Community Wildfire Protection Plan

Crook County, Oregon

Prepared by

Crook County
Community Wildfire Protection
Plan Committee

June, 2005

Acknowledgements

The Crook County Wildfire Protection Plan is the product of extensive collaboration and support of various agencies, community groups and individual citizens. Their support, commitment and insight are gratefully acknowledged.

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Signatures:

As required by the HFRA, the undersigned representatives of the Crook County Court, Crook County Fire and Rescue and Oregon Department of Forestry acknowledge that they have reviewed and agree with the contents of this plan.

Crook County Court

_____ _____

Scott R. Cooper, Crook County Judge Date

_____ _____

Mike McCabe, Commissioner Date

_____ _____

Mike Mohan, Commissioner Date

Crook County Fire and Rescue

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Bob Schnoor, Chief Date

Oregon Department of Forestry

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Robert Young, Central Oregon District Forester Date

Executive Summary

The Healthy Forests Restoration Act, passed by Congress and signed into law in 2003, provides incentives for communities to engage in local forest planning and hazardous fuels management planning. In order for communities to take full advantage of this opportunity, a Community Wildfire Protection Plan (CWPP) must first be completed.[1]

The Crook County Wildfire Protection Plan documents this planning process in Crook County and includes the following components:

- Background information on the Community Wildfire Protection Plan purpose and process, community profile information and fire behavior in Crook County;
- Risk assessment of communities and critical infrastructure;
- Recommendations to reduce structural ignitability and address issues associated with unprotected lands within the county;
- Summaries of communities, critical infrastructure, hazard reduction priorities and funding priorities;
- Recommendations for plan implementation, monitoring and annual review to assess and document accomplishment, short-fall, revised initiatives, and to identify new challenges and opportunities for community wildfire planning.

GIS-based maps are included to help display analysis results, identify communities and infrastructure and to provide a foundation for hazardous fuels project-level planning. With appropriate annual plan review and update, this CWPP should be useful for at least five years. Timely update of GIS products could extend the life of the plan and will provide a meaningful current status of progress made and to identify new opportunities to increase the resilience of Crook County communities to the effects of wildland fire.

The Crook County CWPP is the product of developmental collaboration between the Crook County Court, Crook County Fire and Rescue, Crook County Emergency Management, Crook County Natural Resources Planning Committee, Oregon Department of Forestry and the Ochoco National Forest and Bureau of Land Management-Prineville District via Central Oregon Fire Management Services (COFMS).

Public review and input was provided through presentations to the Crook County Community Emergency Preparedness Committee, the Crook County Natural Resources Planning Committee and posting of a review draft of the planning document on the Crook County website. In addition, CWPP presentations were incorporated into the Crook County Sheriff's spring, 2005 Town Hall meetings held throughout the county.

In addition to meeting the requirements of the CWPP process, this document is intended to provide the citizens of Crook County with a source of information to become more informed about the risks from wildfire and to become aware of the options that the individual homeowner has to reduce the risk of damage or loss of their home.

1.0 Introduction

1.1 Purpose

Destructive wildland fire is often described as "Central Oregon's natural disaster." However, fire is also a natural component of local ecosystems when it burns at lower intensity levels. Traditionally, Crook County citizens have prepared for summer fire occurrence in much the same way that they have prepared for the variety of other seasonal, weather-driven challenges common to Central Oregon. Now, an ever increasing county population with new development expanding into areas of highly flammable vegetation raises the potential for wildland fire to threaten Crook County's communities and critical infrastructure.

Over the last decade, the intensity and destructiveness of wildland fire has increased dramatically, particularly throughout the western inter-mountain portion of the nation. The impact of wildfire on the nation's communities has become a common theme on local and national news programming and has become a component of our daily awareness.

Recent national and state-level legislation has been enacted to enhance development of damage-limiting mitigation planning and actions to counteract this trend. The Healthy Forests Restoration Act (HFRA) was passed by Congress and signed into law in 2003. This legislation provides both the opportunity and a framework for local communities to take a more active role in incorporating community priorities in the planning and implementation of forest management activities, and hazardous fuels treatments on public lands. While this legislation is particularly applicable along the boundary between public lands and areas of community development, it is likewise appropriate that privately-owned wildland areas be considered jointly with public wildlands. The boundary between wildland areas, both public and private, and areas of community development is referred to the "wildland-urban interface" (WUI). To be truly effective, an analysis of hazardous fuels treatment must considered in developed areas and wildland areas. The development of a Community Wildfire Protection Plan (CWPP) is the mechanism identified by the HFRA to provide that community-wide perspective.

1.2 Agency and Public Participation:

In early 2004, the Crook County Court in coordination with the Ochoco National Forest and Prineville District of the Bureau of Land Management initiated the process to develop a Community Wildfire Protection Plan for Crook County. The direction from the Court was to develop an integrated Community Wildfire Protection Plan for the county as a whole with focus on the many communities and components of critical infrastructure throughout the county. The early phases of the effort included all of fire service, planning and emergency management functions within the county. As the process progressed, public review and input was incorporated into the plan.

Partner organizations include the following:

Crook County Court
Crook County Natural Resources Planning Committee
Crook County Sheriff's Office/Emergency Management
Crook County Planning Department
Crook County Fire and Rescue
Oregon Department of Forestry
Oregon State Fire Marshall's Office
Ochoco National Forest*
Prineville District-Bureau of Land Management*
(* The fire management functions of the Ochoco and Deschutes National Forests and the Prineville District-BLM have been combined into Central Oregon Fire Management Service (COFMS). Representatives from both the Ochoco NF and the Prineville District-BLM participated in addition to members of the COFMS staff.)
Warm Springs Tribes

1.3 The Crook County CWPP-Format and Framework

Following passage of the Healthy Forests Restoration Act, a variety of planning framework models developed throughout the country. Concurrently many jurisdictions were also developing or completing Natural Hazard Mitigation Plans (NHMP) including a wildland fire component where wildfire is a threat, to meet FEMA guidelines. Of the two predominate CWPP models being used in Oregon, one provides a mechanism to address the wildland fire component of the NHMP process as well as the CWPP requirements. The other model is entitled "Preparing a Community Wildfire Protection Plan-A Handbook for Wildland-Urban Interface Communities". This framework was developed by the National Association of State Foresters, National Association of Counties, Society of American Foresters and others. This framework, known as the "NASF" model, was chosen as a foundation for the Crook County CWPP effort because the county had just completed development of their NHMP. Figure 1-1 provides a summary of the steps identified in the process.

SUMMARY-NASF COMMUNITY WILDFIRE PROTECTION PLAN
Step 1: Convene Decisionmakers
Step 2: Involve Federal Agencies
Step 3: Engage Interested Parties
Step 4: Establish a Community Base Map
Step 5: Develop a Community Risk Assessment
Step 6: Establish Community Priorities and Recommendations
Step 7: Develop an Action Plan and Assessment Strategy
Step 8: Finalize Community Wildfire Protection Plan

Figure 1-1 NASF Model-Community Wildfire Protection Plan

A complete copy of the NASF framework is included in Section 12.2.1 (*Reference Documents and Maps).*

Based on member agency requests, the following additional specific outcomes or products were requested and will be developed subsequent to CWPP completion.

- Develop an overall county evacuation planning process including local community plans and routes. Develop an update framework to keep plans current.
- Identify public education and awareness opportunities, particularly relating to unprotected areas.

It is intended that the Crook County CWPP be visualized as a county-wide, strategic assessment of the risks, hazards, and mitigation and prevention opportunities associated with wildfire in our communities. While the CWPP should not be confused with jurisdictional agency operational response plans and other project-specific treatment plans, it is intended to be coordinated with and complementary to those other various levels of planning. Figure 1-2 identifies some of those planning processes and illustrates the focus and level of detail of each.

Figure 1-2 Crook County Wildland Fire Planning

CROOK COUNTY WILDFIRE PLANNING and RESPONSE

March 2005

DESCRIPTION: Today, Central Oregon communities are actively eng aged in prevention, mitigation and response planning for wildfires. The following profile briefly documents each plan, i ts purpose, relationship to comprehensive planning, and responsi ble entities.

General ↕ Specific

ANALOGY	SCOPE	PLAN	FOCUS	RESPONSIBLE
Statutes Legislation	Crook County	**Crook County Natural Hazards Mitigation Plan – Wildfire Chapter (NHMP)**	*Mitigation* – Broad/General Focus Priority matrix sorted by qualitative descriptors	FEMA
Administrative Rules Policy Directives	Individual community areas & infrastructure Crook County	**Crook County Community Wildfire Protection Plan (CWPP)**	*Prevention/Mitigation* – Risk/vulnerability assessments, prioritization, gap analysis	Healthy Forest Rest. Act
Standard Operating Procedures	Region Jurisdictional and Joint Response Project Planning	**Jurisdictional/Operational Agency Response Plans –**Individual jurisdictions and broad scale multi-agency response under C.O. Cooperative Wildland Fire Agreement -Agency-specific treatment project planning requirements	*Mitigation*-ODF Interface Fire Protection Act-SB360 *Response* - Structure/Wildfire mutual aid plans, procedures. Wildland agencies joint dispatch plan	Federal, State, Local Govt. (USFS, BLM, ODF, RFPD)
Mobilizes private land mitigation	Private property	**Individual Land Owner Plans** Individual stewardship and responsibility for fuel mitigation, defensible space and family preparedness	*Prevention, Mitigation* – Planning and action vary	Self imposed-some state and local mandates

Crook County Community Wildfire Prot. Plan

1.4 The Wildland-Urban-Interface in Crook County

Another of the primary purposes of the CWPP process is to establish a localized definition and boundary for the wildland-urban interface.[2]

A working group reviewed and analyzed the following parameters to identify wildland-urban interface (WUI) boundary recommendations to the CWPP Committee. The following were considerations in establishing and defining the WUI:

- Anticipated and historic fire behavior (fuels, topography, weather) and direction of spread.
- Location of current and near-term planned communities.
- Location of current and anticipated transportation infrastructure, including major highway routes leading to and from the county, current and planned access routes in support of evacuation and ingress by emergency responders, and routes providing access to the more remote portions of the county.
- All other critical infrastructure within the county including, but not limited to the following:
    - ✓ Electronic sites supporting response agency, commercial and aviation communications.
    - ✓ Commercial electrical and telephone (land-based and cellular) service systems.
    - ✓ Emergency support facilities or facilities that could be used by virtue of their location in support of emergency response and mitigation action such as fire stations, schools, hospital and other medical facilities, other non-fire agency facilities, community halls, churches, airports and water sources.
    - ✓ Businesses and associated support infrastructure.

The WUI boundaries are displayed on the large maps in each of assessment area sections of the plan and on the county-wide maps that display the risk assessment results.

2.0 Crook County Community Profile

As is the case with much of central Oregon, Crook County is experiencing a period of rapid growth. Between April, 2000 and July, 2004, Crook County experienced an 11.7% population increase to 21, 424, the second fastest growing county in Oregon.[3]

There has been a corresponding growth in residential development, within the urban growth boundary, rural areas and in portions of the county traditionally occupied by natural vegetation. This trend is expanding Crook County's wildland-urban interface, exposing more residents to the potential impact of wildland fire.

2.1 Geography and Environment

Crook County is located in the geographical center of Oregon. Crook County's western and southern boundaries are located at about 3000 feet elevation and are characterized as "high desert" dominated by Western Juniper and a variety of sagebrush and grass species. These areas receive an average of 8 to 10 inches of precipitation annually. Elevation gradually increases to about 6000 feet as the terrain becomes more broken in the northern and eastern portions of the county which are part of the Ochoco Mountains. As the precipitation pattern and elevation increases, vegetation types also change with a transition from the high desert to a dry-forest ecotype dominated by Ponderosa pine and interior Douglas-fir. Lodgepole pine, western larch and white fir are also common on north slopes and higher elevations.

Most of the wildland-urban interface (WUI) areas of the county occur in sites dominated by either Juniper/sage/grass or Ponderosa pine/dry fir.

The impact of the rain shadow effect of the Cascade Mountains is the driving force that shapes the Central Oregon high desert and is readily apparent in the western and southern portions of the county. The increasing elevation of the Ochoco Mountains provides an additional lifting effect on the air mass as weather events move across the county and can result in increased precipitation. For example, Prineville averages about 10.5 inches of annual precipitation while Ochoco Ranger Station in the foothills of the western edge of the Ochoco range receives about 17 inches per year.[4]

The Cascades also contribute to gusty, turbulent, dry cold front passage that has historically contributed to wildland fire rates of spread and spotting in many areas of the county.

Figure 2-1 below, illustrates Crook County precipitation patterns, the rain shadow effect from the Cascades and the precipitation effect of the higher elevation Ochoco Mountains.[5]

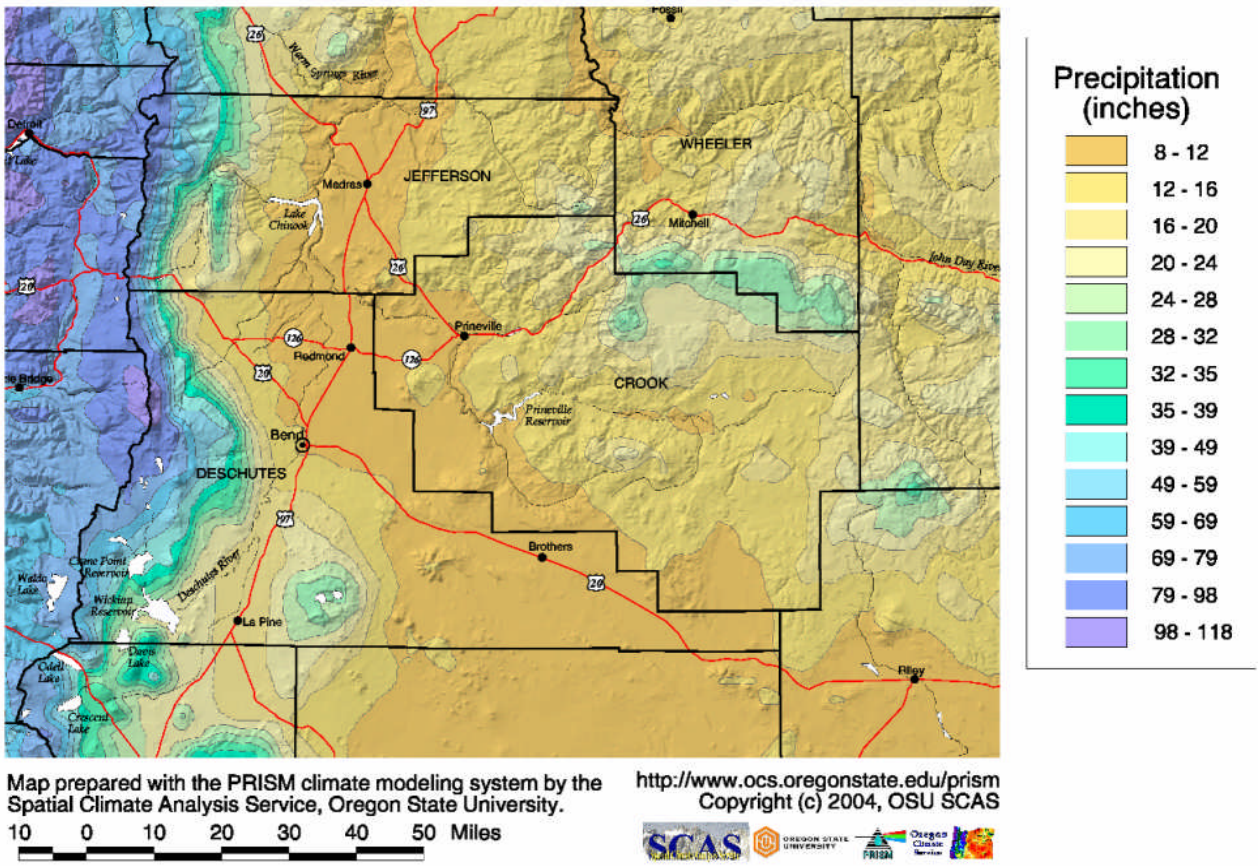


Figure 2-1 Central Oregon Annual Average Precipitation Map (1961-1990)[6]

2.2 Communities and Critical Infrastructure

The Healthy Forests Restoration Act (HFRA) requires that as communities develop Community Wildfire Plans (CCWP) the focus be placed on fire-safety considerations of both communities and critical infrastructure. Traditionally, most concentrations of community development in the county were located in valley areas, near water and grazing for livestock. Over the last two decades, development has moved outward into areas of drier vegetation, further from main roads and with more wide-spread utility systems to support residential development.

As a result, the analysis of overall community resilience to the destructive effects of wild fire must address not only actual fire threat to residences, but also the impacts of fire on utilities including electrical service, telephone and water systems and communications systems used by emergency personnel. Road systems must be adequate to accommodate both residential evacuation and ingress for emergency responders. Hazardous vegetation must be treated not only around homes, but along travel routes. Travel routes must not only be adequate for effective two-way travel, but must provide enough extra width to accommodate blockage from motor vehicle breakdowns and

collisions yet still remain functional to support fire-driven evacuation of local residents and ingress for responding emergency responders.

As initiatives are identified to expand the resiliency of Crook County's communities, hazardous fuel treatments and standards for adequate access infrastructure must be applicable for retroactive implementation in existing development and incorporated into the development planning for areas of new growth.

Communities identified initially in the planning process included developed areas associated with the following:

- City of Prineville
- Powell Butte
- Paulina
- Rager Ranger Station
- Ochoco Reservoir
- Mill Creek
- Marks Creek
- McKay Creek
- Ochoco West
- Prineville Reservoir
- Juniper Acres

Additional developed areas are identified within each of the Risk Assessment Area subsections of Section 4.0. Likewise components of critical infrastructure are identified within each of the Assessment Areas and subsequently summarized in Section 10.0 *Appendix: Summary of Critical Infrastructure.*

2.3 Fire Protection Agencies within Crook County

Portions of Crook County receive fire protection from one of the following:

- Crook County Fire and Rescue (CCRFPD#1)
- Oregon Department of Forestry (ODF-Central Oregon District)
- Ochoco National Forest*
- Bureau of Land Management-Prineville District*

  * The fire management functions of the Ochoco N.F. and Prineville BLM have been merged with that of the Deschutes N.F under Central Oregon Fire Management Services (COFMS).

Crook County Fire and Rescue (CCF&R) provides responses to structural and natural vegetation fires within Crook County Rural Fire Protection District No. 1 (CCRFPD#1).

Oregon Department of Forestry (ODF) provides wildland fire response for fires burning on or threatening private forestlands paying Forest Patrol Assessment within the ODF-Central Oregon District. There are some wildland-urban interface areas that receive dual

protection from ODF and CCF&R because they are located within the rural fire protection district and are also classified as forest land within the ODF district.

Central Oregon Fire Management Services (COFMS) provides wildland fire response for fires burning on, or threatening, all U.S. Forest Service and Bureau of Land Management managed lands within the county.

Figure 2-2 below illustrates the jurisdictional areas of these various fire organizations

In addition, all of the above-listed agencies are signatory to the Central Oregon Cooperative Wildland Fire Agreement that provides for mutual aid wildland fire support among all of the wildland and structural agencies and departments in Crook, Deschutes and Jefferson counties. The multiple agency structural/wildland fire response in central Oregon has been recognized as one of the most efficient and best coordinated in the state. A more-detailed review of the development and capacity of this response system is available in the *Crook County Natural Hazards Mitigation Plan, Section 7: Wildfire.*[7]

2.4 Unprotected Lands

There are extensive areas of private land within the county that receive no wildland fire protection, no structural fire protection or that receive neither.

Crook County Fire and Rescue's response area is limited to CCRPFD#1 and a few facilities outside of the Rural Fire Protection District on contract. The wildland fire agencies (ODF and COFMS) do not provide structural fire response.

Please refer to Figure 2-2. Areas colored white, i.e. not receiving protection from any of the above-referenced agencies, are unprotected and cover 531,648 acres, about 28% of the county.[8] This map is current as of March, 2005. As additional areas are annexed into the RFPD, the picture may change in the western portion of the county. With the exception of specific developments under contract with CCF&R, generally areas shown as outside of any of the fire jurisdictions receive neither structural nor wildland fire response.

The unprotected lands issue has remained unresolved legislatively for more than a decade. In early 2004, as an outcome of an ODF agency-wide protection review, the "Fire Protection Coverage Working Group" was formed with leadership provided by representatives of the Oregon State Fire Marshal's Office and Oregon Department of Forestry. The working group membership reflected a broad representation of interested parties with the intent of exploring opportunities to address the unprotected lands issue in Oregon. One of the short-term recommendations of the working group was that this issue be incorporated into the Community Wildfire Protection planning process. Options for development opportunities for fire response capacity and increased resiliency to the effects of wildland fire in the unprotected area of the county are discussed further in more detail in Section 6.0: *Unprotected Lands and Communities*.

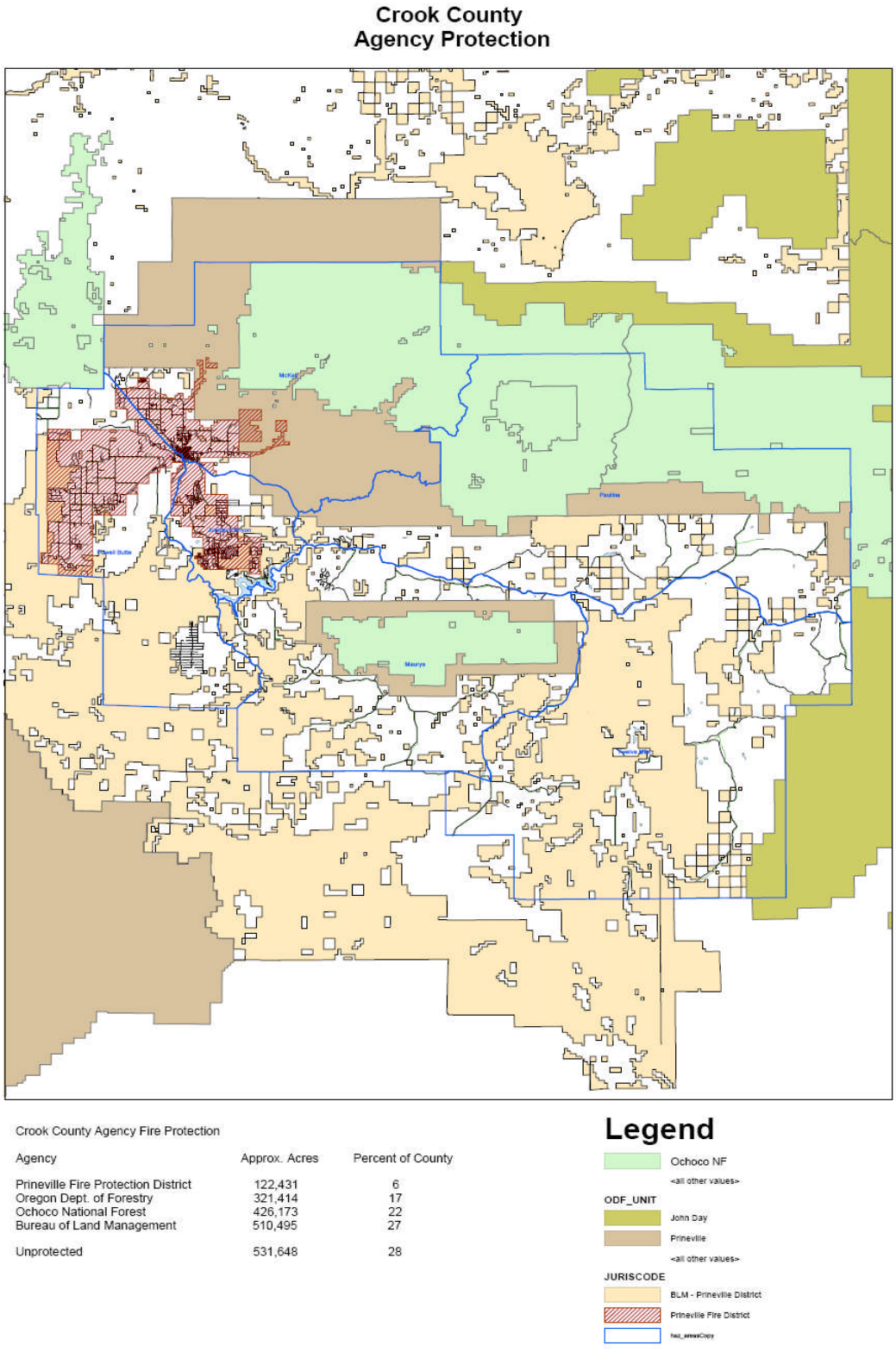


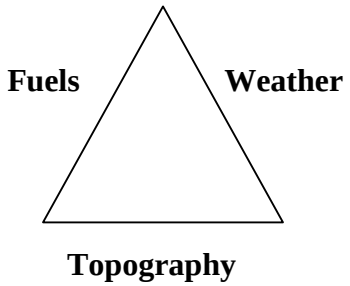
Figure 2-2 – Crook County Fire Agency Protection Districts. Areas shown in white receive no fire protection.

3.0 The Crook County Fire Environment

Most Crook County ecosystems, particularly those at low and mid elevations adjacent to most areas of community development, are described as "fire-adapted". Vegetative ecosystems in these areas are dependent on relatively short fire return intervals to remain healthy and sustainable over time. Over the last 100-plus years, fire suppression and forest management activities have altered this natural fire return interval. This has created tree stand composition species shifts and increases in stand density and forest fuels. This change has increased susceptibility of the forest to insects, diseases and to wildfire.[9]

3.1 Fire Behavior

Wildland fire behavior is comprised of three components: fuels, topography and weather. While each of these three factors collectively define fire behavior, their interactive dynamics offer insight for effective mitigation approaches.



The fire behavior triangle helps demonstrate the relationship between these three parameters.

The **fuels** aspect of fire behavior takes into consideration loading, size and shape, compactness, horizontal and vertical continuity and chemical composition. Each of these parameters offers opportunities for effective hazardous fuels treatment mitigation actions. Due to the dry nature of most wildland-urban interface areas of Crook County, many of the brush species contain a significant amount of volatile, highly flammable oils and resins (e.g. bitterbrush). These relatively low profile fuels can generate very intense, high flame length fire behavior.

Topography takes into account elevation and slope position, and steepness, aspect and shape of the country. Crook County's west boundary is located at about 3000 feet in an area of high desert vegetation. Elevation generally increases, up to about 6000 feet, as the terrain becomes more broken in the northern and eastern portions of the county, which are part of the Ochoco Mountains. The rain shadow effect of the Cascades limits precipitation most strongly in the lower western and southern parts of the county and to a progressively lesser extent in transition to the north and east.

As described in Section 2.1, central Oregon's general **weather** pattern is strongly affected by the Cascade Mountains. Additionally, local topography and daily heating and cooling patterns generate local wind and relative humidity effects that drive local incident-specific fire behavior.

3.2 Crook County Fire Regimes[10]

Recently the Ochoco National Forest and Prineville BLM District completed the "Central Oregon Fire Management Plan 2003" (FMP). Included in that plan is an extensive Fire Regime and Condition Class analysis of the vegetation within Crook County. The FMP analysis is broken out for each of the sub-basin watersheds.

Because of the wide variability in vegetative types in Central Oregon, the fire regime/condition class approach was selected as the best method to describe the range of conditions present on the ground. The approach is described in "Protecting People and Sustaining Resources in Fire-Adapted Ecosystems: A Cohesive Strategy, The Forest Service Management Response to the General Accounting Office Report GAO/RCED-99-65, April 13, 2000."

Figure 3-1, transcribed verbatim from the source document, describes the concept and the fire regime-condition class relationships.

The wildland vegetation most closely associated with wildland-urban interface areas of the county are generally dominated by Fire Regime 1 (dry Ponderosa pine, inland Douglas-fire, etc) and Fire Regime 2 (grasslands, sagebrush, Western Juniper). The overall objective of vegetative management action is to move as much of the wildland-urban interface currently in Condition Class 2 and 3 back to Condition Class 1 status. It is important to note that appropriate landscape treatment options and considerations vary substantially between those areas characterized as Fire Regime 1 and Fire Regime 2 within the county. Treatment actions appropriate for Fire Regime 1 have the potential to worsen fire behavior in Fire Regime 2 areas by allowing invasion of highly flammable grass species such as cheatgrass.

County-wide fire regime and condition class maps are included in Section 12: *Appendix: Reference Documents and Maps.*

Figure 3-1 Fire Regime and Condition Class Description

Historic Natural Fire Regime Group	Condition Class I	Condition Class 2	Condition Class 3
Fire Regime I • 0-35 yr return interval • low severity *Dry forest types:* • Ponderosa pine, interior Douglas-fir, pine-oak woodlands, and very dry grand fir type • Large stand-replacing events can occur under certain weather conditions but are extremely rare events	Surface fuel models 2,6,8,9 Expected 90th % flame length approx 2 feet Non-lethal fire effects ladder fuels infrequent Low crown fire potential Low expected smoke production Canopy closure <55% No missed disturbance cycles	Surface fuel models 2,6,9,10,11 Expected 90th % flame length 4 to 8 ft Mixed fire effects (between 20% and 80% mortality to dominants) common ladder fuels Moderate to high crown fire potential Smoke production	Surface fuel models 6,10,11,12,13 Expected 90th % flame length>8 ft Lethal fire effects Ladder fuels common to abundant Crown fire potential very high to extreme High smoke production Disturbance deficit is

		greater than historic expected level Canopy closure 55% to 70% Missed one or two disturbances	evident in species composition, stand vigor Missed two or more disturbances
Fire Regime II • 0-35 yr return interval • lethal severity *Rangeland types:* • grasslands and savannahs, mesic sagebrush and mountain shrub.	Surface fuel models 1,2, 3, 5, 6, 14-21 custom Surface vegetative cover 50%+ or near site potential Invasive juniper < 4ft	Surface fuel models 1, 14, 18, 21 Surface vegetative cover < 50% or somewhat below site potential Invasive juniper 4ft + tall	Surface fuel models 14,21 Surface vegetative cover < 25% or dramatically below site potential Non-native species trending towards dominance
Fire Regime III • 35-100 yr return • mixed severity *Mixed conifer types:* • mesic Douglas-fir, grand fir, western hemlock, western redcedar • heterogeneous landscape vegetative patterns	Surface fuel models 2,6,8,9 Crown fire potential low Low potential for non-native plant invasion Infrequent ladder fuels and high crown base heights (6 ft +)	Surface fuel models 2,6,9,10,11 Crown fire potential moderate to high Non-native species present and trending toward dominance Typical successional development unlikely due to past high grade cutting/insect & disease impacts/type conversion to shrub dominance	Surface fuel models 6,10,11,12,13 Crown fire potential very high to extreme Non-native species trending towards dominance Typical successional development unlikely due to past high grade cutting/insect & disease impacts/type conversion to shrub dominance
Fire Regime IV • 35-100+ yr interval • stand replacement severity *Lodgepole, dry shrub:* • Seral communities that arise from infrequent stand replacement fires	Surface fuel models 2,6,8,9 All crown fire potential categories Low potential for non-native plant invasion	Surface fuel models 2,6,9,10,11 All crown fire potential categories Non-native species present and trending toward dominance	Surface fuel models 6,10,11,12,13 All crown fire potential categories Non-native species trending towards dominance
Fire Regime V • >200 yr return • stand replacement *Rarely burns, if ever*	Most fire regime V stands are within historic ranges, class 1	Undefined	Significant soil loss Vegetative type conversion (weed dominance)

4.0 Risk Assessment Areas and Analysis Process

In addition to meeting the assessment needs for the CWPP planning, one of the objectives of the planning process was to facilitate any near-term pending prevention or mitigation initiatives. Use of the ODF Risk Assessment process formatted the assessment data to be compatible with implementation of the "Oregon Forestland-Urban Interface Fire Protection Act" by Oregon Department of Forestry scheduled to begin in Crook County in May, 2005.

4.1 Identification of Risk Assessment Areas within Crook County

To facilitate a more manageable analysis process, the county was broken up into six geographical blocks referred to as Risk Assessment Areas. Each of these blocks contains multiple communities and multiple components of critical infrastructure.

1. Powell Butte
2. McKay
3. Juniper Canyon
4. Maurys
5. Paulina
6. Twelve Mile

Analysis summary data, maps, priorities and recommendations, mitigation recommendations and action plan items are identified for each risk assessment area.

4.2 The Analysis Process

Early in the development of the plan, an inventory of existing natural resource data was developed from all participating agencies. The analysis process then proceeded in a series of progressive steps.

1. Review, screen and consolidate appropriate GIS natural resource data layers from land management agencies. Produce county base maps.
2. Screen GIS data layers through the ODF assessment model, *Identifying and Assessment of Communities at Risk in Oregon.* Incorporate fire occurrence data from all fire service agency records and transportation infrastructure data. Identify unique operational and tactical challenges based on topography and transportation infrastructure limitations.
3. Identify developed community areas throughout the county.
4. Review potential wildfire-driven special needs limitations and opportunities.
5. Develop draft recommendations for wildland-urban interface (WUI) boundaries.
6. Incorporate input from community meetings and presentations.
7. Identify mitigation priorities and recommendations for each Risk Assessment Area.
8. Finalize WUI boundary, mitigation and priority recommendations.
9. Finalize action plan and further assessment needs.

4.3 County-wide Assessment Results

Each of the County's geographical assessment areas was screened through the ODF assessment model. This process resulted in conditions labeled as "high, moderate or low" for each of the categories shown below for each of the assessment areas:

- ***Risk***-What is the likelihood of a fire occurring? (Fire occurrence per 1000 acres per 10 years)
- ***Hazard***-What is the resistance to control once a wildfire starts, including weather, topography and fuels?
- ***Protection Capabilities***-What are the risks associated with wildfire protection capabilities, including capacity and resources to undertake fire prevention measures?
- ***Values Protected***-What are the human and economic values associated with communities or landscapes? *This is based on structural/population density and the presence of critical infrastructure with an assessment area, not assessed valuation.*
- ***Structural Vulnerability***-What is the likelihood that structures will be destroyed by wildfire? *Note: All assessment areas were given a "high" listing for this standard until further field assessment can be completed.*

The results are listed in two formats:

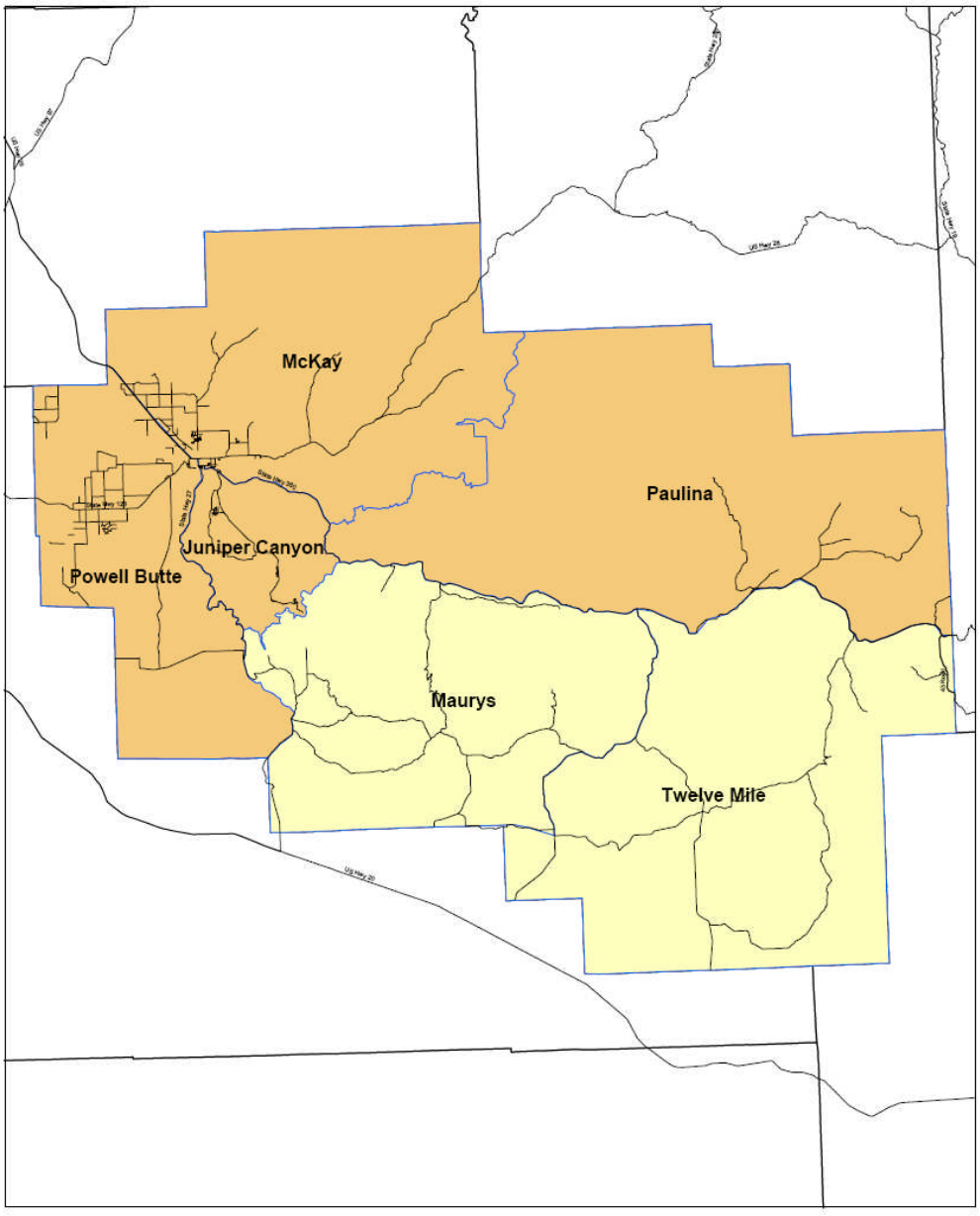
- **Section 4.3.1**-County wide maps, identifying each assessment area with high, moderate or low adjective class for each assessment category.
- **Section 4.3.2**-Tabular results. *Located in Section 12.2.2*. This section contains some additional detail of analysis results and numerical value assignment of the assessment system.

4.3.1 Assessment Results-Countywide Maps (please see next pages)

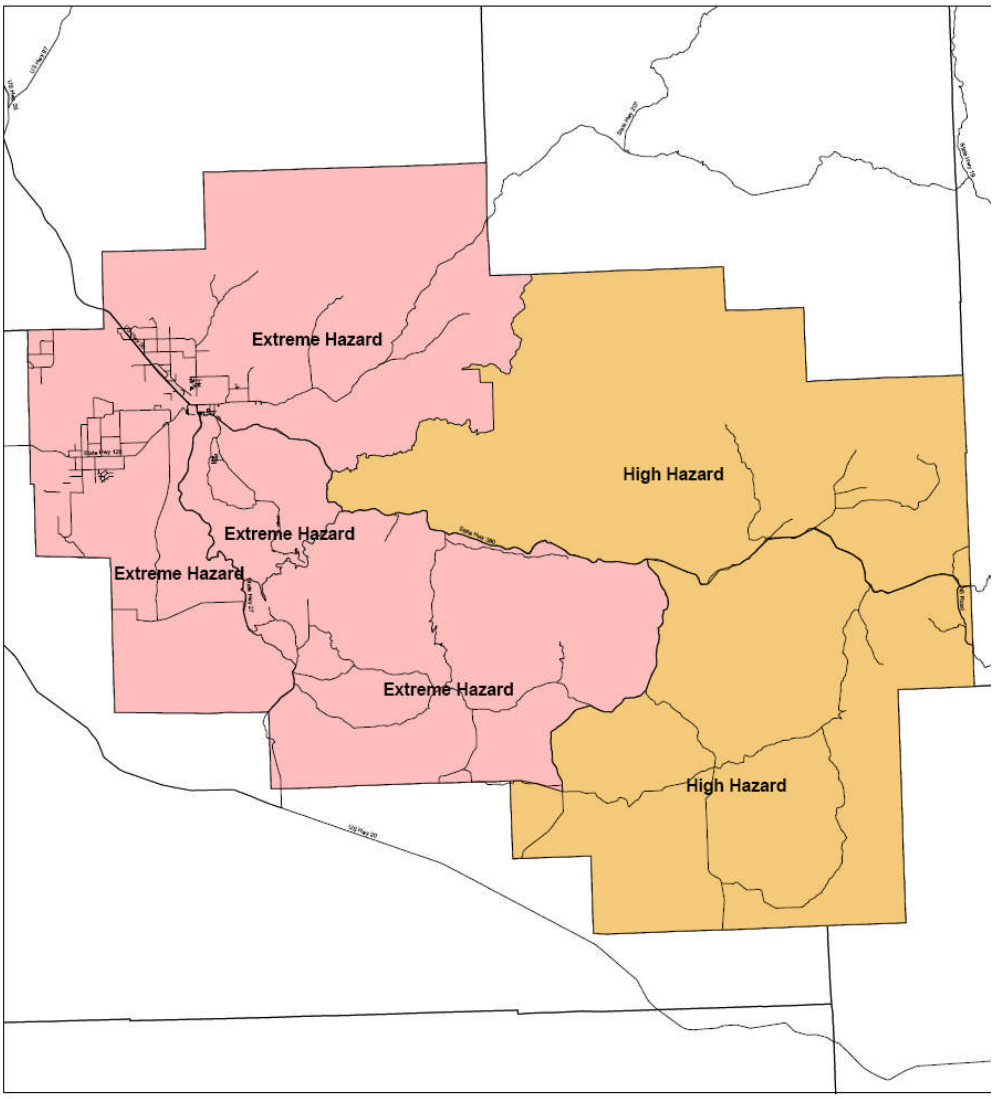
- **Risk Rating Summary**
- **Hazard Rating Summary**
- **Protection Capability Rating**
- **Values Protected Rating**
- **Wildland-Urban Interface and Critical Infrastructure**
  (Small Format-Please see Section 12.3 Reference Maps for large format version)
- **Subdivision/development area Rating**
  (Small Format-Please see Section 12.3 Reference Maps for large format version)

4.3.2 Assessment Results-Tabular Data-See Section 12.2.2.

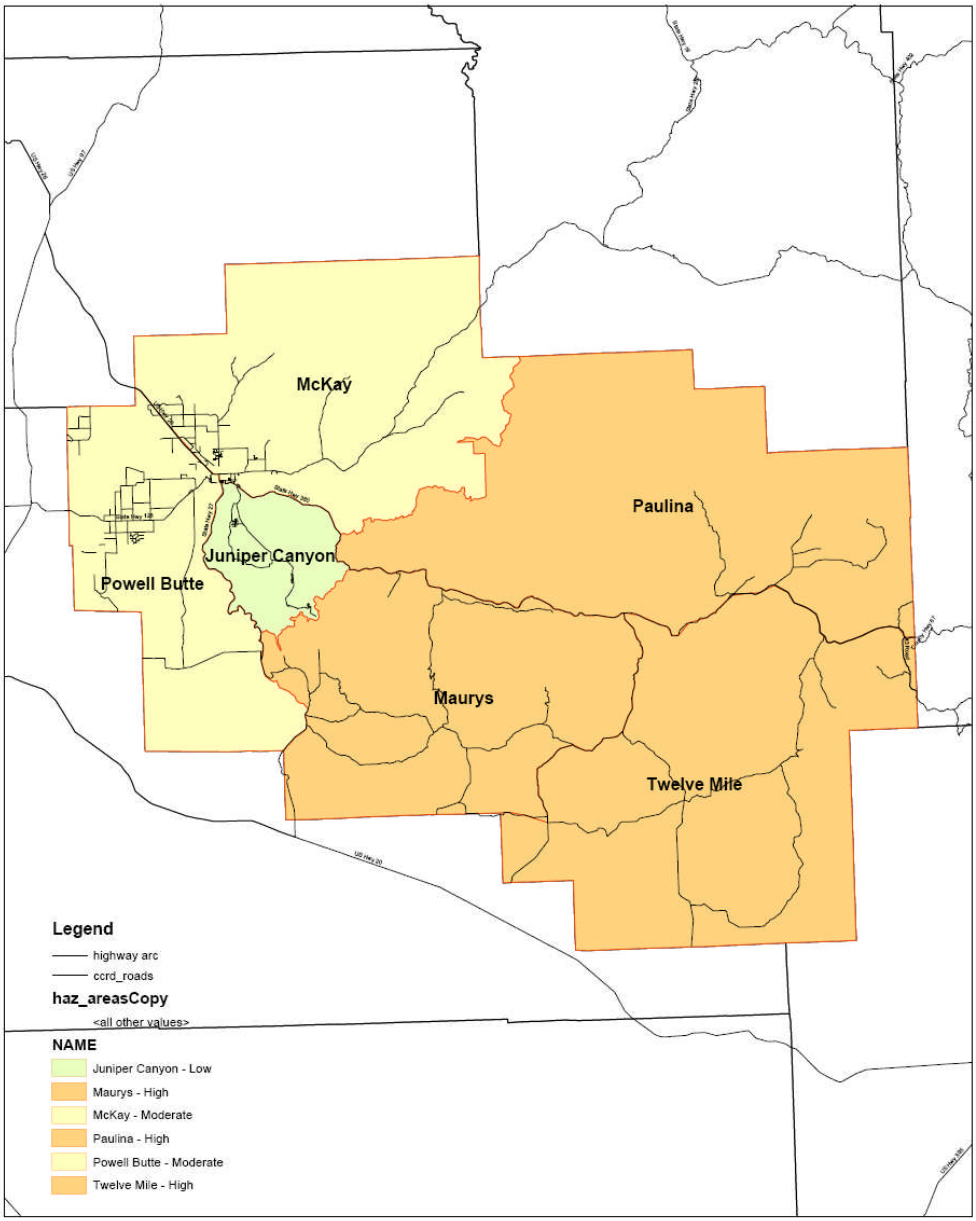
Crook County Fire Protection Plan
Hazard Areas - Risk Rating Summary



Crook County Fire Protection Plan
Hazard Areas - Hazard Rating Summary



Crook County Fire Protection Plan
Hazard Areas
Protection Capability Rating

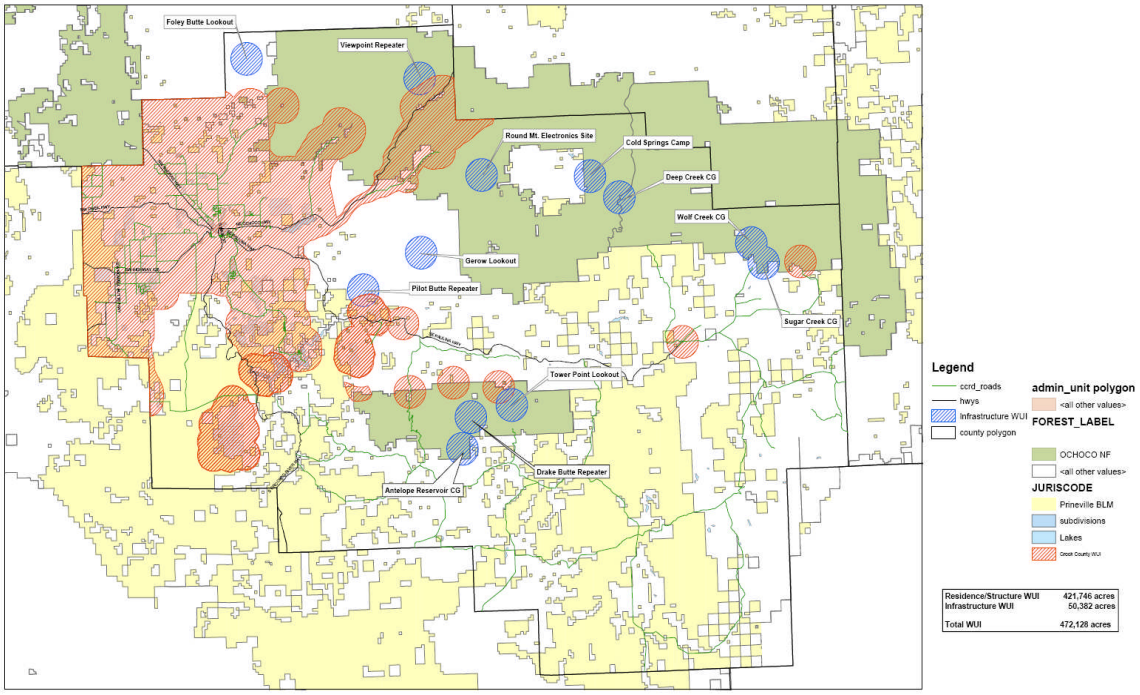


Protection Capability Rating

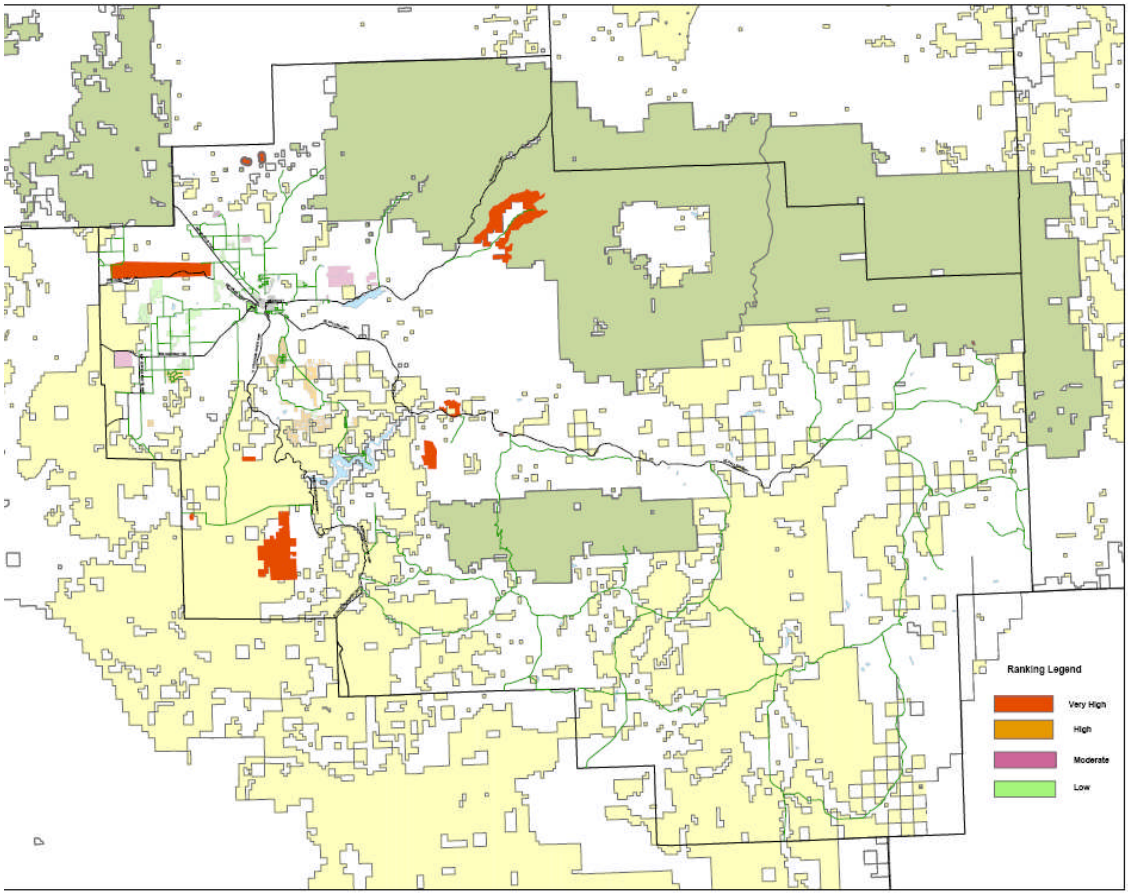
Area	Description of Protection Capability	Rating*
Juniper Canyon	Structural response <10 minutes, primarily agency efforts for community preparedness	Low
Maurys	No structural protection and wildland response >20 minutes, community preparedness at low level	High
McKay	Structural response <10 minutes for areas within CCRFPD, no structural protection and wildland response <20 minutes for areas outside CCRFPD. Primarily agency efforts for community preparedness.	Moderate
Paulina	No structural protection, wildland response <20 minutes for Rager and Paulina, >20 minutes for balance of area. Primarily agency efforts for community preparedness.	High
Powell Butte	Structural response < 10 minutes for areas within CCRFPD, no structural response and wildland response >20 minutes the balance of the area. For most of the area community preparedness is at a low level.	Moderate
Twelve Mile	No structural protection and wildland response >20 minutes, Community preparedness at low level	High

Rating: Areas where the protection capability is high (i.e. structural fire fighting resources are able to respond in < 10 minutes) receive a rating of Low. A moderate or high rating indicates either longer response time or no fire protection resources are available.

Crook County
Wildland Urban Interface (WUI)



Crook County
Subdivision Ranking



4.4 Juniper Canyon Risk Assessment Area

Juniper Canyon assessment area is located west of the Crooked River from Prineville to Bowman Dam; north of Prineville Reservoir from Bowman Dam and the Crooked River to the Paulina Highway; and west of the Paulina Highway back to Prineville. The unit includes fairly dense residential development in the Juniper Canyon area, but is essentially wildland in nature to the east and south of currently developed areas. Significant additional development is being planned to the north of the reservoir. Areas of extensive rimrock are present along the Crooked River and the reservoir.

Figure 4-6 Juniper Canyon Rating Summary

CATEGORY	SCORE	ADJECTIVE RATING
Risk (fires/1000 ac./10 years)	40	High
Hazard (fuels, topography, weather)	72	Extreme
Protection Capabilities (high score=high risk/low protection capability)	2	Low
Values Protected (structural density and critical infrastructure)	35	High
Structural Vulnerability* (*rating assigned until otherwise verified)		High

Communities within the Juniper Canyon Assessment Area

Communities within the area include, but are not limited to the following:

- Highlands Subdivision
- High Desert Estates
- Conifer Heights
- Ironwood Estates
- Ochoco Land and Livestock
- Dry Creek Air Park
- Lost Lake Estates
- Hood's Subdivision
- Chuckwagon Acres
- Idleway Acres
- Prineville Lake Acres
- Lakeview Cove
- Juniper Hills
- Prineville Reservoir State Park
- Jasper Knolls
- Botero Park Subdivision

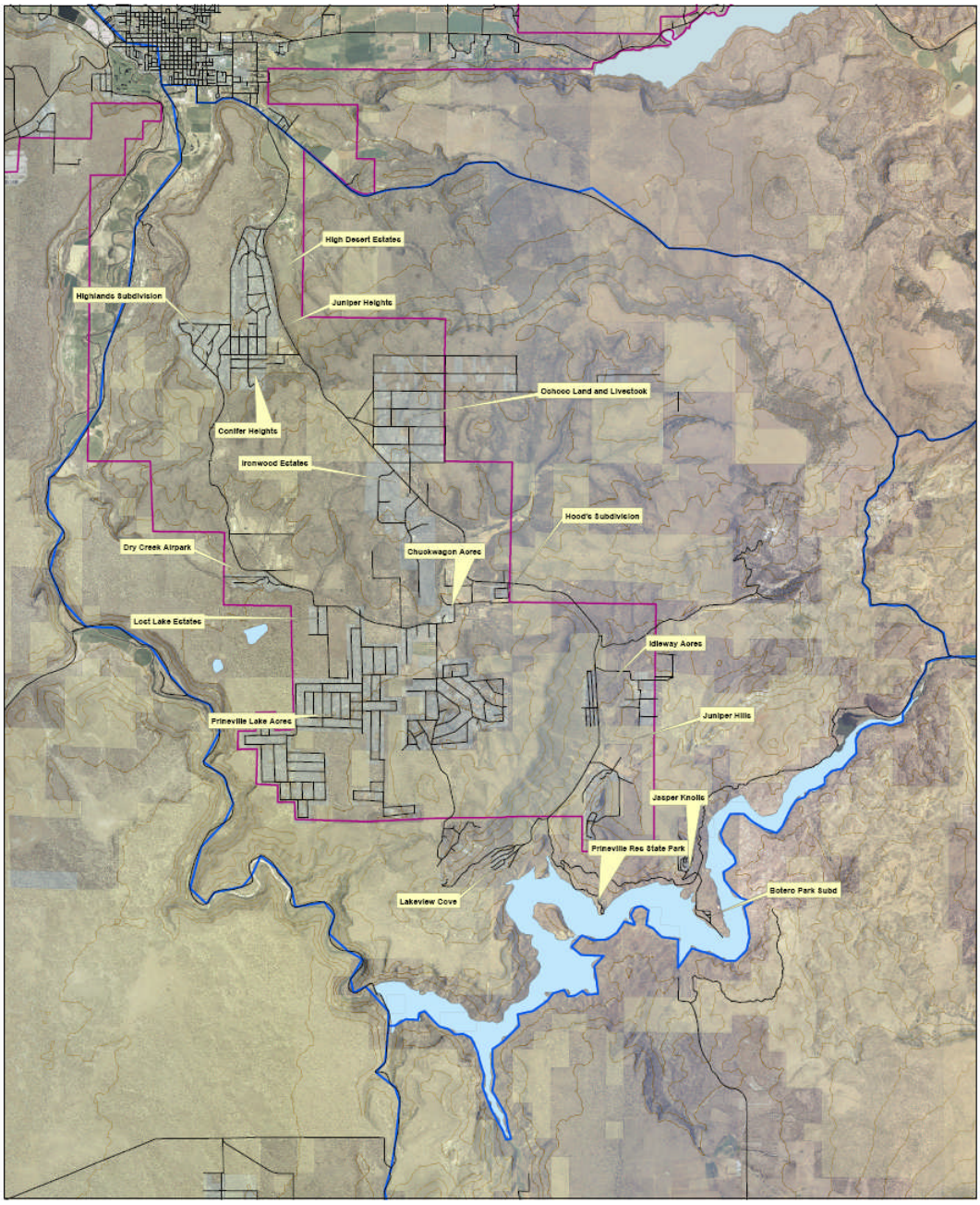
Critical Infrastructure within the Juniper Canyon Assessment Area

1. Transportation/Road System: The transportation infrastructure was judged to be the most at-risk item within the analysis unit. Juniper Canyon Road provides the only major access option. In addition to lack of other travel choices, this route would be further compromised by the presence of significant fuel loading and constricted canyon walls/chimney effect on fire behavior. Establishment of a county standard requiring development of multiple alternate access routes, for both existing and newly-planned communities should be of the highest priority. As identified during the analysis process, a large scale fire-related evacuation would generate heavy traffic that would affect the safety of the public and responding fire fighting resources.

   In addition to Juniper Canyon Road, Davis Loop and all other primary access routes linking to development areas should be high priority for access corridor fuels treatment.

2. Utilities-Electrical: The fuel type in the area potentially provides an adequate heat source to compromise electrical power lines throughout the unit. The electrical substation at the intersection of Juniper Canyon Road and Upper Davis Loop is of significant importance. Hazardous fuels reduction adjacent to all of these assets is appropriate.
3. Recreational Facilities: Prineville Reservoir. These facilities (state and county parks and private campground/resort) are utilized by significant numbers of Crook County residents and visitors, particularly during the summer. Ongoing assessment of hazardous fuels treatment opportunities and development of shelter-in-place contingency plans will be important to wildfire preparedness and increased public safety resiliency for people using these facilities.
4. Emergency Facilities: Crook County Fire and Rescue Substation. Plans are currently underway to install an emergency power generator at that facility. In addition to its fire station function, during a large scale fire event, it may also be needed as an Incident Command Post, medical aid station or medical evacuation staging site.
5. Dry Creek Air Park: Airport. In the event of a large scale wildland fire, fire fighting helicopters may need to use this facility as a heli-base. The need for additional planning for this type of use should be assessed.

Crook County
Juniper Canyon Area



Legend

- Roadmap
- Haz_areas
- Crook Co. Fire Protection District
- <all other values>

JURISCODE

- Prineville BLM
- Ochoco NF

pfd100kutm

- <all other values>

ODF_UNIT

- ODF John Day
- ODF Prineville

subdivisions

4.5 Powell Butte Risk Assessment Area

The Powell Butte assessment area includes the portions of Crook County to the west of Highway 26 beginning at the Jefferson County line and extending to Prineville, then south on Highway 27 extending to the Deschutes County line. The unit contains a substantial number of developed areas, agricultural land in the vicinity the Powell Butte community and an extensive amount of grazing and wildland, both private and public.

The unit is traversed by highways U.S. 26 and Oregon 126. Both of these routes are heavily traveled by residents, visitors and commercial traffic and provide the only major east-west travel options across the county.

Figure 4-7 Powell Butte Rating Summary

CATEGORY	SCORE	ADJECTIVE RATING
Risk (fires/1000 ac./10 years)	40	High
Hazard (fuels, topography, weather)	67	Extreme
Protection Capabilities (high score=high risk/low protection capability)	15	Moderate
Values Protected (structural density and critical infrastructure)	27	Moderate
Structural Ignitability* (rating assigned until otherwise verified)		High

Communities with the Powell Butte Assessment Area

Identified communities within the unit include, but are not limited to the following:

- Prineville, western edge including the Baldwin Road Industrial Park, Prineville-Crook County Airport and Les Schwab Warehouse.
- Powell Butte
- Prineville Ranch Subdivision
- Twin Lakes Ranch
- Prineville Ranch Subdivision
- Westwood
- Westridge Estates
- Old West Road Subdivision
- West Powell Butte Estates
- Red Cloud Subdivision
- Mountain View Estates
- Steelhammer Ranch
- Sinclair-Davis Tract 2
- Carrero-Cowan

- Powell Butte View Estates
- River Lake Ranches
- Juniper Acres
- Alfalfa-eastern portion including Willard Estates

Critical Infrastructure within the Powell Butte Assessment Area

1. Transportation/Road System: Highways 26 and 126 provide for critical transportation across the county and to/from adjoining counties to the east. The recently completed Millican Road bypass provides a direct route from Highway 20 east of Bend, north through Prineville to either Redmond via Hwy 126 or to Madras via Hwy 26.

   The generally mild terrain within the unit allows for a variety of alternative access routes in the agricultural areas and in areas of substantial residential development. With the exception of the Bend-Powell Butte Highway, in the larger blocks of wildland/grazing lands developed travel routes are limited.

2. Utilities-Electrical: This infrastructure is extensive within the unit. The BPA-managed Pacific Northwest/Pacific Southwest transmissions lines cross this area from north to south. Substations and transmission/distribution lines are located throughout developed areas.

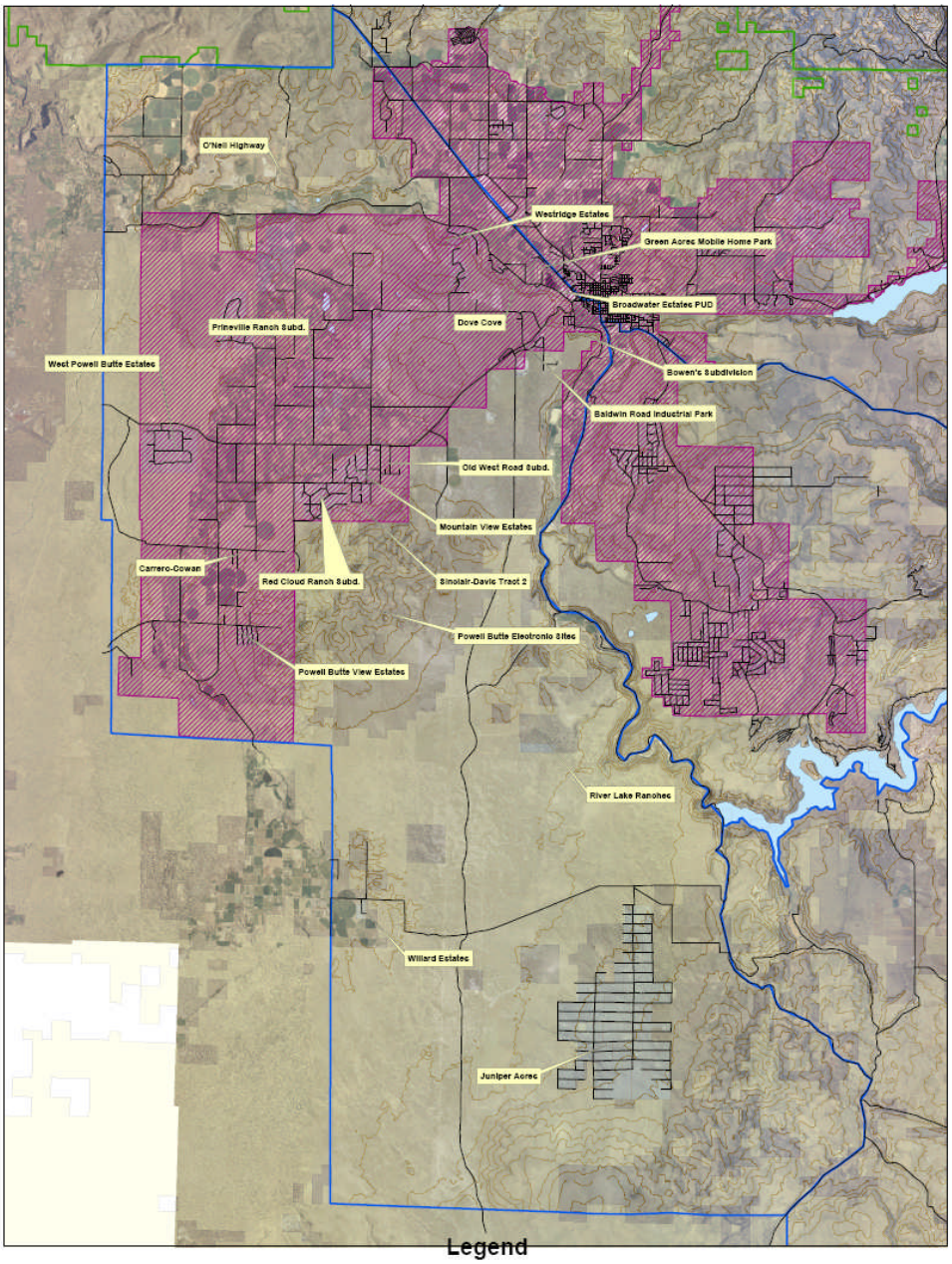
3. Utilities-Other: Telephone, natural gas and water systems are in place to support residential development, the Baldwin Industrial Park, the Prineville-Crook County Airport and the area surrounding the Powell Butte School.

4. School and Emergency Facilities: In addition to the Powell Butte School, Crook County Fire and Rescue has a substation in the Powell Butte community. Plans are currently underway to install an emergency power generator at that facility. In addition to its fire station function, during a large scale fire event, it may also be needed as an Incident Command Post, medical aid station or evacuation staging site. This station is adjacent to agricultural lands where wildland fuels present little risk.

5. The Prineville-Crook County Airport, Central Oregon Interagency Dispatch Center, the National Guard Armory, Les Schwab Tire Warehouse and the Baldwin Industrial Park are clustered on the western edge of the City of Prineville.

6. Campground and Recreational Facilities: The BLM campgrounds along the Crooked River receive large visitor use, particularly during holiday weekends. Evacuation planning should be assessed to address this need.

Crook County
Powell Butte Area



4.6 McKay Risk Assessment Area

The McKay assessment area covers the majority of the northwest portion of the county. It includes the area north and east of Hwy 26 beginning at the Jefferson County line including most of the City of Prineville. The boundary then follows Combs Flat Road (Paulina Hwy) to the break between the Ochoco Creek and Crooked River watersheds; then following the watershed break to the northeast and east to the Ochoco NF boundary; then north to the Ochoco Ranger Station Road near the confluence Ochoco Creek and Wolf Creek; then past the Ranger Station running northeast to the Wheeler County line near Walton Lake. The Wheeler and Jefferson county lines form the northeast and north boundaries back to Highway 26 at the Jefferson County line.

This area includes large expanses of wildland; however this Community Fire Plan will focus on those areas within the wildland-urban interface. The majority of developed areas with more traditional wildland vegetation are either on or adjacent to major travel routes.

The unit includes the majority of the Ochoco Valley agricultural lands, the suburban areas north of Prineville and the community adjacent to Ochoco Reservoir. Reduced levels of hazardous fuels are present in some of the areas closer to the valley floor.

Figure 4-8 McKay Rating Summary

CATEGORY	SCORE	ADJECTIVE RATING
Risk (fires/1000 ac./10 years	40	High
Hazard (fuels, topography, weather)	69	Extreme
Protection Capabilities (high score=high risk/low protection capability)	10	Moderate
Values Protected (structural density and critical infrastructure)	28	Moderate
Structural Vulnerability* (*rating assigned until otherwise verified)		High

Communities within the McKay Assessment Area

- City of Prineville (majority)
- Ochoco West
- Lofton/Turner Creek
- Sunset Hills Subdivision
- Pleasant View Heights
- Meadow Ridge
- Ochoco Reservoir area including Lakeshore Trailer Park, North Shore Estates, Ochoco Lake Lots and the County Park.
- Mill Creek Ranches

- Johnson Creek
- McKay Creek
- Mill Creek area (just south of Wildcat Campground)
- Marks Creek
- Mt Bachelor Academy and Ponderosa Ranch
- Ochoco Ranger Station

Critical Infrastructure within McKay Assessment Area

Most of the urban and suburban areas of Prineville fall into this unit. While much of this area is not considered to be at high risk, many areas are very susceptible to damaging natural vegetation fire due to landscaping choices around homes and inadequate vegetation management on undeveloped lots or in open areas. These areas are particularly vulnerable where un-maintained vegetation covered slopes lead from focal points of human activity (e.g. streets) upslope to residential development. Hazardous fuel mitigation actions in these areas should receive high priority attention

1. Transportation/Road System: The extensive transportation system throughout this unit links to a wide variety of uses. Highway 26 either flanks or travels through the unit from Jefferson County to Wheeler County. The potential for economic and public safety impacts due to fire impingement on this route are substantial as discussed in Section 4.4. McKay Creek Road, Johnson Creek Road, Mill Creek Road and Ochoco Ranger Station Road provide access to developed areas over substantial distances and with more severe terrain and higher levels of vegetative fuel load. Additional secondary side roads and long driveways access many residences.

   Assessment for initial and maintenance-level fuels treatment is needed for all of this transportation infrastructure system.

2. Utilities-Electrical and Telephone: An extensive electrical distribution and telephone infrastructure accesses the residential development within the unit. These systems are generally located along the road systems referenced above. Vegetative assessment and treatment actions taken to protect access routes will confer similar protection to these utilities corridors. Special attention should be placed on right-of-way maintenance of both utility poles and encroachment of trees and limbs. Continuing drought and forest health challenges may increase the number of snags and trees with unsound root systems adjacent to and within R/W corridors. Landowners and land management agencies may have an opportunity to contribute to this maintenance effort by taking appropriate action to remove danger trees adjacent to rights-of-way.

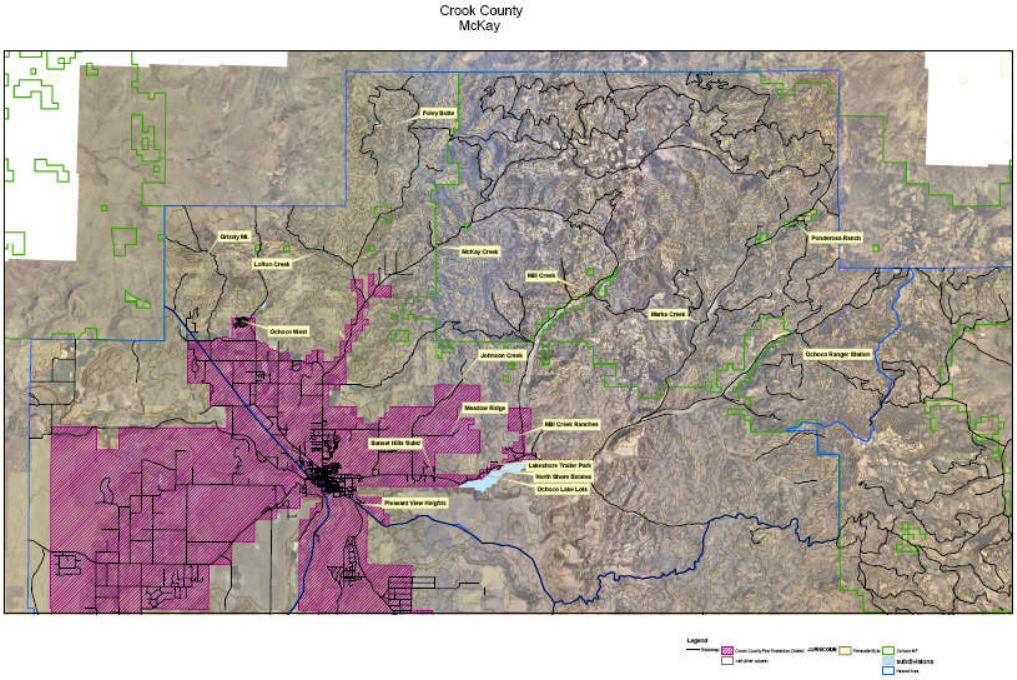
3. Communications Facilities: Communications sites are present throughout the unit serving emergency response agencies, cell-phone facilities and other commercial systems. Hazardous fuel treatment assessment should be a high priority. An extensive inventory of these sites is provided in Section 10.

4. Recreational Facilities: Ochoco Reservoir. Residential development and the County Park at the reservoir receive a significant level of use by local residents and visitors to Crook County. Fuels treatment assessment is of high priority, particularly to the north of the reservoir, including the Highway 26/utilities corridor.

   U.S. Forest Service campgrounds and dispersed camping areas are present on nearly all main roads leading into the forest including:

   - Dispersed sites along Forest Road 33 to Harvey Gap and Wildcat C.G. and along Forest Road 27(McKay Creek) to McKay Saddle.
   - Wildcat Campground on Mill Creek
   - Dispersed sites and Ochoco Divide Campground along Highway 26

5. Emergency Facilities: In addition to those facilities already referenced, Foley Butte Lookout (ODF) provides critical fire detection services to the entire assessment area, but most importantly to the lower Ochoco Valley around Prineville.



4.7 Paulina Risk Assessment Area

The Paulina assessment area is bordered by the McKay and Juniper Canyon assessment areas on the west and northwest and the Paulina Highway on the south. The south boundary continues east along the road toward Rager R.S., then east on the Puitt Road to the junction with Forest Road 58, then east on Road 58 to the Grant County line. The Grant and Wheeler county lines form the northeast and north boundaries back to Walton Lake.

This assessment area is predominately Ochoco N.F. and BLM-managed public land, and large ranches with varying amounts of private timberland. The focus of the assessment and the CWPP will be identified wildland-urban interface around communities and critical at-risk infrastructure.

Figure 4-9 Paulina Rating Summary

CATEGORY	SCORE	ADJECTIVE RATING
Risk (fires/1000 ac./10 years)	40	High
Hazard (fuels, topography, weather)	62	Extreme
Protection Capabilities (high score=high risk/low protection capability)	25	High
Values Protected (structural density and critical infrastructure)	26	Moderate
Structural Ignitability* (*rating assigned until otherwise verified)		High

Communities within the Paulina Assessment Area

Communities within this assessment area are focused along the Paulina Highway to Rager Ranger Station transportation route and include the following:

- Riverside Ranch (north of the Paulina Highway)
- Post (located on the boundary with the Maury assessment area)
- Paulina
- Rager Ranger Station

Critical Infrastructure within the Paulina Assessment Area

1. Transportation/Road System: The Paulina Highway traveling from Prineville east to Post, Paulina and Rager Ranger Station provides the only all weather, year around route to the east end of the county. During the late spring, summer and fall seasons, a variety of alternative travel routes on secondary, gravel and BLM/USFS roads could be utilized for emergency access. During the winter,

these routes should normally be considered unusable due to snow accumulations. Additionally, visitors unfamiliar with these routes would have difficulty following and using them unless equipped with a map of the area. The Paulina Highway is normally kept open during the winter. Secondary roads accessing widely scattered ranches in the area provide the connection to the Paulina Highway.

Of particular concern is the road system in the Wickiup Creek drainage that provides access for the north portion of Riverside Ranch. Options for alternative access routes should be assessed.

2. Utilities-Electrical and Telephone: These systems provide critical support for the communities and ranches in this area. Electrical feeder lines, substations, distribution lines and telephone lines are generally along or adjacent to access routes. Periodic assessment of hazardous fire fuels in rights-of-way and the presence of snags and trees lacking firm root systems outside of the right-of-way but capable of reaching the lines should be completed. Risk from falling snags can both start fires and interrupt electrical service that supports pumps to make water available for fire fighting.

3. Communications Facilities: Several agencies have communications facilities within the assessment area. Hazardous fuels assessments for these critical infrastructure sites and commercial electrical service (including danger trees adjacent to rights-of-way) to them is needed.

4. Public Agency/Organization Facilities:

   Wildland Fire Organization Facilities:

   - USFS Rager Ranger Station, located about 15 miles east of Paulina, is staffed year around with administrative, land management and wildland fire response personnel and equipment. It also has adequate facilities to shelter and support a modest number of evacuation or incident-displaced citizens. Wolf Mountain Lookout, located about ten miles north of the Ranger Station, supports fire detection in the area. Although this lookout is located a couple of miles into Wheeler County, it offers visual monitoring capability throughout the entire eastern portion of Crook County.

   - The Bureau of Land Management (COFMS) provides seasonal wildland fire response staffing and equipment at the Paulina Guard Station located on the Paulina Highway about ten miles west of Paulina.

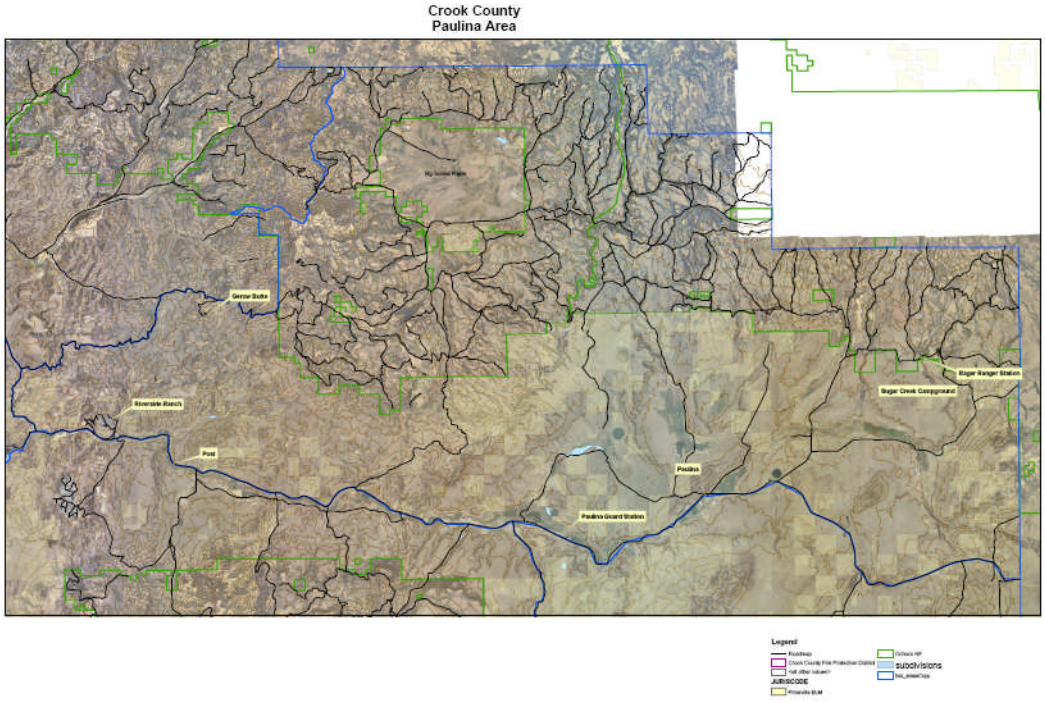
   - Oregon Department of Forestry maintains seasonal staffing at Gerow Butte Lookout, located about 20 miles east of Prineville. This lookout has good visual coverage of the McKay area, Juniper Canyon area, Maury Mountains and to the east as far as Lookout Mountain.

5. The USFS maintains several popular campgrounds within the Paulina assessment area including Wolf Creek, Sugar Creek, Walton Lake and numerous campgrounds around Big Summit Prairie. Visitor use of these campgrounds varies during the year, with heavy use during late summer and fall hunting seasons. Road systems accessing these recreational facilities are considered critical infrastructure due to their public safety access value.

6. Public School: The Paulina School is a Crook County School District facility located in Paulina. This facility could be utilized as a shelter.

7. Crook County Road Department: The County Road Department also has a facility in Paulina with varying amounts of heavy equipment, including dozers and road graders, in the area depending on the nature and location of work projects.

8. Stores-retail: Small stores with groceries and supplies are located in Post and Paulina.



4.8 Maury Assessment Area

The Maury assessment area is bordered by the Powell Butte area on the west, the Juniper Canyon and Paulina areas on the north, Camp Creek Road on the east and the Deschutes County line on the south. This assessment area is predominately public (USFS and BLM) and private wildland with vegetation types varying from rangeland at the lower elevations and Ponderosa pine/mixed conifer at higher elevations and on the north aspect of the Maury Mountains.

Figure 4-10 Maury Rating Summary

CATEGORY	SCORE	ADJECTIVE RATING
Risk (fires/1000 ac./10 years)	20	Moderate
Hazard (fuels, topography, weather)	67	Extreme
Protection Capabilities (high score=high risk/low protection capability)	40	High
Values Protected (structural density and critical infrastructure)	22	Moderate
Structural Ignitability* (*rating assigned until otherwise verified)		High

Communities within the Maury Assessment Area

- Post (on the border with, and addressed in with the Paulina area)
- Riverside Ranch (portion south of the Crooked River)
- Conant Basin

Critical Infrastructure within the Maury Assessment Area

1. Transportation/Road System: The Paulina Highway is located just across the Crooked River on the north edge of this area. Access to/from the south to the highway is via the four primary access routes (Newsome Creek Road, Pine Creek Road and Drake Creek Road from the Maury Mountains and Camp Creek Road located east of the Maury Mountains. Primary alternative access to the south is via a variety of forest roads in the Klootchman Creek/Antelope Flat Reservoir area and in the Double Cabin Creek drainage.

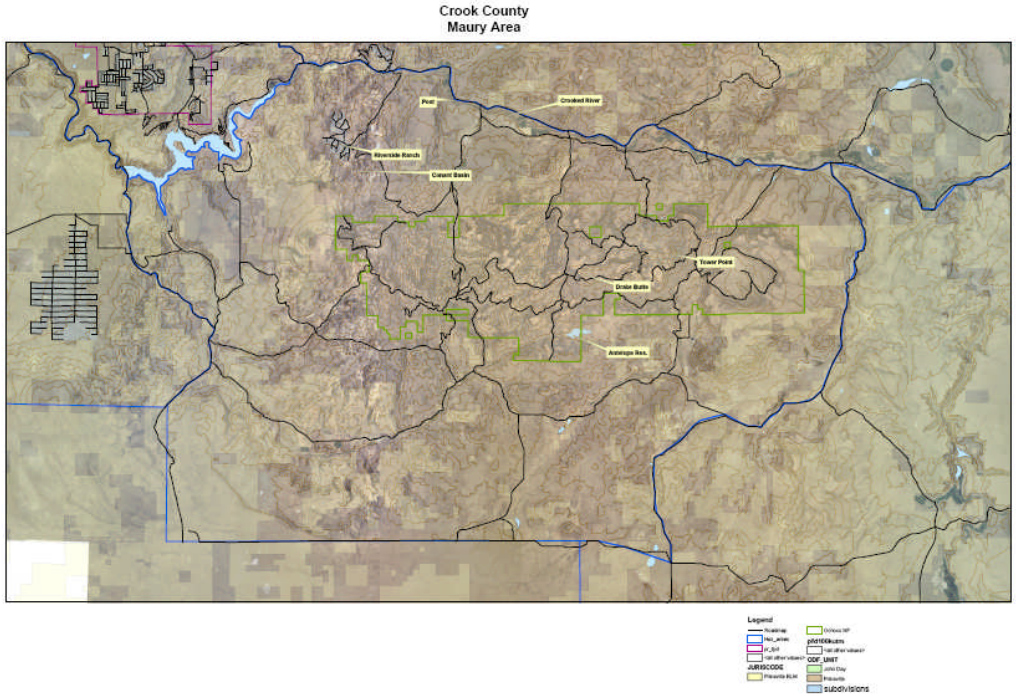
   These north-south road systems provide critical access for both public and agency fire response needs.

   In addition, the access road from Riverside Ranch traveling south into the Conant Basin area is essentially a dead end. It is strongly recommended that arrangements, including any necessary security provisions, be made with adjoining landowners to provide at least one but preferably two alternate emergency access routes out of the Conant Basin. These alternative routes could

be gated with provision made for appropriate authorized use in case of a fire emergency. The current condition of these routes should be assessed and improved as necessary to allow adequate vehicle passage.

2. Public Agency Facilities: The BLM (COFMS) staffs Tower Point Lookout near the east end of the Maury Mountains during fire season. This lookout provides good visual coverage of the entire Maury and Twelve Mile assessment areas and across the Crooked River into the Paulina assessment area.

3. Recreational Facilities: There are numerous USFS campgrounds throughout the Maury Mountains, including Antelope Flat Reservoir. Assessment of evacuation planning for these areas should be conducted.



4.9 Twelve Mile Assessment Area

The Twelve Mile assessment area is bordered on the west by Camp Creek Road and the Maury assessment area; on the north by the Paulina Highway and the Paulina assessment area; on the east by the Grant County line and on the south by the Deschutes and Harney County lines. This area is characterized by widely spaced ranches and public and private grazing lands.

Figure 4-11 Twelve Miles Rating Summary

CATEGORY	SCORE	ADJECTIVE RATING
Risk (fires/1000 ac./10 years)	20	Moderate
Hazard (fuels, topography, weather)	51	High
Protection Capabilities (high score=high risk/low protection capability)	40	High
Values Protected (structural density and critical infrastructure)	12	Low
Structural Vulnerability* (*rating assigned until otherwise verified)		High

Communities within the Twelve Mile Assessment Area

- Paulina-Located on the northern edge of the assessment area. Discussed with the Paulina Assessment Area.
- Aside from the Paulina community, the next greatest concentration of residential development is associated with some of the larger ranch headquaters locations.

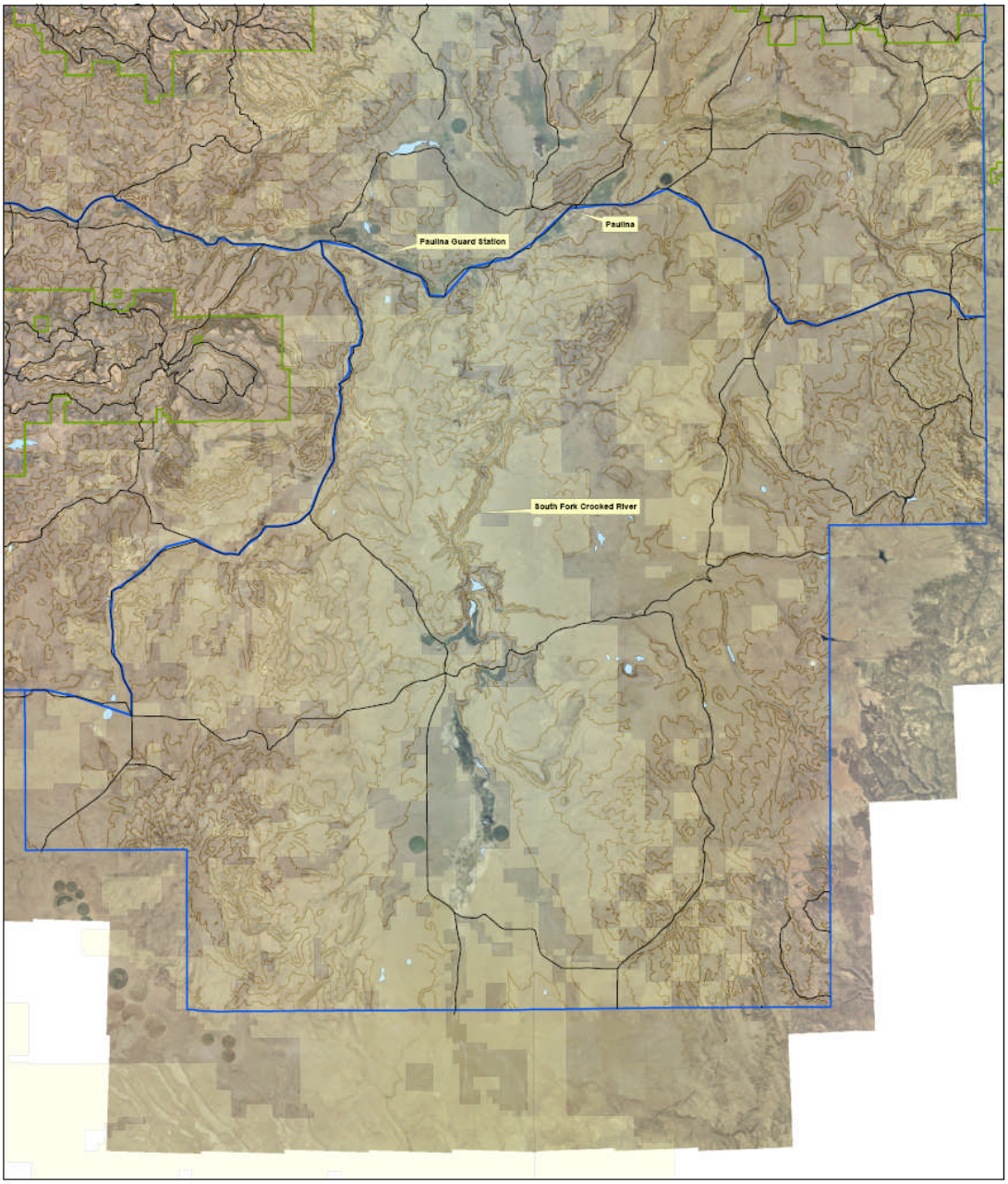
C**ritical Infrastructure within the Twelve Mile Assessment Area**

1. Transportation/Road System: Due to the large distances separating ranch headquarters areas, the road system essential. However, due to the nature of the vegetative fuel in this area, while roads may be briefly made impassible due to fire front passage, they quickly become usable again due to the light, flashy nature of the fuels. Where individual locations may have concentrations of juniper or other heavier vegetation, some fuel loading treatment may be appropriate.

2. Developed Ranch Facilities: Where not already present assessment and establishment of "survivable space" around residences and ranch buildings is recommended. Development and distribution of recommended hazardous fuels treatment options will be addressed as an action plan component.

3. Utilities-Electrical and Telephone: Where these utility facilities may be compromised by concentrations of vegetation, treatments options should be considered. Assessment of treatment needs should be made as needed to support this effort.

Crook County
Twelve Mile Area



5.0 Recommendations to Reduce Structural Ignitability

Based on recommendations and concurrence of members of the CWPP Committee, all assessment areas within the county received a Structural Ignitability rating of high due to lack of on-the-ground assessment. CCF&R is attempting to secure further grant funding to support staffing of this needed assessment with the CCRFPD#1.

When addressing the impacts of wildland fire on communities, it is helpful to focus on two distinct, yet complementary efforts:

- Fire ignition prevention. Examples include traditional structural and wildland initiatives including Smokey Bear, Sparky the Dog, Keep Oregon Green, seasonal debris burning restrictions, etc.
- High intensity, catastrophic fire prevention. This facet is particularly important in Crook County because we live and recreate in ecosystems where fire is a common and natural component. For example, we recognize that in Ponderosa pine sites, thinning of smaller trees, brush and other ground fuels allows fire to burn through an area with lower intensity fire behavior resulting in minimal residual stand damage or mortality. The same principle applies to areas around and adjacent to our homes and communities. Appropriate vegetation treatments, depending on the type of vegetative present (native bunch grass areas vs. sage/Juniper vs. Ponderosa pine, etc) will result in lower intensity fire behavior with less potential to damage our homes and lower resistance to control for fire fighters. These lower intensity fires are more easily controlled with routine initial attack fire suppression actions with lower levels of damage and suppression cost.

This dual initiative approach applies to both existing areas of community development and new development. Both of these avenues to lower the impact of fire on our communities are important and both depend on commitment from landowners, the fire services, community planning and the public.

General Recommendations

It is generally recognized that the three most effective measures (**"**the big three**"**) that a homeowner can take to decrease structural ignitability and the potential of structural damage or loss from a wildland fire are:

1. Install and maintain a **fire resistant roof.** Examples include asphalt composition, metal and tile roofing materials.

2. Establish and maintain **defensible space** around structures. This means reducing the amount, type, and vertical and horizontal arrangement of the flammable vegetation adjacent to structures. These actions will reduce the amount of heat that will impinge on the structure if a fire passes nearby and provides a safe area for fire fighters to work while defending the structure.

3. Maintain aggressive **debris management,** particularly on roofs, below eves and in gutters.

Wildland fire most often spreads to structures from:

- Radiant heat from wildland fuels;
- Spotting on to the roof;
- Spotting into other flammable materials adjacent to the structure (for example, gutters full of flammable material) or
- By first igniting other materials like landscaping, fences, woodpiles or wooden decks and then carrying fire to the structure.

Breaking the continuity of the flammable materials can help break the fuse that can carry fire from the vegetation to the structure. The fire resistant roof and lack of flammable receptive vegetation adjacent to the structure can reduce the potential for spotting to carry fire to the structure.

Defensible Space-Minimum Hazardous Fuels Treatment Standards[11]

The following are recommended minimum hazardous fuels treatment standards. It is intended that these standards mirror the standards contained in the Oregon Department of Forestry "Oregon Forestland-Urban interface Fire Protection Act" (SB 360) that applies on ODF-protected wildland-urban interface areas. It is recognized that slightly differing treatment regimes are needed for Ponderosa pine and Western Juniper/sage/grass ecotypes. The differences in fuel components of the two eco-types will result in slightly differing fuel treatment approaches, however similar treatment distances around structures are still appropriate.

Primary Fuel Break- Establish a 30-foot primary fuel break around structures. Corrected developed, this break should slow the rate of spread and reduce the intensity of an advancing wildfire and create an area where suppression operations may safety occur. This primary fuel break begins at the outside edge of a structure's furthest extension. This may be the edge of a roof eve or the outer edge of a deck attached to the structure.

In the primary fuel break zone:

- Ground cover should be substantially non-flammable. Examples include asphalt, bare soil, clover, concrete, green grass, ivy, mulches, rock, succulent ground cover or wildflowers.
- Dry grass should be cut to a height of less than four inches.
- Cut grass, leaves, needles, twigs and similar small vegetative debris should be broken up so that a continuous fuel bed is not created.
- Shrubs and trees should be maintained in a green condition, be substantially free of dead plant material and have any potential "ladder fuels" removed.
- Trees and shrubs should also be arranged so that fire cannot spread or jump from plant to plant. Some thinning may be necessary to accomplish this.

Secondary Fuel Break- The secondary fuel break begins where the primary fuel break ends and continues out an additional 20 to 70 feet depending on risk classification (under the provisions of the Act) and the type of roofing on the structure. Note that because of Crook County's weather factors and vegetative types, nearly all interface sites in the county will rate out as "high", "extreme" or "high density extreme". The following table is transcribed from the document referenced above.

Fire-risk Classification	Nonflammable Roofing Material	Flammable Roofing Material
Low	None	None
Moderate	None	None
High	None	20 feet
Extreme and High Density Extreme	20 feet	70 feet

Characteristics of the secondary fuel break include trees and shrubs that are:

- Green and healthy
- Substantially free of dead branches
- Pruned where necessary to keep fire from "laddering" into tree crowns
- Thinned o whatever degree necessary to prevent fire from transferring from plant to plant

NOTE:

- For areas outside of the rural fire protection district, it is recommended that homeowners implement more extensive treatments to provide for **survivable space,** meaning that the structure has a better chance of surviving if no suppression resources are present to take suppression action.

6.0 Unprotected Lands and Communities: Options for Added Resiliency to the Effects of Wildland Fire

A substantial portion of private land in the central and eastern portions of the county receive no fire protection, either structural or wildland. As discussed in Section 2.4, the unprotected lands question has been the subject of extensive debate.

In early 2004 a "Fire Protection Coverage Working Group" was formed with leadership provided by representatives of the Oregon State Fire Marshal's Office and Oregon Department of Forestry. The working group membership represented broad representation of interested parties with the intent of exploring opportunities to address the unprotected lands issue in Oregon. One of the short-term recommendations of the working group was that this issue be incorporated into the Community Wildfire Protection planning process.[12]

Hazardous Fuels Treatments Adjacent to Structures

An initiative is currently under development to provide an updated series of brochures for homeowners in the unprotected portion of the county. These materials will be designed to provide a menu for actions that can be taken around structures that will increase resiliency to wildland fire. Crook County-OSU Extension has an agreement with the County Court to distribute these materials to residents.

Local Support

Historically, neighbors have provided mutual support to one another in wildfire situations. Use of the Rangeland Association option provides an added level of formality, allowing mutual aid and potential access to some equipment support. This approach has been adopted by several areas in Harney County. This option may present a step toward developing an acceptable level of wildland response capacity.

The Oregon Department of Forestry provides assistance to local groups of ranchers and other residents of unprotected lands wishing to learn more about Rangeland Associations.

7.0 Action Plan and Assessment Strategy

The following table summarizes actions and strategy for meeting assessment needs identified within the plan. This summary should be considered as a "beginning" with additional entries developing out of annual and other periodic review.

Figure 7-1 CC CWPP Action Plan and Assessment Strategy **May 2005**

Function or Assessment Area	Action	Strategy/Comments
Administrative	Establish CC CWPP "Steering Committee" (CWPP implementation responsibility.)	Responsible for ongoing oversight, periodic review, plan updates, interagency coordination of mitigation and prevention activity liaison, pre-screen grant requests for priority setting, etc. Membership: Chief-CCF&R; CCSO-Dir. Emergency Mgt.; ODF-Unit Forester; Representative-CC Natural Resources Natural Resources Planning Committee or other community at-large representative; Representative-COFMS.
	Identify grant opportunities to support CCF&R on the ground structural vulnerability assessment within CCRFPD#1.	CWPP applied default Structural Vulnerability value of "high" until otherwise verified throughout the county. Very high priority to secure funding in support of this needed assessment work.
	Coordinate with ODF implementation of the "Oregon Forestland-Urban Interface Act" (SB 360) in Crook County beginning in May, 2005.	This legislation currently will apply only in interface areas within the ODF district boundary. Consider application of fuels treatment standards throughout the county under County Court ordinance authority.
County-Wide	Facilitate development and distribution of fire prevention and hazardous fuels mitigation information for unprotected areas of the county.	Crook Co. OSU Extension has a contract with the County Court to provide this service. An effort is currently underway to develop new materials in support of this need. Consider using this mechanism to assess and identify mitigation opportunities in unprotected areas of the county.
	Coordinate with ODF to identify opportunities for application of Rangeland Association or other mechanisms to address unprotected lands issue.	Assess potential to utilize the CC Natural Resources Planning Committee forum or other group to conduct a county-wide grass-roots discussion addressing unprotected lands.
	Develop county standards for access infrastructure that provides for alternate, site-specific access routes consistent with hazardous fuels and topographic/landform features surrounding the development site.	Because of the wide variety of landforms within the county, alternative/emergency access routes are more constrained in some areas. Emergency fire evacuation can present one of the most serious threats to life safety. This is a high priority issue. Development of adequate solutions in various locations throughout the county may require development of agreements with other private landowners/public lands

		managers with provision for security gates to limit non-landowner use to true emergency applications.
	Develop similar alternative access standards solutions for retroactive application in existing areas of community development. Craft solutions to meet site-specific landform constraints.	Consider the potential need for County Court mediation or intervention.
	Coordination of efforts with electrical utilities: Initiate action to assess the condition of electrical rights-of-way. Vegetation management within R/Ws may be more critical in some vegetation types than others.	Utilities' activities are generally constrained to R/Ws. Snags and other hazard trees outside of a R/W may require landowner coordination with utilities. As forest health and drought-related low elevation tree mortality occurs, wind-falls from this source may become a greater potential ignition source than the historical norm. Where co-location of telephone and electrical lines is present, attention to this type of mitigation can additionally help protect critical communications infrastructure.
	Assess opportunity to develop a coordination plan with all users/managers of remote electronic communications sites within the county to support hazardous fuels treatments.	Communications sites support routine commercial and emergency response coordination needs. Recommend near-term attention to initiating this discussion.
	Evacuation Planning	Develop a standard county-wide framework that can be used to develop local, site-specific evacuation plans.
Juniper Canyon	The transportation system/emergency access egress/ingress function is the single most at-risk infrastructure component in this assessment area.	Juniper Canyon Road current presents the only significant volume access route into or out of this area. Assess and develop multiple alternate access routes for the area. Consider alternatives including limited-use authorized emergency only routes across BLM and private lands if necessary. Insure that route condition is adequate to allow travel by passenger cars.
	Evacuation Planning	Develop Juniper Canyon evacuation plan. Keep updated as additional development occurs and alternative access routes are identified and become operational.
	Complete Structural Vulnerability Assessment.	Lack of adequate information on current and needed levels of hazardous fuels treatment and driveway access to structures are needed to develop comprehensive fuels strategy for this assessment area.
	Coordination with BLM to facilitate	A substantial amount of private/BLM interface is

	and expedite WUI fuels treatment actions.	present with the identified WUI area.
	Assess options to initiate near-term fuels treatment on private land and around residences to coincide with BLM fuels treatment actions.	Option to utilize BLM expertise in development of treatment regimes appropriate to juniper/sage ecotype on private land to minimize disturbance, cheatgrass encroachment into the area.
Powell Butte	Complete Structural Vulnerability Assessment	Lack of adequate information on current and needed levels of hazardous fuels treatment and driveway access to structures are needed to develop comprehensive fuels strategy for this assessment area.
	Alfalfa-Community Rural Fire Dist. Formation (preliminary discussions)	Provide coordination and support for this ongoing effort. If an RFPD is formed, it will likely cover portions of both Crook and Deschutes counties.
	Evacuation Planning	Develop evacuation plan with particular attention to areas with limited alternate access routes. Keep plan updated as new development occurs and new access routes become operational.
	Coordination with BLM to facilitate and expedite WUI fuels treatments.	Local resident support for public land fuels treatments is important. A significant amount of private/BLM interface is present with the identified WUI area.
	Assess options to initiate near-term fuels treatment on private land and around residences to coincide with BLM fuels treatment actions.	Option to utilize BLM expertise in development of treatment regimes appropriate to juniper/sage ecotype on private land to minimize disturbance and cheatgrass encroachment into the area.
McKay	Complete Structural Vulnerability Assessment.	Lack of adequate information on current and needed levels of hazardous fuels treatment and driveway access to structures are needed to develop comprehensive fuels strategy for this assessment area.
	Evacuation Planning	Develop evacuation plan with particular attention to areas with limited alternate access routes. Keep plan updated as new development occurs and new access routes become operational
	Coordination with Ochoco NF, BLM and private forestland owners and managers to facilitate and expedite WUI fuels treatments.	Local resident support for public land fuels treatment is important. Assess options to encourage needed hazardous fuels treatment on private land with the WUI.
Paulina	Structural Vulnerability Assessment: Consider development of an assessment form that could be used by homeowners in unprotected areas.	The Paulina assessment unit is outside of the rural fire district. This type of assessment form could be distributed with other fuels mitigation and fire safety materials under the Crook County-OSU Extension agreement.
	Evacuation planning and alternate	Develop evacuation plan with particular attention

	access route development.	to areas with limited alternate access routes. Examples include Riverside Ranch in the Wickiup Creek drainage. Keep plan updated as new development occurs and new access routes become operational
	Identify opportunities to encourage public/private coordination on WUI fuels treatment opportunities	Most of the WUI areas along the Paulina Highway include significant amount of private ranch and forestland.
Maury	Structural Vulnerability Assessment: Consider development of an assessment form that could be used by homeowners in unprotected areas.	The Maury assessment unit is outside of the rural fire district. This type of assessment form could be distributed with other fuels mitigation and fire safety materials under the Crook County-OSU Extension agreement.
	Evacuation planning and alternate access route development.	Develop evacuation plan with particular attention to areas with limited alternate access routes. Examples include Riverside Ranch south of the Paulina Highway and the Conant Basin area. Development of an alternate access route out of this drainage to the south is of particular concern. Keep plan updated as new development occurs and new access routes become operational
	Assessment of vegetation management opportunities under electrical lines in range areas.	Increased juniper concentrations under power lines, particularly where roads/power lines are located in draws or drainages, can increase the vulnerability of the lines and poles due to heat generation. Consider treatment options to reduce vulnerability of this utility infrastructure.
	Identify opportunities to encourage public/private coordination on WUI fuels treatment opportunities	Most of the WUI areas along the Paulina Highway include significant amount of private ranch and forestland.
Twelve Mile	Structural Vulnerability Assessment: Consider development of an assessment form that could be used by homeowners in unprotected areas.	The Maury assessment unit is outside of the rural fire district. This type of assessment form could be distributed with other fuels mitigation and fire safety materials under the Crook County-OSU Extension agreement.
	Assessment of vegetation management opportunities under electrical lines in range areas.	Increased juniper concentrations under power lines, particularly where roads/power lines are located in draws or drainages, can increase the vulnerability of the lines and poles due to heat generation. Consider treatment options to reduce vulnerability of this utility infrastructure.
	Identify opportunities to encourage public/private coordination on WUI fuels treatment opportunities.	Encourage private landowner/BLM cooperative fuels treatment efforts.

8.0 Summary of Community Hazard Reduction Priorities and Funding Priorities

Figure 8-1 lists hazard reduction priorities by Assessment Area. **Figure 8-2** lists those same priorities county-wide by assessment score and lists priority action items. **Figure 8-3** lists some general priorities for funding opportunities.

Figure 8-1 Hazard Reduction Priorities by Assessment Area

Crook County Ratings

Hazard Area	Subdivision/Area	Risk Score	Hazard Score	Protection Score	Values Score	Total Score
Powell Butte	Prineville Ranch Subdivision	40	65	4	12	121
Powell Butte	Westwood	40	65	4	12	121
Powell Butte	Westridge Estates	40	65	4	12	121
Powell Butte	Twin Lakes Ranch	40	65	4	12	121
Powell Butte	Baldwin Road Industrial Park	40	65	4	12	121
Powell Butte	West Powell Butte Estates	40	65	2	35	142
Powell Butte	Red Cloud Subdivision	40	69	4	35	148
Powell Butte	Mountain View Estates	40	65	4	12	121
Powell Butte	Steelhammer Ranch	40	65	4	12	121
Powell Butte	Sinclair-Davis Tract 2	40	69	4	35	148
Powell Butte	Powell Butte View Estates	40	69	4	35	148
Powell Butte	Old West Road Subdivision	40	65	4	12	121
Powell Butte	Carrero-Cowan	40	65	4	12	121
Powell Butte	River Lake Ranches	40	65	40	12	157
Powell Butte	Willard Estates	40	65	40	12	157
Powell Butte	Juniper Acres	40	65	40	12	157
Powell Butte	Structures along O'Neil Highway	40	65	40	12	157
Juniper Canyon	High Desert Estates	40	72	2	35	149
Juniper Canyon	Highlands Subdivision	40	72	2	35	149
Juniper Canyon	Conifer Heights	40	72	2	35	149
Juniper Canyon	Ochoco Land and Livestock	40	72	2	35	149
Juniper Canyon	Ironwood Estates	40	72	2	35	149
Juniper Canyon	Dry Creek Airpark	40	72	2	35	149
Juniper Canyon	Lost Lake Estates	40	72	2	35	149
Juniper Canyon	Prineville Lake Acres	40	72	2	35	149
Juniper Canyon	Hood's Subdivision	40	72	2	35	149
Juniper Canyon	Chuckwagon Acres	40	72	2	35	149
Juniper Canyon	Idleway Acres	40	72	2	35	149
Juniper Canyon	Juniper Hills	40	72	2	35	149
Juniper Canyon	Lakeview Cove	40	72	2	35	149
Juniper Canyon	Prineville Reservoir Stae Park	40	72	2	35	149
Juniper Canyon	Jasper Knolls	40	72	2	35	149
Juniper Canyon	Botero Park Subdivision	40	72	2	35	149
McKay	Ochoco West	40	67	2	35	144
McKay	Miles Puddy Ranches	40	67	2	35	144
McKay	Meadow Ridge	40	67	2	35	144
McKay	Sunset Hills Subdivision	40	67	2	35	144
McKay	Pleasant View Heights	40	67	2	35	144

McKay	Ochoco Lake Lots	40	67	2	35	144
McKay	North Shore Estates	40	67	2	35	144
McKay	Lakeshore Trailer Park	40	67	2	35	144
McKay	Mill Creek Ranches	40	67	2	35	144
McKay	Lofton Creek	40	72	17	22	151
McKay	Turner Creek	40	72	17	22	151
McKay	Sherwood Creek	40	72	17	22	151
McKay	Johnson Creek	40	72	2	22	136
McKay	Ochoco Valley	40	72	17	22	151
McKay	Mt. Bachelor Academy	40	72	17	22	151
McKay	Ponderosa Ranch	40	72	17	22	151
Maury	Riverside Ranch	20	68	40	22	150
Maury	Newsome Creek	20	66	40	22	148
Maury	Pine Creek	20	66	40	22	148
Maury	Drake Creek	20	66	40	22	148
Twelve Mile	All	20	51	40	12	123
Paulina	Riverside Ranch	40	68	40	22	170
Paulina	Rager Ranger Station	40	61	17	35	153
Paulina	Post	40	49	40	22	151
Paulina	Paulina	40	49	19	35	143

Figure 8-2 Hazard Rating Priorities County-wide by Score

Hazard Area	Subdivision/Area	Risk Score	Hazard Score	Protection Score	Values Score	Total Score	Suggested Adjective Rating	Needs
Paulina	Riverside Ranch	40	68	40	22	170	Very High	Fire Protection Fuels Hazard Reduction
Powell Butte	River Lake Ranches	40	65	40	12	157	Very High	Fire Protection Fuels Hazard Reduction
Powell Butte	Willard Estates	40	65	40	12	157	Very High	Fire Protection Fuels Hazard Reduction
Powell Butte	Juniper Acres	40	65	40	12	157	Very High	Fire Protection Fuels Hazard Reduction
Powell Butte	Structures along O'Neil Highway	40	65	40	12	157	Very High	Fire Protection Fuels Hazard Reduction
Paulina	Rager Ranger Station	40	61	17	35	153	High	Fuels Hazard Reduction
McKay	Lofton Creek	40	72	17	22	151	High	Fuels Hazard Reduction
McKay	Turner Creek	40	72	17	22	151	High	Fuels Hazard Reduction
McKay	Sherwood Creek	40	72	17	22	151	High	Fuels Hazard Reduction
McKay	Ochoco Valley	40	72	17	22	151	High	Fuels Hazard Reduction
McKay	Mt. Bachelor Academy	40	72	17	22	151	High	Fuels Hazard Reduction
McKay	Ponderosa Ranch	40	72	17	22	151	High	Fuels Hazard Reduction
Paulina	Post	40	49	40	22	151	High	Fire Protection
Maury	Riverside Ranch	20	68	40	22	150	High	Fuels Hazard Reduction
Juniper Canyon	High Desert Estates	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Highlands Subdivision	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction

Juniper Canyon	Conifer Heights	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Ochoco Land and Livestock	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Ironwood Estates	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Dry Creek Airpark	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Lost Lake Estates	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Prineville Lake Acres	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Hood's Subdivision	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Chuckwagon Acres	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Idleway Acres	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Juniper Hills	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Lakeview Cove	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Prineville Reservoir State Park	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Jasper Knolls	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Juniper Canyon	Botero Park Subdivision	40	72	2	35	149	High	Improved Access Fuels Hazard Reduction
Powell Butte	Red Cloud Subdivision	40	69	4	35	148	High	Improved Access Fuels Hazard Reduction
Powell Butte	Sinclair-Davis Tract 2	40	69	4	35	148	High	Improved Access Fuels Hazard Reduction
Powell Butte	Powell Butte View Estates	40	69	4	35	148	High	Improved Access Fuels Hazard Reduction
Maury	Newsome Creek	20	66	40	22	148	High	Fuels Hazard Reduction
Maury	Pine Creek	20	66	40	22	148	High	Fuels Hazard Reduction
Maury	Drake Creek	20	66	40	22	148	High	Fuels Hazard Reduction
McKay	Ochoco West	40	67	2	35	144	Moderate	Fuels Hazard Reduction
McKay	Miles Puddy Ranches	40	67	2	35	144	Moderate	Fuels Hazard Reduction
McKay	Meadow Ridge	40	67	2	35	144	Moderate	Fuels Hazard Reduction
McKay	Sunset Hills Subdivision	40	67	2	35	144	Moderate	Fuels Hazard Reduction
McKay	Pleasant View Heights	40	67	2	35	144	Moderate	Fuels Hazard Reduction
McKay	Ochoco Lake Lots	40	67	2	35	144	Moderate	Fuels Hazard Reduction
McKay	North Shore Estates	40	67	2	35	144	Moderate	Fuels Hazard Reduction
McKay	Lakeshore Trailer Park	40	67	2	35	144	Moderate	Fuels Hazard Reduction
McKay	Mill Creek Ranches	40	67	2	35	144	Moderate	Fuels Hazard Reduction
Paulina	Paulina	40	49	19	35	143	Moderate	Fire Protection
Powell Butte	West Powell Butte Estates	40	65	2	35	142	Moderate	Fuels hazard reduction
McKay	Johnson Creek	40	72	2	22	136	Low	Fuels Hazard Reduction
Twelve Mile	All	20	51	40	12	123	Low	Fuels Hazard Reduction

Powell Butte	Prineville Ranch Subdivision	40	65	4	12	121	Low	Fuels Hazard Reduction
Powell Butte	Westwood	40	65	4	12	121	Low	Fuels Hazard Reduction
Powell Butte	Westridge Estates	40	65	4	12	121	Low	Fuels Hazard Reduction
Powell Butte	Twin Lakes Ranch	40	65	4	12	121	Low	Fuels Hazard Reduction
Powell Butte	Baldwin Road Industrial Park	40	65	4	12	121	Low	Fuels Hazard Reduction
Powell Butte	Mountain View Estates	40	65	4	12	121	Low	Fuels Hazard Reduction
Powell Butte	Steelhammer Ranch	40	65	4	12	121	Low	Fuels Hazard Reduction
Powell Butte	Old West Road Subdivision	40	65	4	12	121	Low	Fuels Hazard Reduction
Powell Butte	Carrero-Cowan	40	65	4	12	121	Low	Fuels Hazard Reduction

Figure 8-3 Funding Priorities

Priority	Activity	Responsible and Coordinating Agencies
1	On-site Structural Vulnerability Assessment. Ongoing funding in support of completion of this task by additional part-time/seasonal CCF&R personnel. Survey needed throughout the RFPD.	Crook County Fire and Rescue. Coordination with ODF via implementation of Forestland-Urban Interface Act.
2	Hazardous fuels treatment support: public awareness, demonstration sites, residue treatment cost-share support for neighborhood fuels treatment activities, etc. Coordination and joint treatment activities with federal agencies on adjoining public lands.	Crook County Fire and Rescue. Coordination with USFS, BLM, ODF and County Fire Chief in support of parallel effort on un-protected private lands.
3	Unprotected Lands: Fire prevention initiatives, organizational support, structural vulnerability assessment, etc.	Crook County Fire Chief in coordination with Crook County Court. Operational coordination with CCF&R and wildland fire agencies.

9.0 Monitoring and Annual Review/Update Process

An effective monitoring process for the CWPP is important in ensure that resources are being utilized effectively, efforts from various agencies are well coordinated and complementary and that duplication of effort is minimized.

Annual Review

Not less than annually, the Crook County CWPP Steering Committee will conduct a review of the overall CWPP effort. They will identify changes or updates needed in the Plan, evaluate effectiveness of coordination between cooperating agencies, community groups and neighborhoods, evaluate progress in meeting specific performance measures and adjust monitoring protocols as needed. Coordination and communication will be the critical operative requirement.

The CWPP Steering Committee will be made up of the following at a minimum:

- Fire Chief, Crook County Fire and Rescue.
- Emergency Management Director, Crook County Sheriff's Office
- Unit Forester, Oregon Department of Forestry
- Representative from the Crook County Natural Resources Planning Committee or other representative of the Crook County community at-large.
- Recommended additional representation would include as a minimum, *ex officio* representation from Central Oregon Fire Management Services (Ochoco National Forest Service and Prineville District, Bureau of Land Management).

Monitoring

Recommended performance measures to be monitored include the following:

1. **Understand the scope of the wildfire problem and potential in Crook County.**
   Performance measures:
   - Communities and at-risk infrastructure identified and mapped. Updates completed, documented and incorporated into the CWPP.
   - Wildland-urban-interface (WUI) identified and mapped. Any need for updates is evaluated and documented.
   - Fire Atlas compiled and updated annually.

2. **Reduce hazardous fuels.**
   Performance measures:
   - Lowered risk assessment scores for communities within the county.
   - Change in Condition Class from 2 or 3 to 1 (number of acres of land where Condition Class is improved on both federal and non-federal lands.)
   - Total number of acres treated through fuel reduction measures.

3. **Reduce structural ignitability.**
   Performance measures:

- Number of acres/local community areas where defensible space is established around individual homes or clusters of homes.
- Number of structures lost to wildland fire.

4. Coordinate WUI treatment activities on adjoining public and private lands.

Performance measures:

- Number or percentage of WUI areas where complementary treatments occurred (within two years).
- Number or percentage of WUI treatment areas where public and private mitigation measures were conducted simultaneously or under a unified plan.

5. Provide for safety of public during wildfire incidents.

Performance measures:

- County-wide and local community evacuation processes developed.
- Number of fire response or evacuation drill exercises performed.

6. Promote community involvement and awareness

Performance measures:

- Number of outreach or education events held.
- Assessment of overall participation in neighborhood fuels treatment initiatives.

The use of predicted treatment effects on fire behavior could be a powerful tool in gaining community understanding, acceptance and support for engaging in fuels treatments around homes. This approach could be used to enhance community involvement.

10.0 Appendix: Summary of Critical Infrastructure

For purposes of this plan, critical infrastructure could be defined as those items needed to meet the needs of Crook County residents and visitors including:

- Businesses, transportation and communication systems, economic health, public welfare and safety and goods and services needed to maintain the economic and social viability of the community over the long term;
- Those components needed during a fire or other natural disaster response including communications, transportation and emergency response support facilities. This also includes actual emergency response, shelter and support for evacuees, medical treatment and support and other community process through the duration of the actual incident.

There is a parallel between Crook County's demographics and components of critical infrastructure. The northwestern 20% of the county has relatively dense community development with a higher capacity supporting infrastructure. On one hand, compromise or degraded performance of a support function (e.g. phones, roads, etc) has the potential to affect more people, but also has the potential to be brought back into service more quickly because more repair capacity is more readily available and travel distances to reach the point of system breakdown are shorter.

The eastern 80% of the county is characterized by longer travel distances and less dense community development. The transportation system and electrical and communication systems are spread out over much larger distances with more exposure to fire or other potentially compromising events. Road and utility lines should be assessed for their potential to survive a passing wildland fire without being compromised. This parallels the recommendations for greater clearing around structures in this area due to the lack of structural fire response.

Figure 10-1 provides a summary of critical infrastructure in Crook County. Systems are generally addressed in the County-wide section. Further specific examples or clarifying information is provided in the Assessment Area sections.

Figure 10-1 Summary of Crook County Critical Infrastructure

Function or Assessment Area	Critical Infrastructure Component or Description	Comments/Detail
County-wide	Transportation System	✓ All routes necessary for the support of the routine flow of commerce to/through the county; ✓ All routes-both primary and needed and identified secondary- needed for potential evacuation of citizens/visitors from a wildland fire threat to public safety; ✓ All routes needed for emergency response to a wildland fire incident ✓ All routes needed to protect and support electrical and communications (land-line and cellular) infrastructure.
County-wide (continued)	Communication Systems	✓ Land-line telephone infrastructure. ✓ Cellular phone tower and other infrastructure. ✓ Radio communication systems including remote

		mountain repeater sites. ✓ Micro-wave sites. ✓ Aviation communication & navigation sites.
	Electrical Utilities	✓ All transmission and distribution lines. ✓ All substation and switching facilities.
	Public Service Facilities	✓ All fire stations, Ranger Stations and Guard Stations, law enforcement facilities, hospital and other medical facilities, schools-both public and private, ODOT and County Road Department facilities and public administration facilities.
	Recreation Facilities	These facilities are designated as critical due to their public safety relationship with significant numbers of residents and visitors, particularly throughout the summer and fall when burning conditions are at their most severe: ✓ All campgrounds: federal, state, county, private. ✓ Resorts, boating facilities and other recreational sites associated with reservoirs in the county. ✓ Destination resorts.
	Airports and airstrips	✓ Public and private
Juniper Canyon	Transportation System	✓ Expand primary and alternative/emergency access route options.
	Recreational Facilities-Prineville Reservoir	✓ Develop shelter-in-place plan. ✓ Assess evacuation route potential route to east on Crooked River BOR road to Paulina Highway.
Powell Butte	Community Center Fire Station	✓ School, church, store complex
	Industrial Park complex	✓ Airport, Les Schwab warehouse facility, Baldwin Road industrial park.
McKay	Prineville-urban and suburban areas	✓ Explore opportunities to share Fire-wise landscaping concepts with public.
	Transportation System-Alternative/emergency access routes	✓ Assess need for and develop multiple access options for each area of development
Paulina	Electrical and Telephone Utilities	✓ Assess and improve resilience of these systems to effects of wildland fire.
	Transportation System-Alternative/emergency access routes	✓ Assess need for and develop multiple access options for each area of development. ✓ Evaluate options to add fire resiliency to major travel routes.
Maury	Electrical and Telephone Utilities	✓ Assess and improve resilience of these systems to effects of wildland fire.

	Transportation System-Alternative/emergency access routes	✓ Assess need for and develop multiple access options for each area of development and recreational sites. ✓ Evaluate options to add fire resiliency to major travel routes.
Twelve Mile	Electrical and Telephone Utilities	✓ Assess and improve resilience of these systems to effects of wildland fire.
	Transportation System	✓ Evaluate options to add fire resiliency to major travel routes.

11.0 Appendix: Summary of Public Comments

Crook County communities are diverse in density and wide-spread geographically. As a result a variety of approaches were utilized to share draft versions of the CWPP and solicit public input to the CWPP process.

Crook County Natural Resources Planning Committee

Beginning in October, 2004, a series of presentations and background information documents were provided to the Crook County Natural Resources Planning Committee. The CCNRPC was established to advise the County Court on natural resource issues while working to establish cooperation and collaboration with federal agencies that have a responsibility for administering those natural resources. The membership represents a wide cross-section of community interests. The group was kept apprised of progress and direction of the CWPP process with the opportunity to provide input during face to face presentations and through a questionnaire provided to the members.

Summary of comments:

- Provided good insight on effective ways to present the CWPP to follow-up community meetings.
- Important to identity various management approaches to mitigate wildland fire issue.
- More general information is needed on fire behavior and how hazardous fuels treatment impacts fire behavior.
- Important to focus on the value to the individual landowner of taking appropriate mitigation action.
- It will be important to identify and include campgrounds and other recreational facilities in the assessment process.
- The WUI boundary will be important to help focus the CWPP process on priorities.
- Complementary fuels treatment actions on adjoining public lands will be important to protect private land values.
- The CWPP will help focus the growing Crook County community on the potential impact of wildland fire on the residents of the county.

Crook County Community Emergency Preparedness Committee

A presentation was made to this committee's quarterly emergency management planning review. The group represents various public agencies and private citizens with an interest in county emergency preparedness.

Summary of comments:

- High value of the CWPP to provide a framework for coordination of fuels mitigation between all agencies and neighborhoods.
- How will the coordination be implemented?
- How can county Emergency Management coordinate with and incorporate increased wildfire public awareness with preparedness drills, exercises and evacuation planning?

Crook County Sheriff's Town Hall Meetings

CCSO schedules semi-annual meetings throughout the county to meet with local citizens. At the suggestion of the Sheriff, the CWPP public meeting presentations were conducted jointly with the Town Hall meeting schedule. Articles regarding the CWPP effort were published in the Central Oregonian and fliers advising citizens of the meetings were distributed throughout the county by CCSO personnel. About 65 citizens attended these meetings held at five venues throughout the county: Powell Butte Fire Station, Juniper Canyon Fire Station, Ochoco West Community Center, County Meeting Room in Prineville and the Post Store.

Summary of comments:

- Concern about inadequate access route options during fire emergency was voiced at several of the meetings.
- Positive comments were received about the CWPP in hopes that more information on homeowner fuels treatment options could be made available and that the CWPP process would help the federal agencies to do more fuels treatments adjacent to developed communities.
- Cross-agency coordination on hazardous fuels mitigation was seen as a very positive outcome of the planning process.
- Questions about Rangeland Association and unprotected lands were asked at the Post meeting.
- The most common comment was that people were glad the process was happening, but that they had no specific input.
- Local community points of contact to coordinate mitigation activities, either individuals or components of neighborhood organizations, were often identified.

12.0 Appendix: Reference Documents and Maps

12.1 Abbreviations and Acronyms

CCF&R	Crook County Fire and Rescue: Provides fire and emergency medical services within CCRFPD#1
CCRFPD#1	Crook County Rural Fire Protection District No. 1
COFMS	Central Oregon Fire Management Services: The combined fire management function of the Bureau of Land Management-Prineville District, Ochoco N.F. and the Deschutes N.F.
Critical Infrastructure	Those essential components of community development needed to provide essential functions including life safety, communications, transportation, public health and welfare, business and economic viability, etc.
CWPP	Community Wildfire Protection Plan
FEMA	Federal Emergency Management Agency
FR/CC	Fire Regime/Condition Class system used to describe various vegetative systems and the departure from the natural fire occurrence condition.
HFRA	Healthy Forests Restoration Act: Passed by Congress and signed into law in 2003. It provides the authorization and framework for development the current community-based fire planning process.
Interface	See WUI.
NHMP	Natural Hazards Mitigation Plan: This pre-incident mitigation planning process is required by FEMA. The Crook County NHMP contains a chapter to address wildland fire.
ODF	Oregon Department of Forestry
ODOT	Oregon Department of Transportation
SB360	The Oregon Forestland-Urban Interface Protection Act. This ODF administered program provides for hazardous fuels mitigation in "interface" areas within ODF protection districts.
WUI	Wildland-urban interface: The zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels.[13]

12.2 Reference Documents

12.2.1 *Preparing a Community Wildfire Protection Plan, A Handbook for Wildland-urban Interface Communities.*

12.2.2 Tabular Assessment Results (from Section4.3.2)

12.3 Reference Maps:

- Fire Regime
- Condition Class
- Hazard Assessment Areas
- Population Blocks
- County WUI
- Subdivision Ranking
- Agency Protection

12.2.2 (From Section 4.3.2-Tabular Assessment Results)

Powell Butte Assessment Area

Size: 220,354 acres

Risk

Fire Occurrence: 199 fires (FS, BLM, ODF) within the last 10 years. Historic fires from Prineville Fire District (PFD) are not available. An assumption was made that if PFD fires were available then fire occurrence would include 30 – 40 additional fires. This would result in a fire occurrence rate of >1.1 per 1000 acres per 10 years. Rating: high or 40 points.

Total Risk Points: 40

Hazard

Weather Factor Value: We used the Oregon state factor value which classifies the entire eastern portion of the state as high, for 40 points.

Topographic Factor Value: GIS topographic data was available to the group to help assign point ratings for slope, aspect, and elevation.

Slope: Red Cloud, Sinclair-Davis Tract 2 and Powell Butte View Estates Subdivisions assigned to 26-40% slope class, 2 points.

All other areas assigned to 0-25% slope class, 0 points.

Aspect: Red Cloud, Sinclair-Davis Tract 2 and Powell Butte View Estates Subdivisions assigned to S, SW, E aspect, 5 points.

All other areas assigned to moderate rating, 3 points.

Elevation: All areas assigned to 0-3500 feet class, 2 points.

Vegetation/Fuels: GIS vegetation and fuel classification, developed through a contract with the county is available and used to help the group address this factor. The Powell Butte area was assigned to fuel hazard factor 2 (dominantly fuel models 2 and 6, with varying amounts of juniper overstory), 15 points.

There is potential for active crown fire, a moderate rating, 5 points.

Total hazard points:

Hazard Factor	Red Cloud, Sinclair-Davis Tract 2, Powell Butte View Estates	All Other Areas
Weather	40	40
Topography		
Slope	2	0
Aspect	5	3
Elevation	2	2
Vegetation/Fuels		
Fuel Model	15	15
Crown Fire Potential	5	5

Total Hazard Score	69	65
Adjective Rating	High	High

Protection Capability

Protection capability is a combination of the capacities of the fire protection agencies, local government and community organizations. A high score represents high risk/low protection capability.

Structural and wildland protection for subdivisions within the Powell Butte Area are displayed in the table below.

Subdivision	**Organized structural response <10 minutes** **0 points**	**Inside fire district, but structural response >10 minutes** **8 points**	**No structural protection, wildland response <20 minutes** **15 points**	**No structural response and wildland protection >20 minutes** **36 points**
Prineville Ranch Subdivision	0			
Westwood	0			
Westridge Estates	0			
Twin Lakes Ranch	0			
Baldwin Road Industrial Park	0			
West Powell Butte Estates	0			
Red Cloud Subdivision	0			
Mountain View Estates	0			
Steelhammer Ranch	0			
Sinclair-Davis Tract 2	0			
Powell Butte View Estates	0			
Old West Road Subdivision	0			
Carrero-Cowan	0			
River Lake Ranches				36
Willard Estates				36
Juniper Acres				36
Structures along O'Neil Highway				36

Community Preparedness: Mitigation efforts of the community that will make the fire response effective.

Subdivision	Organized stakeholder group, community fire plan, phone tree, mitigation efforts. 0 points	Primarily agency efforts (mailings, fire free, etc.) 2 points	No Effort 4 points
West Powell Butte Estates		2	
All Other Areas			4

Total Protection Capabilities Points:

	West Powell Butte Estates	River Lake Ranches, Willard Estates, Juniper Acres, O'Neil Highway	All Other Areas
Fire Response	0	36	0
Community Preparedness	2	4	4
Total	2	40	4
Adjective rating	Low	High	Low

Values Protected-Structural Density and presence of Critical Infrastructure

Values-at risk and priority setting is best accomplished locally. For a general assessment of life, either population density or home density is appropriate. Identification and evaluation of additional human and economic values is needed for community fire planning. An estimate was made of home density (homes per 10 acres) and community infrastructure based on available data and team member judgment.

Home Density

Homes per 10 Acres	Areas within Powell Butte	
	Red Cloud, Sinclair-Davis Tract 2, Powell Butte View Estates, West Powell Butte Estates	All Other Areas
.1 - .9 (rural) 2 points		2
1 – 5.0 (suburban) 15 points	15	
5.1+ (urban) 30 points		

Community Infrastructure

This category indicates presence of identified community infrastructure. Examples include: power substations and corridors, communication sites and facilities, transportation corridors, major manufacturing and utilities facilities, municipal watersheds, water storage and distribution, fuel storage facilities, hospitals and health care facilities, landfills and waste treatment facilities, schools, churches, community centers, and stores.

Community Infrastructure

Presence of Community Infrastructure	Areas within Powell Butte	
	Red Cloud, Sinclair-Davis Tract 2, Powell Butte View Estates, West Powell Butte Estates	**All Other Areas**
None Present 0 points		
One present 10 points		10
More than One Present 20 points	20	

Total Values Protected Points:

	Red Cloud, Sinclair-Davis Tract 2, Powell Butte View Estates, West Powell Butte Estates	**All Other Areas**
Home Density	15	2
Community Infrastructure	20	10
Total	35	12
Adjective rating	High	Low

Juniper Canyon Assessment Area

Size: 67,707 acres

Risk

Fire Occurrence: 53 fires (FS, BLM, ODF) within the last 10 years. Historic fires from Prineville Fire District (PFD) are not available. An assumption was made that if PFD fires were available then fire occurrence would include 50 additional fires. This would result in a fire occurrence rate of >1.1 per 1000 acres per 10 years. Rating: high or 40 points.

Total Risk Points: 40

Hazard

Weather Factor Value: We used the Oregon state factor value which classifies the entire eastern portion of the state as high, for 40 points.

Topographic Factor Value: GIS topographic data was available to the group to help assign point ratings for slope, aspect, and elevation.

Slope: All areas assigned to 26-40% slope class, 2 points.

Aspect: All areas assigned to moderate to high rating, 4 points.

Elevation: All areas assigned to3500- 5000 feet class, 1 point.

Vegetation/Fuels: GIS vegetation and fuel classification, developed through a contract with the county is available and used to help the group address this factor. The Juniper Canyon area was assigned to fuel hazard factor 3 (abundance of ladder fuels and cheat grass, fuels are often a combination of shrubs with moderate to heavy juniper component), 20 points.

There is potential for active crown fire, a moderate rating, 5 points.

Total hazard points:

Hazard Factor	Juniper Canyon
Weather	40
Topography	
Slope	2
Aspect	4
Elevation	1
Vegetation/Fuels	
Fuel Model	20
Crown Fire Potential	5
Total Hazard Score	72
Adjective Rating	Extreme

Protection Capability

Protection capability is a combination of the capacities of the fire protection agencies, local government and community organizations. A high score represents high risk/low protection capability.

Structural and wildland protection for subdivisions within the Juniper Canyon Area are displayed in the table below.

Subdivision/Area	**Organized structural response <10 minutes** **0 points**	**Inside fire district, but structural response >10 minutes** **8 points**	**No structural protection, wildland response <20 minutes** **15 points**	**No structural response and wildland protection >20 minutes** **36 points**
Juniper Canyon Area	0			

Access into and out of the Juniper Canyon area is constrained by a single route, Juniper Canyon Road. In the event of a large fire heavy traffic would affect the safety of the public and fire fighting resources.

Community Preparedness: Mitigation efforts of the community that will make the fire response effective.

Subdivision	**Organized stakeholder group, community fire plan, phone tree, mitigation efforts.** **0 points**	**Primarily agency efforts (mailings, fire free, etc.)** **2 points**	**No Effort** **4 points**
Juniper Canyon Area		2	

Total Protection Capabilities Points:

	Juniper Canyon
Fire Response	0
Community Preparedness	2
Total	2
Adjective rating	Low

Values Protected-Structural Density and presence of Critical Infrastructure

Values-at-risk determination and priority setting is best accomplished locally. For a general assessment of life, either population density or home density is appropriate. Identification and evaluation of additional human and economic values is needed for community fire planning. An estimate was made of home density (homes per 10 acres) and community infrastructure based on available data and team member judgment.

Home Density

Homes per 10 Acres	**Juniper Canyon**
.1 - .9 (rural) 2 points	0
1 – 5.0 (suburban) 15 points	15
5.1+ (urban) 30 points	0

Community Infrastructure

This category indicates presence of an identified community infrastructure. Examples include: power substations and corridors, communication sites and facilities, transportation corridors, major manufacturing and utilities facilities, municipal watersheds, water storage and distribution, fuel storage facilities, hospitals and health care facilities, landfills and waste treatment facilities, schools, churches, community centers, and stores.

Community Infrastructure

Presence of Community Infrastructure	**Juniper Canyon**
None Present 0 points	0
One present 10 points	0
More than One Present 20 points	20

Total Values Protected Points:

	Juniper Canyon
Home Density	15
Community Infrastructure	20
Total	35
Adjective rating	High

McKay Assessment Area

Size: 327,900 acres

Risk

Fire Occurrence: Approximately 490 fires (FS, BLM, ODF) have occurred within the last 10 years. This would result in a fire occurrence rate of 1.5 per 1000 acres per 10 years. Occurrence category would be >1.1 per 1000 acres per 10 years. Rating: high or 40 points.

Total Risk Points: 40

Hazard

Weather Factor Value: We used the Oregon state factor value which classifies the entire eastern portion of the state as high, for 40 points.

Topographic Factor Value: GIS topographic data was available to the group to help assign point ratings for slope, aspect, and elevation.

Slope: All areas assigned to 26-40% slope class, 2 points.

Aspect: All areas assigned to moderate to high rating, 4 points.

Elevation: All areas assigned to3500- 5000 feet class, 1 point.

Vegetation/Fuels: GIS vegetation and fuel classification, developed through a contract with the county is available and used to help the group address this factor. Fuels and vegetation data is also available from the Ochoco National Forest. The vegetation and fuels classification focuses on the WUI areas within the McKay Area. Much of the area is national forest and not identified as WUI. The majority of the McKay Area was assigned to fuel hazard factor 2 (grass/timber, moderate brush and conifers, fuel models 2 and 6), 15 points. A higher hazard was assigned to the Lofton, Turner, Sherwood and Johnson Creek areas to indicate potential for higher spread rates and more intense fire behavior.

There is potential for active crown fire, a moderate rating, 5 points.

Total hazard points:

Hazard Factor	**Lofton, Turner, Sherwood and Johnson Creek Areas**	**All Other McKay Areas**
Weather	40	40
Topography		
Slope	2	2
Aspect	4	4
Elevation	1	1
Vegetation/Fuels		
Fuel Model	20	15
Crown Fire Potential	5	5
Total Hazard Score	72	67
Adjective Rating	Extreme	Extreme-

Protection Capability

Protection capability is a combination of the capacities of the fire protection agencies, local government and community organizations. A high score represents high risk/low protection capability.

Structural and wildland protection for subdivisions within the McKay Area are displayed in the table below.

Subdivision/Area	**Organized structural response <10 minutes** **0 points**	**Inside fire district, but structural response >10 minutes** **8 points**	**No structural protection, wildland response <20 minutes** **15 points**	**No structural response and wildland protection >20 minutes** **36 points**
McKay Area within PFD	0			
McKay Area outside PFD			15	

Community Preparedness: Mitigation efforts of the community that will make the fire response effective.

Subdivision	**Organized stakeholder group, community fire plan, phone tree, mitigation efforts.** **0 points**	**Primarily agency efforts (mailings, fire free, etc.)** **2 points**	**No Effort** **4 points**
McKay Area		2	

Total Protection Capabilities Points:

	McKay Area Within PFD	**McKay Area Outside PFD**
Fire Response	0	15
Community Preparedness	2	2
Total	2	17
Adjective rating	Low	High

Values Protected-Structural Density and presence of Critical Infrastructure

Values-at-risk and priority setting is best accomplished locally. For a general assessment of life, either population density or home density is appropriate. Identification and evaluation of additional human and economic values is needed for community fire planning. An estimate was made of home density (homes per 10 acres) and community infrastructure based on available data and team member judgment. For the McKay Area subdivisions within the WUI were separated from other areas for assignment of values.
Home Density

Homes per 10 Acres	Subdivisions within McKay WUI	All Other WUI Areas
.1 - .9 (rural) 2 points		2
1 – 5.0 (suburban) 15 points	15	
5.1+ (urban) 30 points		

Identified WUI Subdivisions with the McKay Area:

Ochoco West
Miles Puddy Ranches
Meadow Ridge
Sunset Hills Subdivision
Pleasant View Heights
Ochoco Lake Lots
North Shore Estates
Lakeshore Trailer Park
Mill Creek Ranches

Community Infrastructure

This category indicates presence of an identified community infrastructure. Examples include: power substations and corridors, communication sites and facilities, transportation corridors, major manufacturing and utilities facilities, municipal watersheds, water storage and distribution, fuel storage facilities, hospitals and health care facilities, landfills and waste treatment facilities, schools, churches, community centers, and stores.

Community Infrastructure

Presence of Community Infrastructure	McKay
None Present 0 points	0
One present 10 points	0
More than One Present 20 points	20

Total Values Protected Points:

	Subdivisions within McKay WUI	All Other WUI Areas
Home Density	15	2
Community Infrastructure	20	20
Total	35	22
Adjective rating	High	Moderate

Maury Assessment Area

Size: 330,170 acres

Risk

Fire Occurrence: Approximately 269 fires (FS, BLM, ODF) have occurred within the last 10 years. This would result in a fire occurrence rate of .81 per 1000 acres per 10 years, .1 - 1.1 per 1000 acres per 10 years. Rating: moderate or 20 points.

Total Risk Points: 20

Hazard

Weather Factor Value: We used the Oregon state factor value which classifies the entire eastern portion of the state as high, for 40 points.

Topographic Factor Value: GIS topographic data was available to the group to help assign point ratings for slope, aspect, and elevation.

Slope: All areas assigned to 26-40% slope class, 2 points.

Aspect: The Conant Basin Area ((Riverside Ranch) is given a rating of 5, all other areas assigned to moderate, 3 points.

Elevation: All areas assigned to 3500 - 5000 feet class, 1 point.

Vegetation/Fuels: GIS vegetation and fuel classification, developed through a contract with the county is available and used to help the group address this factor. Fuels and vegetation data is also available from the Ochoco National Forest. The vegetation and fuels classification focuses on the WUI areas within the Maury Area. Much of the area is national forest or BLM and not identified as WUI. The Maury Area was assigned to fuel hazard factor 2 (grass/timber, moderate brush and conifers, fuel models 2 and 6), a moderate rating for 15 points.

There is potential for active crown fire, a moderate rating, 5 points.

Total hazard points:

Hazard Factor	Conant Basin	All Other Maury Areas
Weather	40	40
Topography		
Slope	2	2
Aspect	5	3
Elevation	1	1
Vegetation/Fuels		
Fuel Model	15	15
Crown Fire Potential	5	5
Total Hazard Score	68	66
Adjective Rating	Extreme	Extreme

Protection Capability

Protection capability is a combination of the capacities of the fire protection agencies, local government and community organizations. A high score represents high risk/low protection capability.

Structural and wildland protection for subdivisions within the Maury Area are displayed in the table below.

Subdivision/Area	**Organized structural response <10 minutes** **0 points**	**Inside fire district, but structural response >10 minutes** **8 points**	**No structural protection, wildland response <20 minutes** **15 points**	**No structural response and wildland protection >20 minutes** **36 points**
Conant Basin				36
All Other Area				36

Community Preparedness: Mitigation efforts of the community that will make the fire response effective.

Subdivision	**Organized stakeholder group, community fire plan, phone tree, mitigation efforts.** **0 points**	**Primarily agency efforts (mailings, fire free, etc.)** **2 points**	**No Effort** **4 points**
Maury Area			4

Total Protection Capabilities Points:

	Conant Basin	**All Other Areas**
Fire Response	36	36
Community Preparedness	4	4
Total	40	40
Adjective rating	High	High

Values Protected

Values-at-risk determination and priority setting is best accomplished locally. For a general assessment of life, either population density or home density is appropriate. Identification and evaluation of additional human and economic values is needed for community fire planning. An estimate was made of home density (homes per 10 acres) and community infrastructure based on available data and team member judgment.

Home Density

Homes per 10 Acres	Maury Area
.1 - .9 (rural) 2 points	2
1 – 5.0 (suburban) 15 points	
5.1+ (urban) 30 points	

Community Infrastructure

This category indicates presence of an identified community infrastructure. Examples include: power substations and corridors, communication sites and facilities, transportation corridors, major manufacturing and utilities facilities, municipal watersheds, water storage and distribution, fuel storage facilities, hospitals and health care facilities, landfills and waste treatment facilities, schools, churches, community centers, and stores.

Community Infrastructure

Presence of Community Infrastructure	Maury Area
None Present 0 points	0
One present 10 points	0
More than One Present 20 points	20

Total Values Protected Points:

	Maury Area
Home Density	2
Community Infrastructure	20
Total	22
Adjective rating	Moderate

Twelve Mile Assessment Area

Size: 461,200 acres

Risk

Fire Occurrence: Approximately 138 fires (FS, BLM, ODF) have occurred within the last 10 years. This would result in a fire occurrence rate of .3 fires per 1000 acres per 10 years, or between .1 and 1.1 per 1000 acres per 10 years. Rating: high or 20 points.

Total Risk Points: 20

Hazard

Weather Factor Value: We used the Oregon state factor value which classifies the entire eastern portion of the state as high, for 40 points.

Topographic Factor Value: GIS topographic data was available to the group to help assign point ratings for slope, aspect, and elevation.

Slope: All areas assigned to 26-40% slope class, 2 points.

Aspect: Area assigned to moderate, 3 points.

Elevation: All areas assigned to 5,000+ feet class, 1 point.

Vegetation/Fuels: Very little GIS vegetation and fuel classification is available for the Twelve Mile Area. The Twelve Mile Area was assigned to fuel hazard factor 1 (grass, low/less flammable brush, fuel models 1 and 5), a low rating for 5 points. Much of the area is grazed by livestock which reduces the amount of fuels available to support a fire.

There is potential for active crown fire, a moderate rating, 5 points.

Total hazard points:

Hazard Factor	Twelve Mile Area
Weather	40
Topography	
Slope	2
Aspect	3
Elevation	1
Vegetation/Fuels	
Fuel Model	5
Crown Fire Potential	0
Total Hazard Score	51
Adjective Rating	High

Protection Capability

Protection capability is a combination of the capacities of the fire protection agencies, local government and community organizations. A high score represents high risk/low protection capability.

Structural and wildland protection for subdivisions within the Twelve Mile Area are displayed in the table below.

Subdivision/Area	**Organized structural response <10 minutes** **0 points**	**Inside fire district, but structural response >10 minutes** **8 points**	**No structural protection, wildland response <20 minutes** **15 points**	**No structural response and wildland protection >20 minutes** **36 points**
Twelve Mile Area				36

Community Preparedness: Mitigation efforts of the community that will make the fire response effective.

Subdivision	**Organized stakeholder group, community fire plan, phone tree, mitigation efforts.** **0 points**	**Primarily agency efforts (mailings, fire free, etc.)** **2 points**	**No Effort** **4 points**
Maury Area			4

Total Protection Capabilities Points:

	Twelve Mile Area
Fire Response	36
Community Preparedness	4
Total	40
Adjective rating	High

Values Protected

Values-at-risk determination and priority setting is best accomplished locally. For a general assessment of life, either population density or home density is appropriate. Identification and evaluation of additional human and economic values is needed for community fire planning. An estimate was made of home density (homes per 10 acres) and community infrastructure based on available data and team member judgment. For the McKay Area subdivisions within the WUI were separated from other areas for assignment of values.

Home Density

Homes per 10 Acres	Twelve Mile Area
.1 - .9 (rural) 2 points	2
1 – 5.0 (suburban) 15 points	
5.1+ (urban) 30 points	

Community Infrastructure

This category indicates presence of an identified community infrastructure. Examples include: power substations and corridors, communication sites and facilities, transportation corridors, major manufacturing and utilities facilities, municipal watersheds, water storage and distribution, fuel storage facilities, hospitals and health care facilities, landfills and waste treatment facilities, schools, churches, community centers, and stores.

Community Infrastructure

Presence of Community Infrastructure	Twelve Mile Area
None Present 0 points	0
One present 10 points	10
More than One Present 20 points	0

Total Values Protected Points:

	Twelve Mile Area
Home Density	2
Community Infrastructure	10
Total	12
Adjective rating	Low

Paulina Assessment Area

Size: 504,830 acres

Risk

Fire Occurrence: Approximately 635 fires (FS, BLM, ODF) have occurred within the last 10 years. This would result in a fire occurrence rate of 1.26 per 1000 acres per 10 years or >1.1 per 1000 acres per 10 years. Rating: high or 40 points.

Total Risk Points: 40

Hazard

Weather Factor Value: We used the Oregon state factor value which classifies the entire eastern portion of the state as high, for 40 points.

Topographic Factor Value: GIS topographic data was available to the group to help assign point ratings for slope, aspect, and elevation.

Slope: Riverside Ranch area assigned a value of 2, 26 – 40% slope class. All other WUI areas assigned to 0 – 25% slope class, 0 points.

Aspect: Rager Ranger Station and Riverside Ranch assigned a value of High, 5 points. All other areas assigned to moderate, 3 points.

Elevation: All areas assigned to 5000+ feet class, 1 point.

Vegetation/Fuels: Fuels and vegetation data is available from the Ochoco National Forest. The vegetation and fuels classification focuses on the WUI areas within the Paulina Area. Much of the area is national forest or BLM and not identified as WUI. Rager and Riverside Ranch are assigned a fuel hazard value of 2 (grass/timber, moderate brush and conifers, fuel models 2 and 6), moderate for 15 points. The balance of the Paulina Area was assigned to fuel hazard factor 1, low for 5 points.

There is potential for active crown fire for the Riverside Ranch area, a moderate rating, 5 points. The balance of the Paulina Area has low potential for crown fire, 0 points.

Total hazard points:

Hazard Factor	**Riverside Ranch**	**Rager**	**All Other Paulina Area**
Weather	40	40	40
Topography			
Slope	2	0	0
Aspect	5	5	3
Elevation	1	1	1
Vegetation/Fuels			
Fuel Model	15	15	5
Crown Fire Potential	5	0	0
Total Hazard Score	68	61	49
Adjective Rating	Extreme	Extreme	High

Protection Capability

Protection capability is a combination of the capacities of the fire protection agencies, local government and community organizations. A high score represents high risk/low protection capability.

Structural and wildland protection for subdivisions within the Paulina Area are displayed in the table below.

Subdivision/Area	**Organized structural response <10 minutes** **0 points**	**Inside fire district, but structural response >10 minutes** **8 points**	**No structural protection, wildland response <20 minutes** **15 points**	**No structural response and wildland protection >20 minutes** **36 points**
Riverside Ranch				36
Rager			15	
Paulina			15	
Post				36

Community Preparedness: Mitigation efforts of the community that will make the fire response effective.

Subdivision	**Organized stakeholder group, community fire plan, phone tree, mitigation efforts.** **0 points**	**Primarily agency efforts (mailings, fire free, etc.)** **2 points**	**No Effort** **4 points**
Rager		2	
Balance of Paulina Area			4

Total Protection Capabilities Points:

	Riverside Ranch	**Post**	**Paulina**	**Rager**
Fire Response	36	36	15	15
Community Preparedness	4	4	4	2
Total	40	40	19	17
Adjective rating	High	High	High	High

Values Protected

Values-at-risk determination and priority setting is best accomplished locally. For a general assessment of life, either population density or home density is appropriate. Identification and evaluation of additional human and economic values is needed for community fire planning. An estimate was made of home density (homes per 10 acres) and community infrastructure based on available data and team member judgment.

Home Density

Homes per 10 Acres	Rager and Paulina	Balance of Paulina Area
.1 - .9 (rural) 2 points		2
1 – 5.0 (suburban) 15 points	15	
5.1+ (urban) 30 points		

Community Infrastructure

This category indicates presence of an identified community infrastructure. Examples include: power substations and corridors, communication sites and facilities, transportation corridors, major manufacturing and utilities facilities, municipal watersheds, water storage and distribution, fuel storage facilities, hospitals and health care facilities, landfills and waste treatment facilities, schools, churches, community centers, and stores.

Community Infrastructure

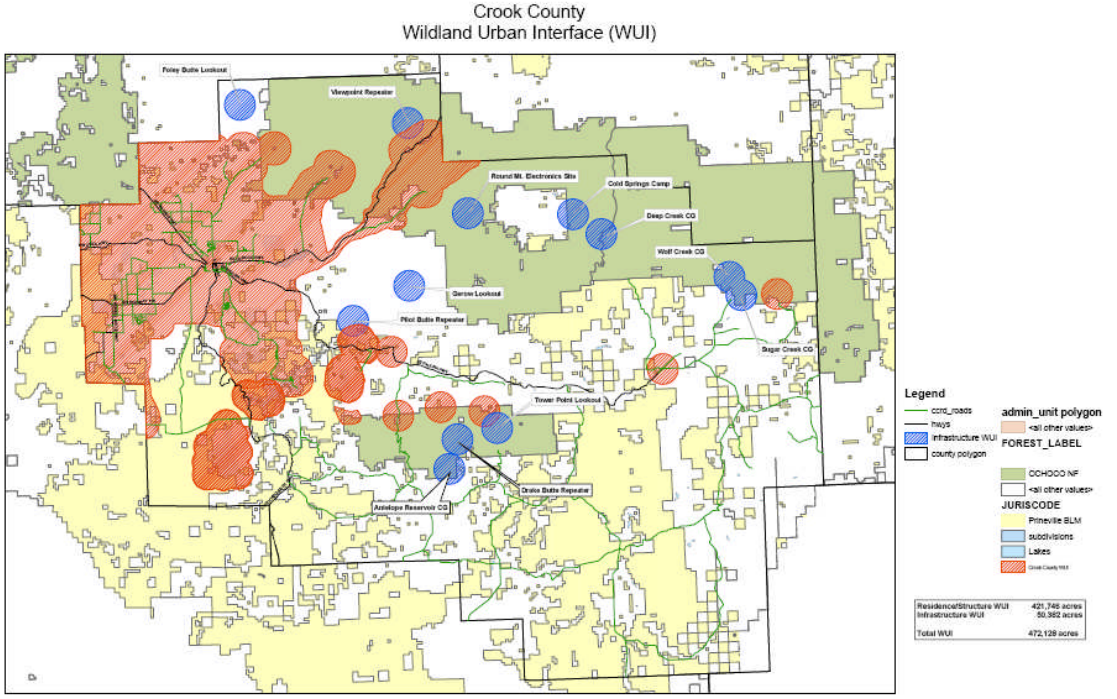
Presence of Community Infrastructure	Paulina Area
None Present 0 points	0
One present 10 points	0
More than One Present 20 points	20

Total Values Protected Points:

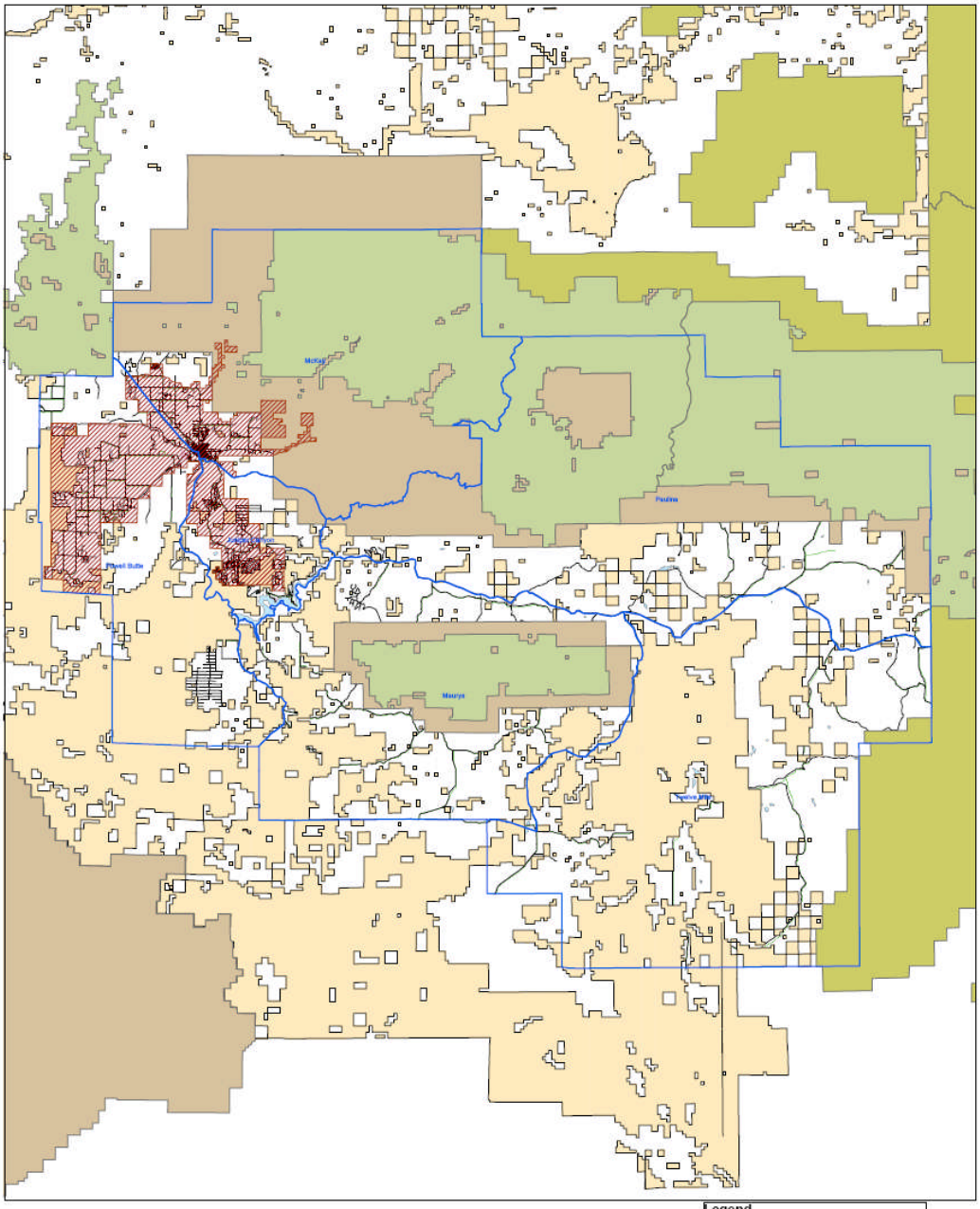
	Rager and Paulina	Balance of Paulina Area
Home Density	15	2
Community Infrastructure	20	20
Total	35	22
Adjective rating	High	Moderate

12.3 Reference Maps

- Fire Regime
- Condition Class
- Hazard Assessment Areas
- Population Blocks
- County WUI
- Subdivision Ranking
- Agency Protection



Crook County
Agency Protection



Crook County Agency Fire Protection

Agency	Approx. Acres	Percent of County
Crook County Fire Protection District	122,431	6
Oregon Dept. of Forestry	321,414	17
Ochoco National Forest	426,173	22
Bureau of Land Management	510,495	27
Unprotected	531,648	28

13.0 Documentation of Annual Review

Annual review and documentation of the CWPP as described in Section 9.0 *Monitoring and Annual Review*, is important to identify progress and new opportunities, and in maintaining the viability and effectiveness of the community wildfire mitigation effort.

Section 13.1 includes a sample documentation format.

Section 13.2 provides an opportunity to incorporate this documentation, other updates and actions plans into the CWPP document.

13.1 Annual Review Documentation Form

Crook County Community Wildfire Protection Plan

Annual Review

Participants-Organization Representation: Date: _____

Agenda Items:

Actions Needed/Assignments:

Plan Updates:

Documentation Attachments:

13.2 Retention File-Annual Review Documents

(File annual review documentation and update summaries here.)

14.0 Reference: Endnotes

[1] Preparing a Community Wildfire Protection Plan-A handbook for Wildland-Urban Interface Communities, National Association of State Foresters, *et al,* March 2004
[2] Ibid.
[3] U.S. Census Bureau data as quoted in *The Bulletin,* April 17, 2005.
[4] Atlas of Oregon, Loy et al, University of Oregon Press, 2001, quoted in Crook County Natural Hazards Mitigation Plan, 2005.
[5] Crook County Natural Hazard Mitigation Plan, 2005
[6] Central Oregon Precipitation Map prepared by Oregon State University, Spatial Climate Analysis Service.
[7] Crook County Natural Hazard Mitigation Plan, 2005.
[8] Data derived from Central Oregon Fire Management Services GIS products.
[9] Personal communication with Stephen Fitzgerald, OSU Extension Forester, quoted in Crook County Natural Hazards Mitigation Plan, Section 7: Wildfire.
[10] Central Oregon Fire Management Plan, 2003. Central Oregon Fire Management Services, Chap 3-Scope of Fire Management. Quoted and adapted from Crook County Natural Hazard Mitigation Plan, Section 7-Wildfire.
[11] Oregon Forestland-Urban Interface Fire Protection Act "Property Evaluation and Self-Certification Guide", Oregon Department of Forestry, 2004. Page 8
[12] Fire Protection Working Group White Paper, October 2004. Oregon Department of Forestry
[13] Preparing a Community Wildfire Protection Plan-A handbook for Wildland-Urban Interface Communities, National Association of State Foresters, *et al,* March 2004.