Community Wildfire Protection Plan: Snohomish County Fire District 26

Completed with support from the residents and businesses of Fire District 26, Fire District 26, Snohomish County Department of Emergency Management, United States Forest Service, and Washington State Department of Natural Resources

Acknowledgments and Approvals

This Community Wildfire Protection Plan represents the efforts and cooperation of a number of organizations and agencies; through the commitment of people working together to improve Fire District 26's preparedness for wildfire events.

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Chapter 1: Introduction

1.1 What This Plan Includes

The purpose of a Community Wildfire Protection Plan (CWPP) is to strengthen the foundation of collaboration and cooperation in wildfire prevention, mitigation, resilience, and response. The CWPP identifies shared community values at risk from wildfire, including the risk to life, community values, property, critical infrastructure, the environment, and the economy. To increase resilience, the CWPP also outlines actions community members can take to mitigate the growing wildfire threat.

The CWPP planning process provides the community with a detailed framework to inform the implementation of specific actions that will result in:

- Reduced likelihood of a wildfire occurring or spreading in the community
- Reduced impacts and losses to property and critical infrastructure
- Reduced negative economic and social impacts to the community

1.2 Healthy Forests Restoration Act – Guidance and Requirements

The District 26 Community Wildfire Protection Plan (CWPP or Plan) has been developed in response to the Healthy Forests Restoration Act of 2003 (HFRA). This legislation established incentives for communities to develop comprehensive wildfire protection plans in a collaborative, inclusive process. The HFRA directs the U.S. Departments of Interior and Agriculture to address local community priorities in fuels reduction treatments on both federal and non-federal lands.

The HFRA emphasizes the need for federal agencies to collaborate with communities in developing hazardous fuels reduction projects, and places priority on treatment areas identified by communities through development of a CWPP. Priority areas include the wildland-urban interface (WUI), municipal watersheds and other local values at risk, areas impacted by insect or disease epidemics, and critical wildlife habitat that would be negatively impacted by a catastrophic wildfire. In compliance with Title 1 of the HFRA, the CWPP requires agreement among local government, local fire departments and the state agency responsible for forest management. The CWPP also must be developed in consultation with interested parties and the applicable federal agency managing lands surrounding at-risk communities.

1.3 Who This Plan Is For

The plan was developed primarily for District 26 residents, businesses, and visitors.

1.4 How To Use This Plan

The following roadmap should help you effectively navigate through the plan.

- To get a profile of District 26 (including fire-related environmental characteristics), see Section 2.
- To understand how wildland fire behaves, and what you can do to reduce your risks, see Section 3 and Annex 1.
- To find out about potential wildland fire risks in District 26, see Section 4.
- To read about ways to mitigate wildland fire risks in District 26, see Section 6.

1.5 CWPP Planning Process

Documentation of the planning process, including public involvement, is required to meet FEMA's DMA 2000 (44CFR§201.4(c)(1) and §201.6(c)(1)). This section includes a description of the planning process used to develop this plan, including how it was prepared, who was involved in the process, and how all of the involved agencies participated.

The CWPP utilized a collaborative process involving all of the organizations and agencies described in this document. The planning process included five steps:

1. **Collection of Data** about the extent and periodicity of hazards in and around District 26.
2. **Field Observations and Estimations** about risks, structures and infrastructure to risk areas, access, and potential treatments.
3. **Mapping** of data relevant to pre-disaster mitigation control and treatments, structures, resource values, infrastructure, risk assessments, and related data.
4. **Facilitation of Public Involvement** utilizing a public survey, news release, public meeting, public review of draft documents, and acknowledgement of the final plan by the signatory representatives.
5. **Final Drafting of the report** compiling the first four steps into one final document.

1.5.2 Multi-Jurisdictional Participation

CFR requirement §201.6(a)(3) calls for multi-jurisdictional planning in the development of Hazard Mitigation Plans (see Section 2.4 of this Plan for more information) which impact multiple jurisdictions. The CWPP is applicable to all local jurisdictions inside District 26. All jurisdictions were represented or had the opportunity for input in this process.

1.5.3 Public Input

An open house was held to share information on the planning process, provide details of the hazard assessments, discuss potential mitigation options, and provide preparedness information. Attendees at the open house were asked to provide their insight and opinion of plan, maps, risks, and values in District 26. Approximately 30 District 26 residents attended the open house. A survey was distributed to residents to provide Fire District 26 with an increased understanding of the community's view point of the risks, values, and potential mitigation ideas. The results of that survey were incorporated into the planning efforts of the Plan.

1.5.4 Continued Public Involvement and Updates

District 26 is dedicated to involving the public directly in reviewing and updating the CWPP. As part of the policy of District 26 in relation to this planning document, this entire Community Wildfire Protection Plan should be reviewed annually (from date of adoption) at a meeting of the planning committee, open to the public and involving all municipalities/jurisdictions.

Copies of the Plan will be kept at Snohomish County Fire District #26 Station 54 located at 42013 SR 2 Gold Bar, WA 98251.

Chapter 2: CWPP Area of Interest

Chapter 2 defines the Area of Interest (AOI) for the CWPP, provides a description of the communities within the AOI, summarizes current community engagement, and identify linkages to other plans that provide valuable information to reduce the risk of wildfires.

2.1 CWPP Area of Interest

District 26 has both rural and wildland urban interface (WUI) areas. The WUI is composed of both interface and intermix communities. In both interface and intermix communities, housing must meet or exceed a minimum density of one structure (hu) per 40 acres (or 6.17 hu per square kilometer). Intermix communities are places where housing and vegetation intermingle. In intermix WUI, the hu density is satisfied and wildland vegetation is continuous and covers more than 50 percent of the census block. Interface communities are areas with housing in the vicinity of contiguous vegetation. Interface areas have more than 1 house per 40 acres, have less than 50 percent wildland vegetation, and are within 1.5 mi of an area (made up of one or more contiguous Census blocks) over 1,325 acres that is more than 75 percent vegetated. The minimum size limit ensures that areas surrounding small urban parks are not classified as interface WUI.

The following is a summary of key information (referencing the Snohomish County Hazard Mitigation Plan Volume 2) about the jurisdictions in District 26 and their history:

2.1.2 Unincorporated areas of Snohomish County within District 26

- **County Date of Incorporation—**January 14, 1861
- **Current Population—**2,870 estimate as of April 2018
- **Population Growth:** Limited and not rapid (less than 1%/year)
- **Location and Description—** Unincorporated Snohomish County within District 26 is located along Highway 2 between Gold Bar and the County line near Baring. This area is primarily unpopulated with small pockets of both primary and secondary residences.
- **Governing Body Format—** Made up of a five-member Council and an Executive Office. The five members of the Council and the County Executive are elected to four-year terms. Some key tasks of the Council and Executive are as follows: the County Council adopts and enacts ordinances, resolutions, and motions; levies taxes; appropriates revenue; and adopts budgets. The Snohomish County Executive supervises executive departments; enforces all ordinances and state statutes within the county; and prepares and presents the proposed budget. Snohomish County also maintains regional facilities such as parks, the fairgrounds, and the county airport. Local services provided in the unincorporated areas include law enforcement, animal control, road maintenance, land use regulation, and permitting.

2.1.3 City of Gold Bar

- **Date of Incorporation**—1910
- **Current Population**—2,125 as of April 17, 2018 (Estimate)

- **Population Growth**—Gold Bar forecasts a 15 percent increase in population over the next 20 years based on the Snohomish County Tomorrow 2013–2014 Growth Monitoring Report.
- **Location and Description**—A former prospectors' camp, the City of Gold Bar lies along the Skykomish River in the Snohomish River Basin and is connected to Startup, Monroe, and other Snohomish County towns to the west by State Route 2. Gold Bar is 30 miles east of the City of Everett and 40 miles west of Stevens Pass.
- **Brief History**—Gold Bar started as a prospectors camp in 1889, named by a miner who found traces of gold on a river gravel bar. After Gold Bar became a construction camp for the Great Northern Railway, anti-Chinese sentiment was inflamed by a shooting fray started by disreputable camp followers. To save the lives of the threatened Chinese, construction engineer Eduard Bauer slipped them out of camp in hastily constructed coffins. Gold Bar was officially incorporated on September 16, 1910. The 1940 population was 307.
- **Climate**—With its pleasant weather, Gold Bar is a great place to live. The average minimum temperature of Gold Bar in January is 30.7°F and the average minimum temperature in July is 55.0°F. Average precipitation in January is 13.85 inches, but it is considerably lower during July at 1.84 inches.
- **Governing Body Format**—Gold Bar's mayor-and-council form of government, with five elected council members, will assume responsibility for the adoption of this plan. City services include: Department of Public Works, a Planning Department that works in conjunction with the Hearing Examiner, a Building Department, contracted services with Snohomish County Sheriff's Department, Animal Control, and a Water Department.
- **Development Trends**—Anticipated development levels for Gold Bar are low to moderate, consisting primarily of residential development. The majority of recent development has been infill. There has been a focus on affordable housing within the old plat of Gold Bar.

2.1.4 Town of Index

- **Date of Incorporation**—1898
- **Current Population**— 178 as of April 1, 2014 (2010 Census estimate)
- **Annual Population Growth Rate**— Population within the Town of Index has remained fairly constant throughout the past few decades (typically ranging from 147 to 180). This is presented as 80 households, with 44 families residing in the town. Population growth for "full-time" residents in the surrounding area has been generally growing during the same time periods. The total Zip Code population (served by the local post office and services) is 523 persons, according to the 2000 census. The average annual population change is estimated to grow about .25 percent yearly.
- **Location and Description**— The Town of Index is located along the north bank of the North Fork Skykomish River. Index is approximately seven miles east of Gold Bar, Washington and close to the southeastern border of Snohomish County. The Town has an approximate elevation of 500 to 540 feet above sea

level and is surrounded by the Cascade Mountain Range to the east and north. Index has a total land area of 0.2 square miles (0.7 km²).

- **Brief History**— The Town of Index is located in the southernmost portion of Snohomish County at the foothills of the Cascade Mountain Range. The Town of Index was incorporated by Amos Gunn in 1898. Less than 25% of the platted lots have been built-out with a high percentage of the remaining undeveloped lots defined as difficult to develop due to environmental conditions (steep slopes, poor soils and flood-prone areas). The original 1890s population was about 1,000 individuals (with few families) and the town's primary industry focused on mining and logging. As the mining and logging industries declined in the late 1800s, Index's population dropped to around 200.
  In the past decades the Town has held steady with a population around 155. The Town and surrounding area support an Elementary School, a Post Office, Volunteer Fire District (#26), and a General Store. The population is split between young families (with adults typically working outside of the general area), small "cottage businesses" with residents working at home, and retired individuals.
- **Climate**—Within the foothills of the Cascade Mountains, rain fall averages 180 inches per year. Index's average temperature is moderate ranging from 43 to 59 degrees, with approximately 213 frost free days.
- **Governing Body Format**—The Town of Index is governed by a Mayor and a five-person council. There is also a Planning Commission made up of five commissioners who review land-use applications, update plans and regulations (as needed), and provide recommendations to the Council for any proposed adoptions. The Town employs three regular "part-time" positions: a City Clerk who is responsible for day-to-day operations within the town, a maintenance person who performs or oversees all maintenance work conducted within the Town, and a Water Distribution Manager who is responsible for the drinking water system and provides assistance, as needed, to the clerk. Index also contracts or hires occasional assistance for maintenance, legal advice, or special projects.
  The Town of Index has inter-local agreements with Snohomish County to provide the Town with services that are beyond the rural community's capabilities. Some of these services include building inspection, fire inspection, and land use advice.
- **Development Trends**—According to the Washington Office of Financial Management there are only about 100 housing units within the Town of Index. With an estimated population of 178, Index is ranked the 8th smallest community in population in Washington State.

2.2 Past Wildfires, Evacuations and Impacts

Fire District 26 has experienced multiple fires over the last 50 years. Most of the District is a fire regime type V. A type V regime is indicative of a fire large enough to replace a stand of trees every 200 years.

The largest fire in recent history was the Proctor Creek Fire in May of 2016. This fire burned 300 acres and threatened homes and businesses in the immediate area. This was the first time evacuation notices were given in Fire District 26.

Most fires within the District occur in the more inhabited portions. This is a result of the fact that most of the fires are human caused. Major lightning events are much less prevalent in Western Washington than they are on the east side of the Cascades.

Past wildfires tend to be an acre or less in size. This is to slow grow rates due to fuel types, and quick responses of resources to the scene. There is historical evidence of fires that have burned from the Town of Index to the area of May Creek unabated in the past. Large fires are possible in the right climatic and weather conditions.

2.3 Community Engagement

The District 26 community was provided various opportunities for input into the plan and planning process including identifying initial values at risk, reviewing a draft version of the plan at the District 26 Community Wildfire Open House, providing surveys of wildfire risk, a 30-day comment period (through both Snohomish County and District 26 webpages), the District 26 Chipper Day and through conversations with District 26 representatives. Continued community engagement will focus on mitigating wildfire risk and socialization of the CWPP.

2.4 Linkages to Other Plans and Polices

The District 26 CWPP primarily links to the Snohomish County Hazard Mitigation Plan (HMP). The goal of the CWPP is to identify and mitigate wildfire risk, one of nine hazards identified in the HMP. Specifically, this CWPP seeks to inform specific risk and mitigation measures for District 26. The CWPP has tangential links to the County's Comprehensive Plan, Comprehensive Emergency Management Plan, other CWPPs as completed, and Fire Protection Agreements/Mutual Aid Agreements within District 26.

Chapter 3: Wildland Fire Behavior Basics

(Information provided through King County)

This section presents the basics of wildland fire behavior.

3.1 Understanding the Fire Triangle

To begin with, three components are required for a fire to start and keep burning.

- Heat
- Fuel
- Oxygen

These components form what is called the fire triangle (as shown in Figure 3-1).

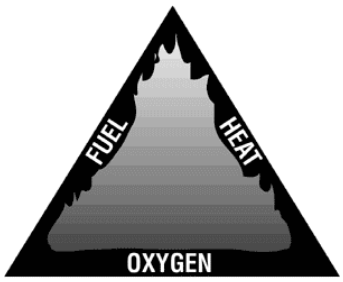


Figure 3-1: The fire triangle consists of heat, fuel and oxygen.

When there's not enough heat generated, when the fuel is exhausted, removed, or isolated, or when the oxygen supply is limited, then a side of the triangle is broken and the fire goes out. Firefighters try to manage one or more of these three elements to control a fire.

3.2 Zeroing In On Heat

The heat part of the fire triangle is critical. Some type of a heat source is required to ignite a fire (lightning, matches, cigarette butt, fireworks, etc.) and heat is needed to maintain the fire and cause it to spread.

Fire is constantly producing heat and the transfer of heat to the surrounding environment is what makes a fire spread. Heat removes the moisture from surrounding combustible materials (grasses, trees, wood, paper, etc.) making it more prone to burn - the dryer the fuel, the more combustible. (Fuels are discussed in the next section.)

When it comes to fire, heat can be transferred three ways:

- **Convection** is heat transfer through the air, such as when hot air rises through a chimney. Convection air currents can preheat leaves and branches carrying a ground fire upwards into a tree or shrub.
- **Radiation** transmits heat by the proximity to flame. Radiation accounts for most of the preheating of fuels surrounding a fire. The temperature of these fuels can sometimes grow so high that the fuels ignite before they even come in contact with the flames, spreading the fire.
- **Conduction** is direct transfer of heat from one fuel source to the next; such as when a stove burner heats a pan and its contents. Conduction allows the heat

to be transferred inside and throughout the fuel, rather than only heating the surface. Conduction is usually not the primary mechanism of heat transfer in a wildfire since wood is a poor heat conductor.

How and how fast heat is transferred plays a large role in wildland fire behavior. Each of the three heat transfer methods can cause a fire to behave differently, depending on the fuel, wind speed, and slope of the terrain.

3.3 Focusing On Fuel

The fuel side of the fire triangle refers anything that can burn. Fuel types include:

- Living vegetation
- Dead vegetation (duff, twigs, needles, standing dead snags, leaves, and moss)
- Organic subsurface material (peat and coal)
- Combustible human-made materials and structures

Fine fuels (grasses, leaves, pine needles) ignite more easily and spread faster with higher intensities than coarser fuels (tree trunks, branches, logs). Generally, the more fuel there is and the more continuous it is, the faster the fire spreads and the higher the intensities.

Several other factors determine how a fuel will burn, including:

- **Moisture content** determines how easily a fuel will burn. For example live trees usually contain a great deal of moisture and are more difficult to combust while dead logs burn easier because they contain very little moisture. Before a wet fuel can burn, the moisture must be converted to vapor through the heating process. The greater the moisture content, the higher the heat temperatures required to dry the fuel. The presence of moist fuel can affect the rate and direction that a wildland fire spreads. High moisture content slows the burning process since heat from the fire must first expel moisture.
- **Size and shape** in part determine a fuel's moisture content. Lighter fuels (often called *fine fuels*) such as grasses, leaves, and needles quickly expel moisture, and burn rapidly. Heavier fuels, such as tree branches, logs, and trunks, take longer to heat up and ignite. In areas of light fuel, the temperature required for ignition is lower than in areas of heavier fuel. The oxygen surrounds lighter fuels and allows the fuel to burn with greater intensity, quickly exhausting the fuel supply.
- **Quantity** - How much combustible fuel there is in a given area is known as known as *fuel loading*. Fuels may be arranged in a uniform pattern and distributed continuously across the ground, allowing a wildland fire to travel uninterrupted. Or, the fuel may be distributed unevenly in a patchy network, forcing the fire to find ways around rocks and other barriers. .
- **Vertical arrangement** - Whether fuels are positioned high or low is another important factor in wildfires. For example intense fires known as *crown fires* occur when fire spreads from the ground into the tops of trees - these fires burn independently of surface fires, with flames moving through the treetops. This type of fire is not very common in Western Washington. *Ground fuels* are all of

the combustible materials found below the ground surface, and include tree roots, duff, and organic material. *Surface fuels* are found at the ground level, including twigs, grass, needles, wood, and other vegetation. *Aerial fuels* are standing vegetation including tree crowns, branches, leaves, snags, and hanging moss.

3.4 Oxygen

The third component of the fire triangle is oxygen. Oxygen is required for combustion, or fire, to occur. Oxygen is in the air you breathe. Anywhere air can reach, oxygen can reach. Firefighters use dirt and other methods to smother burning fuels. The dirt replaces the air so no oxygen is available for the fire.

Densely packed fuels have less air available than loosely packed fuels. Less air means less oxygen and that makes it more difficult for the fire to spread. Loosely packed fuels have more air space, and thus more oxygen, which makes it easier for the fire to spread.

3.5 Weather and Terrain

In addition to the components of the fire triangle, how intense a fire burns and how fast it spreads depends on weather and terrain. Here are some general rules of thumb:

- The combination of current or forecasted high temperatures, low humidity and strong winds can produce potentially dangerous fire conditions.
- Weather affects the moisture content of dead and live vegetation. Dead fine fuel moisture content is highly dependent on the relative humidity and the amount of sun exposure. The lower the relative humidity (RH) and the greater the sun exposure, the lower the fuel moisture content. Relative humidity tends to increase at night. Lower fuel moistures produce faster spread rates and higher fire intensities. This is why wildfires are prevalent in the summer months when rainfall is light and relative humidity is low.
- Fire typically follows wind direction. It's possible for the wind to carry embers (*firebrands*) ahead of the main fire and start new fires (known as *spot fires*).
- Wind speed significantly influences the rate of fire spread and fire intensity. The higher the wind speed, the greater the spread rate and intensity. This is due, in part, to the increased amount of oxygen (more air) and the wind driving heat into adjacent fuels. Strong dry winds originating from the east side of the state carry an even greater threat.
- Thunderstorms produce lighting, which is a source of ignition, and strong and often erratic winds.
- Large fires may generate enough heat to create their own weather. Called *plume dominated fires*, from the giant smoke plume that rises thousands of feet into the air, these fires are dangerous because of their erratic behavior.
- Terrain influences fire behavior by the steepness of the slope. Fires tend to burn uphill. In general, the steeper the slope, the faster a fire will spread and the more intense it will burn.
- The direction a slope faces (*aspect*) contributes to how a fire burns. Fuels

on a south facing slope tend to be drier and will burn faster and more intensely than fuels on a shaded north slope.
- Narrow and box canyons can produce a chimney effect that creates strong upslope winds which can rapidly spread a fire.

Terrain and weather considerations for District 26 are discussed in Chapter 4.

3.6 Getting In the Zone

Two factors generally determine the survivability of a house during a wildfire; the construction of the house itself and the area surrounding the house.

Depending on the construction, one house may be more likely to survive a wildland fire than another. For example because there is no source of exterior combustible fuel, a concrete structure with a metal roof will fare better than a house with a shake roof and wooden siding.

From a construction standpoint, you can make a house more fire survivable by using:

- Class A, B or C rated, fire-resistant roofing material
- Fire-resistant building materials on exterior walls, overhangs and attachments
- Double-paned or tempered glass in windows, skylights and doors
- Enclosed eaves, fascias, soffits and vents

See www.firewise.org for more tips on making your home safer.

Due to the cost and effort, it might not be practical to make structural modifications to your home. However you can still greatly reduce the risks of wildfire by focusing on the second factor that determines house fire survivability - the area surrounding the home.

It's important to understand that wildland fires aren't like avalanches or tsunamis. They don't spread by flowing over the landscape, engulfing whatever is in their path. If you can limit heat and fuel sources, you reduce the potential for the fire to grow. One way to do this is by knowing about the *home ignition zone*.

A *home ignition zone* includes the house and everything within 100 to 200 feet of the structure. While the wooden frame construction of a house is combustible, it takes a significant amount of heat to ignite. A mere 30 feet of distance from a crown fire is all that's required to reduce the radiated heat to low enough levels that the house will not catch on fire.

If you reduce amount and type of fuels around a house, you decrease the amount of heat that is generated adjacent to the structure during a wildfire. This increases the home's survivability.

Figure 3-2: Simple steps for turning a house into a Firewise home.

The first zone is 30 feet from the house. Figure 3-2 gives some ideas for managing this zone. In addition:

- Think lean, clean and green: Mow the lawn regularly.
- Plant fire-resistant vegetation (see the list in the Resource Kit) and keep plants, grass and trees regularly watered and healthy; especially during fire season.
- Remove dead vegetation (leaves and pine needles) from gutters, under decks and within 10 feet of the house.
- Prune back shrubs and tree branches – the lowest branches should be at least 6-10 feet from the ground and shouldn't overhang any part of the house.
- Take out ladder fuels (material on or near the ground that will carry fire into a tree) and provide fuel breaks (such as gravel walkways) to prevent fire from traveling along the ground to the house.
- Ensure firewood stacks are at least 30 feet from the house. The next zone is 30 to 100 (or even 200) feet from the house. In this zone you should consider the type and number of trees. There can be more plantings, but continue to prune the trees and ensure there's separation between the branches of adjacent trees. The idea is to gradually reduce the amount of fuel sources as you get closer to your home.

Chapter 4: Wildfire Risk

Chapter 4 introduces the extent to which wildfire has the potential to impact values within a community, and to summarize the factors that help determine the wildfire risk around the community.

4.1 Identifying the WUI

The definition of the Wildland-Urban Interface (WUI) is published in the Federal Register as “the area where houses meet or intermingle with undeveloped wildland vegetation” (USDA and USDI 2001). In addition, WUI areas must contain a density of at least 6.17 housing units (hu) per square kilometer, or at least 1 housing unit per 40 acres. The WUI is classified as either *intermix WUI* (an area meeting the hu density requirement and also dominated by wildland vegetation) or *interface WUI* (an area meeting the hu density requirement and in the vicinity of wildland vegetation). This analysis adopted common methodology outlined by Stewart et al (2007) and Radeloff et al (2005) to identify these areas. Census blocks were analyzed to determine wildland vegetation composition and proximity using the LANDFIRE Existing Vegetation Type (EVT) layer. Figure 1 displays the classification process as explained below.

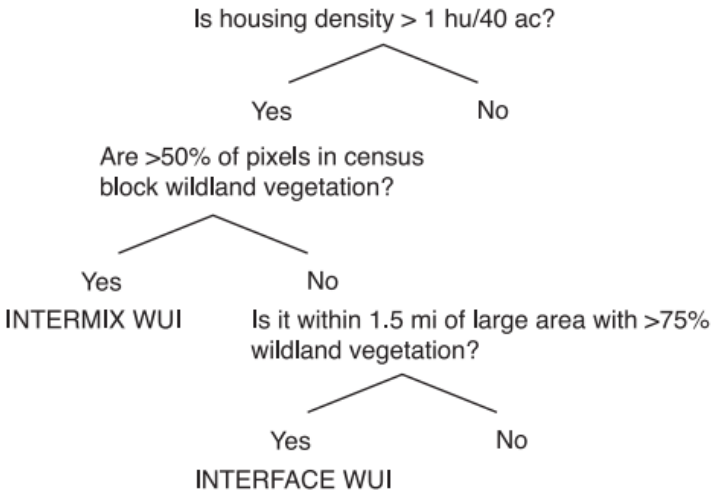
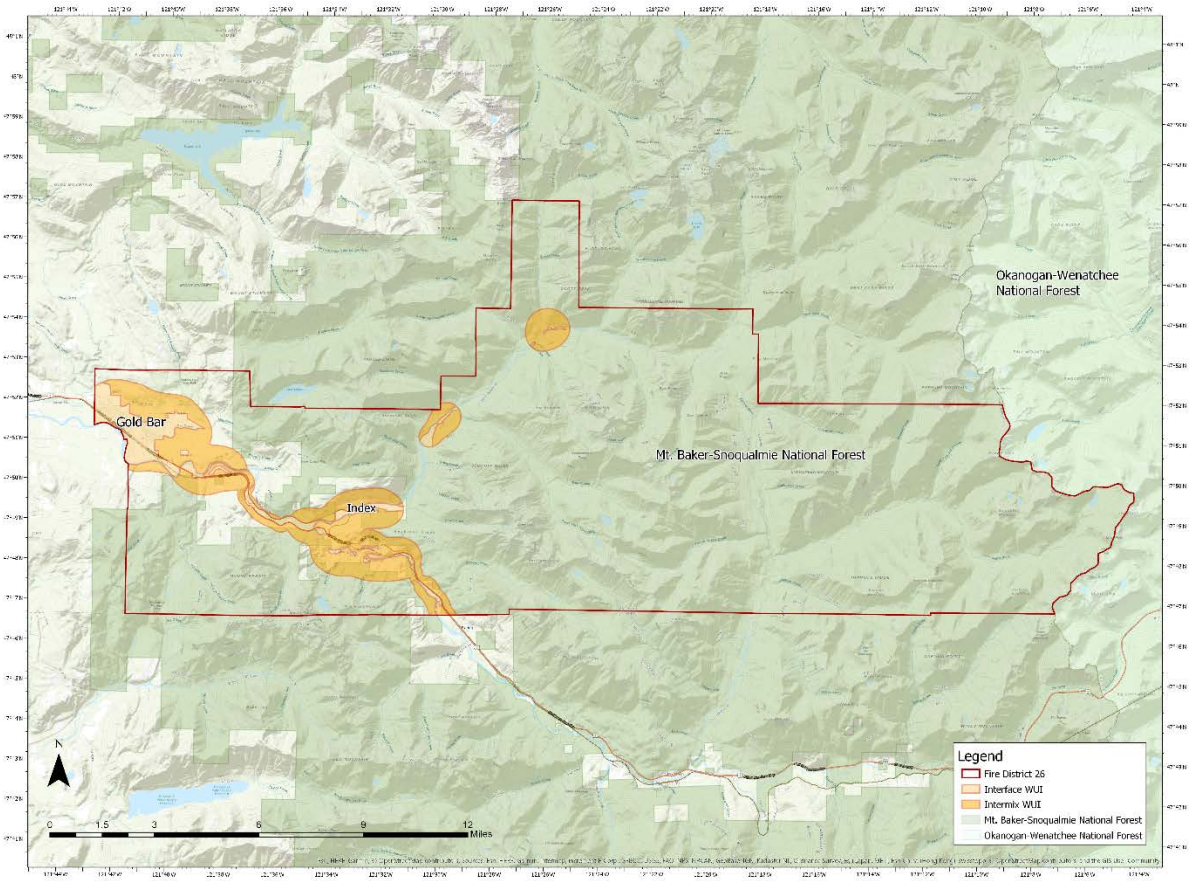


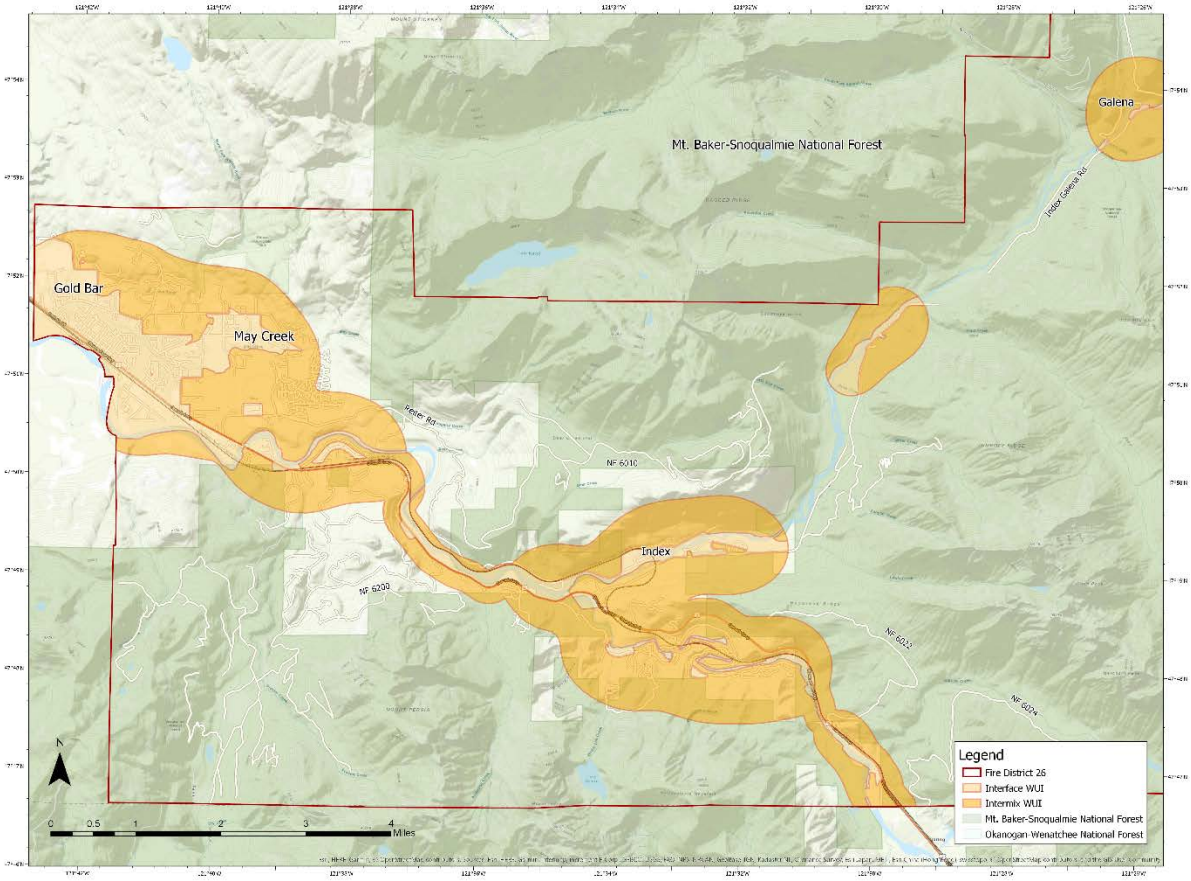
Figure 4-1: WUI identification and classification process steps as presented in Stewart et al 2007.

All geoprocessing performed in creating the WUI layer was conducted using ESRI ArcMap 10.5 and ArcPro 2.0 programs. The kernel density tool was used on address points from an address layer maintained by the Snohomish County Enhanced 911 Office of Fire District 26 to create a raster of housing density at 30 foot resolution. This raster was reclassified to show locations with density equal to or greater than one structure per 40 acres, the minimum density required to meet the WUI definition. A separate layer was created to determine the percentage of wildland vegetation present in census blocks throughout Fire District 26. The LANDFIRE EVT was used for this task, which is mapped using information products from the US National Vegetation

Classification, the National Land Cover Database, and NatureServe's Ecological Systems using decision tree models, field data, Landsat imagery, and assorted compiled data. Wildland vegetation was considered to be all types of vegetative cover except those easily classified as not wild such as pasture, agricultural vegetation, orchards, and urban grass (Stewart et al 2007). The LANDFIRE EVT was reclassified according to this description, and Zonal Statistics were used to determine if wildland vegetation comprised >50% of each census block within District 26. Clip, Erase, and Merge tools were used to create a final WUI layer with both intermix and interface WUI locations identified in District 26 ('FINAL_WUI' layer). A 1000' buffer was added to Highway 2 and added to the WUI because of the importance of Highway 2 for evacuation and the presence of multiple homes and businesses spread adjacent to the highway throughout District 26.



Map 4-1: Intermix and interface WUI in District 26.



Map 4-2: Detail of intermix and interface WUI in District 26.

4.2 Values at Risk (VAR)

VAR are the human or natural resources that may be impacted by wildfire. This includes human life, property, critical infrastructure, high environmental and cultural values, and resource values. Updating VAR data is critical for effective mitigation planning. This can be achieved through the use of high quality imagery to identify areas of new development and values such as critical infrastructure.

4.2.1 Environmental Values

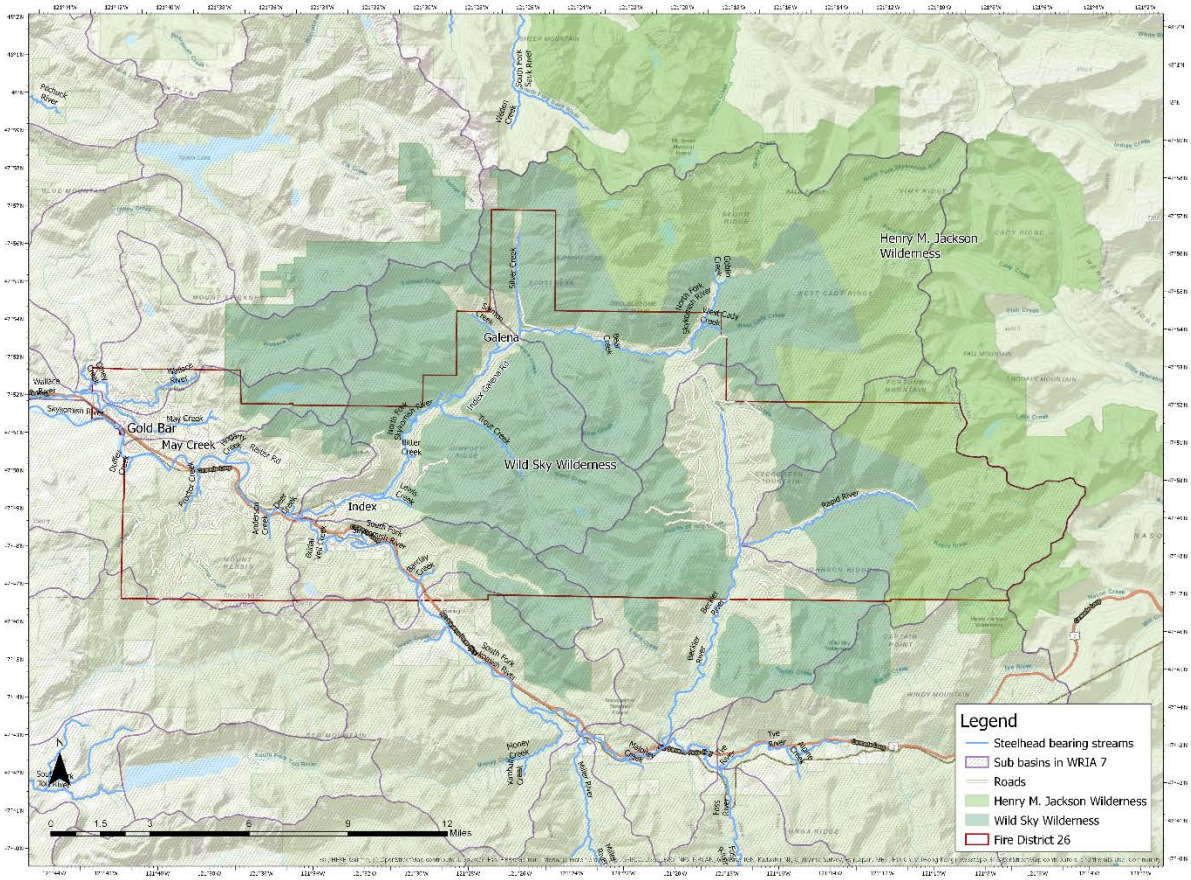
Many environmental VAR within District 26 include components of larger ecological resources and systems existing across jurisdictional boundaries which can be impacted by wildfires. Watershed hydrology is an example of such an ecological system. District 26 is contained completely within the Snoqualmie-Skykomish Watershed (WRIA 7), which ultimately empties to the Puget Sound. Wildfires can have a detrimental impact on local water quality by increasing rates of erosion, suspended sediments, pollution sources, and

nutrient loading (Smith et al 2011). Water quality within the watershed is important for several reasons, including:

- Several protected species of salmon are found in rivers and tributaries within District 26, which provide important recreational and ecological services.
- The Snoqualmie-Skykomish River Watershed recharges groundwater sources through deep drainage and percolation. Many communities rely on groundwater sources, both public and private, for water access. Water quality within the watershed has a direct impact on drinking water quality.

Much of the land area in District 26 falls within the Mt. Baker-Snoqualmie National Forest. Furthermore, a majority of this land is classified as Wilderness Area. Two distinct wilderness areas are present in District 26, the Henry M. Jackson Wilderness Area and the Wild Sky Wilderness Area. These lands provide several important services and opportunities that are at risk from wildfire, including:

- Critical wildlife areas and habitat. Several protected species occur in the National Forest, including the marbled murrelet (Brachyramphus marmoratus) and various salmonids.
- Some patches of old growth remain in the National Forest, and these provide important and dwindling habitat for niche species dependent on old growth for survival.
- Wilderness areas and National Forests provide recreation activities such as camping, hiking, fishing, hunting, wildlife observation, boating, and kayaking. These activities provide economic benefit to surrounding communities.



Map 4-3: Selected environmental VAR in District 26.

4.2.2 Cultural Values

This sub-section seeks to identify and understand where important cultural values are located within District 26 in order to effectively determine wildfire risk and identify mitigation activities. These values may fall inside or outside of the WUI, and are important to catalog for planning activities. Some cultural values in District 26 include:

- Zeke's Drive In, a popular restaurant East of Gold Bar on Highway 2. This is a frequent stop for those returning from recreational activities in the area.
- Historical structures exist in the City of Gold Bar, Index, and near Galena. Buildings and artifacts left from railroads and mining activities can be found throughout the district, and some are registered with the Washington State Department of Archaeology and Historic Preservation.
- Recreation facilities are found throughout the fire district. Popular hiking destinations include Wallace Falls State Park, Lake Serene and Bridal Veil Falls, Heybrook Lookout, and Barclay Lake.

- Forest Service camps and private campgrounds can be found throughout District 26.

4.2.3 Resource Values

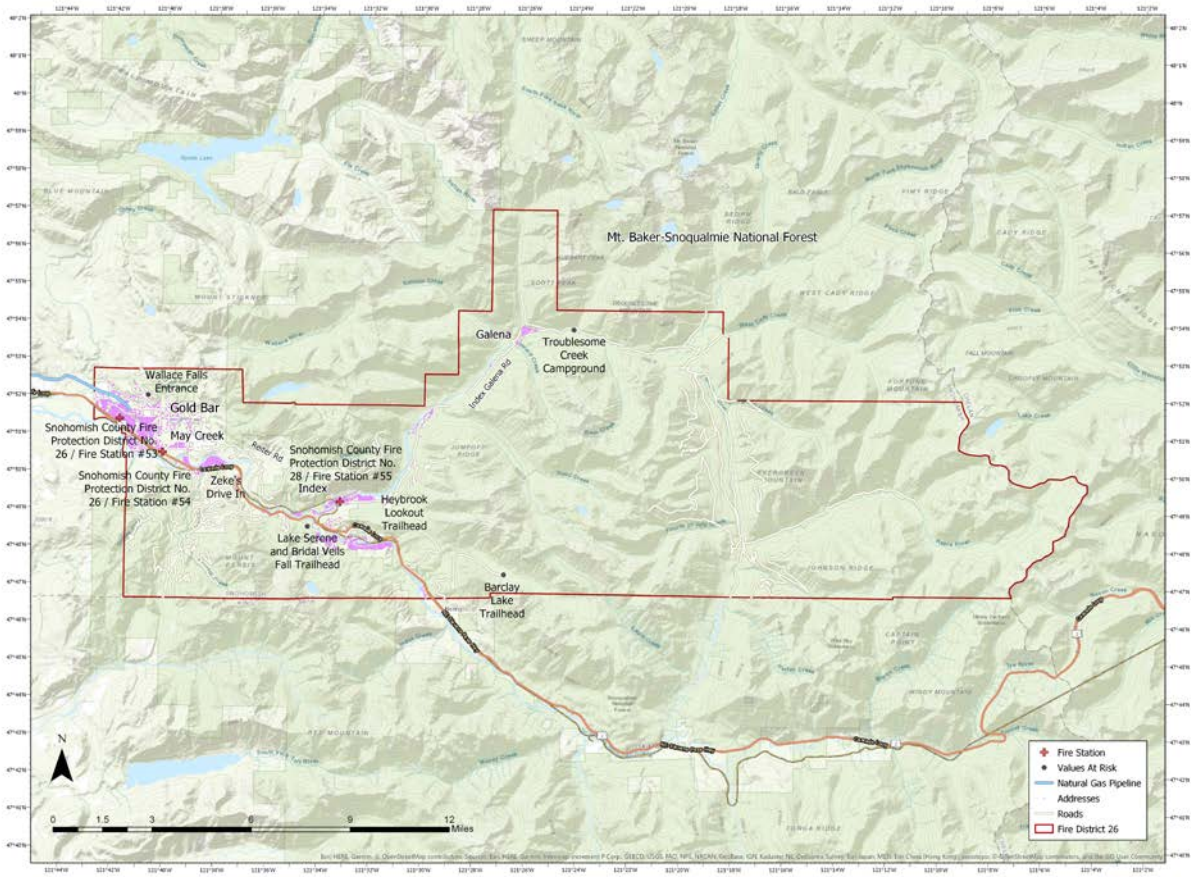
This sub-section seeks to clearly identify and understand where commercial and industrial resources are located within the AOI in order to effectively determine the wildfire risk and identify mitigation activities.

- Forestry occurs on land leased by the National Forest Service, as well as private land within District 26.
- The Washington Department of Fish and Wildlife operates the Wallace River Fish Hatchery west of Gold Bar, and the Reiter Pond Fish Hatchery East of Gold Bar. These hatcheries raise and release steelhead smolt for steelhead population management. The steelhead presence in local rivers provide important recreation, commercial, and ecosystem service opportunities.
- Mining activity occurs within District 26.

4.2.4 Human Life and Safety

This sub-section seeks to clearly identify and understand where people and structures are located within the AOI in order to effectively determine the wildfire risk and identify mitigation activities.

- Highway 2 is the major East-West corridor through District 26. This is the primary evacuation route for most people living in Fire District 26.
- Most structures and homes are found within the towns of Gold Bar and Index, Galena, and along Highway 2. Housing density is also sufficient enough along the Index-Galena Road in some locations to classify as WUI.



Map 4-4: Selected cultural and human life and safety VAR in District 26.

4.2.5 Critical Infrastructure

This sub-section seeks to clearly identify and understand where critical infrastructure is located within the AOI in order to effectively determine the wildfire risk and identify mitigation activities. Important infrastructure components found in District 26 include (but are not limited to):

- PUD substations
- PSE transmission lines
- Williams Pipeline (Natural Gas)
- SERS Repeater and cell tower on Index Wall
- City of Gold Bar water system via springs north of the City
- PUD water system in Gold Bar UGA
- BPA transmission lines

4.3 Risk Assessment (RA)

GIS analyses were used to produce a raster layer representing relative wildfire risk throughout Fire District 26 (hereafter referred to as a 'risk index'). The risk index required assigning a common rating scale to five factors following a point-rating

convention based on NFPA 1144 (2018, Annex A). Ratings not defined by the NFPA were derived from the Bainbridge Island Community Wildfire Plan methodology (2010, Table 5). Factors included in analyses were fuel type (Map 4-5) and abundance, slope, aspect, proximity to fire hydrants, and ignition risk as determined by historical wildfire occurrence (Map 4-6). These factors were weighted by relative importance in the creation of the risk index. For each factor, a raster at 30 foot resolution was created and reclassified by point category. Associated point values for each factor were summed for each cell and resulted in a risk index. See Table 4-1 for a summary of factors included in the risk index analysis, points, point categories, hazard ratings, and the percent contribution of each factor to the overall risk index.

Table 4-1: Risk index assessment factors and ratings

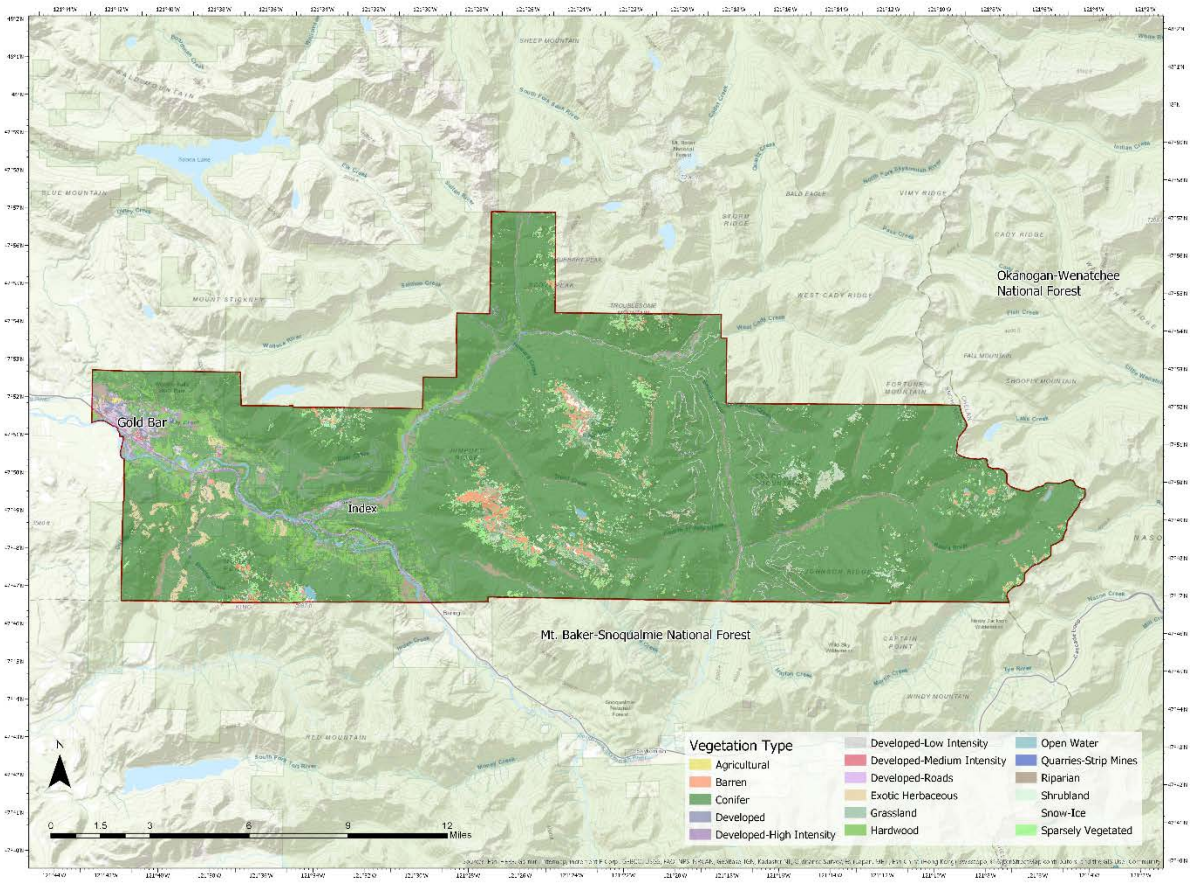
Factor	Points	Point Category	Hazard Rating	Percent of Overall Rating
Fuels	0	Non-Burnable	None	50%
	5	Light	Low	
	10	Medium	Moderate	
	20	Heavy	High	
	25	Slash	Very High	
Slope	1	<10%	Minimal	25%
	4	10 - <20%	Low	
	7	20 - <30%	Moderate	
	10	30 - <40%	High	
	15	>40%	Very High	
Aspect	0	N (316-360, 0-45 degrees)	Low	8.3%
	2	E (225-315 degrees)	Moderate	
	3	W (46-135 degrees)	High	
	5	S (136-224 degrees)	Very High	
Hydrants	0	Hydrant within 1000’	Low	8.3%
	5	No hydrants within 1000’	High	
Past Wildfires	0	0 fires / square mile	Low	8.3%
	2	<1.2 fires / square mile	Moderate	
	4	<3.0 / square mile	High	
	5	<21.0 / square mile	Very High	
Total Possible:	60			100%

Additional classification and ranking was necessary for the fuels layer. Fuel data used in this analysis were the FBFM40 layer downloaded from the LANDFIRE program. This layer represents a refinement of the 40 Scott and Burgan fire behavior fuel model created by the US Forest Service. Fuel types were reclassified using the point-rating

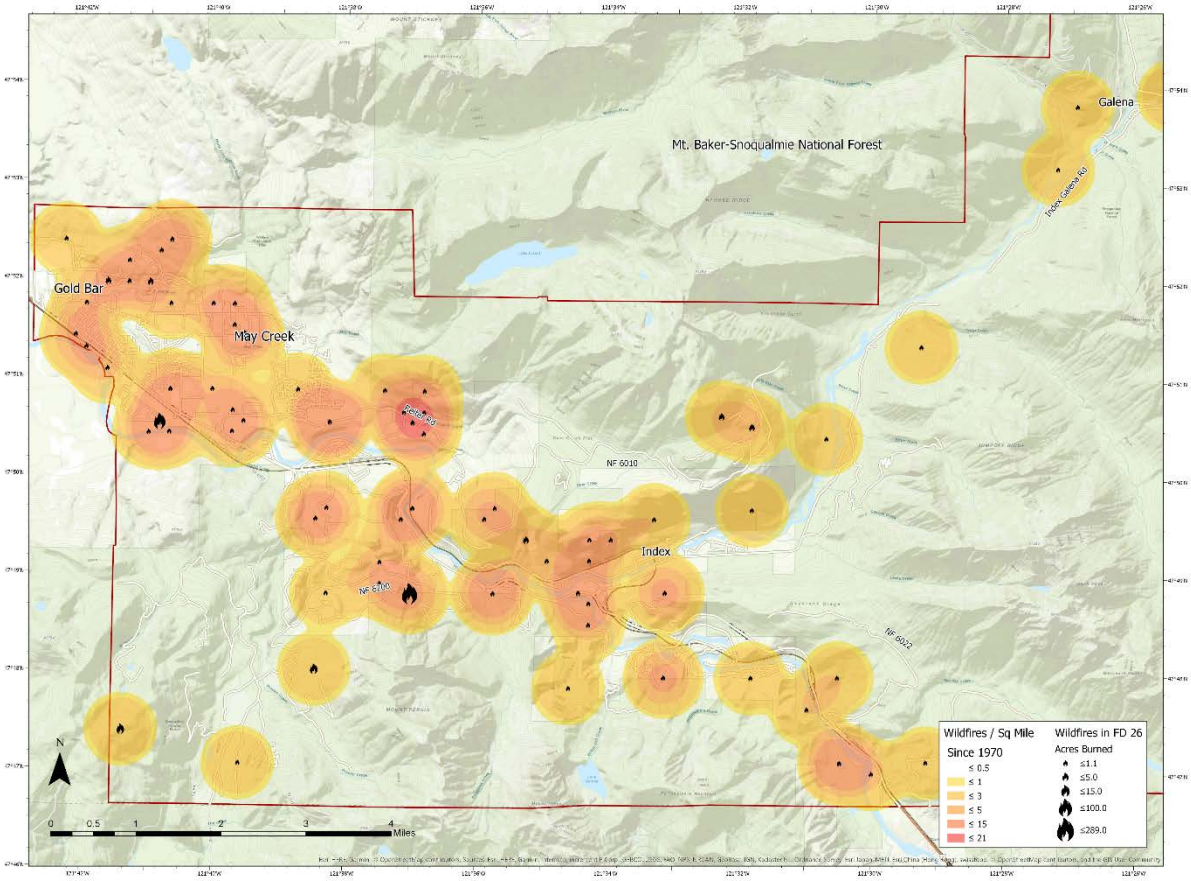
system specified by NFPA Annex A. Point assignments by fuel type are specified below in Table 4-2.

Table 4-2: Point categories and point assignments for FBFM40 fuel types

FBFM 40 Fuel Type		Points
Non Burnable	(NB1, NB2, NB3, NB8, NB9)	0
Light	(GR1, GR2, GS1, SH1, TL1, TL2, TL3, TL4, TL7)	15
Medium	(SH3, GS2, SH2, TL5, TL6, TU1, TU2, SB1)	20
Heavy	(TL8, TU5, TL9)	25
Slash	(None Present)	30



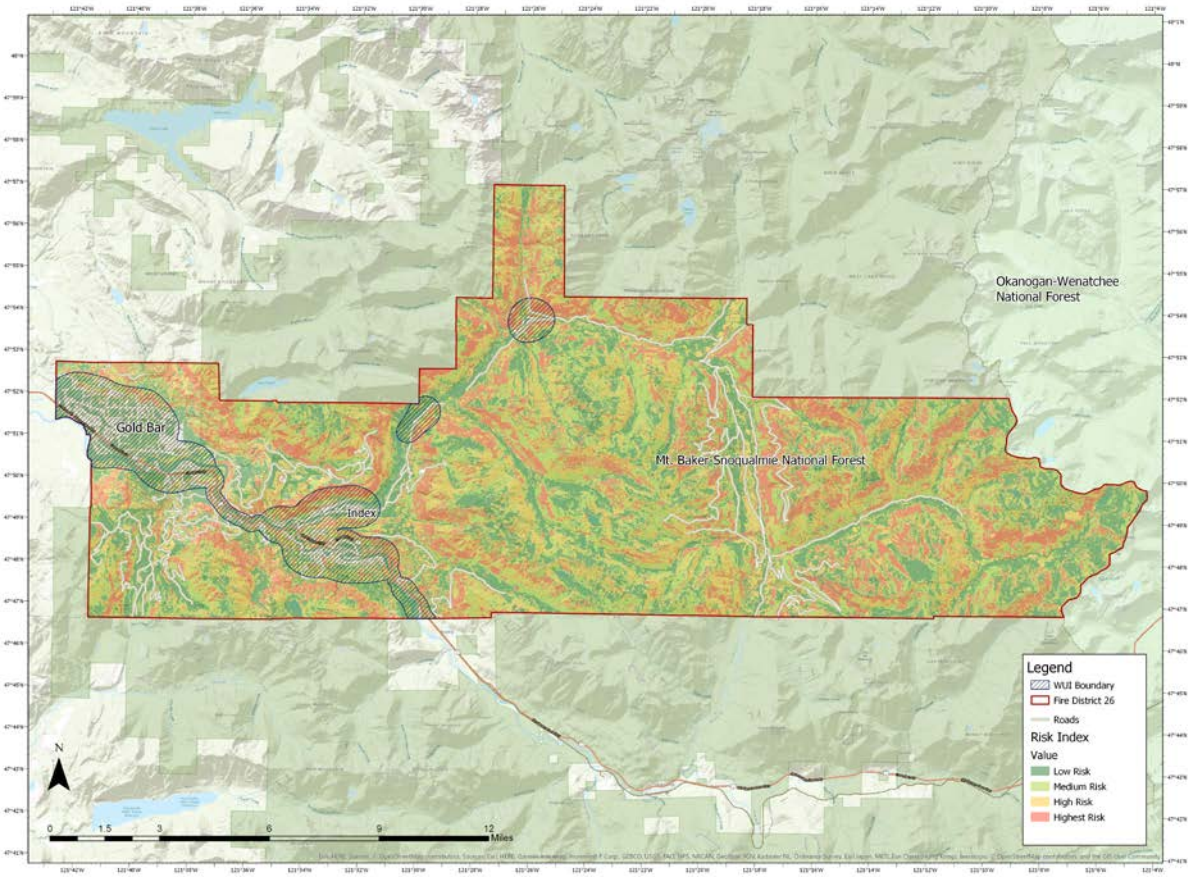
Map 4-5: Existing vegetation types in District 26, as used for determining overall risk index.



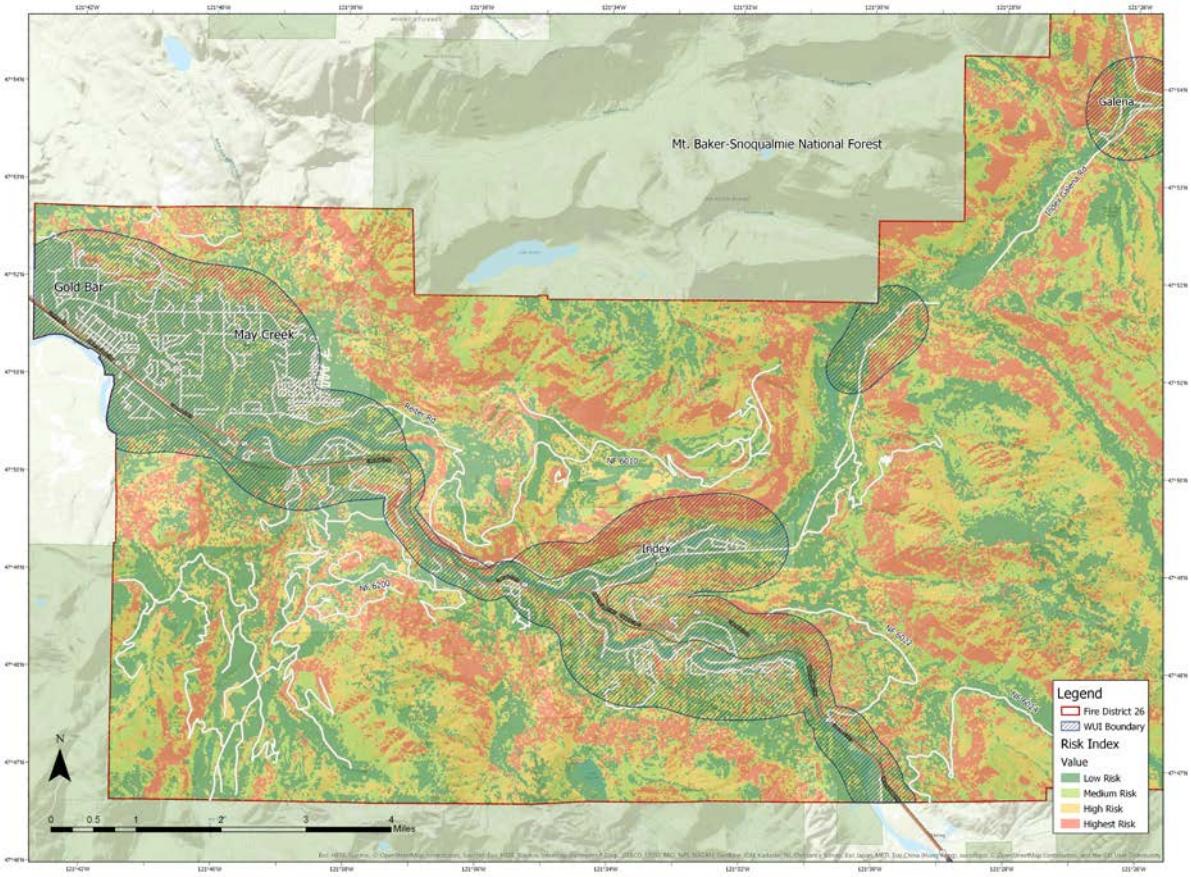
Map 4-6: Wildfire history in District 26, as used for determining overall risk index.

4.4 Wildfire Risk Rating

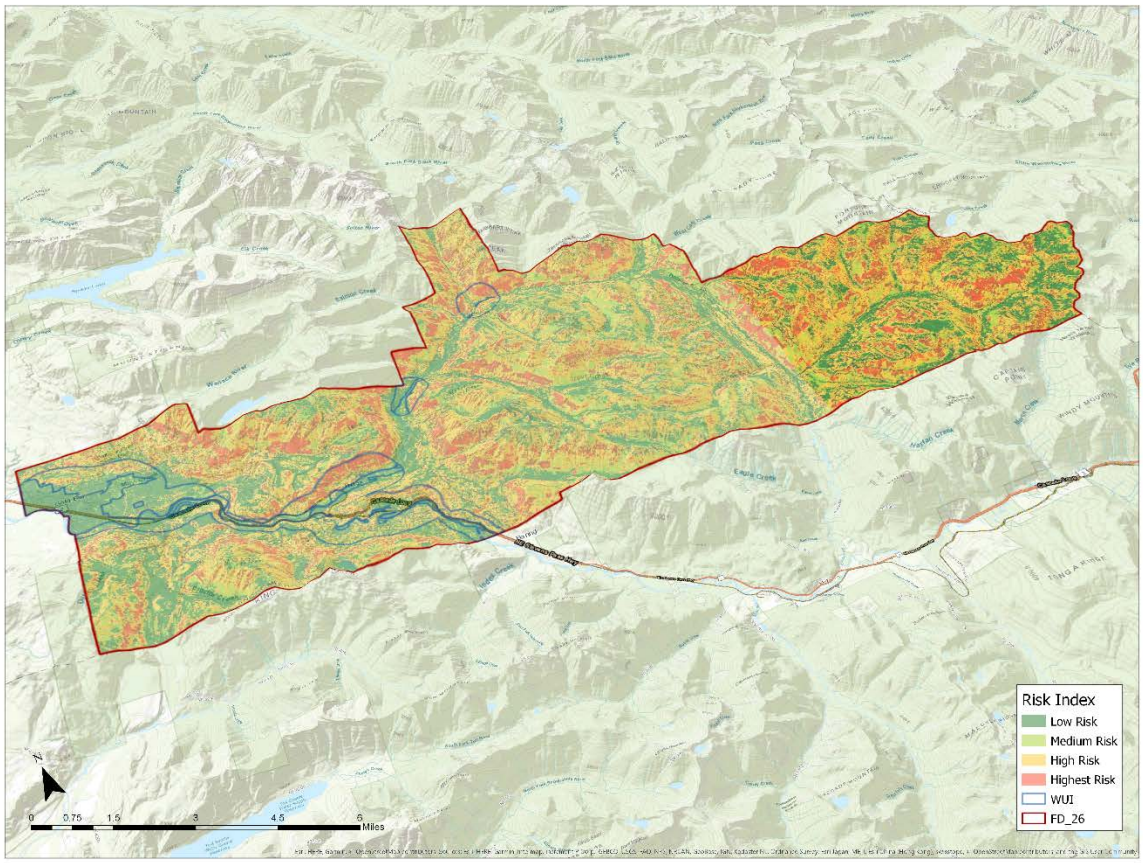
After creating a risk index raster, values were categorized into quartiles to represent areas of low risk (0-18 points), medium risk (19-23 points), high risk (24-29 points), and very high risk (30-45 points). Actual risk index values range from 2 to 45 points, with a maximum possible value of 60 points. The final risk index is displayed below, with areas of high to low risk color coded for easily discerning locations of high and low wildfire risk.



Map 4-7: Risk index for District 26.



Map 4-8: Detail of risk index for District 26.



Map 4-9: Risk index for District 26. Presented in 3D for visualizing topographical effects on wildfire risk. Shown with 2x vertical exaggeration.

Chapter 5: Wildfire Response Resources

Chapter 5 seeks to identify implications of wildfire response resources and processes that help to make community firefighting more effective.

5.1 Local Fire District Equipment

1) Station 53

501 Lewis Ave Gold Bar, WA

- 1- Basic Life Support Unit (BLS)
- Fire Suppression Apparatus
    - 1- 2001 American Lafrance Engine
        - 1500 GPM pump, 750 gallon tank
        - Automobile rescue tools
    - 1- 2001 H&W Water Tender w/ 2800 gallons of water
    - 1- 2011 Chevy Tahoe Command Unit
- 1- Type 3 Brush Engine

2) Station 54

42013 SR 2 Gold Bar, WA

- 1- BLS Unit
- 1- Advanced Life Support Unity (ALS) (Paramedic)
- 1- Reserve Unit for BLS or ALS
- 1- Chevy Tahoe w/ full ALS response capabilities
- Fire Suppression Apparatus
    - 1- 2015 Pierce Saber Engine
        - 1250gpm Pump, 1000 gal tank
        - Automobile rescue tools
    - 1- 2001 American Lafrance Engine
        - 1500 GPM pump, 750 gallon tank
    - 1- 2004 Scott Air Refill Trailer
    - 1- Rehab Support Unit
- 2- Type 6 Brush engines
- Rescue 54- 2005 Ford Excursion
    - Rope and water rescue equipment
    - Inflatable kayaks for swift water
- Boat 54- 2007 21' Sport John Jet
    - Throw bags, medical supplies

3) Station 55

512 Ave A Index, WA

- Engine 55 – 2007 Spartan Type 1 engine
    - 1250gpm Pump, 1000gal tank
    - Auto Extrication tools
- (1) type 3 brush truck
- Aid 55 – BLS unit

- Rescue 55 – Technical rescue unit for rope and swift water
- UTV 55 – 6x6 UTV with 50 gallon tank and pump

5.2 Water Availability for Wildfire Suppression

Multiple sources with hydrant areas in Gold Bar and Index city/town limits. 3,000 gallon water tender at Station 54 and multiple lakes and the Skykomish River that engines can pull water from (locations for drafting in the District have been identified). Rotary aircraft can fill buckets from the river and lakes.

5.3 Access and Evacuation

Appropriate emergency routes should be part of an evacuation plan. Fire can be an unpredictable and powerful force. Despite the best efforts of federal, state and local fire agencies; a fire may burn out of control and threaten residents and homes in an area. As a contingency both Fire District 26 and the Washington State Department of Natural Resources should renew efforts for a formal evacuation plan for District 26 residents. Residents should educate themselves on how to prepare for an evacuation, when to evacuate, how to leave their homes in a fast and efficient way, and when they can return once the area is safe.

Some areas of District 26 have single lane access and the surrounding fuel loads, a quick moving fire could prevent residents from evacuating. Part of an emergency fire plan should be designated *safe zones*. These are large, cleared areas where residents could gather and safely wait out a fire, as an absolute worst case scenario, last resort.

Criteria for appropriate safety zones include:

- Areas where there is little or no fuel (mowed pastures, large lawns, etc.)
- Places where the fire has already burned
- Natural features such as rock areas, water, or meadows
- Constructed sites such as clear cuts or roads

The general rule of thumb for distance separation from people to the fire should be at least 4 times the flame height. For example if the flames were 10 feet high, you would need 40 feet distance separation from the edges of the safety zone to the nearest fuels; for this example, 40 feet on all sides. Larger areas may be required depending on wind, slope, and fuel loads.

One possible project could be to work with Fire District 26 and WA-DNR to conduct a wildfire drill for a portion of the District 26 area (e.g. Gold Bar Nature Trails). This could be a simple exercise where the community tests its communications and evacuation procedures.

5.3.1 Evacuation Levels

Level 1 – Alert: there is a threat in your area. Consider planning/packing as necessary in the event evacuation becomes necessary.

Level 2 – Warning/Notice: High probability of a need to evacuate. Prepare by packing necessary items, and preparing your family, pets and vehicle for departure.

Level 3 – Request/Order: Occupants of the affected area are asked to leave within a specified period of time, using pre-designated routes.

5.4 Training

The risk of wildfires has been a constant threat since Fire District 26 was first established in 1968. Starting in the early 1990's, the District began participating in Statewide Mobilization's for wildfires after the State Mobilization Plan was developed following the Spokane Fire Storm in 1991. The plan allows for fire districts from across the state to send resources (normally Brush trucks and tenders) in Strike Team configuration when a fire or incident exceeds the capability of that requesting districts standard alarm system. These incidents have helped firefighters gain invaluable experience in fighting large wildfires and also a thorough understanding of the National Incident Command System or NIMS. Three of District 26 members are now on a local Type 3 incident management team which responds statewide for assistance and is also available nationally.

In the Early 2000's, state requirements were put in place to require formal "Wildland Firefighting training", AKA "Red Card training" for all firefighters responding to a wildfire lasting longer than 12 hours. District 26 held its first class in 1999 and has hosted an annual "S-130 Initial Wildland Firefighting" course ever since. The course follows the National Wildfire Coordinating Group guidelines and is a nationally recognized certification. Members holding a Wildland Qualification must also attend an annual RT-130 National Wildland Refresher. This refresher covers the previous Fire Season summary, review of case studies, reviewing the 10 Standard firefighting orders, 18 watchouts and fire shelter deployment practice.
Many of our more active Wildland team members have sought further training and District 26 now has (7) Squad Bosses, (3) Single Resource Engine Bosses, (2) Striketeam Leader Trainees and (1) Taskforce Leader/Division Supervisor Trainee. Our team members have also regularly have attended additional academies such as:

- Western Washington Interagency Wildfire Academy – Rainier, WA
- Firehouse World – Urban Interface Conference - San Diego, CA
- Colorado Wildfire and Incident Management Academy – Denver, CO
- Central Washington Interagency Wildfire Academy – Wenatchee, WA
- Washington Firefighter's Association Academy – Wenatchee, WA

A well balanced combination of training and real life Wildfire experience at home and abroad has strengthened our program to be well prepared for when the next wildfire threat strikes District 26.

5.5 Structure Protection

District 26 is equipped with three Type 1 Fire Engines capable of pumping at least 1,000 gallons per minute (GPM). In addition, the District owns two Type 3 Engines capable of 150 GPM and two smaller Type 6 Engines capable of 50 GPM. The District owns a 3,000 gallon water tender that provides water for firefighting operations.

Snohomish County has a clearly defined mutual aid system. Throughout the County there are 65 Fire Engines in service at a given time with another 15 to 20 smaller Wild Land Engines available to respond anywhere in the County.

In a large and complex fire the department can request resources from the Northwest Fire Defense Region. The northwest region consists of fire departments from Snohomish, Skagit, Whatcom, Island and San Juan Counties.

In the event that the incident requires a larger than regional response, the District has the availability of requesting resources through the Washington State Patrol's Fire Mobilization Plan.

Lastly, the Washington State Department of Natural Resources and Snohomish County Sheriff's Office have helicopters that can be outfitted for suppression and protection operations that are located a short flight from the District boundaries.

Chapter 6: Risk Management and Mitigation Options

Chapter 6 outlines the strategies community can put into practice to reduce the risk and impact of a wildfire. Risk mitigation choices can vary by: community, fuel type, ecology, hazard, terrain factors, land ownership, other unique local risk factors, local, state, and federal capacity, and/or public willingness and perception.

6.1 Emergency Communications

Residents should consider establishing a phone tree system for contacting each other in the event that landline or cell phone service is available during an emergency. This system is a fast and efficient way of providing the latest information about a wildfire or other emergency. A phone tree could be easily expanded outside of the area by adding contacts for other neighborhoods. In addition to a phone tree, email addresses should be exchanged as part of an emergency communication plan.

- Mass Notification: Fire District 26 (through Snohomish County 911 and Snohomish County Department of Emergency Management) uses a mass notification service to notify residents of emergencies. During certain emergencies, an automated phone call, text message, or email is placed to residences in the affected area with information. Residents are encouraged to sign-up for SnoCoAlerts to ensure their landline, cell phone, and/or email are available for notification.

- Amateur Radio: Aboveground utilities can be disrupted during a wildland fire. Amateur (HAM) radio is another option, although radios and more expensive and require training and a license to operate. The local American Radio Relay League (ARRL) or the Snoqualmie Valley Amateur Radio Club (http://snovalleyarc.org/) should be contacted for more information.

- Cell phone service can also be disrupted during an emergency when circuits are overloaded or transmission facilities damaged. The District’s communities should examine alternative emergency communication methods in case phone service is not available. This could consist of handheld FRS (Family Radio Service) radios, which are relatively inexpensive, don't require a license and work over distances of around a mile.

6.2 Community Emergency Response Team (CERT)

Another all-hazards way to reduce risk from fires and natural and human-caused disasters is to consider starting or joining a Community Emergency Response Team (CERT). CERT educates people about disaster preparedness for hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. Using the training learned in the classroom and during exercises, CERT members can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help. CERT members also support emergency response agencies by taking a more active role in emergency preparedness projects in their community.

6.3 Map Your Neighborhood

Washington State's Map Your Neighborhood (MYN) program, recognizes that during an emergency, "your most immediate source of help are the neighbors living around you." Coordinated through the Department of Emergency Management, local residents lead their neighbors through a neighborhood asset mapping process to ensure that they're prepared in the event of a natural disaster. MYN helps to identify shared, common resources and values in the community, identifies those that may need additional assistance in evacuations, and promotes all-hazard preparedness that is critical in areas threatened by wildfires.

6.4 Fuel Management

Snohomish County has identified wildfire risk as an element of its Hazard Mitigation Plan (Volume 1, Section 18). One mitigation strategy is the reduction of fuels. Fuel reduction can be expensive and should be carefully assessed to determine the maximum benefit while still maintaining the aesthetics and habitat of the land. Various offsets (insurance premium reductions or sale of timber) as well as the cost of firefighting operations can significantly outweigh the cost of reduction programs. Furthermore, management practices can increase resilience to other factors such as insect infestations and severe weather. Additionally, programs such as a “chipper day” can provide an opportunity for mutual community benefit. Fuel reduction targeted for at risk areas (structures, critical infrastructure, and transportation routes) can provide a positive cost-benefit. A coordinated local, state, and federal fuel reduction effort can maximize resources including codes, covenants, conditions, and restrictions on construction.

6.5 Firewise

Education is one of the strongest tools for reducing the risk of harm or loss from wildfire. The Firewise program is primarily educational, and seeks to create a sustainable balance that allows communities to live safely in natural settings. Educating community members about 30' defensible space zones, 100’ home ignition zones, fire-resistant plants for landscaping (and where to locate them, such as interspersed in a row of flammable shrubs), the dangers of legal and illegal fireworks, and other Firewise principles should be a priority. To reach the greatest possible number of people, a variety of methods should be used such as offering presentations by knowledgeable authorities, distributing readily available Firewise educational material, and partnering with state, county, and local agencies in fire risk reduction efforts.

Annex 1: Risk Reduction Recommendations

1. Monitor Invasive/Flammable Vegetation

Patches of Scotch broom are present in the District 26 community; especially around the power line right-of-way. Because of the plant's rapid growth and flammability, these patches should be removed. The entire community should be monitored for invasive flammable species so they do not become established and increase fire risk.

2. Wind Driven Embers

Wind-driven embers can start fires over a mile away or greater from the main fire. If an ember lands in dry fuel, it can start a fire in a matter of seconds.
The best protection from wind borne embers and firebrands is to make sure there is no fuel to catch fire. Some proven methods include:

- Cleaning out gutters
- Using gravel, compost and other non-flammable materials for mulch in planting beds (avoiding the use of decorative bark)
- Enclosing the bottoms of decks and porches with 1/8 inch metal screening
- Making sure attic and crawlspace vents are covered with 1/8 inch metal screening

3. Fuels

Identifying land that contains vegetation and other fuel types that increases fire danger can help to mitigate risk. Once hazardous fuel sources are identified, the community can work with the landowners and the county to: reduce fuel loads, make certain vegetation on road right-of-ways is managed, establish natural firebreaks, and ensure healthy forest practices are in place.

4. Chipper Day

One proven Firewise activity is for the community to have a wood chipper day. Participating residents would drag unwanted brush from their properties to the roadside where a volunteer or professional crew would chip and dispose of the brush. The community could share the costs of a renting an appropriate sized chipper or work with the county or conservation district. The chips are hauled off to an appropriate disposal site or offered to farms in the area as livestock bedding.

5. Firewood

Dry firewood can quickly spread a wildfire. A wind-blown ember can readily ignite smaller pieces and kindling and soon an entire stack of wood becomes a potentially dangerous bonfire. Firewood should never be kept next to the house. Ideally, firewood would be kept in a covered structure at least 30 feet from the main residence.

6. Forest Plans

Property owners with a significant amount of forested land should ensure they have (and follow) a forest management plan that promotes the health and safety of their forest. The plan can be tailored to the owner’s desires, whether that is to maximize timber production, provide wildlife habitat, increase the diversity of the forest, or any

combination thereof. Plans should take into consideration home ignition zones (as explained in Chapter 3) to help protect residences or structures. A healthy forest is a safe forest, regardless of the owner's long term goals for the land. As an added bonus, with an approved forest management plan the property owner may qualify for various incentive programs that may reduce their property tax.

7. Home Construction

Simple steps can be taken to reduce the ignition risks of residences in District 26. Here are some options to consider.

7.1 **Flammable roofs (cedar shake)** – Cedar shake roofs greatly increase a home's chance of burning down during a wildfire. A single ember blown in from a distant fire can start a cedar shake roof on fire. While it may be impractical to immediately change roof materials, when a cedar shake roof requires replacing, the homeowner is best advised to use a Class A fire resistant roofing material such as architectural composites, metal, ceramic or other less flammable materials.

7.2 **Metal screening -** Dead vegetation is notorious for building up under decks and porches. This dry vegetation can be extremely flammable and if an ember should reach them, it could easily ignite the deck or porch and spread the fire to the house.

An easy way to reduce this risk is to screen in the undersides of decks/porches with 1/8-inch (or smaller) metal mesh. This type of screening reduces the amount of flammable material that builds up under these structures and helps prevent embers from reaching any vegetation that may be present. A wooden lattice or other structure may be added for aesthetic reasons if desired.

In addition to screening underneath decks and porches, any crawl space or attic vent should also be screened for the same reason. Houses tend to "breathe" throughout the day as they heat up and cool down. Air is drawn through attic and crawlspace vents. This same airflow can draw embers into a house and start insulation or other materials on fire. Screens prevent the embers from entering the house plus have the added benefit of keeping out unwanted rodents and other forms of wildlife.

7.3 **Wooden Fences -** Wooden fences should not be connected directly to the house. If an ember lands against a fence and starts it on fire, the fire can easily spread to the house. There are several easy fixes to this problem. A simple gate at the connection point allows the homeowner to open the gate and interrupt the path of the fire. The fence could also be terminated with a stone or metal post next to the house. If the fence must be connected to a residence, use metal connectors and avoid direct wood-to-wood contact.

8. Difficult to See Street Address Numbers

If there is an emergency, fire and emergency personnel need to be able to quickly

locate individual homes in the community; including in darkness and low visibility conditions. Street numbers should be clear and easily read at a distance during both day and night.
Placing clear, easily read, non-combustible markers on the street in front of each home makes it much easier for emergency responders to locate a specific house. These numbers could be placed on a mailbox or on a separate post near the drive. The numbers should be clear and easily read from both directions. If desired, the community may be able to work with Fire District 26 to come up with a similar address marker for everyone to use.
Street signs should also be standardized (reflective letters at least 4” high) and easily read. Street signs should be kept clear of vegetation and any other obstructions that prevent them from being easily seen.

9. Flammable Landscaping
Flammable plants (usually resinous ones, such as decorative cedars, yews, junipers) should only be grown 30’ or more from a house. In addition, fire resistant plantings should be used around aboveground propane tanks.

10. Propane Tanks
Propane tanks (large and small) should be sited away from a residence or structure in case of fire. Even small barbeque tanks should be kept away from buildings to reduce the chance of fire spreading in the event of combustion. Propane tanks typically won't explode under high heat, but will bleed off gas, which may ignite. Because of this, fire resistant plantings should be used around above ground propane tanks.

11. Above Ground Utilities
While it is usually impractical to move all utility lines underground, residents should work with utility companies to make sure tree limbs and other plants are pruned at least 3 feet from the lines. Poles should be kept clear of flammable vegetation. Proper maintenance of the surrounding vegetation may prevent the utilities from failing during a wildfire.

12. Gated Properties
A locked gate provides security for a property, but it can also delay or prevent fire personnel from responding to an emergency. Residents with gated property should consider installing a Knox Box or lock; a secure key box or special lock that allows fire personnel to quickly gain access to a locked gate without damaging it.

13. Narrow Drives and Inadequate Turnarounds
Winding, narrow drives without adequate turnarounds and passing ability can create problems for or prevent emergency vehicles from accessing a property. Even if your car or truck can easily fit down the drive, a much larger vehicle such as a fire truck may have to push through brush and limbs. If the drive is long and narrow, firefighters unfamiliar with the area may not know if they can turn around at the end. Brush and limbs should be pruned to a minimum width of 12-feet and up to a

minimum height of around 14-feet to ensure fire fighting vehicles can access the drive without damaging equipment.
In addition, there should be adequate space for a large vehicle to turn around at the end of a drive (40 - 80 feet is recommended depending on the type of turnaround). If the drive is very long, consider putting in pull-outs so two vehicles can pass each other without forcing one vehicle to back out the full length of the drive.

14. Fire/Barbeque Pits

If a property owner uses an outdoor fire or barbeque pit, it should be built according to these Washington State Department of Natural Resources specifications:

- Located at least 25 feet away from any structure,
- Dug deep enough to reach mineral soil (no leaf litter or other organic material),
- Backfilled with at least four inches of cement,
- Lined with a metal or other non-combustible ring no more than three feet in diameter, and
- Surrounded by rocks at least 1.5 feet around the ring.

Large bonfires and illegal campfires on vacant lots that pose a fire risk should be reported to authorities; especially during dry conditions.

15. Fireworks

In 2009, fireworks and explosives in Washington State started 790 fires and caused over $5.4 million in loss. It’s worth noting that 85% of all wildfires are caused by man-made activities. The use of fireworks is a major contributor of fire starts. Educating residents and others about the dangers of using fireworks in heavily forested areas and the surrounding lands should be an ongoing effort. Fireworks are legal in parts of Snohomish County, however, especially dangerous fireworks (legal or not) should be avoided including paper lanterns which are lit and released with no ability for the user to control their destination.

Annex 2: Acronyms

BLM Bureau of Land Management

CWPP Community Wildfire Protection Plan

DNR Department of Natural Resources

DOI Department of the Interior

FBFM Fire Behavior Fuel Model

FEMA Federal Emergency Management Agency

FSRS Fire Suppression Rating Schedule

USFWS United States Fish and Wildlife Service

HFI Healthy Forests Initiative

HFRA Healthy Forests Restoration Act

IAFC International Association of Fire Chiefs

ICC International Code Council

ISO Insurance Services Office

ITC Inter-Tribal Timber Council

NASF National Association of State Foresters

NEPA National Environmental Policy Act

NFPA National Fire Protection Association

NGOs Non-Governmental Organizations

NIFC National Interagency Fire Center

NLC National League of Cities

NRCS Natural Resources Conservation Service

NWCG National Wildfire Coordinating Group

OFM Office of Financial Management

PCC Public Protection Classification

PMA Primary Mitigation Area

USDA United States Department of Agriculture

USFS United States Forest Service

WDFW Washington Department of Fish and Wildlife

WGA Western Governors Association

WSRB Washington Surveying and Rating Bureau

WUI Wildland-Urban Interface

Annex 3: Wildfire Terms

Aerial Fuels: All live and dead vegetation in the forest canopy or above the surface fuels, including tree branches, twigs and cones, snags, moss, and high brush.

Air Tanker: A fixed-wing aircraft equipped to drop fire retardants or suppressants.

Aspect: Direction toward which a slope faces.

Blow-up: A sudden increase in fire intensity or rate of spread strong enough to prevent direct control or to upset control plans. Blow-ups are often accompanied by violent convection and may have other characteristics of a fire storm.

Brush: A collective term that refers to stands of vegetation dominated by shrubby, woody plants, or low growing trees, usually of a type undesirable for livestock or timber management.

Brush Fire: A fire burning in vegetation that is predominantly shrubs, brush and scrub growth.

Buffer Zones: An area of reduced vegetation that separates wildland fuels from vulnerable residential or business developments. This barrier is similar to a greenbelt in that it is usually used for another purpose such as agriculture, recreation areas, parks, or golf courses.

Burning Ban: A declared ban on open air burning within a specified area, usually due to sustained high fire danger.

Burning Conditions: The state of the combined factors of the environment that affect fire behavior in a specified fuel type.

Burning Index: An estimate of the potential difficulty of fire containment as it relates to the flame length at the most rapidly spreading portion of a fire's perimeter.

Burning Period: That part of each 24-hour period when fires spread most rapidly, typically from 10:00 a.m. to sundown.

Chipping: Reducing wood related material by mechanical means into small pieces to be used as mulch or fuel. Chipping and mulching are often used interchangeably.

Community Wildfire Protection Plan: Community developed plan aimed for coordinated wildfire risk reduction.

Complex: Two or more individual incidents located in the same general area which are assigned to a single incident commander or unified command.

Condition Class: The classification system used by the USFS to determine the extent of departure from the natural fire regime.

Condition Class I: A forest system within its natural fire range and at low risk for catastrophic fire.

Condition Class II: A forest that has moderately departed from its historic fire occurrence and is at moderate risk of experiencing losses to a wildfire.

Condition Class III: A forest that has departed from its historic fire regime and the risk of losing key habitat is high.

Controlled Burn: synonymous with Prescribed Fire.

Cooperating Agency: An agency supplying assistance other than direct suppression, rescue, support, or service functions to the incident control effort; e.g., Red Cross, law enforcement agency, Telephone Company, etc.

Creeping Fire: Fire burning with a low flame and spreading slowly.

Crown Fire (Crowning): The movement of fire through the crowns of trees or shrubs more or less independently of the surface fire.

Curing: Drying and browning of herbaceous vegetation or logging slash.

Dead Fuels: Fuels with no living tissue in which moisture content is governed almost entirely by atmospheric moisture (relative humidity and precipitation), dry-bulb temperature, and solar radiation.

Debris Burning: A fire spreading from any fire originally set for the purpose of clearing land or for rubbish, garbage, range, stubble, or meadow burning.

Defensible Space: An area either natural or manmade where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildfire and the loss to life, property, or resources. In practice, “defensible space” is defined as an area a minimum of 30 feet around a structure that is cleared of flammable brush or vegetation.

Detection: The act or system of discovering and locating fires.

Dozer: Any tracked vehicle with a front-mounted blade used for exposing mineral soil.

Dozer Line: Fire line constructed by the front blade of a dozer.

Drop Zone: Target area for air tankers, helitankers, and cargo dropping.

Drought Index: A number representing net effect of evaporation, transpiration, and precipitation in producing cumulative moisture depletion in deep duff or upper soil.

Dry Lightning Storm: Thunderstorm in which negligible precipitation reaches the ground. Also called a dry storm.

Duff: The layer of decomposing organic materials lying below the litter layer of freshly fallen twigs, needles, and leaves immediately above the mineral soil.

Energy Release Component (ERC): The computed total heat released per unit area (British Thermal Units per square foot) within the fire front at the head of a moving fire.

Engine: Any ground vehicle providing specified levels of pumping, water, and hose capacity.

Engine Crew: Firefighters assigned to an engine.

Entrapment: A situation where personnel are unexpectedly caught in a fire behavior-related, life threatening position where planned escape routes or safety zones are absent, inadequate, or compromised. An entrapment may or may not include deployment of a fire shelter for its intended purpose. These situations may or may not result in injury. They include “near misses.”

Escape Route: A preplanned and understood route firefighters take to move to a safety zone or other low-risk area, such as an already burned area, previously constructed safety area, a meadow that won't burn, natural rocky area that is large enough to take refuge without being burned, or other areas which allows access to safety zones. When escaped routes deviate from a defined physical path, they should be clearly marked (flagged).

Escaped Fire: A fire which has exceeded or is expected to exceed initial attack capabilities or prescription.

Extended Attack Incident: A wildfire that has not been contained or controlled by initial attack forces and for which more firefighting resources are arriving, en route, or being ordered by the initial attack incident commander.

Extreme Fire Behavior: "Extreme" implies a level of fire behavior characteristics that ordinarily precludes methods of direct control action. One or more of the following is usually involved: high rate of spread, prolific crowning and/or spotting, presence of fire whirls, and/or a strong convection column. Predictability is difficult because such fires often exercise some degree of influence on their environment and behave erratically, sometimes dangerously.

Fingers of a Fire: The long narrow extensions of a fire projecting from the main body.

Fire Behavior: The manner in which a fire reacts to the influences of fuel, weather, and topography.

Fire Behavior Forecast: Prediction of probable fire behavior usually prepared by a Fire Behavior Officer, in support of fire suppression or prescribed burning operations.

Fire Break: A natural or constructed barrier used to stop or check fires that may occur, or to provide a control line from which to work.

Fire Cache: A supply of fire tools and equipment assembled in planned quantities or standard units at a strategic point for exclusive use in fire suppression.

Fire Crew: An organized group of firefighters under the leadership of a crew leader or other designated official.

Fire Intensity: A general term relating to the heat energy released by a fire.

Fireline: A linear fire barrier that is scraped or dug to mineral soil.

Fire Load: The number and size of fires historically experienced on a specified unit over a specified period (usually one day) at a specified index of fire danger.

Fire Front: The part of a fire within which continuous flaming combustion is taking place. Unless otherwise specified, the fire front is assumed to be the leading edge of the fire perimeter. In ground fires, the fire front may be mainly smoldering combustion.

Fire Management Plan (FMP): a plan that identifies and integrates all wildfire management and related activities within the context of approved land/resource management plans. It defines a program to manage wildfires (wildfire and prescribed fire). The plan is supplemented by operational plans, including but not limited to preparedness plans, preplanned dispatch plans, prescribed fire burn plans, and

prevention plans. Fire Management Plans assure that wildfire management goals and components are coordinated.

Fire Perimeter: The entire outer edge or boundary of a fire

Fire Regime: A natural fire regime is a classification of the role that fire would play across a landscape in the absence of human intervention.

Fire Season: 1) Period(s) of the year during which wildfires are likely to occur, spread, and affect resource values sufficiently to warrant organized fire management activities. 2) A legally enacted time during which burning activities are regulated by state or local authority.

Fire Storm: Violent convection caused by a large continuous area of intense fire. Often characterized by destructively violent surface in drafts, near and beyond the perimeter, and sometimes by tornado-like fire whirls.

Fire Triangle: Instructional aid in which the sides of a triangle are used to represent the three factors (oxygen, heat, fuel) necessary for combustion and flame production; removal of any of the three factors causes flame production to cease.

Fire Weather: Weather conditions that influence fire ignition, behavior, and suppression.

Fire Weather Watch: A term used by fire weather forecasters to notify using agencies, usually 24 to 72 hours ahead of the event, that current and developing meteorological conditions may evolve into dangerous fire weather.

Fire Whirl: Spinning vortex column of ascending hot air and gases rising from a fire and carrying aloft smoke, debris, and flame. Fire whirls range in size from less than one foot to more than 500 feet in diameter. Large fire whirls have the intensity of a small tornado.

Firefighting Resources: All people and major items of equipment that can or potentially could be assigned to fires.

Flame Height: The average maximum vertical extension of flames at the leading edge of the fire front. Occasional flashes that rise above the general level of flames are not considered. This distance is less than the flame length if flames are tilted due to wind of slope.

Flame Length: The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface); an indicator of fire intensity.

Flaming Front: The zone of a moving fire where the combustion is primarily flaming. Behind this flaming zone combustion is primarily glowing. Light fuels typically have a shallow flaming front, whereas heavy fuels have a deeper front. Also called the fire front.

Flanks of a Fire: The parts of a fire's perimeter that are roughly parallel to the main direction of spread.

Flare-up: Any sudden acceleration of fire spread or intensification of a fire. Unlike a blow-up, a flare-up lasts a relatively short time and does not radically change control plans.

Future Desired Conditions: The future desired conditions on federal land is a return to Condition Class 1. (see Condition Class 1)

Flashy Fuels: Fuels such as grass, leaves, draped pine needles, fern, tree moss, and some kinds of slash, that ignite readily and are consumed rapidly when dry. Also called fine fuels.

Forbs: Plants with a soft, rather than permanent woody stem, that is not a grass or grass-like plant.

Fuel: Any combustible material. This includes vegetation, such as grass, leaves, ground litter, shrubs, and trees, which feed a fire.

Fuel Bed: An array of fuels usually constructed with specific loading, depth, and particle size to meet experimental requirements; also, commonly used to describe the fuel composition in natural settings.

Fuel Loading: The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area.

Fuel Model: Simulated fuel complex (or combination of vegetation types) for which all fuel descriptors required for the solution of a mathematical rate of spread model has been specified

Fuel Moisture (Fuel Moisture Content): The quantity of moisture in fuel expressed as a percentage of the weight when thoroughly dried.

Fuel Reduction (Fuel Treatment): Manipulation, including combustion or removal of fuels, to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control.

Fuel Type: An identifiable association of fuel elements of a distinctive plant species, form, size, arrangement, or other characteristics that will cause a predictable rate of fire spread or difficulty of control under specified weather conditions.

Geographic Area: A political boundary designated by the wildfire protection agencies where these agencies work together in the coordination and effective utilization.

Ground Fuel: All combustible materials below the surface litter, including duff, tree or shrub roots, punch wood, peat, and sawdust that normally support a glowing combustion without flame.

Haines Index: An atmospheric index used to indicate the potential for wildfire growth by measuring the stability and dryness of the air over a fire.

Hand Line: A fireline built with hand tools.

Hazard Reduction: Any treatment of a hazard that reduces the threat of ignition and fire intensity or rate of spread.

Head of a Fire: The side of the fire having the fastest rate of spread.

Heavy Fuels: Fuels of large diameter, such as snags, logs, and large limb wood, that ignite and are consumed more slowly than flash fuels.

Helibase: The main location within the general incident area for parking, fueling, maintaining, and loading helicopters. The helibase is usually located at or near the incident base.

Helispot: A temporary landing spot for helicopters.

Hotspot: A particularly active part of a fire.

Hot spotting: Reducing or stopping the spread of fire at points of particularly rapid rate of spread or special threat, generally the first step in prompt control, with emphasis on first priorities.

Incident: A human-caused or natural occurrence, such as wildfire, that requires emergency service action to prevent or reduce the loss of life or damage to property or natural or cultural resources.

Incident Action Plan (IAP): A plan that contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The plan may be oral or written. When written, the plan may have a number of attachments, including but not limited to: incident objectives, organization assignment list, division assignment, incident radio communication plan, medical plan, traffic plan, safety plan, and incident map.

Incident Command Post (ICP): Location at which primary command functions are executed. The ICP may be co-located with the incident base or other incident facilities.

Incident Command System (ICS): The combination of facilities, equipment, personnel, procedure and communications operating within a common organizational structure, with responsibility for the management of assigned resources to effectively accomplish stated objectives pertaining to an incident.

Incident Commander: Individual responsible for the management of all incident operations at the incident site.

Initial Attack: The actions taken by the first resources to arrive at a wildfire to protect lives and property, and prevent further extension of the fire.

Job Hazard Analysis: This analysis of a project is completed by staff to identify hazards to employees and the public. It identifies hazards, corrective actions, and the required safety equipment to ensure public and employee safety.

Keech Byram Drought Index (KBDI): Commonly-used drought index adapted for fire management applications, with a numerical range from 0 (no moisture deficiency) to 800 (maximum drought).

Ladder Fuels: Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning.

LANDFIRE: a federal interagency group devoted to providing spatial data to wildland managers (www.landfire.gov).

Land/Resource Management Plan (L/RMP): a document prepared with public participation and approved by an agency administrator that provides general guidance

and direction for land and resource management activities for an administrative area. The L/RMP identifies the need for fire's role in a particular area and for a specific benefit. The objectives in the L/RMP provide the basis for the development of fire management objectives and the fire management program in the designated area.

Light (Fine) Fuels: Fast-drying fuels, such as grasses and conifer needles, generally with comparatively high surface area-to-volume ratios, which are less than ¼-inch in diameter and have a moisture time lag of one hour or less. These fuels readily ignite and are rapidly consumed by fire when dry.

Litter: Top layer of the forest, scrubland, or grassland floor, directly above the fermentation layer, composed of loose debris of dead sticks, branches, twigs, and recently fallen leaves or needles, little altered in structure by decomposition.

Live Fuels: Living plants, such as trees, grasses, and shrubs, in which the seasonal moisture content cycle is controlled largely by internal physiological mechanisms rather than by external weather influences.

Mineral Soil: Soil layers below the predominantly organic horizons; soil with little combustible material.

Mobilization: The process and procedures used by all organizations, federal, state and local for activating, assembling, and transporting all resources that have been requested to respond to or support an incident.

Mop-up: To make a fire safe or reduce residual smoke after the fire has been controlled by extinguishing or removing burning material along or near the control line, felling snags, or moving logs so they won't roll downhill.

Multi-Agency Coordination (MAC): A generalized term which describes the functions and activities of representatives of involved agencies and/or jurisdictions who come together to make decisions regarding the prioritizing of incidents, and the sharing and use of critical resources. The MAC organization is not a part of the on-scene ICS and is not involved in developing incident strategy or tactics.

Mutual Aid Agreement: Written agreement between agencies and/or jurisdictions in which they agree to assist one another upon request, by furnishing personnel and equipment.

National Environmental Policy Act (NEPA): NEPA is the basic national law for protection of the environment, passed by Congress in 1969. It sets policy and procedures for environmental protection, and authorizes Environmental Impact Statements and Environmental Assessments to be used as analytical tools to help federal managers make decisions.

National Fire Danger Rating System (NFDRS): A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels.

National Wildfire Coordinating Group (NWCG): A group formed under the direction of the Secretaries of Agriculture and the Interior and comprised of representatives of the U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, National Park Service, U.S. Fish and Wildlife Service and Association of State Foresters. The group's purpose is to facilitate coordination and effectiveness of wildfire activities and

provide a forum to discuss, recommend action, or resolve issues and problems of substantive nature. NWCG is the certifying body for all courses in the National Fire Curriculum.

Normal Fire Season: 1) A season when weather, fire danger, and number and distribution of fires are about average. 2) Period of the year that normally comprises the fire season.

Operational Period: The period of time scheduled for execution of a given set of tactical actions as specified in the Incident Action Plan. Operational periods can be of various lengths, although usually not more than 24 hours.

Overhead: People assigned to supervisory positions, including incident commanders, command staff, general staff, directors, supervisors, and unit leaders.

Peak Fire Season: That period of the fire season during which fires are expected to ignite most readily, to burn with greater than average intensity, and to create damages at an unacceptable level.

Planned Ignition: The intentional initiation of a wildfire by hand-held, mechanical, or aerial device where the distance and timing between ignition lines or points and the sequence of igniting them is determined by environmental conditions (weather, fuel, topography), firing technique, and other factors which influence fire behavior and fire effects (see prescribed fire).

Preparedness: Condition or degree of being ready to cope with a potential fire situation.

Prescribed Fire: A wildfire originating from a planned ignition to meet specific objectives identified in a written, approved, prescribed fire plan for which NEPA requirements (where applicable) have been met prior to ignition (see planned ignition).

Prescribed Fire Plan (Burn Plan): This document provides the prescribed fire burn boss information needed to implement an individual prescribed fire project.

Prescription: Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

Prevention: Activities directed at reducing the incidence of fires, including public education, law enforcement, personal contact, and reduction of fuel hazards.

Protection: The actions taken to limit the adverse environmental, social, political, and economical effects of fire.

Radiant Burn: A burn received from a radiant heat source.

Rate of Spread: The relative activity of a fire in extending its horizontal dimensions. It is expressed as a rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area, depending on the intended use of the information. Usually it is expressed in chains or acres per hour for a specific period in the fire’s history.

Reburn: The burning of an area that has been previously burned but that contains flammable fuel that ignites when burning conditions are more favorable; an area that has reburned.

Red Flag Warning: Term used by fire weather forecasters to alert forecast users to an ongoing or imminent critical fire weather pattern.

Rehabilitation: The activities necessary to repair damage or disturbance caused by wildfires or the fire suppression activity.

Relative Humidity (RH): The ratio of the amount of moisture in the air, to the maximum amount of moisture that air would contain if it were saturated. The ratio of the actual vapor pressure to the saturated vapor pressure. RH is a strong driver of moisture content in fine fuels.

Remote Automatic Weather Station (RAWS): An apparatus that automatically acquires, processes, and stores local weather data for later transmission to the GOES Satellite, from which the data is retransmitted to an earth-receiving station for use in the National Fire Danger Rating System.

Resources: 1) Personnel, equipment, services, and supplies available, or potentially available, for assignment to incidents. 2) The natural resources of an area, such as timber, forage, watershed values, recreation values, and wildlife habitat.

Resource Management Plan (RMP): A document prepared by field office staff with public participation and approved by field office managers that provides general guidance and direction for land management activities at a field office. The RMP identifies the need for fire in a particular area and for a specific benefit.

Response to Wildfire: The mobilization of the necessary services and responders to a fire based on ecological, social, and legal consequences, the circumstances under which a fire occurs, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources, and values to be protected.

Retardant: A substance or chemical agent which reduces the flammability of combustibles.

Run (of a fire): The rapid advance of the head of a fire with a marked change in fire line intensity and rate of spread from that noted before and after the advance.

Safety Zone: An area cleared of flammable materials used for escape in the event the line is outflanked or in case a spot fire causes fuels outside the control line to render the line unsafe. In firing operations, crews progress so as to maintain a safety zone close at hand allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuel breaks; they are greatly enlarged areas which can be used with relative safety by firefighters and their equipment in the event of a blowup in the vicinity.

Severity Funding: Funds provided to increase wildfire suppression response capability necessitated by abnormal weather patterns, extended drought, or other events causing abnormal increase in the fire potential and/or danger.

Single Resource: An individual, a piece of equipment and its personnel complement, or a crew or team of individuals with an identified work supervisor that can be used on an incident.

Size-up: To evaluate a fire to determine a course of action for fire suppression.

Slash: Debris left after logging, pruning, thinning or brush cutting; includes logs, chips, bark, branches, stumps, and broken understory trees or brush.

Slop-over: A fire edge that crosses a control line or natural barrier intended to contain the fire.

Smoke Management: Application of fire intensities and meteorological processes to minimize degradation of air quality during prescribed fires.

Snag: A standing dead tree or part of a dead tree from which at least the smaller branches have fallen.

Spark Arrester: A device installed in a chimney, flue, or exhaust pipe to stop the emission of sparks and burning fragments.

Spot Fire: A fire ignited outside the perimeter of the main fire by flying sparks or embers.

Spot Weather Forecast: A special forecast issued to fit the time, topography, and weather of each specific fire. These forecasts are issued upon request of the user agency and are more detailed, timely, and specific than zone forecasts.

Spotting: Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the main fire.

Staging Area: Locations set up at an incident where resources can be placed while awaiting a tactical assignment on a three-minute available basis. Staging areas are managed by the operations section.

Strategy: The science and art of command as applied to the overall planning and conduct of an incident.

Structure Fire: Fire originating in and burning any part or all of any building, shelter, or other structure.

Suppressant: An agent, such as water or foam, used to extinguish the flaming and glowing phases of combustion when directly applied to burning fuels.

Suppression: All the work of extinguishing or containing a fire, beginning with its discovery.

Surface Fuels: Loose surface litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not yet decayed enough to lose their identity; also grasses, forbs, low and medium shrubs, tree seedlings, heavier branchwood, downed logs, and stumps interspersed with or partially replacing the litter.

Tactics: Deploying and directing resources on an incident to accomplish the objectives designated by strategy.

Torching: The ignition and flare-up of a tree or small group of trees, usually from bottom to top.

Uncontrolled Fire: Any fire which threatens to destroy life, property, or natural resources.

Unplanned Ignition: The initiation of a wildfire by lightning, volcanoes, or unauthorized and accidental human-caused fires.

Under burn: A fire that consumes surface fuels but not trees or shrubs.

Volunteer Fire Department (VFD): A fire department of which some or all members are unpaid.

Wildfire: Unplanned ignition of a fire in a wildland setting (such as a fire caused by lightning, volcanoes, unauthorized and accidental human-caused fires, and escaped prescribed fires).

Water Tender: A ground vehicle capable of transporting specified quantities of water.

Wildland fire: Any nonstructural fire, other than prescribed fire, that occurs in wildland setting.

Wildfire Implementation Plan (WFIP): A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildfire being managed for resource benefits.

Wildfire Use: The management of naturally ignited wildfires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in Fire Management Plans.

Wildland-Urban Interface: The line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

Annex 4: Literature Cited

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Annex 5: Outreach Materials

JOIN US!

DISTRICT 26 COMMUNITY WILDFIRE

OPEN HOUSE

Fire District 26 is developing its first Community Wildfire Protection Plan (CWPP) to strengthen the foundation of collaboration and cooperation in wildfire prevention, mitigation, resilience, and response. The CWPP identifies shared community values at risk from wildfire and outlines actions community members can take to become more resilient to the growing wildfire threat. Join us at an open house to learn about and review:

- The draft CWPP
- Maps of wildfire hazards
- Strategies to develop and maintain wildfire resistant landscapes
- Wildfire response resources including District 26's brush trucks

When:

Wednesday, June 13, 2018

5:00 PM - 7:00 PM

Where:

Snohomish County Fire District 26

Station 54

42013 SR 2, Gold Bar, WA 98251

What:

Learn about wildfires, meet with the partners, get your questions answered, and provide your feedback. Light refreshments will be provided.

Can't make it or want more information?

Visit www.snofire26.org

Scott Coulson (scoulson@snofire26.org)

John Holdsworth (john.holdsworth@snoco.org, 425-388-5074)

Sponsored by:

SNOHOMISH COUNTY FIRE DISTRICT 26

Snohomish County Emergency Management

WILDFIRE

Snohomish County Fire District 26
Community Wildfire Protection Plan Open House
June 12, 2018
5:00 pm – 7:00 pm

1700 – Open house begins

1730 – Remarks by District 26 Chief Andrews and/or DEM Director Jason Biermann (if appropriate)

1900 – Open house concludes

Snohomish County Fire District 26
Wildfire Risk Assessment

Complete the table below to assess your wildfire risk rating.

Fuel Hazard (within 200 feet of structures)	Small, light fuels (grasses, forbs, weeds, shrubs)	+1
	Medium size fuels (brush, large shrubs, small trees)	+2
	Heavy, large fuels (woodlands, timber, heavy brush)	+3
Slope Hazard (within 200 feet of structures)	Mild slope (0-5%)	+1
	Moderate slope (6-20%)	+2
	Steep slope (21-40%)	+3
	Extreme slope (41% and greater)	+4
Structure Hazard	Noncombustible roof and noncombustible siding material	+1
	Noncombustible roof and combustible siding material	+3
	Combustible roof and noncombustible siding material	+7
	Combustible roof and combustible siding material	+10
Additional Factors	Rough topography that contains several steep canyons or ridges	+2
	Areas having history of higher than average fire occurrence	+3
	Areas exposed to strong winds	+4
	Areas with existing fuel modifications or usable fire breaks	-3
	Areas with fire hydrant or water source within 500 feet	-3

Fire Risk Ratings

Extreme Risk = 26+ points
High Risk = 16-25 points
Moderate Risk = 7-15 points
Low risk = 6 or less points

For help with your risk assessment, contact:
Fire District 26 Lt. Scott Coulson - scoulson@snofire26.org

Snohomish County Fire District 26
Community Wildfire Protection Plan
Wildfire Risk Survey

Fill out this survey to help inform District 26 wildfire prevention priorities!

1. Which community is closest to your home or cabin?	
2. What kind of roofing material is covering the main structure of your home or cabin?	• Composite material (asphalt shingles) • Metal (e.g. aluminum, steel, etc.) • Wooden roofing material such as shakes or shingles
3. How many trees are within 75 feet of your home or cabin?	• None • Less than 10 • Between 10 and 25 • More than 25
4. How long is the driveway to your home?	
5. Are there any private bridges or drainage duct covers? Are they rated for fire engines?	
6. Does your driveway have a turnout allowing 2 vehicles to pass?	
7. Does your home have an alternate escape route if your primary driveway access is not available?	
8. Do you have any of the following items available at your home that may be used to help fight a wildfire?	• Hand tools (shovel, Pulaski, etc) • Portable water tank • Stationary water tank • Pond, lake, or stream water supply • Water pump and fire hose • Well or cistern • Equipment suitable for creating fire breaks (bulldozer, cat, skidder, etc.)
9. Do you conduct periodic fuel reduction projects or build defensible space near your home?	
10. What are the most important public locations, recreational opportunities, or business locations in District 26?	
11. Would you be willing to participate in a group effort to reduce wildfire risk around your neighborhood?	
12. Do you have any suggestions for fire prevention projects?	
13. Would you be willing to provide contact information for future hazard mitigation and wildfire risk reduction projects?	Name: Address: Phone: Email:

FREE CHIPPER DAY!

FS Rd 62 Fire, May 13th, 2016 – Gold Bar

Make your home safer by reducing fuels!

- Open to all District 26 residents
- Natural vegetation only, no lumber, painted wood or nails/screws
- Only Limbs and brush limited to 6" in diameter
- Rocks, Dirt, loose leaves/duff and old firewood not allowed
- Free wood chips

July 14, 2018 , 12pm – 4pm

Station 54 – 42013 SR2, Gold Bar, WA

DEFENSIBLE SPACE?
snofire26.org

More info contact:
Lt. Scott Coulson 360-793-1078
scoulson@snofire26.org
www.snofire26.org

SNOHOMISH COUNTY FIRE DISTRICT 26