



Underwood Community Wildfire Protection Plan

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Figure 1. (Appendix H5 Planning Area Location)

Acknowledgements:

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INTRODUCTION:

A Community Wildfire Protection Plan (CWPP) allows a community in the Wildland Urban Interface (WUI) to take action to reduce its vulnerability to wildfire. Skamania County and Washington State University Skamania County Extension facilitate CWPPs through a Title III grant from the Secure Rural Schools and Community Self-Determination Act of 2000 (PUBLIC LAW 106–393). This plan will serve as a standalone document, a subchapter of the Skamania and Klickitat CWPP, and as a chapter to Skamania County, WA Emergency Management Plan, and provide a framework to emergency responders, property owners, and interested parties within the planning area to increase the communities' capacity to be better prepared for a wildfire. The plan identifies communities at risk (CAR) and values that would be vulnerable during a wildfire.

For the purpose of this project, the entire planning area is considered to be WUI.

Residents of Underwood, Washington are concerned about the effects of wildfire on their community. The 2007 Broughton fire burned over 250 acres and destroyed six homes in one afternoon. This prompted local residents, government officials, and fire department personnel to join together to proactively plan and implement actions to reduce the impact of wildfire on the community.

Mission

The Underwood CWPP mission is to protect life, property, infrastructure, and resources in the event of wildfire.

Through this CWPP, residents of Underwood, Washington intend to protect their community from the effects of wildfire through outreach, education, strategic planning, and action. They wish to face each fire season confident that they have done everything possible to prepare for and mitigate the effects of a potential forest fire in their area.

Goal

The primary goal of the Underwood CWPP is to protect life, property, essential infrastructure, and resources through the implementation of fire prevention projects that work to increase public awareness, provide escape routes, provide shelter "in place", improve forest health, sustain local wildlife, and preserve the natural beauty of the area.

To achieve this goal, the Underwood Steering Committee developed specific projects which support the following three objectives:

1. Improve the chance of survival for people, animals, homes, and the environment during wildfires
2. Promote wildfire awareness and education for citizens located in 'risk areas'
3. Engage in community-developed fuels treatment projects that reduce wildfire vulnerability of communities at risk.

In an effort to minimize waste, all options for the utilization of biomass produced from fuels reduction projects will be evaluated.

Community Awareness

Residents of Underwood are very aware of the need to develop a comprehensive wildfire prevention and protection plan. Underwood is located at the interface of the drier eastern Washington forests and the wetter western forests. The drier forests experience frequent low intensity fire, while the wetter forests experience infrequent but catastrophic fires. (Figure 2) the potential for a fire from the east to spread into the west and become catastrophic is enormous. There are large accumulations of woody fuels especially on the steep slopes below the bluffs and above and north of SR 14 and the railroad tracks that run along the southern boundary of the planning area and are a source of frequent ignition. The Columbia Gorge forms a wind tunnel providing high velocity wind to drive the fire. All the ingredients to create catastrophic fire are present here. This danger was demonstrated last summer when a fire started near the railroad tracks at Broughton's Mill. Strong winds from the Columbia Gorge pushed the fire up the bluff and into a residential area. The Broughton fire consumed 250 acres in one afternoon, destroyed six homes, and caused evacuation of 400 residents from 100 immediately threatened homes.

Concerned residents began organizing in April 2008. Their energy, input, and guidance have played an essential role in the creation of this CWPP. In addition to regular planning meetings, they have created a Steering Committee and action plan, and initiated a meeting between Columbia River Gorge Commission (CRGC) and Skamania County planners to help clarify and alleviate National Scenic Area (NSA) restrictions to creating defensible space within Columbia River Gorge National Scenic Area (CRGNSA) boundaries. The Underwood fire department is pursuing grant funding for a community shelter and an early warning siren, and creating a website. A Skamania County "Firewise" AmeriCorps Intern is working with the community to create a demonstration "Firewise" home and coordinate volunteers for fuels reduction around

homes. The Underwood Conservation District is offering free home assessments and advice for making local homes “Firewise” and is assisting in fuel reduction projects. A shaded fuel break along the major escape route for Underwood and other local communities is being planned. The Underwood community is committed to taking action on this plan.

Values

Underwood residents value their homes, businesses, utilities, wildlife habitat, and beauty of the surrounding forest. They want to improve the safety of their community and play an active role in land management decisions affecting both public and private lands.

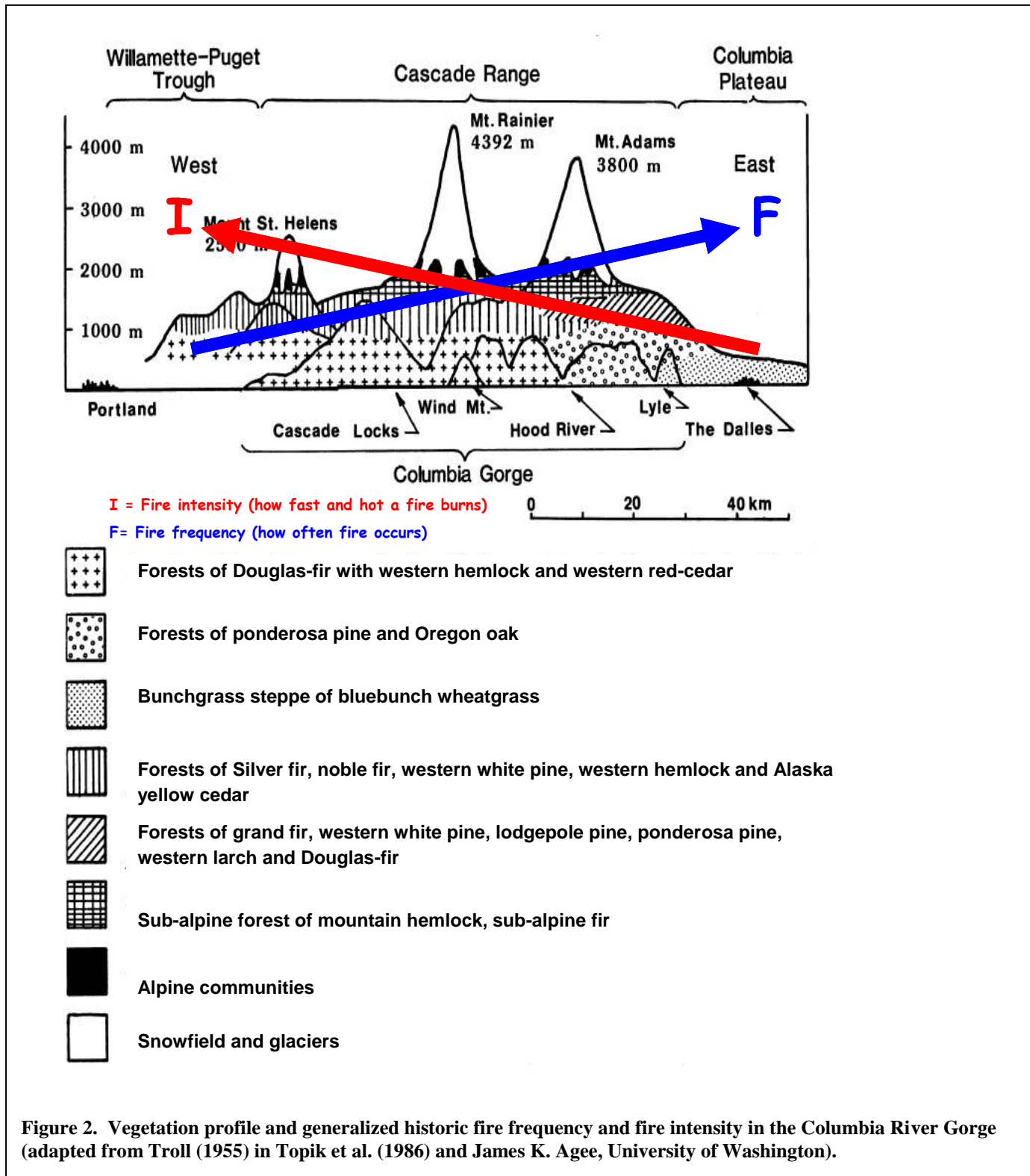


Figure 2. Vegetation profile and generalized historic fire frequency and fire intensity in the Columbia River Gorge (adapted from Troll (1955) in Topik et al. (1986) and James K. Agee, University of Washington).

BACKGROUND

Wildfire has always been a part of the forest ecosystems of the western United States. What has changed is the risk to public safety, private property and the quality of life; risks have compounded due to more homes in and around forests and to the deterioration of forest health. In the state of Washington, there is a sense that the risks will only increase unless there are fundamental changes, changes that must involve many people. (A Wildland Fire Protection Program for Washington 2006)

There is no such thing as a forest free of fire. Over the past decade, Americans have begun to recognize the paradox inherent in our fire suppression efforts. The more intensely western forests have been protected from fire—as well as from insects and disease—the worse many of these problems have become. Western U.S. fire statistics show an alarming trend in wildfire severity and area burned, primarily attributable to fuel buildups in western forests. We have been sitting on a time bomb with little idea of how long the fuse is. (Agee 2002)

To compound the problem more people are moving into the forests and building homes. Nine percent of the land area of the United States and 31 percent of U.S. homes are in the WUI, and growth rates within the WUI are triple the rates elsewhere. (A Wildland Fire Protection Program for Washington) Increase in the number of humans and homes in and around forests has increased the risk of ignition along with the need for suppression in the WUI. The WUI is commonly described as the zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels. This WUI zone poses tremendous risks to life, property, and infrastructure in associated communities and is one of the most dangerous and complicated situations firefighters face. (Preparing a Community Wildfire Protection Plan 2004)

Legislation (NFP, HFI & HFRA)

Nationally, the 2000 wildfire season was the worst wildland fire year since 1910. A total of 122,827 wildfires and over 8.4 million acres burned illustrating how dangerous the situation was. (Jensen 2008) On August 8, 2000, President Clinton asked Secretaries Babbitt and Glickman to prepare a report recommending how best to respond to the year's severe fires, reduce the impacts of these wildland fires on rural communities, and ensure sufficient firefighting resources in the future (A Report to the President in Response to the Wildfires of 2000). This report became the basis for the National Fire Plan (NFP). The NFP addresses five key points: Firefighting, Rehabilitation, Hazardous Fuels Reduction, Community Assistance, and Accountability. In 2001 Congress approved funds for federal and state agencies and local communities to better plan and prepare for future wildfire seasons.

During the wildfire season of 2002, over 88,458 fires burned roughly 7 million acres and caused the deaths of 21 firefighters. President Bush proposed the Healthy Forests Initiative (HFI) in August 2002, and directed federal agencies to develop several administrative and legislative tools to restore these ecosystems to healthy, natural conditions and assist in executing core components of the National Fire Plan. HFI led to the enactment of the Healthy Forest Restoration Act (HFRA) in January, 2003. HFRA's intent is to conduct hazardous fuels reduction projects on National Forest System lands, and Bureau of Land Management lands, aimed at protecting communities, watersheds, and certain other at-risk lands from catastrophic wildfire, to enhance efforts to protect watersheds, and address threats to forest and rangeland health, including catastrophic wildfire, across the landscape, and for other purposes. The first purpose mentioned in HFRA is "to reduce wildfire risk to communities, municipal water supplies, and at-risk federal land through a collaborative process of planning, prioritizing, and implementing hazardous fuel reduction projects". (HFRA 2003, Sec. 601) Priority for funding is given to at risk communities that have developed Community Wildfire Protection Plans (HFRA 2003, SEC. 103).
The Healthy Forests Restoration Act:

- Strengthens public participation in developing high priority forest health projects;
- Encourages collaboration between Federal agencies and local communities when community wildland fire protection plans are prepared;
- Allows communities to define their WUI rather than using the default definition of ½ to 1 mile from the community;
- Directs the United States Bureau of Land Management (BLM), and United States Forest Service (USFS) to give special consideration to project areas and methods of treatment defined in a community wildfire protection plan;
- Requires using at least 50% of the dollars allocated to HFRA projects to protect Communities At Risk (CAR) of wildland fire if identified in CWPPs;
- Encourages biomass energy production through grants and assistance to local communities to create market incentives for removal of otherwise non-merchantable forest material;
- Reduces the complexity of environmental analysis allowing federal land agencies to use the best science available to actively manage land under their protection;

- Encourages courts that consider a request for an injunction on an HFRA-authorized project to balance environmental effects of undertaking the project against the effects of failing to do so;
- Requires performance to be monitored when agencies conduct hazardous-fuel reduction projects and encourages multiparty monitoring that includes communities and other interested parties;
- Provides for administrative review of proposed HFRA projects on National Forest System lands before decisions are issued;
- Contains requirements governing the maintenance and restoration of old-growth forest stands when the USFS and BLM conduct HFRA projects in such stands;
- Requires HFRA projects in the USFS and BLM to maximize retention of larger trees in areas other than old-growth stands, consistent with the objective of restoring fire-resilient stands and protecting at-risk communities and federal lands.

The HFRA is linked to the Rural Schools and Community Self-Determination Act of 2000, PL 106-393, through funding provisions found in two separate Titles of PL 106-393. Title III provides counties with funds for expenditure on projects that fall within certain categories. One of these categories is county planning efforts to increase the protection of people and property from wildfire.

CWPP REQUIREMENTS

The HFRA requires 3 components in a CWPP (see Planning, Steps 1, 5, and 6 for specific compliance of this plan)

- 1) Collaboration:** A CWPP must be collaboratively developed by local and state government representatives, in consultation with federal agencies and other interested parties.
- 2) Prioritized Fuel Reduction:** A CWPP must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure.
- 3) Treatment of Structural Ignitability:** A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

COMMUNITY PROFILE

Location

Underwood is located in the southeast corner of Skamania County, in the southwestern part of the State of Washington on the north shore of the Columbia River. (Figure 3) (Specific location description in Planning Process, Step 2) Skamania County is about forty miles in length from west to east, and extends northward from the Columbia River into the Cascade Mountains and the Gifford Pinchot National Forest for fifty miles. Skamania County has an area of 1,010,080 acres, or 1,672 square miles. The Columbia River flows nearly at sea level through the Cascade Mountains on its way to the Pacific Ocean. This area is nationally recognized for its unique scenic beauty and serves as a major water, highway, and railroad transportation corridor.

Climate

Skamania County's climate is temperate and strongly influenced by topography. It is characterized by cool, dry summers, and mild, moist winters. Along the Columbia River, annual rainfall varies from 50 to 60 inches in the southwestern part of the county to more than 75 inches near the crest of the Cascade Mountain Range. East of this crest, rainfall decreases rapidly to about 35 inches in the southeast corner of the county. Precipitation is higher and temperatures lower with increasing elevation away from the Columbia River. The mountainous valleys in the interior of the county receive annual rainfall of greater than 90 inches.

The Columbia River Gorge functions as a low elevation pass through the Cascade Range. Strong winds are a dominant feature. During the winter, low-pressure systems move through the gorge on westerly winds, bringing heavy rains as a consequence of streamline convergence. Strong high-pressure systems east of the Cascade Range can bring gale-force easterly winds through the gorge, resulting in extremely hot dry weather during the summer and fall and cold continental air during the winter. Summer high temperatures from June through October are generally in the 80's °F. Only 20 percent of annual precipitation occurs during the summer months. August and September are typically extremely dry. Relative humidity is typically high in the winter and spring, but can reach single digits in the summer and fall.

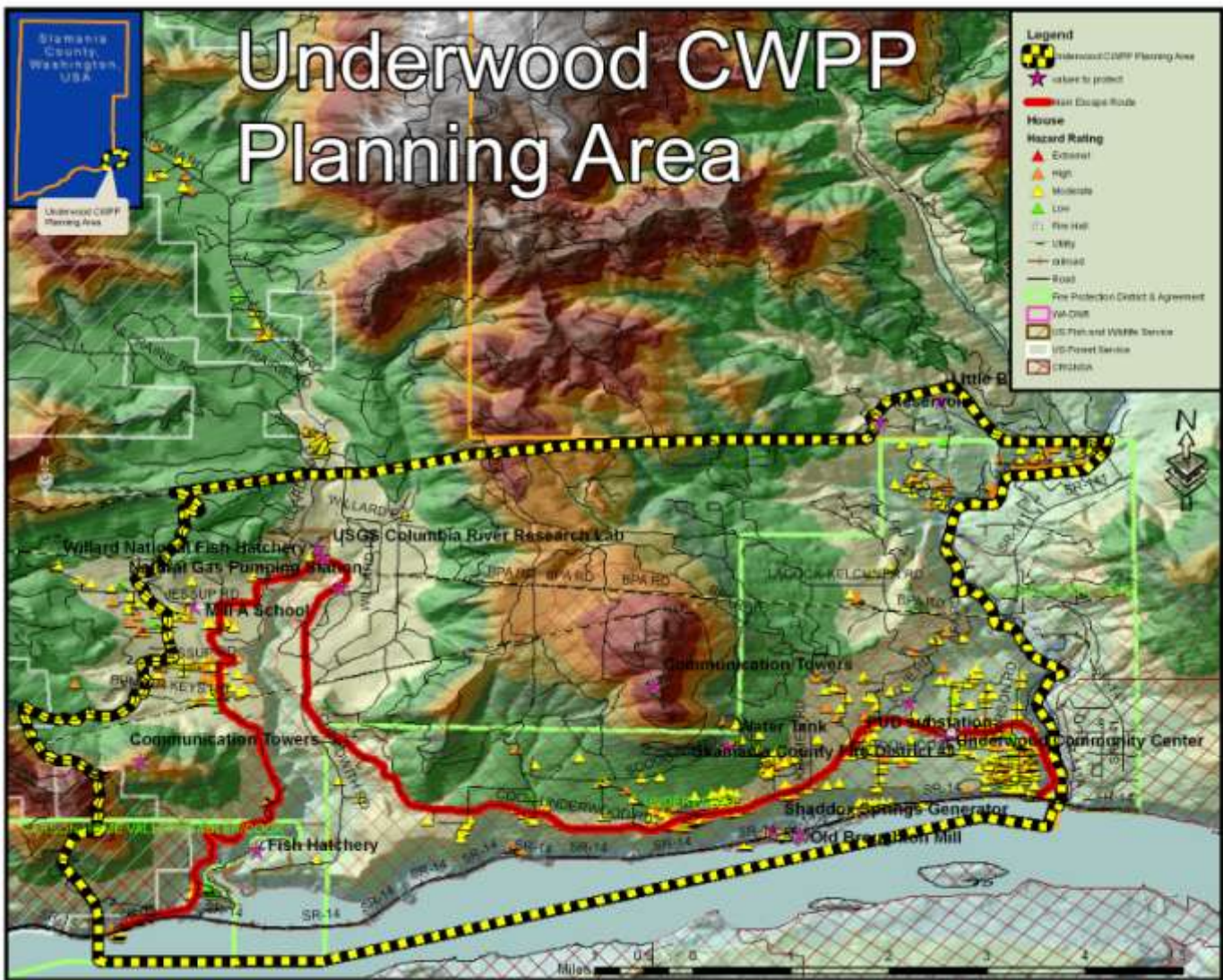


Figure 3. (Appendix – H1) Underwood CWPP Base map. (Created by Gail A. Fullerton)

Topography and Vegetation

Skamania County has diverse topography, ranging from; gently sloping lands to vertical cliffs along the Columbia River and from level valleys to mountainous uplands with steep cliffs and ravines farther north. Most of the county is heavily forested, with over 90 percent of the 1.1 million acres in public and private forest land. Vegetation cover is primarily coniferous forest but includes some deciduous forest, shrubland, and, grassland. Forests range from mesic: western hemlock (*Tsuga heterophylla*) - western red cedar (*Thuja plicata*) and Douglas-fir (*Pseudotsuga menziesii* subsp. *menziesii*), in the west to more xeric: Douglas fir (*Pseudotsuga menziesii* var. *glauca*) - grand fir (*Abies grandis*) and Oregon white oak (*Quercus garryana*) - ponderosa pine (*Pinus ponderosa*) in the east (Figure 2). Southwestern Skamania County has some upland farmland, and southeastern Skamania County has some orchard lands. The Cascade Mountains traverse Skamania County from north to south.

The elevation of the Underwood CWPP area ranges from about 100 to over 3000 feet above sea level. The major vegetation type is Oregon white oak - ponderosa pine. There is some Douglas fir and grand fir in the northern portion of the planning area some orchard land in the southern half and small areas of grass land throughout the planning area.

Fire History

The Underwood CWPP planning area lies with a mixed fire regime including smaller more frequent fires and larger less frequent fires (Figure 4, Appendix H-3). Historically, large wildfires have usually resulted from strong east winds following periods of summer drought (Topik 1986). The Yacolt Fire stands out as being the greatest fire to move through the area. The fire started near Stabler, WA on Sept. 10, 1902. Driven by strong east winds, it killed at least 38 people and destroyed over 12 billion board feet of lumber on 238,900 acres. It stopped near the town of Yacolt in Clark County when the wind died. (Figure 4) In 2003, the Herman Creek fire across the Columbia River in Cascade Locks, Oregon burned 375 acres in about four hours driven by an east wind. Fire fighting there was hampered by lack of knowledge of the terrain by the first responders. A structure was lost because it was regarded as too hazardous to protect. In September 2007, the Broughton fire near Underwood, Washington consumed 250 acres, destroyed six homes, and caused evacuation of 400

residents from 100 immediately threatened homes. Numerous small fire starts have been recorded between 1970 and 2007 but most were contained quickly by local fire districts. (Figure 4, Appendix H3)

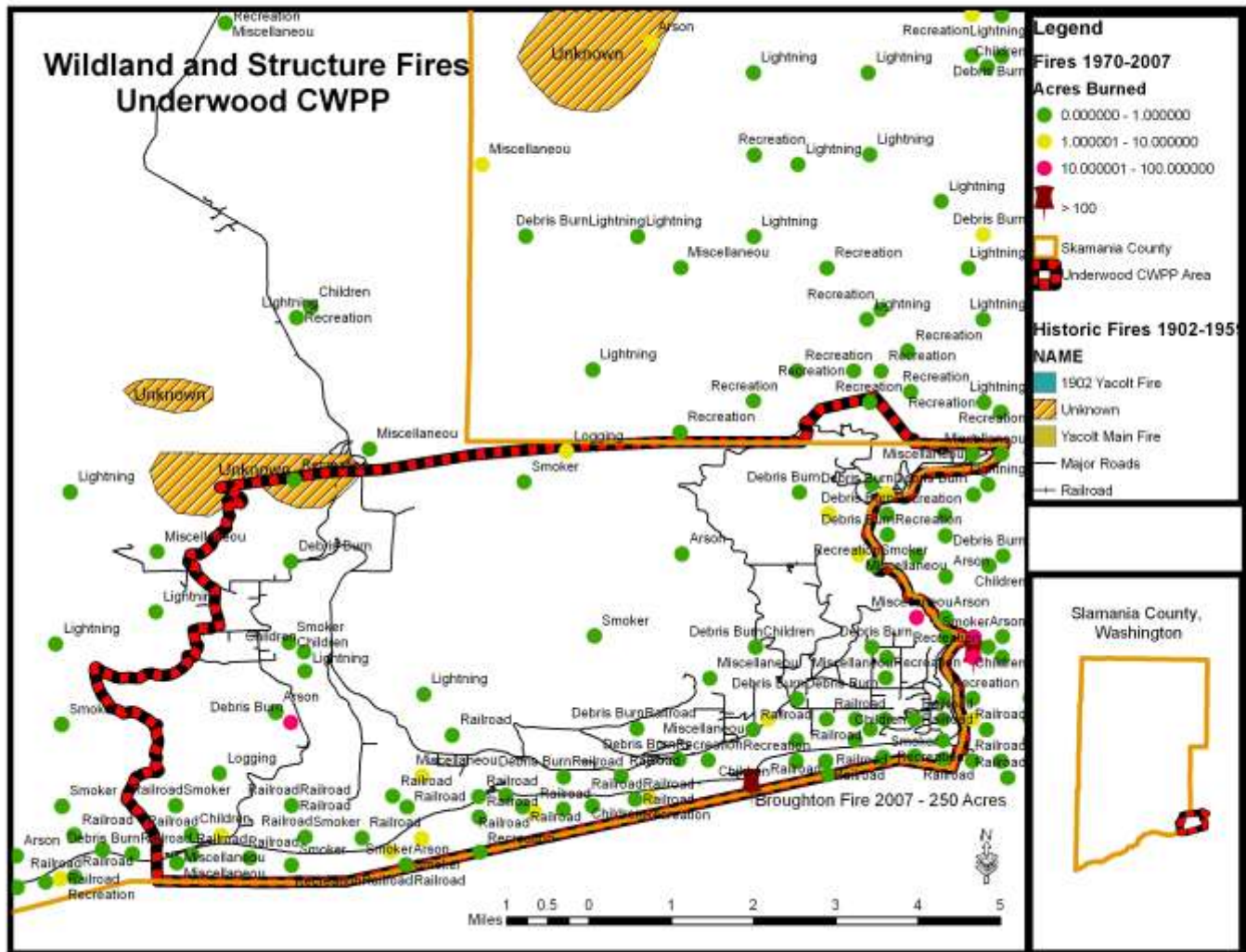


Figure 4. (Appendix – H3) Fire history of planning area. Fire statistics are from DNR statistics and may not include all fire starts. (Map by Gail A. Fullerton)

Population

The population of Skamania County is 10,700¹. Most of the population is concentrated in the southern quarter of the County, along the Columbia River, and in the Wind River Valley. The county seat is Stevenson. The population of the unincorporated Underwood area is 1,157².

Transportation

The main access roads in the Underwood area are SR 14 and The Cook Underwood Road. SR 14 is a major east - west route on the Washington side of the Columbia River, the Cook Underwood Road is a Skamania County road that intersects SR 14 twice once southwest of Underwood and once southeast of Underwood.

¹ Based on 2006 census data

² Based on 2006 census data; WA, Office of Financial Management, Accessed 8/2008



Figure 5 - The town of Yacolt following the great fire of 1902 which burned through Clark County and Western Skamania County. Snags at the edge of town mark the western boundary of the “awful conflagration.” Photo: Weyerhaeuser Company.

Critical Infrastructure

Critical infrastructure in the Underwood CWPP includes:

Transportation:

- Roads, especially the Cook-Underwood Road (main escape route)
- Tunnels (along SR 14)
- Bridges (SR 14 and Cook-Underwood Road)
- Railroads

Utilities:

Gas

- Natural gas lines
- Williams pumping station
- Propane tanks

Electricity

- Power generation
- Two sets of BPA lines
- PUD power lines
- PUD substation
- Power poles

Water

- Water lines
- Water tanks
- Shaddox Springs (water supply, drinking)

Communications:

- Two communication towers

Other Services:

- Schools
- Community Center
- Post Office

Government Facilities:

- Spring Creek National Fish Hatchery
- Willard National Fish Hatchery
- Little White Salmon National Fish Hatchery
- Two USGS Columbia River Research Laboratories

PLANNING PROCESS

Planning for the Underwood CWPP followed recommendations found in “Preparing a Community Wildfire Protection Plan: a Handbook for Wildland-Urban Interface Communities” and followed the process developed by Ole Helgerson and Sarah Zeilin for CWPPs completed in Skamania County in 2007. The process consisted of the following steps.

Step One: Convene Decision Makers, Federal Agencies and Interested Parties (HFRA Requirement 1)

The Underwood CWPP Steering Committee included a core group (made of local government, local fire authority and state representatives), federal agencies, and interested parties/community members. The core group was responsible for the development of a CWPP as described in the HFRA and must mutually agree on the plan’s final contents. The Underwood Steering Committee met three times to establish, review, and critique the planning components (Appendix A-Meeting Agendas, Minutes). The Underwood Steering Committee consists of the following entities:

Core group (Decision makers)

Eric Ziegler - Skamania County Fire District #3 (FD3) Underwood Volunteer Fire Department, Fire Chief
John Carlson - Skamania County, Emergency Manager
Marlon Morat - Skamania County Fire Marshall and Building Inspector
Joe Weeks – Washington State Department of Natural Resources (WA DNR) Pacific Cascade Region Fire Program Specialist

Federal Agencies

Greg Page – USFS, Gifford Pinchot National Forest (GPNF) - Mt Adams Ranger District Lead Fire Prevention Technician
Rod Altig USFS Columbia River Gorge National Scenic Area (CRGNSA) Fire Management Officer
Heather Stiles- USFS Columbia River Gorge National Scenic Area (CRGNSA) Fire Prevention Technician

Interested Parties/Community Members

John Hardham - Fire District 3 Commissioner
Sally Newell - Underwood community member, CERT member
Will Richards - Underwood community member
Jon Paul Anderson – WA DNR
Steve Crow - WA DNR
Jess Calkins - WA DNR
Ross & Christine Bluestone - Underwood community members
Barbara Garrett - Underwood community member
John Campbell - Underwood community member
Chris Lloyd - Underwood community member
Clyde Leach - PUD, Underwood community member
Trish Dixon - Underwood community member
Tad McGreer - Underwood community member
Jon Ohlson - Underwood community member
Art Dickenson - Underwood community member, CERT member
Faye Brehm - Underwood community member
Dan Harkenrider - Underwood community member, CRGNSA Commissioner
Dale Glasgow - Underwood community member
Kevin Cooper - Underwood community member
Kathleen Carlson - CERT Representative

CWPP Team Facilitators

Ole Helgerson - WSU Extension Director and Area Forester
Gail A. Fullerton - Skamania County Wildfire Prevention Coordinator
Sharisse Cordell – AmeriCorps member, Wildfire Prevention Intern

Step Two: Establish Planning Area

The Underwood CWPP planning area was determined by participants of the three CWPP meetings held in the community. The planning area includes all of the Skamania County Fire District #3 area and nearby values to be protected identified at CWPP meetings. The east and south boundaries of the planning area are Skamania County's east and south boundaries. The western and northern boundaries follow ridgelines and roads. (Figure 3, Appendix H1) The Planning area encompasses 19,120 acres and ranges in elevation from about 100 to 3,000 feet above sea level. (Appendix H4 - Planning Area Topography)

Step Three: Community Outreach

Community members from Underwood served on the Underwood Steering Committee to represent the public throughout the process. (A list of community members appears in Step One on page 8). A questionnaire was created and dispersed within the community in May 2008 (Appendix B – Community Questionnaire). The survey results confirmed risks and values already determined by the committee. This plan was also open for public comment from August 29, 2007 to September 26, 2007.

Step Four: Community Risk Assessment

The community risk assessment took place two phases. Phase I considered localized risk of ignition, hazards and values to be protected. Phase II consisted of a map workshop and a gap workshop. The map workshop used maps created with GIS to study the location of hazards, values to be protected, infrastructure and escape routes. The gap workshop identified constraints, 'bottle necks', missing links and/or gaps in fire fighting, evacuation, and shelter in place capabilities within the Underwood planning area.

Risk Assessment Process: Phase I

The Underwood Steering Committee reviewed basic risk factors such as: risk of ignition, hazards, values to be protected, and wildfire protection capabilities. The committee created a list of elements that fell under each risk factor to more specifically define risks within the planning area. The following components of risk were discussed and ranked by ignition risk.

1. Risk of Ignition

Underwood's wildfire ignition risks include but are not limited to:

Man:

HIGH RISK

- Railroads
- Fireworks
- Yard debris burning / Lawn mowers
- Exhaust (ATV's, dirt motor bikes and vehicles)
- Recreational fires

MEDIUM RISK

- Industrial
- Heavy equipment/ Logging/ Slash Burning
- Power lines
- BBQ
- Smoking / Cigarettes

Natural:

MEDIUM RISK

- Lightening

Description of Ignition Risks

Railroad

The Burlington Northern-Santa Fe (BNSF) Railroad runs the length of the southern boundary of the planning area. The railroad has been the cause of twenty two fires between 1973 and 2007 only one of these fires burned more than an acre (DNR GIS). Still, this busy railroad has the potential to start a large wildfire that could affect homes and residents in the planning area as evidenced by the 2007 Broughton Fire. Railroad maintenance activities, especially track grinding, started fires in the past and are now governed by Skamania County Ordinance 2008-09.

Although Highway SR 14 forms a fuel break, ample fuels exist in the strip between the railroad and the highway to support a significant wildfire with potential to spot across the highway and ignite the heavy forest fuels on the steep slopes below Underwood and Home Valley.

Fireworks

According to the Revised Code of Washington 70.77.395 it is legal in the state of Washington to use fireworks between the dates of June 28th and July 5th (RCW 2008). Fireworks are banned otherwise. However, illegal use of fireworks still occurs for most of the year and can ignite a wildfire. Over the July 4th weekend, 2005, there were numerous firework-ignited wildfires that burned hundreds of acres in the Columbia River Gorge.

Residential Debris Burning / Lawnmowers

Debris burning has been a major cause of wildfire ignition. Illegal burning causes more wildfires than permitted burning. This is due to lack of education or forethought on the part of the person during the burning. Non-permitted burning can also involve larger slash piles the more easily get out of control. Lawnmowers and other home yard equipment can also cause ignition during fire season.

Debris burning (of natural vegetation only) is legal in Skamania County, but requires a permit. The debris pile dimensions must be no larger than 10'x10'x5'. The required Small Debris Fire permit is self issued, FREE, and available at local fire stations and some County offices. This burning is generally allowed only from October 1 thru June 30 but extreme weather may extend or shorten this burn period.

Small recreational fires, 2 ft. x 2 ft. are allowed all year with no permit required. Extreme weather could result in a temporary ban of these fires.

Fire permits. Large fire permits are required for all fires exceeding the small fire dimensions. Permits for large fires including Silvicultural practice fires can be obtained from the Southwest Clean Air Agency, the WA DNR, or the USFS.

Exhaust (ATV's, dirt motor bikes and vehicles)

Hot exhaust pipes on recreational vehicles can ignite a wildfire during times of low fuel moisture.

Recreational Fires

A "Recreational fire" is defined by the Skamania County Code (8.14.010 Definitions) as a fire started and retained on private land or in a county-designated campground that is contained within a metal, brick, stone or masonry fire pit. These fires are legal (see Residential Debris Burning above) Recreational fires from hikers, campers and forest product camps are a source of wildfire ignition. There are many hiking and backpacking destinations within the GPNF and CRGNSA that thousands of people visit every year. Recreational campfires are permitted when optimal conditions exist and are banned during peak fire season. It is difficult to regulate campfires in the backcountry however people have been cited for having fires during a ban that have also been the cause of larger fires.

Industrial

Saw mills and other industries are a potential cause of wildfire ignition and a source of fuel to a wildfire started elsewhere.

Heavy equipment/ Logging/ Slash Burning

Logging activities including slash burning, road building, skidding, and hauling have caused wildfire ignitions. Of these, the greatest threat is slash burning. Careless debris burning is the cause of many wildfires and nuisance smoke problems. Outdoor debris burning is subject to state and local fire safety and air quality regulations. (WA DNR) For complete information see:

http://www.dnr.wa.gov/RecreationEducation/Topics/FireBurningRegulations/Pages/rp_burn_fireburnfuelmgt.aspx

Power lines

Power lines located throughout the planning area include two major Bonneville Power Administration (BPA) lines and several smaller lines serving the Skamania County Public Utility District (PUD) #1. Branches or trees falling on power lines can ignite a wildfire. The Skamania County PUD #1 does not have a formal wildfire response plan. However, they do monitor fire radio frequencies and will disconnect power to the area as necessary.

Barbeque

Fires have been started by people barbequing too close to combustible substances such as dry grass, overhanging tree limbs, and low roofs.

Discarded Cigarettes

Lit cigarettes tossed from a moving vehicle have long been a source of wildfire ignition. Because of the miles of roads within the planning area, pinpointing exact high risk locations is difficult. In general, the potential is greatest where suitable fuels adjoin roads.

Lightning

Lightning has historically caused many wildfires in the planning area. With the right weather conditions and fuel characteristics, a major regional lightning storm could spawn many wildfires, potentially overwhelming response capabilities. Although, lightning cannot be controlled, we do have the ability to manage hazardous fuels around structures and properties reducing the chances of ignition.

2. Hazards:

There are three hazards that influence ignition and fire's rate of spread: Weather affects both ignition and fire behavior after ignition (Figure 6). Topography and fuels influence fire behavior once the fire ignites.

Fire season is the period or periods of the year during which fires are likely to occur, spread, and do sufficient damage to warrant organized fire control. Fire season in the Underwood area runs from mid-May through October.

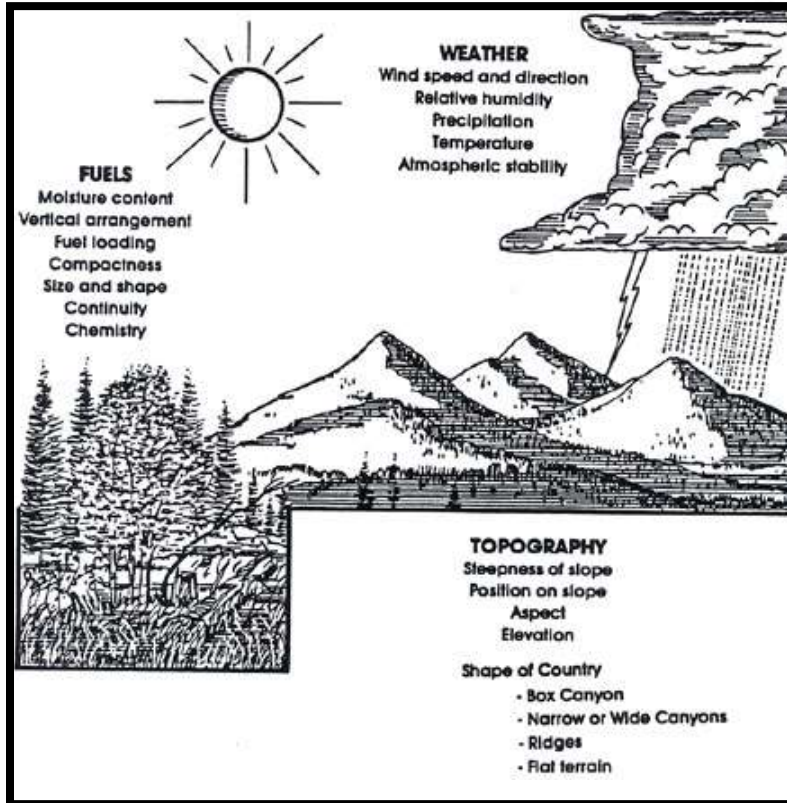


Figure 6. Hazards affecting rate of ignition and spread of wildland fire.
(Adapted from www.pfmt.org/fire)

a. Weather

Key weather factors that influence fire behavior include temperature, humidity, wind speed, wind direction, and atmospheric instability. Weather patterns that promote hot, dry, windy, and unstable conditions encourage wildfire. Wind is an important element of wildfire hazard. The stronger the wind the faster the fire spreads. Wind pre-heats the fuel ahead of the main fire and causes spot fires by blowing sparks and embers ahead into a new source of fuel. When wind flows through a restriction, such as a narrow canyon, it increases in strength. Wind movement can be critical in chutes or steep v-drainages such as the Columbia Gorge, White Salmon drainage, and Little White Salmon drainage. These terrain features create a chimney effect, causing a forced draft, as in a stove chimney. Fires in these chutes or drainages spread quickly and are very dangerous.

Fuel moisture is another important factor in fire behavior. Fire spreads faster when fuel moisture is low. Relative humidity and precipitation largely determine fuel moisture. Extended periods of drought increase wildfire ignition risk, as lack of precipitation and snow lead to drier fuels.

b. Topography

Topographical components that effect the way fire spreads include slope and aspect.

The steepness or slope of the land affects both the rate and direction of the fire spread (Figure 7). Fires usually move faster uphill than downhill. The steeper the slope, the faster the fire will move. This is because the flames on the uphill side are closer to the fuel. The fuels become drier and ignite more quickly. Wind currents are normally uphill, and this tends to push the fire into new fuels. Convected heat rises along the slope and causes a draft which further increases the rate of spread. Burning embers and chunks of fuel may roll downhill into unburned fuels, increasing spread and starting new fires.

The direction a slope faces (north, south, east or west) is its aspect. The aspect of a slope influences a fire's behavior in many ways (Figure 8).

Wind will try to follow the path of least resistance. Ridges, trees, and rocks may alter wind flow and cause turbulence or eddies to form on the windward side of obstructions.

The southern slopes of the Underwood bluffs are steep (45° - 90°) and parallel BNSF railroad and SR 14, both common sources of ignition. All the conditions needed to easily ignite and rapidly spread a fire are present. Structures built on slopes or at the top of bluffs are at risk. Residents living in these locations should contact (Underwood Conservation District (UCD), for assistance in reducing their risk factor.

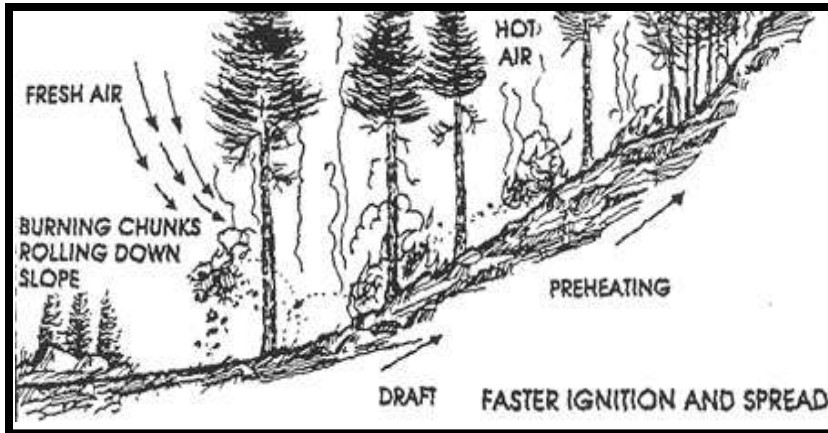


Figure 7. Effect of slope fire ignition and spread. (Adapted from www.pfmt.org/fire)



Figure 8. Influence of aspect on fire behavior. (from <http://www.meted.ucar.edu/fires591/fire/sci/print.htm#z3>)

c. Fuels

Of the hazards that affect fire behavior, fuel is the only one we have any control over. Different types of fuels influence fire in different ways. The following fire behavior fuel models which describe fire behavior for types of fuel found in the CWPP area are from "Aids to Determining Fuel Models for Estimating Fire Behavior" (Anderson 1982). GIS layers from Landscape Fire and Resource Management Planning Tools Project (Landfire)³ showing Anderson Fuel Models were used in assessing the Underwood's wildfire hazard (Figure 9).

³ LANDFIRE (Landscape Fire and Resource Management Planning Tools Project) is an interagency vegetation, fire, and fuel characteristics mapping project. LANDFIRE produces a comprehensive, consistent, scientifically credible suite of spatial data layers for the entire United States. Principal project partners include the USFS Missoula Fire Sciences Laboratory, the USGS Center for Earth Resources Observation and Science, and The Nature Conservancy. The project is scheduled from FY04 through FY09, with expenses apportioned between the Forest Service (60%) and Department of Interior (40%). Data products are 30-meter spatial resolution raster data sets, which will vary in accuracy by geography, product, and scale of use.

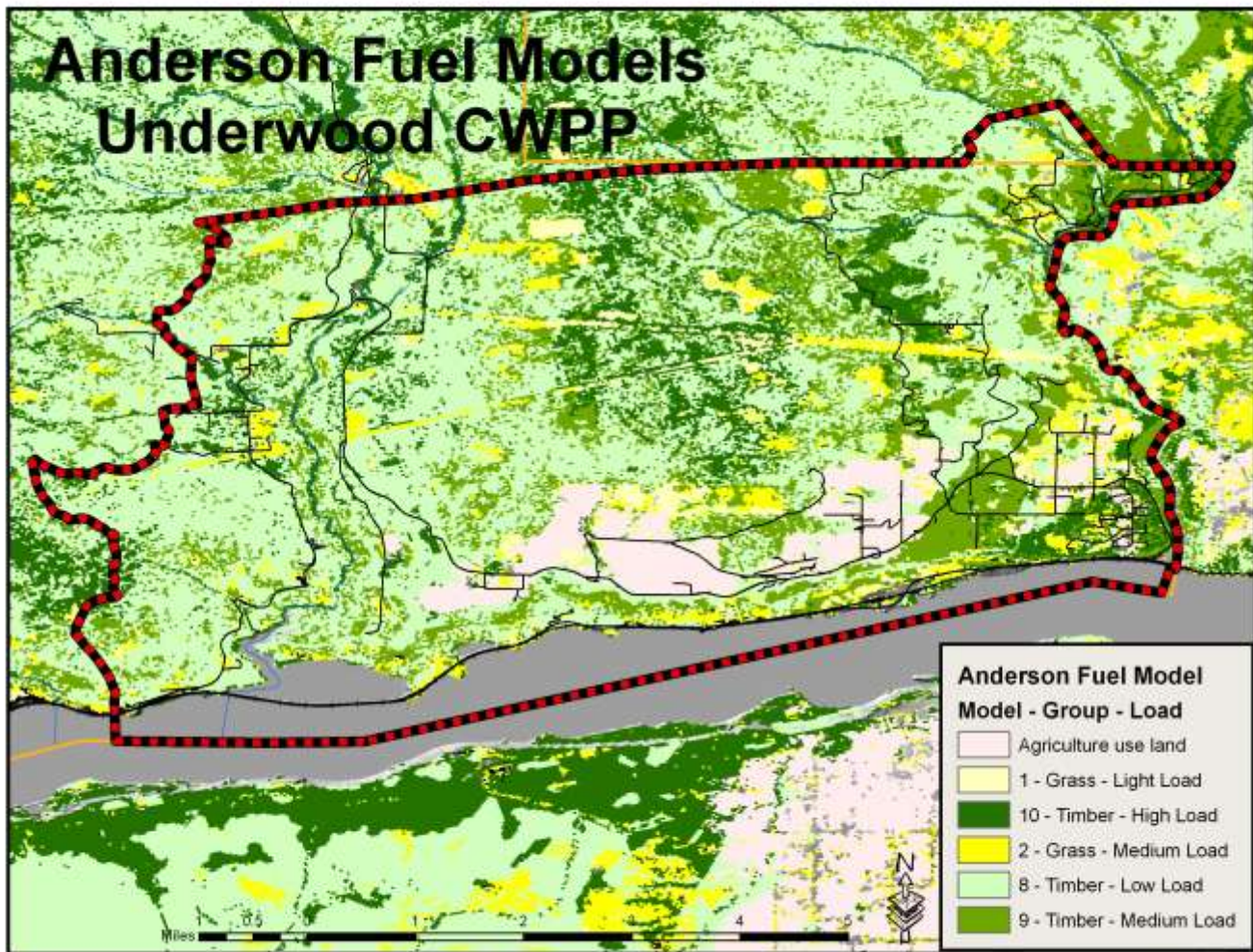


Figure 9. (Appendix H-6) Fuel types in Underwood CWPP area. (Map by Gail A. Fullerton)

Fire Behavior Fuel Model 1: Fire spread is governed by the fine, very porous, and continuous herbaceous fuels that have cured or are nearly cured. Fires are surface fires that move rapidly through the cured grass and associated material. Very little shrub or timber is present, generally less than one third of the area.

Fire Behavior Fuel Model 2: Fire spread is primarily through the fine herbaceous fuels, either curing or dead. These are surface fires where the herbaceous material, in addition to litter and dead down stem wood from the open shrub or timber overstory, contribute to the fire intensity. Open shrub lands and pine stands or scrub oak stands that cover one-third to two-thirds of the area may generally fit this model; such stands may include clumps of fuels that generate higher intensities and that may produce firebrands.

Fire Behavior Fuel Model 8: Slow-burning ground fires with low flame lengths are generally the case, although the fire may encounter an occasional “jackpot” or heavy fuel concentration that can flare up. Only under severe weather conditions involving high temperatures, low humidity, and high winds do the fuels pose fire hazards. Closed canopy stands of short-needle conifers or hardwoods that have leafed out support fire in the compact litter layer. This layer is mainly needles, leaves, and occasionally twigs because little undergrowth is present in the stand.

Fire Behavior Fuel Model 9: Fires run through the surface litter faster than model 8 and have longer flame height. Both long- needle conifer stands and hardwood stands, especially the oak-hickory types, are typical. Fall fires in hardwoods are predictable, but high winds will actually cause higher rates of spread than predicted because of spotting caused by rolling and blowing leaves.

Fire Behavior Fuel Model 10: The fires burn in the surface and ground fuels with greater fire intensity than the other timber litter models. Dead-down fuels include greater quantities of 3-inch (7.6-cm) or larger limbwood resulting from over maturity or natural events that create a large load of dead material on the forest floor. Crowning out, spotting, and torching of individual trees are more frequent in this fuel situation, leading to potential

fire control difficulties. Any forest type may be considered if heavy down material is present; examples are insect or disease-ridden stands, wind thrown stands, over mature situations with deadfall, and aged light thinning or partial-cut slash.

3. **Values Protected**

Values Underwood residents want to protect include but are not limited to:

- **People, Pets & Livestock**
- **Homes & Out Buildings**
- **Transportation**
 - Roads, especially the Cook-Underwood Road (main escape route), railroads
- **Infrastructure**
 - Utilities: natural gas lines, Williams pumping station (Williams Northwest)
 - Water lines, water tanks,
 - Propane tanks, two sets of BPA lines,
 - PUD power lines, PUD substation, power poles,
 - Two communication towers
 - Community Center, Post Office and Shaddox Springs (potable water)
- **Government Facilities**
 - Three fish Hatcheries
 - Spring Creek National Fish Hatchery
 - Willard National Fish Hatchery
 - Little White Salmon National Fish Hatchery
 - Two USGS Columbia River research laboratories
- **Wildlife, habitat, resource lands**

4. **Emergency Equipment and Staffing Inventory**

This section includes inventories for all the fire fighting agencies within the Underwood CWPP area as of August 2008 (Appendix D - Wildfire Protection Capabilities).

Skamania County Fire District 3, Underwood

- 17 volunteer fire fighters
- 1 type 1 engine
- 1 type 2 engine (poor condition)
- 1 type 3 engine (old)
- 1 type 7 engine
- 1 type 2 tender
- 1 type 3 tender

Columbia River Gorge National Scenic Area

The CRGNSA has available the following inventory depending on level and location of wildfire:

- 3 – type 6 wildfire engines
- 1 – fire prevention module
- 2 – command vehicles
- 2 – cooperative engines with WADNR
- 1 – cooperative engine with Oregon Department of Forestry
- 9 – employees staffed 7 days a week from 7/1 – 10/1

Mt Adams Ranger District GPNF

The Mt. Adams Ranger District of the GPNF provides fire protection primarily on federal lands in the Underwood CWPP area, with the following inventory depending on level and location of wildfire:

- 2 – type 6 wildfire engines w/foam 300 gallons
- 1 – type 6 prevention module 320 gallons
- 1 – type 7 prevention module 80 gallons
- 11-14 on duty employees, staffed per day from 7/4 – 10/15
- Estimated 35 employees, line qualified firefighters available as needed from approximately 7/4 – 10/15

Washington State Department of Natural Resources

WADNR provides fire protect primarily on private and state lands and has the following inventory depending on level and location of wildfire:

- 2 – type 6 wildfire engines
- 6 – firefighters

Risk Assessment Process: Phase II

In phase two, the committee further defined risk factors and identified site specific problems by completing two workshops: 1) map workshop and 2) gap establishing workshop.

1. **Map Workshop**

The map workshop used maps created with Geographic Information Systems (GIS) to allow steering committee members to; evaluate aspects of the Underwood planning area such as: location of current population, topography, fire history infrastructure, population, future development and fuel loads; and identify 'high risk areas' and/or Communities At Risk (CAR). (Appendix H-2)

2. **Gap Workshop**

During the gap workshop the steering committee answered the following questions:

1) What limits our ability to fight wildfire within the planning area? **2)** What do we need but yet have to survive a wildfire (that we don't have)? **3)** How will we get it? **4)** Have we thought of everything including communications, safe place (shelter), special needs in the community, evacuation, planning and practice?

Following the gap workshop the committee made a list of projects designed to close the gaps and divided them into four categories: fuel mitigation, planning, education and equipment, and staffing and exercise projects. The steering committee prioritized projects by importance to risk reduction to life, property and natural resources.

3. **Gaps Identified:**

The ability to fight wildfire in the planning area is limited by: communication inoperability and lack of communications interoperability, limited water supply, lack of education, lack of data on actual fuel loads, and lack of defensible space around homes and other structures. The creation of defensible area around homes on the bluff as well as education about evacuation routes, community shelters and defensible space is needed if residents and their homes are going to survive a wildfire. The steering committee suggests the use of volunteers, prisoners, and the Washington Conservation Corps to match grant funding and complete projects.

4. **Data Available for Decision Making:**

A 2003 NFP project in Skamania, Hood River, Wasco, and Klickitat Counties 1) Located and ranked WUI structures by risk using NFPA-299 protocol (Appendix C - NFPA-299 Hazard Rating Form) and combined the data into a GIS database, 2) worked with rural volunteer fire districts to identify and remedy equipment and training shortfalls, and 3) educated rural dwellers in wildfire survivability and damage prevention.

Three of the four counties (Skamania, Hood River and Wasco) completed the NFPA-299 survey using Title III funding. The survey data were put into a GIS database in each county. The data describes conditions affecting structure flammability. It provides information to emergency planners and responders allowing safer response during wildfire.

In Skamania County the project also collected data on fire hydrants, water sources, and other features. In 2007 the data were released to Skamania County first responders in interactive geo-database using IncidentView software. GIS analysis for this CWPP used data from the NFP project, WA DNR (Washington Department of Natural Resources GIS Data Center) and LANDFIRE. (LANDFIRE 2008) Layers used included: 299 risk assessment of Skamania County homes, Digital Elevation Model (DEM), Ortho Photo, Historic fires, CAR, Fire Regimes, Vegetation Types, and Anderson Fuel Model.

Step Five: Establish Community Priorities and Recommendations (HFRA Requirement 2 and 3)

This section describes solutions to problems identified in the map and gap workshops and documents projects supporting the goals and objectives of the Underwood CWPP.

The following projects were identified to reduce the risk of wildfire and protect life, property and natural resources within the Underwood planning area based on risks identified in Step Four. Many of the projects treat structural ignitability. The committee discussed and defined each project. These projects are subject to modification due to changes in local

priorities. The Underwood CWPP core group (see page 9 for definition) will oversee and approve any project amendments or grant applications that reference the Underwood CWPP.

Projects were sorted into four categories: 1) Fuel Mitigation Projects, 2) Planning Projects, 3) Education Projects, and 4) Equipment, Training and Exercise Projects.

Some specific project types, such as landowner fuels mitigation have components in two or more categories. Priority rankings reflect importance among all projects; not just within a category. Other project categories may be developed in the future.

1. Underwood CWPP Projects		
PROJECT TYPE	PROJECT	PRIORITY
Fuel Reduction		
	1. Refine fuel estimates	HIGH
	2. Reduce fuels around homes	HIGH
	3. Fire (shaded fuel) break along Cook - Underwood Road	HIGH
	4. Area north of railroad where tracks are on the N side of SR 14	HIGH
	5. Area north of railroad where tracks are on the S side of SR 14	MEDIUM
Planning		
	1. Shelter in place	HIGH
	2. Water for northern portion of the planning area	HIGH
	3. Building codes changes	HIGH
	4. Reverse 911- How to access - email/phone	HIGH
	5. Early warning siren	HIGH
	6. Resolve conflicts between NSA and "Firewise" requirements	HIGH
Education		
	1. Defensible space around homes / "Firewise" principals	HIGH
	1) Educate absentee owners	HIGH
	2) Educate residents of in lieu fishing site	HIGH
	3) Letters that state hazard level(s) of property (NFPA 299 or 1144)	HIGH
	4) Utilize free assessments available from UCD	HIGH
	5) Demonstration site	MEDIUM
	2. Educate youth	
	1) "Firewise" principals	HIGH
	2) Smokey The Bear outreach	HIGH
	3. Debris burning safe practices and rule	HIGH
	4. Residential ignition sources	HIGH
	5. Meaning of sirens mentioned under planning	HIGH
Equipment, Staffing and Exercise		
	1. Communications: Upgrade to P-25 complaint equipment	VERY HIGH
	2. Volunteer firefighters: recruitment and retention	HIGH
	3. Reader board at new fire department in Cook/Underwood	HIGH
	4. Water for northern portion of the planning area	HIGH
	5. Create a website for FD # 3	MEDIUM

2. Project Descriptions

A. Fuel Reduction Projects (HFRA requirement 2)

The primary goal of fuel mitigation projects is to reduce wildfire risk by physically reducing fuel densities in selected areas to specified levels. Specific target areas and fuel densities will be assessed using computer models, NFPA-299 data, professional judgment and other appropriate and available methods.

Project 1: Refine fuel estimates**HIGH**

Accurate fuel load estimates may be needed. WA DNR conducted a coarse resolution assessment in 2003 however no assessment has been done since. GIS layers available from the LANDFIRE project have a resolution of 30 meters (each pixel represents a square 30m by 30m) are intended for use as a landscape level estimate. (Landfire 2008) The first step to prioritizing and completing fuel mitigation projects is accurate information about the type and amount of fuels at project locations.

Project 2: Reduce fuels around homes**HIGH**

Create defensible space around homes

Induce homeowners to create and maintain their own “Firewise” landscape by advertising, holding classes and demonstrations and using other suitable media. The “Living with Fire” brochure (Appendix F – “Living With Fire, A Guide for the Homeowner”) illustrates fuel reduction treatment, types and methods that homeowners should implement. Fuel treatments will also comply with Skamania County and Columbia River Gorge National Scenic Area (CRGNSA) requirements. Implementing “Firewise” methods such as creating defensible space, thinning dense vegetation, providing access, and having established escape routes to an adequate safety zone can greatly reduce a community’s risk from wildfire.

Project 3: Shaded fuel break along Cook - Underwood Road**HIGH**

The Cook Underwood Road is the main escape route for the Underwood community. A shaded fuel break along both sides of the entire road would help to keep the road open during a wildfire, give firefighters a place to fight the fire (a shaded fuel break will cause a crown fire to drop to a ground fire), and keep crown fires from starting due to thrown cigarettes and other human causes. This project was also identified as a high priority by the adjoining Little White Salmon Drainage CWPP.

Project 4: Area north of BNSF Railroad (tracks are on north side of SR 14)**HIGH**

The north side of SR 14 through the area south of the Underwood community is steep (60-100 percent slopes), and covered with light to medium fuels. A high percentage of fire starts in the planning area are from railroad activities along SR 14. The risk of a fire generated by railroad activities escaping up the bluff is highest in the stretch where the tracks parallel SR 14 north of the highway because there is no cleared fire break to stop the fire. Reducing fuels in this area is important because it is difficult for existing homeowners at the top of the bluff to create enough defensible space and still comply with CRGNSA Requirements.

Project 5: Area north of BNSF Railroad (tracks are on the south side of SR 14)**MEDIUM**

The north side of SR 14 through the area south of the Underwood community is steep (60-100 percent slopes), and covered with light to medium fuels. Fire starts here are related to human traffic along SR 14, including railroad activities. Some of the fires have been able to cross SR 14. Reducing fuels in this area is important because it is difficult for existing homeowners at the top of the bluff to create enough defensible space and still comply with CRGNSA Requirements.

B. Planning Projects

The primary goals of planning projects are to further refine education and fuels mitigation projects and reduce or eliminate constraints in response and interagency cooperation.

Project 1: Shelter in place**HIGH**

The Underwood community had planned to use the Underwood Community Center as a shelter during emergencies. However this is an older wooden structure and was threatened during the Broughton fire. The Underwood Fire Department is pursuing funding for a community shelter with backup generators adjoining the new fire hall. Other alternative shelter areas being explored by the community include: Mill A School, new fire hall, and unused Skamania County Road Department sheds.

Project 2: Water for northern portion of the planning area (Also see equipment staffing And training project 4)**HIGH**

Water is scarce in the northern part of the planning area. During the Broughton fire firefighters exhausted the municipal water supply. Valuable time is lost when firefighters need to travel a long distance to replenish water. Skamania County PUD #1 will be adding one 250,000 gallon water tank in the near future but more water storage is desirable.

Project 3: building codes changes (see Planning Project 6)**HIGH**

Changes in building codes, for new construction or remodeling (anything that requires a building permit) especially in the area at the edge of the bluffs are needed to decrease the risk of loss of life and property.

CRGNSA requires trees to be left in place to screen homes from view of travelers on SR 14, I-84, and the Columbia River. New homes built close to the bluff should have a setback of 100 to 300 feet, depending on the slope below the home, to allow enough defensible space.

Project 4: Reverse 911- how to access - email/phone

HIGH

The Underwood CWPP Steering Committee identified the need to get essential information to residents about an ongoing fire or need to evacuate. During the recent Broughton Fire, one resident who used a cell phone to call 911 was routed to Hood River. A "Reverse 911" system would enable emergency workers to immediately call or email community members in threatened areas.

Project 5: Early warning siren

HIGH

An additional way to notify community members of degree of danger and changes in severity and location of a wildfire is needed. A siren to summon volunteer firefighters could also communicate emergency information to residents by using different numbers and lengths of sound bursts.

Project 6: Resolve conflicts between NSA and "Firewise" requirements

HIGH

Community members expressed frustration with the conflict between creating defensible space, CRGNSA requirements and Skamania County Planning requirements. They wanted a meeting between interested parties to find a way to solve the problem. On July, 2 2008 the Columbia River Gorge Commission Planning Department including Jill Ahrens, Executive Director of the Gorge Commission, met with, Nicole Hollatz, (Skamania County Planning), Gail Fullerton, (Skamania County Wildfire Prevention Coordinator), Ole Helgerson, (Skamania County WSU Extension director) Joe Weeks, (Washington Department of Natural Resources, Forester), Jamie Gomez, (UCD), Conservation Technician), and Diana Ross, (USFS, Land Use Coordinator). The meeting created a dialog between agencies and informed the CRGNSA on "Firewise" practices. Ms. Ahrens indicated that she does not want the regulations to put anyone at risk to wildfire nor does she want "Firewise" regulations to be used as an excuse to clear trees to create a better view. Community members with concerns should call Nichole Hollatz at the Skamania County Planning Office and/or the Columbia Gorge Commission.

c. Education Projects (Structure Ignitability) (HFRA requirement 3)

The goal of education projects is to raise public wildfire awareness to the point where residents will take responsibility for creating and maintaining defensible space around their own homes and structures and make it their personal priority to take steps to protect themselves during wildfire.

Structure Ignitability

The Underwood CWPP Steering Committee recommends using the publication "Living with Fire: A Guide for the Homeowner" as an initial guide to reducing structure ignitability (Appendix F). Education projects will teach the public proper "Firewise" techniques and recommend measures that homeowners can take to reduce structure ignitability.

Project 1: Defensible space around homes / "Firewise" principles

Educate all community members on defensible space and "Firewise" principles. Distribute the publication "Living With Wildfire" (Appendix F) as widely as supplies allow and post a copy on the Skamania "Firewise" website.

Component 1: Educate absentee (part time) owners.

HIGH

Properties owned by absentee owners tend to be more hazardous when rated using NFPA 299 (now NFPA 1144) protocol. It is hoped that teaching these part time residents "Firewise" principles will cause them to take steps to make their properties safer.

Component 2: Educate residents of Tribal in lieu fishing site

HIGH

The tribal in lieu fishing site at the mouth of the White Salmon River on the east end of the Cook Underwood Road is filled with mobile and motor homes during fishing season. The Underwood community is concerned about the risk of fire starts posed by practices at the site, and risk to residents during a wildfire. It is hoped that education on "Firewise" principles will keep this area safer during wildfire and reduce the number of fire starts at this location.

Component 3: Letters to residents stating NFPA 299 hazard Level(s) of property

HIGH

Create a form letter and mail the letter to all residents of properties that scored high informing them of their score and their risk in the event of wildfire.

Component 4: Utilize free assessments available from UCD

HIGH

UCD has grant funding to conduct “Firewise” assessments using the NFPA 1144 protocol for homes in all of Skamania County and part of Klickitat County. They also offer advice on how owners can improve their score and make their property more “Firewise”.

Component 5: Demonstration Site:

MEDIUM

Create a local home site for demonstrating defensible space and other “Firewise” concepts. This can be done at a home volunteered by a community member using volunteer labor. Document the changes with pictures before, during, and after to market the project.

Project 2: Educate youth

HIGH

Youth can learn more quickly than adults and influence both current and future practices. Engaging youth in wildfire prevention as a high school senior project would benefit the community. Create internships with the fire department for local senior high school students.

Component 1: “Firewise” Principles

HIGH

The main focus of this program is to teach fundamental principles and knowledge of wildfire hazards and risk reduction techniques to young adults. Groups such as 4-H, Girl Scouts, Boy Scouts, local schools, and existing youth groups are the main groups of interest. Potential partners include Washington Department of Natural Resources (WA DNR), USFS, and Northwest Service Academy.

Component 2: Smokey the Bear outreach

HIGH

Use “Smokey the Bear” or other kid friendly materials to educate younger children about the dangers of wildfire and ways to reduce the risk of wildfire and personal risk during a wildfire.

Project 3: Debris burning safe practices and rules

HIGH

According to WA DNR wildfire statistics, debris burning is one of the top three causes of fires within the CWPP area. Enforcing debris burning regulations is difficult. The Steering Committee feels that teaching the public proper techniques for preparing and igniting burn piles would decrease the number of escaped fires. Education approaches include developing training for residents interested in learning the proper way to burn debris, and distributing information on proper burning techniques with burn permits, at the Skamania County Fair, at other community events, and on the Skamania County and FD #3 web sites. The committee will also work with WA DNR, Skamania County FD #3 and Skamania County Sheriff to reduce violations.

Project 4: Residential ignition sources

HIGH

Educate area residents on causes of residential ignitions and ways to prevent them.

Project 5: Public understanding of sirens (see planning project 5)

HIGH

This will be necessary once the fire department has the new siren in use. Educate Underwood Community members on the meaning of the siren codes developed by the Underwood Steering Committee. Skamania County FD #3 and the Underwood CWPP steering committee will work together to develop a workable code (similar to Morse code) for communicating information. A written key to the code will be distributed to all residents close enough to hear the siren. An event will be held to teach the code “hands on”. (This might be a good way to recruit residents for other projects)

D. Equipment, Staffing and Exercise Projects (FD #3)

The primary goal of Equipment, Staffing and Exercise projects is to increase the wildfire response capabilities of the CWPP planning area fire agencies by defining and addressing equipment, staff and training needs.

Project 1: Communications: Upgrade to P-25 compliant equipment

VERY HIGH

Lack of communications interoperability has been an issue nationwide for a long time. Eventually a national standard was developed. P-25 is a national standard for digital radio communication. It was created by the Association of Public-Safety Communications Officials using specifications agreed upon by several communication companies and government organizations. P-25 is required by the BLM and USFS for all new radio purchases. New P-25 complaint radios use narrow banded frequencies incompatible with existing radios. In order for local fire departments to communicate with state and federal emergency responders P-25 compliant radio equipment is essential.

Project 2: Volunteer firefighters recruitment and retention

HIGH

The Underwood fire department wants to recruit more volunteer fire fighters and retain the ones they have. A reader board and website could be used for this purpose. Upgrading equipment (including communications equipment) would increase safety and help retain current volunteers. Other potential solutions include: community recognition of volunteers, support (interviews and information) for high school seniors interested in doing a senior project on wildfire response and/or prevention and, internships for students interested in firefighting.

Project 3: Reader board at new fire department in Cook/Underwood

HIGH

A reader board in front of the new Underwood fire station would allow quick communication of fire danger and other information to community members and recreationists. To date the sign has not been allowed by the Gorge Commission because of “aesthetic considerations”. Alternative locations are under consideration.

Project 4: Water for northern portion of the planning area (see also planning project 2)

HIGH

Water is scarce in the northern part of the planning area. During the Broughton fire firefighters exhausted the municipal water supply. Valuable time is lost when firefighters need to travel a long distance to replenish water. Skamania County PUD will be adding one 250,000 gallon water tank in the near future but more water storage is desirable.

Project 5: Create a Website For FD # 3

MEDIUM

A Skamania County FD #3 website would provide the fire department another avenue to communicate information on fire danger, burn bans, and educational and volunteer opportunities for projects detailed in the Underwood CWPP. The site could also be used to post realtime advisories during a wildfire.

Step Six: Develop an Action Plan and Assessment Strategy (HFRA Requirement 3)

1. Assessment Strategy

Because the Underwood CWPP is a “living document” the steering committee will meet as needed to discuss grant proposals, plan amendments, and current status of the plan. The plan will be reviewed annually by the FD #3 chief, Underwood fire commissioners, and Underwood community council. The USFS, WA DNR, and other interested agencies will be included in the process. The core group (Step 1, page 9) will oversee and approve any plan amendments or grant applications referencing the Underwood CWPP.

As provided for in Sec.102 (g)(5) of HFRA the committee may also participate in multiparty monitoring of USFS and BLM projects in or adjacent to the planning area.

To help document changes in vegetation over time, before and after photos should be taken of fuel mitigation project areas. Pictures demonstrate the effectiveness of the project and changes from year to year. Establishing photo points (for larger projects) or recording GPS coordinates of the photo locations are strongly suggested. Software such as Landscape Modeling System (LMS) can help predict when retreatment will be necessary.

2. Action Plan

The committee considered all projects and discussed what could be done right now and in the near future with a minimum of grant funding and outside support, then established the following action plan. The Title III “Firewise” Project offers initial CWPP project follow-up and grant application assistance while legislated funding is still available. Because this is not a permanent funding source, a fulltime position to coordinate CWPP projects and write grants will be pursued.

Underwood Action Plan	
Action Description	Targeted Completion Date
Engage a grant writer to assist in funding acquisition.	
Engage in community outreach through flyers, emailings or meetings that include food to recruit volunteers for projects.	Sept 20 2008
Get homeowners to take responsibility for making their property “Firewise”. E-mail, information about Underwood Conservation District’s NFP 1144 home risk assessment and the link for “Living with Fire: A guide for the homeowner”. ⁴ Also make the publication available at the Underwood Post Office for those who do not have e-mail. (Education project 1)	Sept 20 2008
Complete work on demonstration ““Firewise”” home site.	Sept 20 2008
Pursue grant funding for siren (Planning project 5) and complete related education (Education project 5).	Sept 20 2009
Work with other Skamania County fire departments and Skamania County Commissioners to resolve “holes” in radio coverage caused by lack of repeaters in the right locations. (Equipment Staffing and Training project 1)	
Coordinate the use of CERT personnel in future events.	
Conduct outreach and education for potential volunteer firefighters in order to increase the number of volunteer firefighters (Equipment Staffing and Training project 2)	

Step Seven: Community Wildfire Protection Plan Approval and Compliance with other Standards

1. Approval

The core group will approve the final plan after considering feedback from the steering committee and public comment. The Underwood CWPP will seek the Skamania County Board of Commissioner’s approval. The plan will be submitted to Washington Department of Natural Resources for approval of the State Forester.

2. FEMA Compliance

The Underwood CWPP has recognized FEMA Pre-Disaster Mitigation (PDM) plan requirements. The table in Appendix G indicates how the Underwood CWPP meets FEMA PDM compliancy and what components are missing for future acceptance.

⁴ Structure Ignitability

The Underwood CWPP Steering Committee recommends using the publication “Living with Fire: A Guide for the Homeowner” as an initial guide to reducing structure ignitability (Appendix F). Education projects will teach the public proper “Firewise” techniques and recommend measures that homeowners can take to reduce structure ignitability. The goal is to get community members to make it their personal priority to take steps to protect themselves during wildfire.

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Appendix A – CWPP Meeting Agendas and Minutes

AGENDA

Underwood Community Wildfire Protection Plan Meeting 1,

Underwood Fire Station, 981 Schoolhouse Road Underwood, WA 98651
April 17, 2008 - 7:00 PM

GOALS:

- 1) Outline CWPP Process
- 2) Introduce Firewise Communities Program
- 3) Establish Goals and Objectives
- 4) Create a Risk Assessment

Time	Speaker(s)	Topic
07:00-07:10	Fullerton, All	Introductions, agenda review
07:10-07:20	Fullerton	Community Wildfire Protection Plan Synopsis <ul style="list-style-type: none"> • Roles • Background • Process • Requirements • Completed Data Collection • Current Status • Main Limitations • Underwood CWPP Outline
07:20-07:30	Underwood Conservation District	<ul style="list-style-type: none"> • Beyond the CWPP: Firewise Communities
7:30-7:45	ALL	<ul style="list-style-type: none"> • Questions
07:45-08:00	Fullerton, Helgerson	Review Underwood Planning Area <ul style="list-style-type: none"> • Underwood Base Map
08:00-08:15	Helgerson, All	Establish the Underwood CWPP Objectives and Goals <ul style="list-style-type: none"> • Protection of Life, Property and Resources
08:15-09:00	Helgerson, All	Create an Underwood Risk Assessment <ul style="list-style-type: none"> • History • Hazard • Values Protected • Protection Capabilities
9:00	All	Adjourn Meeting

Underwood CWPP

Meeting 1 Minutes – April, 17th, 2008

- Meeting started at 7:00pm:
- Introductions
- Gail and Ole presented the general information about the CWPP process and handed out copies of the agenda and a proposed outline of the CWPP and passed around a sign up sheet (see attachment 2),
- Maps were posted showing the Underwood area (DEM with overlay of fire district boundaries, transportation (small map showing utilities), map of survey data showing home fire danger ratings (low, medium, and high risk).
- The value of a CWPP as a tool for the community to identify values to be protected and fire risks and to plan for, and mitigate the effects of wildfire was discussed. Ole and Gail explained that a CWPP is required for some funding and helpful in securing other funding (even if it is not required) because it presents a description of needs and goals for the community agreed on by the community.
- Jamie Gomez from Underwood Conservation District explained the Firewise USA program and put out a sign up sheet for free one on one home fire safety assessments.
- Group outlined risk assessments/ignition risks of our tentative plan:
- **Man:**
 - Railroads
 - BBQ
 - Yard debris burning
 - Lawn mowers and heavy equipment
 - Fireworks
 - Smoking/cigarettes
 - Exhaust/ATVs, dirt motor bikes and other vehicles
 - Vehicle fires
 - Chimney fires
 - Campfires
 - Power line (trees falling on)
 - Logging (slash burning)
- **Natural:**
 - lighting
- Hazards of our area were identified – including weather, topography, fuel loads,
- types of fuels,
 - Weather – extreme wind (both from the East and the West), lightning, drought,
 - Fuels – brush, grasses, trees, scotch broom, fuel ladders, response time and inaccessible locations.
 - Topography: steep areas and bluffs, White Salmon canyon, Little White Salmon Canyon and Columbia Gorge.
- Values protected were discussed:
 - Homes (most important)
 - Infrastructure: Utilities: natural gas and water lines, 2 sets of BPA power lines, PUD power lines, power poles, Williams pumping station.
 - Transportation: Roads especially the Cook-Underwood Road (main escape route), railroads
 - Fish hatchery on the Little White Salmon River
 - Protection Capabilities were discussed, Fire district 3 will compile a list of resources on hand and resources needed for optimum protection before the next meeting.

Next meeting set for May 1, 2008 - 7:00pm at the Underwood Community Center
Meeting was adjourned by 9:00pm.

Agenda
Underwood CWPP Meeting 2
Thursday 5/1/2008, 7:00 PM
Underwood Community Center

Goals: Create steering committee, Identify needs and potential solutions, Create list of projects, Prioritize Projects.

Time	Speaker	Topic
7:00-7:05	Gail	Introductions, agenda review, meeting minutes from 4/17/2008
7:05-7:15	Gail, All	Create steering committee
7:15-7:20	Jamie	Additional requirements to be a FIREWISE USA Community (Not many)
7:20-7:30	Gail, Ole, All	Review goals and objectives Create statement of goals and objectives (put it into words)
7:30-7:35	Gail, Ole	Review risks and values to be protected
7:35-7:45	Gail, Ole, All	Map Workshop: Population Density Future Development Fire History Fuel Loads
7:45-8:05	Gail, Ole, All	Gap identification workshop: What limits our ability to fight wildfire within the planning area? What do we need to survive a wildfire that we don't have? How will we get it?
8:05-8:15	Gail	Grants and requirements
8:15-8:45	Gail, Ole All	Create a list of projects: <ul style="list-style-type: none"> • Fuel Mitigation • Planning • Education • Equipment/Staffing/ training and practice Prioritize projects
8:45-8:55	All	Agree on a name for the CWPP
8:55-9:00	Gail, Ole	Review meeting, set next meeting date
9:00		Adjourn

Underwood CWPP Meeting 2 Minutes
Thursday 5/1/2008, 7:00PM-9:00
Underwood Community Center

5 Min. = Introductions/Sign in

10 Min. = Introduction to creating a Steering committee

10 Min. = Jamie discussed what it would take to become a FIREWISE USA member, the application, and requirements.

5 Min. = Reviewed goals/objectives and created goal/objective STATEMENT!

23 Min. = Reviewed risk and values to be protected and rearranged the risks and values to fit the Underwood Need.

8 Min. = Map Workshop Discussion-Further plotted information of infrastructures on wall maps.

15 Min. = Gap Workshop Discussion-

1. What limits our ability to fight wildfire in the planning area?
Lack of education, Vegetation, Lack of Defensible Area
2. What do we need to survive a wildfire (that we don't have)?
The answer to this question was determined to be making a defensible area around homes and clear the bluff if possible.
3. How will we get it?
Get volunteers and prisoners to come help make a defensible space on properties.

46 Min. = Created a list of projects in Fuel Mitigation, Planning, Equipment, Staffing, Training, Practice in Prioritizing projects, but mostly Education.

1. Fuel Mitigation Projects-
 - a. Bluff area fuel reduction (HIGH)
 - b. Railroad tracks on the north side of 14 (HIGH)
 - c. Rest of railroad track (MEDIUM)
 - d. Reduce fuels around homes (HIGH)
 - e. Cook/Underwood Road as a Fire Break (brush clearing along sides) This is a major escape route (HIGH)
2. Planning Projects-
 - a. Firewise oriented building codes for new construction or remodeling (Any building permit) (HIGH)
 - b. Reverse 911- How to access email/phone (HIGH)
 - c. Some kind of New Siren/Early Warning (New way to better notify by severity degree and location). (HIGH)
 - d. NSA/Planners/County Commissioners/Advocacy Group? (Friends of the Gorge?) meeting for clarification to reconcile NSA regulations and fire hazard concerns (HIGH)
3. Education Projects-
 - a. Put up a reader Board at new Fire Department in Cook/Underwood (HIGH)
 - b. Create a Website- for information that is going on, or website for fire station that can give links to informational sights (MEDIUM)
 - c. Absentee owners (HIGH)
 - d. Demonstration home/property (Defensible Space) (HIGH)

- e. Letters that state Hazard Level (s) determined of property (especially to absentee owners with high rating) (HIGH)
 - f. Jamie available to come do free assessments for property owners (HIGH)
 - g. Fish Camp (Native American) (HIGH)
4. Equipment, Staffing, Training, Prioritize Projects-
- a. Prioritize the list of things needed and things have (FD has created this list (Equipment, Staffing and Training) but has not yet prioritized. (High, Medium, Low)
 - b. Also request someone from planning committee and Jamie T. (Commissioner of West End) attend meetings.

1 Min. = Next meeting decided upon as 6/5/2008 @ 7:00PM

2 Min. = Agreed upon "Underwood CWPP" as name for the Underwood Community Wildfire Protection Plan.

AGENDA

**Underwood Community Wildfire Protection Plan Meeting 3,
Underwood Community Center,
951 Schoolhouse Road, Underwood, WA, 98651.
Thursday, June 5, 2008 - 7:00 PM**

GOALS:

- 1) Review Projects**
- 2) Add/Remove Projects**
- 3) Prioritize Projects**
- 4) Create an Action Plan**

Time	Speaker(s)	Topic
7:00 - 7:10	Fullerton, All	Introductions, agenda review, meeting minutes from 3/27/07
7:10 - 8:00	All	Review and make changes to project descriptions <ul style="list-style-type: none">• Fuel Mitigation• Planning• Education• Equipment/Staffing/Exercise
8:00 - 8:20	All	Add/Remove projects
8:20 - 8:30	All	Prioritize projects <ul style="list-style-type: none">• Prioritize new projects• Re-prioritize previous projects if necessary
8:30 - 8:45	Fullerton, Helgerson, Cordell, All	Create an action plan <ul style="list-style-type: none">• CWPP sustainability
8:45 - 8:50	Fullerton, Helgerson, All	CWPP and FEMA Pre-Disaster Mitigation Plan Compliance
8:50 - 9:00	Fullerton, Helgerson, Cordell, All	Review meeting, adjourn meeting THANK YOU FOR ALL OF YOUR HELP!!!

Underwood CWPP Meeting 3

6/5/2008

Meeting began 7:00 PM

All previous community input was reviewed. This included:

Mission Statement:

“To protect life, property, infrastructure, and resources in the event of wildfire.”

Additions:

Climate:

Hot and Dry conditions are present up to 4 months of the year. It is common to have 2 consecutive weeks of temperatures 90 degrees or higher and no rain for 60 days.

Other:

Limited access to water (partly due to lack of proper equipment)

IGNITION RISKS

Man:

- Railroads HIGH
- Fireworks HIGH
- Yard debris burning/ Lawn mowers HIGH
- Exhaust (ATV's, dirt motor bikes and vehicles) HIGH
- Chimney and Campfires HIGH
- Industrial MEDIUM
 - Heavy equipment/ Logging/ Slash Burning
- Power lines MEDIUM
- BBQ MEDIUM
- Smoking / Cigarettes MEDIUM

Natural

- Lightening MEDIUM

Values to be protected

- People, Pets & Livestock VERY HIGH
- Homes & Out Buildings VERY HIGH
- Transportation HIGH
 - Roads especially the Cook-Underwood Road (main escape route), railroads
- Infrastructure HIGH
 - Utilities: Natural gas / Water lines, Water tanks, Propane tanks, 2 sets of BPA lines, PUD power lines/PUD substation/Power poles, Williams pumping station, Communication Towers(2), Community Center, Post Office and Shaddox Springs (water supply, drinking)
- Fish Hatcheries (3) HIGH
 - Spring Creek National Fish Hatchery
 - Willard National Fish Hatchery
 - Little White Salmon National Fish Hatchery
- USGS Columbia River Research Laboratories (2) HIGH
- Wildlife, habitat, resource lands. HIGH

Map Workshop:

Considered:

Population, Development, Topography, Fire History and Fuel Loads

Established areas of concern:

Cook Underwood Road (Main Evacuation Route)

Bluffs above Hwy 14 and RR Tracks

Area N of RR tracks especially where the tracks are north of the highway.

Property owned by absentee homeowners

Gap Identification Workshop:

What limits our ability to fight wildfire within the planning area?

What do we need to survive a wildfire that we don't have? How will we get it?

Have we thought of everything?

Communications, safe place, special needs in the community, evacuation, planning and practice.

Fuel Mitigation Projects

- | | |
|--|--------|
| 1. Refine Fuel Estimates | HIGH |
| 2. Reduce fuels around homes | HIGH |
| 3. Fire Break on Cook / Underwood Road | HIGH |
| 4. Area north of Railroad where tracks are on the N side of 14 | HIGH |
| 5. Area north of Railroad where tracks are on the S side of 14 | MEDIUM |

Planning Projects

- | | |
|--|------|
| 1. Water for Northern Portion of the Planning Area | HIGH |
| 2. Shelter in Place:
Underwood Community Center, Mill A school, New Fire Hall County Sheds | HIGH |
| 3. Water for Northern Portion of the Planning Area | HIGH |
| 4. Building codes for new construction or remodeling (Any building permit) | HIGH |
| 5. Reverse 911- How to access - email/phone | HIGH |
| 6. Some kind of New Siren/Early Warning
A new way to better notify by severity degree and location. | HIGH |
| 7. NSA Planners/County Commissioners/Firewise meeting
for clarification, to reconcile scenic, and fire concerns | HIGH |

This occurred 7/2/2008

Education Projects:

- | | |
|---|------|
| 1. Defensible Space (around homes) | HIGH |
| 2. Smokey Bear Outreach to youth | HIGH |
| 3. Debris burning safe practices and rules | HIGH |
| 4. Residential ignition sources | HIGH |
| 5. Educate Youth in firewise principals | HIGH |
| 1. Educate absentee owners | HIGH |
| 2. Letters that state Hazard Level(s) of property (299) | HIGH |
| 3. Have property owners utilize free assessments | HIGH |
| 4. available from Underwood Conservation District | HIGH |
| 8. Fish Camp | HIGH |
| 9. Meaning of sirens mentioned under Planning | |

10. Demonstration Project: (Defensible Space) and other firewise concepts MEDIUM

Equipment/Training/Exercise Projects (FD #3)

- | | |
|--|--------|
| 1. Communications: RADIO INTEROPERABILITY
HIGH | VERY |
| Address the fact that different types of radios are used
in different parts of the county. | |
| 2. Put up a reader Board at new Fire Department in Cook/Underwood
Links to informational sights | HIGH |
| 3. Water for Northern Portion of the Planning Area | HIGH |
| 4. Create a Website For FD # 3
Information on what is going on, or for fire station | MEDIUM |

Review Planning Area Boundary

Include all of Cook Underwood Road in Underwood planning area boundary

Recommendations:

- Make sure to have an annual review of projects listed in plan. Have an annual meeting of the fire commissioners and Underwood community council.
- RADIO INTEROPERABILITY
 - Despite topography of the area
- Coordinate the Utilization of Use CERT Personnel in future events.
- Outreach and education for potential volunteer firefighters in order to increase the number of volunteer firefighters
- Increase retention of Firefighters

Action Plan (How are we going to make the Underwood CWPP sustainable?)

Resources

Title III – Firewise 2008 – through 12/2008
WA DNR
Underwood Conservation District
Learn form Trout Lake

Community involvement: Steering Committee

- meet to discuss any grant proposals, plan amendments, current status report and meet annually, at a minimum
- Make sure to have an annual review of projects listed in plan. Have an annual meeting of the fire commissioners and Underwood community council. Include Forest Service, DNR and other interested agencies.
- Engage a grant writer to assist in funding acquisition.
- Community Outreach through flyers or e-mailings and food By Sept 20 2008
- E-mail information about Underwood Conservation District's home "1144" assessment. By Sept 20 2008
- Complete work on demonstration site By Sept 20 2008.
- Get siren mentioned in planning and complete related education By Sept 20 2009

CWPP Draft

Outline of draft was reviewed

Gail will revise the outline to include changes to projects and fine-tuning done at meeting 3

CWPP will integrate FEMA requirements if possible

Gail will send draft of the completed CWPP to Steering Committee for review

A press release for public review and comment will run in the Skamania Pioneer and the Enterprise

Public comments received via surveys will be integrated into CWPP

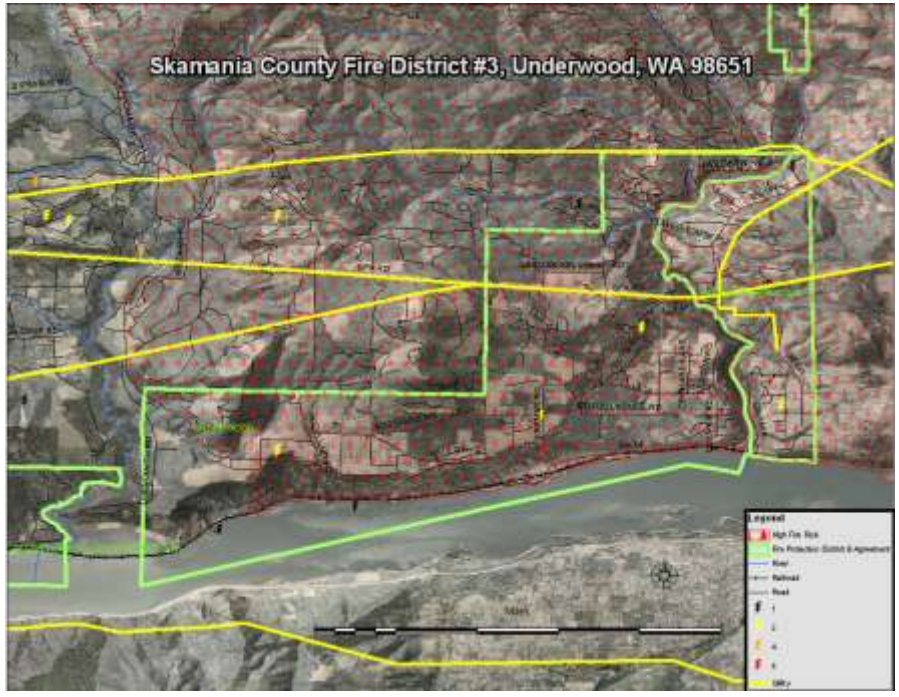
Following a final review by the Underwood CWPP Steering Committee the CWPP will be sent to DNR for approval by DNR.

I will keep Committee posted on any CWPP updates and progress throughout this year.

**My Thanks to all of you who are participating in this process!
Lets continue to work together to make Underwood a safer place to live**

Appendix B

The Underwood Community Wildfire Protection Plan (CWPP) Questionnaire



The purpose of this survey is to involve members of the Underwood Community in the Underwood CWPP. One objective of the survey is to determine what natural and man made features you believe are important to protect in the event of wildfire. The above map depicts the planning area. The Underwood CWPP Steering Committee will determine goals and objectives for our plan such as protecting life, property and natural resources. What we need from you are ideas about specific areas that you, as a member of the community, want to protect. For example: water sources, wilderness areas, recreation spots, unknown cemeteries, watersheds, hunting grounds, archaeological sites, roads, etc.

Please use the backside of this survey if necessary

- As a community member what areas within the Underwood planning area do you want protected in the event of a wildfire?
- What projects do you think could improve the community's fire awareness and responsiveness?
- Do you support the idea of seeking grant funding to upgrade our local, state and federal fire fighting organization's equipment?
- Would you be willing to volunteer or work on your property to meet a matching requirement for grant funding?
- Any other suggestions, concerns, comments, or questions regarding the Underwood CWPP.

To stay connected to the Underwood CWPP please fill out the following confidential information.

Name(s) _____
Address _____
Phone _____
Email _____

**Please mail your completed survey to: Firewise, PO Box 790, Stevenson, WA 98648
OR email Skamaniawfc@saw.net OR call (509) 427-4130**

Appendix C – NFPA-299 Hazard Rating Form

Wildfire Hazard Severity Form Checklist NFPA 299

This form may be used for individual houses or larger areas like developments or other types of applications.

Name of area or address receiving assessment

A. Subdivision Design	Points	House or area	Notes
1. Ingress and egress			
Two or more roads in/out	0		
One road in/out	7		
2. Road width			
Greater than 24 feet	0		
Between 20 and 24 feet	2		
Less than 20 feet wide	4		
3. All-season road condition			
Surfaced, grade < 5%	0		
Surfaced, grade > 5%	2		
Non-surfaced, grade < 5%	2		
Non-surfaced, grade > 5%	5		
Other than all-season	7		
4. Fire service access			
< = 300ft, with turnaround	0		
> = 300ft, with turnaround	2		
< = 300ft, no turnaround	4		
> = 300ft, no turnaround	5		
5. Street signs			
Present (4 in. in size and reflective)	0		
Not present	5		
B. Vegetation (Fuel Models)			
1. Predominant vegetation			
Light (grasses, forbs)	5		
Medium (light brush and small trees)	10		
Heavy (dense brush, timber, and hardwoods)	20		
Slash (timber harvest residue)	25		
2. Defensible space			
More than 100 ft of treatment from buildings	1		
More than 71 -100 ft of treatment from buildings	3		
30-70 ft of treatment from buildings	10		
Less than 30 feet	25		
C. Topography			
1. Slope			
Less than 9%	1		
Between 10-20%	4		
Between 21-30%	7		
Between 31-40%	8		
Greater than 41%	10		

Totals for this page

D. Additional Rating Factors	Points	House or area	Notes
1. Topography that adversely affects wildland fire behavior	0 - 5		
2. Area with history of higher fire occurrence	0 - 5		
3. Areas of unusually severe fire weather and winds	0 - 5		
4. Separation of adjacent structures	0 - 5		
E. Roofing Materials			
1. Construction material			
Class A roof (metal, tile)	0		
Class B roof (composite)	3		
Class C roof (wood shingle)	15		
Non-rated	25		
F. Existing Building Construction			
1. Materials (predominant)			
Noncombustible siding/ deck	0		
Noncombustible siding/ wood deck	5		
Combustible siding and deck	10		
2. Setback from slopes > 30%			
More than 30 feet to slope	1		
Less than 30 feet to slope	5		
Not applicable	0		
G. Available Fire Protection			
1. Water source availability (on site)			
500 gpm pressurized hydrants < 1000ft apart	0		
250 gpm pressurized hydrants < 1000ft apart	1		
More than 250 gpm non-pressurized, 2 hours	3		
Less than 250 gpm non-pressurized, 2 hours	5		
No hydrants available	10		
2. Organized response resources			
Station within 5 miles of structure	1		
Station greater than 5 miles	3		
3. Fixed fire protection			
Sprinkler system (NFPA 13, 13R, 13D)	0		
None	5		
H. Utilities (Gas and Electric			
1. Placement			
All underground utilities	0		
One underground, one aboveground	3		
All aboveground	5		
Totals for this page			
I. Totals for Risk Assessments			
Totals for page 1 and 2			
1. Low Hazard:	< 39 points		
2. Moderate Hazard:	40-69 points		
3. High Hazard:	70-112 points		
4. Extreme Hazard:	113 > points		
Census Data			
Track number			
Block group number			
Block number (s)			

Appendix D: Wildfire Protection Capabilities Underwood CWPP September 2008

Inventory Type	Current Status FS CGSA	Current Status FS GPNF	Current Status WADNR	Current Status Skamania County FD #3
Fire Station(s)	Herman Creek Work Center, Cascade Locks and Hood River	Mt. Adams RD USFS Trout Lake, WA Mt St Helens RD USFS Amboy , WA		1 rented 2 vehicle garage Not adequate New station under construction
Vehicles (Command, rigs, pumpers, tenders, brush rigs, etc.)	2 Command vehicles 1 Fire Prevention Unit 3 FS type 6 engines 2 Cooperative engines with WADNR 1 Cooperative Engine with ODF	DUTY STA. Trout Lake, WA 2 Type 6X Engines/ w Foam 300 gal 1 Type 6X Prevention Module 320 gal 1 Type 7X Prevention Module 80 gal 1 Command Vehicle Pick Up with Lights and Siren 1 6-Pak Crew Carrier - Pick Up 1 Pick Up for general use At Amboy, WA The USFS has: 1 Type 6X Engine /w Foam 300 gal 1 Type 6 Prevention Module 200 gal 2 Type 7 Prevention Modules 50 & 100 Gal	2 Type 6 Wildfire Engines	Structural Engines 1 type 1 1 type 2 (poor) Tenders 1 type 2 1 type 3 Wildland Engines 1 type 3 (old) 1 type 5 1 type 7
Staffing	7 day a week staffing from 7/1-10/1	Staffed 7 days a week From approx. July 4 th Through Fire Season Oct 15th	3 FF/Engine TOTAL -6	17 volunteers
Uniforms Clothing PPE		Normal PPE		17 sets wildland PPE 9 compliant structural PPE SCBAs (obsolete)
Training				90% wildland trained 50% structural trained
Radios	Bendix King	All Firefighters carry Bendix King Radios	2-portable Kings/engine 1mobile in each engine	All vehicles have UHF & VHF 8 portable VHF 6 portable UHF
Pumps and hose lay	Fire Cache in Cascade Locks, and a type 3 fire trailer.	Dist Cache	1500 feet 1" hose Pump with foam Capabilities Mark III pump with 1000 gal portatank	All vehicles have compliant pumps and tanks 600' 4" hose
Wildfire response capability and sustainability	Can bring in resources from the GPNF, Mt Hood NF, or other federal units for ongoing fires or when there is a increased fire risk.	Extended Attack : As requested by the Dispatch centers, resource availability and fire Type (.1-5)	6 - 10 person type 2 hand crews- 2hour response	(Initial attack only) 3 wildland engines 2 tenders
Other		Gifford Pinchot Mobilization Plan Northwest Mobilization Guide and Directory Northwest Interagency Coordination Center	Additional overhead including type 3 team	

Appendix E: Current Inventory and Future Needs Wildfire Response Capabilities

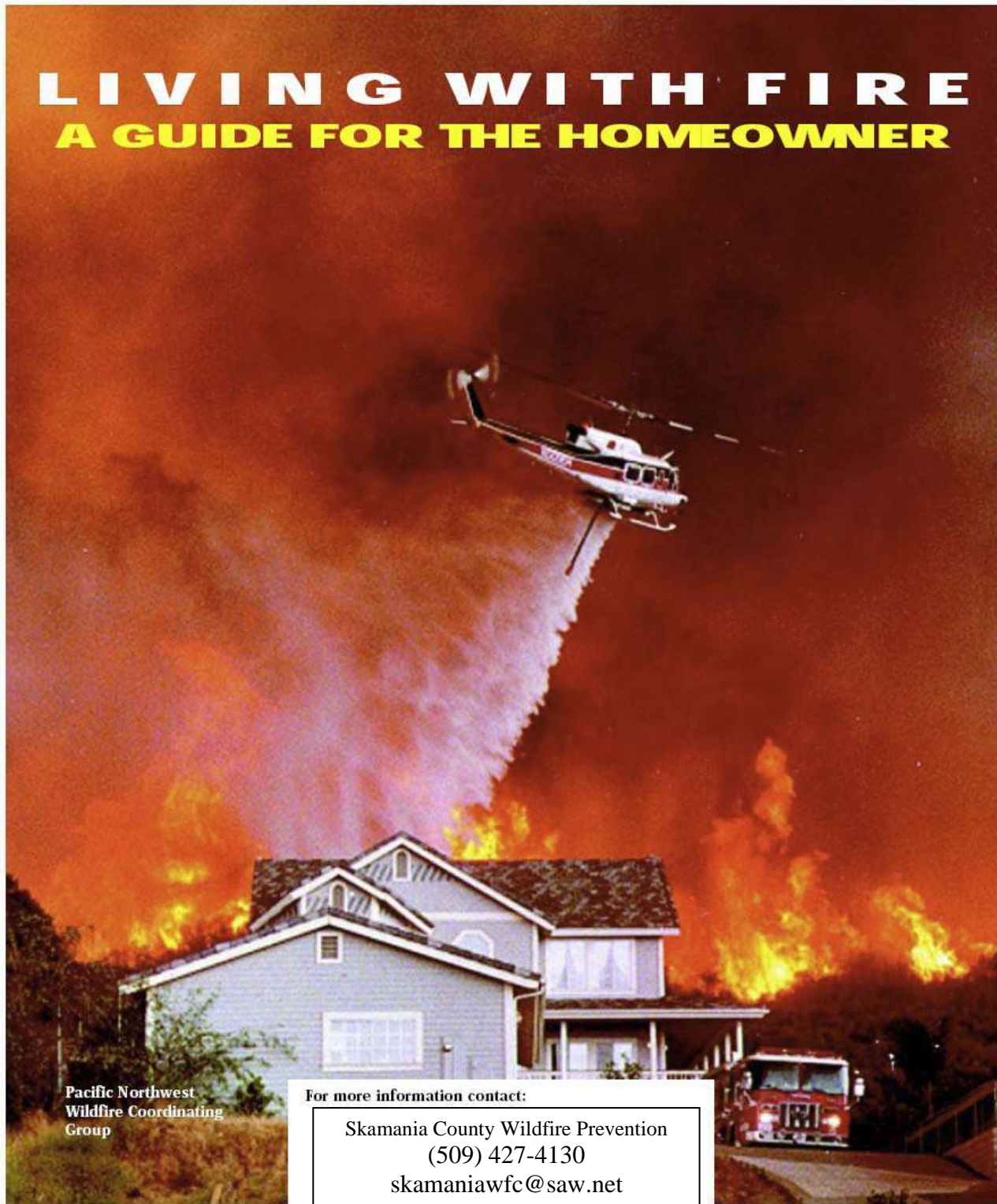
August 2008

Fire Organization: Skamania County Fire District # 3, Underwood

Responder(s) name: Jim Boaz

Inventory Type (Use 'other' section if needed)	Current Status (Include type and quantity)	Inventory Needed (Include type and quantity)
Fire Station(s)	1 rented 2 vehicle garage Not adequate	new larger station needed 5 bay station under construction
Vehicles (Command, rigs, pumpers, tenders, brush rigs, etc.)	Structural engines 1 type 1 1 type 2 (poor) Tenders 1 type 2 1 type 3 Wildland engines 1 type 3 (old) 1 type 5 1 type 7	replacement structural engine replacement type 3
Staffing	17 volunteers	additional volunteers
Uniforms/Clothing/PPE	17 sets wildland PPE 9 compliant structural PPE SCBAs (obsolete)	8 replacement structural PPE 12 SCBA units w/ spare bottles
Training	90% wildland trained 50% structural trained	wildland training materials FF I&II training materials
Radios	all vehicles have UHF & VHF 8 portable VHF 6 portable UHF	9 VHF portables 11 UHF portables
Pumps and hose lay	all vehicles have compliant pumps and tanks 600' 4" hose	2 Mark V pumps 1600' 2 ½" hose 1600' 2 ½" hose 600' 4" hose assorted fittings & nozzles
Wildfire response capability and sustainability	(Initial attack only) 3 wildland engines 2 tenders	additional volunteers
Other		
Other		
Other		

Appendix F – Living With Fire, A Guide for the Homeowner



Pacific Northwest
Wildfire Coordinating
Group

For more information contact:

Skamania County Wildfire Prevention
(509) 427-4130
skamaniawfc@saw.net

Available online at: <http://extension.oregonstate.edu/emergency/livingwithfirepnw.pdf>

Appendix G: FEMA Mitigation Compliance

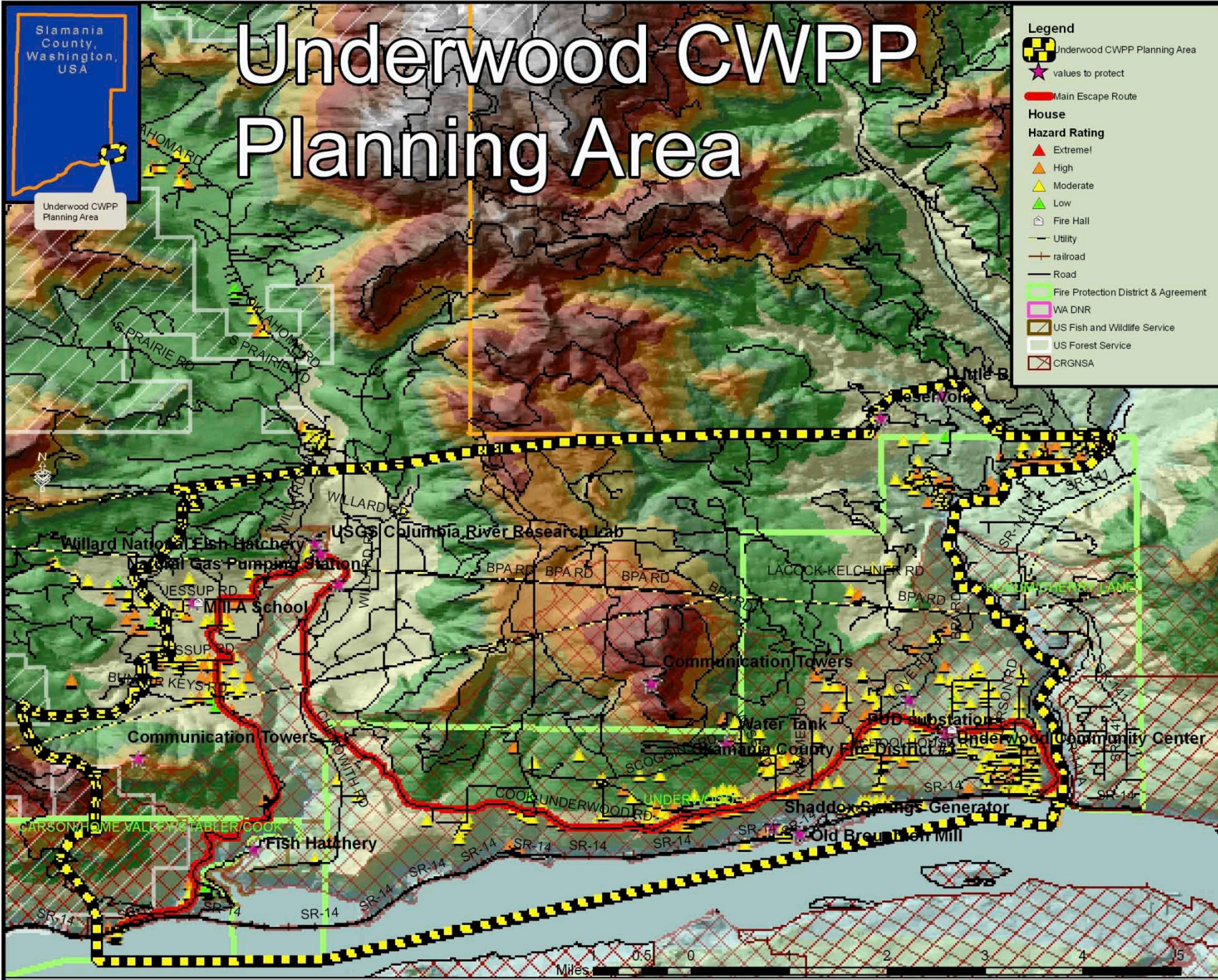
Underwood CWPP

FEMA Pre-Disaster Mitigation Plan Requirements

PDM Requirements	check list	How Underwood plans to accomplish
Public Comment Opportunity		The Underwood CWPP was posted on the Skamania County Web site from 9/12/2008 – 10/17/2008. An announcement requesting public comment was printed in the 9/17/2008 issue of the Skamania County Pioneer.
Neighboring Communities, local and regional agencies involved in hazard mitigation activities		Steering Committee includes representatives from the community (stakeholders, business owners, homeowners), Fire District 3, Skamania County, Washington DNR and Forest Service, see Underwood CWPP, p. 9.
Review and incorporate into other plans if applicable		The Underwood CWPP will serve as a sub chapter to the Klickitat Skamania County CWPP and the Skamania County Mitigation Plan.
Documentation of planning process including how prepared, who was involved and particularly public		The planning process is included within the actual document as 7 planning steps (pages 9-22). Actual public involvement is documented in the CWPP. Copies of sign in sheets (cleansed of sensitive information) are available on request from skamaniawfc@saw.net or (509)427-4130
Local risk assessment that describes the type, location and extent of all natural hazards		A Risk assessment was performed in two phases. Phase I included documenting Risk of ignition, hazards, values protected and wildfire response capabilities specific to the planning area. Phase II included documenting “gaps” in the system and “high risk areas”
Information on previous occurrences of hazardous events and the probability of future hazardous events		This was completed by viewing fire history and current hazards that could potentially cause a catastrophic wildfire. “High risk areas” were designated and encompassed the major communities that fell within the planning area
Summary of each hazard from the risk assessment and a description of vulnerability in terms of: type and number of structures and critical infrastructure, potential dollar loss and land uses and development trends		Structures based on NFPA299 GIS data ranking houses by risk; GIS identification of clusters of houses and important infrastructure in GWR community, dollar loss calculated by multiplying average cost of home in Skamania County to be calculated in future by using HAZUS and the GIS data.

<p>Multi-jurisdictional plans will include details for each jurisdiction's risks where they vary from the entire planning area</p>		<p>Wildfire response governed by Federal and Washington state policy with local MOU's coordinating roles of local, state and federal agencies</p>
<p>Mitigation strategy that provides the jurisdiction's blueprint for reducing potential losses from the risk assessment and includes: goals to reduce vulnerability to hazards, analyzing mitigation actions/projects considered to reduce the effects of the hazards with an emphasis on new and existing buildings and infrastructure</p>		<p>Phase II of the planning process analyzed hazards and proposed mitigation actions in 4 categories. (See Underwood CWPP pp 16-22.)</p>
<p>Description of how projects will be prioritized implemented and administered by the local jurisdiction. Will include emphasis on the extent to which benefits are maximized</p>		<p>This plan provides a first approximation of project importance as determined by the steering committee and approved by the Chief. At the Chief's discretion, projects and their implementation will be reviewed, revised and re-ranked annually as per the Underwood CWPP Assessment Strategy. (Underwood CWPP p. 21)</p>
<p>Multi-jurisdictional plans must include identifiable action items specific to the jurisdiction requesting FEMA approval</p>		<p>An action plan was discussed and documented. Future development is needed to suit FEMA's specific requirements. (CWPP p. 22)</p>
<p>Description of plan maintenance including: methods, schedule of monitoring, evaluating and updating the mitigation plan within a 5 year cycle</p>		<p>At the Chief's discretion, projects and their implementation will be reviewed, revised and re-ranked annually as per the Underwood CWPP Assessment Strategy. (Underwood CWPP p. 21)</p>
<p>Description of the process by which the local government will incorporate the requirements of mitigation plan into other plans</p>		<p>This plan will serve as a chapter of the Skamania County FEMA Emergency management plan and Mitigation plan.</p>
<p>Discussion on how the community will continue public participation in the plan maintenance process</p>		<p>At the Chief's discretion, projects and their implementation will be reviewed, revised and re-ranked annually by the core group and steering committee.</p>
<p>Documentation that the plan has been formally been adopted by each jurisdiction requesting approval of the plan</p>		<p>The plan is to be signed by the Fire District #3 Fire Chief and the Skamania County board of Commissioners.</p>

Underwood CWPP Planning Area



Legend

- Underwood CWPP Planning Area
- values to protect
- Main Escape Route

House

Hazard Rating

- Extreme
- High
- Moderate
- Low

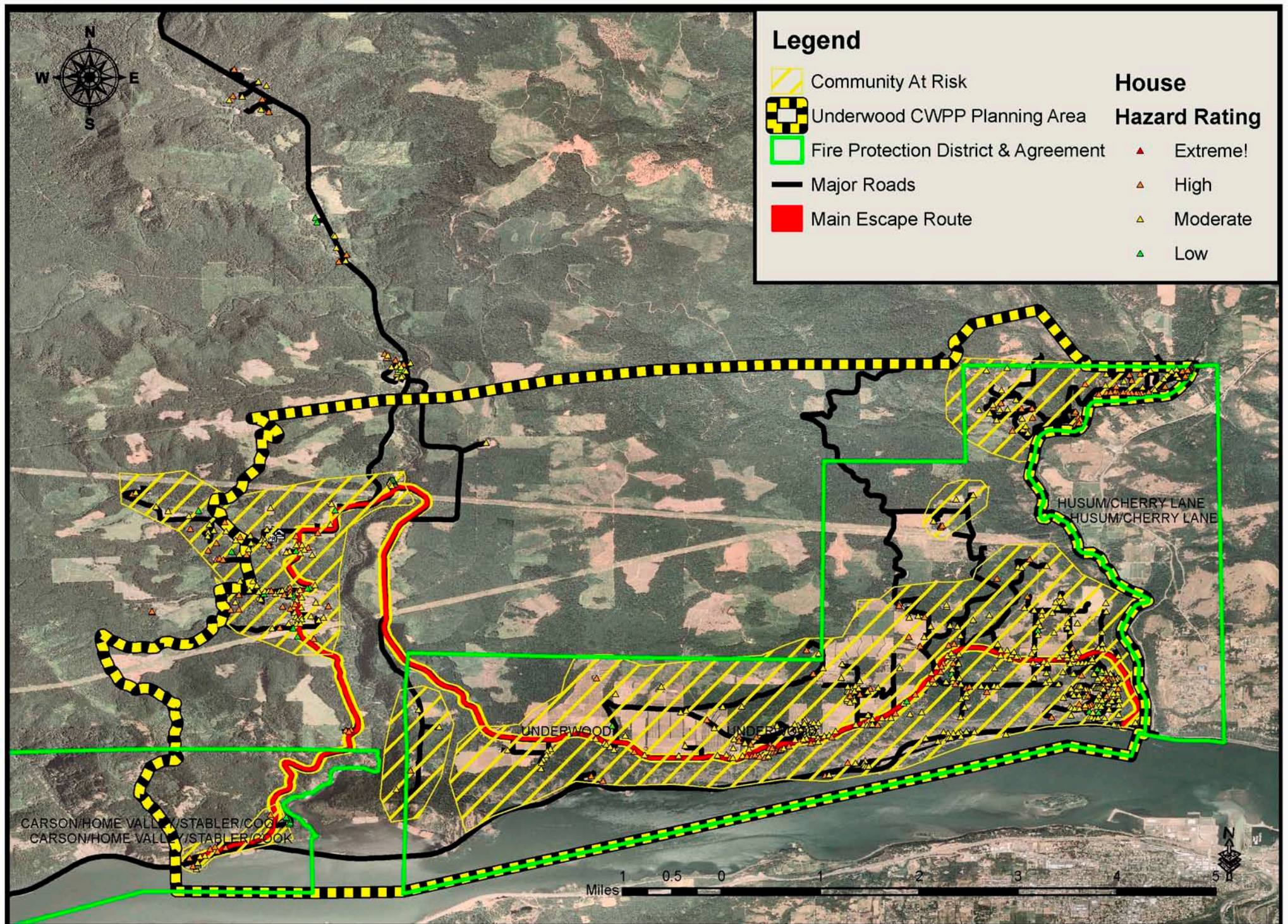
- Fire Hall
- Utility
- railroad
- Road

- Fire Protection District & Agreement
- WA DNR
- US Fish and Wildlife Service
- US Forest Service
- CRGNSA

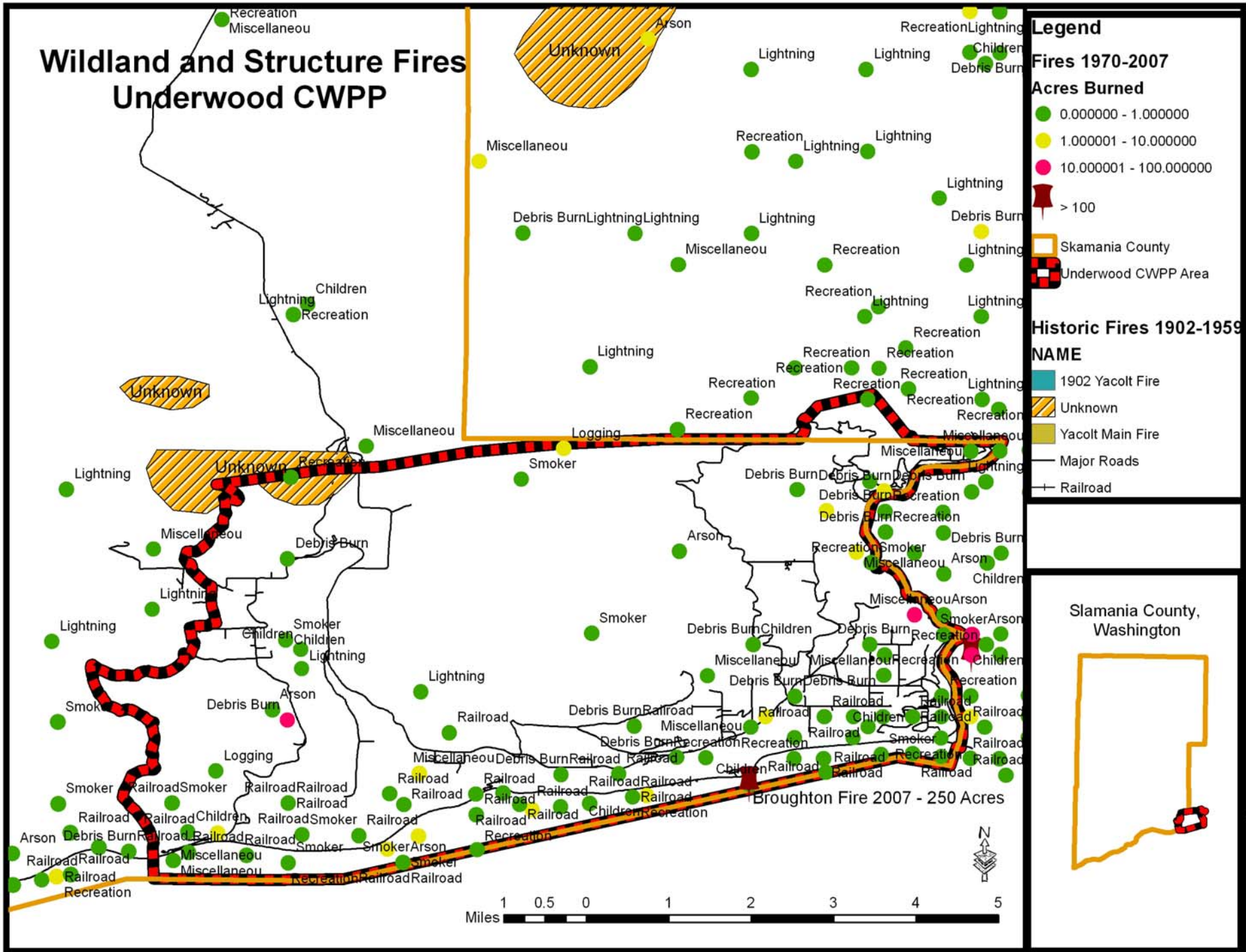
H1- Underwood CWPP Base Map



Appendix H2 - Underwood CWPP Communities At Risk (CAR)

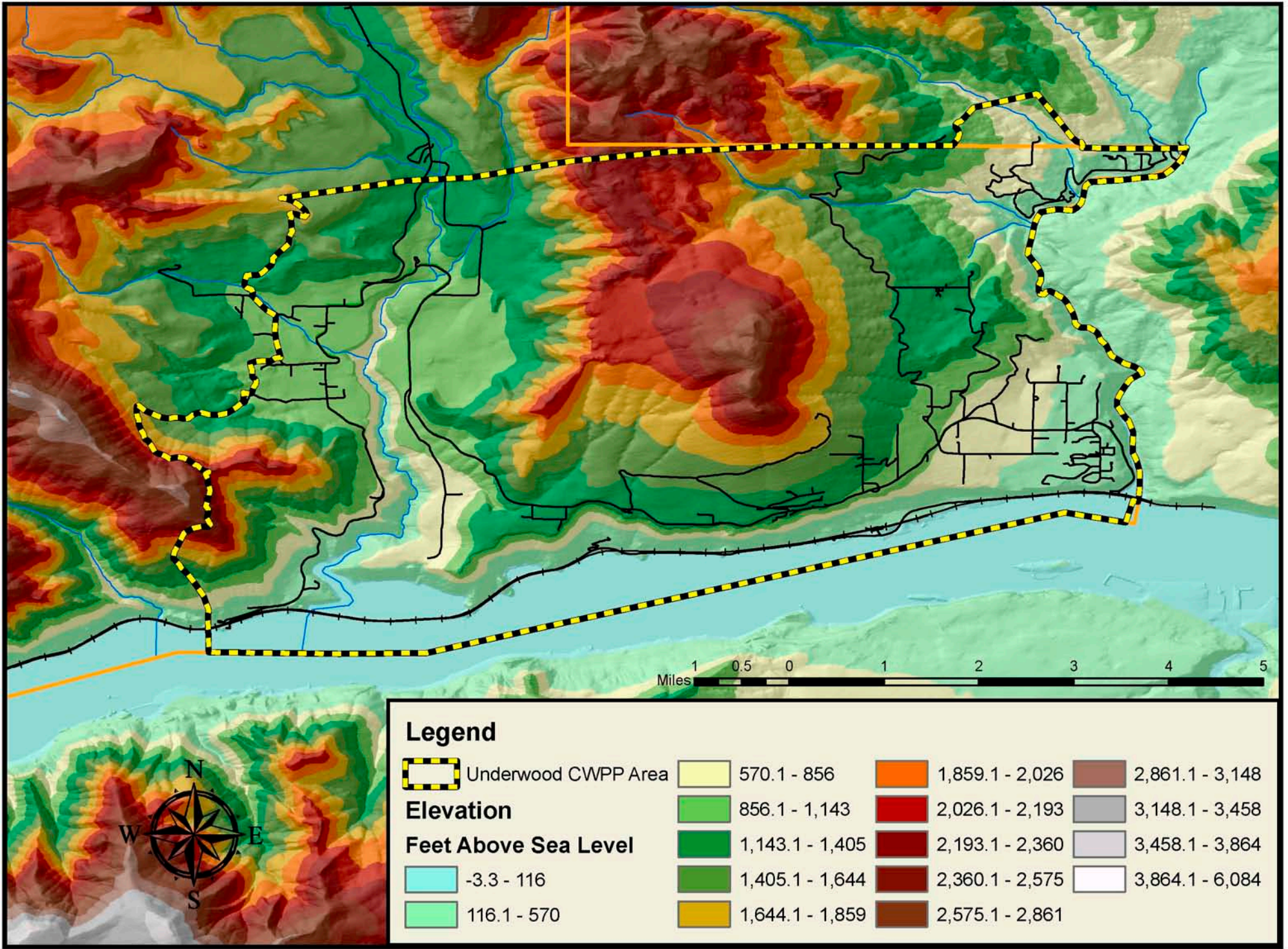


Wildland and Structure Fires Underwood CWPP



H3 - Underwood CWPP Fire History

Appendix H4 - Underwood CWPP Area Topography



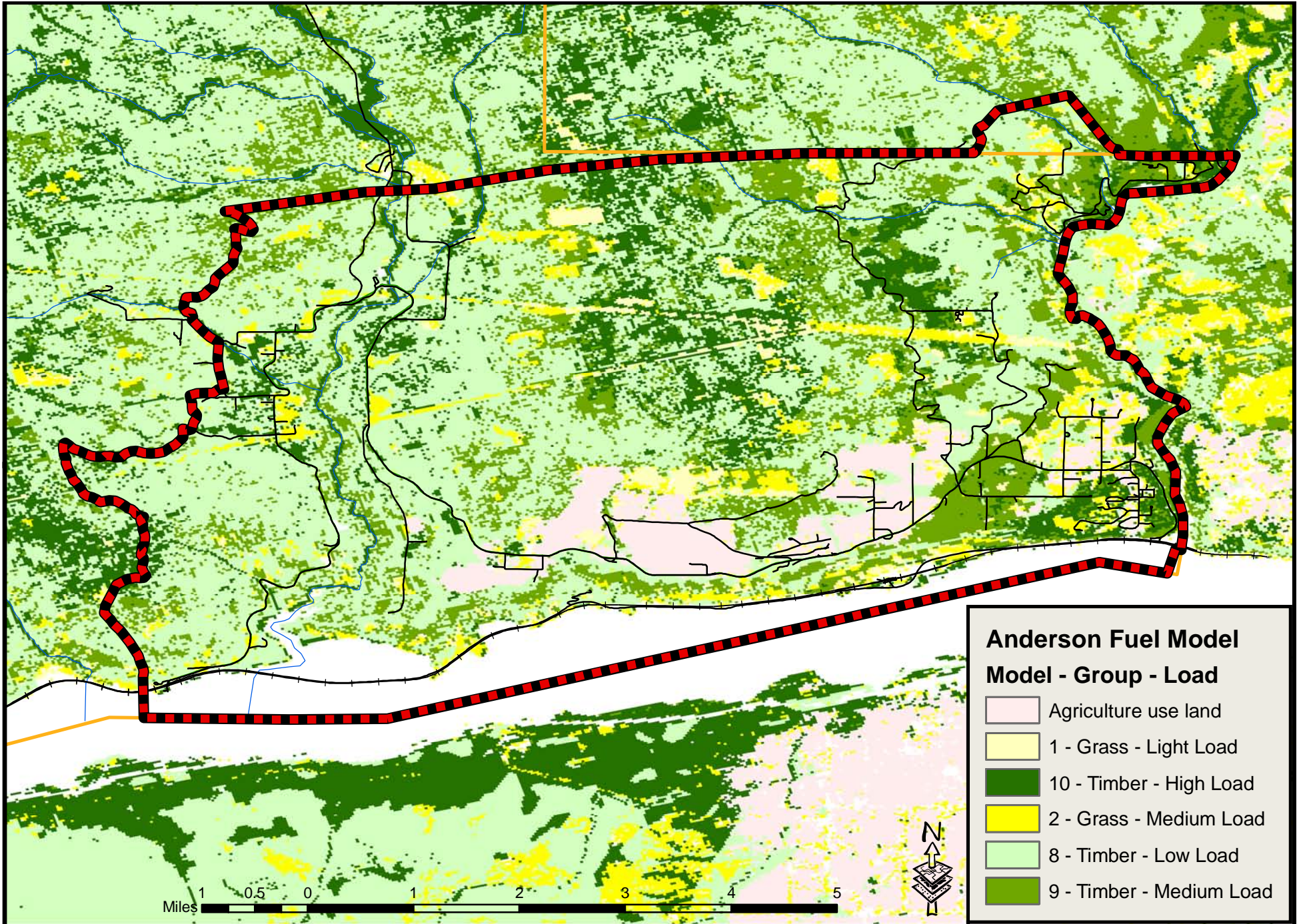
Legend

	Underwood CWPP Area		570.1 - 856		1,859.1 - 2,026		2,861.1 - 3,148
Elevation			856.1 - 1,143		2,026.1 - 2,193		3,148.1 - 3,458
Feet Above Sea Level			1,143.1 - 1,405		2,193.1 - 2,360		3,458.1 - 3,864
	-3.3 - 116		1,405.1 - 1,644		2,360.1 - 2,575		3,864.1 - 6,084
	116.1 - 570		1,644.1 - 1,859		2,575.1 - 2,861		

Appendix H5 - Location of CWPP



Appendix H-6 Underwood CWPP Anderson Fuel Models



Appendix H-7 Underwood CWPP Ortho Photo

