PONDEROSA PARK
COMMUNITY WILDFIRE PROTECTION PLAN
April 2014

Prepared By:
Ponderosa Park Owners Association's
Firewise Committee
With assistance from:
Washington Department of Natural Resources, Rural 7 Fire and Rescue,
United State Forest Service and landowners within the planning area

"Striving to become a more complete Fire Adaptive Community"

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Approved By:

Aaron Everett- Washington State Forester

Klickitat County Commissioners

Tony Browning- Chief: Rural 7 Fire and Rescue

Ponderosa Park Firewise Committee

Landowner

Landowner

Landowner

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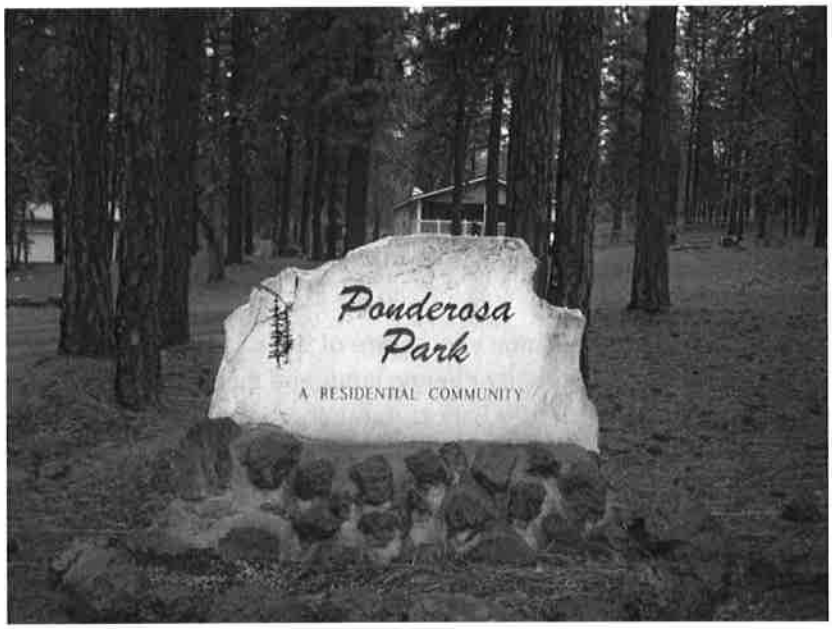
1.0 BACKGROUND INFORMATION

1.1 INTRODUCTION

Historically, Ponderosa Park was a one thousand eighty-nine (1,089) acre cattle ranch. In 1977 the property was purchased and subdivided into over 200 parcels approximately 5 acres in size. The "Park" is overseen by the Ponderosa Park Owners Association (PPOA) which is a 5 member Board of Directors who are elected for a 2 year term. The Board of Directors is responsible for establishing committees, and as a result of a resident petition, formed a Firewise Committee in October of 2007 to work on the creation of a neighborhood Community Wildfire Protection Plan (CWPP). The Firewise Committee is composed of volunteers, one of whom is a representative of the Board of Directors.



The legal description of the "Park" is portions of Sections 29 through 33, Township 5 North, Range 16 East W.M

Recent wildfires in the area have prompted PPOA members, Department of Natural Resources (DNR), Central Klickitat Conservation District (CKCD) and Klickitat County Fire District #7 to join together to plan and implement actions to protect life, property and reduce the risk of future wildfire related disasters.

1.2 VISION AND GOALS

The PPOA's vision and goals are to work in concert with the Vision and Goals approved in the Klickitat County Countywide CWPP, adopted in 2006, to provide an overall vision of fuels related risks and mitigation planning for the entire county. While this plan can be seen as an overall umbrella approach to the fuels and associated fire risks, it is not specific to that of the Ponderosa Park vicinity and therefore, the Firewise Committee has developed a Vision and Goals statement which is specific to the Ponderosa Park area.

"Through the production of Community Wildfire Protection Plan (CWPP) residents of Ponderosa Park aim to protect their community from the effects of wildfire through strategic planning, education, and mitigating actions. The primary goal of the CWPP is to identify and implement projects that will protect people within the CWPP area, including firefighters and emergency response personnel, as well as

residents, from injury and loss of life. The secondary goal is to minimize or eliminate danger or loss of property and essential infrastructure due to wildfire."

1.2a Goal of a Community Wildfire Protection Plan

The goal of a CWPP is to enable local communities to improve their wildfire mitigation capacity while working with government agencies to identify high fire-risk areas and prioritize areas for mitigation, fire suppression, and emergency preparedness. The minimum requirements for a CWPP, as stated in the HFRA, are as follows:

1. Collaboration: Local and state government representatives, in consultation with federal agencies or other interested groups, must collaboratively develop a CWPP (Society of American Foresters [SAF] 2004).

2. Prioritized Fuel Reduction: A CWPP must identify and prioritize areas for hazardous fuels reduction and treatments, and, further, it must recommend the types and methods of treatment that will protect one or more at-risk communities and their essential infrastructures (SAF 2004).

3. Treatments of Structural Ignitability: A CWPP must recommend measures that communities and homeowners can take to reduce the ignitability of structures throughout the area addressed by the plan. (SAF 2004).

1.3 COMMUNITY AWARENESS

The community of Ponderosa Park has become very aware of the need to develop a CWPP. Ponderosa Park landowners have provided the community energy, input and guidance essential to the creation of this document. It is the hope of the Ponderosa Park community that residents will start (or continue) efforts to make their properties "Firewise" and implement defensible spaces around their homes. New residents of the planning area will be made aware of this plan and information packets will be developed and provided to new residents to increase their awareness of the risk of wildfire within the area. This information will include types of non-combustible construction material (roofing, siding and decking, fire resistant plants/shrubs, etc.)

1.4 VALUES

Landowners of Ponderosa Park value their homes, privacy, and the beauty of the surrounding forests and they want to improve the safety and sustainability of their community over time. Residency within the Park is a mix of permanent and seasonal residents all seeking the values that they have found being part of the Park. Over time they have hosted annual meetings, and created a community website that is consistently maintained and updated with new information. Over the years they have conducted extensive work parties to implement fuels reduction efforts. Community members also want to play an active role through collaborative discussion in land management decisions affecting their neighboring large landowners such as, Bonneville Power Administration and Western Pacific Timber.
Some of the values expressed by community members are:

- Landowner Safety
- Association Covenants and policies
- Individual homeowner's privacy
- Sustaining environmental values
- Reduction in forest pest and disease infestations
- Reductions in overall fire risks to the Park

1.5 Five Objectives of the Ponderosa Park CWPP

1.5.1 Develop a fluid Community Wildfire Protection Plan

- Show regional fire history with influencing weather and topographical features.
- Define planning area and entities involved.
- Summarize current prevention and fuel management strategies, educational outreach efforts, and develop a mitigation plan.
- Convey this information to community and agencies.
- Provide for reduce risk of fire and community safety.

1.5.2. Map locations of local infrastructure

- Conduct surveys utilizing GPS/GIS technology.
- Identify on maps things such as homes, evacuation routes, safety zones, locations of livestock, access roads, water sources, and major power and communication systems.
- Identify areas of community importance and value.
- Provide maps to firefighters and emergency response agencies.

1.5.3. Develop a coordinated system for emergency communications

- Research, define, and convey a coordinated system of emergency communications for valley residents, Klickitat County Fire District #3 Volunteer Fire Department, neighboring fire departments, and cooperating fire departments.
- Develop and annually update a database that lists by organization and location: firefighting equipment and contact information of fire managers.
- Research the potential of placing new cell towers up in areas with no coverage.
- Research the potential of a reverse 911 system.
- Develop a community evacuation strategy plan.

1.5.4. Educate residents on how to protect their homes and property from wildfire

- Provide information for community residents to make structures and property safer from wildfire.
- Teach "Firewise" concepts to community and school.
- Educate community residents on ways to reduce structural ignitability.
- Conduct community outreach activities.

1.5.5. Develop and implement strategies for fuel reduction and fire suppression

- Identify critical access roads that can't handle fire department equipment.
- Develop a long- term fuel reduction plan and maintenance schedule.
- Recruit groups to remove hazardous fuels.
- Assist seniors and disabled individuals to create defensible space around homes.
- Encourage local landowners to remove hazardous fuels on their property.
- Research incentive programs for landowners to control hazardous fuels on their property.

2.0 PLANNING AREA

2.1 General Description of the area

Ponderosa Park is a 1000 acre residential development with homes surrounded by dense forest and with some open meadows of grass and brush. The community of Goldendale is the closest town to the planning area and is approximately 5 miles southwest of the planning area boundary. Ponderosa Park is located in the south central portion of Klickitat County, Washington and is situated on the southern slopes of the Simcoe Mountains, southeast of Mount Adams and north of the Columbia River National Scenic Area. The entire planning area is considered to be wildland urban interface (WUI) and the Firewise Committee has begun assessing and mapping the community for hazardous fuel reduction projects with the assistance of KCCD and DNR.

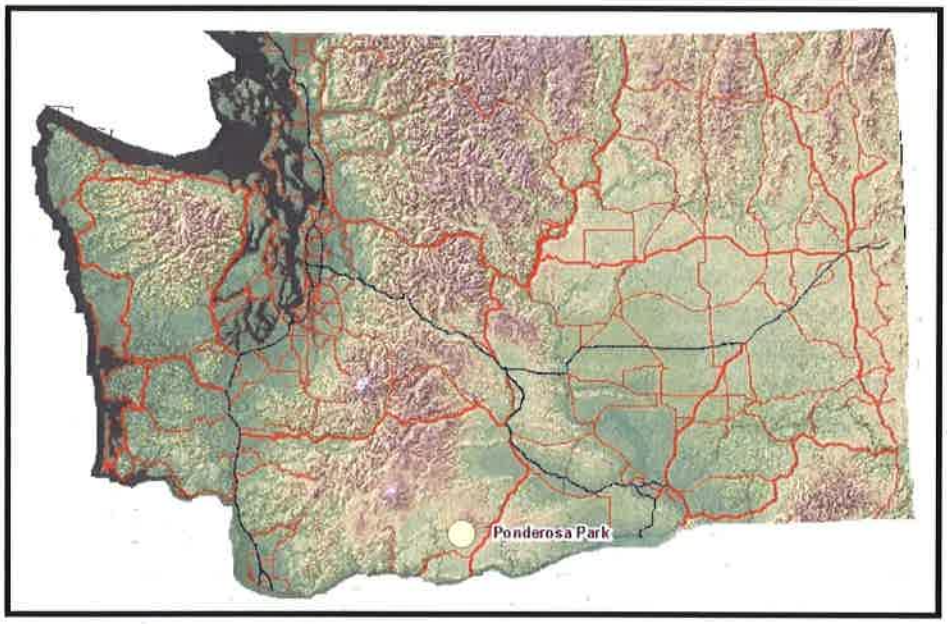


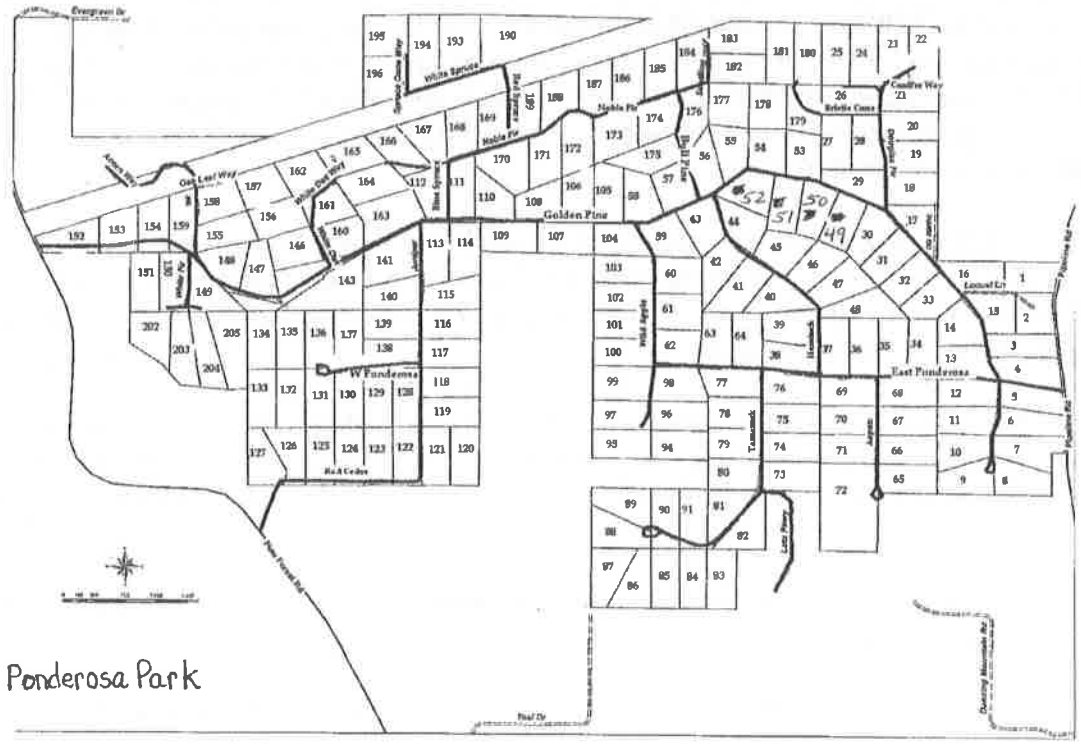
Plate 2.1 Vicinity Map of Ponderosa Park- Park is located north of Goldendale, WA

Currently in the Klickitat Countywide CWPP the community falls within the NW Goldendale community area as designated on the countywide mapping on Map 9 of the countywide plan. Neighborhood planning is to work in collaboration with plans done at the community and county levels.

2.2 Community planning boundaries

Ponderosa Park is bounded on the east by the Pipeline Road, and the west by the Pine Forest Road. The northern border is the right-of-way for the Bonneville Power Authority (BPA) utility lines, and the southern boundary is largely comprised of properties owned by private landowners. There are approximately 10 miles of gravel roads in Ponderosa Park. There is one main through road, Golden Pine, which runs between Pipeline Road and Pine Forest Road. It is gated on the west end at Pine Forest so that traffic does not normally go through, but keys have been provided to Rural #7 Fire Department fire trucks for use in case of fire. The gate is open during the summer when wildfire danger is high. Access to Pine Forest Road is also available from Juniper and Red Cedar Roads.

Plate 2.2 Ponderosa Park Parcels- Roads and parcel numbers associated with the Park



2.2 Other planning area information

Ponderosa Park has one Class A water system that provides water for the community, and is managed by the Klickitat County Public Utility District. PUD has completed an expansion of the water system to provide water hook ups to landowners on the west side of the Park. The lack of water has limited the number of homes on the west end. It is projected more homes will be built and more people will live there on a permanent basis now that this expansion is complete. Due to the lack of year round residential use on the west end of the Park, the area is more forested with moderate to heavy fuel loading. This is mostly made up of ponderosa pine stands with moderate numbers of Oregon white oak scattered in the overall stand mix with some areas containing overgrown undergrowth of brush species. There are some stands of Douglas fir scattered throughout Ponderosa Park. Power service is distributed via underground lines. Some homes are powered by solar electric systems.

The vast majority of the home construction is typically newer (10-15 years old or newer). It must be noted that in many ways home ownership was heavily attributed to the aesthetics of the area and the actual home sites chosen which at the time the majority of them did have a high level of fuel loading and multilayered canopy composition. *Home sites are being assessed to determine if there is adequate defensible space using the Risk Assessment Form 299/1144. (See Plate 2.3 in Attachment A)*

3.0 Planning Process

3.1 Background

With both the enactment of the National Fire Plan (NFP)(2000) and more importantly the Healthy Forest Restoration Act (HFRA)(2003) created opportunities for counties and communities to participate in community based fuels reduction review and fuel reduction oriented forest planning, and vegetation treatment projects' along with other activities that a community might feel they need to complete to make their communities more aware of the danger so that there was a greater opportunity for a wider participation at the grass roots level.

This legislation also included the first meaningful statutory incentives for the United States Forest Service (USFS), the Bureau of Land Management (BLM) and the Bureau of Indian Affairs (BIA) to give consideration to the priorities of local communities as they develop and implement forest management and hazardous fuels reduction projects.

One of the most important concepts to come out of this process is that of community based discussions which are not driven by agencies telling the local community what they should do. The agencies act in an advisory role to the community, local government, fire districts to develop the plan at the grass roots level.

What this really means is that collaboration with all partners in this process is exceedingly important to the success of the process.

The SAF, in collaboration with the National Association of Counties, the National Association of State Foresters, the Western Governors' Association, and the Communities Committee developed a guide titled *"Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities"* to provide communities with a clear process to use in developing a CWPP. This guide can be accessed at http://www.safnet.org/policyandpress/ cwpphandbook.pdf; outlines eight steps for developing a CWPP and has been followed in preparing this Ponderosa Park CWPP. The eight recommended steps are as follows:

Step One: Convene Decision Makers. Form a Core Team made up of representatives from the appropriate local governments, local fire authorities, and state agencies responsible for forest management.

Step Two: Involve Federal Agencies. Identify and engage local representatives of the USFS and the BLM. Contact and involve other land management agencies as appropriate.

Step Three: Engage Interested Parties. Contact and encourage active involvement in plan development from a broad range of interested organizations and stakeholders.

Step Four: Establish a Community Base Map. Work with partners to establish a baseline map (or maps) defining the community's WUI and showing inhabited areas at risk, forested areas that contain critical human infrastructure, and forest areas at risk for large-scale fire disturbance (see Appendix A for the County's base maps).

Step Five: Develop a Community Risk Assessment. Work with partners to develop a community risk assessment that considers fuel hazards; risk of wildfire occurrence; homes, businesses, and essential infrastructure at risk; other CVARs; and local preparedness capability. Rate the level of risk for each factor and incorporate this information into the base map(s) as appropriate.

Step Six: Establish Community Priorities and Recommendations. Use the base map(s) and community risk assessment to facilitate a collaborative community discussion that leads to the identification of local priorities for fuel treatment, structural ignitability reduction, and other issues of interest, such as improving fire response capability. Clearly indicate whether priority projects are directly related to protection of communities and essential infrastructure or related to reducing wildfire risks to other community values.

Step Seven: Develop an Action Plan and Assessment Strategy. Consider developing a detailed implementation strategy to accompany the CWPP, as well as a monitoring plan that will ensure its long-term success.

Step Eight: Finalize Community Wildfire Protection Plan. Finalize the CWPP and communicate the results to community and key partners.

In order for communities to take full advantage of this opportunity, a Community Wildfire Protection Plan, (CWPP) must first be prepared. This happens at two levels, one which is at the countywide level. This plan has a number of effects associated with it. For one, the county is the lowest level of government that FEMA feels comfortable working though for emergency and other matters. This does not mean that the federal government does not work with cities, towns, and communities, but does allow for a standard base relationship from which to administer actions. Countywide planning can be viewed as an umbrella to the entire county discussing overall demographic information, fire history, community risk and overall basic strategies to be employed to reduce fire hazard risk at the countywide level. This document is to provide a certain level of discussion on direction for the entire county.

The next level is the actual community level based CWPPs. In countywide plans the county can be blocked out into communities which have traditionally fallen within fire district lines or topographic areas. Depending on the fire district's boundaries the size of these geographical outlines can vary dramatically.

The Ponderosa Park Community is unique in the fact that they are an isolated 1000 acre community within the much larger Rural 7 Fire and Rescue that can define its boundaries and needs within the residents of the community. (See Plates B12in attachment B)

These plans also look at the general areas of the county which are designated as Wildland Urban Interface (WUI). WUIs are areas or zones where structures and human development meet and intermingle with undeveloped wildland and vegetative fuels. The nature of this interface poses tremendous risk to life, property, and infrastructure associated with these communities. One of the interesting cultural sidebars is that a number of the residents of Ponderosa Park came to this community due to the aesthetics of the area even though they did not understand the risks that are created with the overstocking, stand structure and composition risks associated with the current forest stands. Therefore there are a number of landowners that want to leave things the way they are. Education of as much of the community as possible to give them risk analysis information is one of the best ways to give them a more insightful set of options to move forward with.

It should be noted that in the absence of a CWPP, the HFRA limits the WUI to within ½ mile of a community's boundary or within 1½ miles where mitigating circumstances exist, such as steep slopes or the presence of a critical evacuation route. At least 50 % of the funds appropriated for projects under the HFRA must be used within the WUI as defined by either a CWPP or by the limited definition provided

in the HFRS where no CWPP exists. For the Ponderosa Park vicinity the WUI is defined as the entire project area both in this plan as well as in the county-wide CWPP.

The Klickitat County Countywide CWPP has been adopted by the County Commissioners of Klickitat County in 2006. This was a joint effort with Skamania County. Therefore the document reflects the needs and intentions of both counties. Skamania County has gone one step further and completed the community level plans for the entire county. Overall the countywide document will have periodic review to revise objectives and direction mentioned in the document over time.

This is a broad brush approach to the collaboration of all concerned entities regarding wildland management and fuels reduction practices. The next level of refinement the community based planning process. As mentioned, most of the county plans do demonstrate a breakdown of the county into communities that attempt to have some collaboration with fire district boundaries.

This level planning is more precise as to what specific areas should be reviewed and specific concerns and needs looked at. The specific areas that the community has concerns with are more readily addressed at this level. The collaboration is more precise as to specific project requirements and timelines. Budgetary needs are more easily spelled out and needs for specific funding more easily assessed.

The Ponderosa Park plan takes the Community level CWPP into another more precise level and that is of the "neighborhood level". Community level planning may still be large enough to be somewhat cumbersome. In attaining a productive level of community participation, it has been demonstrated time and time again that the neighborhood level of planning and participation seems to be more successful, especially when dealing with projects that may require some additional assistance from local, State and Federal funds and/or collaboration. Neighborhoods are much better at working through areas of concern such as structural protection planning, local communication options, working with fire districts in specific collaborative processes. It is also a much more effective platform for education on fuels and vegetative planning options. More importantly the neighborhood level appears to be one level where updating of the plan is more readily accomplished.

It also appears that there is more effective use of collaboration with technical assistance agencies since there appears to be a more readily available platform for one to one educational opportunities, eventually providing more positive results.

Information developed from the neighborhood and community level CWPP planning is then attached to the higher level planning, usually at the countywide level, as addendums to the County plan and pathway.

3.2 Planning process schedule

As with any process there has been a tentative schedule of steps to be taken and then timing of these steps to make the process work. Plate 3.2a is the tentative schedule that has been used through the planning process and has been modified over time.

Table 3.2.a CWPP planning Schedule: *A tentative schedule of public input timing for the drafting of the CWPP*

Action	*Timing*	*Participation*	*Results*
Initial Meeting	*November 2007*	*Firewise Committee*	*Organization and timing review*
Second Steering Committee Mtg.	*January 2008*	*Firewise Committee*	*Review of schedule, overview of community needs, begin to draft plan*
First Community Meeting (Homeowner's annual meeting)	*October 2008*	*Firewise Committee and community members*	*Refinement of community concerns, risk review and potential mitigate projects*
First Community Meeting (Homeowner's annual meeting)	*October 2008*	*Firewise Committee and community members*	*Refinement of community concerns, risk review and potential mitigate projects*
Review of 1st draft	*December 2008 –September 2011*	*Firewise committee*	*Review CWPP and discuss options. Firewise committee made editorial changes*
Second Community Meeting	*October 2011*	*Firewise Committee, and community members*	*Refinement of draft and project clarification and scheduling final review*
Review of final draft	*November 2012*	*Firewise Committee and Association Board, and Fire District*	*Final review and agreement to plan*
Commissioner Review	*April 20142*	*Firewise and Klickitat County Commissioners*	*Review and endorsement of the plan as part of the Klickitat County CWPP*
State Forester's Review	*April 2014*	*Review by State Forester*	*Final signatures are completed*
Final Plan adoption	*March 2014*	*Community*	*Plan is adopted with an overall scheduling of specific projects planned out as well as a review process put in place*

3.3 Planning Partners

The residents of Ponderosa Park have been concerned about wildland fire for many years. A number of fires have been near the area, which has raised the concern of the community.

As stated earlier in this document, Ponderosa Park has organized their own "Firewise" committee specifically to look into the issues of viable vegetation management within the boundaries of the Ponderosa Park Homeowners Association. This plan is an outgrowth of the discussion within the community and additional work by the Firewise Committee in efforts to produce a "Fire Adaptive Community".

In addition to the community impute, this work has been done in collaboration with other entities. Klickitat Fire District # 7, Central Klickitat Conservation District, Washington State Department of Natural Resources (DNR), Bonneville Power Authority (BPA) as well as the Klickitat County Commissioners has knowledge of this planning venture. (See complete listing in Attachment D Plate D3.3)

4.0 Risk Assessment

4.1 Existing Vegetative information

The vegetation of the Ponderosa Park community is a mix of two major vegetative habitats. Due to the elevation of the area and the juxtaposition of the site the area lies within the boundaries of what is called the Ponderosa pine and mixed conifer vegetative habitats. Normal topographical elevations for these habitat run from 1500' to 4500' with the Ponderosa Park area falling within elevations of 2300' up to 2500' in elevation with a majority of the area being a southerly facing slope.

Currently the primary vegetation type is PIPO/CARU/AGSP. Ponderosa pine (Pinus ponderosa) with scattered stands of Oregon white oak (Quercus garryana) and Douglas fir (Psudosugo menziesii) making up the vast majority of the overstory stand composition. Ponderosa pine is a shade tolerant species adapted to survive in areas that experience frequent fire occurrences. The majority of the area is made up of Forest Risk Rating classes 2 and 3. Fire plays a major role in how ponderosa pine is established on the landscape. Historical regular burning allows ponderosa pine stands to flourish by removing underbrush and smaller competing trees. As the pine mature their bark thickens, this provides an insulation factor from fire and makes them more adaptable to survival in a fire environment. Older pure ponderosa pine stands often exhibit wide and open park like spacing (12 to 25 trees per acre) with intermittent brush, small tress and native grass species.

Oregon white oak is also somewhat fire resistant and will be sustained over time in stands where fire occurrences happen. Therefore fire intensities are not at the stand replacement level. Additional species that normally would be part of these habitats would be, bitterbrush, serviceberry, ceanothus, Carey balsam root, Slim larkspur, yarrow, sulphur lupine, showy phlox, and bluebunch wheatgrass and the ever persistent invasive cheatgrass to name a few.

The historic evidence of fire return intervals associated with this sort of area is around 7-15 years. While the benefits of natural fires are debated by experts, many believe that fire also provides benefit by creating a mosaic of microhabitats on the landscape.

Resulting increase in vegetation diversity from fire benefits wildlife, as well as forest health and resistance to disease. Conversely, the exclusion of fires over the last 40-60 years has allowed the continuous horizontal and vertical fuel profiles of ponderosa pine and Douglas fir stands to develop, encouraged an increase in insect populations, and increase in possibility for high intensity stand replacement fires across the landscape.

Additionally one can look at Fuel Model classifications. Table 4.1 is a quick review of a number of the modeling classifications associated with the Park. A full modeling exercise was not attempted with this review so there is no mapping associated with the process.

Table 0.1. Fuel Model Classification for the Ponderosa Park planning area

1. **Nearly pure grass and/or forb type (Grass)**
   GR1: Grass is short, patchy, and possibly heavily grazed. Spread rate is moderate (5–20 ch/h); flame length low (1–4 feet [0.3–1.2 m]); fine fuel load 0.40 (tons per acre [t/ac]).
   GR2: Moderately coarse continuous grass, average depth about 1 foot (0.3 m). Spread rate high (20–50 ch/h), flame length moderate (4–8 feet [1.2–2.4 m]); fine fuel load 1.10 (t/ac).
2. **Mixture of grass and shrub, up to about 50% shrub cover (Grass-Shrub)**
   GS1: Shrubs are about 1 foot (0.3 m) high, low grass load. Spread rate moderate (5–20 ch/h); flame

length low (1–4 feet [0.3–1.2 m]); fine fuel load 1.35 (t/ac).

GS2: Shrubs are 1–3 feet (0.3–0.9 m) high, moderate grass load. Spread rate high (20–50 ch/h); flame length moderate (4–8 feet 1.2–2.4 m]); fine fuel load 2.1 (t/ac).

3. **Shrubs cover at least 50% of the site; grass sparse to nonexistent (Shrub)**
   - **SH2:** Moderate fuel load (higher than SH1), depth about 1 foot (0.3 m), no grass fuels present. Spread rate low (2–5 ch/h); flame length low (1–4 feet [0.3–2.4 m]); fine fuel load 5.2 (t/ac).
   - **SH4:** Low to moderate shrub and litter load. Spread rate is high (20–50 ch/h), flame length moderate (8–12 feet [2.4–3.7 m]). Fine fuel load is 3.4 (t/ac).
4. **Grass or shrubs mixed with litter from forest canopy (Timber-Understory)**
   - **TU1:** Fuel bed is low load of grass and/or shrub with litter. Spread rate low (2–5 ch/h); flame length low (1–4 feet [0.3–1.2 m]); fine fuel load 1.3 (t/ac).
   - **TU5:** Fuelbed is high load conifer litter with shrub understory. Spread rate is moderate (5–20 ch/h); flame length moderate (4–8 feet [1.2–2.4 m]); fine fuel load 7.0 (t/ac).
5. **Dead and down woody fuel (litter) beneath a forest canopy (Timber-Litter)**
   - **TL1:** Light to moderate load, fuels 1–2 inches (3–5 cm) deep. Spread rate very slow (0–2 ch/h); flame length very low (0–1 foot [0.0–0.3 m]); fine fuel load 1.0 (t/ac).
   - **TL4:** Moderate load fine litter and coarse fuels. Spread rate is low (2–5 ch/h); flame length is low (1–4 feet [0.3–1.2 m]). Fine fuels load is 0.5 (t/ac).
   - **TL5:** High load conifer litters, light slash. Spread rate is low (2–5 ch/h), flame length is low (1–4 feet [0.3–1.2 m]); fine fuel load is 1.15 (t/ac)
   - **TL8:** Moderate load and compactness, may include small amount of herbaceous load. Spread rate moderate (5-20 ch/h); flame length low (1–4 feet [0.3–1.2 m]); fine fuel load 5.8 (t/ac).
   - **TL9:** very high load conifer litter, spread rate moderate (5-20 ch/h); flame length moderate (8–12 feet [2.4–3.7 m]); fine fuel load 6.65 (t/ac).
6. **Insufficient wildland fuel to carry wildland fire under any condition (Non-burnable)**
   - **NB1:** Urban or suburban development; insufficient wildland fuel to carry wildland fire.
   - **NB2:** Snow/Ice.
   - **NB3:** Agricultural field, maintained in non-burnable condition.
   - **NB8:** Open water.
   - **NB9:** Bare ground.

Notes:
Based on Scott and Burgan's (2005) 40 Fuels Model Systems.
Climate is arid to semiarid for all fuel types.

4.2 Current Fire Ecology

Weather, topography, and fuels affect wildfire behavior. Ponderosa Park CWPP area, like other areas in Klickitat County, is prone to severe weather conditions that can support extreme fire behavior. When the natural fire regime is altered (primarily through fire exclusion) Ponderosa pine stands become denser. This includes the other species found in the habitat producing multi-layered vegetation and ladder related fuel loads. The Ponderosa Park landscape has many areas of dense stands dominated by ponderosa pine, which are primarily less than 18 inches in diameter. This overstocked condition has caused many trees to have commingled crowns and ladder fuels and small pockets to be affected by low-level (0.3 to 5 trees/acre) infestations of mountain pine beetle and/or engraver beetle. Continuous, tall underbrush also predominates.

Historically this area falls within the 7 to 30 years fire re-occurrence cycle which would have taken much of the understory out, done natural thinning of stand by burning out smaller trees and brush leaving an open savanna look over time. With the exclusion of natural fire occurrence cycles the lower and intermediate stand levels have over populated a number of areas within the Park.

Complex fuel loads that have changed the historical stocking, structure and composition allow the fire intensity to sustain its effects over larger expanses of the landscape than what would traditionally be

found in those acreages where the fuel loads have been sustained at traditionally lower levels, with not as much ladder diversity found within stands in a continuous basis.

4.2.1 Historical Disturbance Regimes and Current Fire Conditions

4.2.1.1 Ponderosa Pine Forest

Generally, estimates of fire-return intervals in ponderosa pine forests range from a minimum of about two years to a maximum of nearly 40 years, and many agree that fires were frequent and generally of low severity (Agee 1994; Cooper 1960; Covington and Moore 1994; Richardson 1998); according to Cooper (1960), crown fires were not a component of the historical fire regime. The effects of fire exclusion on forest structure are thought to be most profound in forests that previously sustained frequent, low-intensity surface fires (Westerling et al. 2006), and it is likely that fire exclusion was a primary cause of departure from historical conditions in ponderosa pine forests. For the most part, frequent fire consumed fuels on the ground surface and culled young trees to maintain an uneven age distribution and mosaic pattern throughout the forest (Allen et al. 2002). Frequent fire disturbance maintained an open, park-like forest structure with canopy openings and an abundant herbaceous and shrubby understory (Agee 1994; Biswell 1973; Cooper 1960; Weaver 1947).

4.2.1.2 Mixed Conifer/Subalpine Fir Forests

Often forest patches affected by low and high-severity fire are closely juxtaposed in a transition zone made up of a forest type known as mixed conifer (Fulé et al. 2003). Fire histories in mixed conifer forests vary with forest composition, landscape characteristics, and human intervention, but tend to exhibit mixed-severity fire regimes, with both low-intensity surface fires and patchy crown fires (Touchan et al. 1996). Mixed-severity fire regimes are the most complex fire regimes in the western United States (Agee 1998) because of their extreme variability (Agee 2004). A mixed-severity fire regime exists where the typical fire, or combination of fires over time, results in a complex mix of patches of different severity, including unburned, low severity, moderate severity, and high severity (Agee 2003).

Ponderosa pine was once co-dominant in many mixed conifer forests with relatively open stand structures, but fire suppression has allowed the development of dense sapling understories, with regeneration dominated by the more fire-sensitive Douglas-fir, white fir, and grand fir. Herbaceous understories have been reduced by denser canopies and needle litter, and nutrient cycles have been disrupted. Heavy surface fuels and a vertically continuous ladder of dead branches have developed, resulting in increased risks of crown fires (Touchan et al. 1996).

4.2.1.3 Grasslands

Many authors have suggested that the historical fire-return intervals for grasslands throughout the seventeenth to early nineteenth centuries are thought to have been every 5 to 10 years (Leopold 1924; McPherson 1995; Swetnam et al. 1992). Fire-suppression policies may have contributed to declining fire frequency in this cover type as well, but other interacting factors may have contributed as well. Intensive livestock grazing around the time of the Civil War is thought to have been responsible for a decline in grassland fires (West 1984). Heavy grazing reduced the fuel available to propagate fire spread and also reduced competition with herbaceous plants, tipping the balance in favor of the woody species. Woodland encroachment, increased tree density, and altered fire behavior characterize many former grasslands of the West. Once woody plants become dominant, their long life spans and their ability to extract both shallow and deep soil moisture can maintain a woodland condition indefinitely (Burgess 1995). Frequent fire plays a significant role in grassland nutrient cycling and successional processes, and

long-term exclusion may produce irreversible changes in ecosystem structure and function (McPherson 1995).

4.3 Fire History

Natural wildfires are part of this ecology. Weather conditions found in the Columbia Gorge area contribute to the overall frequency and in many cases to the wind effects associated with these storms. Most of the more intense storms are those that can be attributed to a low pressure front coming north from California that builds in intensity as it moves up through Eastern Oregon and continues its northerly march and sometimes easterly advance. Along with southwesterly winds associated with the fronts advance there is also higher westerly winds coming up through the gorge. This does not mean that isolated storms do not develop for they do and rapidly as they become associated with the effects of the gorge induced weather patterns.

As mentioned earlier, historically these fires would have normally been smaller in size, crept on the ground, and taken out what ladder fuels had accumulated since the past fire. At times due to weather conditions fires would have the potential to gain in size. Historic natural fire occurrence associated with this area would have been in the 7-30 year range. Human caused fires would have also been part of the historic fire frequency of this landscape. Some Native American practices have used fire in the area to induce certain native plants to thrive.

Plate 4.3 Fire History Near the Ponderosa Park Area (See Plate D1 for definitions of incident complexity) A list of recent fire history near the Ponderosa Park Community was compiled from over the past several years beginning with several of the large incidents in East Klickitat County over the past twenty years or so. This list is not all inclusive but briefly summarizes many of the responses to wildland fires only. This list does not include structure fires that did not escape into the wildland or illegal burns (such as burn barrels) where only local volunteer fire district resources or law enforcement responded.

(see next page)

Large Fire Summary

Year	Fire Name	Acres Burned (approx.)	Incident Complexity
1998	Cleveland	20,000	2
2010	Highway 8	2,500	2
2012	Monastery	3,500	2
2012	Columbia Hills	14,000	3 (State Mob)
2013	Mile Marker 28	26,000	2

2005

Wildfire Name	Size (acres)	Incident Complexity
Teal Road Fire	.25	Type 5
Halter Road	.25	Type 5
Mill Creek	.10	Type 5
Dry Creek	2	Type 4
Hwy 97 / MP25	Vehicle Fire (threat to forest land)	Type 5
Gatesville	.25	Type 5
Garrison Road	104	Type 3

2006

Wildfire Name	Size (acres)	Incident Complexity
Orchard Heights	.50	Type 5
Hawks Feather	.10	Type 5
Mill Creek	2.5	Type 4
Fairgrounds Road	.10	Type 4
High Mountain	8	Type 4
Double Klick	2	Type 4

Butler	.10	Type 5
Stage Coach	.25	Type 5
2006 " Lightning Bust"	9 Separate Fires	Type 4

2007

Evergreen Road	.25	Type 5
Pipeline Road	.10	Type 5
MP 20 / Hwy 97	.10	Type 5
Satus Loop Road	.25	Type 5
Blowtorch	.10	Type 5
Boss Road	.10	Type 5
Harris Road	.50	Type 5
Schilling Swale	17	Type 4
Horseshoe Bend	.25	Type 5
Firewood Road	.10	Type 5
Pine Forest	.10	Type 5
2007 "Lightning Bust"	10 Separate Fires	Type 4

2008

Satus Loop	.25	Type 5
Rimrock Road	.10	Type 5
Stacker butte	.25	Type 5
Jeep Fire	.10	Type 5
Airport	.10	Type 5
Bickelton Highway	.25	Type 5
Observatory Complex (3 fires)	140 (Lightning)	Type 3
Lightning Bust	7 fires	Type 4

2009

Mercy Road	.10	Type 5
England Road	.10	Type 5
MP10 / Hwy 97	.25	Type 5
Pipeline	.10	Type 5
Counts Road	.50	Type 5
Homestead Run	1	Type 5
Heartland	.25	Type 5
Grey Digger	.10	Type 5

2010

Old mountain Road	.75	Type 5
Hill Road	.10	Type 5
Four Corners	.10	Type 5
Hanging Rock	.50	Type 5
Jenkins Creek	.25	Type 5
Milepost 8	.25	Type 5
Palomino	4	Type 5
Box Run	115	Type 3

2011

Bowman Creek	.10	Type 5
Monument	.50	Type 5
Black tail	20	Type 4
Old Mountain	.10	Type 5
H Cell	.10	Type 5
1700 Road	.10	Type 5

Milepost 5	.10	Type 5
Pinto	.10	Type 5
Fairgrounds	.10	Type 5
Idlewood	.10	Type 5
Knotty Pine	.10	Type 5
Burn pile	.33	Type 5
Frog Hollow	1	Type 4
Lightning Bust	6 Fires	Type 4

4.3.1 Fire Regime Classifications

A natural or historical fire regime is a general classification describing the role fire would play throughout a landscape in the absence of modern human intervention, but includes the influence of burning by Native American groups (Agee 1993; Brown 1995; Hann et al. 2003).

Fire regime classes (FR I–V) are based on the average number of years between fires (also known as fire frequency or mean fire-return interval) combined with the severity (i.e., the amount of vegetation replacement) of the fire and its effect on the dominant overstory vegetation (Hann et al. 2003).

The five fire regime classes are:

FR I: Frequency of 0 to 35 years, and low (mostly surface fires) to mixed severity (less than 75% of the dominant overstory vegetation is replaced).

FR II: Frequency of 0 to 35 years, and high severity (more than 75% of the dominant overstory vegetation is replaced).

FR III: Frequency of 35 to 200+ years, and mixed severity (less than 75% of the dominant overstory vegetation is replaced).

FR IV: Frequency of 35 to 200+ years, and high severity (more than 75% of the dominant overstory vegetation is replaced).

FR V: Frequency of 200+ years, and high severity (more than 75% of the dominant overstory vegetation is replaced).

Other forms of human starts are normally not started in the fashion of those centuries ago. The past century of Ero-Asian inhabitation of the area has culturally seen the quick suppression of fire when possible with most fires small in nature. This has allowed for accumulations of heavy vegetation in the form of a larger presence of brush species as well as ladder fuels to become a larger portion of the fuel loadings found in the area. Risks of incidental fire starts, normally accidental in nature but sometimes due to carelessness are an ever expanding percentage of the fires near the area. Due to the amount of

fuels present these fires have a higher risk of not being suppressed at a smaller acreage, tend to grow with risks of higher intensities and therefore raise more risks to people, animals and property.

There have been a few large fires in the immediate proximity of the Ponderosa Park area, with the Monastery Fire of September 2011, coming within 5 miles of the north boundary of the Park. This fire made the community very aware of what could happen. During the Park's annual homeowner's meeting a review of some of the after action information was presented and discussed by the homeowners. (See Plate B.8 in Attachment B)

4.4 Fuels and Hazard Review

DNR has classified the immediate area around the Ponderosa Park community as being in the "High Risk" level when looking at wild land/urban interface (WUI) communities. This classification is supported by all agencies responsible for fire protection in the Ponderosa Park area of Klickitat County. Past activities such as logging as well as fire prevention and suppression have altered the normal fire regime, stand species composition, and forest health. (See Plate B.5 in Attachment B)

Numerous stands within Ponderosa Park are second growth stands that have not had any management done in them for a number of years; therefore the stocking is at levels of between 1000-2500 stems per acre. Along with the overstocking problems, stand structure has built up and ever increasing amount of ladder fuels that will allow a fire to sustain itself in the canopy. Specie composition is not at a sustainable level with a large amount of Douglas fir scattered throughout many of the sites that should be Ponderosa Pine dominated to maintain stand thriftiness and health.

Plate 4.4- Typical overstocked stand found in the Park

Overall assessment of specific neighborhoods do show that the overall risk ranking should be classified in the "very high" , due to the dense stands of second growth ponderosa pine and ladder fuels found on

a large amount of the neighborhood acreage. Many of the stands are dominated by trees of less than 18" DBH with pockets of trees affected by infestations of mountain pine beetle as well as fir engraver and other pests which are currently at endemic levels. Trees often have contiguous crowns, with small patches of mistletoe and ladder fuels, associated with continuous tall underbrush that also predominate on the landscape. All of these can create conditions for an intense and fast moving fire. (see Plate 4.4) and Table 4.1)

4.5 Protective Capacities

Rural 7 Fire and Rescue provides structural protection for the Ponderosa Park area and DNR provides fire protection on private lands in and around the area. Recently a fire hall has been built within Ponderosa Park, expanding Rural 7's overall capabilities and reducing the immediate response time. While these resources are at levels that would take care of most emergencies, they are not at levels which would be able to suppress wildfire occurrences that may happen on days with very adverse conditions. Rural 7 Fire and Rescue is primarily a volunteer fire suppression organization, and therefore overall responses may have different levels of staffing associated with each call.

Plate 4.5 Fire District #7 Ponderosa Park Station

The objective of the Ponderosa Park structural fire protection plan is to safely and efficiently manage resources to protect human life, essential infrastructure, and resources in the event of a wildfire. Strategic decisions should take into account the following tactical considerations:

Overall ingress and egress of the neighborhood is one of the highest concerns when assessing overall structural protection strategies. Currently this is fairly well maintained gravel base road but there are some heavy concentrations of fuels on the road right-of-way that need to be assessed for overall risks Some homes would require maximum effort to defend, requiring prompt activation of this plan and the need to triage structures

Plate 4.5 Example of Rural 7 Fire and Rescue apparatus – Engine 718 Tender

Access to some homes is described as "one way in and out". Traffic control and apparatus staging and placement must be carefully considered.
The homes in the area range from small to large with most structures having composition or metal roofing.

A community water system exists in Ponderosa Park and has 13 water outlets which will support engine refilling. As examples, a 3" stand pipe on the east end of the Park at the corner of Golden Pine and Bull Pine Road is connected to the reservoir and can be used to fill and refill water trucks and engines. On the west end of the Park, the Red Cedar well, which is not presently being used for domestic water supply, can be used for firefighting purposes. In addition, some homes are served by individual wells which may be used to support firefighting efforts on a limited basis.

Rural 7 Fire and Rescue and its cooperators cannot assemble enough structural protection resources to simultaneously protect all residential structures in the Ponderosa Park neighborhood in the case of a fast moving fire. Successful defense will require structural triage, time for pre-treatment and/or highly mobile tactics and burnout operations citing current vegetative conditions.

It should be noted that Rural 7 Fire and Rescue has built a new Fire Hall (#11) in the Ponderosa Park Community that houses Structural and Brush engines.

Table 4.5 includes a quick listing of fire suppression resources that are available to the Ponderosa Park area for initial attack as well as long duration assignments. It should be noted that these are local resources and depending on the fire's complexity the local fire chief in consultation with Klickitat

Emergency Services may make the determination that an incident needs to be sent to Washington State Patrol for upgrading status of a fire requesting statewide mobilization. At that time there will be a determination on the complexity of the incident and the additional needed fire suppression resources.

Table 4.5- A listing of fire suppression capabilities near Ponderosa Park

1. Klickitat Fire Districts Initial Attack forces
• **Station 11 located within the park is equipped with**
○ Brush Engine with 275 gal. capacity ○ Water Tender 1000 gal. capacity ○ 10 Volunteers ○ Estimated roll-out time 12-15 minutes
• **The Main Hall located in downtown Goldendale is equipped with**
○ Fire Trucks ○ Water Tenders ○ Dozer ○ Volunteers ○ Chief Anthony Browning
• **Additional satellite stations that would respond include**
○ Box Canyon Fire Hall with 1 Type 6 Brush Engine ○ 1-2200 gallon Water Tender ○ Woodland Road Fire Hall with 1 Type 6 Brush Engine ○ Blockhouse Fire Hall with 1 Type 6 Brush Engine ○ Cedar Valley Fire Hall with 1 Type 6 Brush Engine
2. Additional fire engines available to respond from the City of Goldendale include
○ 2 Type 1 Structure Engines ○ 1 Type 6 Brush Engine ○ 1 Water Tender
3. Local WADNR resources available to respond include
○ 3 Type 5 Brush Engines each equipped with 420 gallons of water, portable pumps, deck pumps, a minimum of 3 Firefighters, hand tools, chainsaws and approximately 1500 feet of hose and fittings. ○ 1 Type 6 Brush Engine equipped with 240 gallons of water, portable pump, a minimum of 3 Firefighters, hand tools, chainsaws and approximately 1200 feet of hose and fittings ○ A minimum of 3 Overhead Personnel
4. Other local resources available to respond for mutual aid include
○ 3 Type 5 Brush Engines each equipped with 420 gallons of water, portable pumps, deck pumps, a minimum of 3 Firefighters, hand tools, chainsaws and approximately 1500 feet of hose and fittings. ○ 1 Type 6 Brush Engine equipped with 240 gallons of water, portable pump, a minimum of 3 Firefighters, hand tools, chainsaws and approximately 1200 feet of hose and fittings ○ A minimum of 3 Overhead Personnel

5. Other local resources available to respond for mutual aid include

• **Centerville Fire District 5**
  o Multiple Type 6 Brush Engines
  o Multiple Water Tenders
  o Chief Lawrence Browning (volunteer)

• **High Prairie Fire district 14**
  o Multiple Type 6 Brush Engines
  o Multiple Water Tenders
  o Chief Doug Hutchison (volunteer)

• **Columbia Gorge National Scenic Area (Scenic Area)**
  o 1 Type 6 Brush Engine with 3 Firefighters
  o 1-10 Person Type II Handcrew
  o Multiple Overhead personnel

• **Oregon Department of Forestry (ODF)**
  o Multiple Type 5 and Type 6 Brush Engines
  o Multiple Overhead Personnel
  o Single Engine Air Tankers (SEATS)

• **Yakama Nation**
  o Type 4 Brush Engine with minimum 3 Firefighters
  o Dozers
  o Multiple Overhead Personnel

• **Additional Air Resources available through WADNR dispatch center include:**
  o Minimum of 3 Type 2 Helicopters equipped with ground personnel and bucket
  o Air Tankers for retardant drops located at several locations throughout the northwest to include Moses Lake, WA and Pendleton, OR.

4.6 Review and Assessments

Residences within the Ponderosa Park community are widely dispersed and woven into the forest landscape. Accessibility, topography, and the surrounding vegetation all contribute to structural susceptibility to fire. The objective of the Ponderosa Park neighborhood plan is to make a complete assessment of overall risks working from the individual landowner up through the overall neighborhood assessment. To accomplish this task, the Home Assessment form (Form 299/1144) (see plate 2.3.1 and 2.3.1 in appendix A) will be used by all landowners to do this type of assessment in the Ponderosa Park CWPP area. To assist in the understanding of the use of the form, the process of assessments, and the cataloguing of information the Ponderosa Park community will use the assistance of the Central Klickitat Conservation District, as well as staff from Rural 7 Fire and Rescue and DNR to complete the neighborhood assessments.

Plate 4.6- On the site home assessment being done by staff members of CKCD

Through this process a risk code will be assigned to each structure based primarily on the ability of firefighters to reach and protect the structure in question without jeopardizing firefighter safety. The risk codes will include the level at which defense of the structures can be assessed from low (easiest to defend), to moderate, or high (most difficult to defend safely) using the current conditions. The information will be updated as homeowners accomplish fuels reduction work on their property.

This process is completely voluntary and is not required by the association or by any entity. Information that is gathered from the assessments will be given to the landowner to make their own plan on how to carry out any fuels reduction treatment(s) that are suggested in the assessment procedures.

The desired outcome is that this assessment process will raise the level of awareness of all residents in the Ponderosa Park community, stimulate discussion of potential improvements and create a list of projects to mitigate the current and future risk from wildfire.

5.0 Risk Evaluation

5.1 Individual Home Assessments

Individual home assessment will be done using the standardized Home Assessment form 299/1144. Federal, State and local assessment groups to standardize the risk analysis of individual home sites, has used this.

To meet the needs of completing this form of assessment a number of tactics may be employed. The first is to use the services of the Central Klickitat County Conservation District's personnel to assist in the one on one site visitations and assessments. While this may work in most cases there is also some competition for this time and therefore the individual one on one assessment process may be supplemented through use of Rural #7 Fire and DNR staff.

Figure 5.1- Looking at a landowner's stands beyond the 150' zone around structures

This process is somewhat insightful when looking at risks to neighbors and an individual's own property and therefore it may be advantageous to have a community level training where staff from the Fire District, CKCCD, and DNR could instruct those attending the training on how they can do their own assessment, then have it reviewed when they complete the process. If an individual homeowner chooses to, they can go through the process of assessment and potential mitigate actions. This would be supplemented with assistance after the assessment by agency staff.

The overall plan is to have 80% assessment rate of all landownerships complete by spring of 2014.

Information developed from this assessment process would then be catalogued using an agreed to format so that it is accessible to the association, Fire District and DNR. The potential of using this information as part of the information available to outside forces will be assessed and formatted during 2012 and updated as work is accomplished.

5.2 Type and Density of Structures

As stated earlier, Ponderosa Park is a 1000 acre tract subdivided into approximately 200, 5 acre parcels. The structures consist of single family dwellings and associated outbuildings.

Action required: the residences, along with the type and location of access and egress, need to be plotted onto a map to assist in location and evaluation of fire risk and defensibility.

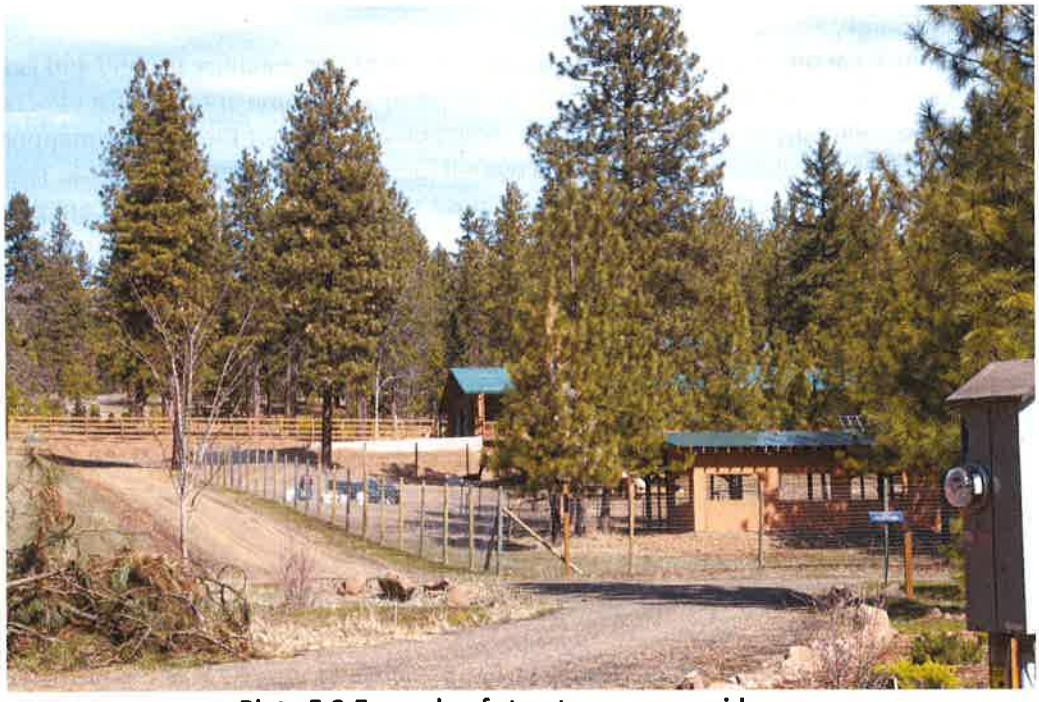


Plate 5.2.Example of structures on a residence

5.3 Access

Access and egress to and from Ponderosa Park is via the Pipeline Road on the east end of the Park and via Pine Forest Road on the west end. There are two park roads which front onto Pine Forest Road. The main access on the west side is via Red Cedar Road to Juniper Road. The secondary access is Golden Pine just south of the BPA power line right-of-way. There are approximately ten plus (10+) miles of all-weather gravel roads within the Park. (See B-19 in Appendix B)

The main thru roads within the Park, East Ponderosa Drive and Golden Pine, are all weather gravel roads suitable for two-way traffic. The remaining connecting roads are all weather gravel and will allow two vehicles to pass in most places.

Actions required: 1) Most of the dead-end access roads have turnarounds at the ends. These will have to be wide enough to meet the needs of a maximum size fire vehicle which can negotiate the turnaround and so marked on the base map. Any turnarounds which are too tight will need to be reconstructed and any dead end roads lacking turnarounds will be identified and turnarounds constructed where feasible, 2) While all new road signage has been installed, some individual home addresses are missing, or are hard to read from one side and many are not reflective. Homeowners are encouraged to obtain reflective house numbers from Rural 7 Fire and Rescue and post them where they are easily seen and visible at night.

5.4 Water Supplies

The Park water supply currently consists of two KPUD administered wells and a 76,000 gallon reservoir tank. The water system has recently been upgraded to include a second well. There are currently 13 hydrants in the system which can be used to fill tender trucks. There is one 3000 gallon privately owned tank on lot 120 which could be used in case of fire. Fittings would need to be organized to access this water.

5.5 Fuel Breaks and Safety Zones

Some of the residents have made commendable efforts to eliminate or minimize ground and ladder fuels on their properties starting the creation of fuel break patterns in some areas. These efforts are currently not designed with any community level risk reduction in mind, but they will be mapped. As strategies are designed they will become part of the overall fuel break strategy for the Park. These efforts will need to work in concert with some of the natural and other open breaks that are present throughout the Park.

Another fuel break strategy is providing overall fuel reduction on the boundary of the Park this will reduce the risk of crown fires spreading from outside as well as within some areas. This could be accomplished by designing a shaded fuel break around the entire Park. This would provide a level of sustainability, in an aesthetically pleasing forest appearance, while eliminating fuel loads, which allow fire to be carried in the crowns of the residual stands adjacent to the BPA right of way, would be an additional corridor of fuels reduction.

Additionally, reducing the amount of fuel along the major road rights-of way will place additional fire breaks within the community as well as improving ingress/egress during emergency situations.

Safety zones also need to be created. These should be large enough to provide a safe area for residents and firefighters who need to stay within the Park during fire activity. The Firewise Committee is working with DNR and KCFD #7 to assess what size of Safety Zone would be needed. The community will work to achieve an area to meet the recommendation.

To accomplish the requirements of both the fuel breaks and the safety zones, the suggested actions are:

- Creation of a 100-200 foot shaded fuel break in designated areas
- Education of homeowners regarding the creation and maintenance of defensible space around their homes and structures
- Creation of these defensible spaces using Firewise techniques
- Identification of Safety Zones within or adjacent to the planning area
- Research additional funding sources to augment the projects required to meet the goals of the community

Currently in the development stage of this plan, the community has completed a number of fuels reduction projects through cost share funding provided by the WADNR to achieve defensible space and shaded fuel break work.

5.6 Staging areas

Staging areas are different than a safety zone in that a staging area is a place to stage resources that can be used in suppression efforts or other emergencies. They provide a location from which these resources can be dispersed quickly and efficiently. Currently the fire hall is the designated staging area.

Plate 5.6 Rural District #7 Station 11-The Park's staging location

5.7 Evacuation

As stated in the goals and objectives of this document, it is the number 1 goal of the residents of the Park to protect life. It is the overall responsibility of the Klickitat County Sheriff's office for evacuation of the Park in case of fire or other hazards. The Firewise Committee will work with the Sheriff as well as Rural 7 Fire and Rescue in the creation of a neighborhood evacuation plan. This plan will be a written document that will be available to all Park residents so they have a clear understanding of what happens at each level of the evacuation plan.

The neighborhood level evacuation plan is meant to better inform all residents so that they are prepared and have a more thorough understanding of the process if there is a situation where the plan must be used.

Copies of the plan will also be kept by Rural 7 Fire and Rescue, Klickitat Sheriff Department and Klickitat County Emergency Management so that it can be used in an orderly fashion if the need arises.

In addition, Map B19 in Section B shows the overall evacuation routes to access main county roads.

6.0 Community activities

6.1 Overview

Section 6 of the Klickitat County Countywide CWPP talks about how there should be collaboration with state and federal agencies but does not set out any guidelines on how the Park's planning strategies for mitigation will collaborate with those of the other levels of CWPP planning. Therefore the Park will work independently cooperating with the Rural 7 Fire and Rescue as well as state and federal agencies to schedule specific projects to compliment other efforts in the area and focus in on areas where funding may be available.

It is further hoped that these projects can be collaborative in nature encouraging residents of Ponderosa Park to work with other neighborhoods and individual landowners in the area to compliment one another's efforts.

In addition a summary of the Park's efforts can be sent annually to the Klickitat County Commissioners for their review.

6.2 Activities

Activities in the mitigation strategy, concerns as well as potential projects, can be broken down into four broad areas, these are: 1) Education and Outreach; 2) Improving Prevention in the WUI; 3) Fuels Reduction; 4) Infrastructure.

Concerns and issues will be placed into one of these four categories, and their importance assessed. Projects will be developed to address residents' concerns and issues.

Depending on the neighborhood's needs and interest emphasis may change over time. This brings up another key point and that not everything can be done overnight. Efforts will be based on the listing of various mitigate activities in a long-term as well as a short-term view. This may be demonstrated through the use of a 10 year developmental plan which would then be broken further down to include the first five year activity strategy and, most importantly, a 2 year implementation plan.

An overall review of this can be found in Appendix A of this plan. The intention is that this will changed over time depending on a number of influences that will be placed on the overall strategy due to other projects in the area, funding source availability, and most importantly the enthusiasm of the neighborhood to take on each individual project and carry it out to a successful conclusion.

Plate 6.0 Defensible space activities within the Park

7.0 Mitigation Action Plan

7.1 Overview

The mitigation plan has been broken down into four areas which can be deleted from or added to at any time but the Park will look at a strategy of bringing forth ideas for changes to projects through the Firewise Committee at the annual meeting. This does somewhat coincide with the grant application cycle with most known grant sources.

Therefore, what is being presented in the Mitigation plan is a listing of various concerns in project form that fall into one of the four categories. From this listing the actual specific activity strategy and implementation plan can be more defined and found in Appendix A.

7. 2 Education and Outreach

7.2.1 Post fire hazard level signs at the Park's entrances.
7.2.2 Distribute Firewise and other pertinent information at owner meetings, and community gatherings, and on community bulletin boards and community website.
7.2.3 Hold workshops for residents and community on Firewise landscaping, birdhouse construction, insect control, fire resistant construction methods, and other pertinent subjects.
7.2.4 Encourage the use of the Firewise website, and other appropriate sites and make fire protection information available on the Ponderosa Park website.
7.2.5 Employ local media such as newspapers and radio to let the community know about Firewise activities and information.
7.2.6 Provide opportunities for residents, communities and agencies such as Rural 7 and the DNR to provide input to the planning and implementation of fire protection of the Park.
7.2.7 Integrate new educational materials into the education and terms such as Fire Adaptive Communities.

7.3 Improving Prevention in the Wildland/Urban interface (WUI)

7.3.1 Conduct individual home risk assessments and work towards the completion of wildfire hazard forms in conjunction with Rural 7 and DNR. (See note in Section 5.1)
7.3.2 Annually update and refine mapping of the Park to include topographic features, individual resident locations, structures, and water sources for Rural 7.
7.3.3 Complete annual updating and distribution of the emergency phone tree for residents.
7.3.4 Complete and distribute an evacuation plan to all residents.
7.3.5 Contact surrounding landowners and work together to find solutions to mutual fire prevention problems.
7.3.6 Inform and coordinate prevention efforts with Rural 7, DNR and Klickitat County.

7.4 Fuels Reduction and Forest Pest Mitigation

7.4.1 Encourage and assist residents to implement Firewise recommendations individually, through work parties, and contractual agreements.
7.4.2 Create defensible space around all homes and essential infrastructure.
7.4.3 Thin, limb and clear all road easements.
7.4.4 Assess and create both internal and perimeter fuel breaks.
7.4.5 Encourage and assist adjacent landowners and agencies to perform fuel reduction on adjacent lands.
7.4.6 Work with local landowners, Rural 7, federal, state and county agencies on continuing dialogue about slash disposal planning and timing.

7.4.7 Explore and employ methods to recycle biomass from fuel reduction project waste, construction waste and other wood products.
7.4.8 Seek out funding sources from different entities to help support the fuel reduction efforts.
(Note: Ponderosa Park has received two WSFM grants to do fuels reduction work in the past two years.)

Plate 7.4 Example of fuel reduction work within the Park

7.4.9 Defensible Space Recommendations

Recommendations concerning defensible space apply to both new and existing buildings located in Urban-Wildland areas. The recommendations specifying fuel modification are voluntary but give landowners prescriptions/treatments to fulfill normal pathways to reduce fire risks around structures. These recommendations suggest fuel modification for a distance of 30 feet around structures in a Moderate Hazard Urban Wildland Area, 50 feet in areas of High Hazard and 100 feet in Extreme Hazard areas. In all other areas, the fuel modification distance shall be no less than 10 feet.

Ornamental vegetative fuels or cultivated ground cover, such as green grass, ivy, succulents or similar plants used as ground cover, are allowed to be with in the designated defensible space provided they do not form a means of readily transmitting fire from the native growth to any structure.

Trees are allowed within the defensible space provided the horizontal distance between crowns of adjacent trees, and crowns of trees and structures, overhead electrical facilities, or unmodified fuel is not less than 10 feet. Deadwood and litter shall be regularly removed from trees.

At all times one must recall that any prescriptions that are recommended are purely voluntary and improvements may happen over time as landowners become more accumulated to these improvements with a better understanding of risk reduction and forest health issues over time.

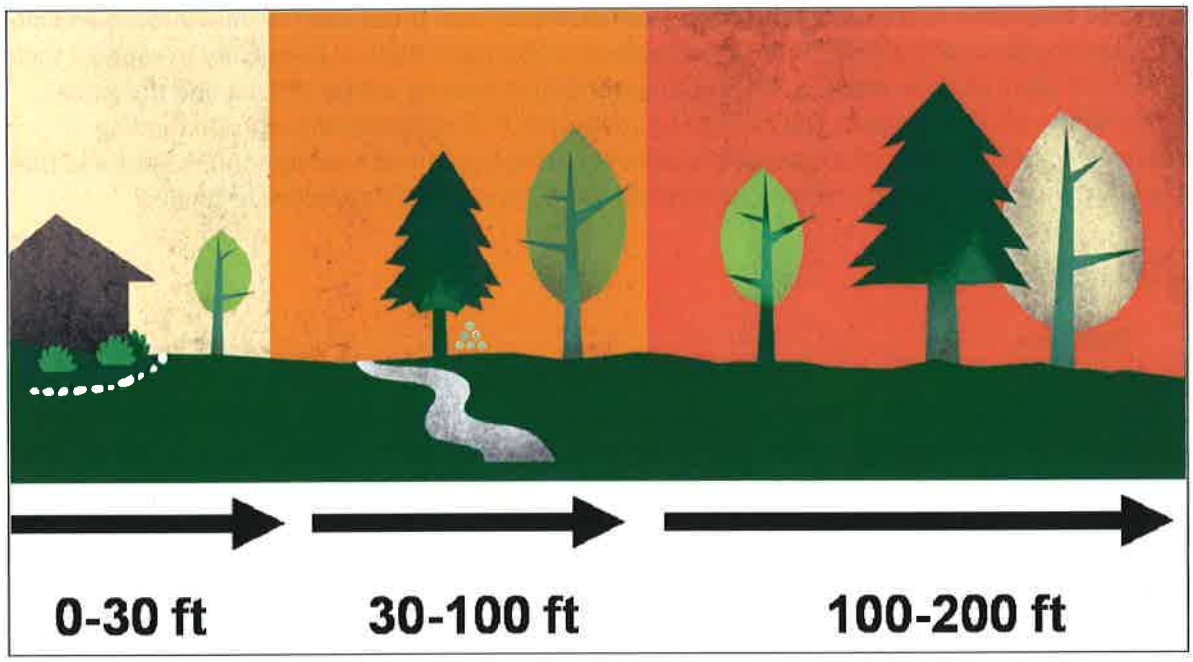


Figure 7.4.9 Defensible Space Zones

7.5 Infrastructure

7.5.1 Maintain all roads and identify with 2-sided signage.

7.5.2 Encourage the use of reflective address signs on all lots.

7.5.3 Clear and create "turn around" to assure easy access, ingress, egress, for both residents, and firefighting apparatus.

7.5.4 Assess improvements to water sources and the current water supply system along with potential ponds in remote corners of the Park

7.5.5 Work with Rural 7 Fire and Rescue in a support mode to encourage upgrading Rural 7's Fire Hall #11's equipment and overall firefighting capabilities

7.5.6 Development of staging areas and safety zone which may also work as part of the fuel break strategy around the entire Park

7.6 Funding

Funding for a number of the activities desired by the community has come through two different sources. Community activities that are driven from either Park funding sources or what is commonly called sweat equity where landowners personally will contract or do the work. It is amazing to see the accounting of this sort of support. Much of the work has been done at what is called 50/50 cost share but never really reaches the 50% share when it comes to any support grant funding since the sweat equity usually has billings that are more than 50%.

Cost sharing is achieved through use of grant funding that currently is coming from funds granted to the State of Washington through either National Fire Plan (NFP) Grants or Western State Fire Manager

(WSFM) funds. Both are an outgrowth of the Healthy Forest Restoration Act (HFRA) of 2002. The funding that the Park has used over the past few years has been from WSFM funding.

As this plan was developed Ponderosa Park has received two Western States Fire Managers (WSFM) grants to do defensible space around homes as well as shaded fuel break work on major roads and along the exterior boundary of the Park. The Park's residents understand their responsibility to support these activities. For some of these projects, finding comprehensive funding will be difficult and the actual implementation of some projects will need to be supported through additional outside funding. Acknowledging this, the Park is prepared to learn where these potential funding sources exist and then pursue assistance at the private, county, state and federal levels to find appropriate funding.

8.0 Plan Maintenance

8.1 Overview

While the Ponderosa Park CWPP has boundaries that isolate its overall process it is not exclusive to the area. The Klickitat Countywide CWPP has defined general long-term objectives and pathways for the County in general. Since the Ponderosa Park community is currently a "Firewise USA Community" and has an active Firewise Committee, this maintenance plan is being developed over time, and specifics in the plan will be influenced by the recommendations of the Firewise Committee.

More importantly there will be impacts on suggested projects in this plan from the directions that come out of the discussions in the local working group forum. This group is moving in conjunction with Rural 7 Fire and Rescue strategies of fuel reductions within the entire Fire District's planning area. Therefore participation in this forum by residents of the Ponderosa Park area is important to insure that the strategy employed by the residents of Ponderosa Park is known and discussed at the forum level. Projects that are taken on at the level should compliments those of other neighborhoods in the watershed for effective and efficient use of available funds and overall fuel reduction accomplishments.

8.2 Project Maintenance Discussion

One of the areas that need more discussion and planning is that of the overall "maintenance" of any of the projects taken on through this plan. While it is obvious that anything that is done to manipulate the vegetation will require work in the future to maintain a certain level of lessened risk, projects such as evacuation plans, structural protection planning, road and safety zone maintenance are just a few of the project areas that will need updating over time.

But this does bring up one of the glaring challenges at the Community level and that is how does one maintain projects and on the ground practices over time when there have been no funding of long-term maintenance of completed practices. It has been in current policy that once a practice has been completed it is up to the landowner or neighborhood to maintain the level of risk that is associated with the completed project. In many cases that may be difficult to sustain over time and space.

One strategy that could be employed through the use of this plan is a clear understanding and influencing of potential projects and funding sources found to assist in the maintenance of vegetation manipulation as well as other areas which no have no options as to how to support the maintenance of completed projects over time.


5 YEARS
FIREWISE
2013
WARNING

APPENDIX A

Project Planning Information

Table 7.1 Implementation Project listing for 2008-2010- ***A listing of potential Projects to be worked on within the Ponderosa Park Planning area that has been presented to the Homeowner's at the annual meeting***

Project Name	Operation period	Project Number	Location	Funds acquired	Brief Description
Home Assessments	2008-2010	7.3.1	Entire area	None	*Will do individual Landowner assessments and then develop a database to store information. Will work with DNR to complete project*
Firewise Workshop	Spring 09	7.2.3	Entire area	DNR	*Have DNR assist with a Firewise workshop along with potentially KLFD#7 and NRCS*
Two Sided Street signs	Winter 08	7.5.1	Entire area	Residents	*Put up two sided street signs at all intersections for better understanding of what street or lanes are what*
Ponderosa Park Steering committee Participation	Spring 2008 Spring 2010	7.2.7	Entire Area	Residents, committee	*Residents participation in the planning processes with USFS and others in fuel reduction and other related processed within the Watershed*
Firewise Landscaping	Fall 2008-Fall 2010	7.4.1	Entire area	Residents	*Work on doing work parties to complete 30 homes using Firewise Landscaping techniques*
Reflective Addresses	2009-2010	7.5.2	Entire area	State, residents, County(Pub.WKs)	*Attempt to encourage the use of the reflective address signs at all residences in the Park. Attempt to find State and county funding to help defer costs*
Phone Tree	2008-2009	7.3.3	Entire Area	Residents	*Development of a neighborhood phone tree, and tested.*
Annual Meeting	2009-2010	7.0	Entire Area	Residents	*Annual meeting and review of CWPP*

Table 7.2 Gant Chart of Project listing for 2008-2010- ***A listing of potential projects in Gant chart form demonstrating potential timeframes for each project***

Project	4th ¼-2011	1st ¼- 2012	2nd ¼ -2012	3rd ¼ -2012	4th ¼ -2012	1st ¼- 2013	2nd ¼ -2013	3rd ¼ -2013	4th ¼ -2013
7.3.1									
7.2.3									
7.5.1									
7.2.7									
7.4.1									
7.5.2									
7.3.3									
7.0									

Table 7.3 Action Plan for Ponderosa Park 2011-2015: ***A listing of potential actions to be taken by the Ponderosa Park area within the next 5 years.***

Project Name	Operation period	Project Number	Location	Funds acquired	Brief Description
Road Day lighting	2012-2014	7.3.1	Entire area	County, State, Residents	*Work with County Public works to assess road daylights strategies and timing implementation*
Firewise Information	Spring 12-Spring 2013	7.2.2, 7.2.3, 7.3.4	Entire area	Residents, DNR, KLFD#7	*Have DNR and KLFD#7 assist with a Firewise workshop and development of informational packets to be distributed to new residents coming to the area*
Evacuation Plan	2nd ½ -2012 1st ½ -2013	7.5.1	Entire area	Residents, KLFD#7	*Development of the neighborhood evacuation plan with assistance from KCFD#3*
Escape Routes and Safety Zones	1st ½ -2012 2nd ½ -2013	7.5.6	Entire area	Residents, KLFD#7, USFS, DNR	*Assess and design an overall escape plan as well as designate locations for safety Zones for residents as well as suppression forces if necessary*
Collaborative Fuel reduction planning and implementation	2012-2013	7.4.5	Entire area	State, County	*Attempt to encourage the use of the reflective address signs at all residences in the Park. Attempt to find State and county funding to help defer costs*
Annual Meeting	2011-2014	7.0	Entire Area	Residents	*Continuation of annual meetings and review of neighborhood plan as well as funding ops.*

Table 7.4 Gant Chart of Project listing for 2009-2013- ***A listing of potential projects in the action plan in Gant chart form demonstrating potential timeframes for each project***

Project	2nd ½ -2011	1st ½ -2012	2nd ½ -2012	1st ½ -2013	2nd ½ -2013	1st ½-2014	2nd ½ -2014	1st ½ -2015	2nd ½-2015
7.3.1									
7.2.2/3/4									
7.5.1									
7.5.6									
7.5.2									
7.0									

Table 7.5 Project Developmental Plan for Ponderosa Park- *A projection of potential projects to be done in the Ponderosa Park CWPP from year 5-10. These projects have the potential of moving up in the priority listing if funding for specific items become available, the community sees a need to change, or priorities above them in the implementation and action plan are completed.*

Project Name	Operation period	Project Number	Location	Funds acquired	Brief Description
Valley Cooperation	2013-2015	7.3.5	Entire area	County, State, Residents	*Cooperation with surrounding communities on working through the entire watershed's fuel reduction plan*
Firewise Information	Spring 2013-Spring 2015	7.2.2, 7.2.3, 7.3.4	Entire area	Residents, DNR, KLFD#7	*Design some sort of "welcome wagon" firewise informational package for new landowners including phone tree and evacuation plan*
Road Maintenance	Spring 2013	7.5.1	Entire area	Residents, County,USFS	*Development of a long-term annual road maintenance assessment and grading plan*
Escape Routes and Safety Zones	1st ½ -2012 2nd ½ -2014	7.5.6	Entire area	Residents, KCFD#3, USFS, DNR	*A design and funding for keeping escape routes and safety zones maintained*
Annual Meeting	2009-2013	7.0	Entire Area	Residents	*Continuation of annual meetings and review of neighborhood plan as well as funding ops.*

Table 7.6 Gant chart of Developmental projects- *A listing of potential projects in the action plan in Gant chart form demonstrating potential timeframes for each project*

Project	2nd ½ -2012	1st ½ -2013	2nd ½ -2013	1st ½ -2014	2nd ½ -2014	1st ½-2015	2nd ½ -2015	1st ½ -2016	2nd ½-2016
7.3.5									
7.2.2/3/4									
7.5.1									
7.5.6									
7.5.2									
7.0									

Plate A.7: 2009 listing of Firewise Accomplishments by Ponderosa Park Firewise Committee

Firewise Accomplishments

2009-2010

1. Firewise Community/USA recognition received for 2009 & 2010.

2. Community workparties cleared roadsides and two turn-arounds.

3. Educational activities were carried out after workparties, potlucks, and annual meetings.

4. DNR grant obtained and sweat equity hours collected from community members.

5. Two contracts for shaded fuelbreak around community perimeter were completed and fuel reduction chipping program is ongoing with grant funding.

6. Station 11 Rural 7 firehouse constructed and is now staffed by local volunteers.

7. Newspaper articles placed in community newspaper to let the broader community know about Ponderosa Park's new fire station, and its volunteers' impact on fire protection in the area.

Objectives for

2011-2012

Community Infrastructure

1. Maintain Firewise Committee

2. Work with Rural 7 volunteers to complete Wildfire Hazard Severity Form Checklist NFPA 299/1144 for all homes in Ponderosa Park.

3. Update wildfire evacuation and staging plans in consideration of new fire station & work force.

4. Pursue continuation of DNR grants to fund community fuel reduction projects.

Fuel Reduction

1. Complete additional shaded fuel break contracts on the perimeter.

2. Continue chipping program.

3. Continue community workparties for road and turn-around clearing.

4. Promote 15' x 15' access to individual properties in Ponderosa Park.

5. Encourage fuel reduction and defensible space on individual properties.

Education

1. Encourage media coverage of wildfire prevention activities and accomplishments.

2. Post Firewise educational materials on the Ponderosa Park website and bulletin boards.

3. Hold educational events in April to support of Wildfire Awareness Week.

Recognition

1. Renew Firewise Communities/USA status each year.

Plate 2.3.1: Wildfire Hazards Severity Form Checklist (Two Pages) - *Assessment checklist sued to assess personal property*

Wildfire Hazard Severity Form Checklist NFPA 1144					
Name:					
Address:					
Mile Post/ Access Rd:					
GPS (Lat/ Long):					
Ownership Plat #:					
Subdivision Design					
1. Ingress and egress (The main road to county Rd)					
Two or more roads in/out	0				
One road in/out	7				
2. Road width (The main road to county Rd)					
Greater than 24 feet	0				
Between 20 and 24 feet	2				
Less than 20 feet wide	4				
3. All season road condition (The main road to county Rd)					
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 (Access to the structure/ driveway)					
< = 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 reflectorized)	0				
Not present	5				
Vegetation (Use the predominant vegetation)					
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				
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		0			

risks

1. Additional Rating Factors					
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				
2. Roofing Materials					
1. Construction material					
Class A roof (metal, tile)	0				
Class B roof (composite)	3				
Class C roof (wood shingle)	15				
Non-rated (no roofing material)	25				
3. Existing Building Construction					
1. Materials (predominant)					
Noncombustible siding, eaves, and deck	0				
Noncombustible siding with combustible 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				
4. 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 (off site)	3				
Less than 250 gpm non-pressurized, 2 hours (off site)	5				
Water unavailable	10				
2. Organized response resources					
Station within 5 miles of structure	1				
Station greater than 5 miles	3				
3. Fixed fire protection (interior sprinklers)					
Sprinkler system (NFPA 13, 13R, 13D)	0				
None	5				
5. Utilities (Gas and Electric)					
1. Placement					
All underground utilities	0				
One underground, one aboveground	3				
All aboveground	5				
Totals for this page		0			
Totals for Risk Assessment					
Totals for page 1 and 2		0			
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)					

Plate 2.3.2- One page Home assessment –Uses the same format as the form 1144

FIREWISE COMMUNITIES

Wildland Fire Risk Assessment Form

(Circle the most appropriate element in each category and total the points)

Homeowner:_____ Phone/Email_____

Address:_____ City:_____ Zip:_____

Element	Assessed Points
A. Means of Access (County Rd/ Main Rd access)	
1. Ingress and egress	
a. Two or more roads in/out	0
b. One road in/out	7
2. Road width	
a. ≥ 24 ft.	0
b. 20 to 24 ft.	2
c. < 20 ft.	4
3. All-season road condition	
a. Surfaced road, grade < 5%	0
b. Surfaced road, grade > 5%	2
c. Non-surfaced road, grade < 5%	2
d. Non-surfaced road, grade > 5%	5
e. Other than all-season	7
4. Fire Service Access (Driveway)	
a. ≤ 300 ft. with turnaround	0
b. > 300 ft. with turnaround	2
c. < 300 ft. with no turnaround	4
d. ≥ 300 ft. with no turnaround	5
5. Street signs and home address numbers	
a. Present: 4 in. in size and reflectorized	0
b. Not present	5
B. Vegetation	
1. Characteristics of predominate vegetation within 300 ft.	
a. Light (grasses, forbs, sawgrasses and tundra)	5
b. Medium (light brush and small trees)	10
c. Heavy (dense brush, timber and hardwoods)	20
d. Slash (timber harvesting residue)	25
2. Defensible space	
a. More than 100 ft. of vegetation treatment from the structure(s)	0
b. 71 – 100 ft. of vegetation treatment from the structure(s)	3
c. 30 – 70 ft. of vegetation treatment from the structure(s)	10
d. <30 ft. of vegetation treatment from the structure(s)	25
C. Topography within 300 ft. of structure(s)	
1. Slope < 9%	1
2. Slope 10% to 20%	4
3. Slope 21% to 30%	7
4. Slope 31% to 40%	8
5. Slope > 41%	10

Hazard Rating	Total Points
1. Low hazard	< 40
2. Moderate hazard	40 - 69
3. High hazard	70 - 112
4. Extreme hazard	> 112

Source: NFPA 1144 Standard for the Protection of Life and Property from Wildfire, 2002 edition, NFPA, Quincy, MA

Element	Assessed Points
D. Additional Rating Factors (rate all that apply)	
1. Topographical features that adversely affect wildland fire behavior	0 1 2 3 4 5
2. Areas with a history of higher fire occurrence than surrounding areas due to special situations (e.g. Heavy lightning, railroads, escaped debris burning, malicious burning)	0 1 2 3 4 5
3. Areas that are periodically exposed to unusually severe fire weather and strong dry winds	0 1 2 3 4 5
4. Separation of adjacent structures that may contribute to fire spread	0 1 2 3 4 5
E. Roofing Assembly	
1. Class A roof (rated in good condition)	0
2. Class B roof (rated in fair condition)	3
3. Class C roof (rated in poor condition)	15
4. Nonrated (wood shake shingles)	25
F. Building Construction	
1. Materials (predominate)	
a. Noncombustible/fire-resistive siding, eaves and decks	0
b. Noncombustible/fire-resistive siding, combustible deck	5
c. Combustible siding and deck	10
2. Building setback relative to slopes > 30%	
a. ≥ 30 ft. to slope	0
b. < 30 ft. to slope	5
G. Available Fire Protection	
1. Water source availability	
a. Pressurized water source availability	
(1) 500 gpm hydrants ≤ 1000 ft. apart	0
(2) 250 gpm hydrants ≤ 1000 ft. apart	1
b. Non-pressurized water source availability (off site)	
(1) ≥ 250 gpm continuous for 2 hours	3
(2) < 250 gpm continuous for 2 hours	5
c. Water unavailable	10
2. Organized response resources	
a. Station ≤ 5 mi. from structure	0
b. Station > 5 Mi. from structure	3
3. Fixed fire protection	
a. NFPA 13, 13R, 13D sprinkler system	0
b. None	5
H. Placement of Gas and Electric Utilities	
1. Both utilities underground	0
2. One underground and one aboveground	3
3. Both aboveground	5

Totals for Home or Subdivision
(Total of circled points) _____

Hazard Rating:_____

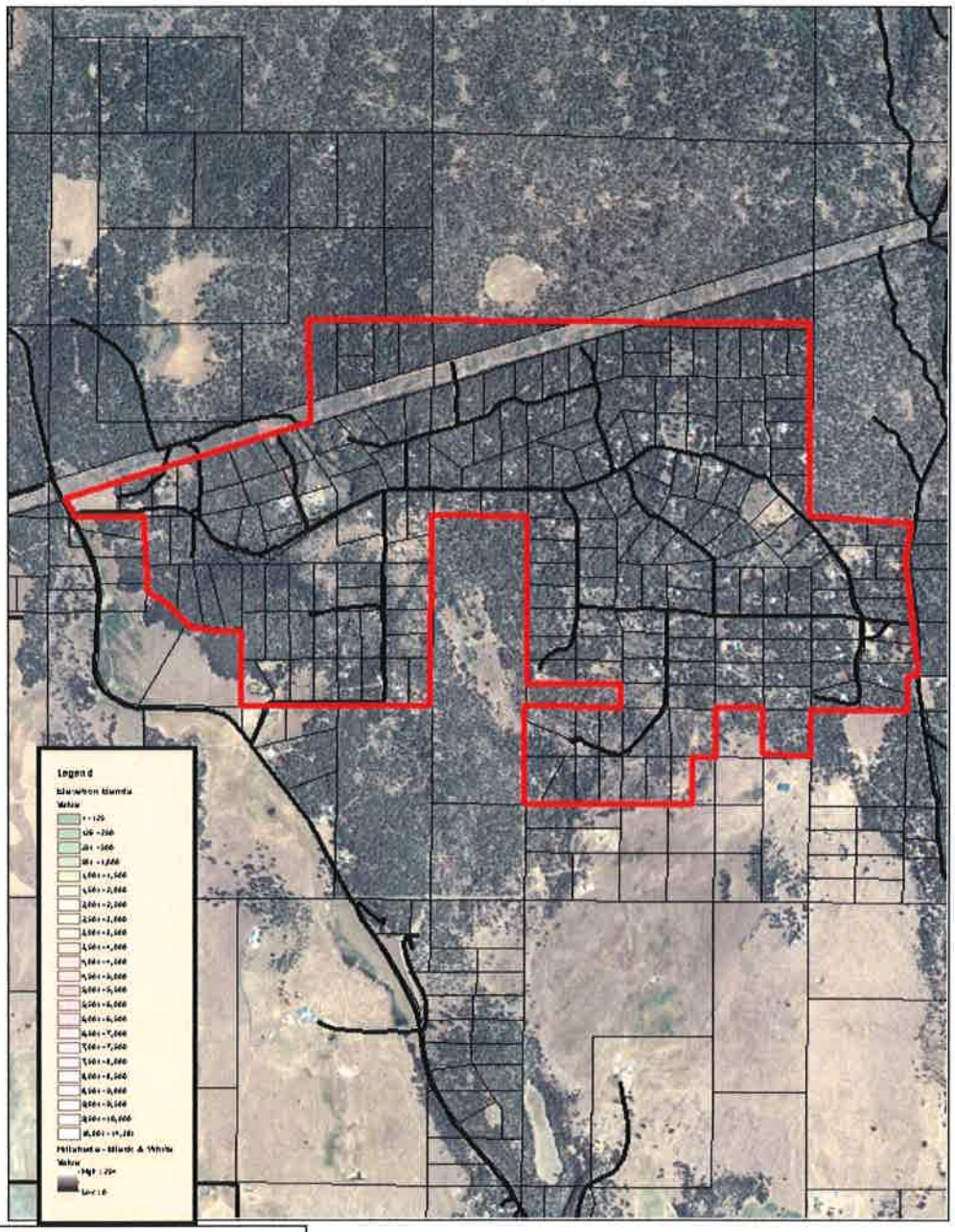
Latitude:_____

Longitude:_____

Date:_____

Appendix B

Photos and Maps



Ponderosa Park CWPP 2014

Park's Property Parcels

WASHINGTON STATE DEPARTMENT OF Natural Resources

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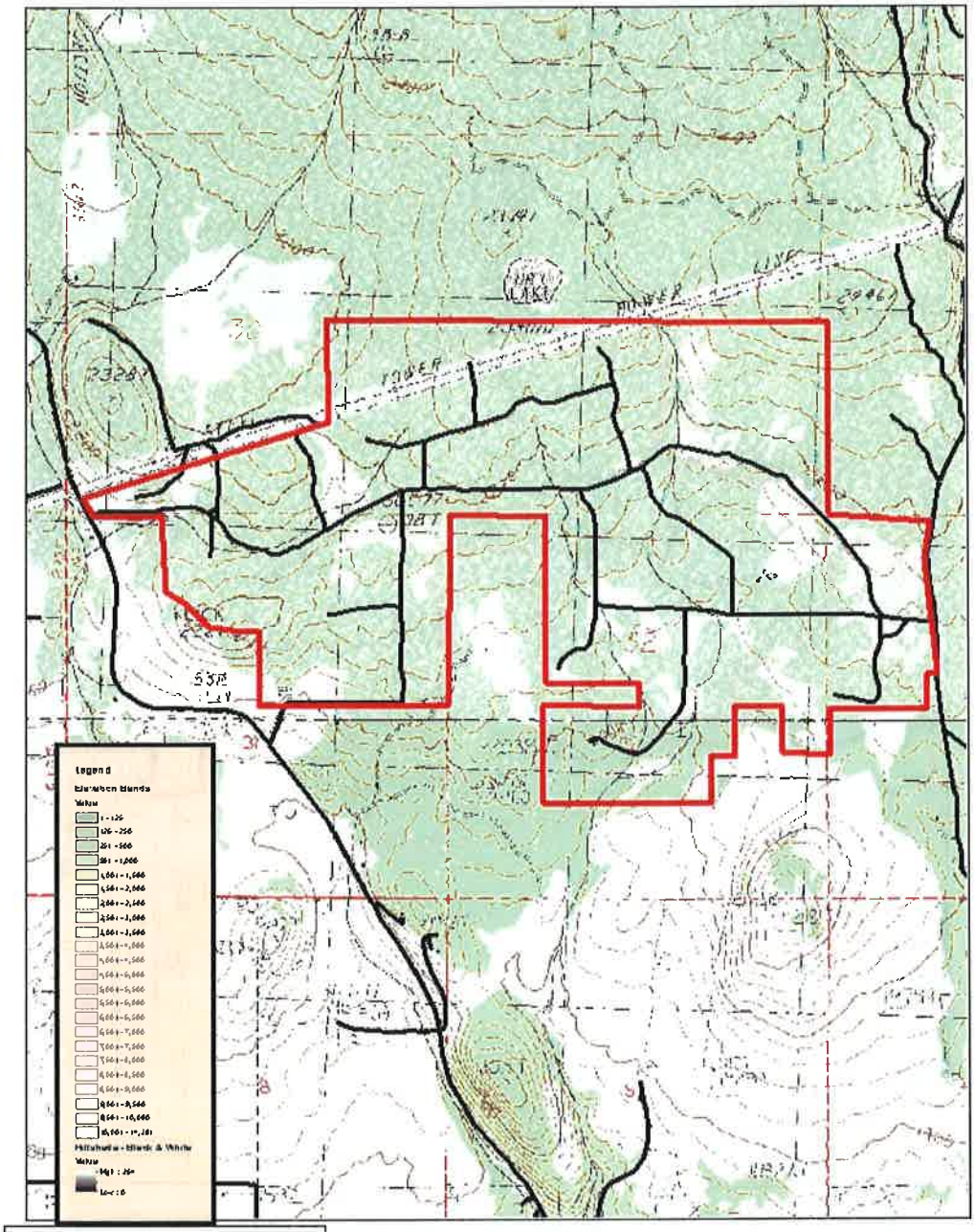
LAKE
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Ponderosa Park CWPP 2014
Park's Topography
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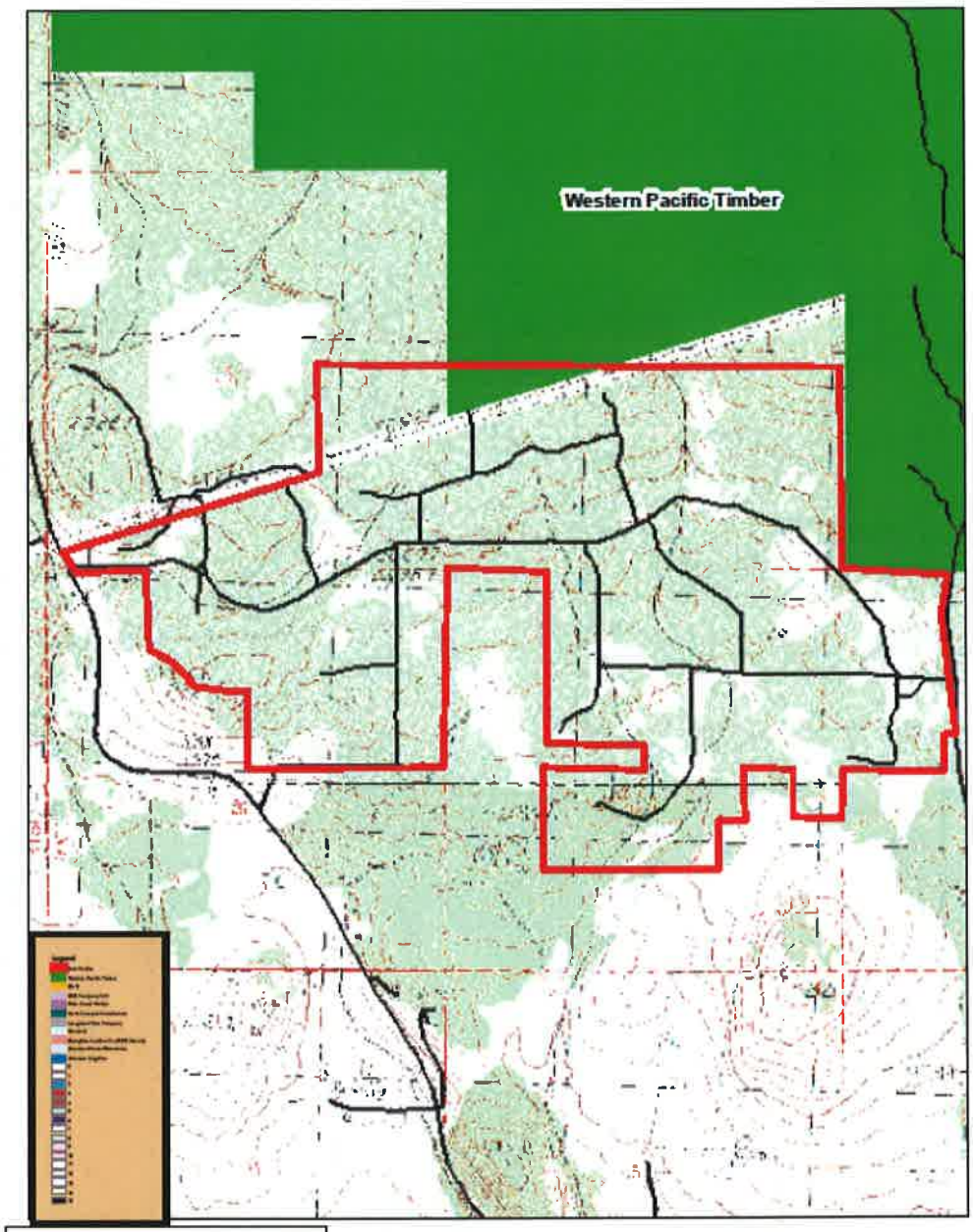

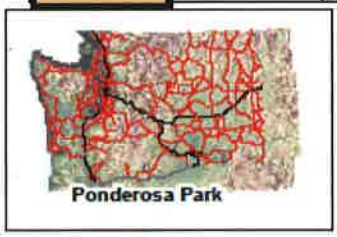

Ponderosa Park CWPP 2014

Major Privite Landowners

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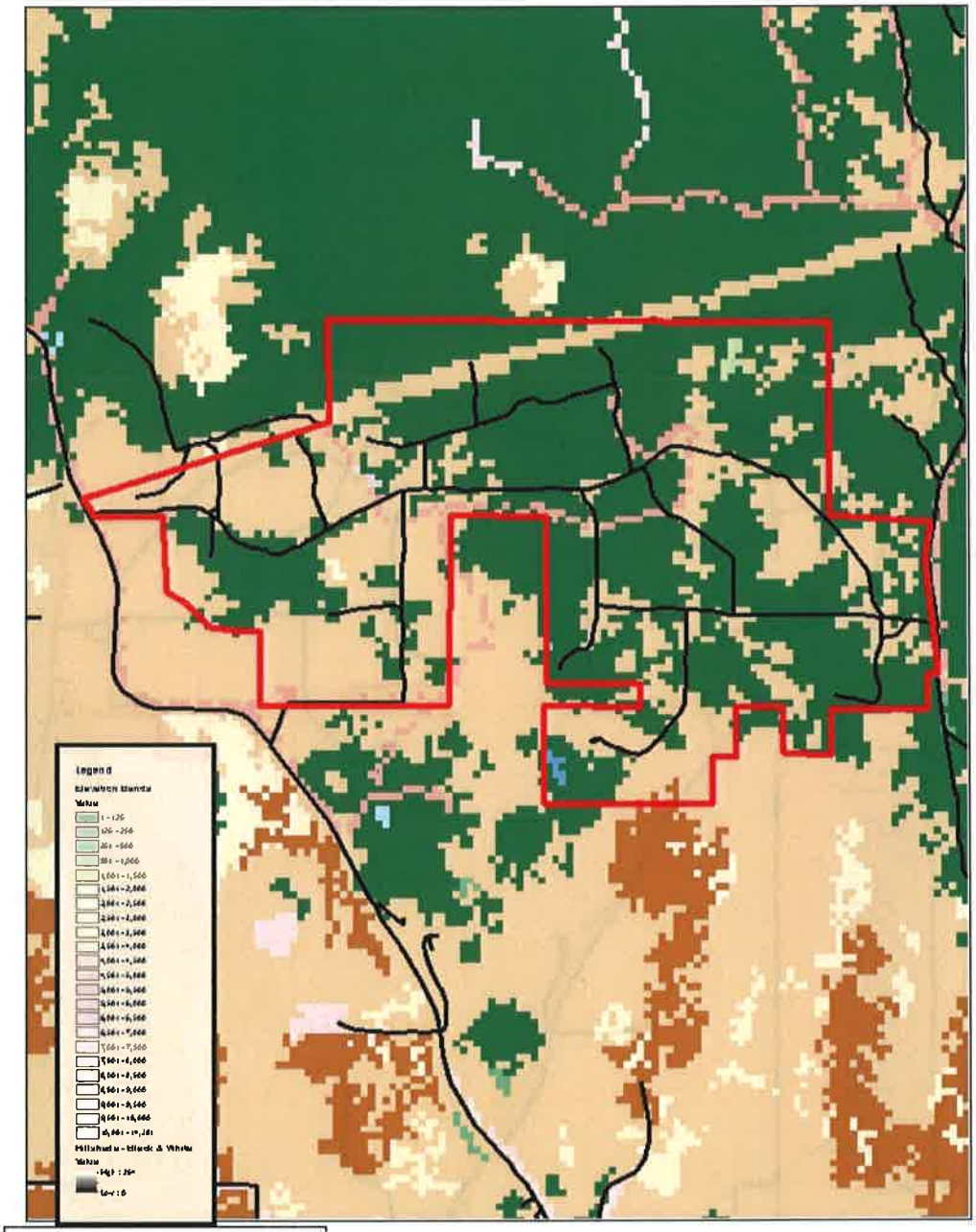
Natural Resources



Ponderosa Park CWPP 2014

Land Cover

Washington State Department of Natural Resources

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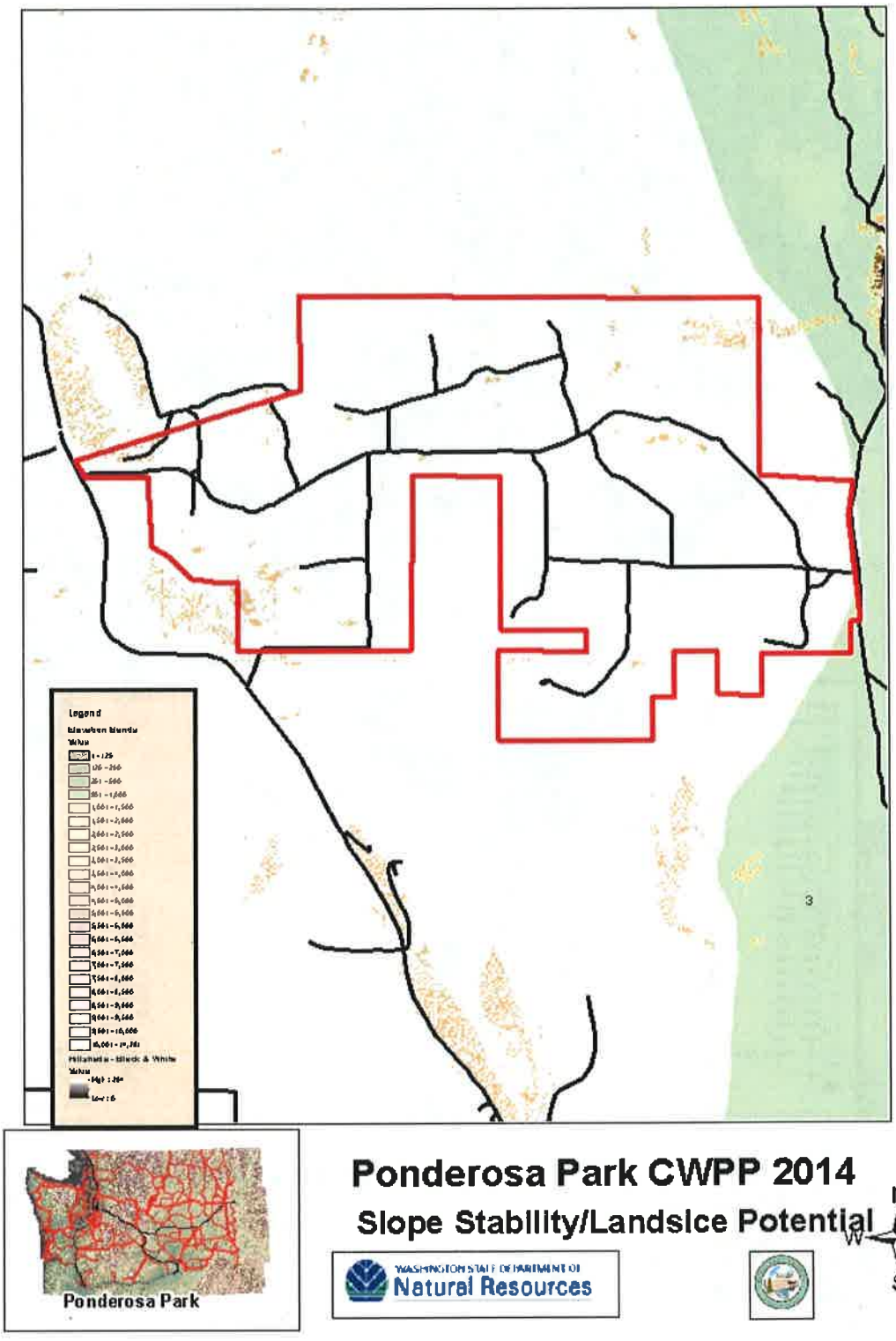
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Ponderosa Park
Ponderosa Park CWPP 2014
Slope Stability/Landsice Potential
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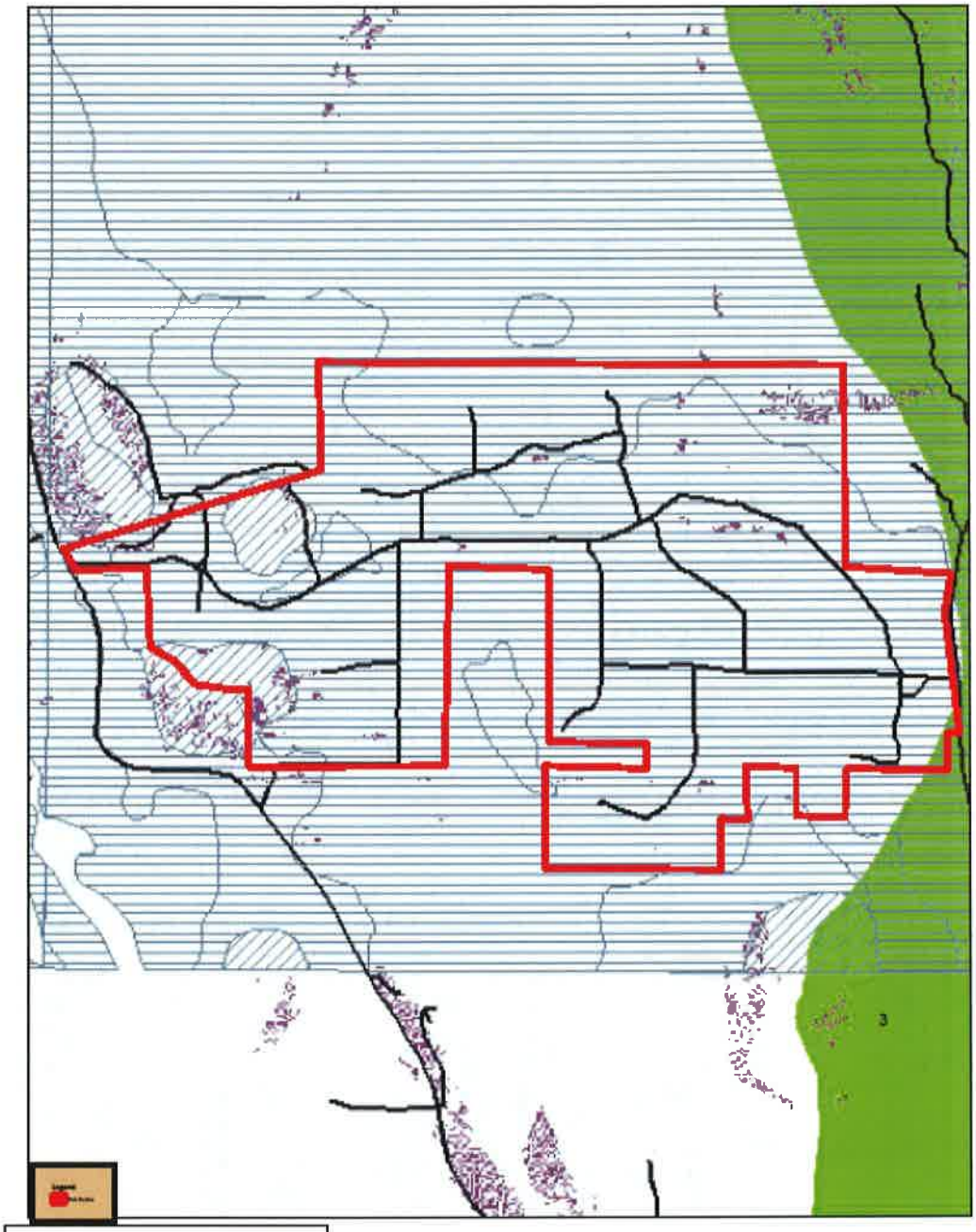
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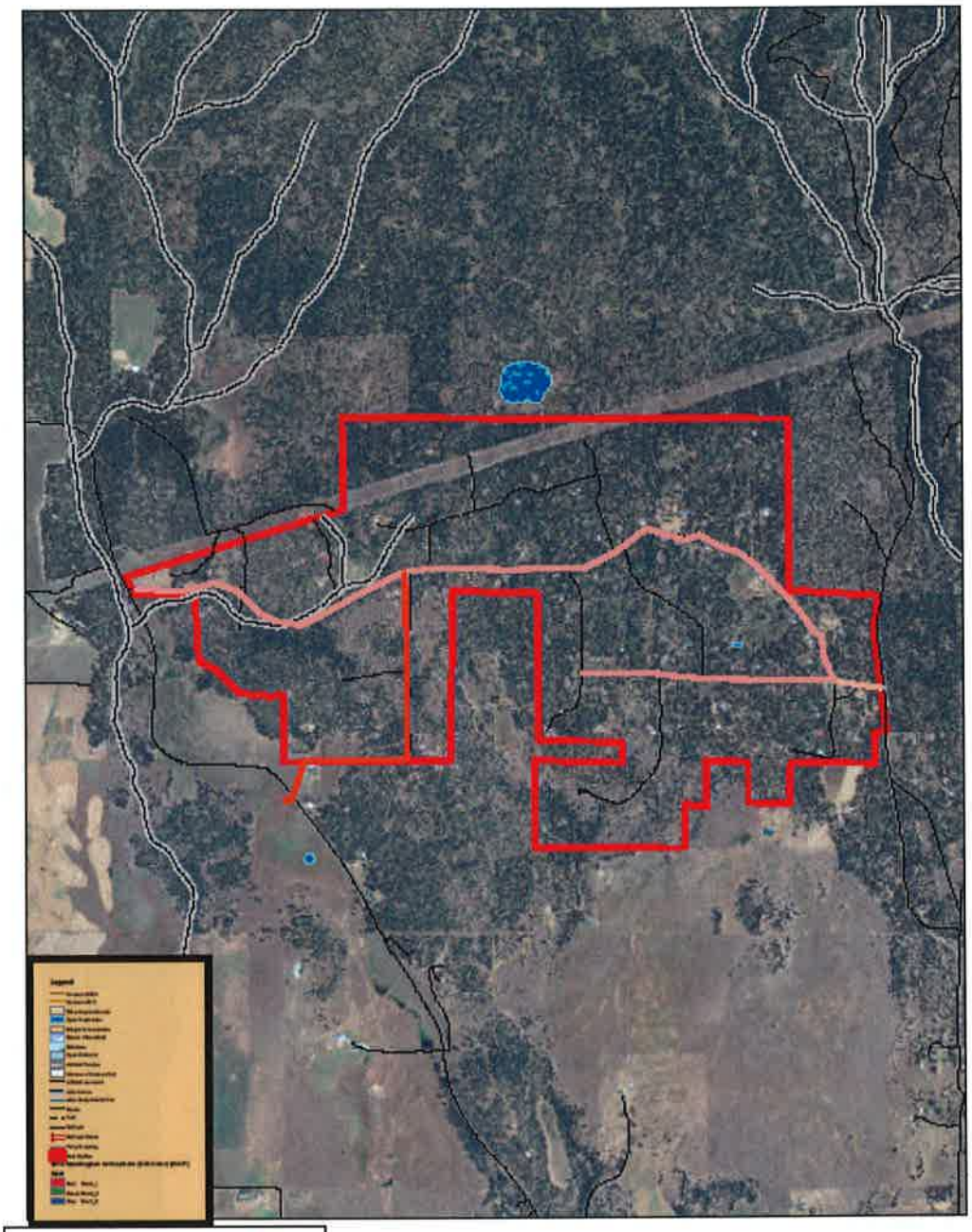

Ponderosa Park CWPP 2014

Hydrology

Natural Resources

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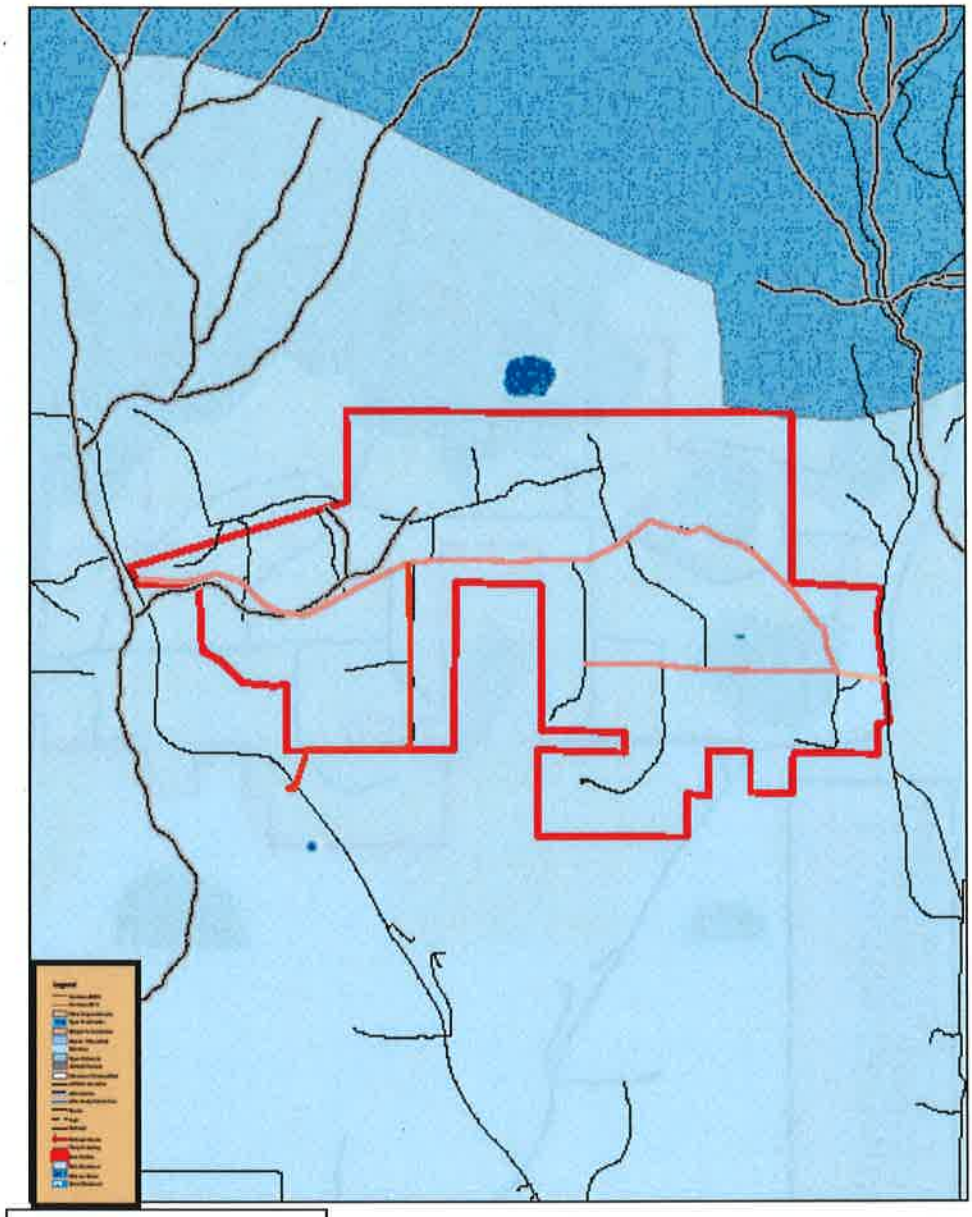
Ponderosa Park CWPP 2014
Rain on Snow
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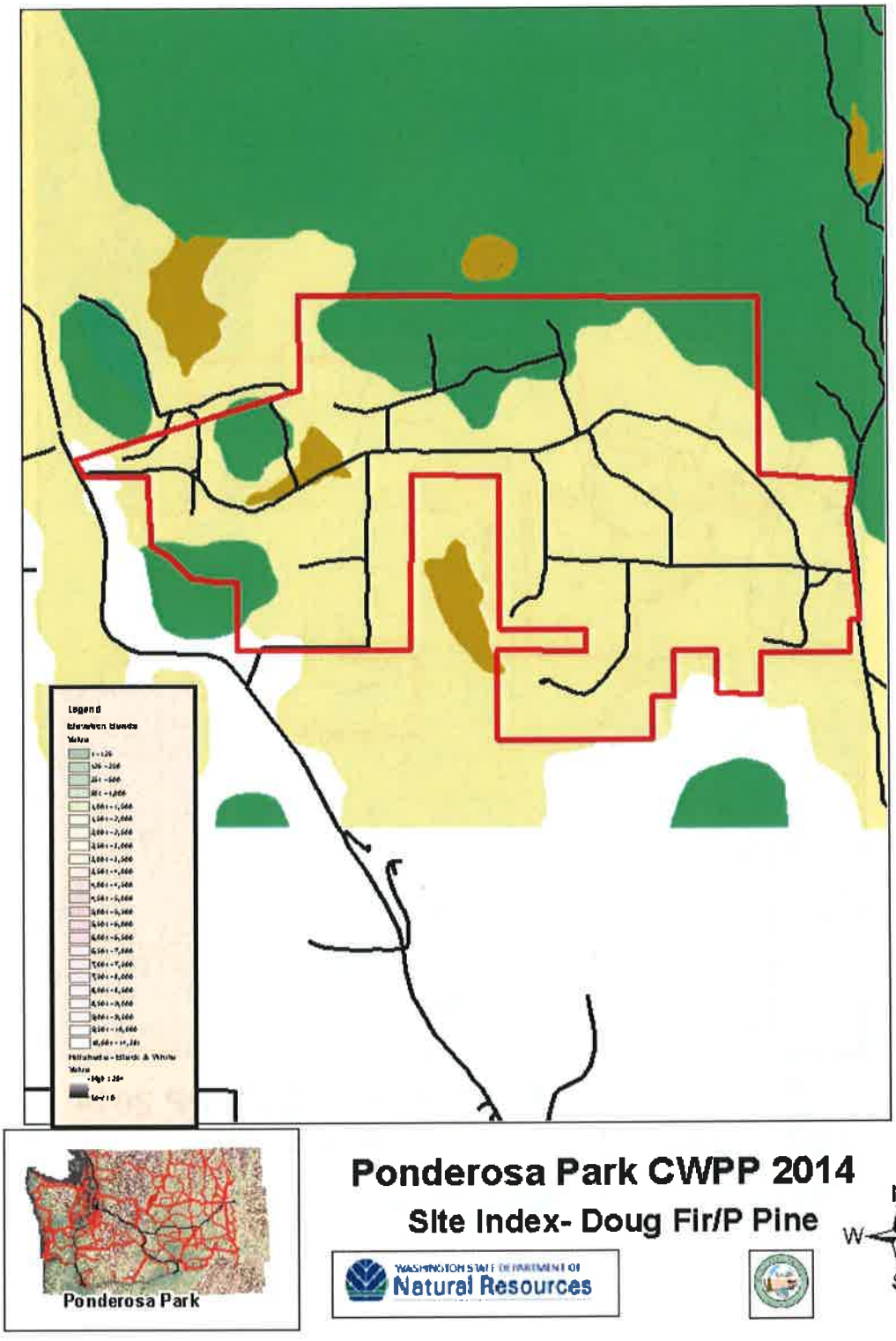
Legend
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Site Index- Doug Fir/P Pine
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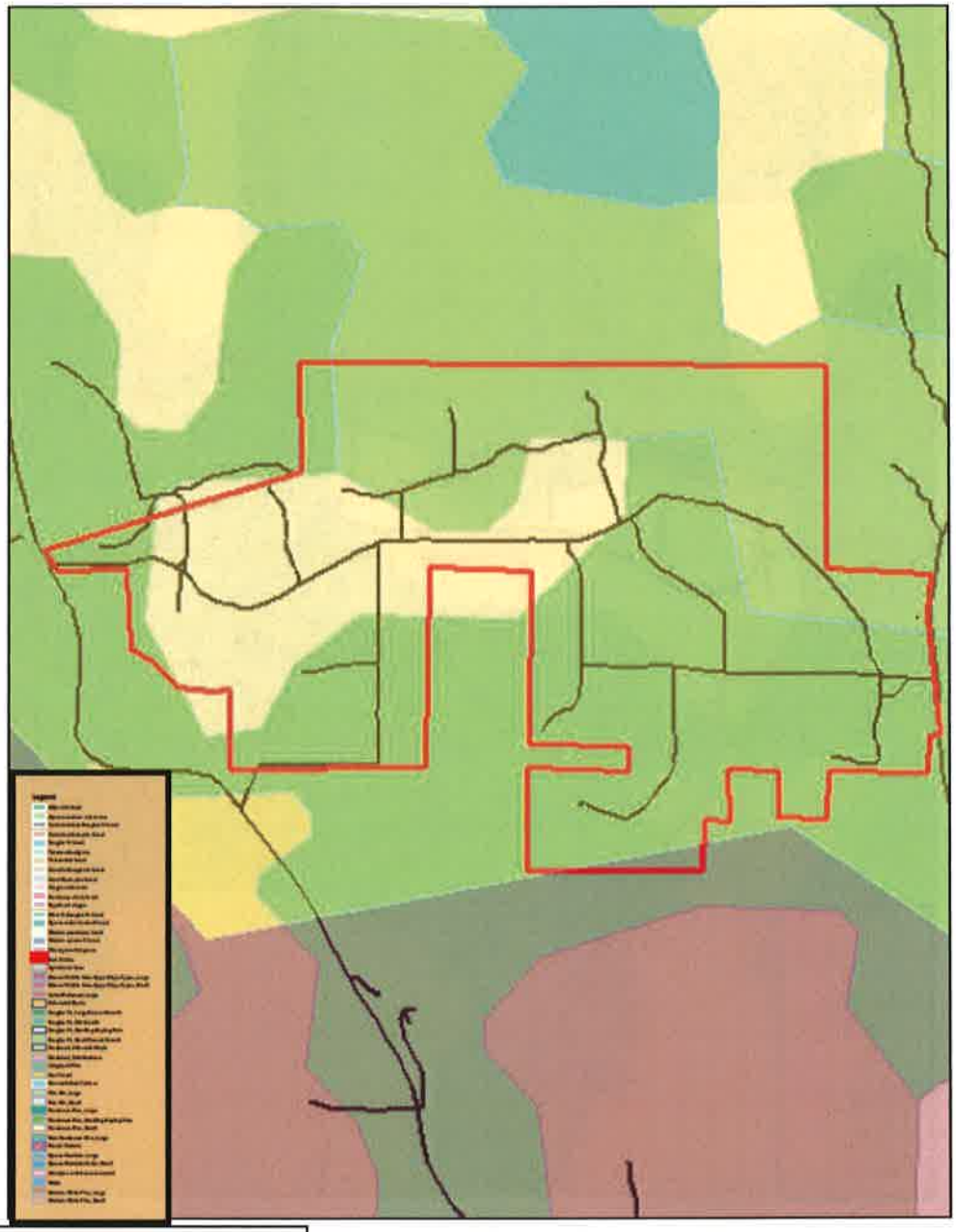
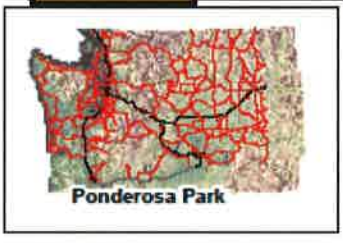
Natural Resources





Ponderosa Park CWPP 2014

Potential Natural Vegetation

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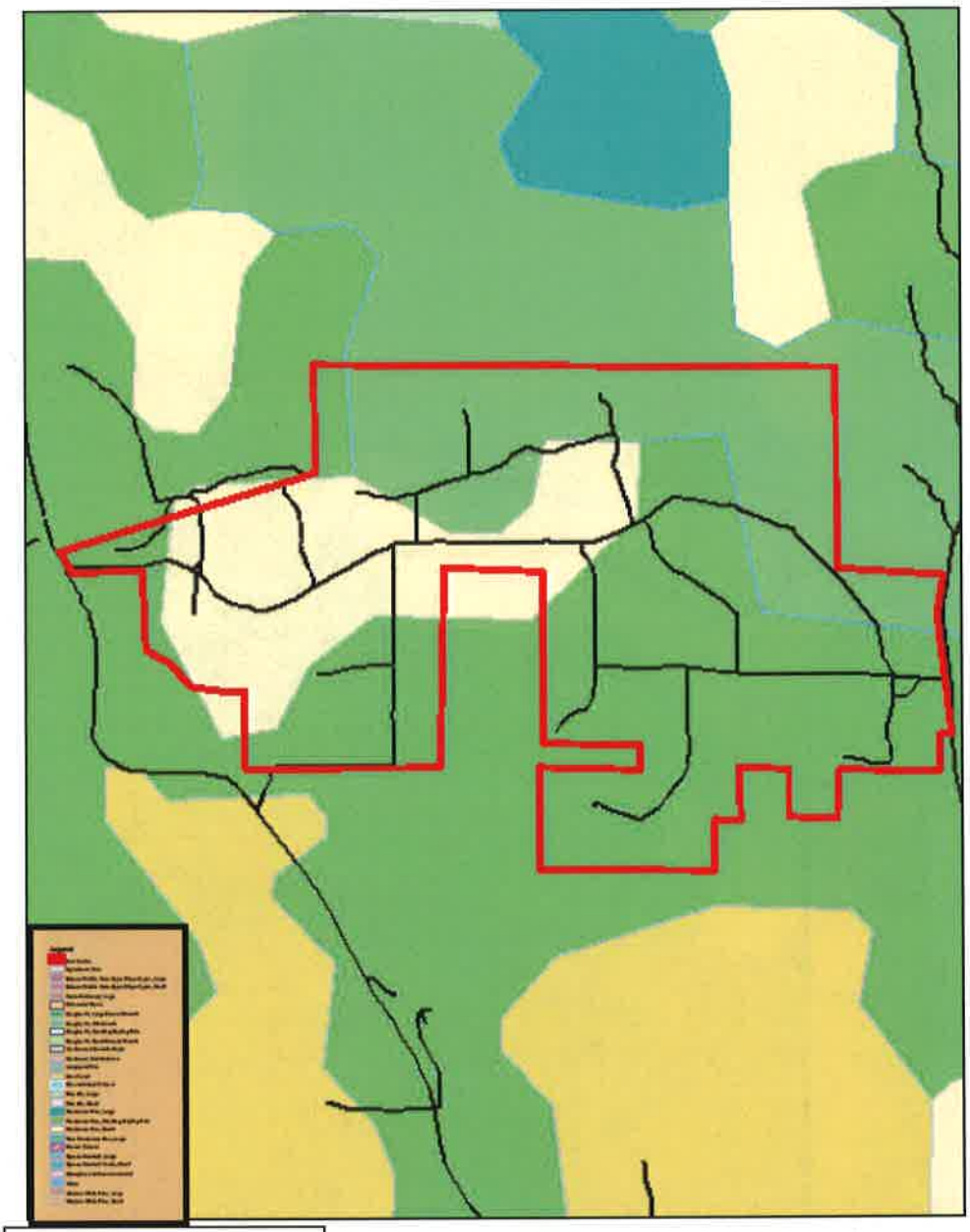
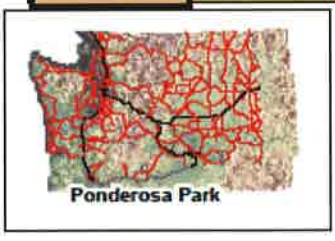
Natural Resources





Ponderosa Park CWPP 2014

Historical Vegetation

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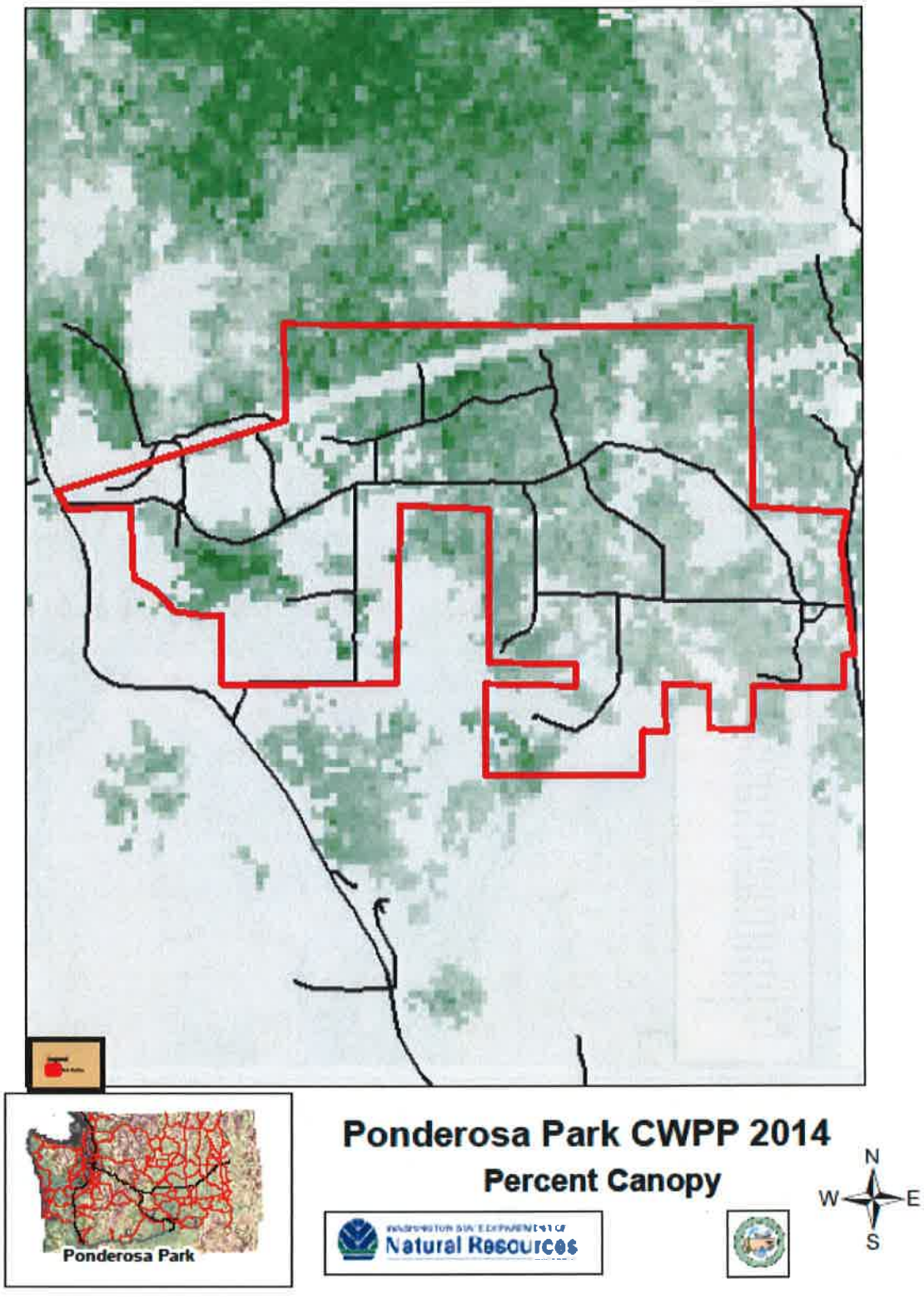
Ponderosa Park
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Percent Canopy
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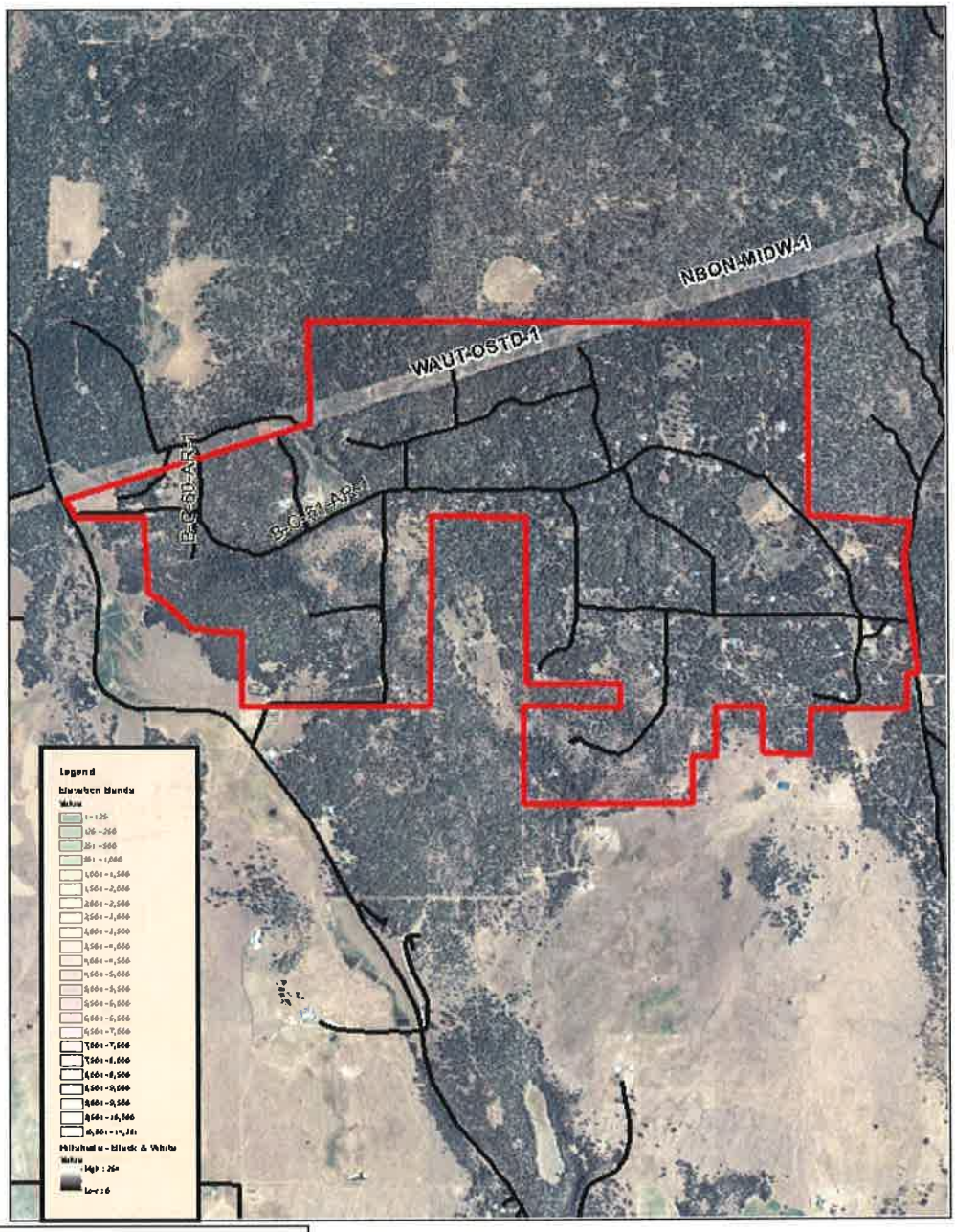

Ponderosa Park CWPP 2014

Utility Lines _ BPA

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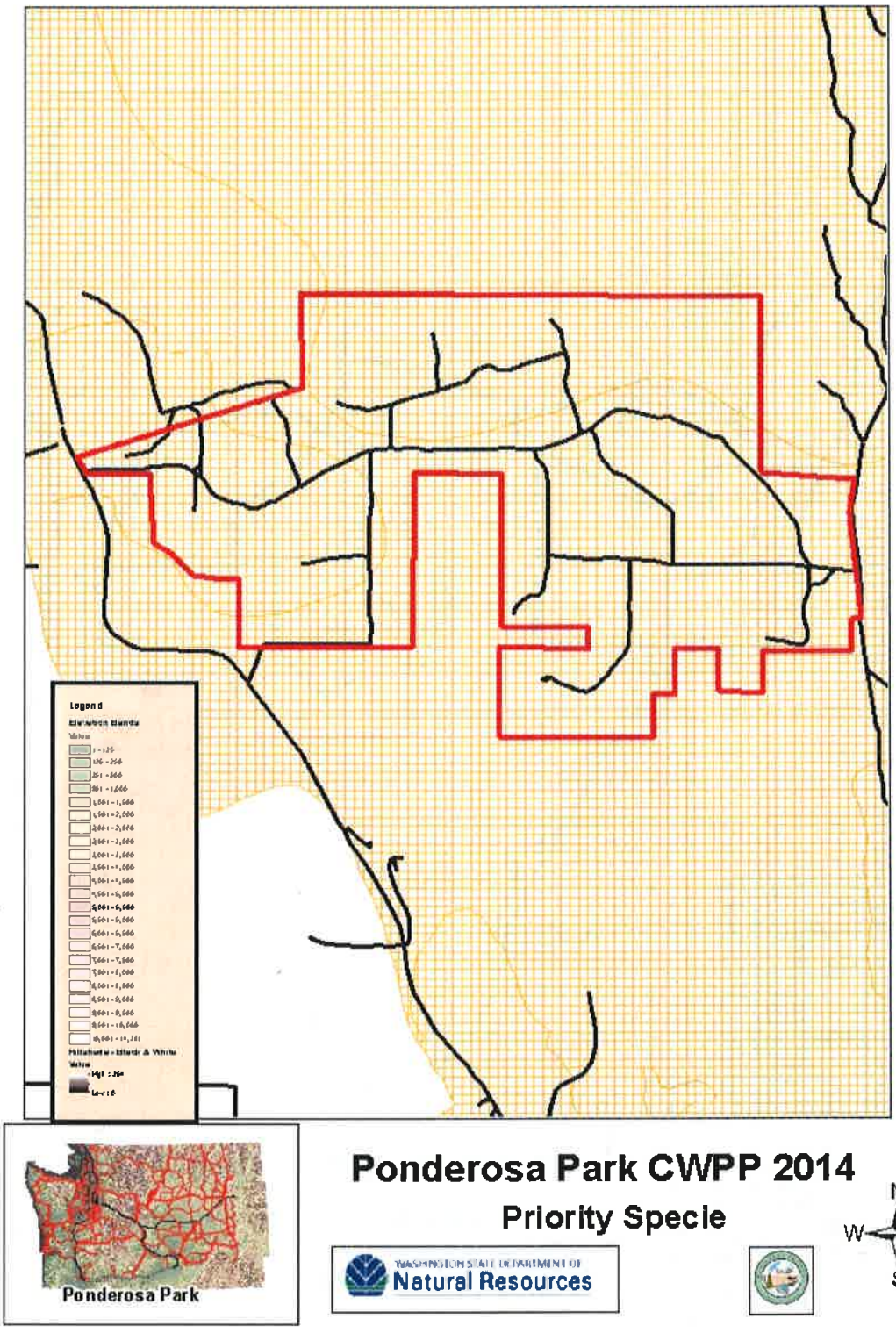
WASHINGTON STATE DEPARTMENT OF Natural Resources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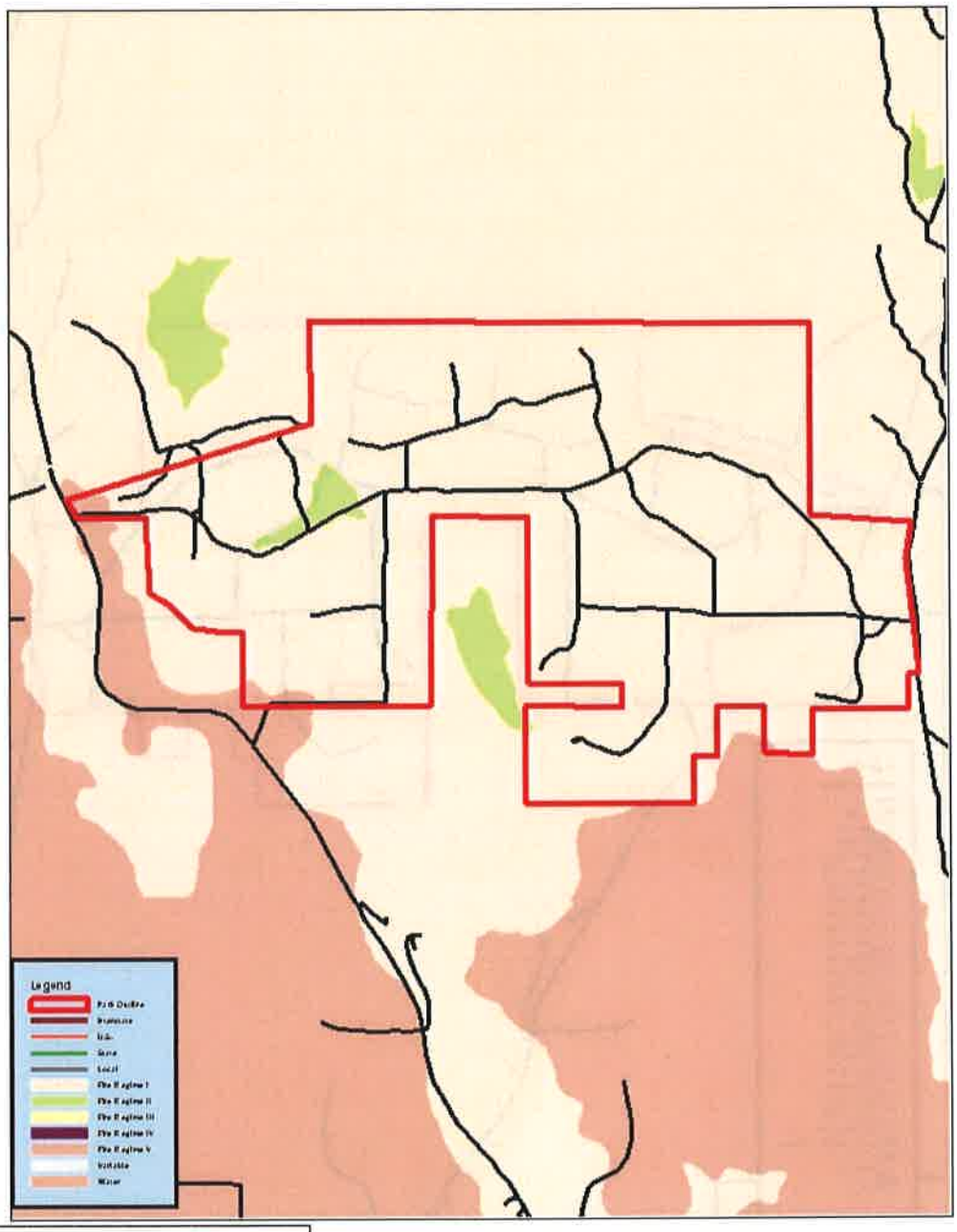

Ponderosa Park CWPP 2014

Landscape Fire Regimes

WASHINGTON STATE DEPARTMENT OF Natural Resources

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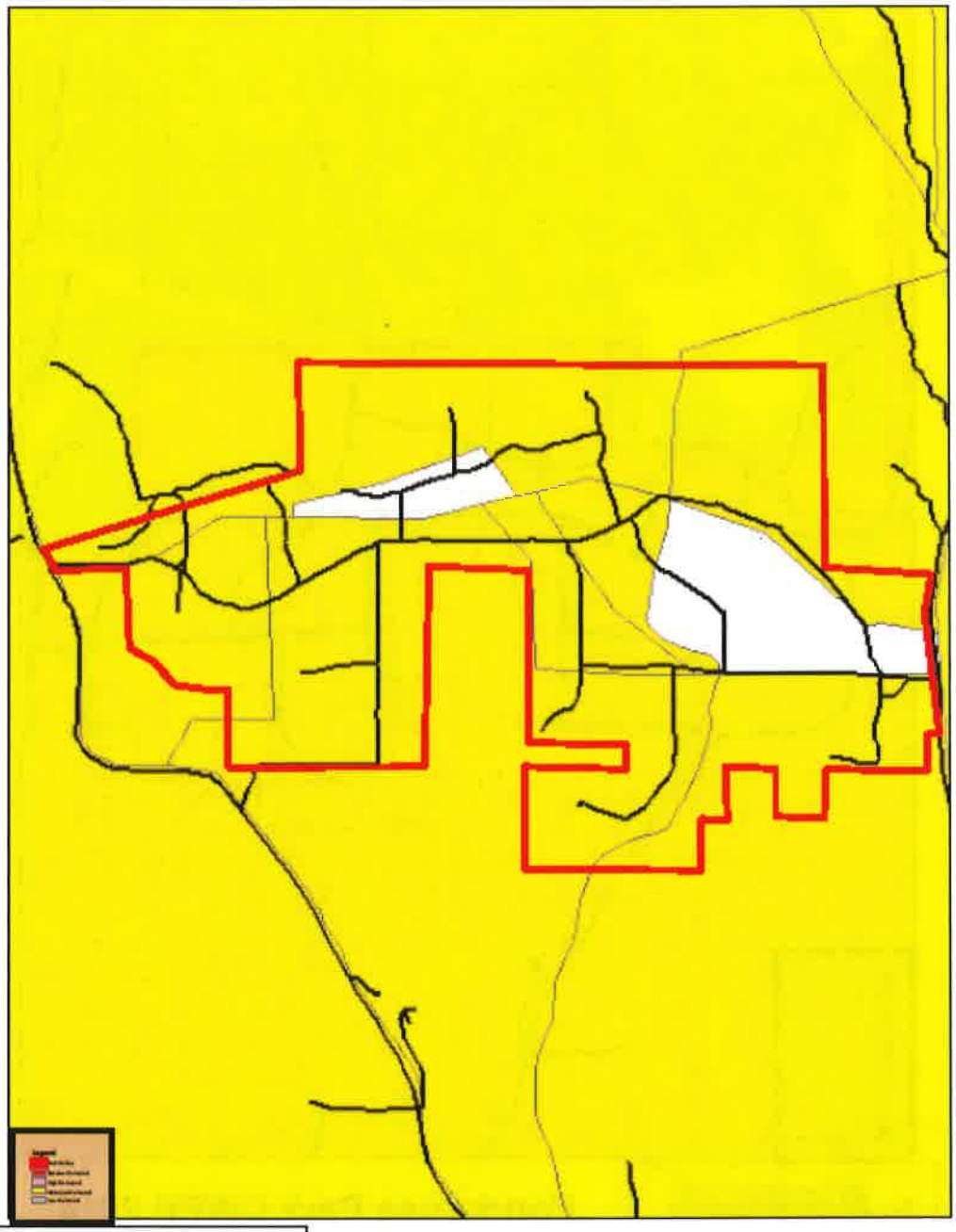

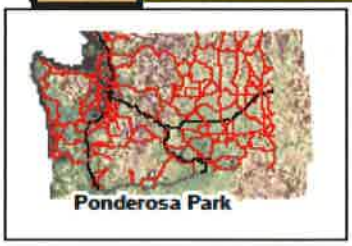

Ponderosa Park CWPP 2014

Current Risk Assessment

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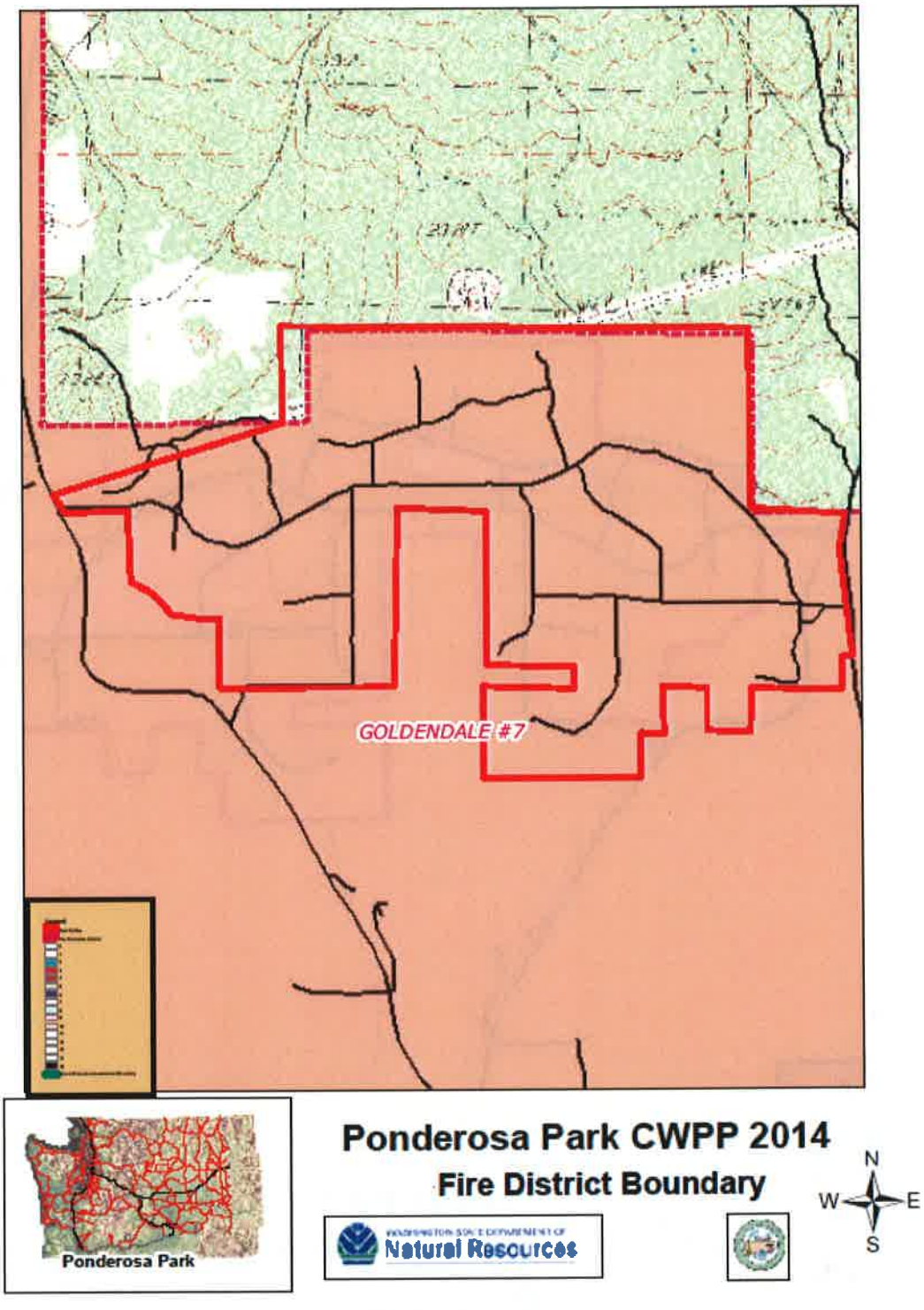
GOLDENDALE #7
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Ponderosa Park CWPP 2014
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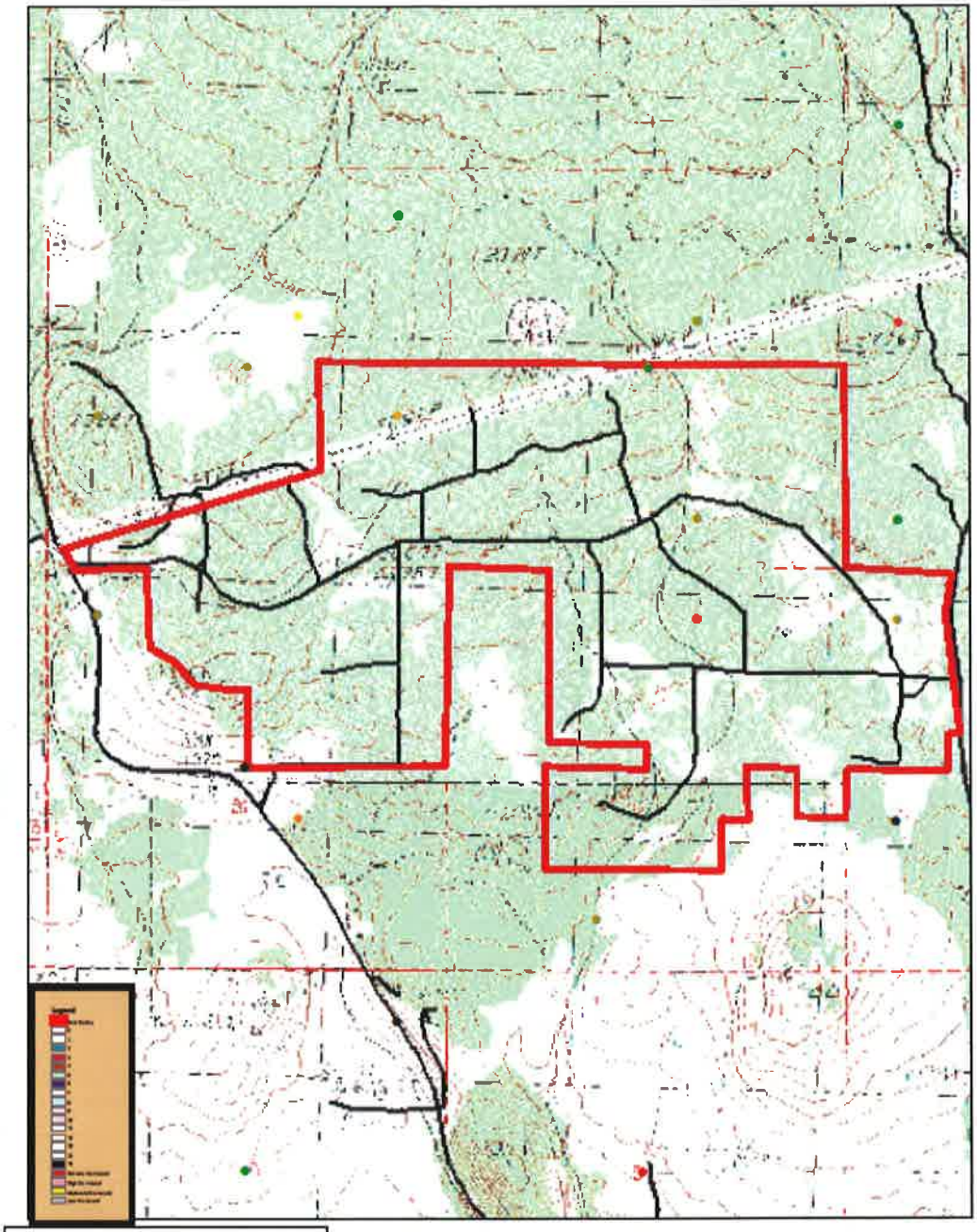

Ponderosa Park CWPP 2014

Fires 1979-2012

Natural Resources

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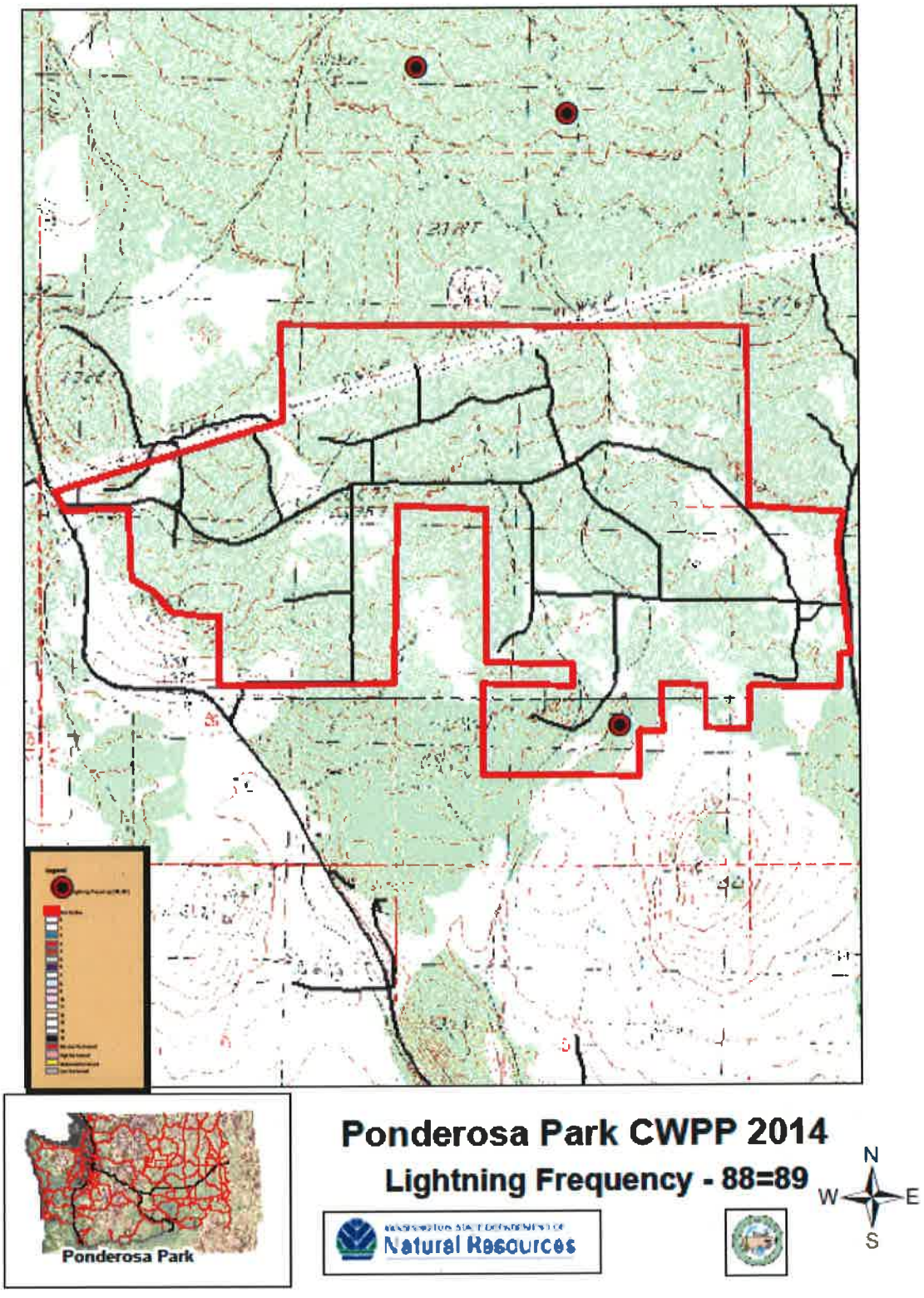
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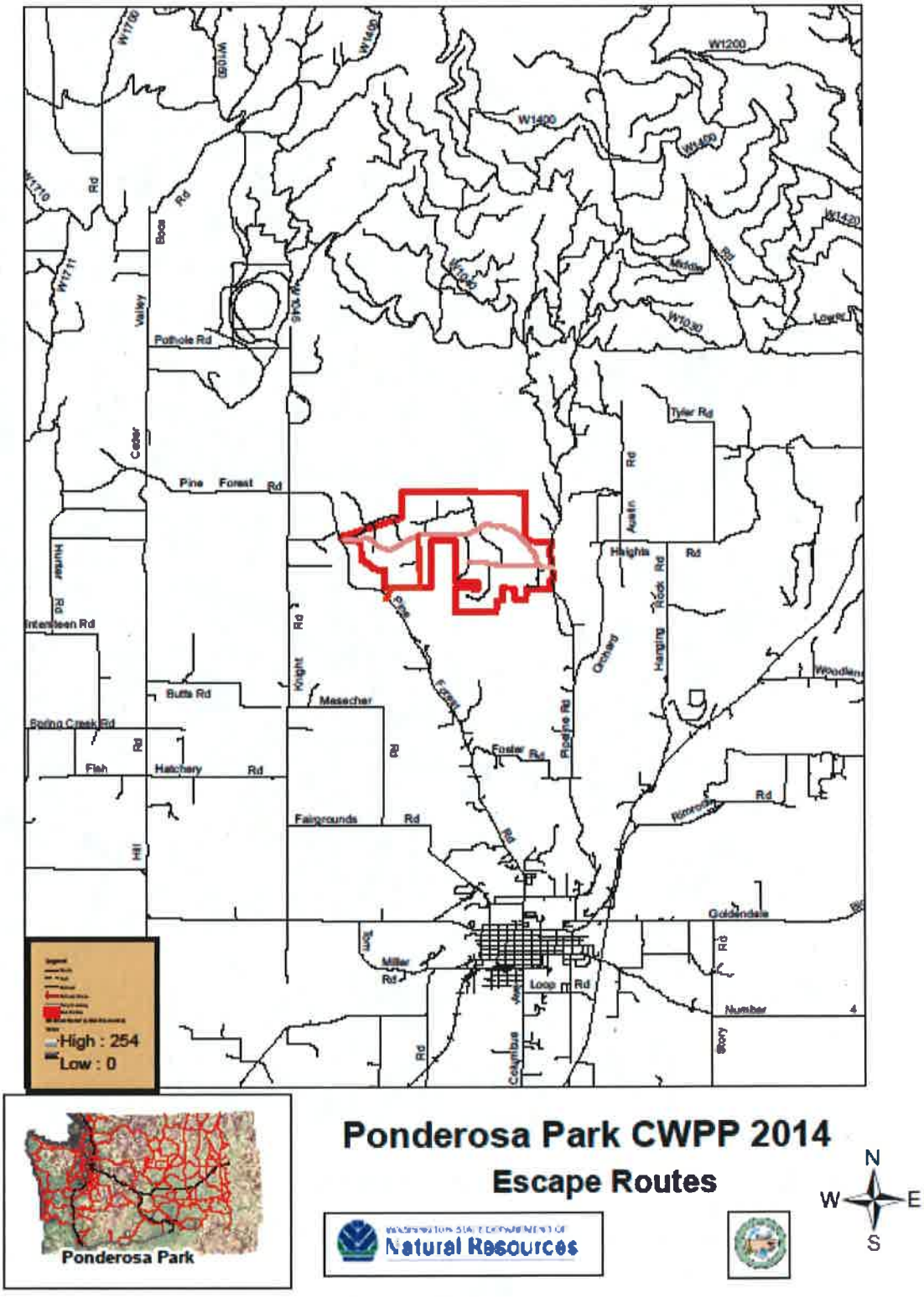
Natural Resources


Pothole Rd
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Fairgrounds Rd
Foster Rd
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Heights Rd
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Knight Rd
Cedar
Valley
Boss Rd
Hunter Rd
Interlaken Rd
Spring Creek Rd
Hill
Miller Rd
Loop Rd
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Escape Routes
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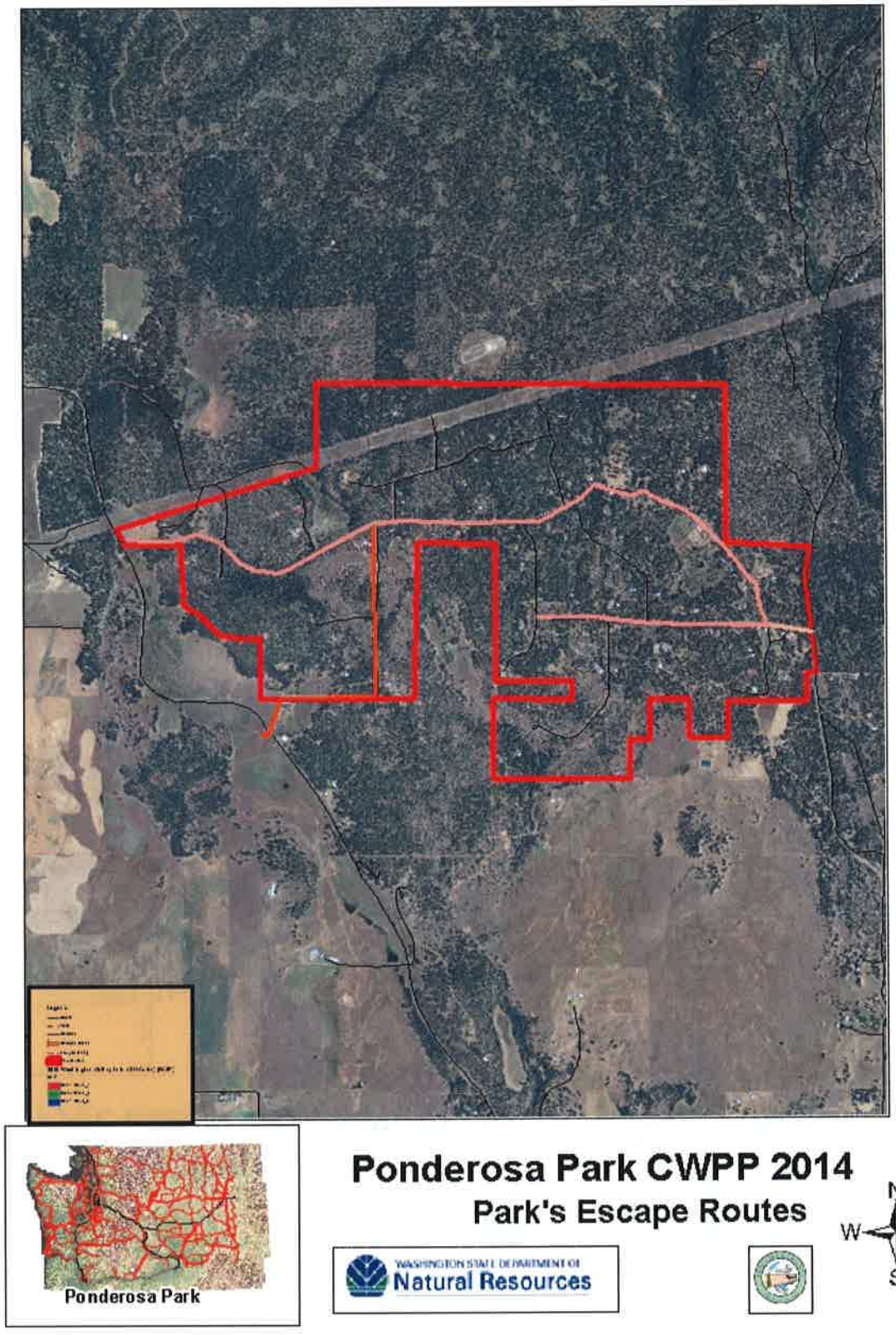
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WASHINGTON STATE DEPARTMENT OF
Natural Resources

Appendix C

Activity Tracking

Plate C.1- Ponderosa Park Landowner agreement form (two Pages): *Firewise Committee's agreement form with Landowners to do shaded fuel break work on their parcel.*

FIRE FIRE FIRE FIRE FIRE

There is a fire burning along the border of your property and is about to spread onto your property. Now it has spread onto your property and is burning the bitter brush and the dead Branches and the other dead fall and soon it will be burning trees that are dead due to being too close to other trees. Now the next thing to burn is your home.

Now all this can be prevented with some work before a fire breaks out. I am about to tell you an easy way to prevent this from happening.

At the entrance to Ponderosa Park at the corner of Ponderosa and Golden Pine you might have noticed a sign that says THIS IS A FIREWISE COMMUNITY. The Ponderosa Park Community was recognized by the Federal Government, (Firewise USA) and given the status of being a Firewise Community by the Department of Natural Resources. What this means is that Ponderosa Park was given a grant of money to create a program to clear out fire hazard materials and to create a way to protect or at least aid in the protection of the people's property within the Park.

The Firewise Committee is about to let a contract to a contractor to come on to your property and clear out the bitter brush, dead brush, dead trees, limb existing trees up 15' above the ground, and fall any trees that are crowding other trees and causing them to become sick or dying. This is all going to happen within a 100' (one hundred foot) area beginning at your property line. This being the property line next to the property belonging to someone not in the Park. This area of clearing is called a SHADED FUEL BREAK. Now this would be done at no expense to you the property owner. It will be paid for from the funds that Ponderosa Park has received from the Department of Natural Resources.

The best way to make this happen is to cooperate with the Firewise Volunteer and work with them in order to work out any details of the project. The Volunteer will mark out the boundaries of the project and explain and in some cases even mark trees that have to come down. Any tree that is taken down will be limbed and the limbs removed and the tree log can be left for you to make fire wood out of. All the brush, limbs and other items will be reduced to chips and left on your property as ground cover.

So we hope you take advantage of this opportunity to reduce the risk of fire spreading onto your property and work with the Firewise Volunteer.

THANK YOU.

I approve of the creation of a SHADED FUEL BREAK on the first 100' of the exterior of the perimeter of my Lot # _____.

Signature of Property Owner. _____ Date. _____.

Plate C2- Homeowner time tracking sheet

FIREWISE COMMUNITIES/USA

VOLUNTEER TIME SHEET

DATE	
NAME OF PERSON/GROUP	
NUMBER OF VOLUNTEERS	
CONTACT PERSON	
TELEPHONE	
ADDRESS	
E-MAIL	
NO. OF HOURS WORKED	
TYPE OF PROJECT	

ADDITIONAL INFORMATION:

1. POWER EQUIPMENT HOURS

2. BRUSH /SLASH REMOVAL HOURS

3. ACRES CLEARED

4. MILEAGE/EXPENSES

5. MISC.

C3- Ponderosa Park Homeowner's time sheet instructions (two Pages

Instructions for Submitting a Firewise Volunteer Time Sheet

1. From the Home page, click on Data Entry Forms.
2. In the Data Entry Forms page, click on Firewise Volunteer Time Sheet.
3. A Firewise Volunteer Time Sheet will display with your Name and Email already entered.
4. Address*. This is a required field. Enter your Park street address or lot number.
5. Phone*. This is a required field. Enter the phone number where the Firewise committee can reach you.

Work Details for the Firewise work project.

6. Beginning Date*. This is a required field. Enter the date the work started. Any format is acceptable, mm/dd/yyyy is preferred.
7. Ending Date. Enter this date if the hours required more than 1 day to complete the work. Any format is acceptable, mm/dd/yyyy is preferred.
8. Name of Person/Group. If the work was performed by a group, enter the name such as Weekend Work Party. If the Time Sheet is for someone other than you, enter their name.
9. Number of Volunteers. Enter the number of volunteers that worked on the project.
10. Total Hours Worked*. This is a required field and is the total number of hours worked by all volunteers.
11. Acreage or. Enter the total acreage of the work area. If less than 1/4 acre, enter Square Footage in the following field instead.
12. Square Footage. Enter the square footage of the Firewise work area if acreage is not used.

Total Hours Breakdown - Hours entered below show when combined should equal the hours entered in step 10 - Total Hours Worked.

13. Flammable Brush Control Hours. Enter the number of hours spent removing brush and dead timber, including falling, cutting and stacking.
14. Defensible Space Hours. Enter the number of hours spent clearing a defensive space around a structure. This includes clearing, falling, cutting and stacking.
15. Pruning Hours. Enter the number of hours spent pruning trees and shrubs.
16. Thinning Hours. Enter the number of hours spent thinning trees and shrubs.
17. Chipping Hours. Enter the number of hours that chipping was performing on the debris. Do not enter Chipping Hours if the work was performed by the Park's Firewise Chipping contractor.

Power Equipment - Chain Saws, Trim Saws or any other gas powered equipment used.

18. Power Equipment Hours. Enter number of hours power equipment was used during the Total Hours Worked.

Firewise Committee - Following 2 fields used by Firewise Committee members only.

19. Type of Activity. Select Bids, Contract Documents, Meetings or Others from the selection list.
20. Activity Hours. Enter the total number of hours for all committee members combined.

Additional Comments

21. Comments. Enter any comment needed to clarify an entry.
22. Click Submit. A ticket is generated and forwarded to the Firewise committee.
23. You will receive an email from the Firewise committee when your ticket is posted to the Firewise database, usually within 24 hours.

More information on the Firewise Volunteer Time Sheet is available in Frequently Asked Questions. From the Home page, click on FAQ. On the FAQ page, click on a question to display an answer to the question.

C4: Ponderosa Park Roving Chipping agreement

Ponderosa Park Firewise Chipping Program

Name. _____

Address. _____

Phone Number. _____

Lot # _____

Your brush piles have been inspected and found to be ready to be chipped.

Firewise supervisor. _____

By signing this form, you the property owner do hereby agree to hold harmless from any liability that may occur due to this chipping operation, Ponderosa Park Owners Association and its Firewise committee.

Owner. _____ Date. _____

C5-Ponderosa Park Address marker request form

KLICKITAT COUNTY RURAL 7 FIRE AND RESCUE

327 W. Brooks
Goldendale, WA 98620

REFLECTIVE ADDRESS ORDER FORM

Please complete the following information:

Name_____
Address_____
City, State, Zip _____
Telephone Number _____

Please fill in the boxes below with your address numbers.

☐ ☐ ☐ ☐ ☐ ☐

OR

STREET NAME

☐

Signs can be made horizontal ☐ OR vertical ☐

Mark your preference.

Signs are pre-drilled, easy to install. They are blue with white numbers or lettering.

$15.00 Number Sign **$25.00** Street Name

C6- Original application for cost share assistance to Ponderosa Park (7 pages)

Eastern Washington
Forest Landowner
Cost-Share Application
(October 1, 2007 – September 30, 2008)

****

MAIL ALL THREE (3) PAGES TO: FOREST STEWARDSHIP PROGRAM, WA DNR, P.O. BOX 47012, OLYMPIA, WA 98504-7012 –OR—FAX TO: (360) 902-1428 (FAX).

Please print legibly. Read carefully all terms, conditions, and requirements; and BE SURE TO SIGN THE LAST PAGE.

Name: Ponderosa Park Home Owners Asso.
Mailing Address: P.O. Box 988
Goldendale WA 98620
Daytime Phone: (206) 696-6035 E-mail (optional): Kincaid@Gorge.net
County where property is located: Klickitat Nearest town: Goldendale # of forested acres:
Legal Description: Pt Sect. 29 through 33, T.5 N. R16 E. WM.
(Example Legal Description: NW 1/4 of S ½ of Section 31, Township 57N, Range 42E).
Name of road from which property can be accessed: Pipeline Road
Map or Photo: **Please attach a map or copy of aerial photo to help forester locate the property.**

Does this property have a DNR-approved Forest Stewardship Plan? ___Y _X_N But have a neighborhood CWPP
If not, do you wish to apply for FLEP cost-sharing to hire a private consulting forester to prepare such a plan?
___Y ___N Name and address of consulting forester (if known at this time): _____

Please use key words to describe the type and extent of work you would like to do (e.g. thinning and slash disposal – 10 acres, etc.):

This project will be doing thinning, pruning, and slash disposal on individual home lots as well as the potential of shaded fuel break in some areas around boundary of the park property

BE SURE TO READ THE TERMS, CONDITIONS, AND REQUIREMENTS CAREFULLY AND COMPLETELY AND THEN SIGN THE LAST PAGE.

7

Cost-Share Terms, Conditions, and Requirements

Landowner Eligibility Requirement

The applicant must be a non-federal owner of no more than 5,000 forested acres within the state of Washington.

Minimum Ownership Requirement

Forest Stewardship Plans – minimum of 20 forested acres.

All other practices: No minimum acreage.

Maximum Ownership Limit

The applicant must own no more than a total of five thousand (5,000) forested acres in the state of Washington.

Minimum Cost-Share

Applications must be for a minimum of $500 in cost-share funds.

Maximum Cost-Share

Applicants may be approved for up to $20,000, plus the cost of a Forest Stewardship Plan (if applicable), per federal fiscal year. Public agency applicants, and multi-landowner group projects, under a Community Wildfire Protection Plan, are exempt from this limitation.

Minimum Treatment Acreage

Forest Stewardship Plans – plan must be for a minimum of 20 acres.

All other practices: No minimum treatment acreage.

Maximum Treatment Acreage

There is no maximum treatment acreage.

Cost-Share Rate Limit

Cost-share will be paid at 50% of actual cost incurred, not to exceed the maximum per-unit reimbursement rate shown in this application.

Prior Written Approval Requirement

No cost-sharing can be paid for any practice which was begun before written approval is issued. The applicant agrees NOT to begin any work until formal written approval is received from the Washington State Department of Natural Resources (DNR). Filing of this application does NOT constitute approval to begin a practice nor does a subsequent site visit to determine project needs and specifications. Purchase of materials (e.g. tree seedlings) ahead of when work actually commences is acceptable, however, there is no guarantee that the applicant will be reimbursed for any costs unless and until you receive a written approval letter from DNR.

Forest Stewardship Plan Requirement

When a DNR-approved Forest Stewardship Plan is required in order to receive cost-share funds to for "on-the-ground" practices, payment for such practices will be withheld until the plan is completed. **A DNR-approved Forest Stewardship Plan is required EXCEPT in the following cases:**

a) Ownerships of 20 acres or less.
b) Ownerships of 21-100 acres when cost-share approval is $5,000 or less.
c) Public agency projects, and multi-landowner group projects, conducted under a Community Wildfire Protection Plan (CWPP).
d) When adequate funds are not available to cost-share Forest Stewardship Plans.

Practices Must Meet Specifications

Cost-shared practices must meet written specifications provided, or approved, by DNR.

Any change in specifications or practice extents requires written approval in advance from DNR.

The applicant is responsible for having, and understanding, written practice specifications before any work commences.

Non-Commercial Requirement

Slash (debris) created by commercial harvest, and reforestation following commercial timber harvest, are ineligible for cost-sharing. In mixed stands, containing both commercial and non-commercial sized trees; slash resulting from treatment of that portion of the acreage occupied by non-commercial trees is eligible. Slash treatment following commercial harvest is eligible in cases where the land has been sold and the new owner (cost-share applicant) did not receive financial benefit from the harvest.

Defensible Space

Creation of wildfire-resistant "defensible space" around structures is not eligible as a stand-alone practice. However, defensible space is both eligible and required when combined with other practices to treat surrounding forested acreage.

Practices Must Meet Permit and Regulatory Requirements

The applicant is required to comply with all appropriate legal requirements, including obtaining appropriate permits (e.g, hydraulics and forest practices applications, etc.) when required. No cost-share funds will be paid for any practice installed without proper permits, or for any practice which is out of compliance with regulatory requirements at the time of completion.

Cost Documentation Requirement

The applicant must provide DNR with acceptable written documentation (e.g. receipts from contractors and suppliers and/or time logs for do-it-yourself work) of costs incurred for each practice category for which cost-sharing is to be paid. Landowners may charge up to $20 per hour for do-it-yourself labor.

Timely Completion Requirement

Cost-shared practices must be completed, and reported to DNR, no lster than the completion deadline stated in the application approval letter, at which time the approval expires and no cost-sharing will be paid. **There are no extensions of time. Applications cannot be renewed.**

Ten Year Practice Maintenance Requirement

Cost-share recipients are required to maintain their properties in forest land use, and to protect and maintain cost-shared practices in a fully viable condition for a period of 10 years (e.g. if cost-share is paid for tree planting, the recipient is required to make a good faith effort to control competing vegetation and animal damage). Failure to meet this obligation may require the applicant to repay the government for all, or part, of the cost-share funds received. The landowner is not liable for practice failures caused by events or circumstances beyond their control. There is no obligation whatsoever after the 10 year period.Sale of Property

If the property is sold within the above-mentioned ten year period, the original cost-share recipient retains responsibility for practice protection and maintenance unless the new owner advises DNR in writing that they are assuming this responsibility for the balance of the ten year period.

Property Access

Applicants agree to allow DNR staff, or persons authorized by DNR, access to the property to determine cost-share needs, feasibility, and specifications; certify practice completion; and to determine compliance with the ten year practice maintenance requirement. FLEP recipients are NOT required to allow public access to their properties.

Tax Information Disclosure

Upon practice completion, applicants will be required to submit a Cost-Share Claim Form and an IRS Form W-9 on which they must disclose their Social Security Number or Employer Identification Number. DNR is required to annually submit a Form 1099 to the IRS and to the payee indicating the amount of cost-share funds paid during the previous calendar year.

Appeals

Applicants can appeal any program determination within 30 days by sending a detailed letter of appeal to: Forest Stewardship Program Manager, WA DNR, P. O. Box 47012, Olympia, WA 98504-7012.

I/we, the undersigned, understand and agree to comply with all terms, conditions, and requirements described herein.

X Ralph David Kinkaid PPOA President

SIGN HERE **Applicant(s) Signature(s)** 11-1-2008 **Date**

MAIL all 3 pages of completed application to: Forest Stewardship Program Manager, WA DNR, P.O. Box 47012, Olympia, WA 98504-7012 --- OR ---
FAX all 3 pages to: (360)-902-1428 (FAX).
You will receive written confirmation of the receipt of your application by US Mail.

Ponderosa Park Fuel Reduction Proposal

1.0 Purpose of Proposal:

The purpose of this proposal is to seek funding to supplement funding and work to be done as part of the Ponderosa Park fuel reduction proposal. This is part of the overall Ponderosa Park CWPP and was on the priority list as one of the highest projects to be completed.

2.0 Proposed of Preliminary Action Plan:

The following is a proposed action plan to be taken to reduce the Fuels found within the "Park" area and therefore reducing fire risks in this area. As stated previously this is part of the Ponderosa Park's CWPP and was listed in the priority actions to be taken list in Section 7.4.2 under Fuels Reduction in high risk areas as well as under Education and Outreach 7.2.3 in holding Firewise Workshops as well as working with Klickitat Conservation District in regards to doing personal risk assessments under Section 7.3.1

3.0 Identification of Wildfire Risk Factors:

The following risk factors have been accessed:

- Heavy second-growth forests with many small and tightly spaced smaller trees and brush
- While landowners are particularly attached to the forest setting of their residences they also recognize the need for a protective zone about improvements.
- Topography of the area provides for a high risk of rapidly spreading fire if one was to ignite
- Risk of human caused fires is high in the area due to the amount of tourist traffic and past history.
- Some of the landowners on the lower portions of the slopes are absentee in nature and will probably not be available to assist or are willing to do the fuels reduction yet these parcels with the fuel loading that are present do have the potential of hot fires being created if they do ignite..
- Road rights-of-way fuel reduction is also a key for future access, as well a the potential of creating fuel breaks in case of an incident happening.

4.0 Suggested Actions to be taken

4.1 Identify actions to be taken. Where, who, what
4.2 Additional actions proposed to be taken
4.3 Obstacles to the proposed actions

- Time and cost considerations- need to have some source of funding to enhance the overall project funding
- Some landowners will inevitably choose not to participate
- Potential Rights-of-way issues

4..4 Solutions to potential obstacles

- Time will be volunteered by the homeowners in the area, possibly as groups or on individual landowner's time and effort. This will include the thinning pruning and slash disposal that will improve protective zones around infrastructure
- Use of homeowner's "sweat equity" will include individual time, chainsaws, small equipment and mileage as well as other forms of expenses will be logged and kept current.
- Will seek out if there are other forms of assistance that can help to complete the project.
- Work with KCCD to come up with ways of completing the Park's Homeowner Assessments by July 1, 2009
- Look at mapping homes and other structures using GPS equipment

5.0 Target outcomes of this proposal

- ✓ By June 15th, 2009 completion of the Phase 1 portion of the plan will be outlined and approved by those participating at this time.
- ✓ By July 1st, 2009 a listing of all landowners in the proposal will be obtained.
- ✓ Assessment of the amount of slash build up due to logging as well as blow down from the past winter storms
- ✓ Review of the potential of safety zones located with the proposal area.
- ✓ By July 15, 2008 a mailing will go out to all absentee landowner to see if they are willing to work on phase 2 of the project
- ✓ By October 30th, 2009 phase 1 of the project will be 50% completed.
- ✓ January 2010 work will be started in planning the 2010 project work in both phase 1 and phase 2
- ✓ Slash disposal alternatives need to be looked at from burning, chipping and hauling material off site

6.0 Associated projects being done at the same time as well as future projects the compliment the current proposal

6.1 Current associated projects

- Ponderosa Park's Neighborhood CWPP
- DNR coop demonstration projects within the Park
- KCCD assistance in individual Home Assessments

6.2 Projected Community Projects that compliment the current proposal

- There are no proposed projects at the "Community" level at this time.

7. 0 BUDGET :Proposed budgetary items associated with the proposal

Table 7.1 Review of budget request using FLEP Identification and costs

Work type	Item Number	Acres	Proponent's Costs	Cost Share limits	Total
Precom Thinning (<500 st/ac)	FSI-2	100	$10,500	$9,000	$19,500
Precom Thinning (510-1000 st/ac)	FSI-3	140	$21,000	$16,000	$37,000
Precom Thinning (1001-2000 st/ac	FSI-4				
Precom Thinning (2000 st/ac +)	FSI-5				
Pruning	FSI-6	90000 ft	$18,000	$18,000	$36,000
Slash Disposal	FSI-9	120	$33,000	$34,000	$77,000
Totals			$82,000	$76,000	$158,000

Table 7.2 Review of costs related to those proposed by proponents.

Title	Funding	Match	Total
Planning			
Planning meetings		$1,000.00	
Information outreach		$500.00	
Labor			
Volunteer Labor @18.00/ hour 2000 hours		$36,000.00	
Misc. Labor costs		$3,000.00	
Equipment Costs			
Chainsaw time		$6,000.00	
Gas and oil		$3,200.00	
Chipping and slash disposal		$30,000.00	
Misc. Equipment costs			
Transportation Costs			
Vehicle Transportation costs @ .58/mi.X 10,000		$5,800.00	
ATV (.305/mi)		$1,500.00	
GRAND TOTAL		$87,000.00	

C7- Approval letter for original cost share funding for Ponderosa Park

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Doug Sutherland - Commissioner of Public Lands

Caring for
your natural resources
... now and forever

January 15, 2009

Ponderosa Park Homeowners Association
P. O. Box 988
Goldendale, WA 98620

RE: APPROVAL OF FORESTRY COST-SHARE APPLICATION

We are pleased to inform you that the cost-share application for your property in Klickitat County is **APPROVED** as itemized below. This approval is effective immediately and expires on **JANUARY 31, 2011.**

Assuming all conditions of the program are met, you will be reimbursed for 50% of your written documented costs –OR– at the "not to exceed" rate shown below, whichever is less.

FSI-2: Non-commercial thinning – 100 acres @ 50% not to exceed $120/acre.
FSI-3: Non-commercial thinning – 140 acres @ 50% not to exceed $150/acre.
FSI-6: Pruning – 90,000 lineal feet @ 50% not to exceed 20 cents/ft.
FSI-8: Slash Disposal – 120 acres @ 50% not to exceed $350/acre.

IMPORTANT: The maximum amount of cost-share that you can potentially earn under this approval is $93,000. If you complete less work than the amount approved above, your payment will be less. The payment cannot exceed the per unit rate (e.g. $/acre) shown above.

All work must be completed, and reported to DNR, before the expiration date of this approval
All work must be completed, and reported to DNR, no later than **JANUARY 31, 2011** at which time this approval expires and will be cancelled if no performance is reported. **There are no extensions of time.**

All work must be done according to specifications acceptable to DNR
All work must be completed according to written specifications provided, or approved, by your DNR Stewardship Forester. If you have not been provided with written specifications, or if you have any questions, please contact your Stewardship Forester BEFORE beginning any work. Any changes in practice specifications must be approved, in writing, by the DNR Stewardship Forester.

All costs must be documented in writing
At the time of completion, you will need to provide DNR copies of cost documentation. These may be invoices or receipts for materials or for hired labor and/or a log of "do-it-yourself" labor. Do-it-yourself labor can be valued at any rate up to a maximum of $20/hour.

A DNR-approved Forest Stewardship Plan may be required before any payment can be made
If a Forest Stewardship Plan is required, DNR must approve and have a file copy of your plan before any cost-share payments can be made for other practices. If practices are completed before the plan is completed, then payment will be withheld until such time that the plan is approved by DNR.

FOREST PRACTICES DIVISION ▮ 1111 WASHINGTON ST SE ▮ MS 47012 ▮ OLYMPIA, WA 98504-7012
TEL (360) 902-1400 ▮ FAX (360) 902-1428 ▮ TTY (360) 902-1125 ▮ TRS 711 ▮ WWW.DNR.WA.GOV
EQUAL OPPORTUNITY EMPLOYER

Additional program requirements
You reviewed and agreed to the complete list of program terms, conditions, and requirements when you submitted and signed your application. A copy of these is enclosed for your reference.

Who to Contact
If you have questions, or when you are ready to report completion, please contact the DNR Stewardship Forester highlighted on the attached sheet.

If at any time you decide to cancel your application, or reduce the amount of work you plan to do, please advise your DNR Stewardship Forester so that we can make the funds available to another landowner.

Thank you for your participation in this cost-share program and for the proactive steps you are taking to improve forest health and reduce wildfire risk in your area.

Sincerely,

Steven D. Gibbs
Forest Stewardship Program Manager
P.O. Box 47012
Olympia, WA 98504-7012
(360) 902-1706
FAX: (360) 902-1428
steve.gibbs@dnr.wa.gov

c: Joe Weeks, Jesse Calkins, Bart Ausland– DNR-SE
Div. Landowner File

FOREST LANDOWNER COST-SHARE CLAIM FORM
(Use for ALL cost-share claims regardless of funding source)

PART I: PAYEE INFORMATION: ***To be completed by landowner or consultant/contractor.***
IMPORTANT: The person to whom the check will be made payable must also complete and attach a IRS W-9 Form to this form.

Check One:
___ The consultant/contractor has been paid in full, and/or the applicant has done the work on a "do-it-yourself" basis and I/we are now claiming cost-share reimbursement.
___ The consultant/contractor has not yet been paid. The cost-share payment should be sent to the consultant/contractor. I/we will be responsible for payment of any remaining balance.
Landowner Applicant Signature(s):_____
Print Landowner Applicant Name(s): Ponderosa Park Homeowners Association
Mailing Address: P.O. Box 988
Goldendale, Washington 98620
Consultant/Contractor Name (if applicable):_____
Mailing Address:_____

PART II: COMPLETION AND COST INFORMATION: ***To be completed by DNR Stewardship Forester.***
PLANS (FLEP-1) **Acres:_____** **Total Amount Paid for Plan: $_____**

PRACTICES (FLEP 2-11)

Practice Category (e.g. FLEP-3)	Practice Code/Description (e.g. FSI-3: Non-com Thin)		Units Completed (e.g. 10 acres)
FSI-3	Non-Comm Thin (501-1000 tr/ac)	100 ac. @ $150/ ac	$15,000
FSI-2	Non-Comm Thin (<500)	50 ac.@ $120/ac	$ 6,000
FSI-6	Pruning	40,000 lin.ft @ $0.20/ft.	$ 8,000
FSI-8	Slash Disposal	60 ac@$350/ac	$ 21,000
Grand Total			$50,000

TOTAL COST INCURRED FOR ALL PRACTICES (EXCLUDING PLANS) → $ 50,000

Stewardship Forester's Approval Signature: Josh H. Weeks **Date:** 09/29/09

PART III: COST-SHARE PAYMENT CALCULATION: ***To be completed by DNR-Olympia.***
Amount Due Claimant: $_____ Program Descriptor:_____
Approval to Pay:_____ DNR Program Code:_____
Date:_____ Agency/Grant #:_____

Appendix D

Additional Information

Plate D.1- Incident complexity definitions-Used in the development of Plate 4.3

Incident Type Descriptions

(The following is a list of incident complexity levels used in evaluating fire suppressions needs)

Type 5 Incident

a) Resources required are local and typically vary from two to six firefighters.
b) The incident is generally contained within the first burning period and often within a few hours after resources arrive on scene.

Type 4 Incident

a) Command staff and general staff functions are not activated.
b) Resources are local and vary from a single module to several resources.
c) The incident is usually limited to one operational period in the control phase.
d) No written incident action plan (IAP) is required. However, a documented operational briefing will be completed for all incoming resources.

Type 3 Incident

a) Resources are usually local and some or all of the command and general staff positions may be activated, usually at the division/group supervisor and/or unit leader level. Units may have a predetermined Type 3 organization designated.
b) Type 3 organizations manage initial attack fires with a significant number of resources, an extended attack fire until containment/control is achieved, or an escaped fire until a Type 1 or 2 team assumes command.
c) Initial briefing and closeout are more formal.
d) Resources vary from several resources to several task forces/strike teams.
e) The incident may be divided into divisions.
f) The incident may involve multiple operational periods prior to control, which may require a written Incident Action Plan (IAP).
g) A documented operational briefing will be completed for all incoming resources, and before each operational period.
h) Staging areas and a base may be used.
i) By completing an Incident Complexity Analysis, a fire manager can assess the hazards and complexities of an incident and determine the specific positions needed (e.g., if sensitive public/media relationships are evident, then an information officer should be ordered as part of the team).
j) When using a Type 3 organization or incident command organization, a manager must avoid using them beyond the Type 3 complexity level.
k) A Type 3 IC will not serve concurrently as a single

Type 2 Incident

a) A Type 2 team can be ordered in a short or long configuration. The national standard configuration is the same for all teams. GACCs may adjust the makeup of teams for use in their areas.
b) The incident extends into multiple operational periods.
c) Operations personnel often exceed 200 per operational period and total personnel will usually exceed 500 (numbers are guidelines only).
d) A written action plan is required for each operational period.
e) Many of the functional units are needed and staffed.
f) The agency administrator will have regular briefings, and ensure that WFSAs and delegation of authority are updated.
g) Divisions established for span of control are usually established to geographically facilitate work assignments.

Type 1 Incident

A Type 1 incident meets all the characteristics of a Type 2 incident, plus the following:

a) All command and general staff positions are activated.

b) Operations personnel often exceed 500 per operational period and total personnel will usually exceed 1,000 (numbers are guidelines only).

c) Divisions are established requiring division supervisor qualified personnel.

d) May require the establishment of branches.

e) Aviation operations often involve several types and numbers of aircraft

PLATE D.2 -List of Acronyms- **Commonly used acronyms in CWPP development**

°C	degrees Celsius
°F	degrees Fahrenheit
BAER	Burned Area Emergency Rehabilitation
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BTU/ft./sec	British Thermal Units per feet, per second
ch/h	chains per hour
CVAR	Community Values at Risk
CWPP	Community Wildfire Protection Plan
DOD	Department of Defense
EAS	Emergency Alert System
EPA	Environmental Protection Agency
ESRI	Environmental Systems Research Institute
FIREMON	Fire Effects Monitoring and Inventory Protocol
FMP	Fire Management Plan
FRCC	Fire Regime Condition Class
GIS	geographic information system
HFRA	Healthy Forests Restoration Act
HIZ	Home Ignition Zone
m^2/ha	square meters per hectare
MAA	mutual aid agreement
NCDC	National Climatic Data Center
NEPA	National Environmental Policy Act
NFP	National Fire Plan
NIFC	National Interagency Fire Center
NOAA	National Oceanic and Atmospheric Administration
NWCG	National Wildfire Coordinating Group
NYCD	North Yakima Conservation District
RAWS	remote automated weather station
RMP	Resource Management Plan
SAF	Society of American Foresters
t/ac	tons per acre
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
WADNR	Washington Department of Natural Resources
WFIP	Wildland Fire Implementation Plan
WUI	Wildland Urban Interface
YCCWPP	Yakima County Community Wildfire Protection Plan

D.3 Glossary of Terms - Definitions of commonly used terms and words related to CWPPS

Glossary of Terms

"A"

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

Aerial Ignition:
Ignition of fuels by dropping incendiary devices or materials from aircraft.

Aerial Reconnaissance:
Use of aircraft for detecting and observing fire behavior, values at risk, suppression activity, and other critical factors to assist command decisions on strategy and tactics needed for fire suppression. Often called aerial recon or just recon.

Agency:
Any federal, state, or county government organization with jurisdictional responsibilities.

Air Attack:
The deployment of fixed-wing or rotary aircraft on a wildland fire to drop retardant or suppressant, shuttle and deploy crews and supplies, or perform aerial reconnaissance of the overall fire situation. Can also refer to the person functioning as air attack officer and directing aerial operations.

Airtanker:
A fixed-wing aircraft equipped to drop fire retardant or suppressant.

Anchor Point:
An advantageous location, usually a barrier to fire spread, from which to start building a fireline. An anchor point is used to reduce the chance of firefighters' being flanked by fire.

Aramid:
The generic name for a high-strength, flame-resistant synthetic fabric used in firefighters' protective clothing. Nomex, a brand name for aramid fabric, is the term commonly used by firefighters.

Aspect:
Direction toward which a slope faces.

"B"

Backfire:
A fire set along the inner edge of a fireline to consume the fuels in the path of a wildfire and/or to change the direction of force of the fire's convection column.

Backpack Bucket:
A portable sprayer with a hand pump, fed from a liquid-filled container fitted with straps and worn like a backpack, used mainly in fire and pest control. (See also Bladder Bag)

Bambi Bucket:
A collapsible bucket slung beneath a helicopter. Used to dip water or retardant from a variety of sources for fire suppression.

Behave:
A system of interactive computer programs for modeling fuels and fire behavior that includes two systems: BURN and FUEL.

Bladder Bag:
A collapsible backpack portable sprayer made of neoprene or high-strength nylon fabric fitted with a pump. (See also Backpack Pump)

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

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

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

Bucket Drops:
The dropping of fire retardant or suppressant from a specially designed bucket slung beneath a helicopter.

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

Bump-up Method:
A progressive method of building a fireline on a wildfire without changing firefighters' relative positions in the line. Work is begun with a suitable space between firefighters. Whenever one overtakes another, all crew members ahead move one space forward and resume work on the uncompleted part of the line. The last in line does not move ahead until completing his or her section of line.

Burn Out:

Setting fire inside a control line to widen it or to consume fuels between the edge of the fire and the control line.

Burn Plan:
This document provides the prescribed fire burn boss the information needed to implement an individual prescribed fire project. Also called prescribed fire plan.

Burning Ban:
A declared ban on open-air burning within a specified area, usually put into place by the agency in charge of managing that area and usually in cases of sustained high fire danger.

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

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

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

"C"

Campfire:
As used to classify the cause of a wildland fire, a small fire that was started for cooking or warming that spreads sufficiently from its source to require action by a fire control agency.

Candle:
A single tree or a small clump of trees that is candling, or burning from the bottom up.

Chain:
A unit of linear measurement equal to 66 feet, often used in describing the length of fireline built or yet to be built.

Closure:
Legal restriction on -- but not necessarily elimination of -- specified activities such as smoking, camping, or entry that might cause fires in a given area.

Cold Front:
The leading edge of a relatively cold air mass that displaces warmer air. The heavier cold air may cause some of the warm air to be lifted. If the lifted air contains enough moisture, the result may be cloudiness, precipitation, and thunderstorms. If both air masses are dry, no clouds may form. Following the passage of a cold front in the Northern Hemisphere, westerly or northwesterly winds of 15 to 30 mph or more often continue for 12 to 24 hours.

Cold Trailing:
A method of controlling a partly dead fire edge by carefully inspecting and feeling with the hands for heat to detect any fire, digging out every live spot, and trenching any live edge.

Command Staff:
The command staff consists of the information officer, safety officer, and liaison officer. They report directly to the incident commander (IC) and may also have assistant staff.

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

Condition Class 1:
Fire regimes are within a historical range, and the risk of losing key ecosystem components is low. Vegetation attributes (species composition and structure) are intact and functioning within the historical range.

Condition Class 2:
Fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components is moderate. Fire frequencies have departed from historical frequencies by one or more return intervals (either increased or decreased). This results in moderate changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation attributes have been moderately altered from their historical range.

Condition Class 3:
Fire regimes have been significantly altered from their historical range. The risk of losing key ecosystem components is high. Fire frequencies have departed from historical frequencies by multiple return intervals. This results in dramatic changes to one or more of the following: fire size, intensity, severity, and landscape patterns. Vegetation attributes have been significantly altered from their historical range.

Contain a Fire:
A fuel break around the fire has been completed. This break may include natural barriers such as a river or road, and/or fireline built by hand, and/or fireline constructed mechanically.

Control a Fire:
The complete extinguishment of a fire, including spot fires. Fireline has been strengthened so that flare-ups from within the perimeter of the fire will not break through the line.

Control Line:

All built or natural fire barriers and treated fire edge used to control a fire.

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

Coyote Tactics:
A progressive line construction duty using self-sufficient crews who build fireline until the end of the operational period, stay or camp there while off duty, then begin building line again the next operational period where they left off.

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

Crew Boss:
A person in supervisory charge of a crew -- usually 16 to 21 firefighters -- and responsible for their performance, safety, and welfare.

Crown Fire:
The movement of fire through the crowns or tops of trees or shrubs more or less independently of the surface fire. A fire is said to be crowning when the flames get up into the tops of trees and spreads.

Curing:
Drying and browning of herbaceous vegetation or slash.

"D"

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

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

Defensible Space:
An area either natural or manmade where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and

resources or lives at risk. In practice, defensible space is generally defined as an area of 30 feet or more around a structure that is cleared of flammable brush or vegetation or other fuels.

Deployment:
Removing a fire shelter from its case and using it as protection against fire.

Detection:
The act or system of discovering and locating fires, for example, by staff or volunteers in lookout towers.

Direct Attack:
Any treatment of burning fuels, such as by wetting, smothering, or chemically quenching the fire or by physically separating burning fuels from unburned fuels.

Dispatch:
The implementation of a command decision to move a resource or resources -- such as crews or dozers or engines or aircraft -- from one place to another.

Dispatch Center:
A facility from which resources are directly assigned to an incident.

Dispatcher:
A staff person who receives reports of discovery and status of fires, confirms their locations, receives orders for resources and takes action to provide people and equipment needed for control, and sends them to the designated locations.

Division:
Divisions are used to divide an incident into geographical areas of operation. Divisions are established when the number of resources exceeds the span-of-control of the operations chief. A division is located with the Incident Command System organization between the branch and the task force or strike team.

Dozer:
Any tracked vehicle with a front-mounted blade used for exposing mineral soil or constructing fireline or safety zones.

Dozer Line:
Fireline constructed by a dozer.

Drip Torch:
A hand-held device for igniting fires by dripping flaming liquid fuel onto the materials or area to be burned; consists of a fuel fount, burner arm, and igniter. The fuel used is generally a mixture of diesel and gasoline.

Drop Zone:
Target area for airtankers, helicopters, and cargo dropping.

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

Dry Lightning Storm:

Thunderstorm in which negligible precipitation reaches the ground. Also called a dry storm.
34
Duff:
The layer of decomposing organic materials lying below the litter layer of freshly fallen twigs, needles, and leaves and immediately above the mineral soil.
"E"
Energy Release Component (ERC):
The computed total heat released per unit area (British thermal units per square foot) within the fire front at the head of a moving fire.
Engine:
A ground vehicle providing specified levels of pumping, water, and hose capacity.
Engine Crew:
Firefighters assigned to an engine. The Fireline Handbook defines the minimum crew makeup by engine type.
Entrapment:
A situation where personnel are unexpectedly caught in a fire behavior-related, life-threatening situation where planned escape routes or safety zones are absent, inadequate, or compromised. An entrapment may or may not include deployment of a fire shelter. These situations may or may not result in injury; they include "near misses."
Environmental Assessment (EA):
EAs were authorized by the National Environmental Policy Act (NEPA) of 1969. They are analytical documents prepared with public participation to determine whether an Environmental Impact Statement (EIS) is needed for a project or action. If an EA determines an EIS is not needed, the EA becomes the document allowing agency compliance with NEPA requirements.
Environmental Impact Statement (EIS):
EISs were authorized by the National Environmental Policy Act (NEPA) of 1969. Prepared with public participation, they assist decision-makers by providing information, analysis, and an array of action alternatives, allowing managers to see the probable effects of management decisions on the environment. Generally, an EIS is written for a large-scale action or geographical area.
Equilibrium Moisture Content:
Moisture content that a fuel particle will attain if exposed for an infinite period in an environment of specified constant temperature and humidity. When a fuel particle reaches equilibrium moisture content, net exchange of moisture between it and the environment is zero.
Escape Route:
A pre-planned and understood route firefighters can take to move to a safety zone or other low-risk area, such as an already burned area (commonly called "the black"), a previously constructed safety area, a meadow that won't burn, or a natural rocky area that is large enough to provide refuge without being burned.
Extended Attack Incident:
A fire which has exceeded or is expected to exceed initial attack capabilities or prescription.
Extreme Fire Behavior:
"Extreme" implies a level of fire behavior characteristics that ordinarily precludes methods of direct control action. One or more of the following are usually involved: high rate of spread, prolific crowning and/or spotting, presence of fire whirls, a strong convection column. Predictability is difficult because such fires often exercise influence on their environment and behave erratically, sometimes dangerously.
35
"F"
Faller:
A person who cuts down or fells trees. Also called a sawyer or cutter.
Field Observer:
Person responsible to the Situation Unit Leader for collecting and reporting information about an incident obtained from personal observations and interviews.
Fine Fuels:
Fast-drying fuels, generally with a comparatively high surface area-to-volume ratio, which are less than 1/4-inch in diameter and have a timelag of one hour or less. These fuels ignite readily and are rapidly consumed by fire when dry.
Fingers of a Fire:
The long narrow extensions of a fire projecting from the main body.
Fire Behavior:
The manner in which a fire reacts to the influences of fuels, weather, and topography.
Fire Behavior Forecast:
A prediction of probable fire behavior, usually prepared by a Fire Behavior Analyst, in support of fire suppression or prescribed burning operations.

Fire Behavior Specialist:
A person responsible to the Planning Section Chief for establishing a weather data collection system and for developing fire behavior predictions based on fire history, fuels, weather, and topography. Also called Fire Behavior Analyst.
Fire Break:

A natural or constructed barrier used to stop or check fires, or to provide a control line from which to work.

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

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

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

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

Fireline:
A linear fire barrier that is scraped or dug to mineral soil after being cleared of all vegetation.

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

Fire Management Plan (FMP):
A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

Fire Perimeter:
The entire outer edge or boundary of a fire, which may contain within it substantial areas of unburned fuels.

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

Fire Shelter:
An aluminized tent offering protection by means of reflecting radiant heat and providing a volume of breathable air in a fire entrapment situation.

Fire Shelter Deployment:
Removing a fire shelter from its case and using it as protection against fire.

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

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

Fire Use Module:
A team of skilled and mobile personnel dedicated primarily to prescribed fire management. These are national and interagency resources, available throughout the prescribed fire season, trained to ignite, hold, and monitor prescribed fires.

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

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

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

Firefighting Resources:
All people and major items of equipment that are or could be assigned to fires, ranging from crews and other personnel to engines to aircraft to dozers to water tenders and including a large variety of support personnel and services.

Flame Height:
The average maximum vertical extension of flames at the leading edge of the fire front . Occasional flashes that rise above the general level of flames are not considered. The flame height is less than the flame length if flames are tilted by winds or slope.

Flame Length:
The distance between the flame tip and the midpoint of the flame depth at the base of the flame

(generally the ground surface); flame length is an indicator of fire intensity .

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

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

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

Flash Fuels:
Fuels such as grass, leaves, pine needles, ferns, tree moss, and some types of slash, flash fuels or flashy fuels ignite readily and are consumed rapidly when dry. Also called fine fuels.

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

Fuel:
Combustible material. Includes vegetation such as grass, leaves, ground litter, plants, shrubs, and trees that feed a fire. (Also see Surface Fuels.)

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

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

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

Fuel Moisture:
The quantity of moisture in fuels expressed as a percentage of the weight when thoroughly dried at 212 degrees Fahrenheit. Also referred to as fuel moisture content.

Fuels Reduction:
Manipulation, including combustion or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control. Often includes thinning and/or prescribed burning.

Fuel Type:
An identifiable association of fuel elements of a distinctive plant species, form, size, arrangement, or

other characteristics that will cause a predictable rate of fire spread or difficulty of control under specified weather conditions.

Fusee:
A colored flare originally designed as a railway warning device and widely used to ignite suppression and prescription fires.

"G"

General Staff:
The group of incident management personnel reporting to the incident commander. They may each have a deputy or assistant, as needed. Staff includes operations section chief, planning section chief, logistics section chief, and finance/administration section chief.

Geographic Area:
A political boundary designated by the wildland fire protection agencies, where these agencies work together in the coordination and effective utilization of fire management resources. Each geographic area includes a Geographic Area Coordination Center (GACC) that handles fire intelligence, information, ordering, and dispatch.

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

"H"

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

Hand Line:
A fireline built with hand tools, such as shovels and pulaskis.

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

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

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

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

Helispot:
A temporary landing spot for helicopters.
Helitack:
The use of helicopters to transport crews, equipment, and fire retardant or suppressant to the fireline during the initial stages of a fire. Helitack can also refer to personnel, as in helitack crews.
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Helitack Crew:
A group of firefighters trained in the technical and logistical use of helicopters for fire suppression.
Holding Actions:
Planned actions required to achieve wildland prescribed fire management objectives. These actions have specific implementation timeframes for fire use actions but can have less sensitive implementation demands for suppression actions.
Holding Resources:
Firefighting personnel and equipment assigned to do all required fire suppression work following fireline construction but generally not including extensive mop-up.
Hose Lay:
Arrangement of connected lengths of fire hose and accessories on the ground, beginning at the first pumping unit and ending at the point of water delivery.
Hotshot Crew:
A highly trained and experienced fire crew used mainly to build fireline by hand. Hotshots -- also called Interagency Hotshot Crews or IHCs -- are national resources, also called Type 1 crews.
Hotspot:
A particular active part of a fire.
Hotspotting:
Reducing or stopping the spread of fire at points of particularly rapid rate of spread or special threat, generally the first step in prompt control, with emphasis on first priorities.
"I"
Incident:
A human-caused or natural occurrence, such as a wildland fire or tornado or hurricane or major flood, that requires emergency service action to prevent or reduce the loss of life or damage to property or natural resources.
Incident Action Plan (IAP):
The plan that contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period on an incident. The plan may be oral or written. When written, the plan may have a number of attachments, including incident objectives, organization assignment list, division assignment, incident radio communication plan, medical plan, traffic plan, safety plan, fire weather, and incident maps.
Incident Command Post (ICP):
Location at which primary command functions are executed. The ICP is often co-located with the incident base or other incident facilities.
Incident Command System (ICS):
The combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, with responsibility for the management of assigned resources to effectively accomplish stated objectives on an incident.
Incident Commander:
The individual responsible for the management of all operations at the incident site. The IC is usually in charge of an incident management team, which may be national (Type 1) or regional or local (Type 2 or 3) and which includes a wide variety of resources and personnel.
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Incident Management Team:
The incident commander and appropriate general staff or command staff personnel assigned to manage an incident. Teams vary in size and experience and are assigned based on availability of the teams and complexity of the incident.
Incident Objectives:
Statements of guidance and direction necessary for selection of appropriate strategy or strategies, and the tactical direction of assigned resources. Incident objectives are based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed.
Infrared Detection:
The use of heat sensing equipment, known as Infrared Scanners, for detection of heat sources that are not visually detectable by the normal surveillance methods of either ground or air patrols.
Initial Attack:
The actions taken by the first resources upon arrival at a wildfire to protect lives and property and prevent further expansion of the fire.
"J"
Job Hazard Analysis:
This analysis of a project is completed by staff to identify hazards to employees and the public. It identifies hazards, corrective actions, and the required safety equipment to ensure public and employee safety.
Jump Spot:
Selected landing area for smokejumpers.

Jump Suit:
Approved protection suit worn by smokejumpers.

"K"

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

Knock Down:
To reduce the flame or heat on the more vigorously burning parts of a fire edge.

"L"

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

Large Fire:
1) For statistical purposes, a fire burning more than a specified area of land; e.g., 100 acres. 2) A fire burning with a size and intensity such that its behavior is determined by interaction between its own convection column and weather conditions above the surface.

Lay Down:
A fire is said to "lay down," often at night, when temperatures drop and RH rises. Fires do not "lie

down." It's a long-standing term in fire and means that the fire is burning less actively than it did during the day.

Lead Plane:
Aircraft used to make dry runs over a target area to check wind and smoke conditions and topography and to lead airtankers to targets and supervise their drops. Lead planes are mandatory with MAFFS operations.

Light Fuels:
Fast-drying fuels, generally with a comparatively high surface area-to-volume ratio, which are less than 1/4-inch in diameter and have a timelag of one hour or less. These fuels ignite readily and are rapidly consumed by fire when dry.

Lightning Activity Level (LAL):
A number, on a scale of 1 to 6, that reflects frequency and character of cloud-to-ground lightning. The scale is exponential, based on powers of 2 (i.e., LAL 3 indicates twice the lightning of LAL 2).

Line Scout:
A firefighter who determines the location or placement or route of a fireline to be built.

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

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

"M"

Micro-Remote Environmental Monitoring System (Micro-REMS):
Mobile weather monitoring station. A Micro-REMS usually accompanies an incident meteorologist and Air Transportable Modular Unit (ATMU) to an incident. The ATMU is a weather data collection and forecasting unit consisting of four modules, weighing a total of 282 pounds and occupying 27.1 cubic feet of space when transported. Used by incident meteorologists on an incident.

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

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

Modular Airborne Firefighting System (MAFFS):
A manufactured unit consisting of five interconnecting tanks, a control pallet, and a nozzle pallet, with a capacity of 3,000 gallons, designed to be rapidly mounted inside an unmodified military C-130 (Hercules) cargo aircraft for use in dropping retardant on wildland fires.

Mop up:
To make a fire safe or reduce residual smoke after the fire has been contained, by extinguishing or removing burning material along or near the control line, felling snags, or moving logs and large rocks so they won't roll downhill. Mop-up work is usually (but not always) handled by hand crews.

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

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

"N"

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

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

National Wildlife Coordinating Group (NWCG):
A group formed under the direction of the Secretaries of Agriculture and the Interior that includes representatives of the U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, National Park Service, U.S. Fish and Wildlife Service, and National Association of State Foresters. The group's purpose is to handle coordination and effectiveness of wildland fire activities and provide a forum to discuss and resolve issues and problems of substantive nature. NWCG is the certifying body for all courses in the National Fire Curriculum.

Nomex®:
Trade name for a fire-resistant synthetic material used in the manufacturing of flight suits and protective clothing worn by firefighters. (see Aramid)

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

"O"

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

Operations Branch Director:
Person under the direction of the operations section chief who is responsible for implementing that portion of the incident action plan appropriate to the branch.

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

"P"

Pack Test:
The pack test gauges the aerobic capacity of fire suppression and support personnel and assigns physical fitness scores. The test consists of walking a specified distance, with or without a weighted pack, in a predetermined period of time, with altitude corrections. Various levels of the test apply to various levels of firefighting duties or jobs.

Paracargo:
Anything intentionally dropped, or intended for dropping, from an aircraft by parachute, by other retarding devices, or by free-fall. Often includes firefighting supplies and tools for firefighters in remote areas.

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

Personal Protective Equipment (PPE):
All firefighting personnel must be equipped with protective equipment and clothing in order to mitigate the risk of injury from or exposure to hazardous conditions encountered while working. PPE includes, but is not limited to, 8-inch high-laced leather boots with lug soles, fire shelter, hard hat with chin strap, goggles, ear plugs, aramid shirts and trousers, leather gloves, and individual first aid kits.

Preparedness:
Condition or degree of being ready to cope with a potential fire situation. Preparedness Levels are determined by region and nationally as the season progresses, based on current and expected conditions.

Prescribed Fire:
Any fire ignited by management actions under certain pre-determined conditions to meet specific objectives related to hazardous fuels reduction or habitat improvement. A written, approved prescribed fire plan must exist, and NEPA requirements must be met prior to ignition. Prescribed fires are ignited and managed within a "window" (see "Prescription" below) of very specific conditions including winds, temperatures, humidity, and other factors specified in the burn plan.

Prescribed Fire Module:
A team of skilled and mobile personnel dedicated primarily to prescribed fire management. These are national and interagency resources, available throughout the prescribed fire season, trained to ignite, hold, and monitor prescribed fires.

Prescribed Fire Plan:
This document provides the prescribed fire burn boss the information needed to implement an individual prescribed fire project. Also called burn plan.

Prescription:

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

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

Project Fire:
A fire of such size or complexity that a large incident management organization and prolonged activity are required to suppress it.

Pulaski:
A combination chopping and trenching tool that combines a single-bitted ax blade with a narrow adzelike trenching blade fitted to a straight handle. Useful for grubbing or trenching in duff and matted roots. Well-balanced for chopping.

"R"

Radiant Burn:
A burn injury incurred from a radiant heat source.

Radiant Heat Flux:
The amount of heat flowing through a given area in a given time, usually expressed as calories per square centimeter per second.

Rappelling:
Technique of landing specially trained firefighters from hovering helicopters; involves sliding down ropes with the aid of hand-held friction-producing devices called "Genies." Rappellers are often deployed into remote areas where access is difficult (e.g. without roads or helicopter landing spots) or too remote to allow effective deployment of firefighters without extended hiking time.

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

Reburn:
The burning of an area that has previously burned but that contains flammable fuels that ignite when burning conditions are more conducive to ignition. Can also refer to an area that has reburned.

Red Card:
Fire qualifications card issued to fire-rated persons showing their training needs and their qualifications to fill specified fire suppression and support positions on a fire or other incident.

Red Flag Warning:
Alert issued by fire weather forecasters to warn personnel about an ongoing or imminent critical fire weather situation.

Rehabilitation:
Commonly referred to as "rehab," the work necessary to repair damage or disturbance caused by wildland fire or suppression activities. Often includes restoration of firelines or dozer work, and projects such as erosion control, installation of water bars or culverts, re-seeding or other rehab of fire-damaged areas.

Relative Humidity (RH):
The ratio of the amount of moisture in the air to the maximum amount of moisture that the air would contain if it were saturated -- the ratio of the actual vapor pressure to the saturated vapor pressure.

Remote Automated Weather Station (RAWS):
There are nearly 1,500 interagency Remote Automated Weather Stations (RAWS) strategically located throughout the United States. Weather data assists land management agencies with monitoring air

quality, rating fire danger, and providing information for research applications. Most of the stations owned by the wildland fire agencies are located where they can monitor fire danger. RAWS units collect, store, and forward data to a computer system at the National Interagency Fire Center (NIFC) in Boise, Idaho, via the Geostationary Operational Environmental Satellite (GOES). The GOES is operated by the National Oceanic and Atmospheric Administration (NOAA). These data are automatically forwarded to other computer systems including the Weather Information Management System (WIMS) and the Western Regional Climate Center in Reno, Nevada (www.wrcc.dri.edu). Other Automated Weather Stations (AWS) transmit data to the WIMS system via telephone telemetry. Fire managers use RAWS data to predict fire behavior and monitor fuels; resource managers also use data to monitor environmental conditions.

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

Resource Order:
An order placed with dispatch for firefighting or support resources, often initiated by the incident management team on a fire.

Resources:

1) Personnel, equipment, services, and supplies available, or potentially available, for assignment to fires or other incidents. 2) The natural resources of an area, such as timber, wildlife habitat, grasslands, watershed values, and recreational and other values.

Retardant:
A substance or chemical agent which reduces the flammability of combustibles. Retardant application is generally via fixed-wing airtankers or helicopters, and is used to slow or retard the flames, often for pre-treatment of fuels prior to ground attack or other suppression activities or for slowing the spread or potential for spread of the fire.

Run of a Fire:
The rapid advance of the head of a fire with a marked change in fireline intensity and rate of spread from that noted before and after the advance. A fire "makes a run" if such conditions are present.

Running:
A fire event including rapidly spreading surface fire with a well-defined head.

"S"

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

Scratch Line:
An unfinished preliminary fireline hastily established or built as an emergency measure to slow or halt the spread of fire.

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

Single Resource:
An individual, a piece of equipment (such as an engine) and its staff, or a crew or team of persons with an identified work supervisor.

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

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

Sling Load:
Cargo carried beneath a helicopter and attached by a lead line and swivel.

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

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

Smokejumper:
A firefighter who travels to fires by aircraft and parachutes in to the fire area.

Smoldering Fire:
A fire burning without flame and barely spreading.

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

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

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

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

Spotter:
In smokejumping, the person responsible for selecting drop targets and supervising all aspects of dropping smokejumpers.

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

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

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

Strike Team:
Specified combinations of the same kind and type of resources -- such as a group of staffed engines -- with common communications and a leader.
Strike Team Leader:
Person responsible to a division or group supervisor for performing tactical assignments given to the strike team.
Structure Fire:
Fire burning any part or all of any building or structure.
Suppressant:
An agent, such as water or foam, used to extinguish the flaming and glowing phases of combustion when directly applied to burning fuels.
Suppression:
All the work of extinguishing or containing a fire, beginning with its discovery.
Surface Fuels:
Loose litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not yet decayed; also grasses, forbs, low and medium shrubs, tree seedlings, heavier branchwood, downed logs, and stumps interspersed with or partially replacing the litter.
Swamper:
(1) A worker who helps fallers and/or sawyers by clearing away brush, limbs, and small trees. Carries chainsaw gas, oil, and tools and watches for dangerous situations. (2) A worker on a dozer crew who pulls winch line, helps maintain equipment, etc., to speed suppression work on a fire.
"T"
Tactics:
Deploying and directing resources on an incident to accomplish the objectives designated by strategy.
Temporary Flight Restrictions (TFR):
A restriction requested by an agency and put into effect by the Federal Aviation Administration (FAA) in the vicinity of an incident restricting the operation of nonessential aircraft in the airspace around that incident.
TerraTorch®:
A device for throwing a stream of flaming liquid, used to initiate rapid ignition during burn out operations on a wildland fire or during a prescribed fire project.
Test Fire:
A small fire ignited within the planned burn unit to determine the characteristics of the prescribed fire, such as fire behavior, detection, performance, and control measures.
Timelag:
Time needed under specified conditions for a fuel particle to lose about 63 percent of the difference between its initial moisture content and its equilibrium moisture content. If conditions remain unchanged, a fuel will reach 95 percent of its equilibrium moisture content after four timelag periods.

Torching:
The ignition and flare-up of a tree or small group of trees, usually from bottom to top.
Two-way Radio:
Radio equipment with transmitters on the same frequency as the base station, permitting conversation in two directions using the same frequency in turn.
Type:
The capability of a firefighting resource in comparison to another type. Type 1 usually means a greater capability in power, size, or capacity. Can refer to type of engine or type of crew or type of team.
"U"
Uncontrolled Fire:
Any fire which threatens life, property, or natural resources.
Underburn:
A fire that consumes surface fuels but not trees or shrubs.
"V"
Vectors:
Directions of fire spread as related to rate of spread calculations (in degrees from upslope).
Volunteer Fire Department (VFD):
A fire department of which some or all members are unpaid.
"W"
Water Tender:
A ground vehicle capable of transporting water in the field, generally used to supply engines.
Weather Information and Management System (WIMS):
An interactive computer system designed to accommodate the weather information needs of all federal and state natural resource management agencies. Provides timely access to weather forecasts, current and historical weather data, the National Fire Danger Rating System (NFDRS), and the National Interagency Fire Management Integrated Database (NIFMID).
Wet Line:
A line of water, or water and retardant, sprayed along the ground, which serves as a temporary control line from which to ignite or stop a low-intensity fire.
Wildland Fire:

Any non-structure fire, other than prescribed fire, that occurs in a wildland area.

Wildland Fire Implementation Plan (WFIP):

A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire that is managed for resource benefits.

Wildland Fire Situation Analysis (WFSA):

A decision-making process that evaluates alternative suppression strategies against selected environmental, social, political, and economic criteria. Provides a record of decisions. A WFSA is required when the documentation of suppression decisions needs to occur when (1) a wildland fire

escapes initial actions or is expected to, or (2) a wildland fire managed for resource benefits exceeds prescription parameters in the fire management plan, or (3) a prescribed fire exceeds its prescription and is then declared a wildland fire.

Wildland Fire Use:

The management of naturally ignited (usually by lightning) wildland fires to accomplish specific prestated resource management objectives in predefined areas outlined in Fire Management Plans.

Wildland/Urban Interface:

The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Often incorrectly referred to as the "interzone" or "urban/wildland interface."

Wind Vectors:

Wind directions used to calculate fire behavior.

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