

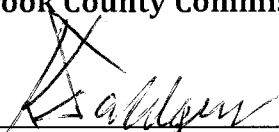
Crook County Community Wildfire Protection Plan

June 2014



As required by the Healthy Forest Restoration Act, the undersigned representatives of Crook County, Crook County Fire Chief, and Oregon Department of Forestry acknowledge that they have reviewed and approve the contents of this plan.


Crook County Commission Chair



Commissioner Fahlgren

7/2/14
Date

Crook County Fire and Rescue



Matt Smith

7/2/14
Date

Oregon Department of Forestry



George Ponte

8/15/14
Date

This Community Wildfire Protection Plan represents the efforts and cooperation of a number of organizations and agencies working together to improve preparedness for wildfire events while reducing risk factors.

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1.0 Introduction

1.1 Purpose

Wildfire, often described as “Central Oregon’s natural disaster,” has become increasingly destructive due to two compounding factors: decades of fire suppression have resulted in unnatural forest fuel build-up while people have moved further into the natural landscape to take advantage of privacy, natural beauty and recreation opportunities. The zone where human development meets wildland is referred to as the “wildland-urban interface” (WUI) and presents the greatest risk for life, property and infrastructure to be threatened by wildland fire.

Two significant pieces of federal legislation were passed to encourage local fire prevention efforts. The Healthy Forest Initiative (HFI, 2002) reduces the administrative delays for federal land management agencies to accomplish hazardous fuels reduction projects. The Healthy Forests Restoration Act (HFRA, 2003) provides the opportunity and framework for local communities to incorporate their priorities into the planning and implementation of forest management activities and hazardous fuels treatments on public lands. The HFRA invites communities to develop a Community Wildfire Protection Plan (CWPP) to identify vulnerabilities in wildland and developed areas and create an action plan to build their resilience to wildland fire.

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 CWPP for Crook County in early 2004. The Court requested an integrated CWPP for the county, with a focus on communities and components of critical infrastructure. In June 2005, Crook County completed the first version of the CWPP and it was updated in 2006-7. This re-write was completed in 2013-4.

1.2 Agency and Public Participation

This plan was developed in collaboration with representatives from:

- Citizens At-Large
- Crook County Court
- Crook County Sheriff's Office/Emergency Management
- Crook County Fire and Rescue
- Central Oregon Fire Management Service (COFMS)
- Oregon Department of Forestry
- Oregon State Fire Marshall's Office
- Bureau of Land Management
- US Forest Service

1.3 Methodology

Following approval of the Healthy Forests Restoration Act (HFRA), two CWPP planning models predominated in Oregon. The first provided a mechanism to address both the CWPP requirements and the wildland fire component of Natural Hazard Mitigation Plans (NHMP) to meet Federal Emergency Management Agency (FEMA) guidelines. The second, entitled “Preparing a Community Wildfire Protection Plan - A Handbook for Wildland-Urban Interface Communities” (known as the NASF model) was developed by the National Association of State Foresters, National Association of Counties, Society of American Foresters and others. The NASF model was selected as the foundation for the Crook County CWPP effort because the County had already completed their NHMP. Below is a summary of the steps identified in the NASF model:

1. Convene Decision makers
2. Involve Federal Agencies
3. Engage Interested Parties
4. Establish a Community Base map
5. Develop a Community Risk Assessment
6. Establish Community Priorities and Recommendations
7. Develop an Action Plan and Assessment Strategy
8. Finalize Community Wildfire Protection Plan

1.4 Wildland-Urban Interface (WUI)

In the context of the Healthy Forest Restoration Act (HFRA), one primary purpose of the CWPP is to establish a local definition and boundary for the wildland-urban interface (WUI). The HFRA identifies the wildland urban interface as an area within or adjacent to an at-risk community that has been identified by a community in its wildfire protection plan. The HFRA also provides some buffer distance guidelines for areas that do not have a CWPP. The Steering Committee decided to use these guidelines to define the WUI buffer distances for the at-risk communities and infrastructure in Crook County. The distances are identified as:

- Extending 0.5 miles from the boundary of an at-risk community,
- Extending 1.5 miles from the boundary of an at-risk community when other criteria are met such as a sustained steep slope or a geographic feature that creates an effective firebreak, or is classified as Condition Class 3 land.

The Steering Committee identified the following parameters to identify wildland-urban interface (WUI) areas:

- Current and near-term planned residential communities;
- Seasonal recreation communities;
- Current and anticipated transportation infrastructure, including but not limited to:
 - Major highway routes leading to and from the county.

- Current and planned access routes in support of evacuation and ingress by emergency responders, including sufficient setbacks for one way in/out routes.
- Routes providing access to the more remote portions of the county.
- Routes providing access to critical infrastructure sites.
- Other critical infrastructure within the county, including but not limited to:
 - Electronic sites supporting response agencies, 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.
 - Economic assets such as data centers, businesses and associated support infrastructure.

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

1.5 Goals of the Crook County CWPP

- Protect against loss of life, property and natural resources from wildfire.
- Strengthen partnerships to build and maintain active participation in mitigation and suppression of wildfire from each fire protection agency and unprotected area.
- Instill a sense of personal responsibility to reduce the risk of intense wildfire behavior on public and private lands.
- Enhance local ability to prepare for, respond to and recover from wildfires in Crook County.
- Generate site development standards to enhance structural survivability in fire-prone areas.
- Develop a 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 used as a county-wide, strategic assessment of the risks, hazards, and mitigation and prevention opportunities associated with wildfire in our communities. This plan is intended to be a living document, which will be reviewed, updated, amended and distributed (as needed) on an annual basis. The Steering Committee will convene every five years to re-evaluate the risks and overall analysis.

2.0 Crook County Community Profile

Crook County (population 20,728¹) has a deep history in logging, wood products and agriculture. After the decline of the timber industry, community leaders renewed efforts to improve Crook County's economic circumstances.

During the economic boom in the 2000s, Crook County experienced rapid growth with plans for four destination resorts totaling over 4,500 new housing units. However, the economic collapse in 2008/2009 created a new volatile situation with deeper unemployment than the state and national averages.² As a part of recovery from the economic downturn, the City of Prineville created an enterprise zone and renewable energy zone and attracted data centers for both Facebook and Apple. The residential boom of the 2000s coupled with new economic infrastructure has resulted in development in portions of the county traditionally occupied by natural vegetation. This has expanded Crook County's wildland-urban interface (WUI), potentially exposing more residents to the impact of wildland fire.



2.1 Geography and Environment

Crook County is located in the geographic center of Oregon at the base of the Cascade Mountains. The Cascades contribute to gusty, turbulent, dry cold front passage that has historically contributed to high wildland fire rates of spread and spotting in many areas of the county. The rain shadow effect of the Cascades also shapes the Central Oregon high desert and is readily apparent in the western and southern portions of Crook County. These portions are located at 3000 feet in elevation and are dominated by Western Juniper and a variety of sagebrush and grass species with an annual average precipitation of 8 to 10 inches.

The Ochoco mountain range, located in the northern and eastern portion of the county, transitions from high desert to elevations of 6,000 feet with broken terrain and a dry-forest ecotype dominated by Ponderosa Pines and interior Douglas fir. Lodgepole pine, Western larch and White fir are also common on north slopes and higher elevations. As weather moves across and into the higher elevation of the Ochoco Mountains, precipitation increases.

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.

¹ U.S. Census, 2010.

² Crook County Coordinated Human Services Transportation Plan. 2009 Update.
<http://www.coic.org/t/docs/CrookCountyPlan.pdf>

2.2 Critical Infrastructure

The Healthy Forests Restoration Act (HFRA) requires that Community Wildfire Protection Plans (CWPP) focus on fire-safety of both communities and critical infrastructure. Traditionally, development in Crook County was located in valley areas, near water and grazing for livestock. However, over the last few decades, development has moved outward into areas of drier vegetation, further from main roads and more wide-spread utility systems supporting sprawling residential development.



Figure 2.1 Crook County Annual Average Precipitation Map (2000)

The analysis of community resilience to the destructive effects of wildfire must address fire threat to residences as well as infrastructure used by emergency personnel including, power, electricity, transformers, telephone, water and communications systems, cameras, and roadway egress/ingress. The road system must adequately address ingress and egress issues for emergency vehicles and residential and recreational travel. Hazardous vegetation must be treated not only around homes, but along travel routes and must provide effective two-way travel with sufficient width to accommodate evacuation traffic and turn-around point for emergency vehicles.

As measures are identified to expand the resiliency of Crook County's communities, hazardous fuel treatments and standards for access to infrastructure must be applied to existing developments and in the planning process for newly developed areas.

2.3 Communities at Risk

Developed areas are identified within each of the Risk Assessment Area subsections in Section 4.0. Components of critical infrastructure are identified within each of the Assessment Areas and subsequently summarized in *Section 8.0 Summary of Critical Infrastructure*.

2.3 Fire Protection Agencies

Portions of Crook County receive fire protection from one of the following agencies. Note: the fire management functions of the Ochoco National Forest and the Bureau of Land Management have been merged with that of the Deschutes National Forest under Central Oregon Fire Management Services (COFMS).

Alfalfa Fire District #1 is a rural fire district approved by Alfalfa voters in November 2013. The area will still be considered unprotected until the new district is in operation. The district will begin raising money to acquire equipment, fund training and build a fire station. Residents will begin paying taxes for the district in July 2014, and it will begin collecting revenue in November 2014.

Brothers-Hampton Rangeland Fire Protection Association (RFPA) operates as an independent association of landowners that provide their own protection and works in cooperation with the Prineville BLM and Oregon Department of Forestry (ODF). The RFPA was formed as a non-profit corporation with a local Board of Directors and provides wildland fire protection under a cooperative agreement with the Oregon Board of Forestry. The Chair of the RFPA Board is John Kopser.

The RFPA is centered on the Brothers and Hampton area south of the Maury Mountains and east of Hwy 27. It also includes areas in Deschutes and Lake Counties. The RFPA covers 135,405 acres of previously unprotected private lands in Crook County. In addition to trucks, dozers, and other equipment owned by the members of the RFPA, the RFPA is equipped with two fire trucks on loan through the Federal Excess Property Program. ODF provides technical support in the form of grants, grant writing, equipment procurement, and firefighter training.

Bureau of Land Management (BLM) see COFMS.

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.

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.

Post-Paulina Rangeland Fire Protection Association (RFPA) operates as an independent Association of landowners that provide their own protection and works in cooperation with the Prineville BLM and ODF. The RFPA was formed as a non-profit corporation with a local Board of Directors and provides wildland fire protection under a Cooperative Agreement with the Oregon Board of Forestry.

The Post-Paulina Rangeland Fire Protection Association is centered on the Post and Paulina area north of the Maury Mountains and to the southeast including the GI Ranch. It also includes areas in Deschutes and Harney counties. The RFPA covers 344,729 acres of

previously unprotected lands in Crook County. In addition to trucks, dozers and other equipment owned by members of the RFPA, the RFPA is equipped with two fire trucks on loan through the Federal Excess Property Program. ODF provides technical support in the form of grants, grant writing, equipment procurement, and firefighter training.

Map: Land Ownership and Fire Protection 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. Additional information about this system can be found in the *Crook County Natural Hazards Mitigation Plan, 2010 Update*.

2.4 Unprotected Lands

Historically, a substantial portion of private land in the central and eastern portions of the county received no fire protection, either structural or wildland. However, due to the establishment of two Rangeland Fire Protection Associations, private, unprotected lands now account for a small portion of the County. In 2005, about 28% of the County (531,648 acres) was unprotected. As of 2014, private, un-protected lands account for 57,494 acres (90 square miles) and make up 2.8% of the county.

Development of the Rangeland Fire Protection Associations is discussed further in *Section 6.0 Unprotected Lands and Communities*.

3.0 The Crook County Fire Environment

The Crook County ecosystems, particularly those adjacent to development at low and mid elevations, are described as “fire-adapted”. Vegetation in fire-adapted areas required fire to remain healthy and sustainable over time. Over the last century, fire suppression and forest management activities have altered the natural period between fires for these ecosystems (fire return interval). This has resulted in tree species shifts, increase in tree stand density and overgrowth of forest fuels, all of which increase the susceptibility of the forest to insects, disease and to wildfire.³

3.1 Wildfire Causes

Lightning is a main fire starter in Crook County. While fire cause data is incomplete, patterns show that lightning historically causes about three times as many fires as are caused by humans in the County.

Human Caused fires are typically started by accident. Frequent ignition sources include: out of control yard burning, fireworks, cigarette butts, inadequately suppressed campfires, and heated catalytic converters in dry grass.

3.2 Fire Behavior Factors

Wildland fire behavior is comprised of three components: fuels, topography and weather. The interaction between these three factors offers insight into how a fire behaves after it is ignited. It is important to note that fuel is the only factor that can be mitigated. Weather and topography can be understood, but not influenced.



Fuels describe anything that can burn in a fire. Dry fuels burn easier and fuels that are close together allow fire to spread quickly. There are three general categories of fuels: ground fuels, surface fuels and canopy fuels.

Ground fuels lie just under the ground’s surface, such as buried logs or roots. These fuels burn slowly because of higher moisture and lower oxygen levels.

Surface fuels are just above the surface and include anything from pine needles, grass, leaves, shrubs, or home porches. Because of 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). The south and western areas of

Personal communication with Stephen Fitzgerald, OSU Extension Forester, quoted in Crook County Natural Hazards Mitigation Plan, Section 7: Wildfire.³

Crook County are dominated by Western Juniper and a variety of sagebrush and grass species. These relatively low fuels can generate very intense, high *flame length* fire. *Flame length* describes the distance between the tip and the base of a flame, and is used as an indicator of fire intensity. Fire managers try to reduce fuels so wildfires generate flame lengths under four feet.



Figure 2: Sagebrush typical of lower elevations of Crook County.

and eastern portions of Crook County have a dry-forest ecotype dominated by Ponderosa Pines and interior Douglas fir. Lodgepole pine, Western larch and White fir are also common on north slopes and higher elevations.

Ladder Fuels are the small trees and brush that carry fire from the surface into the crowns. Reducing ladder fuels significantly reduces the risk of crown fire.

Topography is the elevation and slope, steepness, aspect and shape of the country – the “lay of the land”. Fire intensity and speed varies greatly depending on the topography of the land. Fire generally travels rapidly uphill as it dries out the fuels above it. Steep terrains are also more difficult for firefighters to access.

Crook County’s western boundary is located at approximately 3,000 feet in an area of high desert vegetation. Elevation increases, up to 6,000 feet, as the terrain becomes more broken in the northern and eastern portions of the county, which are part of the Ochoco Mountains. Fire behavior is also affected by the aspect, or direction the slope faces. Southern-facing slopes get the most direct sunlight and are the driest side of any mountain or foothill. Some features of the landscape can be beneficial to controlling fire, like rivers and lakes that can impede its path and help firefighters contain the fire. However, river canyons can also channel and amplify winds, so fires move faster and burn hotter. The Crooked River runs east-west from the Ochoco Mountains and into the Prineville Reservoir, created by the Bowman Dam. Below the dam, the river flows through Prineville and continues northwest until it empties into Lake Billy Chinook (Jefferson County).

Weather patterns in Crook County are strongly affected by the Cascade Mountain range. Wind, humidity, temperature and precipitation are the aspects of weather that have the greatest influence on fire behavior. Wind propels fire by injecting oxygen for combustion

Map: Conditional Flame Length (produced by the US Forest Service) illustrates the flame length based on fuel type for Crook County.

Crown fuels refer to the crowns (tops) of trees and are typically the most dangerous fuel type. A crown fire is significantly harder to suppress and can quickly spread away from the ground fire where it originated. The northern



Figure 3: Ochoco Mountains, Stein's Pillar: vegetation typical of the in the north-eastern portions of the

and pushing the flame onto unburned fuel. The Cascades contribute to the gusty, turbulent, dry cold front passage that has historically contributed to high wildland fire rates of spread and spotting in many areas of the Crook County. Humidity and precipitation (as well as temperature to a lesser degree) control the level to which fuels are saturated with water. The rain shadow effect of the Cascades affects precipitation patterns with the western and southern portions of Crook County having an annual average precipitation of 8-10 inches, while the northern and eastern portions at higher elevations receive increased precipitation.

4.0 Risk Assessment Areas and Analysis Process

In addition to meeting the assessment needs for the CWPP, one of the objectives of the planning process is to facilitate any near-term pending prevention or mitigation initiatives. The CWPP uses the ODF Risk Assessment process so that assessment data is compatible with implementation of the “Oregon Forestland-Urban Interface Fire Protection Act” by Oregon Department of Forestry.

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. See *Map: All Risk Assessment Areas* for boundaries.

1. Powell Butte
2. McKay
3. Juniper Canyon
4. Maury
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

In the development of the 2005 CWPP, an inventory of existing natural resource data was developed from all participating agencies. The analysis process then proceeded in a series of progressive steps outlined below.

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.

The 2014 CWPP re-write reviewed the steps and updated information as needed. The committee reviewed mitigation work that had been completed in each of the Risk Assessment Areas since 2005; however, the majority of the overall risk assessment ratings remained unchanged.

4.3 Crook County Assessment Results

Each of the County's geographical assessment areas was screened through the ODF assessment model. This process resulted in conditions labeled as "extreme, 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? *Note: 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. Crook County does not have a data base or field assessment for acreage treated or defense measures homeowners have taken (discussed further in Section 5.0).*

All data for the assessment results are in tabular form in Appendix C and in narrative form on the following pages.

Crook County CWPP

Land Protection Agency
and Risk Assessment Areas

Land Protection Agency

- Alfalfa
- Brothers - Hampton
- Crook County Fire & Rescue
- Dual CCFR & ODF
- Dual CCFR & Post - Paulina
- ODF
- Post - Paulina

- Subdivisions
- Risk Assessment Areas

Base layers

- Crook County Boundary
- WUI
- Deschutes CWPP
- Lakes & Water Bodies
- Major Rivers
- Major Roads
- Highways

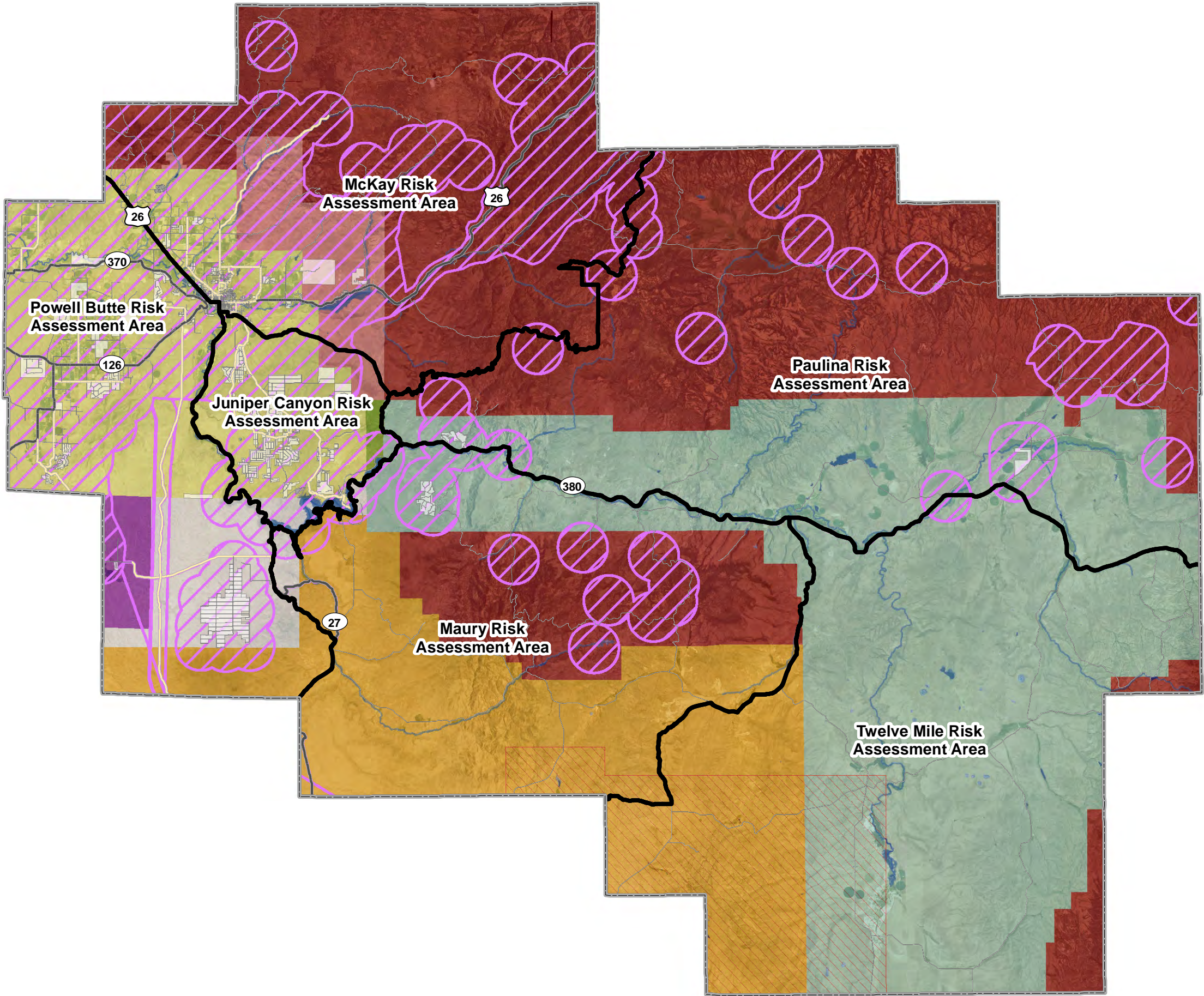
Map Notes

Map created by Crook County GIS - 4/8/2014
Risk Assessment Areas based on 2005 CWPP
Deschutes CWPP provided by Deschutes Co.
All other data is maintained by CC GIS.
NAIP 2011 Imagery from State of Oregon
Only Subdivisions in Risk Assessment Table and
adjacent to Included

Miles 5

SCALE:

Kilometers 5



4.3.1 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 the City of 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.

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 (‘High’ rating assigned to all until otherwise verified)	40	High

Communities and Mitigation Work Completed within Powell Butte Assessment Area

The 2008 FEMA Pre-Disaster Mitigation Hazardous Vegetation Treatment grant focused on Red Cloud Ranch in Powell Butte, Ochoco West and the area on the north side of Ochoco Reservoir (in the McKay Risk Assessment Area).

The Bureau of Land Management completed some targeted mitigation work in the area, and Oregon Department of Forestry completed some scattered work as well.

Notes highlighting the fuels treatment completed in each community are included below.

Communities within the area 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
- ✓ Red Cloud Ranch
 - 2008 FEMA Summary: 50% of parcels participated and now meet Crook County Fire Ready standards. About 25% are still in need of substantial vegetation reduction. The remaining 25% have limited vegetation in need of treatment.
- ✓ Powell Butte

- ✓ Prineville Ranch Subdivision
- ✓ Twin Lakes Ranch
- ✓ Westwood
- ✓ Westridge Estates
- ✓ Old West Road Subdivision
- ✓ West Powell Butte Estates
- ✓ 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 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 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. 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.
3. Emergency and Communications Facilities: Several agencies have communications facilities within the assessment area. Hazardous fuels assessments for these critical infrastructure sites and commercial electrical service to them (including hazardous trees adjacent to rights-of-way and critical infrastructure) is needed.
4. Public Agency Facilities: 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. School Facilities: Powell Butte School is located in the unit.
6. Campgrounds and Recreation 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.
7. Other Critical Facilities: 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. Facebook and Apple data centers are also located on the southwestern edge of the City.










The Oregon Army National Guard Biak Training Center is located in western Crook County and eastern Deschutes County in the Redmond area. Assigned personnel are in the process of developing a fire management plan in accordance with Department of Defense guidelines. The Deschutes County portion of this area is addressed by the Greater Redmond CWPP and is included in their WUI.

The portion of the training area in Crook County extends, in part, nearly to the Crooked River south of Highway 126. The majority of that area is already within the identified WUI of the Powell Butte Assessment Area. As the Training Center completes its fire planning process, the Crook County CWPP Review Committee should confer with National Guard staff to ensure that no conflicts unintentionally develop between the CWPP and the training center document. Subsequent review committees should also review and identify which portions of the training center are most apt to have a potential fire-related impact on adjoining residents in Crook County.

The Review Committee recognizes the importance of this Center for National Guard resources to maintain a high level of readiness.

Crook County CWPP

Powell Butte Risk Assessment Area

-  Subdivisions
-  Risk Assessment Areas
-  Crook County Boundary
-  WUI
-  Deschutes CWPP
-  Lakes & Water Bodies
-  Major Rivers
-  Major Roads
-  Highways

Map Notes

Map created by Crook County GIS - 4/8/2014
Risk Assessment Areas based on 2005 CWPP
Deschutes CWPP provided by Deschutes Co.
All other data is maintained by CC GIS.
NAIP 2011 Imagery from State of Oregon
Only Subdivisions in Risk Assessment Table and
adjacent to Included

Miles 5

SCALE:



Kilometers 5



Powell Butte Risk Assessment Area

Prineville Ranch

Twin Lakes Ranch

Mountain View Estates
Old West Road
Red Cloud Rance
Seven Peaks Estates
Sinclair-Davis Tract 2
Steelhammer Ranch

West Powell Butte Estates

Carrero-Cowen

Powell Butte View Estates
Brasada Ranch

Juniper Acres

Willard Estates

Westridge Estates
Westwood

Baldwin Road

4.3.2 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 National Forest 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 the CWPP 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.

CATEGORY	SCORE	ADJECTIVE RATING
Risk (fires/1000 ac./10 years)	20	Moderate
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 (‘High’ rating assigned to all until otherwise verified)	40	High

Communities and Mitigation Work Completed within the McKay Assessment Area

The 2008 FEMA Pre-Disaster Mitigation Hazardous Vegetation Treatment grant focused on the Red Cloud Ranch in Powell Butte, Ochoco West and the area on the north side of Ochoco Reservoir in the McKay Assessment Area.

The U.S. Forest Service completed some mitigation work in the area, and several hundred acres of thinning and burning is planned along the forest boundary in the next three years.

Notes highlighting the fuels treatments completed in each community are included below.

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

- ✓ City of Prineville (majority)

- ✓ Ochoco West
 - 2008 FEMA Summary: Limited lot owner interest resulted in a 2-phase approach to fuels treatment for this area. Phase 1 resulted in a shaded fuel break on common ground under the management of the Water and Sanitary Board and parcels owned by two individuals. This fuel break was primarily focused on the north and west sides of the development perimeter. Phase 2 was placed on hold when the County lost the residual funds remaining in the 2008 Grant. This fuel break can be expected to substantially limit rates of spread of ground fire into the development. Long-range spotting into the core area of the development; however, remains a major concern.
- ✓ Ochoco Reservoir area including Lakeshore Trailer Park, North Shore Estates, Ochoco Lake Lots and the County Park
 - 2008 FEMA Summary: Treatment was somewhat scattered with approximately 20% participation overall.
- ✓ Mill Creek area (just south of Wildcat Campground)
 - USFS has thinned and burned 2,700 acres since 2005.
- ✓ Ochoco Ranger Station
 - USFS has thinned and burned 6,800 acres since 2006.
- ✓ Marks Creek
 - USFS has thinned and burned 5,300 acres since 2007.
- ✓ Lofton/Turner Creek
- ✓ Sunset Hills Subdivision
 - 2008 FEMA Summary: Nearly 100% homeowner participation in the treatment program. A substantial mitigation to fire behavior can be expected in this area.
- ✓ Pleasant View Heights
- ✓ Meadow Ridge
- ✓ Mill Creek Ranches
- ✓ Johnson Creek
- ✓ McKay Creek
- ✓ Mt Bachelor Academy and Ponderosa Ranch

Critical Infrastructure within McKay Assessment Area

Most of the urban and suburban areas of Prineville fall into this area. 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. 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: 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 hazardous trees adjacent to rights-of-way.
3. Emergency and Communications Facilities: Several agencies have communications facilities within the assessment area. Hazardous fuels assessments for these critical infrastructure sites and commercial electrical service (including hazardous trees adjacent to rights-of-way and critical infrastructure) is needed. 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. Public Agency Facilities: The Ochoco Dam (title held by the Ochoco Irrigation District) and several parks are located within the assessment area.
5. School Facilities:
6. Campgrounds and Recreation 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

Crook County CWPP

McKay Risk Assessment Area

-  Subdivisions
-  Risk Assessment Areas
-  Crook County Boundary
-  WUI
-  Deschutes CWPP
-  Lakes & Water Bodies
-  Major Rivers
-  Major Roads
-  Highways

Map Notes

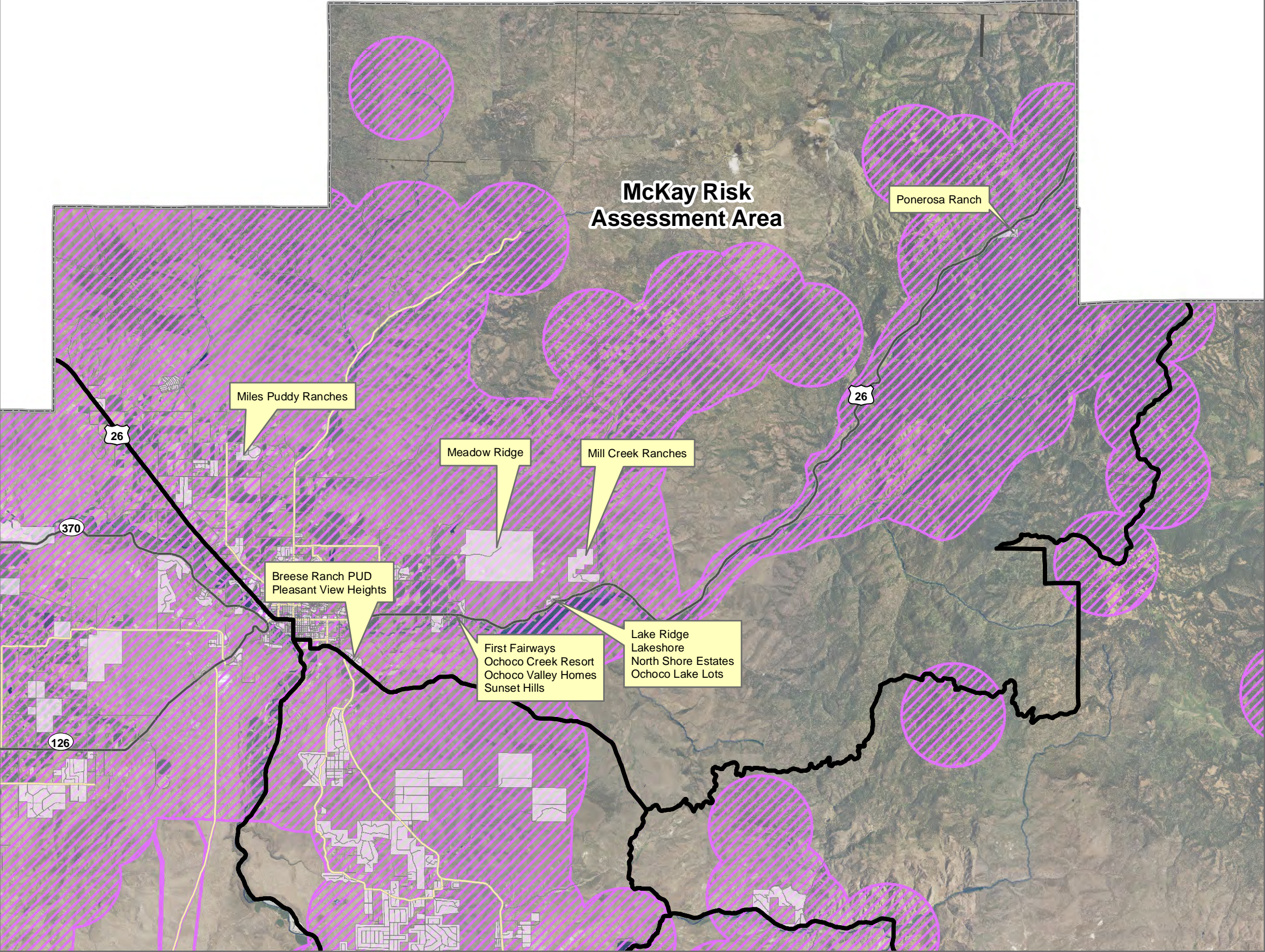
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Risk Assessment Areas based on 2005 CWPP
Deschutes CWPP provided by Deschutes Co.
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NAIP 2011 Imagery from State of Oregon
Only Subdivisions in Risk Assessment Table and adjacent to Included

Miles 5

SCALE:



Kilometers 5



4.3.3 Juniper Canyon Risk Assessment Area

Juniper Canyon assessment area is located east 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.

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 (‘High’ rating assigned to all until otherwise verified)	40	High

Communities and Mitigation Work Completed within the Juniper Canyon Assessment Area

The 2007 FEMA Pre-Disaster Mitigation Hazardous Vegetation Treatment grant focused on the Juniper Canyon Assessment area.

Notes highlighting the completed fuels treatment are included below.

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

- ✓ Highlands Subdivision
 - 2007 FEMA Summary: Limited, scattered mitigation work was completed.
- ✓ High Desert Estates
 - 2007 FEMA Summary: Approximately 50% of the parcels in the development participated. More importantly, nearly 80% of the parcels at greatest topographic risk along the major drainage running through the development and those adjacent to Juniper Canyon Road participated.
- ✓ Ochoco Land and Livestock
 - 2007 FEMA Summary: Limited, scattered mitigation work was completed.
- ✓ Lost Lake Estates
 - 2007 FEMA Summary: Limited, scattered mitigation work was completed.
- ✓ Idleway Acres
 - 2007 FEMA Summary: Limited, scattered mitigation work was completed.
- ✓ Prineville Lake Acres #1 (PLA1)

- 2007 FEMA Summary: About 15% of the parcels participated/now meet CC-FR standard. Approximately 5 miles of road R/W within the development was treated to reduce fire behavior under overhead utility lines (electrical and phone). These same roads function as the primary evacuation routes out of the subdivision back to Upper Davis Road.
- The Bureau of Land Management has performed some mitigation/fuels reduction work.
- ✓ Prineville Lake Acres #2 (PLA2)
 - 2007 FEMA Summary: Approximately 6 miles of road R/W was treated to reduce fire behavior under overhead utility lines. These same roads function as the primary evacuation routes out of the subdivision back to Upper Davis Road. Roughly 15% of landowners participated and now meet the minimum standard.
- ✓ Prineville Reservoir State Park
 - 2013/2014 treatment work was performed by the Oregon Parks and Recreation Department on the main roadway into State Park.
- ✓ Indian Rock Estates
 - 2007 FEMA Summary: Road construction slash piles were abated along about a mile of road running through Phase 2 of the development. This section of road will eventually provide an alternate emergency egress route from Prineville Reservoir State Park for traffic traveling to the north back toward Prineville.
- ✓ Long Horn Ridge
 - 2007 FEMA Summary: Limited, scattered mitigation work was completed.
- ✓ Hood's Subdivision
- ✓ Dry Creek Airpark
- ✓ Conifer Heights
- ✓ Ironwood Estates
- ✓ Chuckwagon Acres
- ✓ Lakeview Cove
- ✓ Juniper Hills
- ✓ Jasper Knolls
- ✓ Botero Park Subdivision

Critical Infrastructure within the Juniper Canyon Assessment Area

1. Transportation/Road System: The transportation infrastructure was determined 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. In 2006, the CWPP identified establishment of a county standard requiring development of multiple alternate access routes, for both existing and newly-planned communities as a highest priority. As of 2014, these standards have not been established and Juniper Canyon Road remains the only major access option to the communities. 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: 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. Communications and Emergency Facilities: The Crook County Fire and Rescue Substation and an emergency power generator are located in the assessment area. In addition to its fire station function, during a large-scale fire event, CCF&R may also be needed as an Incident Command Post, medical aid station or medical evacuation staging site.

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

4. Public Agency Facilities: Crook County Fire and Rescue.
5. School Facilities:
6. Campground and Recreation 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. Along the Lower Crooked River from Milepost 11 to the Dam there are twelve BLM campgrounds and day-use (du) recreation areas including: Castle Rock, Upper Palisades, Cobble Rock, Stillwater, Lone Pine, Lower Palisades, Chimney Rock, Post Pile Poison Butte and Big Bend; and the day-use areas: Greenwood and Upper Lone Pine.
7. Other Critical Facilities: In the event of a large-scale wildland fire, the Dry Creek Airport's airport facility may be used for medical evacuation and general air support. The need for additional planning for this type of use should be assessed.

Crook County CWPP

Juniper Canyon Risk Assessment Area

-  Subdivisions
-  Risk Assessment Areas
-  Crook County Boundary
-  WUI
-  Deschutes CWPP
-  Lakes & Water Bodies
-  Major Rivers
-  Major Roads
-  Highways

Map Notes

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Risk Assessment Areas based on 2005 CWPP
Deschutes CWPP provided by Deschutes Co.
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NAIP 2011 Imagery from State of Oregon
Only Subdivisions in Risk Assessment Table and adjacent to Included

Miles 2.5

SCALE:



Kilometers 2.5



Juniper Canyon Risk Assessment Area

High Desert Estates

Juniper Heights

Highlands

Scenic Vista Estates

Conifer Heights

Happy Trails

Longhorn Ridge

Bridge Top

Dry Creek Airpark

Roundtree

Lost Lake

Falcon Ridge

Three Peaks

Southwood Estates

Prineville Lake Acres

Jerry Acres

Fairview North

Ochoco Land & Livestock

Adams Plat

Ironwood Estates

Cimmaron Hills

Redtail Meadows

Hoods

Chuckwagon Acres

Mountain Ridge Estates

Tocher

Idleway Acres

Ridgeview Estates

Juniper Hills

Indian Rock Estates

Lakeview Cove

Jasper Knolls

Bottero Park

4.3.4 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.

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 (‘High’ rating assigned to all until otherwise verified)	40	High

Communities and Mitigation Work Completed 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
 - The Natural Resources Conservation Service (NRCS) and Crook County Soil and Water Conservation District have removed some juniper in the area.

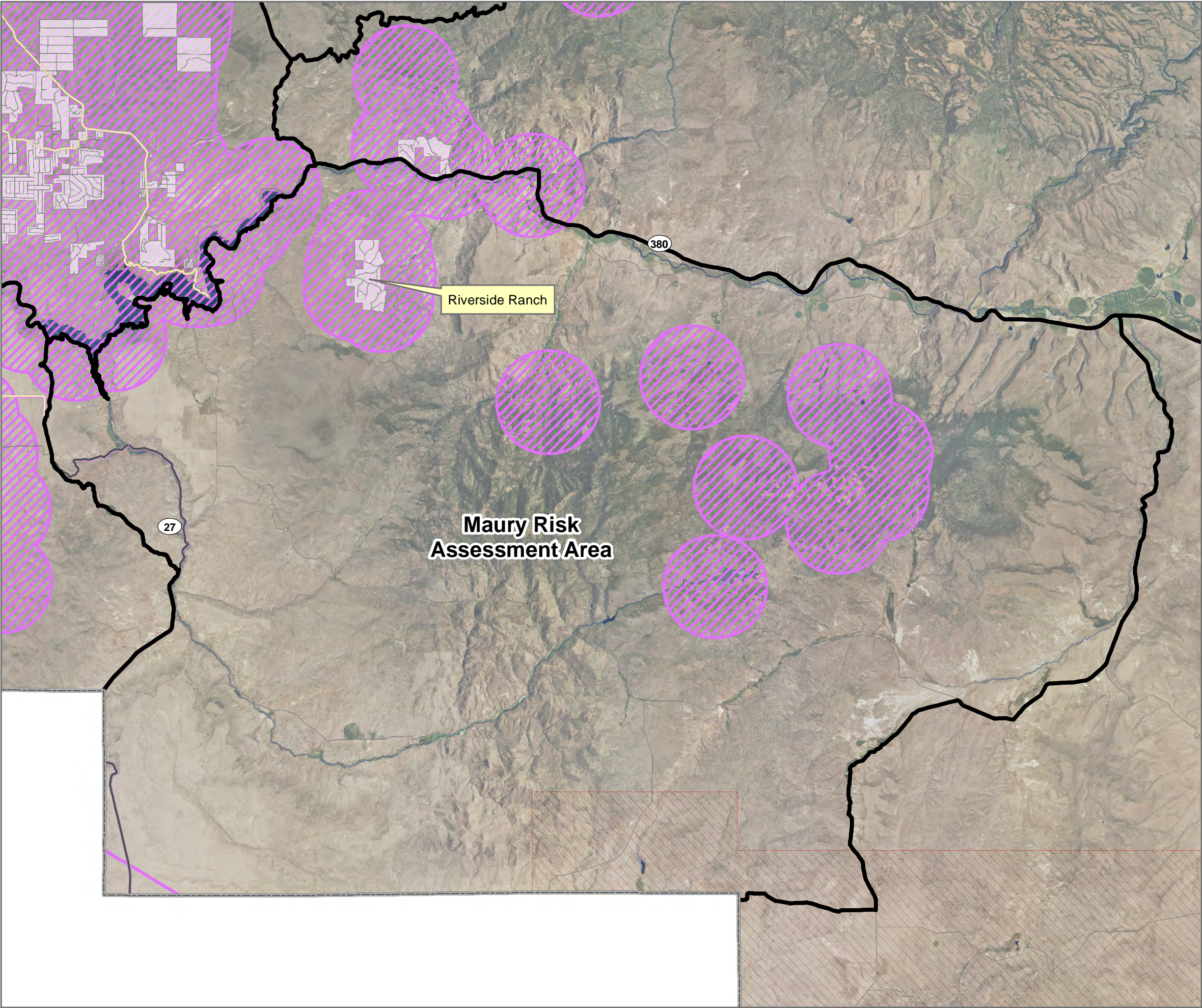
Critical Infrastructure within the Maury Assessment Area

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. Utilities:
3. Emergency and Communications Facilities: Several agencies have communications facilities within the assessment area, including critical radio infrastructure. Hazardous fuels assessments for these critical infrastructure sites and commercial electrical service to them (including hazardous trees adjacent to rights-of-way and critical infrastructure) is needed.
4. 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.
5. School Facilities:
6. Campgrounds and Recreation Facilities: There are numerous USFS campgrounds throughout the Maury Mountains, including Antelope Flat Reservoir. Assessment of evacuation planning for these areas should be conducted.
7. Other Critical Facilities:



Crook County CWPP

Maury Risk
Assessment Area

-  Subdivisions
-  Risk Assessment Areas
-  Crook County Boundary
-  WUI
-  Deschutes CWPP
-  Lakes & Water Bodies
-  Major Rivers
-  Major Roads
-  Highways

Map Notes

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Deschutes CWPP provided by Deschutes Co.
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NAIP 2011 Imagery from State of Oregon
Only Subdivisions in Risk Assessment Table and
adjacent to Included

Miles 5

SCALE:



Kilometers 5



4.3.5 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 to the south. The south boundary continues east along the road toward Rager Ranger Station, 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 National Forest 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.

CATEGORY	SCORE	ADJECTIVE RATING
Risk (fires/1000 ac./10 years)	20	Moderate
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 (‘High’ rating assigned to all until otherwise verified)	40	High

Communities and Mitigation Work Completed 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:

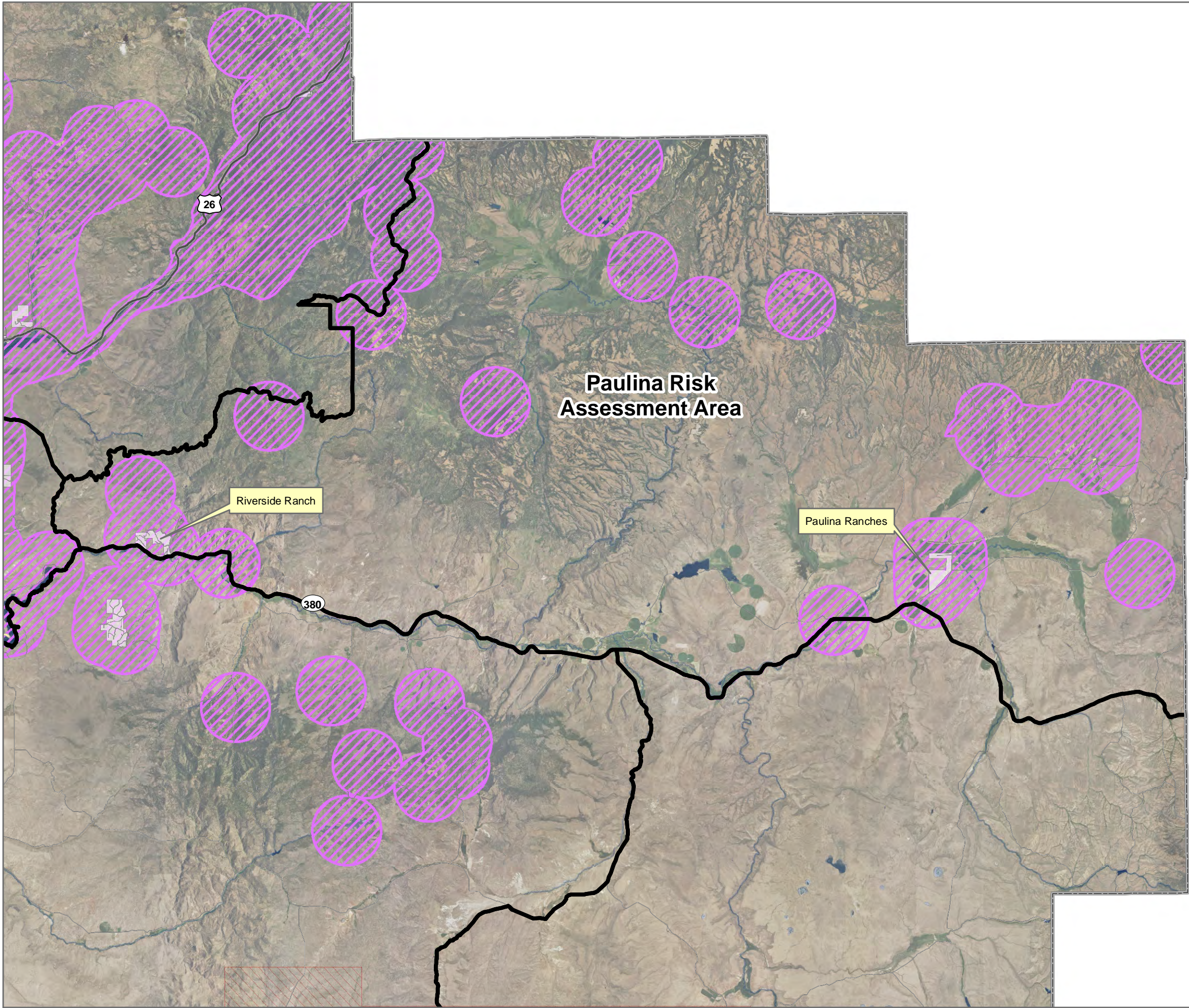
- ✓ Riverside Ranch (north of the Paulina Highway)
- ✓ Post (located on the boundary with the Maury assessment area)
- ✓ Paulina
 - The Natural Resources Conservation Service (NRCS) and Crook County Soil and Water Conservation District have removed some juniper in the area.
- ✓ Rager Ranger Station (structures only, no staff)

Critical Infrastructure within the Paulina Assessment Area

1. Transportation/Road System: The Paulina Highway to Post, Paulina and Rager Ranger Station provides the only all weather, year-round route to the east end of the county. 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. Visitors unfamiliar with these routes would have difficulty following and using them unless equipped with a map of the area. 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: 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. Emergency and Communications Facilities: Several agencies have communications facilities within the assessment area. Hazardous fuels assessments for these critical infrastructure sites and commercial electrical service to them (including hazardous trees adjacent to rights-of-way and critical infrastructure) is needed.
4. Public Agency Facilities:
 - ✓ USFS Rager Ranger Station, located about 15 miles east of Paulina, 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 BLM Paulina Guard Station located on the Paulina Highway about ten miles west of Paulina. The facility is closed; however, still needs protection and may be able to operate as a heli-base in the event of a large-scale wildland fire.
 - ✓ 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. School Facilities: The Paulina School is a Crook County School District facility located in Paulina. This facility could be utilized as a shelter.
6. Campgrounds and Recreation Facilities: 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.
7. Other Critical Facilities: The Crook County Road Department 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. There are also small stores with groceries and supplies located in Post and Paulina.



Crook County CWPP


Paulina Risk Assessment Area

-  Subdivisions
-  Risk Assessment Areas
-  Crook County Boundary
-  WUI
-  Deschutes CWPP
-  Lakes & Water Bodies
-  Major Rivers
-  Major Roads
-  Highways

Map Notes

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Miles 7

SCALE: 

Kilometers 7



4.3.6 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.

CATEGORY	SCORE	ADJECTIVE RATING
Risk (fires/1000 ac./10 years)	5	Low
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 (High rating assigned to all until otherwise verified)	40	High

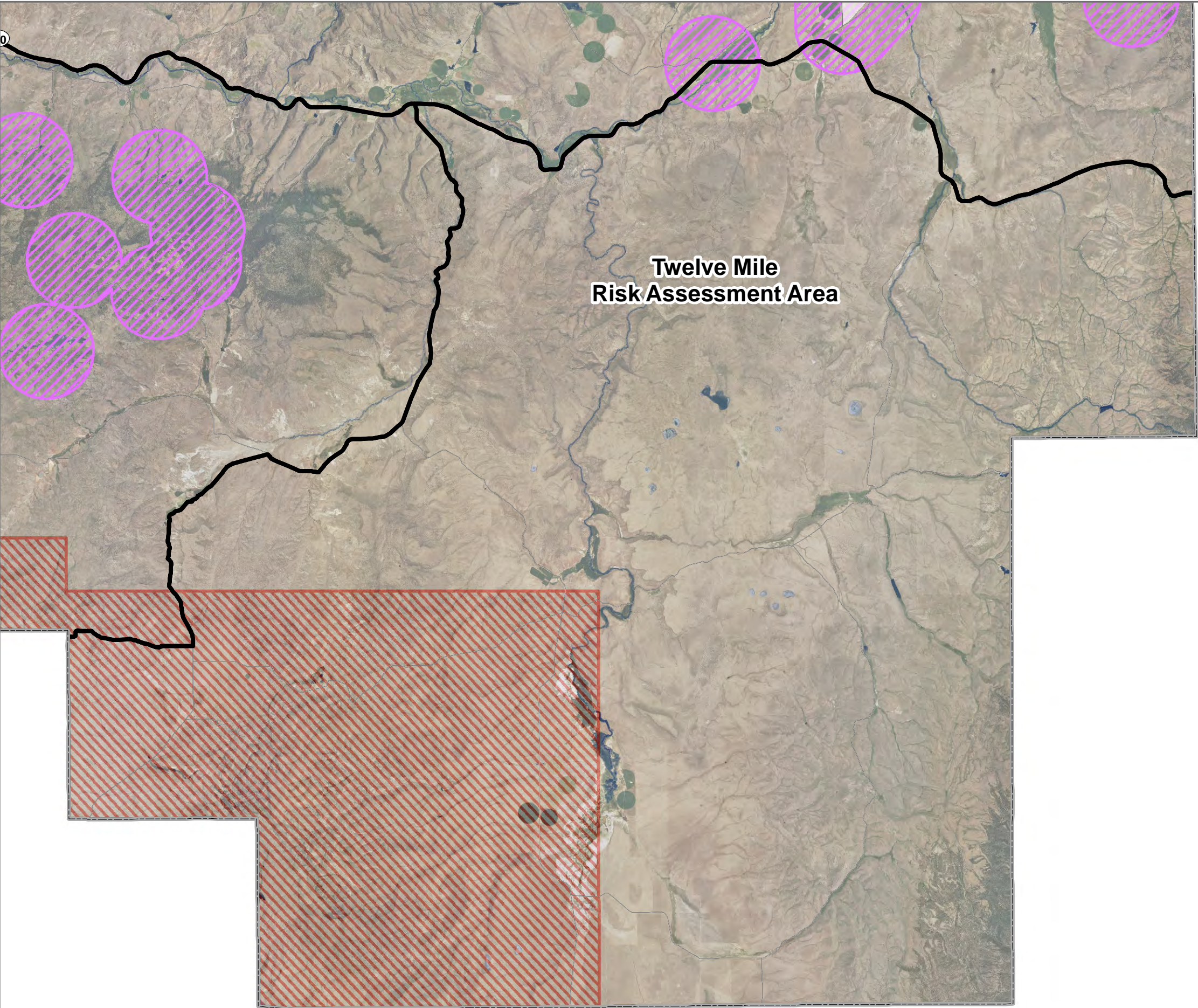
Communities and Mitigation Work Completed within the Twelve Mile Assessment Area

- ✓ 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 headquarters locations.
 - The Natural Resources Conservation Service (NRCS) and Crook County Soil and Water Conservation District have removed some juniper in the area.

Critical 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. Utilities: 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

3. Emergency and Communications Facilities:
4. Public Agency Facilities:
5. School Facilities:
6. Campgrounds and Recreation Facilities:
7. Other Critical Facilities: 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.



Crook County CWPP


Twelve Mile
Risk Assessment Area

-  Subdivisions
-  Risk Assessment Areas
-  Crook County Boundary
-  WUI
-  Deschutes CWPP
-  Lakes & Water Bodies
-  Major Rivers
-  Major Roads
-  Highways

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adjacent to Included

Miles 5

SCALE: 

Kilometers 5



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 CCFRPD#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 Firewise Communities, Smokey the 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.

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 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.

5.1 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 eaves and in gutters.

Wildland fire most often spreads to structures from:

- Radiant heat from wildland fuels;
- Spotting on the roof;
- Spotting onto 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 flame receptive vegetation adjacent to the structure can reduce the potential for spotting to carry fire to the structure.

5.2 Defensible Space - Minimum Hazardous Fuels Treatment Standards⁴

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. Correctly 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 safely occur. This primary fuel break begins at the outside edge of a structure’s furthest extension. This may be the edge of a roof eave 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.

⁴ Oregon Forestland-Urban Interface Fire Protection Act “Property Evaluation and Self-Certification Guide”, Oregon Department of Forestry, 2006. Pages 8-10.

- 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 to 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.

5.3 Become a Firewise Community

The Firewise Communities/USA Recognition Program is a process that empowers neighbors to work together in reducing their wildfire risk. More than 1,028 recognized Firewise communities currently take action and ownership in preparing and protecting their homes against the threat of wildfire. Participation in the Firewise Communities program would reduce the risk of wildland fire to people’s homes and property in Crook County. The program requires participation from 70% or more of homeowners in the community; which provides the critical mass necessary to greatly reduce fire risk.

Becoming a Firewise Community is a five-step process where communities develop an action plan that guides their residential risk reduction activities, while engaging and

encouraging their neighbors to become active participants in building a safer place to live.

The following steps will get a community started and on the way to receiving official Firewise Communities USA recognition status, and the honor of proudly displaying high-profile signage along with many other benefits. The five steps of Firewise recognition:

- **Obtain a wildfire risk assessment** from your state forestry agency or fire department. Your Firewise state liaison can help direct you to experts who can conduct an evaluation for your community. Your local fire department may also be able to assist.
- **Form a board or committee, and create an action plan** based on the assessment. The community plan can be elaborate or simple. Generally, the plan should include at least three agreed-upon, doable action items that will improve the community's wildfire readiness. The action plan can be modified over time.
- **Conduct a "Firewise Day" event.** Your community and Firewise Board can decide what kind of event you want to do. Whether it's a "chipper day" that gathers equipment and volunteers to chip brush and limbs, a state fair exhibit, or a community clean-up day, the Firewise event helps you get the work done to make your community safer.
- **Invest a minimum of \$2 per capita in local Firewise actions for the year.** Communities can count grants, in-kind services, loaned equipment, contractors hired by the community, or, of course, cash as part of their investment. Most commonly, small neighborhoods achieve their \$2 per capita minimum investment through volunteer hours. So, how do you put a dollar value on the volunteer efforts of your neighbors or your Firewise Board? A website called Independent Sector can help.
- **Submit an application to your state Firewise liaison.**

More information on the Firewise program and becoming a Firewise community is available at www.firewise.org.

6.0 Unprotected Lands and Communities

6.1 Unprotected Lands

Historically, a substantial portion of private land in the central and eastern portions of the county received no fire protection, either structural or wildland. However, due to the establishment of two Rangeland Fire Protection Associations, private, unprotected lands now account for a small portion of the County. In 2005, about 28% of the County (531,648 acres) was unprotected. As of 2014, private, un-protected lands account for 57,494 acres (90 square miles) and make up 2.8% of the county.

6.2 Local Support and the Establishment of Rangeland Fire Protection Associations

The Brothers-Hampton and Post-Paulina Rangeland Fire Protection Associations (RFPA) are each formed as non-profit corporations with a local Board of Directors and provide wildland fire protection under a Cooperative Agreement with the Oregon Board of Forestry. In addition to trucks, dozers and other equipment owned by the members of the RFPA, they are each equipped with two fire trucks on loan through the Federal Excess Property Program.

The Post-Paulina Rangeland Fire Protection Association is centered on the Post and Paulina area north of the Maury Mountains and to the southeast including the GI Ranch. It also includes areas in Deschutes and Harney counties. The RFPA covers 344,729 acres of previously unprotected lands in Crook County.

The Brothers-Hampton Rangeland Fire Protection Association is centered in the Brothers and Hampton area south of the Maury Mountains and east of Hwy 27. It also includes areas in Deschutes and Lake Counties. The RFPA covers 135,405 acres of previously unprotected lands in Crook County.

6.3 Hazardous Fuels Treatments Adjacent to Structures

Crook County, in collaboration with other agencies, created a “Crook County Fire Ready” brochure to aid people who own property within the wildland-urban interface area. The information in the brochure is intended to help property owners evaluate a property and structure’s vulnerability to damage or destruction by wildfire, and choose measures which will make a property easier to defend against wildfire. The brochures are available at Crook County Fire and Rescue, the Crook County Chamber of Commerce, OSU Extension Office, County offices and the Crook County Library.

7.0 Action Plan and Assessment Strategy

The following table summarizes actions and strategy for meeting needs identified within the plan. This summary should be considered a beginning to a working document that should include additional entries developed out of annual and other periodic review.

Action Plan and Assessment Strategy

Function or Assessment Area	Action	Strategy/Comments	Completed Items (2005-2014)
Administrative	Maintain communication with CWPP Steering Committee, including engaging in an annual review and update meeting.	Responsible for ongoing oversight, periodic review, plan updates, interagency coordination of mitigation and prevention activity liaison, pre-screen grant requests for priority setting, etc. <u>Membership:</u> Chief-CCF&R; CCSO-Dir. Emergency Mgt.; ODF-Unit Forester; Representative County Planning Department; Representative Forest Service; Representative BLM; community at-large representative; Representative each RFP.	Established CC CWPP "Steering Committee".
	Coordinate with ODF implementation of the "Oregon Forestland-Urban Interface Act" (SB 360) in Crook County.	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.	Assessment completed on ODF lands.
	Complete a structural vulnerability assessment.	CWPP applied default Structural Vulnerability value of "high" until otherwise verified throughout the county. Very high priority to secure funding to support of this assessment work. Identify grant opportunities to support CCF&R on the ground structural vulnerability assessment within CCRFPD#1.	FEMA FS&R funding pending.
	Coordinated outreach and education.	Promote Firewise communities, handout Crook County Fire Ready.	
County-Wide	Organize and publicize maintenance opportunities for landowners, i.e. spring clean-up days and distributing Crook County Fire Ready and Firewise materials.	Handout Fire Ready and Firewise materials at the dump on the clean-up days. Continue to pursue additional opportunities to get the materials out to the public. Hold clean-up days in May (rather than April), better weather may increase motivation to participate.	Facilitated development of the Crook County Fire Ready booklet with ODF.

Function or Assessment Area	Action	Strategy/Comments	Completed Items (2005-2014)
	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. <u>This is a high priority issue.</u> 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. CWPP steering committee members will continue working with the County to work toward road development.	Preliminary work has been completed to identify potential roads/routes.
	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. Adopt SB 360 standards into County code.	
	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 increase wildfire detection capability and to support hazardous fuels treatments.	Communications sites support routine commercial and emergency response coordination needs. Recommend near-term attention to initiating this discussion.	ODF developed a plan for remote fire detection camera system.
	Encourage the development of Firewise communities.		
	Evacuation Planning	Develop a standard county-wide framework that can be used to develop local, site-specific evacuation plans.	

Function or Assessment Area	Action	Strategy/Comments	Completed Items (2005-2014)
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. Issue is also listed in the County-wide priorities.	
	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 and expedite WUI fuels treatment actions.	A substantial amount of private/BLM interface is present with the identified WUI area.	Prineville Lake Acres, ongoing BLM fuels treatment work.
	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.	In progress.
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.	RFPD created, establishment in progress.
	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.	Ongoing work on Millican project.
	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.	FEMA funding pending.

Function or Assessment Area	Action	Strategy/Comments	Completed Items (2005-2014)
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	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 and alternate access route development.	Develop evacuation plan with particular attention 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. Coordinate information with NRCS-SWCD who completes some general fuels treatment.	Ongoing fuels treatment being completed.
Maury	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 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. Coordinate information with NRCS-SWCD who completes some general fuels treatment.	

Function or Assessment Area	Action	Strategy/Comments	Completed Items (2005-2014)
	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.	Ongoing general fuels treatment completed by the Forest Service.
Twelve Mile	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.	
	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 Critical Infrastructure

For the purposes of this plan, critical infrastructure could be defined as those items necessary 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 necessary during a fire or other natural disaster response including communications, transportation and emergency response support facilities. This 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 of 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 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 8-1 provides a summary of critical infrastructure in Crook County. Systems are generally addressed in the County-wide section. Specific examples and clarifying information is provided in each Risk Assessment Area section.

Figure 8-1 Summary of Crook County Critical Infrastructure

Function or Assessment Area	Critical Infrastructure Component or Description
County-wide	Transportation System <ul style="list-style-type: none">• All routes necessary for the support of the routine flow of commerce to/through the county.• All routes identified as primary or secondary 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.
	Communication Systems <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • All transmission and distribution lines.
	Public Service Facilities <ul style="list-style-type: none"> • All substation and switching 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: <ul style="list-style-type: none"> • All campgrounds: federal, state, county, private. • Resorts, boating facilities and other recreational sites associated with reservoirs in the county. • Destination resorts.
	Airports and airstrips <ul style="list-style-type: none"> • Public and private airports and air strips.
Juniper Canyon	Transportation System: Expand primary and alternative/emergency access route options. Recreational Facilities-Prineville Reservoir: Develop shelter-in-place plan, and assess evacuation route potential route to east on Crooked River BOR road to Paulina Highway.
Powell Butte	Community Center: School, church, store complex Public Service Facilities: Fire Station. Utilities: Critical electrical infrastructure and O'Neil Hwy gas line. Industrial Park complex: Airport, Baldwin Road industrial park, associated industrial/commercial business facilities.
McKay	Transportation System-Alternative/emergency access routes: Assess need for and develop multiple access options for each area of development. Utilities: O'Neil Hwy gas line.
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 and 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.

9.0 Monitoring and Annual Review/Update Process

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

9.1 Annual Review

The Crook County CWPP Steering Committee will conduct an annual 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 Action Plan goals 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: *ex officio* representation from Central Oregon Fire Management Services (Ochoco National Forest Service and Prineville District, Bureau of Land Management), Brothers-Hampton Rangeland Fire Protection Association, Post-Paulina Rangeland Fire Protection Association, and Alfalfa Fire District #1.

9.2 Monitoring

Recommended performance measures to be monitored include the following:

1. Understand the scope of the wildfire problem and potential in Crook County.

- 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.

- 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.

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

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

- 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.

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

6. Promote community involvement and awareness

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

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.

Appendix A: Summary of Public Comments

One public meeting was held on June 26, 2014 at the Crook County Courthouse Annex for the community to learn about the CWPP process and outcomes.

Meeting Notes:

Attendees: Ken Fahlgren (Crook County Commissioner), Michael Ryan (Crook County Sheriff's Department), Casey Kump (CCF&R), John Jackson (Consultant), Bob and Jerri Bronson (Dry Creek Airpark Residents), Nate LeFevre (BLM - Prairie Division), P. Dan Ridenour (BLM), Gordon Foster (ODF), Charles Beauchenu (Public/Mariposa).
Staff: Tami Geiger (COIC)

The meeting was called to order at 6:08pm by Michael Ryan.

- I. Introduction (Tami Geiger, COIC and Michael Ryan, Crook County Sheriff's Office)
- II. What is a CWPP and Purpose (John Jackson, Independent Consultant)
 - a. Agencies work together to protect public and private land from threat of wildfire.
 - b. CWPP is a practical tool to discuss and determine priorities.
 - c. CWPP priorities tie into grant opportunities for mitigation work.
- III. Fire Occurrence and Threat from Federal Lands (Dan Ridenour, Bureau of Land Management)
 - a. The coordinated response of multiple agencies allows the majority of fires in the County to be put out very quickly.
 - b. Priorities are the protection of life, property, and resources.
 - c. Presence of the Greater Sage Grouse, a candidate species for the Endangered Species list, is present in the County. This has informed some of the fire mitigation and habitat management strategies. While areas may not be heavily populated, the presence of the Greater Sage Grouse encourages more aggressive fire response.
- IV. Risk Assessment/SB 360/Firewise (Gordon Foster, Oregon Department of Forestry)
 - a. Local assessment is based on an initial statewide assessment of density, adjacent landscape and vegetation.
 - b. Five assessment components: Risk, Hazard, Protection capabilities, Values protected, and Structural vulnerability.
 - c. The assessment is used to identify vulnerabilities to reduce a community's threat from wildfire and provides an opportunity for community education.
 - d. SB 360 created a set of property management standards for ODF to encourage homeowners to apply on lands under ODF protection. The Firewise Communities program includes a set of standards that are very similar to SB 360. Implementing these standards can greatly reduce a homeowners/communities risk of devastating wildfire.
 - e. ODF has a Firewise Coordinator in the Prineville office and a Crook County Fire Ready Homeowners Guide is available throughout the County.

V. Next Steps

- a. Michael Ryan, John Jackson and Katrina Van Dis (COIC) will attend the Crook County Court meeting on July 2nd to seek their approval and adoption of the plan.

Michael Ryan motioned to close the meeting at 7:25pm, Ken Fahlgren seconded the motion.

Summary of comments and questions:

- Most people don't understand what a wildfire is like until they experience one. People with "fire stories" will participate and will be the most concerned; however, there is generally low public involvement.
- Would it be possible for inmates in the local prisons to be assigned to clean up the forest?
 - Ken Fahlgren: We have a work crew to pick up trash but operating equipment is a hazard.
 - Gordon Foster: ODF has a program training inmates at Deer Ridge to fight fire. There is still a cost for providing the training and guards.
- There needs to be more education to encourage homeowners to remove the trees around their house and protect from wildfire.
- How does the fire district interact with homeowners and distribute information?
 - Casey Kump: We go door to door to distribute information in some of the highest risk areas, but do not have the authority to force people to do things on their private property.
- Insurance companies may become the best enforcers of the standards by refusing to provide fire insurance to homes that are not appropriately prepared.
- Local coverage of the recent Two Bulls Fire should have scared and help to initiate some homeowner action to create defensible space. Historically, people are the most receptive to the message immediately after a fire.
- Need to convince people who are focused on their independence that taking action on their property is for their own safety.
- We are very impressed with the coordination between the agencies.

Appendix B: Crook County Ratings by Subdivision

Table B-1 Assessment Result by Subdivision and Adjective Rating

Risk Assessment Area	Subdivision/Area	Risk	Hazard	Protection	Values	Total	Adjective Rating	Needs
Juniper Canyon	Jasper Knolls	40	72	10	35	157	Very High	Improved Access, 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
Maury	Conant Basin	20	68	40	22	150	Very High	Fuels hazard reduction
Paulina	Riverside Ranch	20	68	40	22	150	Very High	Fire Protection, 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 Stae Park	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
Juniper Canyon	Indian Rock Estates	40	72	2	35	149	High	Improved Access, fuels hazard reduction
Juniper Canyon	Longhorn Ridge Estates	40	72	2	35	149	High	Improved Access, fuels hazard reduction

Risk Assessment Area	Subdivision/Area	Risk	Hazard	Protection	Values	Total	Adjective Rating	Needs
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
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
Powell Butte	West Powell Butte Estates	40	65	2	35	142	High	Fuels hazard reduction
Paulina	Rager Ranger Station	20	61	17	35	133	High	Fuels hazard reduction
McKay	Lofton Creek	20	72	17	22	131	High	Fuels hazard reduction
McKay	Turner Creek	20	72	17	22	131	High	Fuels hazard reduction
McKay	Sherwood Creek	20	72	17	22	131	High	Fuels hazard reduction
McKay	Ochoco Valley	20	72	17	22	131	High	Fuels hazard reduction
McKay	Mt. Bachelor Academy	20	72	17	22	131	High	Fuels hazard reduction
McKay	Ponderosa Ranch	20	72	17	22	131	High	Fuels hazard reduction
Paulina	Post	20	49	40	22	131	High	Fire Protection
McKay	Ochoco West	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Miles Puddy Ranches	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Meadow Ridge	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Sunset Hills Subdivision	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Pleasant View Heights	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Ochoco Lake Lots	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	North Shore Estates	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Lakeshore Trailer Park	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Mill Creek Ranches	20	67	2	35	124	Moderate	Fuels hazard reduction
Paulina	Paulina	20	49	19	35	123	Moderate	Fire protection
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

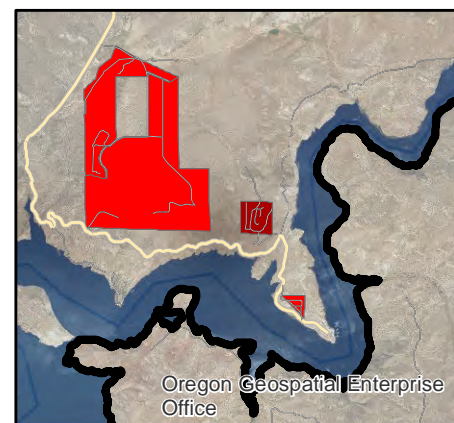
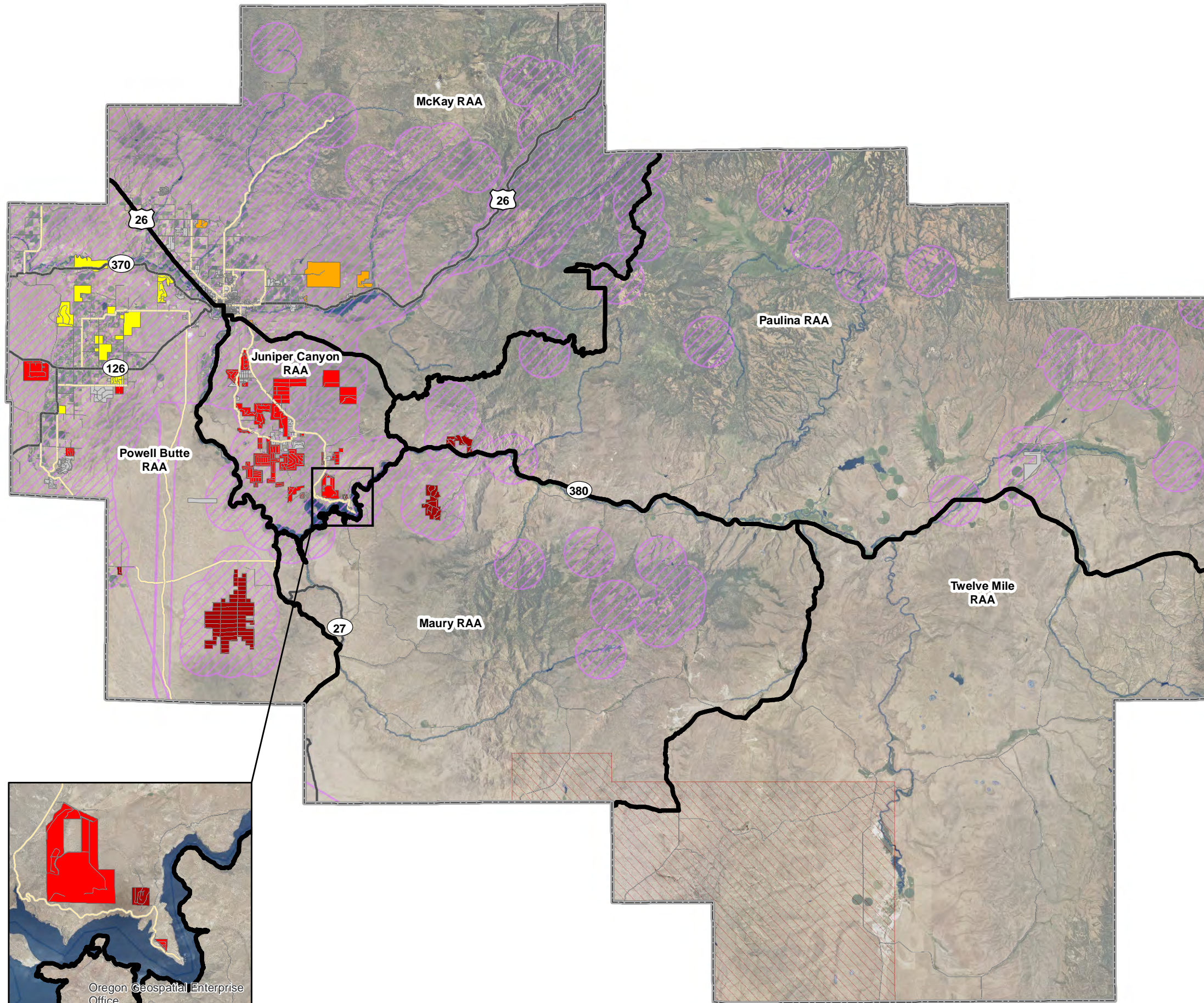
Risk Assessment Area	Subdivision/Area	Risk	Hazard	Protection	Values	Total	Adjective Rating	Needs
Powell Butte	Westridge Estates	40	65	4	12	121	Low	Fuels hazard reduction
Powell Butte	Twin Lakes Ranch	40	65	4	12	121	Low	Fuels hazard reduction
Powell Butte	Baldwin Road Industrial Park	40	65	4	12	121	Low	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
Powell Butte	Structures along O'Neil Highway	40	65	4	12	121	Low	Fire Protection, fuels hazard reduction
McKay	Johnson Creek	20	72	2	22	116	Low	Fuels hazard reduction
Twelve Mile	All	5	51	40	12	108	Low	Fuels hazard reduction

Table B-2 Assessment Result by Subdivision and Risk Assessment Area

Risk Assessment Area	Subdivision/Area	Risk	Hazard	Protection	Values	Total	Adjective Rating	Needs
Juniper Canyon	Jasper Knolls	40	72	10	35	157	Very High	Improved Access, 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

Risk Assessment Area	Subdivision/Area	Risk	Hazard	Protection	Values	Total	Adjective Rating	Needs
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 Stae Park	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
Juniper Canyon	Indian Rock Estates	40	72	2	35	149	High	Improved Access, fuels hazard reduction
Juniper Canyon	Longhorn Ridge Estates	40	72	2	35	149	High	Improved Access, fuels hazard reduction
Maury	Conant Basin	20	68	40	22	150	Very High	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	Lofton Creek	20	72	17	22	131	High	Fuels hazard reduction
McKay	Turner Creek	20	72	17	22	131	High	Fuels hazard reduction
McKay	Sherwood Creek	20	72	17	22	131	High	Fuels hazard reduction
McKay	Ochoco Valley	20	72	17	22	131	High	Fuels hazard reduction
McKay	Mt. Bachelor Academy	20	72	17	22	131	High	Fuels hazard reduction
McKay	Ponderosa Ranch	20	72	17	22	131	High	Fuels hazard reduction
McKay	Ochoco West	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Miles Puddy Ranches	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Meadow Ridge	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Sunset Hills Subdivision	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Pleasant View Heights	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Ochoco Lake Lots	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	North Shore Estates	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Lakeshore Trailer Park	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Mill Creek Ranches	20	67	2	35	124	Moderate	Fuels hazard reduction
McKay	Johnson Creek	20	72	2	22	116	Low	Fuels hazard reduction






Risk Assessment Area	Subdivision/Area	Risk	Hazard	Protection	Values	Total	Adjective Rating	Needs
Paulina	Riverside Ranch	20	68	40	22	150	Very High	Fire Protection, fuels hazard reduction
Paulina	Rager Ranger Station	20	61	17	35	133	High	Fuels hazard reduction
Paulina	Post	20	49	40	22	131	High	Fire Protection
Paulina	Paulina	20	49	19	35	123	Moderate	Fire protection
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	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
Powell Butte	West Powell Butte Estates	40	65	2	35	142	High	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
Powell Butte	Structures along O'Neil Highway	40	65	4	12	121	Low	Fire Protection, fuels hazard reduction
Twelve Mile	All	5	51	40	12	108	Low	Fuels hazard reduction




Crook County CWPP








Crook County Subdivisions Risk Assessment

Risk Assessed Subdivisions

-  Very High Risk
-  High Risk
-  Moderate Risk
-  Low Risk
-  No Value

-  Risk Assessment Areas

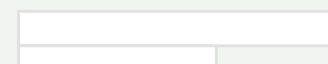
Base layers

-  Crook County Boundary
-  WUI
-  Deschutes CWPP
-  Lakes & Water Bodies
-  Major Rivers
-  Major Roads
-  Highways


Map Notes

Map created by Crook County GIS - 6/4/2014
Risk Assessment Areas based on 2005 CWPP
Risk Assessment Subdivisions from COIC
Deschutes CWPP provided by Deschutes Co.
All other data is maintained by CC GIS.

Miles 10

SCALE: 

Kilometers 10



Appendix C: Risk Assessment Comprehensive

Risk: Fire Occurrence: The number of fires within the risk assessment area for the 10 year period, 2002-2011. In cases when historic fires from Crook County Fire and Rescue (CCF&R) were not available, an estimate was made. A fire occurrence of >1.1 per 1000 acres resulted in a High rating (40 points), .1-1.1 was assigned a Moderate (20 points), and <.1 was assigned a Low rating (5 points).

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

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.

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

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.

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.

Table C-1 Hazard Overall Rating

	Weather	Slope	Aspect	Elevation	Fuel Model	Crown Fire Potential	Total Hazard Score	Adjective Rating
Powell Butte: Red Cloud, Sinclair-Davis Tract 2, & Powell Butte View Estates	40	2	5	2	15	5	69	High
Powell Butte: All Other	40	0	3	2	15	5	65	High
Juniper Canyon	40	2	4	1	20	5	72	Extreme
McKay: Lofton, Turner, Sherwood & Johnson Creek Areas, Ochoco Valley, Mt. Bachelor Academy & Ponderosa Ranch	40	2	4	1	20	5	72	Extreme
McKay: All Other	40	2	4	1	15	5	67	Extreme
Maury: Conant Basin	40	2	5	1	15	5	68	Extreme
Maury: All Other	40	2	3	1	15	5	66	Extreme
Twelve Mile	40	2	3	1	5	0	51	High
Paulina: Riverside Ranch	40	2	5	1	15	5	68	Extreme
Paulina: Rager	40	0	5	1	15	0	61	Extreme
Paulina: All Other	40	0	3	1	5	0	49	High

Notes:

Adjective Rating: 0-65 points = High and 65+ points = Extreme

Table C-2 Total Protection Capabilities Points

	Protection	Community Preparedness	Total	Adjective Rating
Powell Butte: West Powell Butte Estates	0	2	2	Low
Powell Butte: Willard Estates & Juniper Acres	36	4	40	High
Powell Butte: All Other	0	4	4	Low
Juniper Canyon: Jasper Knolls	8	2	10	Moderate
Juniper Canyon: All Other	0	2	2	Low
McKay: within CCF&RD	0	2	2	Low
McKay: outside CCF&RD	15	2	17	High
Maury	36	4	40	High
Twelve Mile	36	4	40	High
Paulina: Rager	15	2	17	High
Paulina: Riverside	36	4	40	High
Paulina: Paulina	15	4	19	High
Paulina: Post	36	4	40	High

Notes:**Structural and Wildland Protection**

0 points = Organized structural response < 10 minutes; 8 points = Inside fire district but structural response > 10 minutes;

15 points = No structural protection, wildland response <20 minutes; and 36 points = No structural response and wildland protections >20 minutes

Community Preparedness:

0 points = Organized stakeholder group, community fire plan, phone tree, mitigation efforts; 2 points = Primarily agency efforts (mailings, fire free, etc.); and

4 points = No effort

Table C-3 Home Density

Homes per 10 Acres	Rating
Powell Butte: Red Cloud, Sinclair-Davis Tract 2, Powell Butte View Estates, West Powell Butte Estates	2
Powell Butte: All Others	15
Juniper Canyon	15
McKay: Subdivisions within WUI	
McKay: All Others	2
Maury	2
Twelve Mile	2
Paulina: Rager & Paulina	15
Paulina: All Others	2

Notes:

2 points = .1-.9 homes/10 acres Rural; 15 points = 1-5.0 homes/10 acres Suburban; and 30 points = 5.1+ homes/10 acres Urban

Table C-4 Community Infrastructure

Presence of Community Infrastructure	Rating
Powell Butte: Red Cloud, Sinclair-Davis Tract 2, Powell Butte View Estates, West Powell Butte Estates	20
Powell Butte: All Others	10
Juniper Canyon	20
McKay	20
Maury	20
Twelve Mile	10
Paulina	20

Notes:

0 points = No identified infrastructure present; 10 points = One present; and 20 points = More than one present

Powell Butte Assessment Area:

Size: 220,354 acres

Subdivision	Home Density	Infrastructure	Risk	Hazard	Protection	Values	Total	Adjective Rating
Willard Estates	2	10	40	65	40	12	157	Very High
Juniper Acres	2	10	40	65	40	12	157	Very High
Red Cloud Subdivision	15	20	40	69	4	35	148	High
Sinclair-Davis Tract 2	15	20	40	69	4	35	148	High
Powell Butte View Estates	15	20	40	69	4	35	148	High
West Powell Butte Estates	15	20	40	65	2	35	142	High
Prineville Ranch Subdivision	2	10	40	65	4	12	121	Low
Westwood	2	10	40	65	4	12	121	Low
Westridge Estates	2	10	40	65	4	12	121	Low
Twin Lakes Ranch	2	10	40	65	4	12	121	Low
Baldwin Road Industrial Park	2	10	40	65	4	12	121	Low
Mountain View Estates	2	10	40	65	4	12	121	Low
Steelhammer Ranch	2	10	40	65	4	12	121	Low
Old West Road Subdivision	2	10	40	65	4	12	121	Low
Carrero-Cowan	2	10	40	65	4	12	121	Low
Structures along O'Neil Highway	2	10	40	65	4	12	121	Low

Risk: Fire Occurrence: 115 fires (FS, BLM, ODF) within the 10 years period, 2002-2011. Historic fires from Crook County Fire and Rescue (CCF&R) are not available. An estimate was made that if CCF&R fires were available then fire occurrence would include 160 additional fires. This would result in a fire occurrence rate of 1.2 per 1000 acres per 10 years. Rating: High or 40 points.

Hazard:

Topographic Factor: GIS topographic data was available 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 was used to help 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.

Juniper Canyon Assessment Area

Size: 67,707 acres

Subdivision	Home Density	Infrastructure	Risk	Hazard	Protection	Values	Total	Adjective Rating
Jasper Knolls	15	20	40	72	10	35	157	Very High
High Desert Estates	15	20	40	72	2	35	149	High
Highlands Subdivision	15	20	40	72	2	35	149	High
Conifer Heights	15	20	40	72	2	35	149	High
Ochoco Land and Livestock	15	20	40	72	2	35	149	High
Ironwood Estates	15	20	40	72	2	35	149	High
Dry Creek Airpark	15	20	40	72	2	35	149	High
Lost Lake Estates	15	20	40	72	2	35	149	High
Prineville Lake Acres	15	20	40	72	2	35	149	High
Hood's Subdivision	15	20	40	72	2	35	149	High
Chuckwagon Acres	15	20	40	72	2	35	149	High
Idleway Acres	15	20	40	72	2	35	149	High
Juniper Hills	15	20	40	72	2	35	149	High
Lakeview Cove	15	20	40	72	2	35	149	High
Prineville Reservoir State Park	15	20	40	72	2	35	149	High
Botero Park Subdivision	15	20	40	72	2	35	149	High
Indian Rock Estates	15	20	40	72	2	35	149	High
Longhorn Ridge Estates	15	20	40	72	2	35	149	High

Risk: Fire Occurrence: 17 fires (FS, BLM, ODF) within the 10 year period 2002-2011. Historic fires from Crook County Fire and Rescue (CCF&R) are not available. An estimate was made that if CCF&R fires were available then fire occurrence would include 70 additional fires. This would result in a fire occurrence rate of 1.3 per 1000 acres per 10 years. Rating: High or 40 points.

Vegetation/Fuels: GIS vegetation and fuel classification, developed through a contract with the county is available and used to help 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.

Protection Capability: 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.

McKay Assessment Area

Size: 327,900 acres

Subdivision	Home Density	Infrastructure	Risk	Hazard	Protection	Values	Total	Adjective Rating
Lofton Creek	15	20	20	72	17	22	131	High
Turner Creek	15	20	20	72	17	22	131	High
Sherwood Creek	15	20	20	72	17	22	131	High
Ochoco Valley	15	20	20	72	17	22	131	High
Mt. Bachelor Academy	15	20	20	72	17	22	131	High
Ponderosa Ranch	15	20	20	72	17	22	131	High
Ochoco West	15	20	20	67	2	35	124	Moderate
Miles Puddy Ranches	15	20	20	67	2	35	124	Moderate
Meadow Ridge	15	20	20	67	2	35	124	Moderate
Sunset Hills Subdivision	15	20	20	67	2	35	124	Moderate
Pleasant View Heights	15	20	20	67	2	35	124	Moderate
Ochoco Lake Lots	15	20	20	67	2	35	124	Moderate
North Shore Estates	15	20	20	67	2	35	124	Moderate
Lakeshore Trailer Park	15	20	20	67	2	35	124	Moderate
Mill Creek Ranches	15	20	20	67	2	35	124	Moderate
Johnson Creek	15	20	20	72	2	22	116	Low

Risk: Fire Occurrence: Approximately 278 fires (FS, BLM, ODF) have occurred within the 10 year period, 2002-2011. This would result in a fire occurrence rate of .85 per 1000 acres per 10 years. Occurrence category would be .1-1.1 fires per 1000 acres per 10 years. Rating: Moderate or 20 points.

Vegetation/Fuels: GIS vegetation and fuel classification was used to 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.

Values Protected-Structural Density and presence of Critical Infrastructure: Values for the McKay Area subdivisions within the WUI were separated from other areas for assignment of values. Identified subdivisions within the WUI: 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.

Maury Assessment Area

Size: 330,170 acres

Subdivision	Home Density	Infrastructure	Risk	Hazard	Protection	Values	Total	Adjective Rating
Conant Basin	2	20	20	68	40	22	150	Very High
Newsome Creek	2	20	20	66	40	22	148	Very High
Pine Creek	2	20	20	66	40	22	148	Very High
Drake Creek	2	20	20	66	40	22	148	Very High

Risk: Fire Occurrence: Approximately 111 fires (FS, BLM, ODF) occurred in the ten year period, 2002-2011. This would result in a fire occurrence rate of .33 per 1000 acres per 10 years. Rating: moderate or 20 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 was used to help 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.

Twelve Mile Assessment Area

Size: 461,200 acres

Subdivision	Home Density	Infrastructure	Risk	Hazard	Protection	Values	Total	Adjective Rating
All	2	10	5	51	40	12	108	Low

Risk: Fire Occurrence: Approximately 35 fires (FS, BLM, ODF) occurred within the ten year period, 2002-2011. This would result in a fire occurrence rate of .075 per 1000 acres per 10 years. Rating: low or 5 points.

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.

Paulina Assessment Area

Size: 504,830 acres

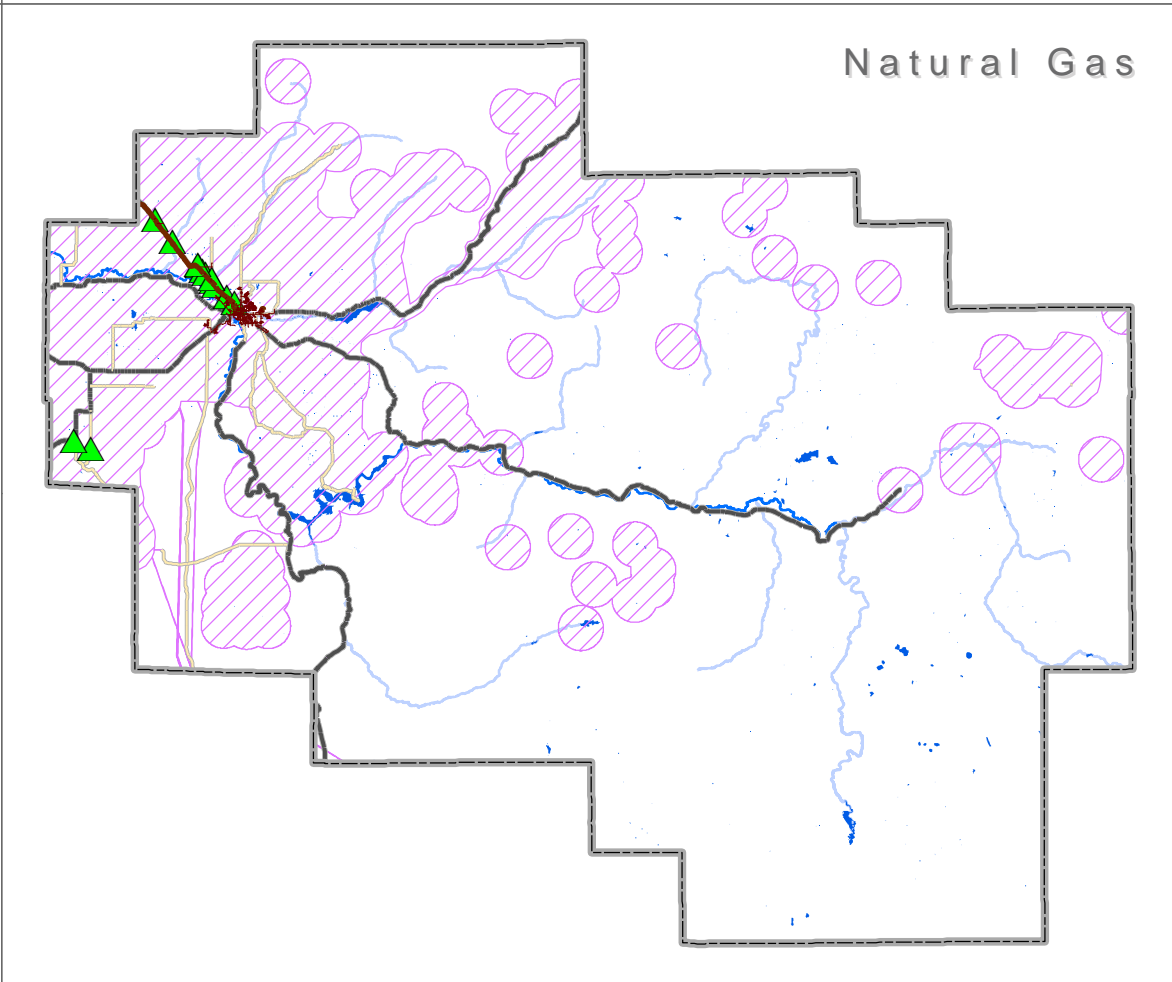
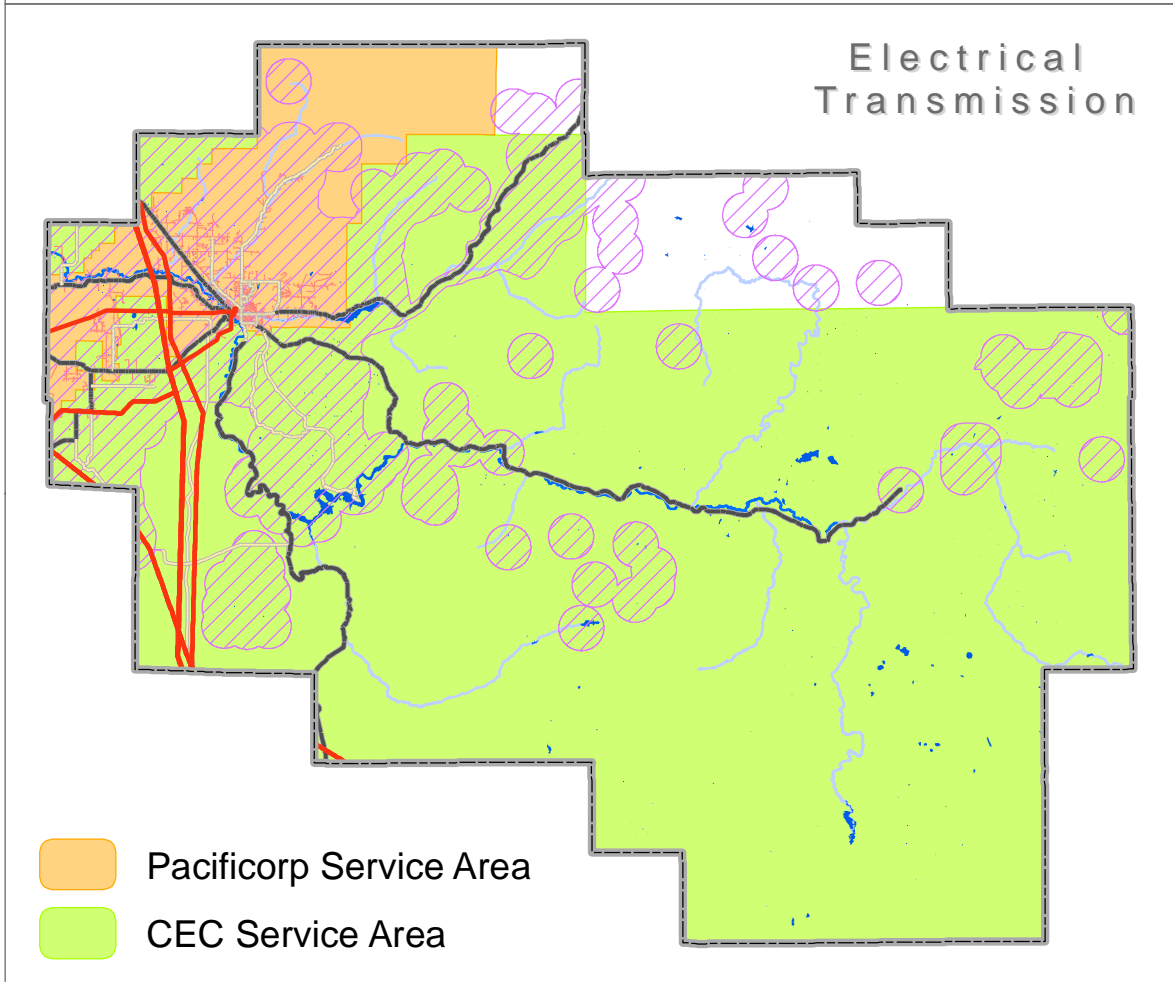
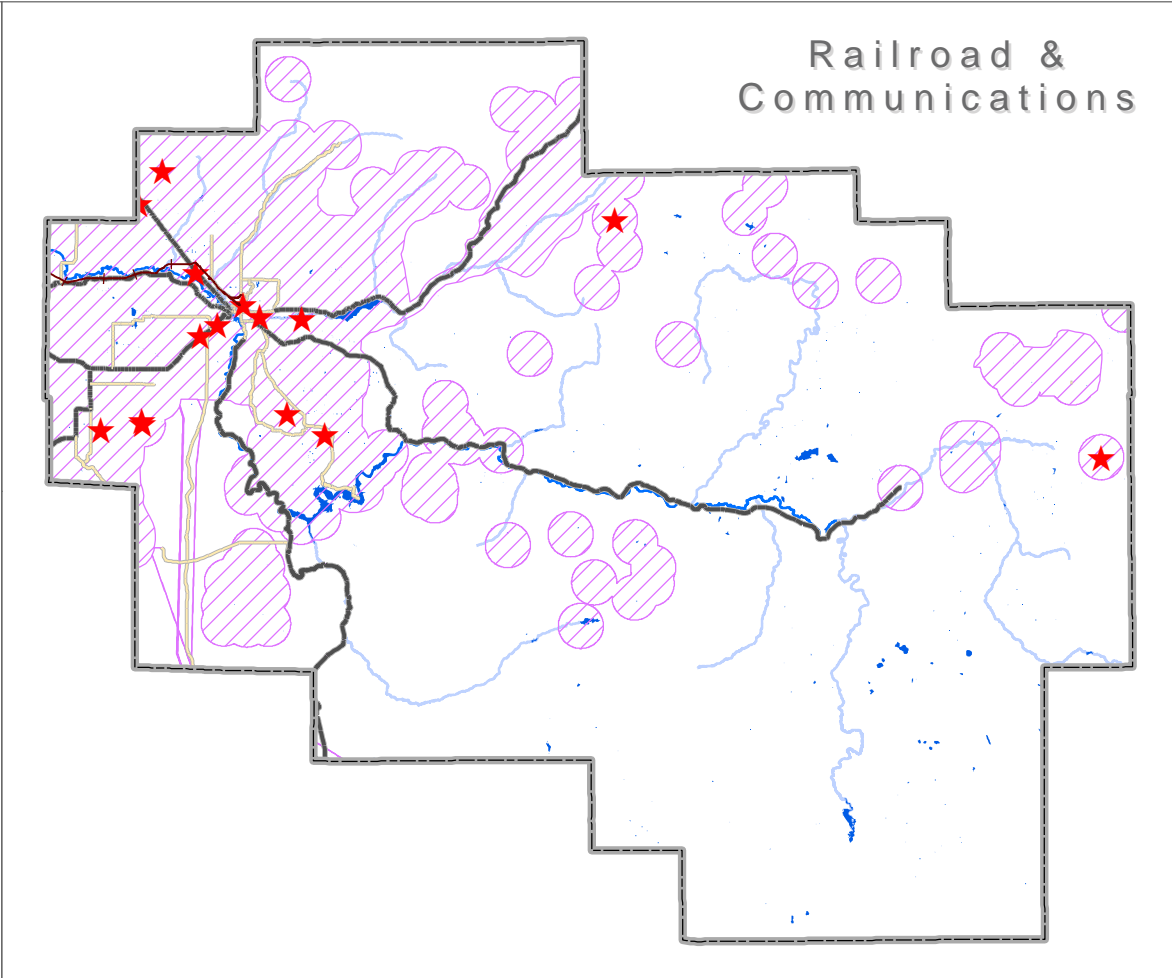
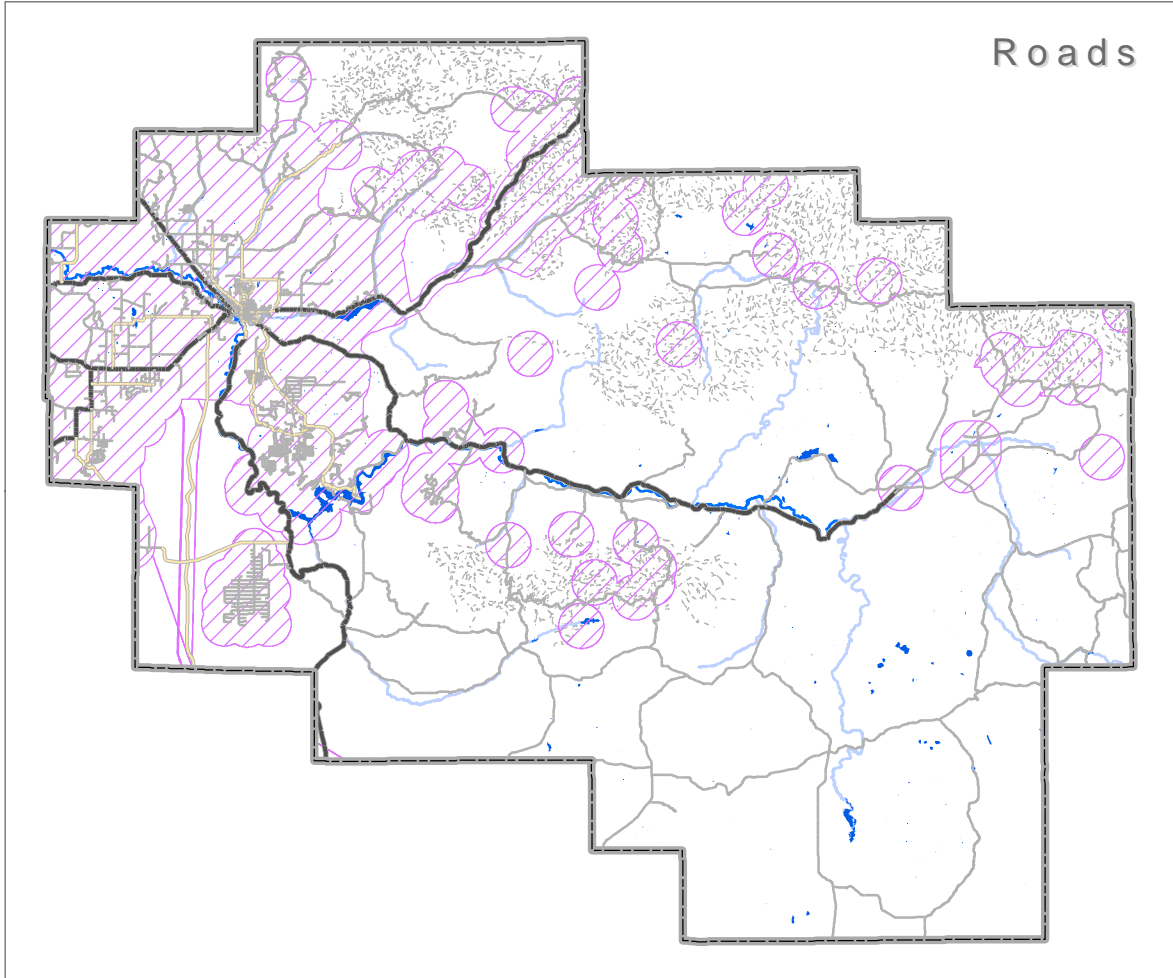
Subdivision	Home Density	Infrastructure	Risk	Hazard	Protection	Values	Total	Adjective Rating
Riverside Ranch	2	20	20	68	40	22	150	Very High
Rager Ranger Station	15	20	20	61	17	35	133	High
Post	2	20	20	49	40	22	131	High
Paulina	15	20	20	49	19	35	123	Moderate

Risk: Fire Occurrence: Approximately 188 fires (FS, BLM, ODF) occurred within the 10 year period, 2002-2011. The results in a fire occurrence rate of .37 per 1000 acres per 10 years. Rating: Moderate or 20 points.

Topographic Factor Value: Aspect: Rager Ranger Station and Riverside Ranch were 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: 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 remainder 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 remainder of the Paulina Area has low potential for crown fire, 0 points.



Crook County CWPP Infrastructure

Infrastructure

- ★ Communication Towers
- ▲ Gas Regulation Stations
- Gas Main pipes
- Gas Distribution Pipes
- +—+— Railroad
- Main Electrical Power
- Electrical Distribution Lines
- - - USFS Roads

Base Layers

- Crook County Boundary
- WUI
- Lakes & Water Bodies
- ~~~~~ Major Rivers
- Minor Roads
- Major Roads
- Highways

Map Notes

Map created by Crook County GIS - 4/4/2014

Electrical transmission lines - CEC, Pacificorp, BPA
 Gas Lines - CNGC
 Towers - <http://www.cellreception.com>
 All other data is maintained by CC GIS

Miles 10

SCALE:

Kilometers 10

Crook County CWPP
Land Ownership and
Wildland / RFPA / Structural
Fire Protection

Land Ownership

- BLM Land
- USFS National Forest
- National Grasslands
- State Lands
- Private Lands

Fire Protection Areas



Base layers

- Crook County Boundary
- WUI
- Portions of Deschutes Brothers - Hampton CWPP
- Lakes & Water Bodies
- Major Rivers
- Major Roads
- Highways

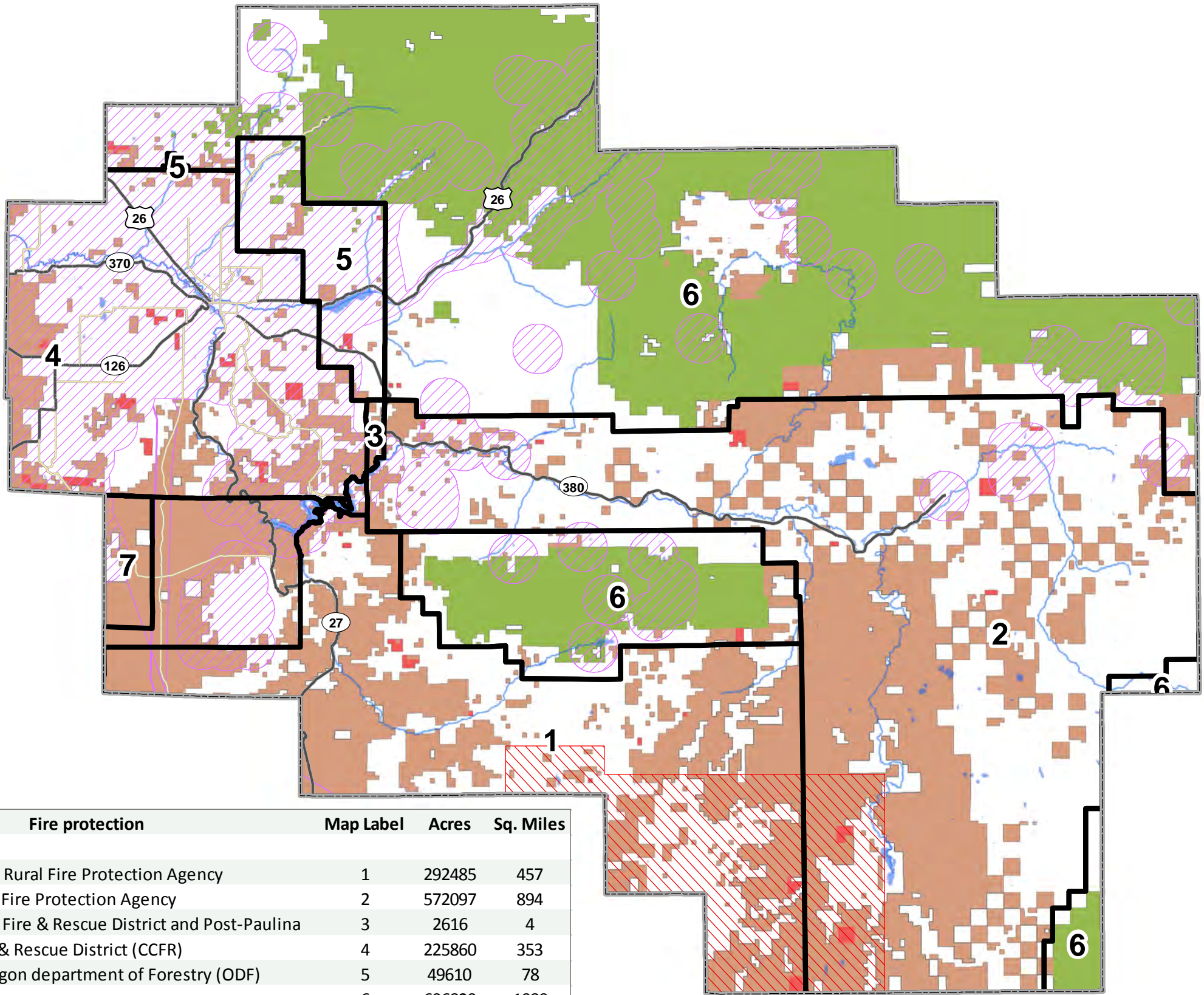
Map Notes

Map created by Crook County GIS - 8/6/2014
Ownership data obtained from State of Oregon.
Brothers-Hampton CWPP provided by Deschutes Co.
All other data is maintained by CC GIS.

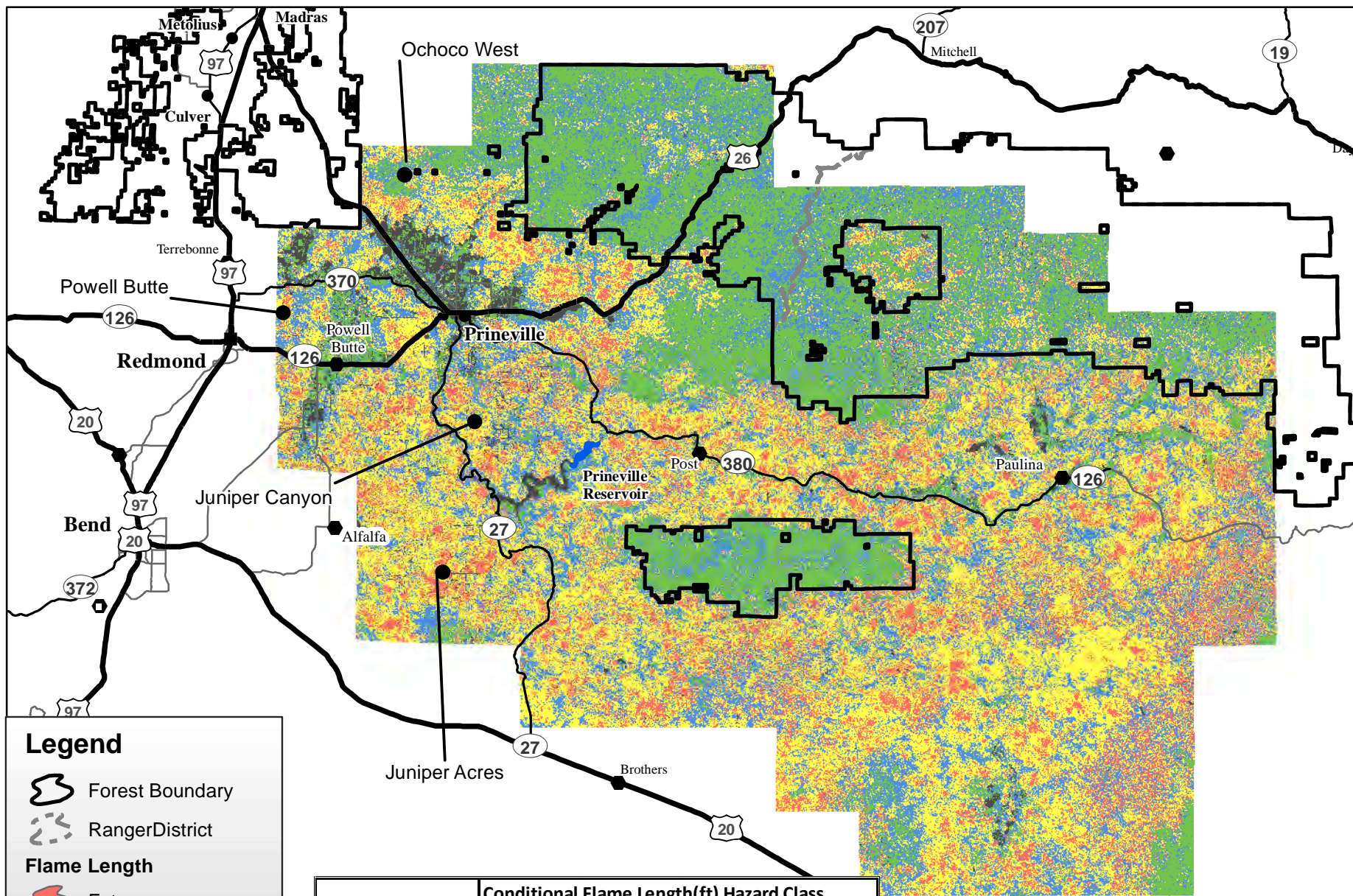
Miles 10

SCALE:



Kilometers 10



Fire protection	Map Label	Acres	Sq. Miles
Brothers-Hampton Rural Fire Protection Agency	1	292485	457
Post-Paulina Rural Fire Protection Agency	2	572097	894
Dual Crook County Fire & Rescue District and Post-Paulina	3	2616	4
Crook County Fire & Rescue District (CCFR)	4	225860	353
Dual CCFR and Oregon department of Forestry (ODF)	5	49610	78
ODF	6	696829	1089
Alfalfa Fire District	7	14896	23
Portions of Deschtues Brothers - Hampton CWPP		131596	206
NO PROTECTION		57494	90



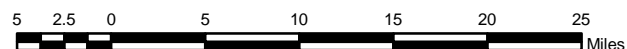
Legend

-  Forest Boundary
-  Ranger District

Flame Length

-  Extreme
-  High
-  Moderate
-  Low
-  None

	Conditional Flame Length(ft) Hazard Class			
Fuel Type	Low	Moderate	High	Extreme
Grass or Shrub	0-2 ft	2-3 ft	3-4 ft	4+ ft
Timber	0-4 ft	4-8 ft	8-11 ft	11+ ft



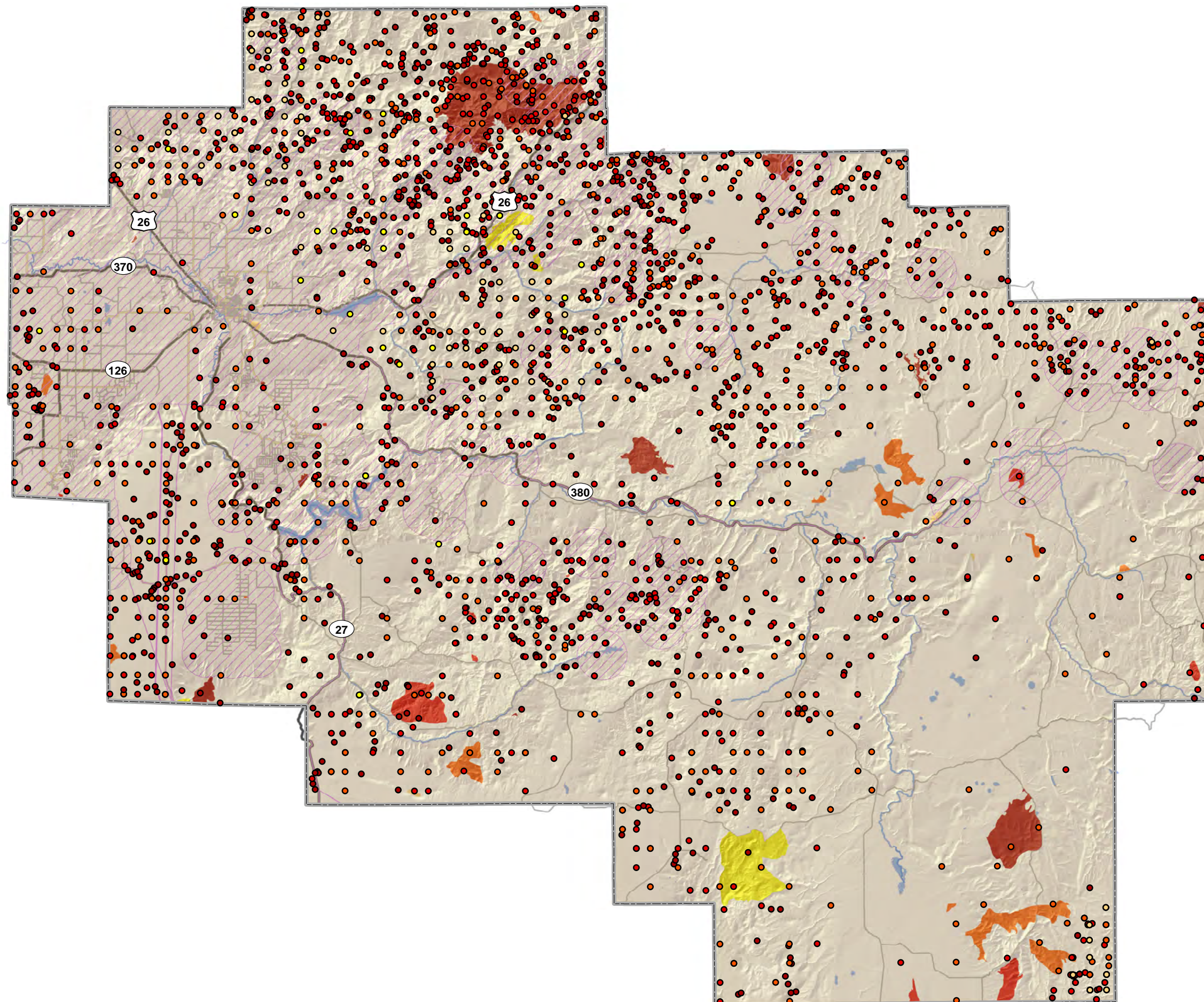
Information displayed on this map was derived from multiple sources. This map is only for graphic display and general planning purposes. Inquiries concerning information displayed on our maps, their sources, and intended uses should be directed to:

Ochoco National Forest
3160 NE Third Street
Prineville, Oregon 97754
(541) 416-6500



This map has no warranties to its contents or accuracy.





Crook County CWPP








Fire Time Period

Main Layers

Fire point and area locations:

-  Fires Before 1970
-  Fires From 1970 To 1979
-  Fires From 1980 To 1989
-  Fires From 1990 To 1999
-  Fires After 1999

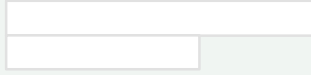
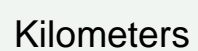
Base Layers

-  Crook County Boundary
-  WUI
-  Highways
-  Major Roads
-  Other Roads
-  Major Rivers
-  Lakes & Water Bodies

Map Notes

Map created by Crook County GIS -1/27/2014

Fire Data compiled from USFS, ODF & BLM for all years. All other data is maintained by CC GIS

SCALE: 
Miles 10

Kilometers 10



Crook County CWPP

Cause of Fires

Main Layers

Time Period: 1919 - 2012

- ⚡ Natural Caused Fires
- 🔥 Human Caused Fires
- Unknown Caused Fires
- 🔥 Large Fires

Base Layers

- 🗺️ Crook County Boundary
- 🌀 WUI
- Highways
- Major Roads
- Other Roads
- 🌊 Major Rivers
- 🌊 Lakes & Water Bodies

Map Notes

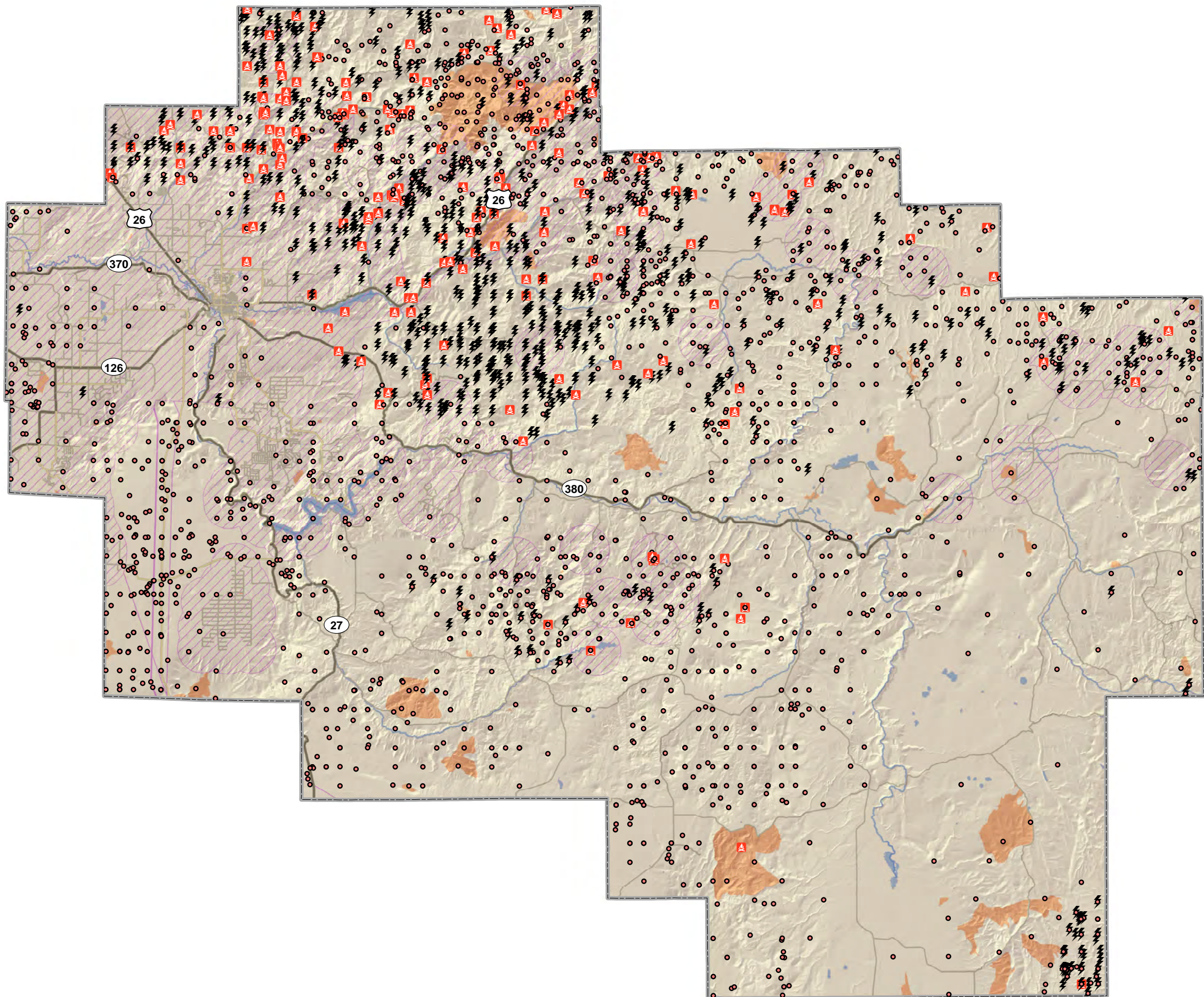
Map created by Crook County GIS -1/29/2014

Fire Data compiled from USFS, ODF & BLM for all years. BLM data can not be used to determine cause. All other data is maintained by CC GIS

Miles 10

Kilometers 10

SCALE:




Crook County CWPP

Fire Treatments

Treatments

-  ODF / Private Treatments 2007-13
-  BLM 2005-13
-  BLM Planned 2014-16
-  FS 1998-2013
-  FS Active Project Areas
-  FS Planned Project Areas

Base Layers

-  Crook County Boundary
-  WUI
-  Highways
-  Major Roads
-  Major Rivers
-  Lakes & Water Bodies

Map Notes


Map created by Crook County GIS -1/27/2014

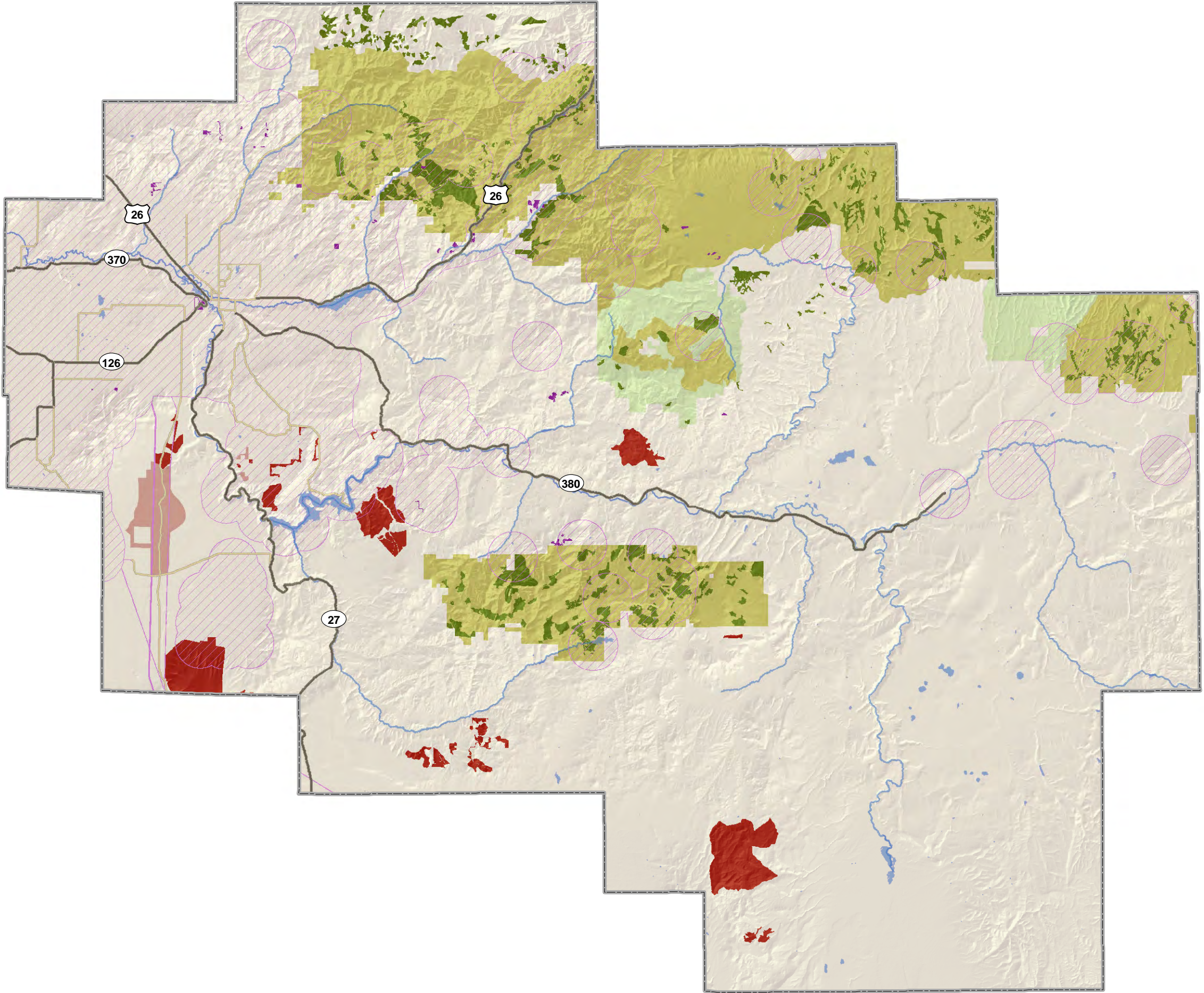
Fire Data compiled from USFS, ODF & BLM for all years. All other data is maintained by CC GIS

SCALE:

Miles 10

Kilometers 10





Crook County CWPP

Recreation & Communities

Main Layers

-  Snow Shelters & Cabins
-  Campgrounds
-  Snow Parks
-  Trailheads
-  Subdivisions

Base Layers

-  Crook County Boundary
-  WUI
-  Lakes & Water Bodies
-  Major Rivers
-  Major Roads
-  Highways

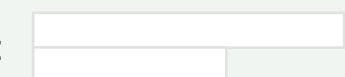
Map Notes

Map created by Crook County GIS - 1/27/2014

Recreation data compiled from USFS & BLM.
Some campground data was collected by CC GIS.
All other data is maintained by CC GIS

Miles 10

SCALE:



Kilometers 10

