

Methow Community Wildfire Protection Plan



**Prepared for the Methow Community Fire Plan Coordinating Group
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Methow Community Wildfire Protection Plan Contents

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My profound gratitude goes to all of the individuals, organizations and agencies that made progress and ultimate completion of this Methow Community Wildfire Protection Plan possible. Specifically, I would like to thank Sarah Schrock and the Methow Conservancy for the hard work and resources they applied to this community effort in 2004. The “Community Fire Plan Summary Report,” commissioned by the Conservancy and drafted by Ms. Schrock, forms the backbone for this Plan. Thanks also to the following organizations for providing funding and oversight to complete the final draft of this Plan: Okanogan Communities Development Council, Methow Conservancy, Okanogan Conservation District, and Conservation Northwest. GIS resources for the Plan were provided through the coordinated efforts of the U.S. Forest Service Methow Valley Ranger District, Okanogan-Wenatchee National Forest Supervisor’s Office, Okanogan County GIS, Washington DNR and Pacific Biodiversity Institute. Special thanks to Pete Soderquist, Kathryn Busse, Leahe Swayze, Gary Reed, Richy Harrod, Ted Murray, Steve Harris and Hans Smith for your patience, professionalism, and good spirits under a variety of circumstances.

Lorah Waters

Methow Community Fire Plan Coordinating Group Chair

EXECUTIVE SUMMARY

This Community Wildfire Protection Plan for the Methow Valley watershed of North Central Washington is the result of three years of voluntary collaborative work among no fewer than fifty individuals, representing approximately 24 agencies, fire districts, non-governmental organizations, businesses and community members. In a region renowned for contentious planning processes and controversial natural resource issues, this group's efforts serve as eloquent testimony that common objectives can produce effective results among even the most diverse participants.

This Plan is intended to operate as a work in progress, and to inform other planning efforts that address land use and natural resource planning by providing the most current information available concerning wildfire risk mitigation activities affecting public and private lands in the Methow Valley. The Plan will be an integral component to the Okanogan County CWPP, which is currently in development.

Because risk mitigation, fuels reduction and ecosystem restoration are moving targets with ongoing needs for planning, prioritization and monitoring across ownerships, this Plan is intended to be regularly updated and maintained through the collaborative framework initially established with the Methow Community Fire Plan Coordinating Group and the Okanogan County Fire Plan Steering Committee. Hard copies and electronic files that have been used to create and update this Plan from 2003 to the present will be archived at the Methow Conservancy.

INTRODUCTION

Community Awareness

The communities of the Methow Valley watershed are surrounded by public lands that are largely undeveloped and a source of vegetative fuels and wildfire ignition potential. Residents are very aware of the need to develop comprehensive wildfire prevention and protection plans on multiple scales from state and county level, to watershed and neighborhood levels. The energy, input and guidance of local residents have played an essential role in the creation of this CWPP.

Values

The residents and property owners of the Methow Valley watershed value their homes and properties, as well as the privacy and beauty of the surrounding forestlands. They want to improve the safety of the community, and have demonstrated a willingness to dedicate time, energy and resources to ensure the effectiveness of treatments across multiple ownerships. Community members also wish to play an active role in land management

decisions affecting adjacent Federal and State lands. Wherever possible, community members are also interested in supporting local economic diversity through beneficial use of woody biomass resulting from fuels and restoration treatments.

Vision

Through the production of a Community Wildfire Protection Plan (CWPP), residents of the Methow Valley watershed aim to protect their community from the effects of wildfire through outreach, education, strategic planning, and action. Protection of human life, property, and essential infrastructure and resources will occur through the implementation of fire prevention projects that improve forest health, reduce fuels and preserve the natural beauty of the area. The community envisions sustained and diverse participation in land management planning across federal, state and private ownerships, using a collaborative framework to achieve goals *and monitor outcomes*.

Mission

The Mission of the Methow Community Fire Plan Coordinating Group and the Methow CWPP is to decrease the overall risk of wildland fire impacting the communities within the Methow Basin by establishing a long-term strategy to create fire safe communities and restore the health of fire adapted ecosystems in which our communities reside.

Goals

Increase the prevention of human caused fires in areas where public values and natural resources are at risk from wildfire.

Develop an outreach and education plan that will provide the public access to accurate local wildfire information and activities associated with reducing risk including the use of prescribed burns and associated air quality/smoke issues in their communities.

Develop evacuation plans and telephone trees for all communities in the basin.

Promote fuel removal that is ecologically sensitive.

Promote efforts to create local economies through the use of non-sawtimber biomass from hazardous fuel removal treatments on public and private lands.

Create a long-term maintenance strategy and evaluation for risk reduction activities through collaboration of land-owners and planning group members.

DESCRIPTION OF PLANNING AREA

Physical Description

The Methow Valley is located in north central Washington State and is widely characterized as a beautiful and wild land of four distinct seasons. The Methow CWPP area includes the entire watershed, which drains approximately 1,855,417 acres of rugged, mountainous terrain and rests entirely within Okanogan County. The planning area includes within its geographic scope the towns of Carlton, Mazama, Methow, Pateros, Twisp, and Winthrop, all of which were included in the 2001 Federal Register listing of Communities-At-Risk for wildfire events.

At its furthest reach the Methow Valley extends about 68 miles from north-to south and approximately 40 miles from east-to-west. The Valley is bordered on the west by the Cascade Mountains, on the north by Canada, on the east by the Buckhorn Mountains and the Okanogan River drainage, and on its southern edge by the Columbia River and the Sawtooth Ridge (Foster and Squier, 2002). The Methow Basin encompasses a number of major tributaries to the Methow River, including Lost River, Chewuch River, Wolf Creek, Twisp River, Beaver Creek, Benson Creek, Texas Creek, Libby Creek, Gold Creek, Cow Creek, French Creek, McFarland Creek, Squaw Creek, and Black Canyon Creek.

The Methow Valley's climate is influenced by maritime weather patterns, elevation, topography, and its location on the leeward side of the Cascade Mountains. Pacific storms driven by prevailing westerly winds are routinely interrupted by the Cascade Mountains, dropping heavy precipitation throughout the upper elevations. Precipitation falls off significantly as elevation decreases and as the distance from the Cascade Crest increases.

Nearly two-thirds of the watershed's annual precipitation occurs between October and March, arriving primarily as snow. In the summer, long spells of hot, dry weather are punctuated by intense, but short lived, thunderstorms. Fall brings increased precipitation, which generally climaxes as winter snowfall between December and February. The upper reaches of the watershed along the Cascade Crest (at elevations of approximately 8,600 feet) receive as much as 80 inches of precipitation a year, this drops to about 60 inches in adjacent upland areas, while the town of Pateros (800 feet), at the far southern end of the Valley, receives only about 10 inches of precipitation annually (Foster and Squier, 2002).

Six fish species and fourteen wildlife species are federally listed as endangered, threatened or as species of concern within the Methow Valley. On one hand the Methow Valley is characterized by large tracts of relatively pristine habitat; while on the other hand the potential of habitat in the Valley to support self-sustaining populations of fish and wildlife is hampered by a variety of factors, including human population growth and related development (Foster and Squier, 2002).

State Route 153 (SR153), which runs along the valley floor, is the primary artery providing access from the confluence of the Methow and Columbia rivers to the junction with State Route 20 (SR 20) near milepost 30, just south of the town of Twisp. SR 20 is the primary artery providing access from the town of Okanogan over Loup Loup Pass to the junction with SR 153. The highways combine as SR 20 and continue to the head of the Methow

Basin at Washington Pass, providing access to points west during three seasons of the year. SR 20 is closed during the late fall, winter and early spring due to avalanche danger.

Ownership and Demographics

Figure 1 shows the distribution of land ownership in the Methow Basin. Over eighty percent of the land in the Methow Valley is federally owned. Nearly eighty five percent of the land falls under the jurisdiction of the Okanogan-Wenatchee National Forest, Methow Valley Ranger District. The Washington State Department of Fish and Wildlife and Department of Natural Resources collectively manage an additional five percent of the land. Only ten percent of land in the Methow Valley is privately owned, the majority of which is held along valley floors, on adjacent terraces and foothills to the Methow River, and nestled in narrow reaches of tributaries surrounded by National Forest lands (Schrock 2004). The population of the Valley at the time of the 2000 Census was 4,382. The following excerpt from the Draft Methow Subbasin Summary aptly describes the relationship of the Methow's human population with natural resource issues:

“The Methow Valley is also unique in the extraordinary level of interest and active involvement, sometimes accommodating, and sometimes contentious, of the valley's citizenry in natural resource questions and issues. Current participation in discussions and decision-making regarding the Methow's natural resources involves private citizens, irrigation districts, environmental groups, county government, state and federal agencies... The Methow Valley is also a microcosm of current natural resource management and public policy challenges. Individuals and agencies involved in the Methow Valley wrestle with the difficulties of balancing federal versus local control of natural resources; finding effective means for coordinating among tribal, state and local governments; balancing competing demands for limited water resources; and maintaining and promoting healthy rural economies, while simultaneously protecting and preserving fish and wildlife habitat and species... Finding means to balance those demands in the long-term will require adaptability, creativity, patience and cooperation.

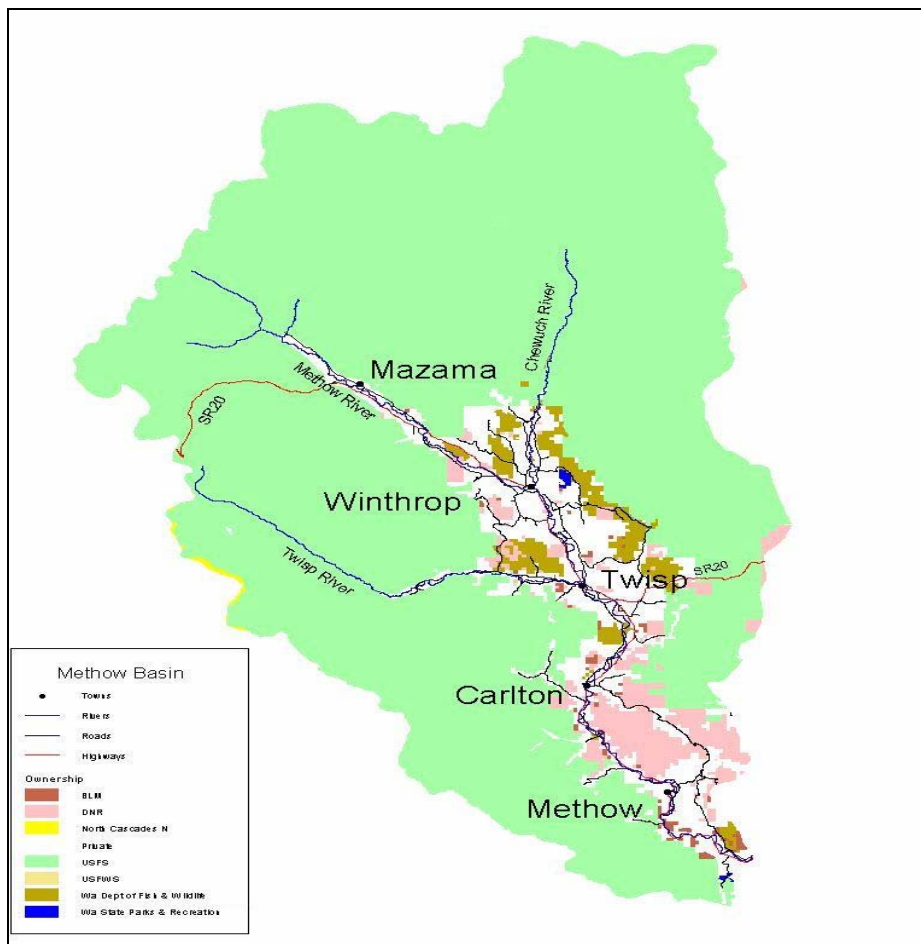


Figure 1 Geographic Boundary and Ownership of Methow Basin Community Fire Plan

WHAT IS A COMMUNITY WILDFIRE PROTECTION PLAN?

A Community Wildfire Protection Plan (CWPP) is a coordinated, collaborative effort between federal and state government agencies, local governments, local fire authorities, non-governmental organizations, and community members to address concerns related to wildfire risk management in the wildland/urban interface (WUI). The process is developed with public input by planning members, and formulated into a plan that will serve as a living document to be updated and monitored collaboratively as conditions evolve across the landscape. A Community Wildfire Protection Plan creates a long-term strategy for raising awareness and preparedness for wildland fires that pose threats to communities and economies within a designated area through different means. Fuels reduction projects, Education and outreach programs, protection planning, and public awareness are common approaches to mitigate risk. All activities provide an opportunity for restoration of fire-dependent ecosystems and continued public involvement in land management.

Planning Process

Background

The enactment of the Healthy Forest Restoration Act (HFRA) of 2003 created opportunities for counties to participate in community-based forest planning and vegetation treatment project prioritization. The legislation includes the first meaningful statutory incentives for the U.S.D.A. Forest Service and Bureau of Land Management to give consideration to the priorities of local communities as they develop and implement forest management and hazardous fuels reduction projects.

In order for communities to take full advantage of this opportunity, a CWPP must first be prepared. The Methow CWPP is meant to conform to the intent and letter of HFRA and interface meaningfully with other plans, including smaller scale plans developed for neighborhoods within the Methow Valley, the CWPP being developed for Okanogan County, the Okanogan County Comprehensive Plan Update, and the Okanogan County Hazard Mitigation Plan.

The process of developing a CWPP is intended to help the communities of the Methow Valley clarify and refine priorities for the protection of life, property and critical infrastructure in the wildland-urban interface (WUI). It can also lead community members through valuable discussions regarding management options and implications for surrounding watersheds (CCCD 2005). The Methow CWPP has been prepared through such a process, through the collaborative framework of the Methow Community Fire Plan Coordinating Group (Coordinating Group). More background and current information on the Coordinating Group is provided in the following pages.

Updates and edits to the Methow CWPP will be performed yearly and will be coordinated by the Coordinating Group, which includes representation from local, county, state and federal authorities as well as fire and emergency managers from the appropriate jurisdictions.

What is the WUI?

The wildland-urban interface (WUI) is commonly described as the zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels. This WUI zone poses tremendous risks to life, property and infrastructure and is one of the most dangerous and complicated situations firefighters face (SAF 2004). The definition of the WUI zone is important because it defines the areas for which development guidance is provided or federal funds are applied to reduce the risk of fire.

Both the National Fire Plan and the Ten-Year Comprehensive Strategy for Reducing Wildland Fire Risks to Communities and the Environment place a priority on working collaboratively within communities in the WUI to reduce their risk from large-scale wildfire.

The HFRA builds on existing efforts to restore healthy forest conditions near communities and essential community infrastructure by authorizing expedited environmental assessments, administrative appeals, and legal review for hazardous fuels projects on federal lands. To ensure community participation and support for these expedited processes, the Act emphasizes the need for federal agencies to work collaboratively with communities in developing hazardous fuel reduction projects, and it places priority on treatments identified by communities themselves in a CWPP.

The HFRA provides communities with a tremendous opportunity to influence where and how federal agencies implement fuel reduction projects on federal lands and how additional federal funds may be distributed for projects on nonfederal lands. A CWPP is the most effective way to take advantage of this opportunity (SAF 2004).

In the absence of a CWPP, the HFRA limits the WUI to within ½ mile of a community's boundary or within 1 ½ miles where mitigating circumstances exist, such as steep slopes or the presence of a critical evacuation route. At least 50 percent of all 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 HFRA where no CWPP exists.

For the purposes of this CWPP, the Methow Community Fire Plan Coordinating Group has collaboratively agreed to adopt the HFRA definition of the WUI for the Methow Valley CWPP planning area. The Coordinating Group intends to revisit this definition again in 2006, while working with the County Fire Plan Steering Committee.

Process and Partners

Methow Community Fire Plan Coordinating Group

Prior to 2003, non-profits and individuals representing property owners' associations within the Methow Valley watershed have received National Fire Plan funding to reduce wildland fire risk in some areas of the wildland urban interface. However, little communication between these groups and implementation efforts existed, and no centralized body existed to coordinate fire related projects in the region, especially on private land. At a minimum, coordination of local project proposals to reduce wildland fire risk was needed to reduce the potential for redundancy and competition for funding, and provide an overall framework for long-term community fire protection. The expertise and oversight from government agency professionals and input from local community-based groups would strengthen and legitimize project proposals. Furthermore, this coordinating group would satisfy the guiding principles of a "Framework for Collaboration and Information Sharing" outlined in the 10-year Comprehensive Strategy (2001) developed by the Forest Service/DOI/Western Governors Association.

The Methow Community Fire Plan Coordinating Group (Coordinating Group) was formed in December 2003 when several community groups convened a multi-stakeholder meeting in an effort to coordinate proposals for FY2005 National Fire Plan funding and provide a collaborative forum to address fuels reduction and forest restoration strategies across ownerships in the Methow Valley. Representatives from the U.S.D.A. Forest Service, Washington Department of Natural Resources, Okanogan County, Rural Fire Districts, local non-profit organizations and local foresters participated in the discussion. The outcome of this meeting was the beginning of The Methow Community Fire Plan Coordinating Group, which convened several more times in 2003 to establish a common mission and goals, prepare and prioritize grant proposals, and discuss preparation of a Community Wildfire Protection Plan.

The Methow Conservancy, in agreement with group members, hired a temporary coordinator to assist the group in gathering information for the development of a comprehensive Community Fire Plan. This resulted in the "Community Fire Plan

Summary Report,” published in February 2003. Public meetings were held in March 2003 to share the work of the collaborative and gather public input. Public response was favorable and supportive of continuing development of the CWPP. The Coordinating Group submitted proposals to the National Fire Plan in 2003 and 2004 to complete the CWPP, without success. In 2005, the Coordinating Group established a collaborative relationship with the Highlands Fire Defense Team and other county-level entities. These groups worked together to develop a proposal for an Okanogan County-wide CWPP, which has been tentatively selected for funding in FY2006.

In the absence of National Fire Plan funds for plan development at the local level, the Coordinating Group has continued to convene collaborative meetings, prioritize National Fire Plan proposals, coordinate fuels reduction activities on public and private lands, and fill information gaps to complete the CWPP. Agencies and Okanogan County have provided technical assistance and resources, non-profit organizations have contributed funding and staff, and individuals have provided many hours of volunteer time to serve the completion of this CWPP. Our experience has demonstrated that this Plan will continue to evolve as a living document if it is to serve the community effectively. To that end, it is recommended that the Coordinating Group remain active to provide leadership and a collaborative forum for updating the Plan, establishing priorities, monitoring outcomes and sharing information with the public.

A list of organizations, agencies and individuals represented on the Coordinating Group follows:

The Methow Conservancy
Methow Forest Owners' Cooperative
Methow Forest Watch
Okanogan Communities Development Council
Conservation Northwest
Pacific Biodiversity Institute
Bearfight Institute
U.S.D.A. Forest Service Okanogan-Wenatchee National Forest
U.S.D.A. Forest Service Methow Valley Ranger District
Washington State Department of Natural Resources
Washington State Department of Fish and Wildlife
North Central WA Resource Conservation and Development
Okanogan Conservation District
Okanogan County Planning Department
Okanogan County Emergency Services Department
Okanogan County Commissioners
Okanogan Public Utility District No. 1
Rural Fire Districts 5, 6
Mazama volunteer Fire Chief, Dick Roberts
Cascade Woodlands-Arnie Arneson, consulting forester
Fire Vision LLC – Tom Leuschen, fire behavior consultant
KLB Consulting, Kristi Laguzza-Boosman, outreach consultant
Soo-Ing Moody, social and economic monitoring consultant
Community members and landowners at large

Statement of Need for Community Fire Planning

Okanogan County has the most numerous fires starts and the highest fire suppression costs in the state of Washington. According to Washington DNR, an average of 93 wildland fires ignite in the county each year. Fires on the Okanogan National Forest along with private and state lands surrounding communities in the Methow Basin ignite every fire season. The largest recent forest fires have included the Farewell, Thirtymile, and Needles fires, all of which originated in the Methow Basin on National Forest lands and spread to other ownerships. The 2003 Needles Fire on the Okanogan National Forest directly threatened the residences in a community known as Lost River just north of Mazama, prompting evacuation of the community on two separate occasions and creating severe air quality impairments to the entire river valley for multiple weeks. Similarly, a 2001 fire ignited by power lines spread through wildland fuels in grasslands destroying one home in the town of Winthrop. According to the DNR, on average there are 10.9 wildland fires on private or state land within the Methow Basin each year. In addition, air quality issues associated with smoke from summer wildfires and prescribed burns continues to be a public health concern.

Past management activities on surrounding private and public lands, most notably timber harvesting of fire resistant ponderosa pine and nearly a century of effective fire suppression, have led to altered forest composition and increased fuel loads throughout the public and private lands. This has led to increases in fire intensity and severity. Similarly, in the shrub/steppe areas of the basin, introduction of exotic species and fire suppression have altered historic fire behavior. These impacts have led to an increased concern surrounding the risk of wildfire to the growing number of individual homes and communities nestled throughout the landscape and to the stability and health of local ecosystems.

Fuels reduction and forest restoration projects, including defensible space programs such as FireWise, have been implemented in some parts of the Methow Valley. However, until 2003 little effort was made to coordinate these projects with adjacent landowners to address the landscape-scale effects related to forest and ecosystem health. Furthermore, ponderosa pine and shrub/steppe ecosystems, which include the vast majority of residential dwellings in the valley, are fire dependent systems and have been identified as priority areas for conservation by the Methow Valley Conservation Coalition. Because of the Methow Valley's rich environmental resources and concern for protection of the natural environment and community character, a Basin-wide fire plan is needed mitigate risk to loss of life and property while ensuring proper management of valued natural resources including wildlife habitat, water and air quality, forest health, and shrub/steppe habitat.

A Community Wildfire Protection Plan also supports community participation in land management planning on nearby federal lands. In addition to giving communities the flexibility to define their own WUI, the HFRA also gives priority to projects and treatment areas identified in a CWPP by directing federal agencies to give specific consideration to fuel reduction projects that implement those plans. If a federal agency proposes a fuel treatment project in an area addressed by a community plan but identifies a different treatment method, the agency must also evaluate the community's recommendations as part of the project's environmental assessment process (SAF 2004).

ASSESSMENT

Existing Information

A substantial amount of data is presently available from several sources, which are combined in this report or included by reference. Primary fire planning information and GIS data used in this plan came from U.S.D.A. Forest Service, Okanogan-Wenatchee National Forest, Methow Valley Ranger District, Washington Department of Natural Resources, Okanogan County, and Pacific Biodiversity Institute. Intellectual property of these entities which appears in this document is used with permission of the appropriate entity.

Vegetation Types and Associated Fire Regimes

Vegetation types in the Methow Valley are complex and varied. Vegetation types result from physical characteristics of the landscape such as slope and aspect as well as climate and geologic influences. Vegetation is further influenced by natural disturbances such as fire, insects, and disease. In addition, human impacts from land use and management have changed the natural composition, structure, and function of vegetation. These changes have further influenced the behavior and effects of those disturbances, especially fire.

Historically, fire played an essential role in shaping the vegetation pattern throughout the Methow Valley. The summer weather patterns predispose the valley for lightning strikes causing naturally occurring fires. Native American use of fire in the region is also well documented (Ohlson, 1996). Frequent fires historically burned along the surface with low intensity and low severity. Species such as ponderosa pine and Douglas-fir (to lesser degree) survived these historic fires by adaptive strategies such as thick bark. Some species like lodgepole pine depend on the presence of fire for reproduction. Similarly, grasses, shrubs and forbes have various responses to fire that enable them to survive, and in some cases, regenerate vigorously after fire.

For the purposes of this Plan, vegetation types and their associated fire regimes will be described for those areas in the Basin where human establishment and the risk of wildfire coexist. This includes shrub/steppe and forested communities ranging in elevation between 900 ft at the confluence of the Methow and Columbia Rivers to approximately 3,000 ft, above which human habitation is negligible. Although effects of smoke and ecosystem health in more remote areas in the higher elevations are of public concern, it is within the scope of this plan to focus attention on vegetation and associated wildland fuels that abut or are intermixed with communities.

Average rainfall in the Methow Valley ranges from 13-24 inches of precipitation from the lower reaches of the valley to upper portions near Mazama (UMCP, 2002). The majority of precipitation falls in the form of snow between October and March. Fire season generally

begins in July and continues through October with its peak occurring between the first week of August through the first week of September (OWNF 2002). Thunderstorm activity, which typically begins in June with wet storms, turns dry with little or no precipitation reaching the ground as the season progresses into July and August. Consequently the risk of catastrophic fires increases in late summer. Drought, snow pack, and local weather conditions can extend or shorten the length of the fire season.

Fire regimes defined by the Okanogan National Forest are depicted in the following map (Figure 2). Detailed definitions of fire regimes can be found in the Fire Management Plan (OWNF 2002)

Methow Fire Regimes

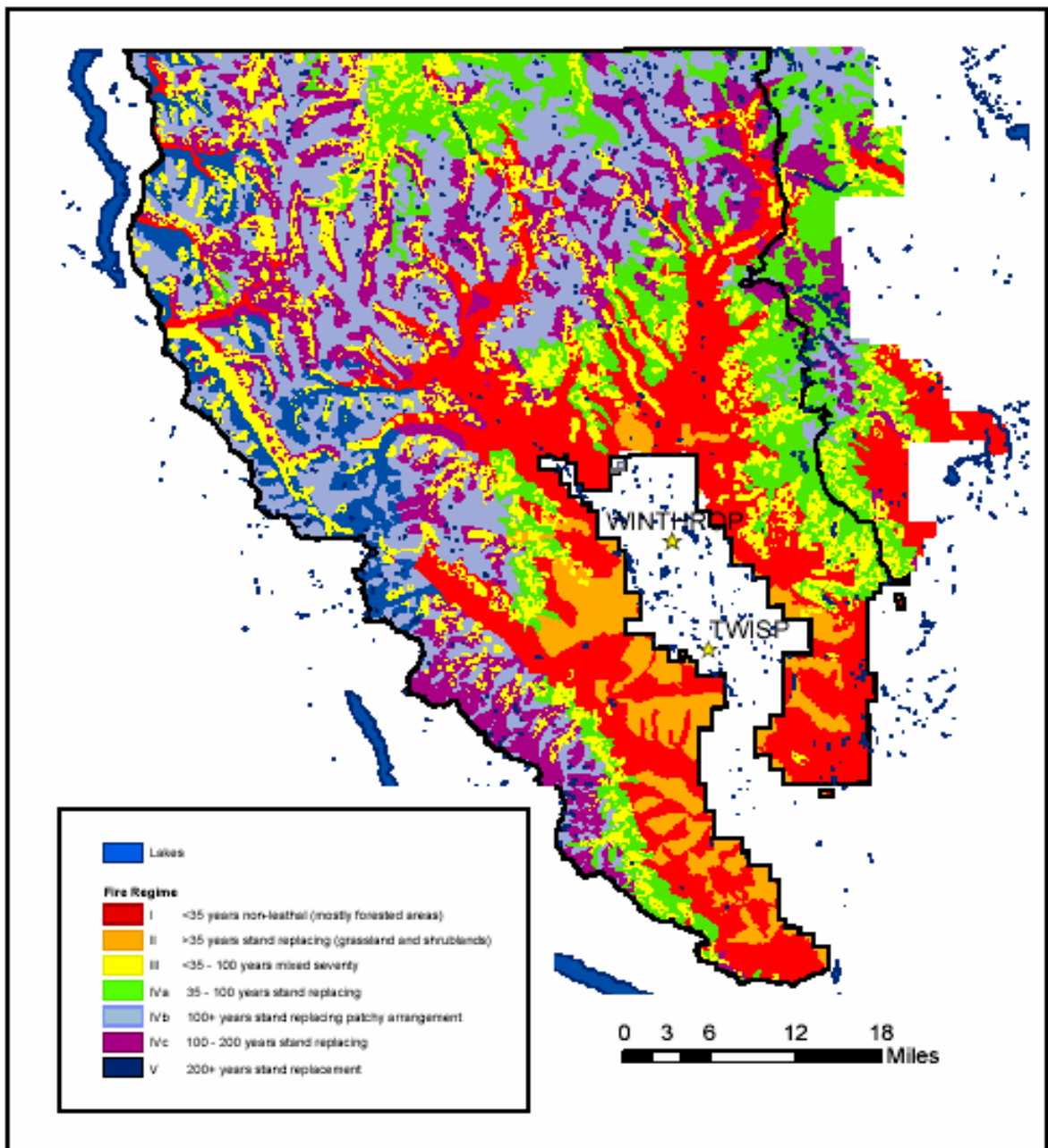


Figure 2 Methow Sub-Basin Fire Regimes (OWNF 2002)

Forests

The two major forested types where human habitation exists in the Basin include the Ponderosa pine (*Pinus ponderosa*) zone and dry Douglas-fir (*Pseudotsuga menziesii*) zone (Franklin and Dryness, 1973). These zones are named according to their climax species and canopy dominance in the presence of natural disturbance regimes. Riparian forests of cottonwood, aspen, willow and alder among other trees and shrubs are also present but are of lesser concern with regard to communities at risk from wildfire and will not be discussed in this report. Fire does however play a significant ecological role in these systems, especially aspen forests.

Ponderosa pine series:

Ponderosa pine is historically the dominant species present in the Ponderosa pine series. It can be found throughout the basin on gentle slopes and flats of variable aspect. In general, frequent surface fires of low intensity burned every 7-33 years (Agee, 1993). These burns kept the understory clear of young pine thickets and large shrubs, while favoring the establishment of grasses and herbs.

Fire suppression in these forests has allowed for the establishment of thick stands of suppressed pines as well as the establishment of thickets of shade-tolerant Douglas-fir often referred to as “dog hair” stands. What were once described as “park like” open forests of large pine are now often dense forests of suppressed Douglas-fir that are prone to insects, disease, and severe crown fires that can kill both the younger trees and older fire resistant pines. These large deadly fires are termed “catastrophic” wildfires because of their abnormally high intensity and severity, relative to historic fire behavior.

Douglas-fir series:

Douglas-fir forests are found mostly on north facing slopes, riparian areas, or drainages where topographic shade provides for cooler and moister microclimates. These moist sites create good growing conditions for Douglas-fir which establishes with vigor during fire free periods in the understory and can then survive low intensity surface fires. Both ponderosa pine and Douglas-fir would have been present in the overstory creating a mixed species canopy cover.

Low intensity surface fires also burned through this zone on average of 7-33 years (Agee, 1993), thinning out mostly Douglas-fir but allowing for some to reach maturity. Fire suppression and past logging of ponderosa pine has left areas of thick Douglas-fir forests that, like the above scenario, are more prone to disease and catastrophic fire.

Shrub/steppe grasslands

Shrub/steppe ecosystems in the Methow Valley are found on lower elevation foothills and flats mostly along south and west facing slopes, and extend to the southern portions of the watershed where they are a prominent vegetation type along the confluence of the Columbia River. Vegetation types were described by Daubenmire in 1970 and 1973. In

general, these shrub/grasslands are dominated by bluebunch wheatgrass (*Agropyron spicatum*) and Idaho fescue (*Festuca idahoensis*) among other native grasses. Shrub components include big sagebrush (*Artemisia tridentata*) and bitterbrush (*Purshia tridentata*). Herbaceous cover is also present providing spectacular displays of spring wildflowers including arrowleaf balsamroot and lupine.

Although fire also played a critical role in these plant communities, less is know about the fire regimes in these systems. In general these areas are estimated to have burned at a 0-35 year fire return interval. Again, historic fire would have burned as surface fires, thinning out shrubs and allowing for regeneration of native grasses and herbs. Major impacts on the fire behavior in shrub/grasslands include grazing, fire exclusion, and the introduction of non-native grasses. For example, cheatgrass (*Bromus tectorum*) increases fire intensity by supplying fine textured fuels. The further establishment of non-native species is a critical concern in these ecosystems with the use of prescribed fire or in the event of a wildfire. In addition, fire spreads quickly in grasslands which poses an added threat to homes within these ecosystems.

Fire History and Incidences

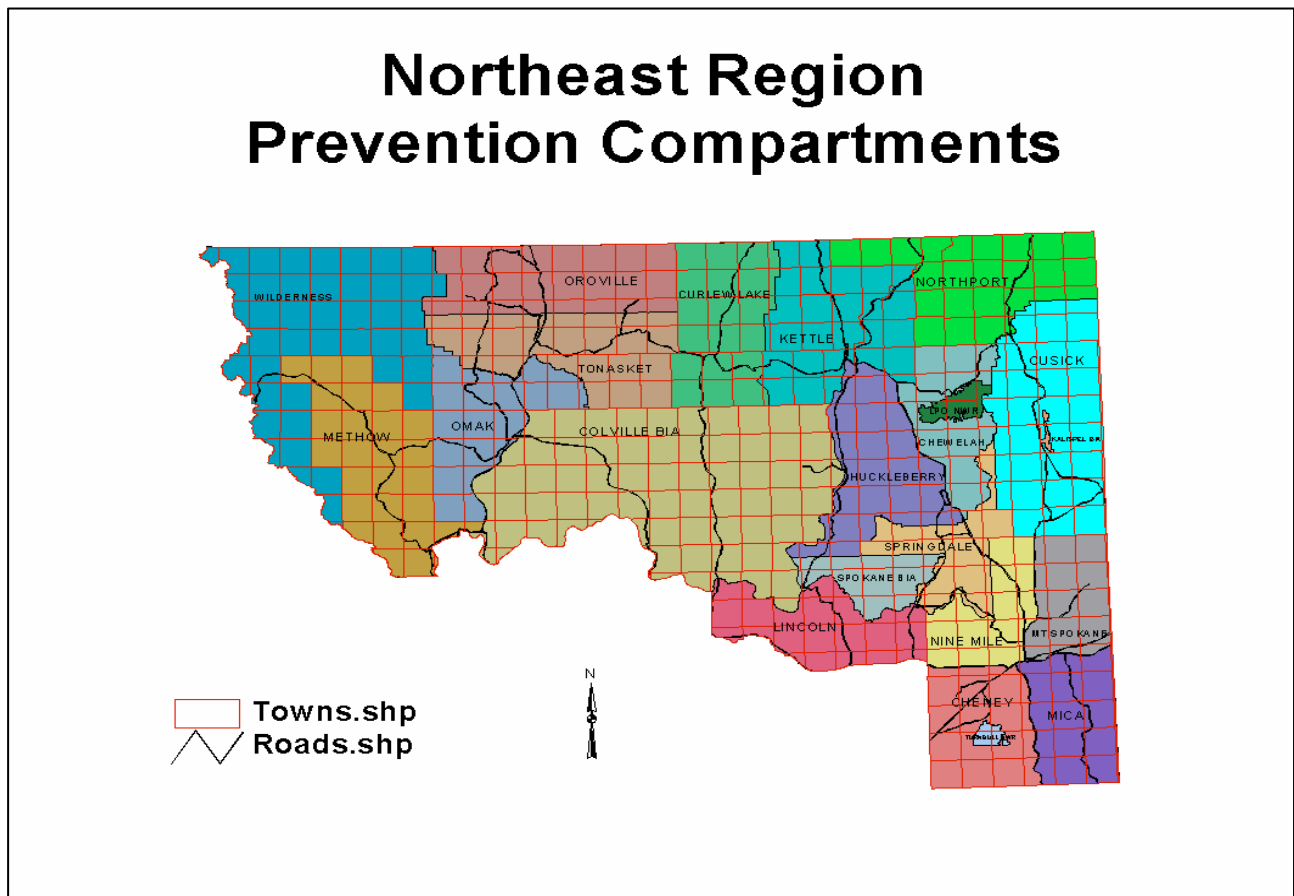


Figure 3 DNR Prevention Compartments

Washington State DNR fire statistics are based on Prevention Compartments as seen below (Figure 3). A summary of compartment statistics can be found in Appendix VI. In the Methow Compartment there are 10.9 fires per year. A state wide fire occurrence map is provided so relative comparison of fires across the state can be seen. The majority of fires occur along major highways and roads near more populated areas.

The wildland fire season in Washington usually begins in early July and culminates in late September with a moisture event; however, wildland fires have occurred in every month of the year. The beginning and end of the fire season are usually associated with human-caused fires, while lightning causes the most fires during the peak season from July through September. Fire on the Okanogan National Forest between 1990-1999 was ignited by human causes approximately 32% of the time, while lightning attributed to 67% of the fires (OWNF 2002). Figure 4 is a map adapted from Forest Service fire ignition density and history layers. The map clearly shows that the majority of fires start near private and state lands. This indicates that in addition to risk reduction, prevention and education need continued attention.

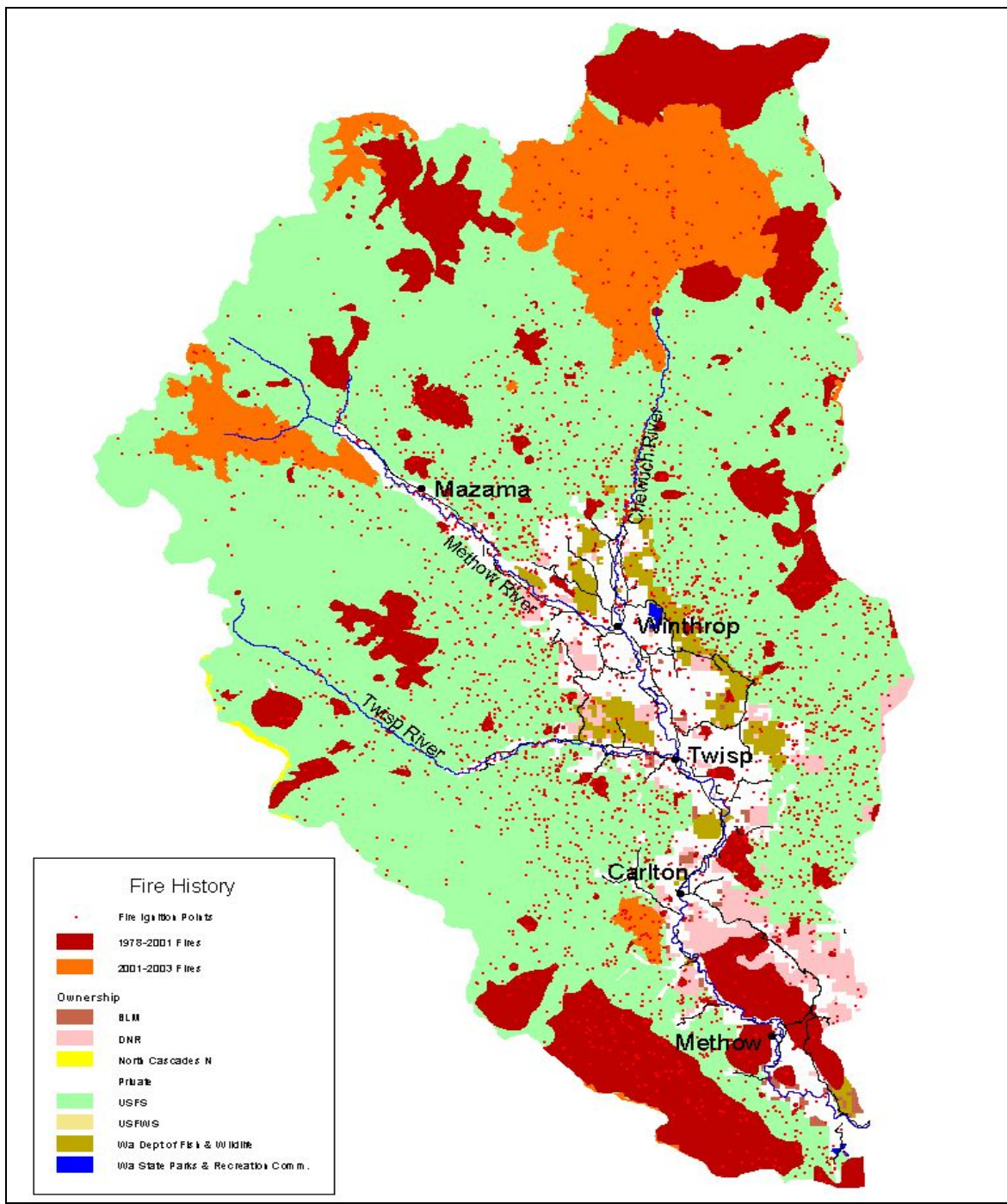


Figure 4 Fire History and Occurrence (adapted from ONF GIS layers)

General Fire Behavior Potential

Weather, topography and fuels affect wildfire behavior. The Methow CWPP area, like other areas of Okanogan County, is prone to severe weather conditions that can support extreme fire behavior. Topography is an extremely important aspect of anticipated fire behavior in this area. Steep ridges and river valleys can limit the spread of fire by

functioning as natural barriers or influencing local weather conditions; conversely, these attributes can also predispose microclimates to higher risk under certain conditions.

Fuels and their moisture content are also a critical component of wildfire behavior. Lighter fuels such as grasses, leaves and needles quickly expel moisture and burn rapidly, while heavier fuels such as tree branches, logs and trunks take longer to warm and ignite. Snags and trees that are diseased, dying or dead also burn more rapidly than heavy fuels. East of the Cascades, summer drying typically starts in mid-June and runs through early September, with drought conditions extending the season. Passage of a dry, cold front through the region can result in a sudden increase in wind speeds and a change in wind direction affecting fire spread and severity. The peak burning period of a fire is generally between 1p.m and 6p.m., moderated by local factors such as aspect and cloud cover. Wildland fires can take on a life of their own when there is sufficient heat and fuel, creating their own winds and weather. Fires can heat fuels in their path, drying them out and making them easier to ignite and burn.

Community Facilities

Community facilities serving the Methow Valley include fire stations, law enforcement facilities, schools, medical facilities, airports, wastewater treatment plants, and public works facilities including roads and powerlines. Table 1 lists the types and amounts of public facilities within the Methow Valley. These facilities are also shown in Figure 5.

Table 1 Community Facilities

Community Facility	Number
Airports	2
Medical facilities with emergency capabilities	3
Schools	4
Fire Stations	5
Municipal	2
Rural/volunteer	3
Law Enforcement	2
Wastewater Treatment	2
Roads	2,134 miles
Paved	206 miles
Unpaved	1,928 miles
Powerlines	
Transmission (Okanogan PUD)	104 (total in Okanogan County)
Distribution (Okanogan PUD)	1,577 (total in Okanogan County)
Distribution (Okanogan Elec. Co-op)	422 miles (245 mi overhead/ 177 mi underground)

Airports in the Methow Valley include facilities serving Twisp and Winthrop, as well as the North Cascades Smokejumper Base operating adjacent to the Intercity airport near Winthrop. Both of the airports are located outside of municipal boundaries and are adjacent to rural lands exposed to wildland fires. Medical facilities capable of responding in emergency situations include Aero-Methow Rescue, Methow Valley Family Practice and the Country Clinic. All of these facilities are located within the municipal boundaries of Twisp or Winthrop. All of the fire stations are located within municipal areas or in the

central portion of unincorporated towns. Among these, the volunteer fire response facility at Mazama/Lost River is at greatest risk from wildfire, due to its proximity to adjacent high fuel loads on public and private lands and recent fire history. Law enforcement facilities exist within the business districts of Twisp and Winthrop and are not considered to be at higher risk than the towns themselves. Wastewater treatment facilities are also located within municipal boundaries. Of the schools located in the Methow Valley, the facilities housing Liberty Bell Junior-Senior High and Elementary schools are adjacent to grasslands or forest lands that place these facilities at higher risk than schools located in the Twisp municipal boundary.

Figure 3 shows the locations of roads throughout the CWPP plan area. The road system in the Methow Valley is comprised of state highways, Washington State Department of Natural Resources (DNR) roads, County roads, U.S. Forest Service roads, and private roads. Table 2 below shows the number of miles of each type of road. The U.S. Forest Service is responsible for the highest number of miles of road in the Methow Valley. Roads are important in the WUI, because they provide a means of escape and access to fight fires, and because they may act as fuel breaks to prevent the spread of a wildfire. Due to unplanned development patterns, there are many locations in the valley where a single road serves as the only means for access to and escape from a residential area, creating a potentially hazardous situation. Many of these locations are not suitable for the development of alternative access roads; mitigation of risk in these situations will require more attention to reducing structural ignitability, developing evacuation plans, and educating residents.

Ownership	Type	Miles in Methow Valley
Washington State	State Highway, arterial	92
Okanogan County	Paved	114
Okanogan County	Dirt/gravel	107
Private	Dirt/gravel	676
Forest (USFS/DNR/Pvt)	Open Dirt/gravel	1,145
Forest (USFS/DNR/Pvt)	Closed	542

Table 2: Roads in the Methow Valley watershed

Okanogan Public Utility District (PUD) and Okanogan Rural Electric Cooperative (OCEC) provide electrical service to the Methow Valley. Most of the Methow Valley's electricity needs are presently served by a single transmission line, which starts in Okanogan at a substation and follows the route of SR20 over Loup Loup Pass to the Twisp substation in the town of Twisp. Okanogan PUD is responsible for maintaining the transmission line under an agreement between the two utilities and the Bonneville Power Administration. Okanogan PUD is currently engaged in an environmental review process to determine whether to construct a second transmission line to serve the valley; this second route would either be located in the upland hills on the east side of the valley or along the valley floor adjacent to SR153.

Additionally, the valley's residents are served by a network of distribution lines that connect the transmission line to homes and businesses. Okanogan PUD owns and maintains the distribution system from the southern boundary of the Plan area up to and including the town of Twisp; OCEC owns and maintains the distribution system from the

northern boundary of the Plan area down to the town of Twisp, including the Twisp River drainage. Both utilities maintain some percentage of underground distribution facilities in the Methow Valley. OCEC Manager Roger Meader reports that 95% of new distribution construction and feeder upgrades in the OCEC service area are being installed underground, in part to mitigate risk from fire and other natural hazards.

In general, due to the dispersed nature of the electrical infrastructure and the risk of extreme fire behavior throughout the CWPP planning area, all of the existing and proposed above-ground facilities are exposed to varying levels of risk from human-caused and natural wildfire events. Planned and existing risk mitigation activities include vegetation clearing in rights-of-way, multi-agency coordination of thinning adjacent to power line easements in higher risk areas, and public education.

Structural Vulnerability and Development Patterns in the Basin

Because of the pristine setting of many of the drainages in the Basin, many rural residents have been attracted to build homes or cabins nestled within the unique contours of the Methow Valley. Defining wildland/urban interface communities based solely on population density and adjacency to public land as defined in the Federal Register fails to include a large number of residences that are interspersed throughout the landscape and may be at risk from wildfire. The majority of rural homesites in the Basin exist outside the boundaries of designated communities listed in the Federal Register, but should be considered at risk based on their location within wildland fuels and fire-dependent ecosystems adjacent to large tracts of undeveloped public land. The majority of these areas fall outside of Rural Fire Protection District boundaries.

While overall population of the region is relatively low at 4,382 (US Census 2000), many rural residences are nestled on the valley floors of steep, forested drainages where fire spread and severity are often highest. Many remote homes are not occupied year-round and owners of these homes may not be well prepared or informed of the risk of fire to their property. In addition, even year round residents in remote communities often lack good evacuation plans or communication strategies, and road conditions may inhibit or endanger residents and firefighters in the event of an evacuation.

Structural fires are the primary concern for rural fire districts. The remoteness of many residences in the valley lead to the potential for structural fires to ignite wildland fires as well. Many communities on lower terraces and foothills and the southern reaches of the watershed occur in the shrub/steppe where current mapping information place fire return intervals within a 35 year interval. The rate of spread in these shrub/steppe systems exceeds that of forested areas and therefore adds an additional risk.

Specific locations in the Methow Valley that have experienced considerable development adjacent to at-risk public lands include Lost River, Mazama, Wolf Creek, Rendezvous, Cub Creek, East Chewuch, Elbow Coulee, Twin Lakes, Twisp River, and Libby Creek. Other locations in the valley are in transition, with the potential for subdivision of private lands and increased future development adjacent to public lands. These areas include the uplands of Benson Creek, Alder Creek, Texas Creek, French Creek, McFarland Creek,

Squaw Creek, Black Canyon Creek and Alta Lake. There may be opportunities to mitigate risk in these transitional areas by incorporating wildfire planning into the County Comprehensive Plan Update process, which is currently underway. Including fire prevention planning in this process could inform zoning and development ordinances before significant subdivision or population growth occurs.

Methow Valley Private Ownership Demographics in More Detail

In January 2005, the Methow Forest Owners’ Cooperative contracted with a GIS specialist to manually delineate all of the private parcels in the Methow Valley with approximately one acre of forest or more from the entire Okanogan County parcel database. The total number of parcels in the Methow Valley (defined generally as the watershed from the crest of the Cascades to the mouth of the Methow River), representing 171,999 acres of forested and unforested private land, numbers 11,465 discreet parcels (Waters 2005). Remote sensing reduced this number to 3,393 forested parcels (33,792 acres). Further analysis of the 3,393-parcel database reveals interesting details about the ownership of parcels in the Methow Valley. Table 3 shows a comparison of forested Methow acreage owned by persons from different locations in the world, nation and Washington State.

Table 3: Parcel Ownership by Primary Residence, in acres

Primary Residence of Owners	Total Acreage	% Of Total Private Forested Acreage (33,792)
Other Countries except Canada	28.43	.08
Canada	84.94	.25
United States, Other than WA (includes military)	1,895.7	5.6
California	283.78	.84
Oregon	390.69	1.2
Washington	31,783.7	94
Washington west of Cascades	13,897.3	41
Seattle metro area	8,012.86	23
Tacoma	2,287.7	6.8
Washington east of Cascades	17,886.4	53
Spokane	23.7	.07
Wenatchee	273.52	.80
Brewster	2,647.99	7.8
Methow Valley	13,066.92	38
Mazama	370.89	1.1
Winthrop	3,174.43	9.4
Twisp	5,720.98	17
Carlton	1,494.53	4.4
Methow	1,281.01	3.8
Pateros	1,025.08	3.0

The ownership percentages shown above indicate that while ownership of the Methow Valley’s forested parcels tends to be concentrated in Washington State (94%), less than half of the forested acreage is owned by persons living in the Valley (38%). Ownership on either side of the Cascade Crest is nearly an even split. Residents of the Seattle metro area alone own 23% of the Methow’s forested acreage, the largest percentage for any single region outside of the Methow. By comparison, 1.1% of the forested acres near the unincorporated town of Mazama are locally owned. These numbers combine with local

experience to point out that the majority of Methow forest owners are absentees and a high percentage make their primary home in the Seattle metropolitan area.

A challenge inherent in this dynamic relates to the unique climate on the east and west sides of the Cascade Crest. The Seattle metro area and surrounding environs are part of a historically maritime-influenced, temperate rainforest environment. Forests on the west side of the Cascades tend to be dense, moist and highly productive. By comparison, much the east side of the Cascade Crest is in the 'rain shadow' of the Cascades, and the ecosystems tend to be drier. Forests on the east side of the Cascades were maintained historically by natural disturbances such as fire and drought, which reduced density in favor of open, 'park-like' stands of fire-resistant trees. Forest owners residing in rainforest environments are not always educated about the different management needs of their 'dry side' forests, and can be uncomfortable with the idea of initiating projects that reduce the density of their trees. The risk of wildfire, which is becoming more widely recognized, may encourage more absentee landowners to consider ecologically sensitive thinning as an acceptable practice (Waters 2005).

Protection Capabilities

Response Providers

Fire response in the Methow Valley is distributed among a number of agencies, including local fire protection districts, U.S. Forest Service, and Washington DNR. Fire Protection Districts (FPD) are chartered under RCW 52 with taxing authority and elected commissions. FPD's have sole responsibility for responding to fires within their jurisdictions. Each district's jurisdiction is entirely on private land, though a District may

A Fire Protection District may call for mutual aid or State mobilization, requesting assistance from other fire entities within the boundaries its District. The Okanogan County Fire Chiefs Association provides a Mutual Aid Agreement among all FPDs, allowing a host District to request assistance from another District. The assistance provided is at the discretion of the district responding to the request, and is provided at no cost to the requesting entity.

Washington DNR is responsible for fire suppression under several circumstances. First, DNR has sole jurisdiction over the state-owned lands it manages, though DNR may request assistance from other agencies and fire response entities. DNR will also suppress wildfires on private lands that pay forest patrol assessments to DNR but do not pay assessments to Fire Protection Districts. DNR will not respond to structure fires on these properties. Joint jurisdiction over private lands occurs when FPDs and DNR both collect taxes for fire protection coverage on the same property. In these cases, the FPD is primarily concerned with protecting structures, while DNR focuses on wildland fire protection.

DNR maintains Fire Suppression Agreements with Fire Districts 5 and 6. These agreements allow the Districts to either assist with or be first responders to fires under joint jurisdiction or on State lands.

The U.S. Forest Service is responsible for suppressing fires on the lands managed by the agency, and may use a number of interagency agreements to request assistance from other entities.

Reciprocal Agreements exist between DNR and the US Forest Service, allowing the nearest agency to take quick action during Initial Attack of a wildfire. These agreements are created within specific timeframes and cover specific regions of each participating agency's protection area where state and federal public lands abut.

When fire suppression becomes a multi-agency effort, a Suppression Contract may be used between fire agencies, allowing one agency to take over suppression duties for another agency. A Fire Protection District encountering a very difficult fire within its jurisdiction may call for additional firefighting resources after exhausting all other efforts to secure aid. In this case, referred to as State Mobilization, Washington State Emergency Services will pay the suppression costs for outside responding agencies.

Methow Basin Rural Fire District Boundaries

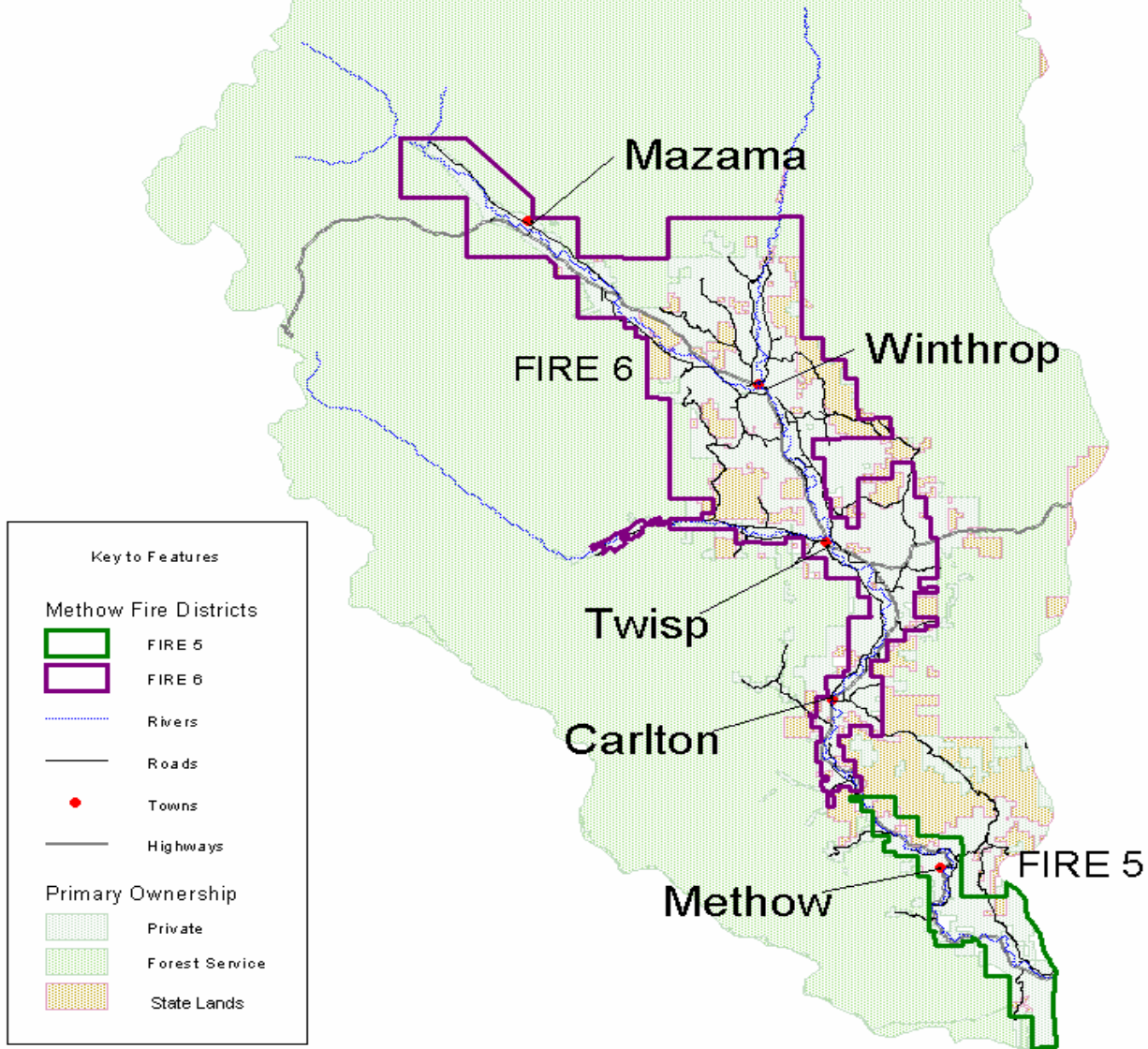


Figure 5 Methow Valley Rural Fire District Boundaries

A Multi-Agency Coordination (MAC) Group, part of the National Incident Management System, is a coalition of agency representatives that provides jurisdictional, functional or significant support to incidents. The purpose of a MAC group is to provide a forum for various agencies to meet and provide guidance and assistance to the Incident Management Team. A MAC group is activated when multiple or complex single incidents

involve many agencies. It can also be activated if there is competition for resources or if the Board of County Commissioners decides that it is necessary. Members of a MAC group are fully authorized to commit agency funds and resources to the incident. The MAC group is responsible for setting incident priorities, authorizing allocation of resources, providing a focal point for the overall situation, and providing a political interface. Additionally, the MAC group can monitor implementation, conduct future planning, and coordinate information releases to the public and other agencies.

Rural Fire District Capacity Assessment

Both of the rural fire districts with the Methow Basin are assigned a numerical fire protection rating by the Washington Surveying and Ratings Bureau. The Bureau, which is funded by insurance companies to perform on site evaluations, analyzes five main areas: average response time; water supply; communication network; schedule of fire inspections and fire station evaluations, which focus on age of vehicles, amount of personnel training and staffing of facilities. Insurance companies use the fire protection rating to help determine insurance rates on all fire insurance policies. The rating is on a scale of 1 to 10, with 1 representing the best score. Many residents live outside the 5 mile radius of protection defined by the Washington Surveying and Rating Bureau that rates the capacity of rural fire districts to set insurance standards. These residents are generally required to pay higher rates for their home insurance policies.

- Okanogan Fire District 6, which encompasses 350 square miles and serves a population of roughly 3,000 residents, is rated an 8 with a tanker within 5 miles of each station. Outside that 5 mile radius, the rating is 10. The fire District has 4 Type 1 engines, 5 Type 2 tenders, 5 Type 6 engines and 3 command vehicles. The District has an equipment replacement fund but it is very difficult to replace this equipment out of the budget with the State 1% tax limit law.
- Douglas/Okanoga Fire District 15, which serves 200 square miles and 7,000 residents is rated a 9. In 2005, the District initiated an annexation process in the French Creek, McFarland Creek and Squaw Creek areas of the Methow Valley, in an effort to bring more upland residences under Fire District protection.

	Washington Surveying & Rating Bureau Rating	Population	Area (square miles)
Fire District 15	9	7,000	200
Fire District 6	8 with tanker, 10 outside 5 mile radius of each station	3,000	350

Table 4 Fire District 15 and 6

Areas for Increased Capacity for Fire Districts

Update physical addressing and acquire an integrated dispatch on-board or laptop computer with GPS mapping system for response efficiency

Locator map of year round water supplies

Work with landowners and County Planning to address access issues including road conditions for ingress and egress requirements, possible local fire zoning ordinances and/or variances with communities

Fire District #6: Purchase two Type 4 interface engines and two type 6 4X4 engine. The wildland engines are the District's top priority.

Fire District #6: Replace Winthrop Fire Station. The station is an 1940's building with additions in 1984 and 2005

Structure Protection Tactical Considerations

The objective of the Methow CWPP structure protection plan is to safely and efficiently manage resources to protect human life, property, essential infrastructure and resources in the event of a wildland fire. Strategy decisions should take into account the following tactical considerations:

1. Common areas have heavily forested pockets with some steep slopes, chimneys, saddles and other areas at risk for extreme fire behavior. Fire may move rapidly through these areas with torching, crowning and spotting.
2. Some homes would require maximum effort to defend, requiring prompt activation of this plan and the need to triage structures.
3. Access to some area subdivisions is described as "one way in one way out". Traffic control and apparatus staging and placement must be carefully considered.
4. The homes range from average to large with some percentage having flammable siding and/or decking, and/or composition or wood roofing materials.
5. Okanogan County Fire Districts 5 & 6 and their cooperators can not assemble enough structure protection resources to simultaneously protect all residential structures in the Methow Valley watershed. Successful defense will require structural triage, time for pre-treatment and/or highly mobile tactics and burnout operations.
6. Resources from the state and federal wildland cooperators will be necessary to implement the strategies described in this CWPP.

Access

Road access has been identified as a potential concern in the event of a wildfire for many residential areas in the Methow Valley. Roads are limited due to the influence of drainage topography (steep slopes). It is recommended that existing roads be evaluated to determine the feasibility of improving or upgrading to allow for use as emergency evacuation routes.

Explanation of Evacuation Levels

The following explanation of evacuation levels is excerpted from a handout provided by the Okanogan County Sheriff's Office in conjunction with Unified Incident Command.

Level 1: Evacuation has become a likely possibility and it is suggested that you begin preparations for evacuation. For preparation recommendations, refer to the pamphlet “Wildland Fires – Developing a Fire Plan” produced by the WA State Military Department, Emergency Management Division.

Level 2: The situation now warrants notification to affected persons that evacuation may become necessary in the immediate future. It is suggested that you complete necessary preparations and be ready for the order to evacuate on a moment’s notice.

Level 3: In the interest of protecting life and property the Sheriff’s Office strongly suggests that affected persons evacuate immediately due to an imminent threat. Protection and security of the evacuated zone will be a high priority of the Sheriff’s Office and access into the area will be restricted to emergency response personnel only. Suggested evacuation routes will be determined as well as locations for emergency food and shelter. You will also be advised of options for livestock and pet shelter.

Information regarding evacuation levels will be disseminated via local radio, recorded phone information, the Sheriff’s Office website, posted information locations, at designated public information centers, and, in some cases, by television. Whenever possible every attempt will be made to notify affected persons directly by members of the Sheriff’s Office or a designee.

Community Evacuation Plans

Only three evacuation plans currently exist for areas within the Methow Basin and are listed below. Complete versions of these evacuation plans are kept at the Methow Valley Ranger Station in Winthrop. Currently evacuation plans are developed during an active fire threat. It has been noted that evacuation plans should be in place prior to an immediate threat. The “Hot Spots” described by the OCD on page 28 of this document can be used as an initial guide for prioritizing the development of evacuation plans.

“Structure Protection and Evacuation Plan Lost River/Two Rivers Community”
Needles Fire 2003

“Freestone Inn and Wilson Ranch”
Needles Fire 2003

“Structure Protection Plan, (Western) Lower Methow Valley
(Pateros to McFarland Creek)”

Deer Point Fire

- Alta Lake
- Black Canyon
- Squaw Creek Canyon
- McFarland Creek
- Antoine Creek
- Washington Creek

Key Contacts

Organization	Contact	Phone Number
Okanogan County Sheriff's Office		911 or 800-572-6604
Okanogan County Emergency Management	Scott Miller	509-422-7207
Okanogan County Fire District #5	Bill Valance, Fire Administrator	509-689-0216
Okanogan County Fire District #6	Don Waller, District Chief	509-997-2981
U.S.D.A. Forest Service Methow Valley Ranger District	Front Desk/Information	509-996-4003
Report Forest Fires		800-562-6010
Okanogan Public Utility District		509-422-3310
Okanogan Rural Electric Co-op		509-996-2228

Table 5 Key Contacts

Risk Evaluation

Communities At Risk

Congressional requirements in the fiscal year (FY) 2001 Appropriations Act required states to identify wildland/urban interface communities within the vicinity of federal lands that are at risk from wildfire. Definitions of these communities at risk can be viewed in APENDIX I. The Secretaries of Agriculture and Interior were directed to consult with states and tribes to develop the list of communities within the vicinity of federal lands that are high risk from wildfire.

Five communities in the Methow Basin were listed as communities at risk in Federal Register Vol. 66, No. 3, Pages 751-754, January, 2001 as a result of the congressional mandate. They include: Carlton, Winthrop, Mazama, Twisp, Methow. With the exception of Winthrop and Twisp, these communities are unincorporated localities without definite boundaries.

Agency Risk Assessments

Current risk assessments for the Methow Valley watershed have been developed by the US Forest Service and Washington State DNR, employing various fuel models. Despite lack of a standardized risk assessment among agencies, fuels treatments, defensible space work and community planning have been underway in areas assumed to be of high risk based on high population density, dense forest stand conditions, fire history and recent fire events.

The US Forest Service risk assessments were developed to aid in the management directive in the event of fire. They primarily assess the potential for crown fire and the rate of spread on federal lands and are based on vegetation cover layers developed from 1983 and 1997 Landsat imagery. They are coarse scale assessments using computer simulations and models that give an indication of crown fire potential and rate of spread under different wind and temperature scenarios. The Methow Fire Management Unit of Methow Sub-Basin is broken down into Fire Management Areas which are then regrouped into strategic Risk Analysis Zones (RAZ) using a fire management computer model called RERAP (Rare Event Risk Assessment Process). Residential communities within the

Methow Valley Watershed lie within Methow RAZ 4 and 5 based on the Methow Sub-Basin Fire Management Unit. Results of fire modeling in RAZ 4 using an ignition prediction and spread model called SPREAD, have predicted fires to actively spread in all directions depending on prevalent wind directions. Descriptions of the risk analysis for all Risk Assessment Zones and a map of the RAZ units in the Methow basin are included in Appendix 6.

Fuel condition classes that describe the relative deviation from an area's historic fire regime have been mapped on the Okanogan National Forest. These condition classes give an estimate of the fuel types across the landscape. GIS layers depicting fuel condition classes are available in Appendix XII and more detailed descriptions can be found in the Okanogan-Wenatchee National Forest Fire Management Plan (OWNF 2002).

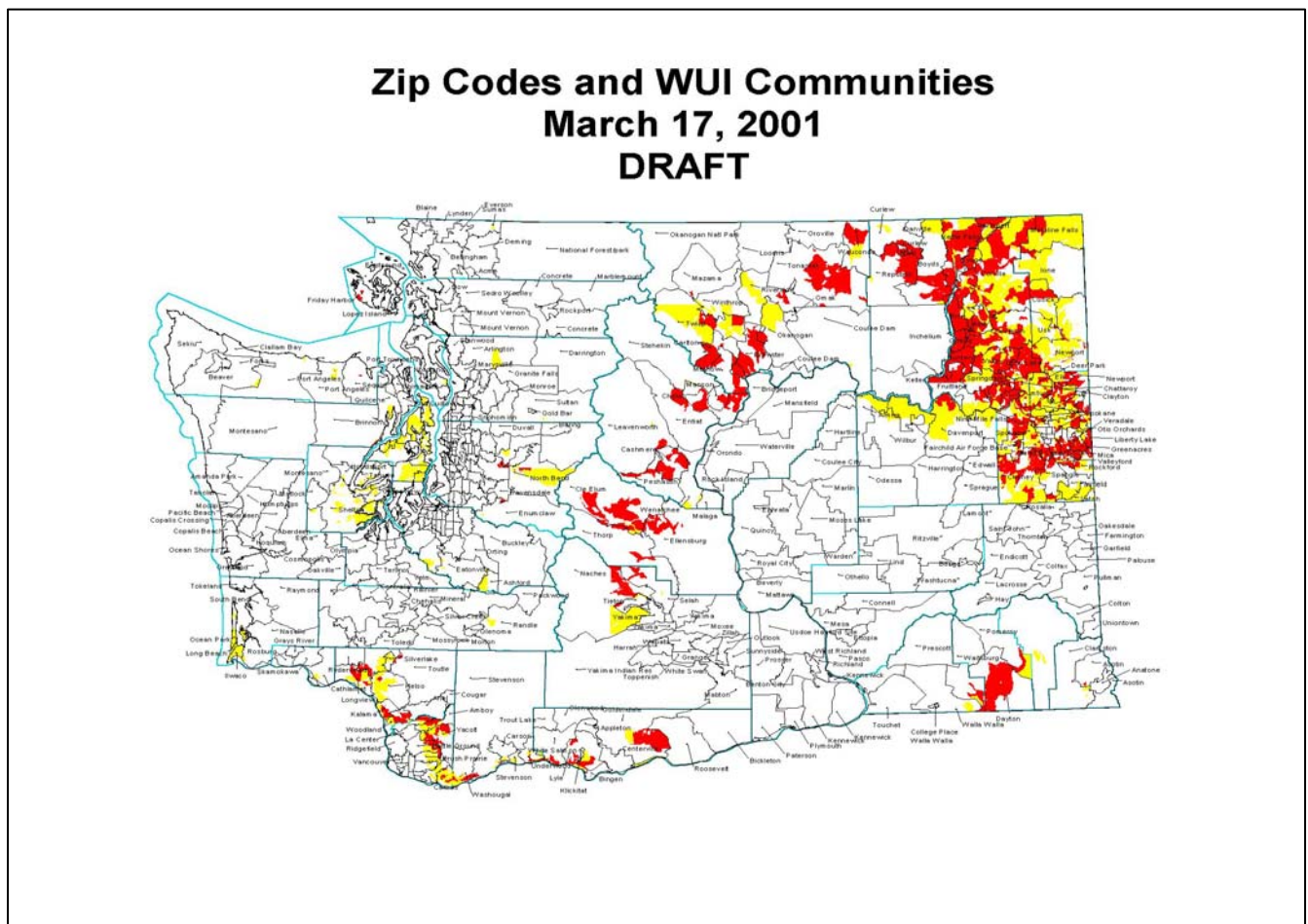


Figure 6 Zip Codes and WUI Communities

Washington State DNR has employed a series of risk assessments to identify communities at risk. The zip code map (left) established moderate and high risk zones based on fuel types and population data. In 2000, They also implemented a RAMS assessment throughout certain areas in NE Washington, including the Methow Valley. The 2000 RAMS assessment is consistent with the 2001 Federal Register listing, citing Carlton, Winthrop, Mazama, Twisp, and Methow as High Risk communities.

These community-level agency assessments offer a landscape perspective of fire potential in a given area and are important for viewing landscape level impacts and evaluating appropriate response strategies. However, they offer little information in terms of structural ignitability or actual risk to homes. Current research demonstrates home ignitability, which is a function of the home and its immediate surroundings, is the primary factor in assessing the risk to homes in the wildland/urban interface (Cohen, 2000).

Homes in Crown Fire Potential

Identifying residences throughout the Basin by overlaying the Okanogan Land Use layer and crown fire potential matrix was done using ArcView GIS to demonstrate a potential use of these data in evaluating risk at a finer scale. The result of this analysis is shown in Figures 6 and 7 on the following pages. A magnified version of the analysis in Figure 4.1 can be seen in Figure 7. Based on this derived data, there are approximately 541 homes that intersect with high crown fire potential. However, crown fire alone does not accurately describe risk because it cannot predict defensible space or structural ignitability.

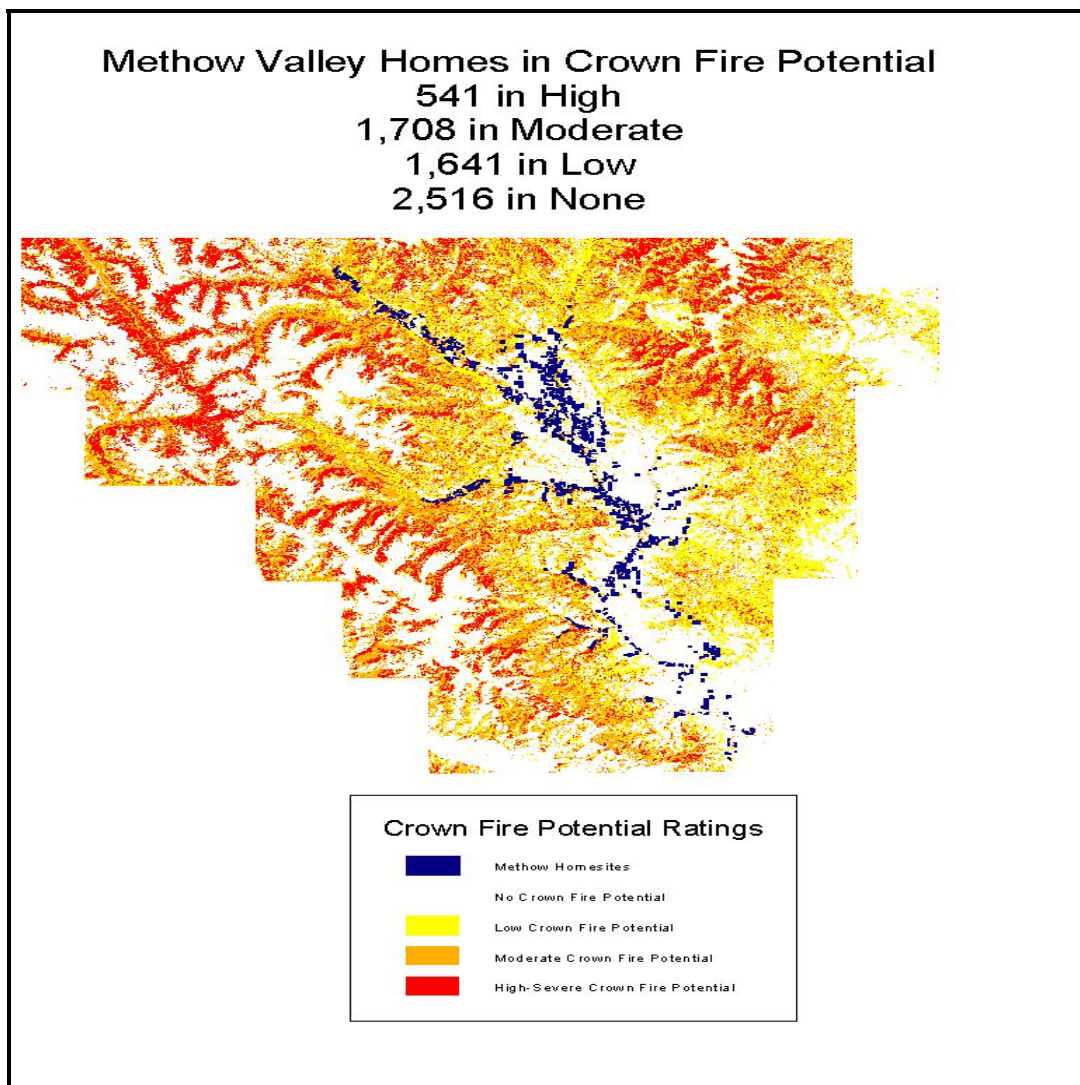


Figure 7 Methow home sites derived from county parcel layer and ONF Crown Fire Potential layer

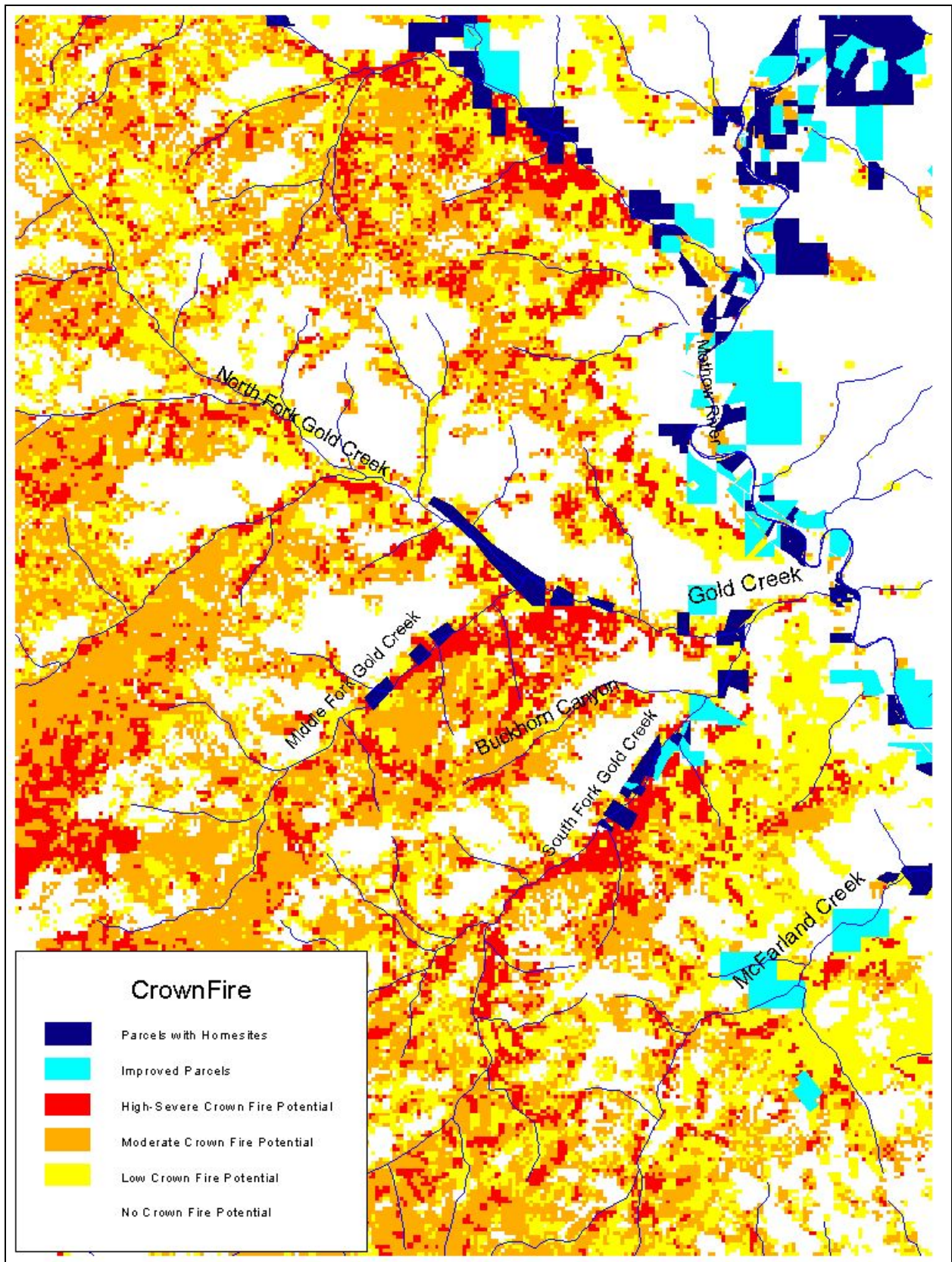
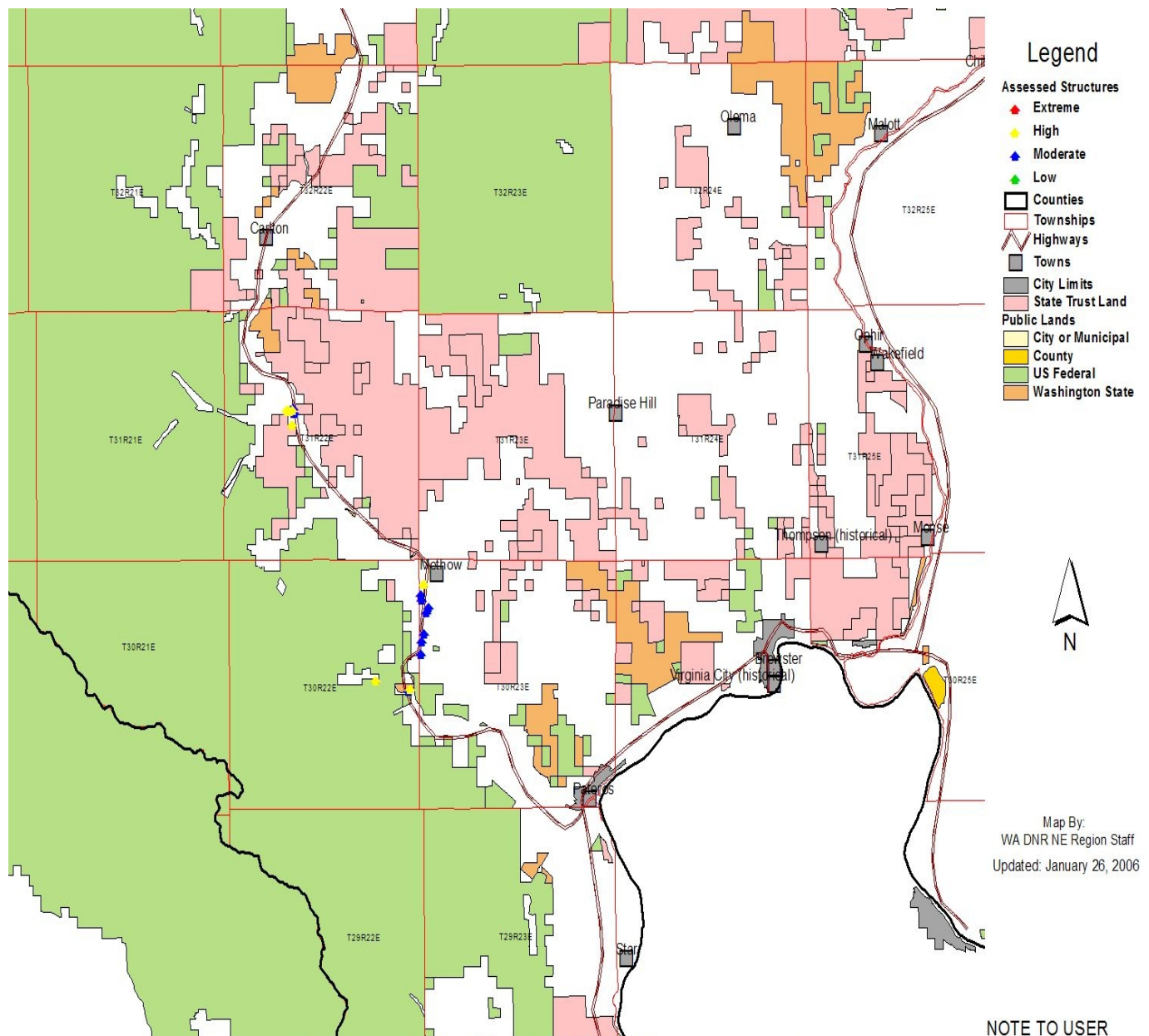


Figure 8 Methow Home sites and Improved Parcels overlaid with Crown Fire Potential

Structural Ignitability Assessments

Currently Washington DNR is implementing the National Fire Protection Association 299 method of on-site assessments for structural ignitability and defensible/survivable space. The results of these on-site evaluations are averaged based on census polygons to view relative risk ratings at various scales. Current maps (Figure 8) showing communities that have received this assessment in the Methow Valley are presented on the following page. DNR Fire Prevention Teams have conducted NFPA 299 evaluations during fire events such as the 2003 Needles Fire, the 2004 Deer Point Fire and the 2005 Pearrygin Lake fire. DNR and prevention teams have completed 485 risk assessments on individual residences, 110 of which have been plotted into the GIS database. The average score for all assessments is 76, which is a High Risk rating. Steve Harris, DNR Fire Prevention Coordinator for Eastern Washington, has also conducted multiple trainings in the Methow Valley in recent years, teaching landowners, volunteer firefighters, forest resource professionals and engine crews how to conduct these evaluations.

The trainings have improved landowner and professional understanding of the need for such assessments and the skills required to conduct them, but some limitations remain to achieving full effectiveness of this method. First, a lack of sufficient GPS technology on the ground has been cited as restricting the ability to plot locations, indicating a need for DNR to make these tools available to more field personnel. Second, landowners do not always perceive government officials seeking to evaluate the risk to their homes as beneficial, and may interfere with the collection of meaningful data. Some success has been noted when pairing the NFPA 299 assessment with other DNR programs, such as burn permit applications and Forest Stewardship activities. Property owners who are motivated to seek DNR assistance with funding or permitting appear to be more compliant with the risk assessment process, which could be a clue to future success. Continued efforts to educate and inform landowners about the benefits of the assessment and their responsibilities regarding fire prevention are also recommended.



- Legend**
- Assessed Structures**
 - Extreme (Red diamond)
 - High (Yellow diamond)
 - Moderate (Blue diamond)
 - Low (Green diamond)
 - Counties (Black outline)
 - Townships (Red outline)
 - Highways (Red line with double dashes)
 - Towns (Grey square)
 - City Limits (Black outline)
 - State Trust Land (Pink fill)
 - Public Lands**
 - City or Municipal (Light yellow fill)
 - County (Yellow fill)
 - US Federal (Light green fill)
 - Washington State (Orange fill)



Map By:
WA DNR NE Region Staff
Updated: January 26, 2006

Residential Wildfire Risk Assessment Lower Methow Valley

NOTE TO USER

- * Structure locations are approximate. Garmin GPS used when available.
- * Care was taken during map compilation. However, the Department of Natural Resources cannot accept responsibility for errors or omissions. Therefore, there are no warranties which accompany this material.
- * State Plane NAD 83 South

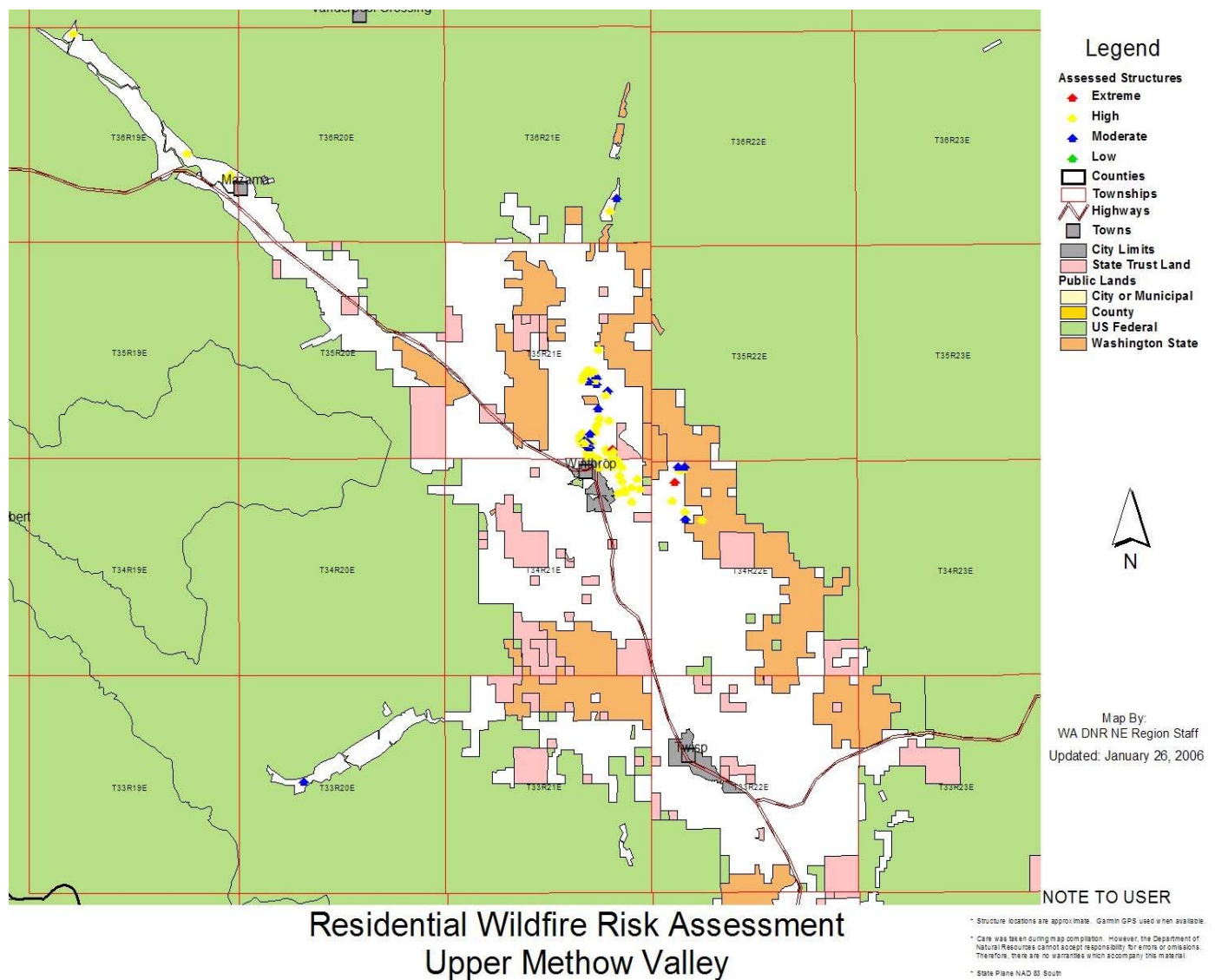


Figure 9 a & b DNR Census Polygons using NFPA 299 Risk Assessments

Finally, data collected by DNR through the NFPA 299 process is useful at multiple scales for reporting and statewide planning purposes, but the placement of data into census blocks limits applicability to WUI-scale fire protection planning, partially due to the large amount of federal land in the planning area. It is recommended that this data be reorganized by the Coordinating Group into groupings by drainage or sub-watershed rather than census blocks in order to assess risk within relevant management units of the Methow Valley watershed and assist landowners at meaningful local scales.

Okanogan Conservation District Fire Hazard Assessment

Beginning in 2003, the OCD sought input from Pete Soderquist, Fire Management Officer at the Methow Valley Ranger District, and Fire District #6 Chief Don Waller for a qualitative approach to designate “Hot Spots” of concern in the Methow Valley. They viewed

economic values, fuel types, fire history and access issues to identify the following communities that need better fire prevention and/or protection plans:

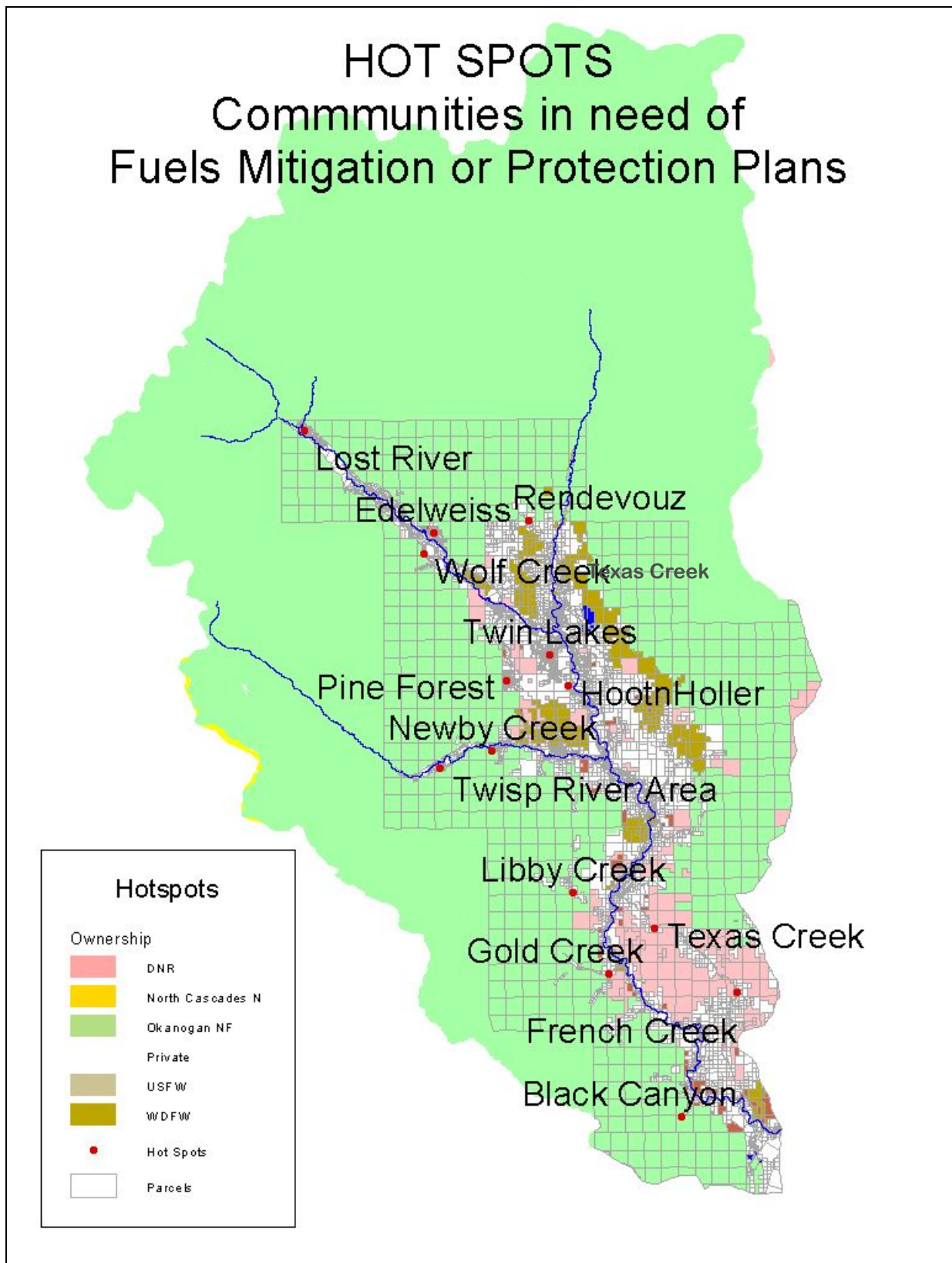


Figure 10 Okanogan Conservation District and Fire Districts identification of "Hot Spots"

This work was later refined to include input from land managers and emergency services professionals throughout Okanogan County, and to evaluate specific fuel reduction needs and costs for areas deemed high priority. The final report, completed in the spring of 2005, ranks the “Top Ten” risk areas throughout the county, and offers management guidance for mitigating risk to homes and landscapes. Exactly half of the top ten ranked areas are located in the Methow Valley. They are included below in Table 6.

Area Name	Risk Ranking in County “Top Ten List”
Mazama to Lost River	3
Rendezvous	4
Texas Creek	6
French Creek	8
Wolf Creek	9

Table 6 OCD Methow Valley Risk Assessment Ratings

Some of the areas identified in the “Hot Spots” map and Table 6 above have received treatment or planning assistance through the National Fire Plan since 2003. In 2005-06, the OCD rankings were combined with DNR assessments, US Forest Service risk evaluations and other data by a subcommittee of the Methow Community Fire Plan Coordinating Group and used to prioritize allocation of cost-share funds. This work will be further described in the portion of this Plan discussing Current Activities.

Current Activities

Protection Measures

Okanogan County Fire Districts 5 and 6, the Washington State Department of Natural Resources, and the U.S.D.A. Forest Service are responsible for providing initial attack response in the event of a wildfire in the Methow Valley watershed. Mutual aid will be supplied by other fire entities as needed.

Existing Procedures

Since weather and topography can not be changed, the best approach to minimizing the risk of wildfire impacting people and resources is to modify and/or reduce fuels surrounding the home. Fuels reduction also needs to occur at the landscape level to affect fire spread and severity. Fuels treatments within and adjacent to communities can improve firefighter safety, improve the effectiveness of overall fire suppression efforts, and reduce the potential risk of damage to individual structures and property. Planning and implementing treatments through the collaborative framework of the Coordinating Group will improve effectiveness and ensure that ecological, economic and other aspects of proposed projects are given full consideration by a diverse body of stakeholders.

Coordination with Public Agencies

In order to maximize the benefits of fuels reduction work planned for private lands, it is desirable for complementary projects to take place on adjacent lands managed by the

U.S.D.A. Forest Service, Washington DNR, and Washington Department of Fish and Wildlife. The CWPP is recognized as the instrument necessary to organize and educate the public to further encourage and suggest design of future projects across ownerships. The Coordinating Group is recognized as the vehicle for completing, maintaining and updating the CWPP, and for planning and prioritizing future projects.

The Methow Valley Ranger District's 5-Year Action Plan for Fuels Treatments, included in its entirety in Appendix IX, is a useful starting point for coordinating fuels reduction activities across ownerships, and has been used to collaboratively prioritize fuel treatments on private lands.

Education

There is an ongoing need to inform landowners and community members regarding the risks posed by wildfire, and to educate them about strategies for preventing fire, minimizing risk, protecting structures and resources, and participating in evacuation procedures. Both the Methow Valley Ranger District and Washington DNR Eastern Region employ a Prevention-Education Coordinator to interface with communities and provide educational opportunities on a limited basis. Additionally, Okanogan Communities Development Council, Methow Forest Owners' Cooperative, Bearfight Institute and the Methow Conservancy are local non-governmental organizations that coordinate prevention, education and land stewardship opportunities for community members in conjunction with one another, DNR, USFS, and other participants in the Coordinating Group. These organizations are recognized for their effective leadership in community education, and for collaborating to achieve results in a climate of limited funding.

Since 2004, two neighborhoods in the Methow Valley have received National Fire Plan funding to complete a site-specific CWPP. The Draft Edelweiss Community Wildfire Protection Plan is included in Appendix 11 of this Plan. The Pine Forest community will be working to complete their NFP-funded CWPP in 2006.

Fuels Reduction Treatments circa 2004

In January 2004, information was gathered from local organizations including the Methow Conservancy, Cascade Woodlands, Forest Stewardship Project, and Dave Demyan. A GIS layer depicting areas of past and on-going treatments was created and shown below (Figure 10). Approximately 3,648 acres of forested private land had received fuels treatment in the Basin in early 2004. Similarly, by viewing the parcel layers and aerial photographs a layer was created showing potential sites for fuels reduction work on or directly adjacent to private land. These areas were selected based on canopy closure and adjacency to developed parcels. This layer shows approximately 6,007 acres directly adjacent to developed sites in need of fuel treatment. This method provides a raw estimate of the amount of work that lies ahead only on and adjacent to private land.

Methow Fuel Reduction Projects on and adjacent to Private Lands

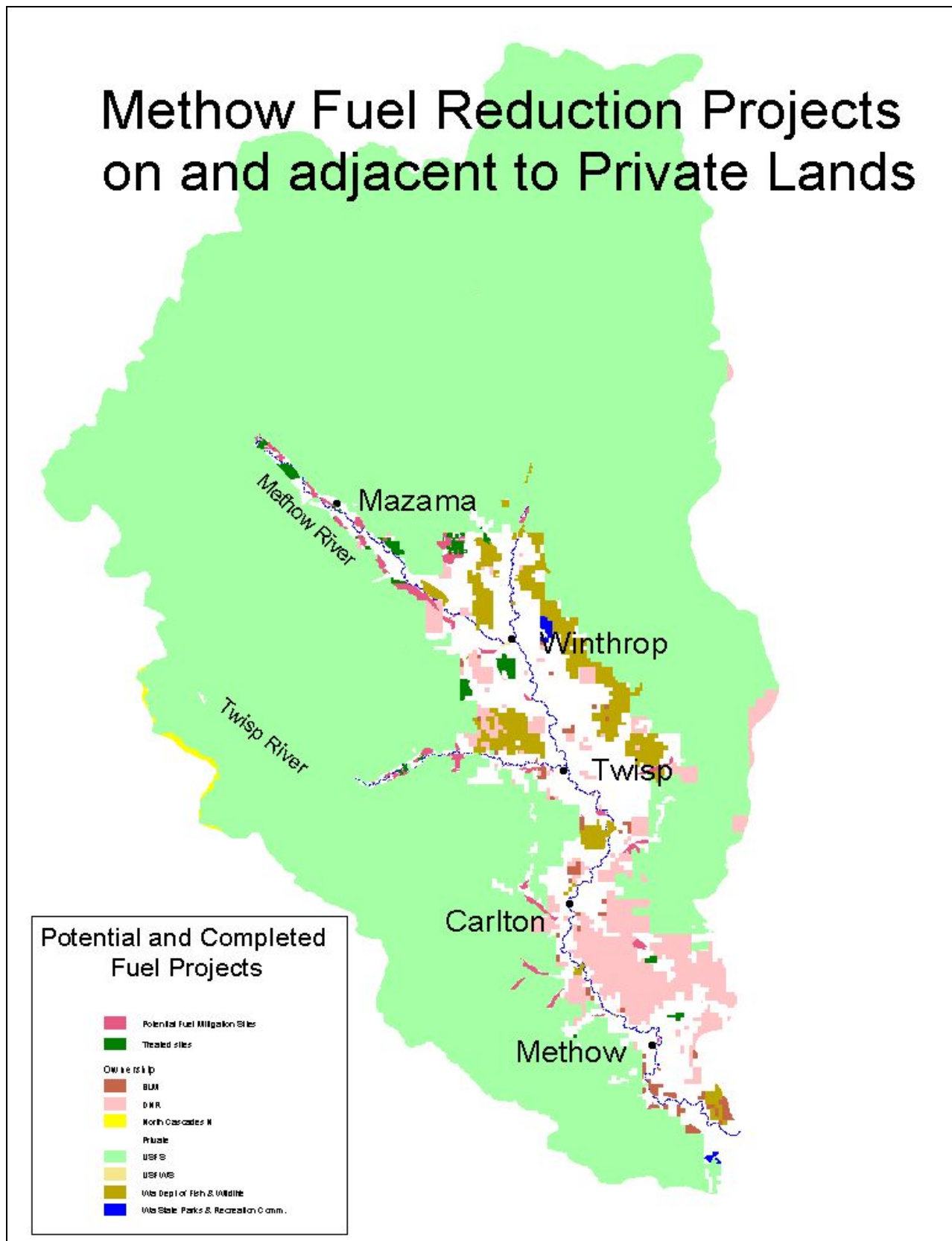


Figure 11 Fuel Treatment areas, current and potential (Schrock 2003)

The Methow Community Fire Plan Coordinating Group is in the process of combining the information in this map with updated Forest Service layers to create a truly landscape scale monitoring of forest management and fuels reduction work in the Methow Valley. This map layer will continually be updated to track fuels treatments over time in order to identify areas in need of treatment and provide a baseline for monitoring fuels treatments throughout the watershed.

Current Fuels Reduction, Prevention and Education Activities

Upper Rendezvous Project

The Rendezvous community is a mixed interface community of landowners encompassing approximately 2,000 acres, surrounded by U.S. Forest Service and Washington Department of Fish and Wildlife lands. Of approximately 1,000 acres of forested land, nearly 500 acres was treated for hazardous fuels prior to 2005 in a collaborative effort between agencies, landowners and the Pacific Watershed Institute. In Fiscal Year 2006, the Bearfight Institute received National Fire Plan funding to conduct additional fuels reduction work and preparedness education involving an additional 400 acres and 15 landowners. The project involves thinning, pruning, slash piling and burning. The project incorporates a utilization and marketing component that will be addressed through the collaborative efforts of Bearfight Institute, Okanogan Communities Development Council, and the Methow Forest Owners' Cooperative.

Methow Valley Cost Share Incentive Program (CSIP)

In August 2005, Okanogan Communities Development Council and the Methow Forest Owners' Co-op were awarded funding through the National Forest Foundation and the Flintridge Foundation to develop the "Methow Valley Cost Share Incentive Program (CSIP)." The CSIP program, which is administered by the Methow Forest Owner's Cooperative, will provide 50% cost-sharing to assist eligible property owners with needed fuels reduction and forest health improvements in 2006. This program is intended to reduce the risk of wildfire damage to homes and resources on public and private lands, and has been developed in cooperation with the Methow Community Fire Plan Coordinating Group to focus on areas identified as high priority.

In October 2005 and January 2006, a subcommittee of the Coordinating Group met to prioritize treatment areas to be targeted for allocation of funds by this program. Adjacency to public lands, particularly lands that have planned or experienced thinning or fuels reduction within a five year period, were among the top criteria developed by the group. The group also chose to target the program to landowners in the Twisp River watershed and lower Methow Valley tributaries south of the unincorporated town of Carlton, based on the OCD rankings combined with DNR assessments, US Forest Service risk evaluations and other data.

Approximately 100 acres will be treated through this project in 2006. Cost-share funds may be used for such activities as thinning, pruning, piling slash, and chipping. Eligible landowners who have signed a CSIP Work Plan will have the option of completing the work themselves, working with a contractor from the Co-op's roster, or hiring their own contractor. Okanogan Communities Development Council will facilitate the woody biomass utilization component of the Program. Additional funding has been provided by

the Flintridge Foundation to incorporate a prevention and education component to the project, which will allow the organizations to partner with DNR, Forest Service and other organizations to conduct workshops and trainings. Okanogan Communities Development Council anticipates application to the National Fire Plan for FY2007 funds to continue the CSIP program.

Edelweiss Neighborhood Projects

Arnie Arnesson of Cascade Woodlands has been working with the Edelweiss neighborhood near Mazama to conduct fuels reduction and education. Since 2002, utilizing National Fire Plan funds, 135 acres (113 properties) have been treated. The Edelweiss community initiated a CWPP process in 2005, also funded through the National Fire Plan. The draft of that document is included in Appendix XI.

Pine Forest and other Neighborhood Projects

Arnie Arnesson of Cascade Woodlands also worked with the Pine Forest, Lost River Airport, Liberty Woodlands and Sun Mountain Ranch Club communities to conduct fuels reduction projects between 2002 and the present, funded by the National Fire Plan. These accomplishments are summarized below.

<i>Neighborhood name</i>	<i>Acres Treated</i>	<i>Properties Treated</i>
Pine Forest	157	22
Sun Mountain Ranch Club	324	156
Lost River Airport	62	99
Liberty Woodlands	38	52

Table 7 Pine Forest and Neighborhood Projects

Loup Loup Transmission Line Right of Way Projects

In April and May 2005, a technical committee of the Coordinating Group consisting chiefly of representatives of Okanogan Public Utility District, U.S. Forest Service Methow Valley Ranger District, Washington DNR, Conservation Northwest and Okanogan Communities Development Council, met to discuss wildfire risk mitigation for the Loup Loup Transmission Line. The group conducted meetings and field trips to the area, evaluating risk and developing mitigation strategies for state and federal ownerships surrounding the transmission line Right of Way. In 2005, this collaborative work resulted in the development of multiple projects that will be carried out in upcoming years on Forest Service and DNR Trust lands. Additionally, Okanogan PUD conducted an evaluation of “hazard trees” adjacent to the Right of Way and removed approximately 450 trees in consultation with the DNR. It is anticipated that identification and planning work will continue over the next several years, in order to achieve the highest level of risk mitigation possible for this critical infrastructure.

Mitigation Action Plan

There are six main categories of mitigation actions identified by members of the Coordinating Group. Categories include Planning, Fuels reduction, Education and Outreach, Rural Fire District capacity improvement, Biomass utilization and Smoke management.

Planning Recommendations

- Improve the capacity of the Methow Community Fire Plan Coordinating Group to continue serving as the focal point for collaborative forest and fuels management activities in the Methow Valley watershed. This group of stakeholders will be valuable for updating this CWPP, planning, prioritizing and monitoring forest management activities across ownerships, and identifying other collaborative opportunities. Funding for facilitation, organizational development and travel assistance for non-funded members will improve the ability of this entity to continue providing a valuable service to the community.
- Collaborate with Okanogan County Fire Plan Steering Committee and Okanogan County Natural Resource Planner to continue incorporating wildfire planning into the County Comprehensive Plan Update process. Including fire prevention planning in this process could inform zoning and development ordinances before significant subdivision or population growth occurs in parts of the Plan area. Maintain and update the Fire Planning portion on a schedule that complements other Fire Plan updates.

Fuels Reduction Recommendations

- Implement “Firewise” recommendations within 200 feet of all private homes and essential infrastructure. Actions include the establishment of “defensible” space, adequate turn-around space for emergency equipment, and clear consistent address signage.
- Create shaded canopy fuel breaks in the planning area on strategically identified areas that will have the greatest benefit for the entire project area. The objective of the shaded fuel break strategy is to help reduce the potential of a wildfire moving from public to private lands and vice versa across the landscape. Particular attention will be paid to neighborhood and more densely populated areas adjacent to heavy fuels, and areas adjacent to critical community infrastructure such as the Loup Loup Transmission Line.
- Encourage the U.S. Forest Service to continue coordinating fuels reduction and forest health projects on lands adjacent to private ownership within the CWPP area as the risk assessment and prioritization process continues.
- Treat vegetation within 50 - 100 feet of roads and driveways. This can include shaded canopy defensible space on both sides of the road, road signs, and clearly marked evacuation routes.
- Encourage adjacent landowners and agencies to perform complementary treatments on their land by increasing involvement in the public planning process

and inviting neighboring private landowners to participate in “Fire Wise” workshops and other educational opportunities.

- Improve funding opportunities to assist landowners in meeting their responsibilities for risk mitigation and forest stewardship by exploring cost-sharing agreements and partnerships.

Prevention Education and Outreach Recommendations

- Provide opportunities for “hands-on” stewardship and risk reduction training for homeowners and local contractors.
- Assist community members to access funding and resources needed to complete fuels reduction and defensible space creation on their properties.
- Continue conducting risk assessments of individual structures and essential infrastructure, ensuring data is used to implement identified recommendations, inform planning efforts and educate landowners.
- Obtain sufficient GPS equipment for use by DNR and their partners to ensure risk assessment data can be mapped accurately.
- Compile essential “Fire Wise” information and distribute to landowners in the CWPP planning area. Information presented should cover landowner responsibilities and individual preparedness.
- Assist DNR to improve landowner understanding, interest and compliance with NFPA299 on-site assessments.

Fire Response Capacity Recommendations

Fire District #6: Purchase two Type 4 interface engines and two type 6 4X4 engine. The wildland engines are the District’s top priority.

- Complete Evacuation Plans for all at-risk sub-drainages with sufficient population density.
- Update physical addressing and acquire an integrated dispatch on-board or laptop computer with GPS mapping system for response efficiency
- Locator map of year round water supplies
- Work with landowners and County Planning to address access issues including road conditions for ingress and egress requirements, possible local fire zoning ordinances and/or variances with communities
- Fire District #6: Replace Winthrop Fire Station. The station is an 1940’s building with additions in 1984 and 2005

Bio-Mass Utilization Recommendations

Currently the Okanogan Community Development Council (OCDC), a non-governmental organization in Twisp, works on market development and utilization opportunities for small diameter wood products in the region. As an active participant in the Coordinating Group, opportunities to coordinate fuels reduction work with biomass utilization efforts are envisioned through this plan. Small diameter wood products like furniture, fencing, structures and other products have been developed through OCDC. The organization has

recently demonstrated a small diameter utilization sort yard where small scale processing and marketing of suppressed Douglas fir flooring and Ponderosa pine paneling is being piloted. Partnerships with OCDC for utilizing the traditionally non-merchantable byproducts of fuels reduction work should be part of any holistic implementation project.

The Okanogan Biomass Working Group, a collaborative of entities including OCDC, Okanogan Conservation District, Methow Valley Ranger District, Washington DNR, Bearfight Institute, Okanogan Rural Electric Association, Okanogan Public Utility District and Energy Northwest has secured funding to study the feasibility of an appropriately scaled biomass cogeneration facility that could benefit fuels reduction goals while providing an alternative source of locally-generated electricity. Bearfight Institute has also applied for funding to conduct research and demonstration on biofuels sourced from woody biomass.

Opportunities associated with the results of these studies should be incorporated into future planning and implementation efforts.

Smoke Management Recommendations

Air quality issues associated with smoke from summer wildfires and prescribed burns continue to be increasing public concerns. Reported symptoms from smoke generated by local fires include upper and lower respiratory ailments, eye irritation, sinus irritation, headaches and many other effects. Evidence shows the level of toxic inhalants released during cold burns/springtime burns are higher than during dry burns later in the season. Public tolerance for smoke resulting from prescribed controlled burning during spring may be lessening because of the compound effect of recurrent smoke associated with adjacent summer wildfires in the region.

In addition to health related impacts, smoke created from wildfire also directly affects the local economy in the Methow Valley, which is dependent on tourism for local jobs and revenue during summer months. Visual impairments from smoke have also been listed as concerns by local residents.

The health concerns, visual effects, and economic impacts associated with fuels mitigation projects should be acknowledged and could be addressed by future updates to this CWPP. Collaboration between state and county health agencies, Department of Ecology, the US Forest Service and the public to address outreach and education for prescribed burns that are proposed on Forest Service is underway.

Currently the US Forest Service, Department of Ecology, and DNR coordinate burn plans under guidelines set forth by the Smoke Management Plan (DNR, 1998). Any prescribed burns associated with the CWPP need to address smoke management at some level, and this planning group should cooperate with the Forest Service on how to address these concerns.

For more information regarding smoke management in the Methow Valley, the following documents and links may be useful to guide further planning on this issue.

Smoke Management Plan. DNR

Contact: Mark Gray
Fire Regulation & Outdoor Burning Program Coordinator
WA Dept. of Natural Resources
P.O. Box 47037, Olympia, WA 98504-7037.
Phone: (360) 902-1754 FAX: (360) 902-1757.
mark.gray@wadnr.gov.

Western Regional Air Partnership - The Fire Emission Joint Forum

<http://www.wrapair.org/forums/fejf/>

Nonburning Alternatives for Vegetation and Fuel Management. November 2002

http://www.wrapair.org/forums/fejf/documents/altwild/nonburning_manual.pdf

MEMO: Prescribe Burn Program

KLB Consulting
Kristi Luguzza-Boosman, Citizen, Outreach Consultant
PO BOX 488
Twisp, WA 98856

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APPENDIX I

Definition of Communities at Risk

Federal Register Vol. 66, No. 3, Pages 751-754, January , 2001

The urban/wildland interface community exists where humans and their development

meet or intermix with wildland fuel.’’

There are three categories of communities that meet this description. Generally, the Federal agencies will focus on communities that are described under categories 1 and 2. For purposes of applying these categories and the subsequent criteria for evaluating risk to individual communities, a structure is understood to be either a residence or a business facility, including Federal, State, and local government facilities. Structures do not include small improvements such as fences and wildlife watering devices.

Category 1. Interface Community

The Interface Community exists where structures directly abut wildland fuels.

There is a clear line of demarcation between residential, business, and public structures and wildland fuels. Wildland fuels do not generally continue into the developed area. The development density for an interface community is usually 3 or more structures per acre, with shared municipal services. Fire protection is generally provided by a local government fire department with the responsibility to protect the structure from both an interior fire and an advancing wildland fire. An alternative definition of the interface community emphasizes a population density of 250 or more people per square mile.

Category 2. Intermix Community

The Intermix Community exists where structures are scattered throughout a wildland area. There is no clear line of demarcation; wildland fuels are continuous outside of and within the developed area. The development density in the intermix ranges from structures very close together to one structure per 40 acres. Fire protection districts funded by various taxing authorities normally provide life and property fire protection and may also have wildland fire protection responsibilities. An alternative definition of intermix community emphasizes a population density of between 28–250 people per square mile.

Category 3. Occluded Community

The Occluded Community generally exists in a situation, often within a city, where structures abut an island of wildland fuels (e.g., park or open space).

There is a clear line of demarcation between structures and wildland fuels.

The development density for an occluded community is usually similar to those found in the interface community, but the occluded area is usually less than 1,000 acres in size. Fire protection is normally provided by local government fire departments.

Preliminary Criteria for Evaluating Risk to Communities

The Secretaries are required to publish in the **Federal Register**, by May 1, 2001, a second list of urban wildland interface communities within the vicinity of Federal lands that are at high risk from wildfire in which treatments will not have begun during 2001. The Federal agencies will work with Tribes, States, local governments, and other interested parties to refine and narrow the initial list of communities provided in this notice, focusing on those that are at highest risk, as determined through the application of appropriate criteria. In discussions with States, Tribes, local governments, and other interested parties, the Secretaries will suggest using the specific factors listed below, as modified through further discussion with and input from interested parties, in evaluating risk to communities. Similar risk factors will be included in interim guidance to the agencies’ field units that will be required to implement urban wildland treatment projects during FY 2001.

Risk Factor 1: Fire Behavior Potential

Situation 1: In these communities, continuous fuels are in close proximity to structures. The composition of surrounding fuels is conducive to crown fires or high intensity surface fires.

There are steep slopes, predominantly south aspects, dense fuels, heavy duff, prevailing wind exposure and/or ladder fuels that reduce fire fighting effectiveness. There is a history of large fires and/or high fire occurrence.

Situation 2: In these communities, there are moderate slopes, broken moderate fuels, and some ladder fuels. The composition of surrounding fuels is conducive to torching and spotting. These conditions may lead to moderate fire fighting effectiveness. There is a history of some large fires and/or moderate fire occurrence.

Situation 3: In these communities, grass and/or sparse fuels surround structures. There is infrequent wind exposure, flat terrain with little slope and/or predominantly a north aspect. There is no large fire history and/or low fire occurrence. Fire fighting generally is highly effective.

Risk Factor 2: Values At Risk

Situation 1: This situation most closely represents a community in an urban interface setting. The setting contains a high density of homes, businesses, and other facilities that continue across the interface. There is a lack of defensible space where personnel can safely work to provide protection. The community watershed for municipal water is at high risk of being burned compared to other watersheds within that geographic region. There is a high potential for economic loss to the community and likely loss of housing units and/or businesses. There are unique cultural, historical or natural heritage values at risk.

Situation 2: This situation represents an intermix or occluded setting, with scattered areas of high-density homes, summer homes, youth camps, or campgrounds that are less than a mile apart. This situation would cover the presence of lands at risk that are described under State designations such as impaired watersheds, or scenic byways. There is a risk of erosion or flooding in the community if vegetation burns.

Risk Factor 3: Infrastructure

Situation 1: In these communities, there are narrow dead end roads, steep grades, one way in and/or out routes, no or minimal fire fighting capacity, no fire hydrants, no surface water, no pressure water systems, no emergency operations group, and no evacuation plan in an area surrounded by a fire-conductive landscape.

Situation 2: In these communities, there are limited access routes, moderate grades, limited water supply, and limited fire fighting capability in an area surrounded by scattered fireconductive landscape.

Situation 3: In these communities, there are multiple entrances and exits that are well equipped for fire trucks, wide loop roads, fire hydrants, open water sources (pools, creeks, lakes), an active emergency operations group, and an evacuation plan in place in an area surrounded by a fireproof landscape. The Secretaries will work collaboratively with States, Tribes, local communities, and other interested parties to develop a ranking process to focus fuel reduction activities by identifying communities most at risk. Public input is welcome on the form a ranking system should take, as is input

on measures that may be useful to assess
Selection

After the Federal agencies consult with States, Tribes, local leaders, and other interested parties on the risk to communities, the Secretaries will work collaboratively with those entities to identify and prioritize specific treatment projects. Projects will be focused on Federal land in the urban wildland interface, and may be extended to non-Federal land that falls in close proximity. All projects will be subject to review for conformance with applicable laws, as addressed in the report to Congress that responds to section 5(B) of title IV of the report accompanying the FY 2001 Interior and Related Agencies Appropriations Act. The agencies expect the preliminary criteria for risk evaluation identified above, modified as appropriate in consultation with interested parties, to be helpful in project selection. Among other factors that may be considered in project selection is the contribution the project will make toward establishing an adequate buffer around, or defensible space for, a community at risk. By this criterion, priority would be given to projects that are adjacent to combustible structures within the interface communities. Another factor will be the degree to which the community actively supports and invests in hazardous fuel reduction activities and programs. Support would be demonstrated by a combination of: developing partnerships with adjacent Federal agencies, States, and Tribes; sharing costs for hazardous fuels reduction and fire prevention activities; enhancing a fire-safe environment through enforcement of fire-related laws, regulations and ordinances; applying appropriate community planning practices; and participating in the organization of and support for fire safety and related environmental education.

Dated: December 27, 2000.

For the Department of Agriculture.

Dan Glickman,

Secretary of Agriculture.

Dated: December 22, 2000.

For the Department of the Interior.

Bruce Babbitt,

Secretary of the Interior.

**Urban-Wildland Interface Communities
in the Vicinity of Federal Lands That
Are at High Risk From Wildfire**

the impacts of fuels treatment projects.

Preliminary Criteria for Project

APPENDIX II

List of Resources

Websites

Northwest Wildfire Coordinating Group

<http://www.nwccg.gov/default.htm>

FireWise

<http://www.firewise.org>

Washington Department of Natural Resources

<http://www.dnr.wa.gov/base/fire.html>

National Interagency Fire Center

<http://www.nifc.gov>

Northwest Interagency Coordination Center

<http://www.or.blm.gov/nwcc/index.htm>

Okanogan National Forest

<http://www.fs.fed.us/r6/oka/>

Northwest Fire Plan

<http://www.nwfireplan.gov/>

National Fire Plan

<http://www.fireplan.gov/content/home/>

Josephine County Integrated Fire Plan

<http://www.co.josephine.or.us/>

Applegate Fire Plan

<http://www.grayback.com/Applegate-Valley/fireplan/>

Ecosystem Management Initiative. Learning from Experience: A National Resource for Collaboration and Partners

<http://www.snre.umich.edu/emi/lessons/>

Trinity County Fire Safe Council. Trinity County Resource Conservation District.

<http://users.snowcrest.net/tcrd/index.htm?article01-toc.htm>

<http://users.snowcrest.net/tcrd/pdf/FireSafeCouncilHistory.pdf>

Memorandum of Understanding, Trinity County Fire Safe Council

http://users.snowcrest.net/tcrd/pdf/FireSafeCouncil_MoU.pdf

Utah Community Fire Planning (including plan and workbook)

<http://www.ffsl.utah.gov/communityfirepln.htm>

<http://www.ffsl.utah.gov/communityfireplan.pdf>

<http://www.ffsl.utah.gov/cfp-workbook.pdf>

COPWRR Strategy Framework

<http://www.coic.org/copwrr/>

Pacific Biodiversity Institute

<http://www.pacificbio.org/>

GIS and Maps

CD's containing GIS layers and paper maps for this project will be kept with the Methow Conservancy.

All GIS layers for this project are displayed in Washington State Plane North: meters.

Washington State DNR GIS maps and layers are housed on CD for this project and additional GIS info can be found at

<http://fortress.wa.gov/dnr/app1/dmmatrix.html>

USFS GIS layers can be found at <http://www.fs.fed.us/r6/oka/gis/> or requested directly. In addition the Forest Service has paper maps available.

APPENDIX III

List of Participants and Contact Information

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APPENDIX IV

Fire District Preliminary Capacity Assessment Worksheet

Fire District Preliminary Capacity Assessment Worksheet
 Prepared by Sarah Schrock
 Methow Basin Community Fire Plan 2004
 (updated January 2006 by Lorah Waters)

Assess the following by compiling lists:	Fire District # 5 Gold Creek to Pateros Po Box 395, Pateros, Wa.			
Chief: Mike Lambert Admin: Bill Valance	130 sq. mile serving a population of approximately 4,000			
Existing Infrastructure (ie engines, hoses etc)	Stations in Brewster, Pateros, Methow (inventory updating currently underway)			
Location of hydrants, water sources used during suppression	In the rural area of District 5 there are no hydrants			
Number of Fire fighters	volunteer		paid 1	
Historical Statistics	2000	2001	2003	
Average response time				
Loss of property				
Loss of life				
Fire ignition causes				
Identify areas where access is prohibitive to protection	known			
	unknown			
Assess Operational Needs				
Is the current infrastructure adequate for most fire calls? If not, what is needed?	We are currently in the process of building a new fire station in Pateros. A fire station and equipment is needed in the Alta Lake area and fire station in Methow needs to be expanded.			
What are the current wildland suppression procedures? Are they in order and effective?	We are dispatched through the Okan. Co. Sheriff's Dispatch center. From there we respond, extinguish and confine wildland fires using our equipment and man power as well as mutual aid agreements if any other resources are needed.			
Is there a need to update training of crews for either structural and/or wildland fires?	Yes, there is always a need to continue and update our knowledge and skills involving fire fighting.			

Fire District Preliminary Capacity Assessment Worksheet
 Prepared by Sarah Schrock
 Methow Basin Community Fire Plan

Assess the following by compiling lists: Chief: Don Waller	Fire District # 6 Methow to Mazama Po Box 895, Twisp, Wa			
	350 sq. miles serving approximately 3,000 people			
	See attached sheet			
<u>Existing Infrastructure</u> (ie engines, hoses etc)				
Location of hydrants, water sources used during suppression	Use of irrigation districts. Spigots in Edelweiss. Deer Run has hydrant, Goat Creek			
Number of Fire fighters	Volunteer= 70		Paid= 1	
<u>Historical Statistics</u>	2000	2001	2003	
Average response time				
Loss of property				
Loss of life	0	0	0	
Fire ignition causes				
Identify areas where access is prohibitive to protection	Known: Pine Forest, Edelweiss, Newby Creek, Hoot n'Holler			
Assess Operational Needs	Update of addressing with dispatch, mapping of water sources, integrated GPS system			
Is the current infrastructure adequate for most fire calls? If not, what is needed?	Yes, for the most part. New equipment has been acquired in recent years. Winthrop station needs to be replaced			
What are the current wildland suppression procedures? Are they in order and effective?	Structures are first priority. Mutual aid agreement with state and federal fire fighting is sufficient			
Is there a need to update training of crews for either structural and/or wildland fires?	Always a need, but for the most part adequate			

APPENDIX V

EQUIPMENT LIST by STATION District 6

The fire dist. have 2 new pumpers to replace Carlton and Mazama's pumpers. This list includes the new pumpers

They all carry about the same amount of hose, which is:

A brush vehicle carries 1000' of 1.5" hose and 600' of 1" hose, plus equipped with Class A foam

All tenders carry 300' of 2.5" hose.

All pumpers will carry 1000" of 5" hose, 600' of 2.5 hose, 600' of 1.75" hose

Carlton:

Pumper with 2000 gal. of water with
1500gpm pump and class A foam
4x4 brush vehicle with 450gal of water
Tender with 3000 gal of water

Twisp:

Pumper with 1000gal of water with 1500gpm pump and class A foam
4x4 brush vehicle with 450gal water
4x4 brush vehicle with 300 gal water
tender with 3000gal water

Winthrop:

Pumper with 2000gal of water with 1500gpm pump and Class A foam
4x4 brush vehicle with 450gal of water
tender with 3000gal of water

Mazama

Pumper with 1000gal of water with 1500gpm pump and Class A foam
4x4 brushvehicle with 450 of water
tender with 3000gal of water

APPENDIX VI.

DNR Assessment Compartment 1: Methow

Part I

Compartment 1 contains 161000 acres in Fire Management Zone 02. Representative Locations (RLs) and the percents in this Compartment are: 20 (100%). The Compartment experiences 10.90 fires per year, totaling 417 acres. The characteristics of the compartment indicate that: Catastrophic Fire Likely.

Fuels Hazard characteristics are rated:

Fuels (flame length produced): 4 - 8 Feet (**Moderate**)
Crowning Potential: 3 - 5 (**Moderate**)
Slope Percent: 36+ (**High**)
Aspect: East, West (**Moderate**)
Elevation: 1000 - 2500 (**High**)

Protection Capability ratings are:

Initial Attack: 31+ minutes (**High**)
Suppression Complexity: Complex (**High**)

Ignition Risk factors include:

Population Density - Wildland Urban Interface
101-300 Dwellings/structures

Power Lines In Unit
Transmission Lines
Sub-station
Distribution Lines

Industrial Operations
Construction project
Debris/slash burning
Active timber sale
Mining

Recreation
Dispersed camping areas, party areas, hunters, waterbased, hiking
Off highway vehicle use
Developed camping areas

Flammables Present
Powder magazine
Gas pumps or storage

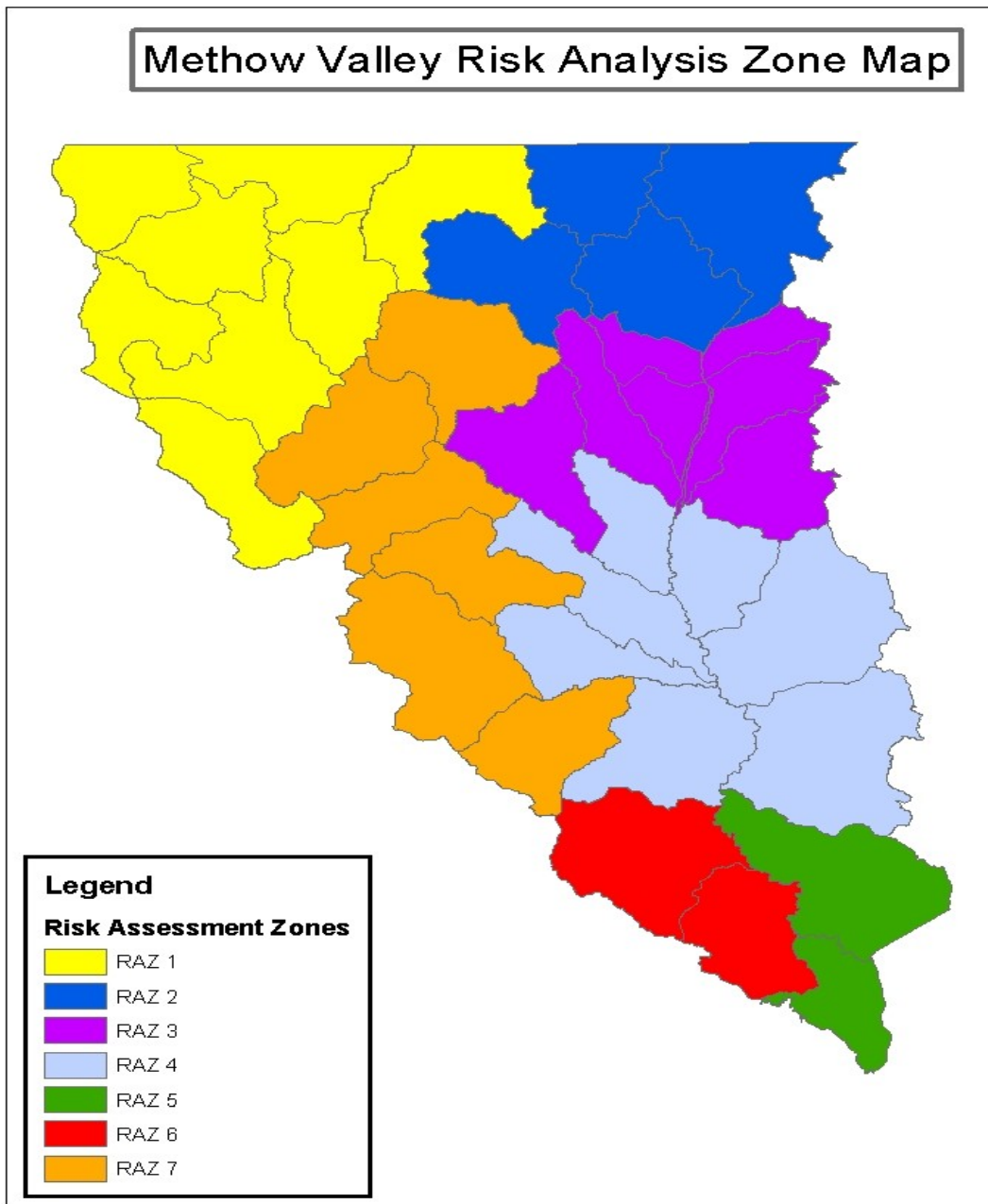
Other
Incendiary
Cultural Activities
Government operations
Shooting/target
Woodcutting area, power equipment
Fireworks, children with matches

Transportation System
County road(s)
Public Access Road(s)
State/Federal highway(s)

Commercial Development
Camps, resorts, stables
Business, agricultural/ranching
Schools

APPENDIX VII.

Methow Valley Risk Analysis



APPENDIX VIII

Fire Spread Projections

To properly assess fire spread, the area between the fire's leading edge and the geographical points of concern are evaluated using the techniques taught in Advanced Wildland Fire Behavior Calculations (S490). For risk assessment this involves locating transects from the fire to the areas of concern. These lines were then subdivided into segments based on fuel models, slope and aspect. For this assessment these inputs were generated electronically in GIS. When the results of this process were reviewed we found that the number of unique segments exceeded the ten maximum segments allowed by the RERAP program. To adjust to this limitation the original fuel model map was filtered to exclude any fuel model polygon less than fifty acres. Slope classes were broken into 0-25%, 26-40%, 41-55%, and greater than 55% as has been done in the spread tables in the Fire Behavior Field Reference Guide. 1,000 foot elevation bands were used to determine elevation and the transect relationship to the elevation of the weather station. Aspects of North, South, East, and West were used to determine the aspect input. The aspect data was also used to determine if the fire spread was moving up or down slope so that the appropriate slope percent would be used in the calculations. Once these steps were done the data was consolidated again and found to meet the limitations of the RERAP program. Each of these segments was processed in SPREAD using fuel moisture and windspeed information for each weather class. SPREAD summarizes this information in tabular form.

SPREAD summarizes the data into daily spread rates by multiplying the hours of spread per day times the hourly spread per day. Barry George, (Methow Valley Ranger District) provided information on hourly spread per day. The following values were used:

Methow Wx	Low	Medium	High	Extreme
June	2	3	5	6
July	2	4	8	10
August	2	4	8	10
September	2	3	6	8
October	2	3	4	6

Table 3

Methow RAZ 2

Fires, which are spreading **East** in Zone 2, have a greater than 50% chance of spreading up to two miles when they occur in June and July. Greater than two mile distances with starts in June and July drop below 40% probability and are not likely to reach any critical areas. East spread exhibits a fair amount of variability. The general trend appears to favor the lower probability values, but one transect exhibits very high probabilities. Results of this assessment for east spread should be used cautiously and incident specific assessments should be run as soon as possible.

North, South, and West spread probabilities for spread in these directions with starts in all months, for all distances are 20% or lower. The only exceptions are starts in June and July with Critical areas within one mile to the north of the start. These have a very high probability, but drop off rapidly as distance increases. There is very little variability in the data. Results should be pretty reliable and north, south, and west spread offers good opportunities to consider wildland fire use for resource benefits.

Methow RAZ 3

Fires in zone 3, starting in June and July, can be expected to actively spread **Easterly** up to approximately 2 1/2 miles. Fires starting in June and July stay above 50% probability during this time period. Fires starting in these months never drop below 40% probability of spreading up to 3 1/2 miles. Fires starting in August have a 70% probability of burning 1/2 mile to the east, and more than 50% probability up to 1 1/2 miles to the east. The probability of fires burning from 2 miles to 3 1/2 miles start at 40% and drop to 26%. Wildland fires starting in September and October are both below 40% probability of spreading more than 1/2 mile to the east. At 1 1/2 mile the probability drops below 20 %. There is a lot of variability in the data in June, July and August. Some transect probabilities are very low, while others reach 100% probability. The averages trend towards the lower values. Although management of wildfires as WFU appears very risky during June, July, and August, there may be opportunities depending on the point of origin of the fire and the distance and direction to critical areas. More specific data should be gathered once a fire starts in this area, and a new risk assessment done if there are critical areas to the east of the fire start. If the fire starts in September or October the risk is much lower and it is a good candidate for WFU. There is little variability in the data in September and October and the results can be considered fairly reliable.

North spread in June, July, and August is very similar to east spread, although the probabilities are a little lower. There is a lot of variability in the data with at least one transect around 100% probability in June and July and dropping to 80% in August. However, the other transect values are much lower. Fires starting in June, July, and August with critical areas to the north can be considered for WFU, but will need further risk assessments for site specific conditions. September and October have low risk probabilities of fire spreading to the north and are therefore good candidates for WFU. September and October have little variability.

South and West spread in zone 3 is very similar. In June and July wildland fire starts there is about a 50% probability of fire spreading a mile to the west and about a 25% probability of it spreading to the south. **The data for these transects exhibit moderate variability and site-specific data is recommended Starts from the month of August to the end of fire season all have a low probability of spreading to the south or west 1/2 mile or more and the variability is low.**

In general, Zone 3 is not a good risk to manage wildland fires for resource benefit unless the ignition occurs in September or October. If the fire starts occur in June, July or August, in remote areas where there are no critical areas within four miles of the fire start, a new assessment should be done to determine the risk of managing the fire for resource benefit.

Methow RAZ 4

Fires in zone 4 can be expected to actively spread in **all** directions.

Fires starting in June, July and August, spreading in a **North or South** direction, maintain approximately a 70% probability or higher of spreading up to 3 1/2 miles. September fire starts are at or above 70% probability up to a 3 1/3 mile distance to the north. Fires starting in September and spreading to the south, have above a 50% probability of spreading 1 1/2 miles, and 40% to 20% probability of spreading 2 to 3 1/2 miles. North spread with fires starting in October remain high at over 69% probability up to one mile. Then drops to 40% at 1 1/2 miles to a low of 13% probability at 3 1/2 miles.

There is very little variability in the datasets for this zone for north or south spread.

East and West spread in zone four is very similar. Fire spread to the east and west in RAZ 4 does not drop below 60% probability of reaching up to 3 1/2 miles. July spread drops below 50% at three miles. August drops below 50% at two miles distance. September

wildland fire starts are at 50% probability of spreading 1/2 mile, then drop steadily to below 20% probability at two miles. October wildland fire starts are at 20% probability of reaching 1/2 mile, then drops below 10% probability at 1 1/2 miles.

In general, Zone 4 is not a good risk to manage wildland fires for resource benefit for wildland fires. There may be some opportunities for fires starting in August, September or October. In all areas within 3 1/2 miles of the fire start a new risk assessment should be done to determine the probability of a successful WFU project based on the specific data associated with the actual wildland fire. If the fire starts occur in remote areas where there are no critical areas within four miles of the fire start a new assessment should be done to determine the risk of managing the fire for resource benefit.

Methow RAZ 5

West spread from wildland fires starting in June, July or August will spread over 3 1/2 miles. With September fire starts spread is likely up to 2 miles. The probability of west spread more than two miles drops below 50%, reaching 20% probability at 3 1/2 miles. October starts are not likely to spread very far with only a 30% probability of spreading 1/2 mile to the west. There is also very little variability in the results of the assessment for each transect in this direction. The west spread probabilities should be very reliable.

North spread is very similar to the west spread probabilities. June, July and August starts all have over 60% probability of spreading up to 3 1/2 miles to the north. September starts have a 60% probability of spreading north up to 1 1/2 miles, then drops below 50% until it reaches 20% at 3 1/2 miles distance. October is at or below 25% probability of reaching any distance over 1/2 mile. There is very little variability in the results for north spread. North spread results should be very reliable.

East spread with June, and July starts have over 80% probability of spreading up to 3 1/2 miles. August starts are above 70% probability of spreading up to 2 miles, then drop to just below 50% at 3 1/2 miles. September starts have a 100% probability of spreading east up to 1/2 miles, then drops below 50% until it reaches 20% at 2 1/2 miles distance. October is at or below 10% probability of reaching any distance over 1/2 mile. There is very little variability in the results for east spread. East spread results should be very reliable.

South spread with June, and July starts have over 60% probability of spreading up to 3 1/2 miles. August starts are above 50% probability of spreading up to 2 miles, then drop to just below 30% at 3 1/2 miles. September starts have a 40% probability of spreading south up to 1 mile, then drops below 10% at 2 miles. October is at or below 10% probability of reaching any distance over 1/2 mile. There is very little variability in the results for south spread. South spread results should be very reliable.

Wildland fire use for resource benefits should only be considered in August, September or October, unless the fire occurs in a very remote area where there is no threat to critical areas within at least 4 miles. September and October do offer some opportunities for consideration of WFU fires, but need further risk assessment for each wildland fire start.

Methow RAZ 6

Wildland fires spreading to the **North** in Risk Assessment Zone 6 have a greater than 90% probability of spreading up to 3 1/2 miles if the fire starts in June, July, or August. Wildland fire starts in September have greater than a 70% chance of spreading up to 2 miles, then dropping to about 40% probability for spread up to 3 1/2 miles. August fire starts have a 40% probability of spreading 1/2 mile and less than 25% chance of spreading one mile or more. There is very little variability in the data for north spread and therefore it can be considered reliable.

West spread is the next most active direction of spread in this RAZ. June, July and August wildland fire starts have about a 70% or higher probability of spreading up to 3 1/2 miles. September starts have a 70% chance of burning 1/2 mile to a mile, then drop below 50% probability at 1 1/2 mile spread distance. Spread two miles to the west has a 40% probability and up to 3 1/2 miles has about a 20% probability. October fire starts have a 30% chance of spreading 1/2 mile, then drop below 10% probability shortly after spreading one mile. There is a moderate amount of variability between the results of the transects for westerly spread in this RAZ. Most of the transect results trend towards the higher probabilities, but there are a few with below average probabilities. Further analysis, especially in September and October, with site-specific data pertinent to the actual wildland fire should be accomplished here to determine whether WFU should be considered. There may also be opportunities for WFU in remote areas where there are no critical areas within four miles.

South spread from Wildland fire starts in June and July have over a 50% probability of spreading 3 1/2 miles to the south. August has a very similar pattern, but drops below 50% at 3 miles and stays at 40% at 3 1/2 miles distance. Wildland fires starting in September have less than a 50% chance of spreading 1/2 mile and less than 30% chance of spreading 1 1/2 miles. October fire starts have less than a 10 % probability of spreading more than 1/2 mile. June, July, and August all have the greatest chance of spreading south, but also have a lot of variability in the transect probability results. Site - specific data for each fire start should be considered before deciding not to proceed with WFU in this area. There may also be opportunities for WFU in remote areas where there are no critical areas within four miles. September and October are a good risk for WFU in most cases.

East spread from wildland fires is expected to be the least active of all directions within this RAZ. In June and July fire starts there is a 50% probability that the fires will spread to the east 1/2 mile. At one mile the probability is less than 40% and drops until at three miles it is below 10%. There is not much variability in the data so the results should be fairly reliable. All wildland fires with critical areas to the east in RAZ 6 should be considered a good risk for WFU. Site specific data should be reassessed for verify this with each fire start.

Methow RAZ 7

Fires, which are spreading **North or East** in Zone 1, have a greater than 70% chance of spreading up to two miles when they occur in June, July, and August. Greater than two mile distances with starts in June, July, and August stay between 70% and 50% probability of spreading 3 1/2 miles. September wildland fire starts have a probability of 50% to spread 1 mile, then drops to 20% probability at 2 miles and remains the same through 3 1/2 miles. August starts do not get much above 10% at 1/2 mile distance. There is a lot of variability in this data, especially June, July, and August starts. This implies that this data should be used cautiously. With each wildland fire start an site specific risk assessment should be conducted to develop a reliable probability of success. September and October offer more reliable data and probabilities of spread that indicate they are generally a good risk for WFU.

Wildland fires spreading **South** and **West** have 50% or less probability of spreading a distance 1/2 mile or more, with the exception of south spread in June and July, which is a little over 60% up to a one mile distance. West spread exhibits moderate variability in the transect results, and consequently should be considered to be less reliable data than south spread probabilities

APPENDIX IX.

Natural / Appropriated Fuels Planned Treatments Methow Valley Ranger District

1/9/06

**5 Year Action Plan
Planning &/or Implementation
* Denotes NEPA complete**

Project	Objectives / Remarks
FY 2006 – ac.	
* S.Fork Benson Creek – 717 ac. (Fall preferred)	Ecosystem Restoration
* Coal – 1,344 ac. (Spring)	WUI, Ecosystem Restoration, Activity Fuels.
* Deer Creek – 742 ac. (Spring)	Ecosystem Restoration, Activity Fuels.
Upper Methow = Freestone–98 ac., E.W. – 10 ac., WUI.	Thin/Handpile &/or Mechanical options.
Lucky – Idelweiss – 89 ac., Liberty Woodlands -	WUI
* Yockey Creek – 2,110 ac. (Spring)	Ecosystem Restoration
Big Burgett – 578 ac. (8mile Ridge) -	Ecosystem Restoration, Activity Fuels.
Buck Lake – 1,203 ac.	WUI, Ecosystem Restoration
8mile Bottom – 1,600 ac.	WUI. Ecosystem Restoration.
* Ramsey Peak – 2,752	Birds & Burning, Hazard Fuels Reduction
Woody Creek – 500 ac.	Ecosystem Restoration
* Culbertson – 300 ac.	WUI
* Jay Ridge – 1,450 ac. (Fall) (Benson Creek) -	Ecosystem Restoration.
Finley Bottom – 212 ac.	WUI
* Vinegar Gulch – 308 ac.	
DNR & FS land	WUI
*Little Coal – 47 ac.	
Mechanical	WUI
*Hooker IIB - ? ac.	Ecosystem Maintenance
* Dry Cow Ridge - ? ac.	WUI
* Cow Creek – 161 ac.	WUI
* Sheep Creek – 296 ac.	Ecosystem Restoration
* Lower Boulder – 107 ac.	WUI

Some projects may carry over to 07

FY 2007 – ac.

Cougar Lake – 400 ac.	WUI, Ecosystem Restoration
* Mulhollan - 380 ac. (Spring)	WUI, Ecosystem Restoration
* Mt. Leecher – 1,263 ac.	Dry Site Ecosystem Restoration
* Lower Yockey – 1,152 ac. (Spring)	Dry Site Ecosystem Restoration
Russian Spring/French – 973 ac.	Ecosystem Restoration
*Fawn Red Slash Handpiling- ? ac.	WUI , Mechanical
*TPR Red Slash Handpiling - ? ac.	WUI, Mechanical

FY 2008 – ac.

* Goat Creek – ~ 800 ac. WUI. Activity Fuels, Forest Health.
Russian Spring/French – 973/250=1,223 ac. Ecosystem Restoration
*Gulch Ranch – 1,034 ac. (Fall) WUI, Ecosystem Restoration

FY 2009– ac.

* Upper Rendevous - ~3,000 ac. Ecosystem Restoration, Activity Fuels.
* Hungry Hunter projects - ~ 2,500 ac. Stewardship Projects
Weeman Bridge – 640 ac. WUI
S.20 mile – 3,000 ac. Ecosystem Restoration

FY 2010 + ac.

Hungry Hunter projects - ~ 2,500 ac.
Falls Creek - ~ 2,500 ac. Beetle-kill infestations
Beaver Creek - ~2,500 ac. Beetle-kill infestations
Leroy/Bromus Creek - ~1,000 ac Mistletoe, Forest Health
Libby Creek – 2,500 ac. WUI

APPENDIX X

Resources for reference at the Methow Conservancy for the Methow Community Fire Plan

Prepared by Sarah Schrock
February 2004

Paper Files

File Name: Risk Assessments

Contents:

- Field Guidance: Identifying and Prioritizing Communities as Risk
Prepared by: National Association of State Foresters
- RAMS: Risk Assessment Mitigation Strategies Overview
- A Site-Specific Approach for Assessing the Fire Risk to Structures at the Wildland/Urban Interface. By Cohen, Jack P.
- Wildland Fire Relative Risk Rating. From Methow Sub-Basin Fire Management Plan. OWNF Fire Management Plan, 2002.
- The Idaho Panhandle National Forests Wildfire Hazard-Risk Assessment. by Kobe Harkins, Oregon State University.
- Urban Interface Risk Assessment Form. Used in 2000 by WA State DNR
- NFPA 299 Wildfire Risk Severity Form. Currently Used by the WA State DNR

File Name: Community Fire Plans and Planning Documents

Contents:

- Case Study: Josephine County Integrated Fire Plan: Rural Fire Protection District Involvement
- COWPWRR Strategy Framework: Reducing Wildfire Risks in Central by Removing and Utilizing Forest Fuels
- Utah Community Fire Planning Checklist
- Trinity County Fire Safe Council History (includes suggestions for collaboration)

File Name: Fire Districts

Contents:

- Rural Fire Districts 5 & 6 Preliminary Capacity Report
- Rural Fire District 5 & 6 Maps

File Name: Smoke

Contents:

- Memo: RE: Prescribed Burn Program by KLB Community Consulting
Attachments: a) Smoke Hazards to Prescribed Burns. The Nature Conservancy b) Impacts reported from Cub Creek/Rendezvous burns: Department of Ecology c) photos d) journal entries of Molly Maxted e) Emissions Data f) Scientists study health effects of forest fire smoke by Brad Haire g) Air Quality Index
- Smoke Management portion of the Methow Sub-Basin Fire Management Plan
- Smoke Management Plan. August 1998. WA State DNR

File Name: Community/Local Plans

Contents:

- Upper Rendezvous Map of FSP treatments
- FSP Treatment Chart
- Cascade Woodlands: Completed Fuels Treatments
- Structure Protection Plan: Lower Methow Valley- Pateros to McFarland Creek
- Structure Protection and Evacuation Plan: Needles Fire
- Freestone Inn/Wilson Ranch Structure Contingency Plan
- Fire Protection Plan, Edelweiss

File Name: NFP '05 Plans

Contents:

- Cascade Woodlands: Cooperation- WUI Fuels Treatments
- NFP '05 Grant Proposals for Planning Coordinator and Public Outreach Coordinator

File Name: **Conservation Organization Reports**

Contents:

- WUI Landscape Analysis: Pacific Biodiversity Institute

File Name: **National Fire Plan**

Contents:

- Pacific Northwest Coordinating Group Applications: Call for Applications for 2005 National Fire Plan Community Assistance and Wildland Urban Interface Projects
- A Collaborative Approach for Reducing Wildland Fire Risk to Communities and the Environment: 10-year Comprehensive Strategy

File Name: **USFS**

Contents:

- Methow-Sub Basin Fire Management Plan from OOWNF Fire Management Plan. 2002
- Methow District Statistical Fires 2003: spreadsheet

Digital Files on CD

CD Name: **Fire Plan Maps and Shapefiles**

Contents:

- JPEG image files of maps in final summary report
- ArcView GIS shapefiles of all map layers shown in this report

CD Name: **Baseline Data Shapefiles**

Contents:

- WRIA 48 ArcView Shapefiles used during this project

CD Name: **DNR Files**

Contents:

- Methow Compartment Files
Compartment assessments reports, bitmap, spreadsheets
- Assessment Forms Folder
PowerPoint Presentation on how to use NFFPA 299 Assessment Forms. Steve Harris, DNR
N. Eastern Washington Assessment Data
Assessment worksheets for 2000 and NFFPA 299
- DNR Methow Data Folder
DNR ArcView Shapefiles of work done in the Methow

CD Name: **Demyan's Work**

Contents:

- Arcview Shapefiles of fuel and forestry treatments contracted by Dave Demyan

CD Name: **Raster Veg Layer**

Contents:

- Vegetation Layer depicting forest cover adapted from Raster Satellite Imagery. developed by Hans Smith IV of Pacific Biodiversity Institute
Lowforest: lands in the southern reaches of the watershed that are forested
Midforest: lands in the mid-reaches of the watershed that are forested
Mazforest: lands in the upper reaches near Mazama that are forested

CD Name: **Easements with Thinning**

Contents:

- Shapefiles developed by Dawn Woodruff of Methow Conservancy easement properties that have undergone fuels treatments

CD Name: **Okanogan Wenatchee Fire Management Plan**

Contents:

- Complete Fire Management Plan for all Ranger Districts within both the Okanogan and Wenatchee National Forests

CD Name: **Fire in S.S. Wooten 2004**

Contents:

- 36 Text and Image files presenting information on fire behavior models and history in shrub/steppe ecosystems: prepared by George Wooten, botanist for the Kettle Range Conservation District

CD Name: **Fire References**

Contents:

- Numerous fire related resources ranging from technical reports including the Sinlahekin Wildlife Area Assessment to ecology, air quality and much more. Prepared by George Wooten.

CD Name: **Wildfire/WUI Reports**

Contents:

- Text documents pertaining to Wildland/urbanface issues and research: prepared by Peter Morrison of Pacific Bio-diversity Institute

APPENDIX XI.

December 20, 2005

Edelweiss Draft CWPP

Edelweiss Development Methow River Drainage – Okanogan County, WA Community Wildfire Protection Plan

1. Introduction

Citizens in the Edelweiss Development of Okanogan County have been concerned about the effects of wildfire since their beginning in the early 1970's. The community was placed on a Level II Evacuation Order during the Whiteface Fire in 1994(?). The Fawn Peak Fire and recent major fires in the Pasayten Wilderness, and in the Chewuch Drainage keep this concern alive. The 2003 Needles Fire, that threatened the entire upper Methow Valley, provided another scare, evacuation alert and increased emphasis for fire safety. The Edelweiss Maintenance Commission (EMC), the association management body, took action in 2001 and applied for a National Fire Plan grant. They were successful in acquiring a \$145,700 grant to conduct a "Fire Wise" workshop and risk assessments, to develop a Community Wildfire Protection Plan, to develop a fuel break along the Goat Creek Road and begin fuels treatment on demonstration lots and on the first bench. In 2002 the grant was amended to add \$300,050 to continue additional fuels treatments. These funds have provided for increased awareness and support for the program and fuels treatment on 134 high priority acres, on about 25% of the development. But blocks of high-risk fuels still exist and the community desires to continue the program. Proposed projects are outlined in this Community Wildfire Protection Plan (CWPP).

Visions and Goals

The citizens value their homes, forested setting and privacy. Their overarching aim is to protect life and property of the community, its members, and essential infrastructure from fire through outreach, strategic planning and action.

The primary goal of the Edelweiss Community Wildfire Protection Plan (CWPP) is to identify and implement projects that will protect people in the CWPP area, including residents, and firefighters and emergency personnel, from injury and loss of life. The secondary goal is to minimize or eliminate damage or loss of property and essential infrastructure due to wildfire.

In an effort to remain true to the environment that the citizens live in, all options for the utilization of biomass produced from fuels reduction projects will be pursued.

Community Awareness

The Edelweiss community is very aware of the need to develop a Community Wildfire Protection Plan and reduce the fire risk in the area. Edelweiss was on a Level II alert for evacuation until the 1994 Whiteface Fire was brought under control. And the community was under a Level I alert during the 2004 Needles Fire. These fires, plus the large fires on Fawn Peak, in the Chewuch Drainage (Andrews Creek, Thirtymile and Chewuch) and the Pasayten Wilderness fires, continue to emphasize the severe fire risk in this area. An electrical fire at the pump house along Goat Creek Road in 2002 provided an added emphasis for action.

The community hopes to provide an example that other communities can apply to their areas. The Edelweiss leaders and EMC Board have provided the community energy, input and guidance essential for the creation of this document. Additionally, it is the hope of the Edelweiss community that residents and property owners of the area will continue efforts to make their properties "Fire Wise" and implement defensible space.

Values

The property owners of the Edelweiss area value their homes, forest setting and privacy. They want to improve the safety of their community, and many individuals have already conducted work to reduce fuels around their homes and implemented fuels reduction projects. The Edelweiss community involves about 338 properties on 600 acres with about 45% of these lots developed. With the strong covenants in the association, building values are significant. The assessed value of the Edelweiss community is approximately \$98,000,000.

Through the CWPP effort they also hope to provide input on land management decisions for adjacent National Forest, Bureau of Land Management and State lands.

2. Planning Area

The Edelweiss CWPP planning area is approximately 600 acres lying along southwesterly slopes on the east side of the Methow River between Winthrop and Mazama, WA. The area includes all the platted Edelweiss subdivision area. The area is bound to the west by the Methow River, and to the north and east by the Okanogan National Forest. A 40-acre parcel of Bureau of Land Management land lies inside the north boundary and a 40-acre parcel of Washington State Department of Natural Resources land just outside the north boundary. A 7-acre parcel of private land lies between the pump house on Goat Creek Road in the southeast corner of the subdivision. It lies within Okanogan County Fire District #6. The area is considered a portion of the Twisp-Winthrop Wildland/Urban Interface – communities of risk. (see Edelweiss CWPP Base Map, page 3.)

General Description of the Area

The Edelweiss CWPP planning area is defined as the area platted as the 338-parcel Edelweiss subdivision. It lies midway between Winthrop and Mazama on the east side of the Methow River. The Okanogan County Goat Creek Road runs long the valley bottom through the area. Access to the properties is provided by a system of interior roads. Two roads, Homestead and East Fawn, provide ingress/egress routes during emergencies for the majority of the area. However the East Fawn Road is

Edelweiss Community Wildfire Protection Plan Area
Base Map

(to be inserted)

substandard, very rough and steep. Some dead-end spur roads exist and the West Fawn and Sunflower portion of the area have only one ingress-egress route. The roads are either paved or graveled but are to varying standards and some are not suitable for travel with structural fire vehicles. The development will be difficult to evacuate and defend in the event of a fast moving wildland fire.

Many of the home sites do not include adequate defensible space although individuals have initiated work and through the National Fire Plan grants fuels treatments were completed on 113 of the properties (134 acres). Fuel types are primarily overstocked, mixed conifer types with steep, arid, south slopes containing bitterbrush and grasses. Three open meadows, previously cultivated pastures, lie within the area. Heavy riparian vegetation exists along the Methow River and Fawn Creek that runs through the northern portion of the area. The terrain is gentle along the valley bottom and meadows but steep and broken through the remainder of the area. The meadow areas could serve as "safe zones" in case residents were trapped or for suppression forces in case of a fast moving wildland fire.

Power is provided by an overhead power line to the pump house along the Goat Creek Road. Underground lines provide power throughout the subdivision. Water is provided by a public water system maintained by the Edelweiss Maintenance Commission.

General Description of Edelweiss Existing Residential Area

Edelweiss is a recreational-residential subdivision, initiated in the early 1970's, and contains 338 parcels on 600 acres. Community-owned green belts include the three meadow areas totaling 40 areas. The road system is a series of loop roads with some dead-end spurs. Ingress/egress to the Goat Creek Road for the majority of the development is by the Homestead Road and the primitive East Fawn Road. The West Fawn Road and the Sunflower Road provide single access to the remainder of the subdivision east of the Goat Creek Road. Short spurs provide access to the properties on the west side of the Goat Creek Road. The development is about 45% built, containing a total of 151 residences. There are strict building codes and many of these are high-quality structures. Shake roofs are prohibited but several buildings have shake or shingles siding. Defensible spaces have been developed around about 75% of the structures but the overall fire risk to the community remains high due to pockets of dense, untreated fuels, the steep southwest aspect and ephemeral draws.

Water is provided from 2 wells and is pumped to two water tanks with 225,000-gallon total capacity. Standpipes are provided through the development but only one standard fire hydrant, at the east end, exists. This is because the water lines are too small to handle standard fire hydrant flows. Underground lines provide power throughout the development. In 2002 North State Consulting P.C. estimated it would cost \$880,000 to upgrade the system to 8" water lines with standard fire hydrants, but this could be accomplished in stages.

3. Planning Process

Process and Partners

The residents of the Edelweiss community have been concerned about wildland fire from the beginning. The concern was emphasized when the community was placed on evacuation alerts during the Whiteface and Needle Fires. The 2002(?) Fawn Peak Fire was less than 3 miles to the north and several Class-A lightning fires have been observed from the community. An electrical fire at the pump house along the Goat Creek Road would have been disastrous if it had not been caught. The current drought and recent low snow levels also raise concern.

Over the last 15 years fire prevention and safety was a frequent topic at association meetings and in newsletter articles. The Forest Service, Washington Department of Natural Resources, the Fire Districts and the Sheriff's Department participated in these efforts. The community members continue to be very concerned about fire risk to their properties and their ability to evacuate the area should fires occur. About 39 are full-time residents with the remainder part-time users, primarily from the west side. It is a continuing program to inform new members about the inherent fire risk to the entire community.

In September 2001 the Edelweiss Maintenance Commission (EMC) was successful in receiving a National Fire Plan grant of \$145,700, funded by the U.S. Bureau of Land Management. The grant provided for:

- Conducting risk assessments of community properties.
- Hold "Fire Wise" workshops for community members.
- Develop a fire protection plan for the community
- Develop a fuels break along the Goat Creek Road.
- Implement demonstration treatments and begin developing defensible spaces and fuels reduction treatments.

This grant was supplemented in September 2002 with an additional \$300,050 to continue the fuels treatments.

Fire protection to the community is provided by the Okanogan County Fire District #6 with Fire Stations at Winthrop, 9 miles to the east and the Mazama, 4 mile to the west. The department is primarily a volunteer organization with only the fire Chief being a paid employee. The Fire Department, as well as the Department of Natural Resources and U.S. Forest Service, all recognize the extreme fire risk of the community and support remedial measures. The Bureau of Land Management added their support by funding the grants.

Risk assessments have been completed on a total of 344 properties and risk assessment brochures were made available to the residents. A special "Fire Wise" workshop was conducted on May 2002 with about 70 members attending. A potential fire occurrence was modeled that showed the fire running through the community in less than 30 minutes. This was a very effective demonstration.

Fuels reduction and defensible space treatments were accomplished on 113 properties, totaling 134 acres. Priorities were placed on treating developed sites and those along the first bench above the Goat Creek Road and along the upper perimeter of the development. EMC has contributed nearly \$70,000 to the project, primarily through timber receipts. The results were well-received by the community. There is now a better understanding of how wildfire risk can be reduced and many are initiating treatment actions on their own.

The EMC Board recognizes that there is still much work remaining to reduce the fire risk to the community and are committed to take additional actions. Before any additional grant assistance can be requested the Community Wildfire Protection Plan needed to be approved. This plan identifies the actions and priorities as identified by the Edelweiss community.

The Edelweiss Community Wildfire Protection Plan is the result of these locally led efforts and partnerships between private, local, state and federal interests. The Edelweiss CWPP serves as part of the foundation of the countywide wildfire protection plan that is currently being developed. By basing the County-wide plan on individual CWPP's such as the Edelweiss plan, the goals, objectives and

recommended projects will be developed by and remain specific to each community. (See Section 7, Mitigation Action Plan)

4. Assessment

Existing Information

A substantial amount of data is already available from several sources. Primary fire planning information used in this plan came from Okanogan County fire District #6 (structure protection plan, evacuation plan, etc.), USFS Wenatchee-Okanogan National Forest, Methow Valley Ranger District (fire history, base map, and some vegetation information), and Washington Department of Natural Resources (historic/potential, vegetation/potential vegetation).

Vegetation

The majority of the planning area contains a mix of Douglas-fir and ponderosa pine. Riparian vegetation, including cottonwood, exists along the Methow River. Western redcedar is added in the Fawn Creek riparian area. Grass shrub vegetation, predominated by bitterbrush, occurs on the droughty south slopes. Dry land grasses exist in the meadow areas. Understory vegetation includes pinegrass, snowberry, rose, ocean spray and serviceberry. The majority of the trees are 70-90 years old, coming in after the last harvest and major wildfire, with scattered remnant older trees. About 50% of the area is overstocked with 400-900 trees per acre averaging 7 inches diameter breast height. Ponderosa pine composition is being reduced by bark beetle attack and dwarf mistletoe is heavy in some pockets of Douglas-fir.

Historically, ponderosa pine predominated in these stands with a scattering of Douglas-fir. Age classes ranged from seedling to very large diameters. Understory vegetation was reduced by recurrent low-intensity wildfires. (see Historic/Potential Natural Vegetation map on page 8.)

The planning area is predominately a ponderosa pine and mixed conifer dry forest type. Ponderosa pine is a shade intolerant species naturally adapted to survive in areas that experience fire on a regular basis (i.e. frequent fire regime, fire interval every 5-15 years). Fire plays a major role in how ponderosa pine is established and sustained on the landscape. Regular burning allows pine stands to flourish by removing underbrush and smaller competing trees. As the pines mature their bark thickens and their lower branches are self-pruned, which makes them better adapted in a fire environment. Older, pure ponderosa pine stands often have a wide, open, park-like feel with scattered large trees (12-25/acre) with grass and scattered brush species in the understory. Fire also provides benefits, and opportunities for a variety of plant species. The resulting increase in vegetation diversity benefits wildlife, as well as forest health-disease resistance.

When the natural fire regime is altered (primarily through fire suppression) ponderosa pine stands become denser. Shading and competition will inhibit the growth of pine and allow more shade tolerant species, such as Douglas-fir, to become established along with other underbrush species. This overstocked condition will produce vertical and horizontal fuel profile continuities, which often result in stand replacement fires. Additionally, denser stands are often more susceptible to the spread of insects and disease which provide more dead fuels. Frequent fire regimes (with fires at intervals of 0-35 years) become unstable as fire frequency is disrupted (e.g. by fire suppression). These forest types rely on the dynamics of fire to lower competition amongst species, keep areas of disease and insects in check and clean up the dead and downed materials (fuel). If there are no fires in a 0-70 year period to manipulate the dry forest, the forest is considered in a Condition Class II. No fires over a longer period produce a densely stocked stand of pine and shade tolerant species with often results in stand replacement fires. This Condition Class III situation will result in the loss of forest cover, damage to watersheds, altered wildlife habitat, and potential soil damage when the inevitable uncharacteristic high intensity fire occurs. Some fuels treatment has reduced the risk but most of the areas in the planning area are in Condition Class II.

Fire Ecology

Weather, topography, and fuels affect wildfire behavior. The Edelweiss CWPP area, like other areas of Okanogan County, is prone to severe weather conditions that can support extreme fire behavior. The

landscape within the developments is benchy and rolling with sharp, ephemeral draws running up from the Methow River that would act as fire chimneys. And the steep slopes above the Goat Creek Road would support severe fire behavior. Many of the stands have closed canopies, overstocked understory, and abundant ladder fuels. Insect and disease infestations of mountain pine beetle and dwarf mistletoe are prevalent.

Since the weather and the topography of the community cannot be changed, the best approach to minimize the risk to people and potential property losses is to modify and/or reduce fuels surrounding the home, as well as at the landscape level. Fuels treatments

Historic/Potential Natural Vegetation Map
(to be inserted)

within and adjacent to a community can improve safety for firefighters, help overall suppression efforts to be successful, and reduce potential risk/damage to individual structures/property. Wildlife habitat benefits can also be gained through fuels reduction and natural vegetation restoration projects.

Fire History

Fires are started naturally by lightning, in and around the planning area, every few years. But fires are also often started as a result of other causes, such as campfires, and debris burning. The Forest Service has mapped the fire occurrences they have responded to. (see Fire History Map on page 10 for summary and location of fire starts.) The size of the fires may vary, but typically small fires of a few to several acres occur at 1-5 year intervals. No large fires have been experienced in the planning area in nearly 100 years but conditions are conducive to a large, high severity fires similar to those that have recently occurred in surrounding areas (1994 Whiteface Fire, 2002 Fawn Peak Fire and Chewuch Fires)

General Fire Behavior Potential

Some structures are located around the meadow perimeters but most structures inside the planning area are within heavily forested areas. The small lot sizes (average 1.5-2 acres each) within the Edelweiss community result in buildings being close together. Fires may move very rapidly through both the developed areas and the overstocked forested undeveloped areas. There is a high potential for spotting and control could be difficult if wind is a factor. The heavily forested ephemeral draws could produce fast moving fires when driven by the steep slopes and sustained winds. The threat would soon be in all areas of the planning area with fire potential to involve all structures.

A major concern is the draw at the east end of the community, between the pump house and Highland Meadows. It is a steep sloped ephemeral draw that is overstocked and with heavy ground and ladder fuels. If a fire ever started up this draw it would run through the community in minutes. The majority of the property is not within the Edelweiss community and to date the landowner has not agreed to have the fuels treated.

On the positive side shake roofs are not permitted. This reduces the risk of shakes becoming a firebrand source for starting new spot fires. But many have wood or even shake or shingle siding and there are many wood and lumber piles that could contribute to spotting. Should structures become involved, spotting potential from the structures themselves will be significant.

Fuels Hazards

The WADNR has classified the planning area as a portion of the "high risk" Twisp-Winthrop Wildland Urban Interface area. The Forest Service considers the WUI to extend 1 ½ miles beyond the developed area. Past activities such as logging and fire suppression have altered the normal fire regime; stand species, composition and structure and forest health. Dense overstocked stands dominated by trees under 12 inches in diameter are increasing the fire hazard. Pockets of trees are affected by mountain pine

Fire History Map
(to be inserted)

beetle. Trees often have contiguous crowns and ladder fuels and underbrush and grasses predominate the landscape. The development lies on a southwest aspect with some steep slopes and deep, incised draws. All of these variables provide a continuous fuel profile, which can create conditions for an intense and fast moving fire.

Protection Capabilities

Okanogan County Fire District #6 with stations at Winthrop and Mazama is responsible for protection of the Edelweiss community. The surrounding private property is protected by the Washington Department of Natural Resources. The Forest Service has primary agency responsibility for the federal lands. The Fire District has a working relationship with the Forest Service and the Washington Department of Natural Resources and mutual aid agreements with all the fire districts within Okanogan County.

Fire District #6 is responsible for protection of the entire Methow Valley north of Gold Creek, covering a very large area (nearly 200 square miles). There is only one paid employee, Fire Chief Don Waller. There are an estimated 70 - 75 volunteers in the Department but availability is variable since many of these have jobs outside the valley. Fire stations are located at Lost River Airport, Mazama, Winthrop Twisp and Carlton.

Current Equipment

Lost River Airport

750 gal. Pumper
3,000 gal. Tanker

Mazama

1,000 gal. Pumper
3,000 gal. Tanker
4 x 4 Brush Rig

Winthrop

2,000 gal. Pumper
3,000 gal Tanker

Twisp

1,000 gal. Pumper
4,000 gal Tanker
Backup 4 x 4

Carlton

2,000 gal. Pumper
3,000 gal. Tanker

The objective of the Okanogan Fire District #6's structure protection plan is to safely and efficiently manage resources to protect life, property and resources in the event of an approaching wildfire. Strategy decision shall take into account the following tactical considerations:

1. The Edelweiss community is in a very fire-prone setting. It lies on a southwest slope with variable terrain incised with step heavily timbered ephemeral draws. Fires would move rapidly through the area with spotting, torching and crowning common.
2. This is an up-scale community with significant structures. However many of the homes will require maximum effort to defend, requiring prompt implementation of this plan and the need for triage of structures.
3. The primary consideration of the District is the safety of the firefighters and the protection of the lives of the residents.
4. The District practices a policy of aggressive initial attack. For any fire call within Edelweiss both the Winthrop and the Mazama stations are dispatched, and the remaining stations are included when there is high fire danger.
5. While structural protection is the primary responsibility of the District, they attack threatening wildfires in order to protect nearby structures.
6. Wildfires escaping initial attack rapidly expand and require a multi-jurisdictional response with a unified command. This requires joint training and communications. Currently there is a positive relationship with local partners but this requires constant maintenance.
7. Okanogan County Fire District #6 and its cooperators cannot assemble enough structure protection capabilities to protect all the development within the Edelweiss community. Successful defense from wildfire will depend upon structural triage, and time for pre-treatment with mobile tactics. Resources from state and federal agencies will be necessary to implement the strategies described.
8. The Edelweiss community has a community water system. There are water standpipes throughout the area but only one standard hydrant, at the upper east end. Water can be drafted from the Methow River but refill capacities for extended structural attack are not available.

Structural Vulnerability

Residences within the Edelweiss community are in a suburban forested setting somewhat entwined into the forested landscape. Access, topography, slope and fuels play a role in each structure's fire risk, as well as the condition of adjacent structures. Residents within the untreated forested sections are of highest potential for large fire loss. Timber mixed with light fuels creates a fast moving fire situation with the highest potential for large fire loss. Not having an adequate water system for structural fire suppression limits the amount of protection the district can supply.

Key Contacts

<u>Organization</u>	<u>Contact</u>	<u>Phone Number</u>
Okanogan County Fire District #6	Central Dispatch Twisp Station	911 (509) 997-2981
Okanogan County Fire District #6 Administration	Chief Don Waller	(O) (509) 997-2981 (C) (509) 322-3605
	Mazama Asst. Fire Chief Dick Roberts	(509) 996.2334
Okanogan County Sheriff	Frank Rodgers	(509) 422-7200-7525
Methow Valley Ranger Dist. (USFS)	Pete Soderquist (FMO)	(509) 996-4003
Central WA Interagency Comm. Center (CWICC)		(509) 662-4393
Okanogan County Electric Coop.		(509) 996-2228
Edelweiss Maintenance Comm.	John Caesar, Manager Steve Cleaves, Pres.	(509) 996-2667 (509) 996-8238

Additional Operational Needs Identified by the District

- Two additional paid staff are requested to have sufficient staff available throughout the year to facilitate continued and improved coordination, training, communications, and other joint efforts and to be able to respond to structural fires with two first-responders.
- Two additional Type 4 Engines are required for adequate protection of the Wildland Urban Interface.

Acquiring these needs will largely hinge on funding available for the fire program and its various elements.

5. Risk Evaluation

An area risk assessment was completed by WDNR (NFP-299 area risk assessment) that grouped the planning area rather than analyzing risk to individual structures. **The fire risk assessment for the Edelweiss CWPP planning area is ranked as high.**

Access

The Goat Creek Road is the primary evacuation route in and out of the planning area. Two access roads (Homestead and East Fawn) serve as ingress/egress to the Goat Creek and serve as evacuation routes for the majority of the community. However, the East Fawn Creek is substandard, steep, narrow and rough. The properties that are accessed by the West Fawn and Sunflower Roads have only one access route. The Goat Creek Road can be considered as a shaded fuel break. In order for the interior roads to act as shaded fuel breaks some additional clearing would be needed in portions of these roads where dense timber abuts the road.

The roads are either paved or graveled, but are narrow where passing is difficult. Segments have steep grades and wash-boarded when dry and graveled and icy in the winter. There are several dead end

spurs to portions of the development, some with an inadequate turn-around at the end. Some of these roads are not in a suitable condition for fire equipment, especially in the steeper, dead end spurs. Improvement of the East Fawn Road as an evacuation route has been identified as a critical concern.

Evacuation

Okanogan County Emergency Management Program administers the evacuation of the Edelweiss community. Since access routes for evacuation are limited, evacuation would have to occur well ahead of any approaching wildfire. An evacuation plan is being developed that addresses these concerns.

Staging Area for Tactical Resources

The Okanogan County Fire District #6 is the primary agency for any fire originating within the Edelweiss community. Washington Department of Natural Resources is the primary agency for fire protection on the surrounding forested private and state lands and US Forest Service is the primary agency responsible for management of fires on federal lands. The District will respond from both the Winthrop and Mazama Fire Stations as first response with mutual aid resources available throughout the county. These resources may respond to a pre-designated staging area.

Staging area options include:

If fire threatens any portion of the Edelweiss area, the District will respond with mutual aid resources from throughout the Okanogan County. These resources may use any of the following pre-designated staging area locations:

- Walt Foster's Field, Mazama
- WA Fish & Wildlife Campground, Big Valley Ranch, Highway 20

Command Post Locations

The command posts would be established at the staging area, but additional phone lines and communications would have to be set up.

Command posts could also be located at the:

- Methow Valley Ranger Station, 24 West Chewuch Road, Winthrop
- Liberty Bell High School, 18 Twin Lakes Road, Winthrop

Water Supplies

The location of water sources and capabilities available for firefighting efforts have been identified. 225,000 gallons of water are stored in the community storage tanks. One standard fire hydrant exists at the east end of the development and water standpipes are located at intervals throughout the community. The Methow River can be accessed at camping area to draw additional water.

Fuel Breaks and Safety Zones

Previous fuels treatments have developed a shaded fuel break along the first bench above the Goat Creek Road and around most of the upper perimeter of the development. But there is still a real possibility of a fast moving fire engulfing the community and trapping residents. The three meadow areas (Highland Meadow, Community Pool Area and Campground Area) could act as safety zones for cut-off residents or as areas to stage strike forces so they could provide more efficient secondary protection of structures. For those along the West Fawn Road a possible safety zone could be the open bench just above the Forest Service cattle guard. There is no safety zone along the Sunflower Road.

A treatment goal is to develop a fire and fuel break along the interior road system. Considerable work has been done and an estimated 50% of the system could act as a shaded fuel break but to be effective the intervening sections need to be treated. This could be accomplished by treating the full right-of-way width. (see Completed, Planned and Proposed Projects Map on Page 16.)

In the event of a fire, the Okanogan County Humane Society will work with landowners to find a safe place for domestic animals for homeowners who cannot take their animals with them.

6. Current Activities

Protection Measures

The Okanogan County fire district #6 provides fire protection for the Edelweiss area. Depending on time and location, response times average 20-30 minutes.

Existing Procedures

The Edelweiss community and its Maintenance Commission have organized and begun implementing community types of projects that have increased the awareness and understanding of the residents regarding the fire risk and the reduction of fuels loads around individual homes. Grant funds, obtained through the National Fire Plan program, have been utilized to treat over ½ of the high-risk fuels and have acted as a catalyst for individual efforts by property owners. The community desires to continue these fuels treatments and reduction of the fire risk. (see Completed, Planned and Proposed Project Map on page 16.)

Project Proposals

Approximately 50% of the high-risk fuels have been treated with the current National Fire Plan grants plus individual efforts. Dr. Jim Agee, fire ecologist, estimates 60%-75% participation is needed so, “the worst fire behavior might be fragmented enough to allow most of the subdivision to avoid being destroyed”. The community recognizes more work needs to be done.

Priorities for additional fuels treatment include, treating the steep ephemeral channels that are heavily stocked and “wick” up from the Goat Creek Road into the community, completing the upper perimeter shaded fuel break in the northeastern corner and treating the remaining densely, stocked areas in the interior of the development. Completing shaded fuel breaks along the road system is another priority. Other priorities include upgrading the East Fawn Road to be an effective evacuation route and upgrading the water system to provide for standard hydrant coverage. (see Completed, Planned and Proposed Project map on page 16.)

*Completed, Planned and Proposed
Project Map
(to be inserted)*

Coordination with Forest Service and Other's Activities

In order to maximize the fuels reduction work for private land, it would be desirable for complimentary projects to take place on adjacent lands, including Forest Service managed lands. The Bureau of Land Management recently completed a fuels treatment project on their 40-acre parcel that is within the subdivision perimeter. This compliments the work accomplished by the National Fire Plan grants.

The Washington Department of Natural Resources has a 40-acre parcel immediately north of the subdivision. A shallow draw along the subdivision boundary is heavily overstocked and high-risk to the community. It would be desirable to treat this boundary to provide an effective shaded fuel break along the boundary.

A high priority for additional fuels treatment is the 7-acre private parcel adjacent to the pump house along the Goat Creek Road. This parcel contains heavy, ladder fuels and is at the mouth of a steep ephemeral draw that feeds directly up to the subdivision. Numerous efforts have been made to contact the owner but to date these have been unsuccessful.

The Forest Service has initiated a fuels treatment project in the Fawn Creek Treatment Unit above the planning area. Two areas, that were not included as treatment units, contain extreme fuels loading and are considered a major threat to the homeowners. The Forest Service is currently exploring options on how to treat these areas that contain heavy, submerchantable material.

The CWPP is recognized as the instrument necessary to organize and educate the public and to further encourage and facilitate the design of such future projects.

7. Plan Maintenance

The Edelweiss Maintenance Commission Board will be responsible for monitoring existing projects and proposing and prioritizing future projects aimed at wildfire prevention and protection within the Edelweiss CWPP area. Board members will take on the task of coordinating with outside groups and agencies to investigate, write and submit future grants. This group is also responsible for partnering with appropriate agencies to review and update this CWPP at least once a year under the direction and assistance of the Okanogan County Fire District #6 and the Methow Valley Ranger District.

8. Mitigation Action Plan

The priority projects of the Edelweiss landowners are to continue the fuels treatment program by treating the high-risk areas of the ephemeral draws, the remainder of the exterior shaded fuel break, and the dense stands within the development. A second priority is the completion of fuel breaks along the interior roads and development of the East Fawn Road into a satisfactory evacuation route. (see Completed, Planned and Proposed Project map on page__.) The objectives of these projects are to better provide a safe evacuation route and safe area if trapped and to reduce fire intensity within the community. Additional priorities are the continuing education of the landowners, upgrading the water system to provide standard fire hydrants and the ongoing maintenance that will be required.

The Edelweiss Community Wildfire Protection Plan has five categories of mitigation actions: Roads - ingress/egress, Fuels Reduction, Public Education and Outreach, Suppression Capability, and Public

Agency Coordination. Natural Vegetation/Habitat Restoration is incorporated into the Fuels Reduction projects. Recommendations by category are provided below.

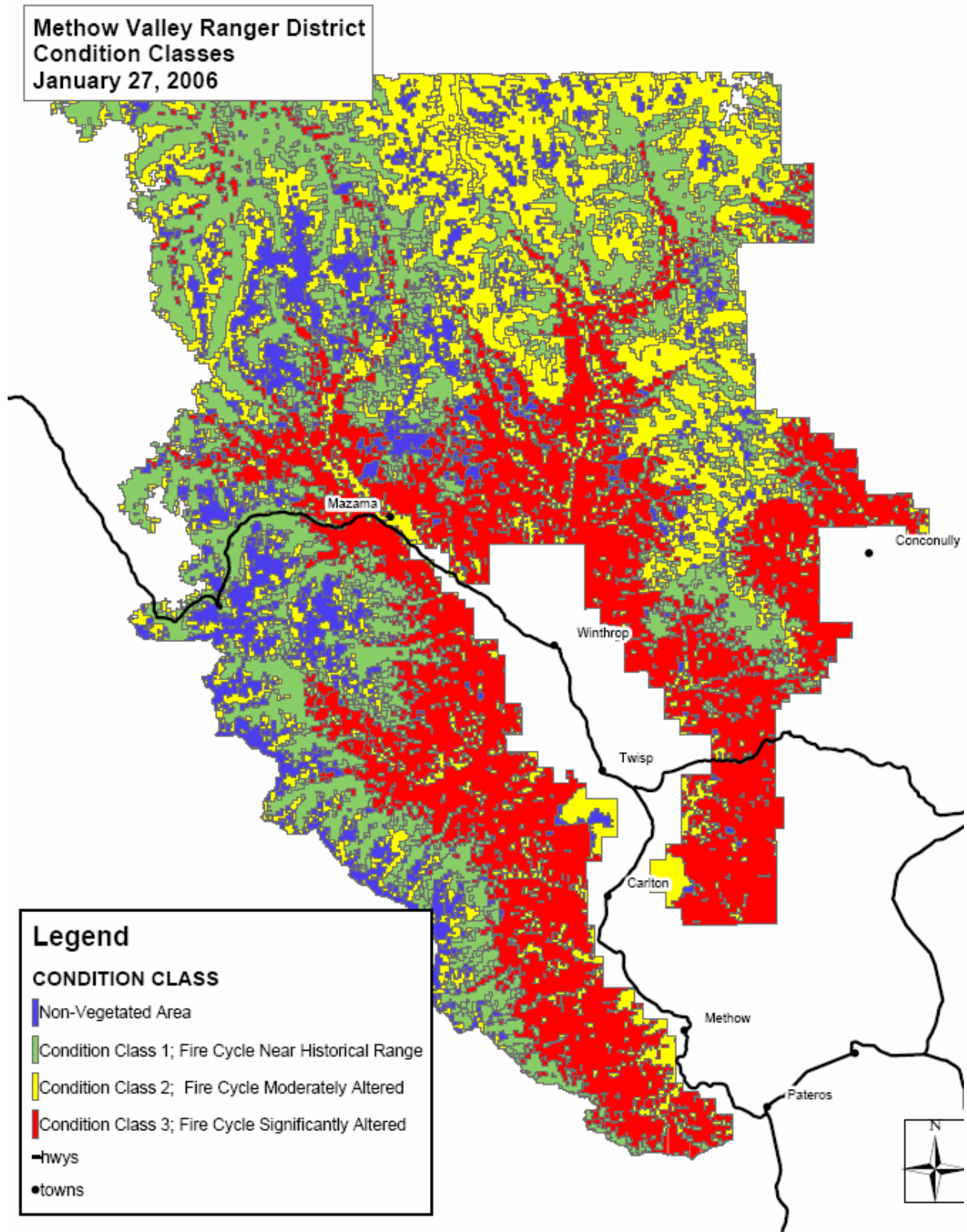
The Edelweiss Steering Committee will prioritize the recommendations and the top ten items will be put into an action plan and funding will be sought to implement these projects. Additionally these ten top items will be recognized as the highest priority projects for implementation by the Edelweiss area landowners.

1. Issue – Roads ingress/egress
 - a. Fuels reduction along roads.
 - i. Mitigation goal – develop shaded fuel break along the main loop roads.
 - ii. Mitigation Goal – Extend the fuels breaks to the remaining spur and dead-end roads.
 - b. Dead end roads unsafe for firefighting personnel to access.
 - i. Mitigation Goal – Map roads accessible by fire vehicles. Sign those that are dead end or are inaccessible.
 - c. Need improved secondary access in case of fire emergency.
 - i. Develop cooperative approach to improve East Fawn Road into safe ingress/egress access route.
 - ii. Implement the improvement work.
 - d. Develop uniformity of road and address signs and install signs at strategic locations.
 - i. Mitigation Goal – Develop a road and address sign plan for the Edelweiss community.
 - ii. Mitigation Goal – Provide means for acquiring standard signs and directions on installation.
 - iii. Mitigation Goal – Install “dead end road” signs and warning signs on roads unsuitable for fire emergency vehicles.
2. Issue - Fuels Reduction for Edelweiss (a portion of the Twisp-Winthrop WUI, a community at risk)
 - a. Natural Resources Protection
 - i. Mitigation Goal – Treat fuels in areas to protect communities and infrastructure at risk.
 1. Treat the ephemeral draw between pump house and Highland Meadows.
 - a. Reach agreement with adjacent landowner to conduct fuels reduction.
 - b. Treat the fuels.
 2. Complete shaded fuel break along top and east corner of the development
 3. Provide additional treatment on the steep slope and ephemeral draw from the Goat Creek Road to the Homestead Road.
 4. Treat remainder of dense stands in the interior of the community
 - ii. Mitigation Goal – Maintain existing and future fuels reduction projects.
 - iii. Mitigation Goal – Develop a team to locate and prioritize landscape scale fuels projects.
 - b. Homesites
 - i. Mitigation Goal – Implement defensible space guidelines and create defensible space around homes.
 - ii. Mitigation Goal – Provide information for homeowners for measures they can take to reduce ignitability of structures.
 1. With brochures, association meetings, newspapers, etc.
 2. During building permit review and approval process.
 - c. Utility Corridors
 - i. Mitigation Goal – Proactively trim growth and remove hazard trees along the power line to the pump house annually to prevent outages and fires.
 - d. Disposing of Excess Fuels

- i. *Mitigation Goal – Develop and implement plan to dispose of excess fuels generated during fuels treatment projects.*
 - ii. *Mitigation Goal – Explore opportunities for utilization of material generated during fuels treatment projects.*
 - e. *Monitor Effectiveness and Validate Work*
 - i. *Mitigation Goal – EMC Board in conjunction with the Fire District, Forest Service, and Department of Natural Resources review the projects to see that work accomplished is what was intended, to see if it was effective and to learn how to adapt and improve.*
- 3. *Issue – Public Education and Outreach*
 - a. *Community Preparedness*
 - i. *Mitigation Goal – Implement risk assessment recommendations of individual properties with prescriptions as identified in the assessments.*
 - ii. *Mitigation Goal – Develop and implement community fire emergency and evacuation plan, including how to contact and notify landowners (phone trees, sirens, radio stations, etc.) and interaction with firefighting officials. (See Appendix ____)*
 - iii. *Mitigation Goal – Encourage individuals to develop personal emergency action plans, to include:*
 - a. *Individual responsibilities and residential and personal security, i.e., creating defensible spaces, landscaping in fire country, creating fire breaks, Fire Wise construction materials, visible house numbers, etc.*
 - b. *Individual preparedness: How to create a Personal Emergency Action Plan (personal escape routes, disaster supply list, personal communication plan),*
 - c. *What to do and what NOT to do in case of wildfire.*
 - d. *Interacting with local firefighting and law enforcement officials.*
 - iv. *Mitigation Goal – Provide uniform signage for roads and addresses.*
 - b. *Prevention*
 - i. *Mitigation Goal – Residents aware of risks and responsibilities of living within Wildland Urban Interface*
 - 1. *Conduct Fire Wise Workshops.*
 - 2. *Provide information packets to all present and new landowners.*
 - ii. *Mitigation Goal – Include Fire Wise considerations in review process for building.*
 - 1. *Expand review criteria to include restrictions and/or recommendations regarding construction materials, landscaping materials, and road design.*
 - 2. *Provide information packets to those considering building or remodeling.*
 - iii. *Mitigation Goal – Initiate fire restrictions and provide notifications to landowners*
 - 1. *Develop and maintain fire message bulletin board at entrance of Homestead Road, to include:*
 - a. *Fire Danger Levels*
 - b. *Burn bans and other restrictions*
 - c. *Emergency call number – Dial 911*
 - 2. *Winthrop and Mazama Fire Districts initiate burn bans and other fire restrictions.*
 - 3. *Provide fire prevention messages and notifications on bulletin boards, signs and other media.*
 - 4. *Prosecute violators.*
 - iv. *Mitigation Goal – Explore possibilities to receive incentives for construction with fire resistant materials.*
 - c. *Emergency Services*
 - i. *Mitigation Goal – Provide current road and address maps to all fire, law enforcement, and emergency medical entities.*
 - d. *Outreach*

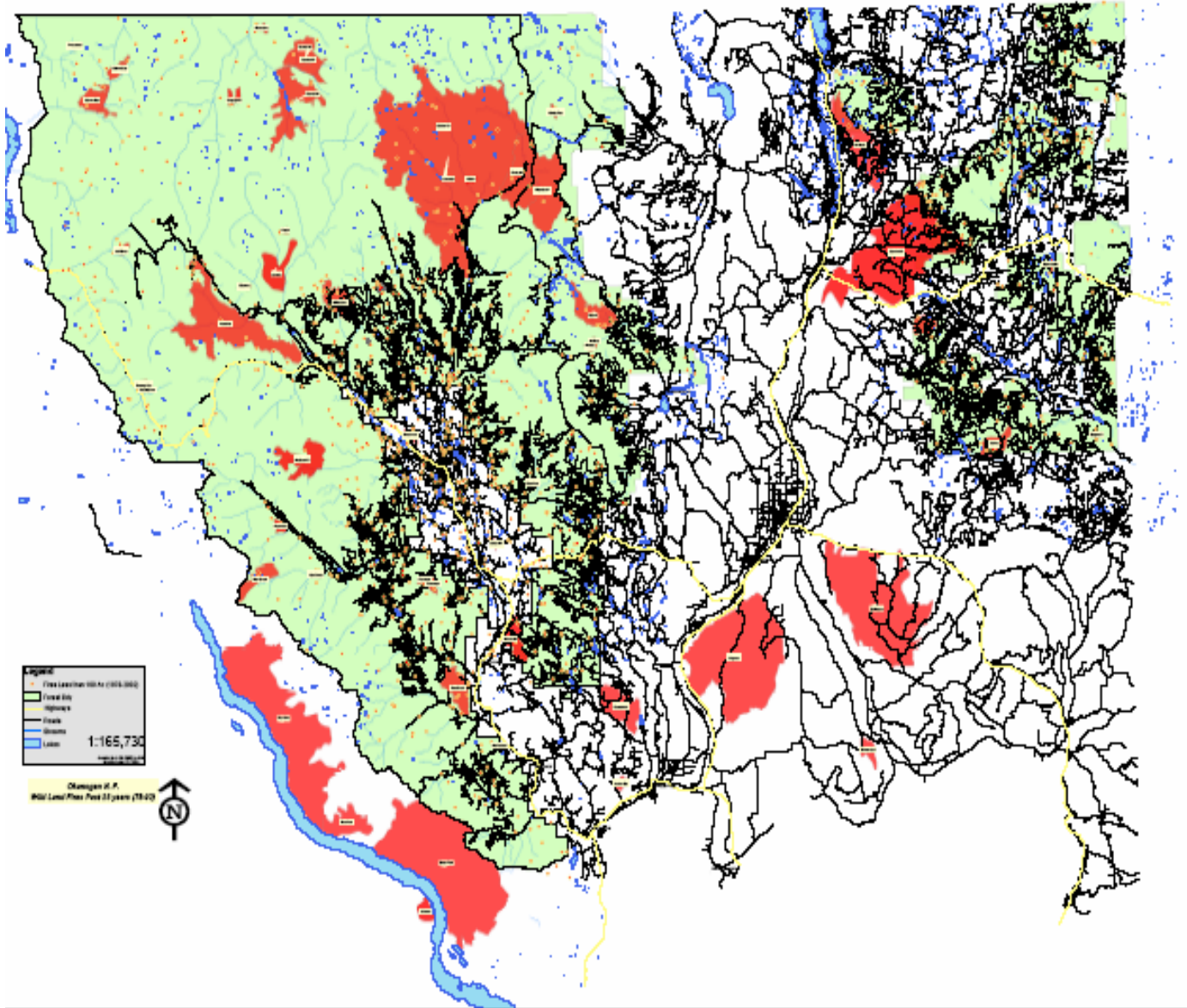
- i. *Mitigation goal – Compile and make available to general public fire risk information and actions being initiated to reduce these risks.*
 - 1. *Distribute information about Edelweiss' initiatives to media and surrounding communities.*
 - 2. *Emphasize how groups work collectively together.*
 - ii. *Mitigation Goal – Encourage Edelweiss and neighboring residents to come together to promote community safety.*
- 4. Issue – Suppression Capability
 - a. *Fire District Staffing*
 - i. *Mitigation Goal – Current staffing is inadequate to assure adequate protection, training and coordination.*
 - 1. *Provide 2 additional paid employees for District #6*
 - b. *Available Resources*
 - i. *Mitigation Goal – Continued development within the WUI requires increased suppression capabilities.*
 - 1. *Provide additional 2 Type 4 Engines for WUI protection*
 - c. *Water Availability*
 - i. *Mitigation Goal – The community water system is inadequate for standard fire hydrants for structural suppression..*
 - 1. *Develop a strategic plan to upgrade the community water system to accommodate standard fire hydrants.*
 - 2. *Secure funding and implement the upgrading program.*
- 5. Issue – Public Agency Coordination
 - a. *Agency and Group Collaboration*
 - i. *Mitigation Goal – Participating agencies and Edelweiss continue to work together to monitor, improve, and adapt program.*
 - 1. *Work with the Methow Valley, Okanogan County and participating agencies and landowners to implement a County-wide CWPP.*
 - b. *Project Coordination*
 - i. *Mitigation Goal – Edelweiss and Forest Service coordinate treatment of the National Forest areas that are a threat to the community.*
 - c. *Process of Fire Response*
 - i. *Mitigation Goal – Describe fire response procedures and conditions:*
 - 1. *Within the Edelweiss community*
 - 2. *In surrounding forested areas*
 - 3. *Identify and distribute evacuation conditions and procedures*
 - d. *Website Resources*
 - i. *Mitigation Goal – Identify and include in information packets information sources for Fire Wise development, emergency measures, current conditions, contacts, etc.*
- Structural Vulnerability – *Residents within the Edelweiss community are on relatively small lots, akin to a suburban community within a forested setting. Accessibility, topography, close proximity of the structures, and surrounding vegetation all contribute to each structure's and the community's fire risk. Actions implemented in the Mitigation Action Plan portion of this plan primarily address improving the ability of structures to be defended during wildfires.*

APPENDIX XII: Methow Valley Fire Regime Condition Classes



Source: Methow Valley Ranger District

APPENDIX XIII: OKANOGAN COUNTY 25 YEAR FIRE HISTORY



Source: Okanogan County Draft Hazard Mitigation Plan