# Greater Redmond
# Community Wildfire Protection Plan


## October 14, 2011

**Prepared by Kate Lighthall, Project Wildfire 541-322-7129** klighthall@bendcable.com

# Declaration of Agreement

The Greater Redmond Community Wildfire Protection Plan (CWPP) was originally completed and approved in December 2006. As directed by this CWPP, extensive fuels reduction and fire prevention activities have been completed on public and private lands. The Steering Committee reconvened in April 2011 to update the original plan. Under the Healthy Forests Restoration Act, the CWPP is approved by the applicable local government, the local fire department and the state entity responsible for forest management.

This plan is not legally binding as it does not create or place mandates or requirements on individual jurisdictions. It is intended to serve as a planning tool for fire and land managers and residents to assess risks associated with wildland fire and identify strategies and make recommendations for reducing those risks.

_____ _____

Tim Moor, Fire Chief — Date
Redmond Fire & Rescue

_____ _____

Carroll Penhollow, Board Chair — Date
Deschutes County Rural Fire Protection District #1

_____ _____

George Endicott, Mayor — Date
City of Redmond

_____ _____

Kevin Benton, Unit Forester — Date
Oregon Department of Forestry

_____ _____

Tammy Baney, Chair — Date
Deschutes County Board of Commissioners

# Acknowledgements

Assembled within the true spirit of collaboration, the following people are acknowledged for their participation and commitment resulting in this 2011 Greater Redmond Community Wildfire Protection Plan.

| | |
|---|---|
| Jake Akerberg | Bureau of Land Management |
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| Traci Cooper | Fire Marshal, Redmond Fire & Rescue |
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| Melinda Campbell | Deschutes County GIS |
| Rich Carver | Resident – Northwest |
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| Seth Nickell | Oregon Army – National Guard |
| Stu Otto | Oregon Department of Forestry |
| Dave Pickhardt | Deputy Fire Chief, Redmond Fire and Rescue |
| Joe Stutler | Deschutes County Forester |
| Becky Weeks | Resident – Southwest |

# Table of Contents

# Contact Information

**Tim Moor, Fire Chief**
Redmond Fire & Rescue
341 NW Dogwood
Redmond, OR 97756
(541) 504-5000

**Traci Cooper, Fire Marshal**
Redmond Fire & Rescue
341 NW Dogwood
Redmond, OR 97756
(541) 504-5000

**Stu Otto, Stewardship Forester**
Oregon Department of Forestry
3501 NE 3rd Street
Prineville, OR 97754
(541) 447-5658

**Joe Stutler, County Forester**
Deschutes County
61150 SE 27th Street
Bend, OR 97702

**Lisa Clark, Fire Mitigation Specialist**
Central Oregon Fire Management Service
3050 NE 3rd Street
Prineville, OR 97754
(541) 416-6864

**Kate Lighthall, Program Director**
Project Wildfire
61150 SE 27th Street
Bend, OR 97702
(541) 322-7129

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# Greater Redmond
# Community Wildfire Protection Plan

## Purpose

**The purpose of the Greater Redmond Community Wildfire Protection Plan (CWPP) is to:**

- **Protect lives and property from wildland fires;**
- **Instill a sense of personal responsibility for taking preventive actions regarding wildland fire;**
- **Increase public understanding of the risks associated with living in a fire-adapted ecosystem;**
- **Increase the community's ability to prepare for, respond to and recover from wildland fires;**
- **Restore fire-adapted ecosystems;**
- **Create and maintain fire adapted communities; and**
- **Improve the fire resilience of the landscape while protecting other social, economic and ecological values.**

Originally completed in December 2006, this comprehensive revision outlines a clear purpose with updated priorities, strategies and action plans for fuels reduction treatments in the greater Redmond wildland urban interface. This CWPP also addresses special areas of concern and makes recommendations for reducing structural vulnerability and creating defensible spaces in the identified communities at risk. It is intended to be a living vehicle for fuels reduction, educational, and other projects to decrease overall risks of loss from wildland fire; updated and revisited regularly to address its purpose.

Wildland fire is a natural and necessary component of forest ecosystems across the country. Central Oregon is no exception. Historically, wildland fires have shaped the forests and rangelands valued by residents and visitors. These lands in greater Redmond however, are now significantly altered, or "out of whack" due to fire prevention efforts, modern suppression activities, residential development and a general lack of large scale fires. These activities have resulted in overgrown landscapes with decadent vegetation and abundant ladder fuels that dramatically increase the chances of large wildland fires that burn intensely and cause catastrophic losses.

Previous population growth and projected future growth has led to increased residential development into forests and into the wildland urban interface (WUI) presenting an increased challenge for fire protection, fire prevention and law enforcement agencies.

# Planning Summary

The Redmond City Council approved the Greater Redmond Community Wildfire Protection Plan on December 19, 2006. The Greater Redmond CWPP was also formally adopted by Deschutes County by resolution # 2006-139 on December 11, 2006.

Since that time, continued efforts have been made by city, county, state and federal land management agencies to reduce the threat of high intensity wildland fires through education and fuels reduction activities on public lands. In addition, private residents have responded enthusiastically to the defensible space and preparation guidelines and recommendations to reduce hazardous fuels on their own properties.

Although reducing the risk of high intensity wildland fire is the primary motivation behind this plan, managing the wildlands for hazardous fuels reduction and fire resilience is only one part of the larger picture. Residents and visitors desire healthy, fire-resilient wildlands that provide habitat for wildlife, recreational opportunities, economic stimulation and scenic beauty.

In keeping with the strategy of the original Greater Redmond CWPP, the Steering Committee revisited the planning outline in *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities* (Communities Committee, Society of American Foresters, National Association of Counties, and National Association of State Foresters 2005).

Eight steps are outlined to help guide Steering Committees through the planning process:

**Step one: Convene the decision makers.**

The Greater Redmond CWPP Steering Committee reconvened in April 2011 to review the work completed within and adjacent to the WUI boundary on public and private lands; and reevaluate the priorities for future fuels reduction treatments.

**Step two**: **Involve state and federal agencies.**

The Healthy Forests Restoration Act (HFRA) directed communities to collaborate with local and state government representatives, in consultation with federal agencies and other interested parties in the development of a CWPP. The Steering Committee recognized the importance of this collaboration and involved not only members from the USDA Forest Service and USDI Bureau of Land Management (BLM) but Oregon Department of Forestry (ODF) and Deschutes County representatives as well. Each agency brought a wealth of information about fuels reduction efforts planned and completed along with educational information based on current research across the nation.

**Step three: Engage interested parties.**

Representatives from each of the eight Communities at Risk participated on the Steering Committee. The Steering Committee also includes members of Redmond Fire and Rescue, local businesses, homeowner/neighborhood associations, and other organizations and individuals.

**Step four: Establish a community base map.**

The Steering Committee reviewed the previous maps and boundaries from the 2006 CWPP and approved the boundaries for the Communities at Risk for use in this update.

**Step five: Develop a community risk assessment.**

Fire Regime Condition Class (FRCC) was used as a risk assessment tool in the 2006 CWPP. No updated data has been published that allowed the group to use this assessment tool again. The Steering Committee therefore relied on the ODF Assessment of Risk Factors and the classification ratings of individual areas under the Oregon Forestland – Urban Interface Fire Protection Act of 1997 (aka Senate Bill 360).

**Step six: Establish community hazard reduction priorities and recommendations to reduce structural ignitability.**

Based on the assessments, the Steering Committee produced two groups of priorities for fuels reduction treatments on public and private lands. The Steering Committee also made recommendations to reduce structural ignitability based on information in the assessments and local knowledge.

**Step seven: Develop an action plan and assessment strategy.**

The Steering Committee identified an action plan for key projects; roles and responsibilities for carrying out the purpose of the CWPP; potential funding needs and the evaluation process for the CWPP itself.

**Step eight: Finalize the Community Wildfire Protection Plan.**

A draft of the Greater Redmond CWPP was available for public comment for 30 days prior to the final signing and approval of the plan. Interested parties provided comments during this period. The Greater Redmond Community Wildfire Protection Plan was mutually approved by Redmond Fire & Rescue, the City of Redmond, Oregon Department of Forestry, and the Deschutes County Board of Commissioners as demonstrated in the Declaration of Agreement.

# Collaboration

In 2002, President George Bush established the Healthy Forests Initiative (HFI) to improve regulatory processes to ensure more timely decisions, greater efficiency and better results in reducing the risk of catastrophic wildfire.

In 2003, the Congress passed historical bi-partisan legislation: the Healthy Forests Restoration Act (HFRA). This legislation directs federal agencies to collaborate with communities in developing a Community Wildfire Protection Plan which includes the identification and prioritization of areas needing hazardous fuels treatment. It further provides authorities to expedite the National Environmental Protection Act (NEPA) process for fuels reduction projects on federal lands. The act also requires that 50% of funding allocated to fuels projects be used in the wildland urban interface.

Since the enactment of this legislation, communities have had the opportunity to direct where federal agencies place their fuels reduction efforts. HFRA also allows community groups to apply for federal funding to make communities safer against the threat of wildland fire.

Although some of the authorities under HFI and HFRA have been subsequently challenged in federal courts, all have been successfully appealed and the original intent and authorities under each remain the same.

Original members of the Steering Committee reconvened in April 2011 with new members to update the Greater Redmond CWPP. The Steering Committee group included community members from the greater Redmond area along with representatives from Redmond Fire & Rescue, Oregon Department of Forestry, the USDA Forest Service, the USDI Bureau of Land Management, Project Wildfire and Deschutes County to develop the Greater Redmond Community Wildfire Protection Plan.

The plan was created by this Steering Committee in accordance with *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities* (Communities Committee, Society of American Foresters, National Association of Counties, and National Association of State Foresters 2005); and Deschutes County Resolution 2004-093.

The Redmond City Council adopted the 2011 Greater Redmond Community Wildfire Protection Plan by resolution on _____. The 2011 Greater Redmond CWPP was formally adopted by Deschutes County by resolution _____ on _____.

# Community Profile

Redmond, Oregon is located in central Oregon and is a rapidly growing social, economic and recreational destination in Deschutes County. In 2000, the census reported 13,481 residents in Redmond. According to the 2010 census 26,215 residents called Redmond area home. The latest certified population estimates reveal a small increase in Redmond's city population to 26,225. Deschutes County estimates a total city and surrounding area population at 40,260. (Population Research Center, Portland State University, July 2010 www.pdx.edu/sites/www.pdx.edu.prc/files/media_assets/CertCityTownPopEst2010.pdf ).

The population in Redmond has grown 95% within the city limits over the last decade. Deschutes County planners estimate that there are now an additional 15,112 people outside the city limits in the greater Redmond area. From a local knowledge perspective, most of the population growth over the last decade has occurred within the city limits, west of US Highway 97.

Historically, the Redmond area included a mix of open stands of western juniper, bitterbrush, sage and grasslands which was maintained by frequent low to moderate intensity fires. Today, with more development into the wildland urban interface and effective wildland fire suppression, the greater Redmond area is characterized by widespread stands of dense western juniper, bitterbrush, sage and grasses.

Developed 3,077 feet in elevation, in a classic wildland urban interface environment, the greater Redmond area is also home to abundant wildlife including deer, elk, and many species of birds and fish. Within the planning area there is also a significant amount of public land with developed and dispersed recreation sites which provide valuable recreation opportunities to both residents and visitors. In the summer months, Deschutes County estimates an additional transient population of up to 20,000 people that visit these areas and the city of Redmond creating a seasonal challenge for those agencies responsible for fire suppression and evacuation.

The climate in Redmond is considered semi-arid and typical of the east slopes of the Cascade Mountains, with most of the annual precipitation (8"-12") coming as winter snow or fall and spring rains. Summers are dry and prone to frequent thunderstorms with lightning storms producing multiple fire ignitions.

US Highway 97, a major transportation route through the state, runs north to south, through the middle of the city of Redmond. US Highway 126 also intersects the city of Redmond, running east and west in the middle of town. As central Oregon grows, more residents and tourists crowd the highway and increase congestion, particularly during the summer months when fire season reaches its peak. As part of the central community, transportation routes are included in the consideration of the WUI boundary due to their critical role as roads and travel corridors that link communities together and serve as evacuation routes.

The community of Redmond presents a unique challenge for the wildfire planning process. Although the core urban area is not at significant risk from wildfire due to the amount of development and lack of vegetation, the areas adjacent to the core of Redmond are characterized

by dense stands of trees, topographical challenges and thick ground vegetation that contribute to its scenic beauty as well as the overall wildland fire risk. There are extensive areas of hazardous wildland fuels intermixed with homes and businesses across the planning area that in the event of a grass or brush fire, could sustain a wildland fire event with catastrophic losses likely. Redmond is also home to many agricultural areas, which have the capacity to carry significant ground fires.

The greater Redmond community has experienced many large fires in the last 100 years. In 1996 the Smith Rock Fire charred 300 acres and one home. Each year Redmond Fire and Rescue reports dozens of brush fires that reach 20+ acres, as well as many that are less than 100 acres that threaten lives and property.

## Public and Private Accomplishments

As part of the ongoing wildland fire risk management of the surrounding public and private landscape, the Bureau of Land Management, Oregon Department of Forestry, Deschutes County, Project Wildfire and private landowners have accomplished much and continue to be engaged in ongoing hazardous fuels treatment projects across the planning area.

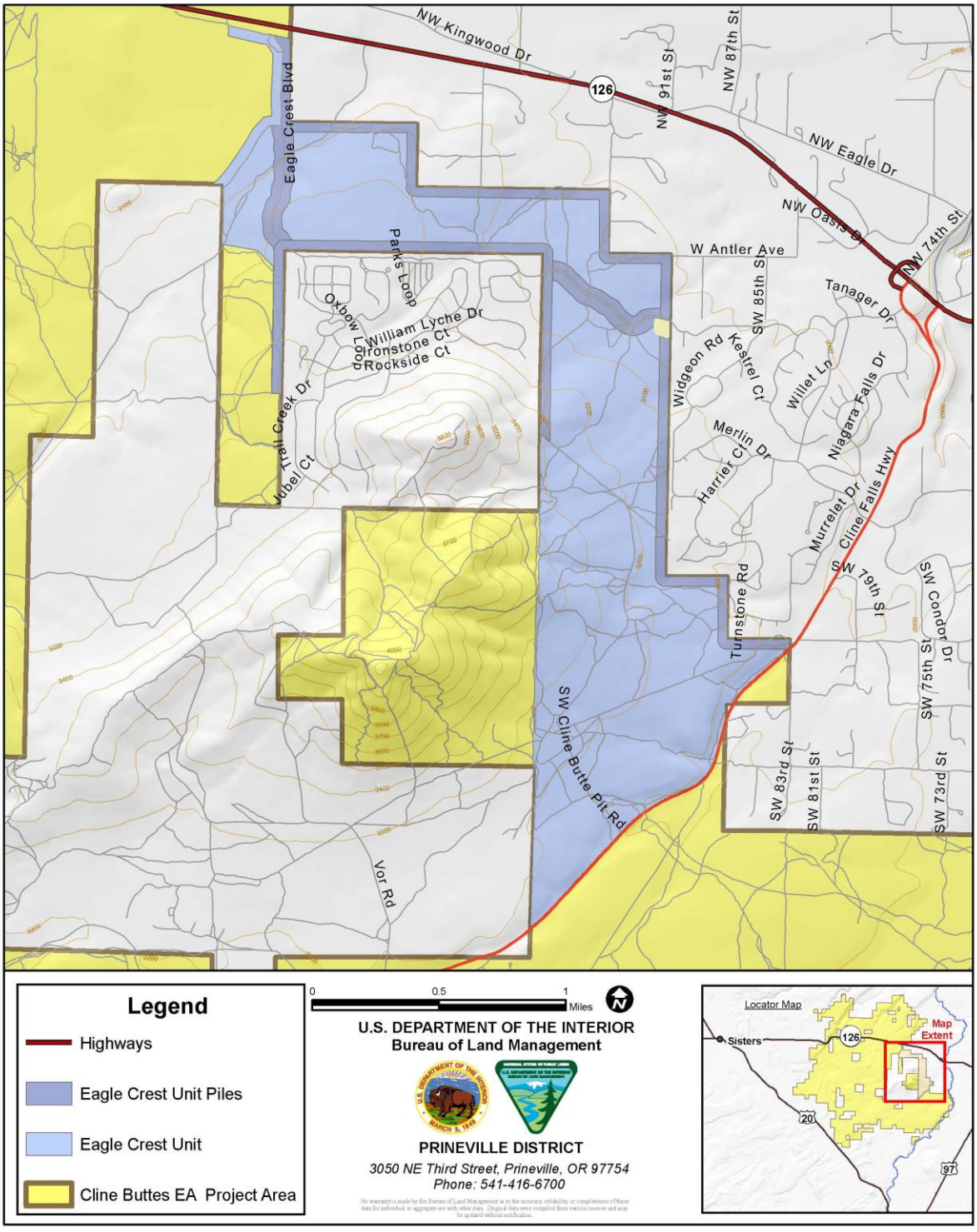
### The Bureau of Land Management

The Bureau of Land Management – Prineville District manages 45,511 acres of public land in the greater Redmond area and continues to pursue increased forest health and reduced potential for high intensity wildland fire.

**Ember showers:** smoldering embers from a nearby fire that can land in gutters, roof valleys; on or under decks and siding; in vents; or on lawn furniture where they can ignite and cause damage to a home. They can travel miles and ignite spot fires far from the original fire.

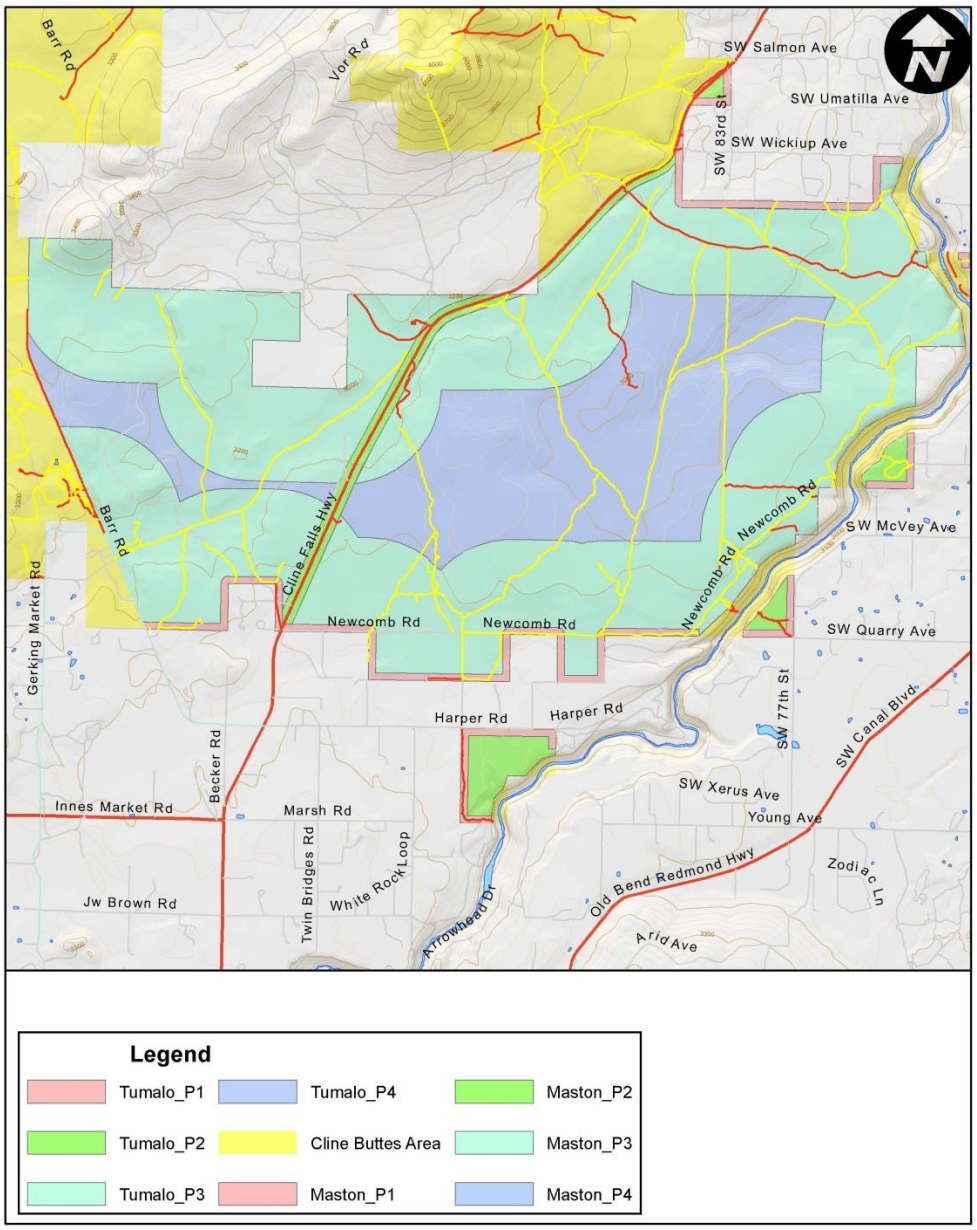
The BLM is currently engaged in the Cline Buttes project which will thin 1,308 acres of dense juniper (220 piles) within 200 feet of the Eagle Crest boundaries in the Southwest region of the Greater Redmond WUI. The piles and remaining slash will be burned. This buffer will significantly reduce the potential for active crown fires and ember showers, and provide working space between trees giving firefighters a positive shot at suppression. In addition, a reduction in juniper trees means less vegetation competing for water which in turn provides added nutrients and water to the remaining landscape. Some of the thinned trees will be left in place to create wildlife habitat and further enrichment for the soil. See map on next page.

# Eagle Crest Unit



The BLM is also currently in the planning stages for a 500-acre treatment project south of Eagle Crest in the Maston/Tumalo Unit which will also assist in reducing the potential for wildfire and ember showers threatening communities in Redmond. See map below.

## Tumalo / Maston Priorities



It is important to note that each project area requires multiple types of fuels reduction activities to achieve the desired result including mechanical shrub mowing, tree thinning, hand piling, and under burning. Therefore, multiple entries are required in order to adequately reduce hazardous fuels and restore forest ecosystem health. The ultimate goal for these projects is to reduce the potential for high intensity fire that can spread to tree crowns, requiring costly suppression efforts and causing large losses on the landscape as well as in and around communities.

**Deschutes County**

Deschutes County owns only 3.22% of all the privately owned land in the greater Redmond WUI. Through ongoing funding opportunities including grants, Deschutes County is taking steps to reduce and maintain the hazardous vegetation and contribute to the fire adapted community here.

**Project Wildfire**

Over the last five years, Project Wildfire has secured over $8.5 million in grant funding to reduce hazardous fuels on private lands. In order to stretch the grant money as far as possible, Project Wildfire developed the Sweat Equity Program whereby residents create or maintain defensible space on their property; bring the woody debris to the roadside and the grant funding pays to have it hauled away at no charge to the resident. Project Wildfire manages this program and now estimates that residents participating in this program are treating 10,000 acres each year. The benefit of this program is not only the treatment of hazardous fuels, but the education and resident "buy-in" that are occurring at the individual resident and neighborhood levels.

Similar to the Sweat Equity Program, Project Wildfire also coordinates and manages the FireFree Program whereby residents also complete their defensible space work and bring it to local recycling sites at no charge.

The debris collected through the Sweat Equity Program is combined with the debris collected through the FireFree Program to yield approximately 200,000 cubic yards of woody biomass each year. The debris is ground into a biomass fuel and utilized for making clean energy and electricity throughout the region.

**Oregon Department of Forestry**

The Oregon Department of Forestry works with large landowners on a cost share basis to reduce hazardous fuels and the potential for losses on larger tracts of land and with homeowner and neighborhood associations on commons lands.

**Firewise Communities USA**

The Firewise Communities USA program is a national recognition program which highlights communities that have chosen to complete and maintain defensible space; ensure adequate access, water and signage; promote ongoing fire prevention education, and build or retro-fit structures with non-combustible building materials such as siding, decks and roofing. Oregon Department of Forestry is the statewide liaison for the Firewise Communities USA program and

in coordination with Redmond Fire and Rescue and Project Wildfire, they are leading the charge to identify and assist neighborhoods in their Firewise and FireFree endeavors. Redmond Fire and Rescue has made the development of additional Firewise Communities a top priority for the coming years. Specific plans to develop Firewise Communities in the Greater Redmond WUI are detailed in the Action Plan and Implementation section of this CWPP on page 35.

Since the implementation of the original CWPP in 2006, many neighborhoods within the eight Communities at Risk have made tremendous strides in reducing the potential for catastrophic losses.

- Odin Falls and River Springs combined their Sweat Equity endeavors and achieved 100% participation in their neighborhoods, producing 6,000 cubic yards of defensible space debris.
- Tetherow Crossing participated in a neighborhood-wide Sweat Equity event to produce 1,700 cubic yards of debris and mapped the subdivision for an Evacuation Plan and installed multiple evacuation signs across the neighborhood.
- Lower Bridge Estates residents took advantage of partnership opportunities and treated 160 acres of 5-acre parcels to greatly reduce the risk of brush fire in their subdivision.
- The Cliffs subdivision combined efforts with the City of Redmond to treat the commons lands in the subdivision and the Dry Canyon area directly below the subdivision.
- The Ridge at Eagle Crest participated in two Sweat Equity events producing over 4,500 cubic yards of defensible space debris and took advantage of partnership opportunities to treat 106 acres of commons lands and 100 vacant lots (25 acres). The Ridge homeowners board has also developed a ladder fuels reduction plan, included funding in their annual budget for maintenance of the treated commons. The Architectural Review Committee has adopted new landscape guidance incorporating fire-resistant plants and defensible space principles. This represents an important shift from an "aesthetics and natural preservation" approach to one that places equal value on fire considerations.

## Community Base Maps

The CWPP Steering Committee relied on the following maps and GIS data (Appendix A):

- Greater Redmond WUI boundary with eight Communities at Risk, and all private & public land ownership;
- 2010 Senate Bill 360 Classification Ratings.

For updated planning purposes, the Steering Committee referenced this data and relied on recent activities and fuels treatment projects in specific Communities at Risk.

**Wildland Urban Interface Description**

The Healthy Forests Restoration Act defines wildland urban interface (WUI) as an area within or adjacent to an at-risk community that has been identified by a community in its wildfire protection plan. For areas that do not have such a plan, it is identified as:

- extending ½ mile from the boundary of an at-risk community,
- extending 1½ 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,
- adjacent to an evacuation route.

The Redmond CWPP Steering Committee reviewed the overall WUI boundary and approved its use in this update (see Appendix A). The southern edge of the boundary is the northern boundary of the Bend CWPP. The northern part of the WUI is the Jefferson County CWPP boundary. The west side of the WUI is met by the Greater Sisters Country CWPP boundary and the east side is met by the Crook County CWPP. Every acre in Deschutes County is covered by a CWPP.

The southeast corner of the planning area dips into the Bend CWPP boundary to capture the evacuation route from the Pronghorn development where it meets the Powell Butte Highway. This area was not included in the Bend CWPP risk assessments. The Steering Committee included it in this plan as a necessary element for assessment.

Also included in the Southeast sub region is 23,718 acres of land for the Biak Training Center for the Oregon Army National Guard. The Oregon Military Department recently renewed its long term lease for this land with the Bureau of Land Management. This acreage takes up approximately 90% of the land in this sub region and includes a variety of infrastructure and buildings including gas and power lines, roads and numerous buildings that comprise the Guard Base. A representative for the Oregon Army National Guard participated on the Steering Committee for the Greater Redmond CWPP. Under Department of Defense guidelines, the Biak Training Center is also conducting a fire prevention planning effort. Although their planning process significantly differs from the Greater Redmond process, the Steering Committee recognizes the value of the military training center and supports coordinated and complementary efforts to protect it from losses due to wildland fire. Therefore, the Steering Committee included the Biak Training Center in the WUI boundary.

In all eight identified sub regions, the 1½ mile WUI boundary meets the CWPP planning area boundary. For the purposes of this plan, the wildland urban interface (WUI) boundary and the CWPP planning area are the same geographical region. The Greater Redmond wildland urban interface boundary is approximately 173 square miles and covers 111,003 acres.

## Communities at Risk

The Healthy Forest Initiative (HFI) and the Healthy Forests Restoration Act (HFRA) define a "community at risk" from wildland fire as one that:

- is a group of homes and other structures with basic infrastructure and services (such as utilities and collectively maintained transportation routes) in or adjacent to federal land;
- has conditions conducive to large-scale wildland fire; and
- faces a significant threat to human life or property as a result of a wildland fire.

As noted, the Steering Committee approved the existing boundaries of the Communities at Risk to identify these eight (8) Communities at Risk.

**Table 1 – Communities at Risk**

| Community at Risk | Acreage | Structures | Estimated Population |
|---|---|---|---|
| Northeast | 13,797 | 815 | 2,038 |
| Southeast | 26,354 | 116 | 290 |
| Northwest | 34,809 | 2,677 | 6,692 |
| Southwest | 20,388 | 2,437 | 6,092 |
| Urban Northeast | 3,263 | 961 | 2,402 |
| Urban Southeast | 4,462 | 500 | 1,250 |
| Urban Northwest | 3,351 | 3,139 | 7,848 |
| Urban Southwest | 4,579 | 5,459 | 13,648 |
| Total | 111,003 | 16,104 | 40,260 |

Note: The estimated population of each area is based on Deschutes County's estimate formulated as 2.5 x the number of homes.

## Fuel Hazards and Ecotypes

The majority of the vegetation in the Greater Redmond WUI includes:

- Sagebrush
- Western juniper
- Bitterbrush
- Cheat grass & noxious weeds

**Sagebrush** is found throughout the Redmond planning area and is of great concern as ladder fuel intermixed with stands of western juniper trees. Sagebrush is highly susceptible to fire and rarely re-sprouts. Under historic conditions, sagebrush took approximately 20 years to reach pre-burn densities following a wildfire event. Without periodic fire, sagebrush reaches an uncharacteristic old-growth form with increased height, woody stems, and thick accumulations of leaves – all highly flammable. Changes in fire occurrence along with fire suppression and livestock grazing have contributed to the current condition of sagebrush in the planning area. Introduction of annuals, especially cheat grass, has increased fuel loads so that fire carries easily, increasing the potential for significant and dangerous fire behavior.

**Western juniper** is the predominant overstory species that occurs across the Redmond area landscape. During its first few decades, western juniper is extremely susceptible to wildfire and spends most of its resources putting down major root systems instead of developing thick bark or other fire resistant characteristics. Prior to settlement of the western United States, juniper was frequently killed by wildfires that moved through the landscape approximately every 30 years. As a result, it grew almost exclusively in rocky areas and outcrops where fire could not burn it. Over the past century, western juniper has established itself outside the rocky outcrops and into much of central Oregon, including the greater Redmond area. Specifically, the increase in its range is attributed to more effective fire suppression which has allowed stands to grow unchecked by fire and past grazing practices of domestic livestock which has decreased the amount of ground vegetation needed to carry a fire.

**Bitterbrush** occurs throughout the Redmond planning area on all aspects and elevations and is frequently found with sagebrush and western juniper. Fire severely damages bitterbrush, especially if rain is not received shortly after a burn. Bitterbrush is fire dependent, but not fire resistant. It regenerates mostly from seed after a fire and often sprouts from caches of seeds made by rodents. Bitterbrush will sprout after burning regardless of the severity of the burn and matures relatively quickly. Consequently, the Redmond wildland urban interface area is rich with patches of bitterbrush that burn well on their own and provide fire-ready ladder fuels for taller tree stands.

**Noxious weeds and cheat grass** are found across the planning area and present yearly challenges for residents, agricultural users and fire suppression agencies. Cheat grass (considered obnoxious rather than noxious) and some noxious weeds typically occur where the ground has been disturbed to create roads, paths, or other plantings. Once established, they return perennially and can reach heights of three feet or more creating an easily ignitable fuel bed once they dry out during summer months. Fires that occur in this type of fuel spread quickly and can direct fire to other fuels such as trees or structures.

**Ladder fuels:** Bitterbrush, manzanita, sagebrush and other flammable vegetation that can provide a direct path or "ladder" for fire to travel to trees or structures.

The result of the fuel hazards and forest types in the greater Redmond area is an overgrowth of trees and ladder fuels with an abundance of dead or dying vegetation that contribute to a substantially elevated risk of wildland fires that are difficult to control. These overly dense conditions lead to fire behavior that produces flame lengths over eight feet with crowning and torching that can result in stand replacement severity fires.

Not only have large, stand replacement fires not occurred, but also the more frequent low intensity fires have not been allowed to burn either. This practice of fire exclusion along with insufficient vegetation/fuels reduction has resulted in the buildup of excessive live and dead fuels.

## Community Assessment of Risk

Fire Regime Condition Class (FRCC) was used as a risk assessment tool in the 2006 CWPP. No updated data has been published to demonstrate the significant amount of work that has occurred in the planning area over the last five years. The Steering Committee notes the importance however of a landscape level analysis, rather than a lot-by-lot, and understands the overall goal to return the landscape to its historical setting. It is described in this section for reference only.

The Steering Committee relied on the ODF Assessment of Risk Factors and the classification ratings of individual areas under the Oregon Forestland – Urban Interface Fire Protection Act of 1997 (aka Senate Bill 360).

### ODF Assessment of Risk Factors

#### Risk of Wildfire Occurrence

The risk of wildfire occurrence refers to the likelihood of a fire occurring based on historical fire occurrence, home density and ignition sources. The risk ranges from HIGH to MODERATE in the Communities at Risk based on historical evidence of fire history as well as ready ignition sources like dry lightning storms, debris burning, equipment use, juveniles, campfires, and arson. See Table 2 on page 20.

The current condition of the vegetation on the federal and private lands adjacent to and within the Greater Redmond WUI poses an elevated risk of catastrophic loss from wildland fire. Redmond is also threatened by a possibility of a crown fire sweeping into the community, or by embers falling on the community from an adjacent wildland fire.

**Hazard**

The hazard rating describes resistance to control once a fire starts based on weather, topography (including slope, aspect and elevation), vegetation and crown fire potential. As stated earlier, less logging activity, effective wildland fire suppression and a lack of forest management has led to dense vegetation in the wildland urban interface. All Communities at Risk in the Greater Redmond WUI are rated EXTREME under this assessment except the Urban Southeast, Urban Northwest and Urban Southwest areas which are rated HIGH. See Table 2 on page 20.

A wildland fire could start within the communities or in any of the forested areas adjacent to or surrounding the communities. With a fire of any significance, it could be difficult to assemble the resources necessary to adequately address all of the fire and safety issues that could arise in the early stages of emergency operations. The potential exists for a high intensity wildland fire for any number of reasons, during a significant portion of each year.

**Protection capability**

Fire protection capability ranges from LOW to HIGH in the Greater Redmond WUI. In this category, the lower the overall rating, the more protection capability the community has. The ratings are based on fire protection capability and resources to control and suppress wildland and structural fires. The ratings also consider response times and community preparedness. See Table 2 on page 20.

When local resources are fully engaged, all agencies can request additional resources through the State of Oregon and request federal resources through the Pacific Northwest Coordination Center.

In addition to this high level of coordination, all fire departments and agencies in Central Oregon convene each year for a pre-season meeting to discuss the upcoming wildland fire season. Topics addressed at this meeting include predicted wildland fire activity, weather forecasts and how agencies can/will respond to meet the needs of fire events.

<u>Redmond Fire & Rescue</u>

In 2011, Redmond Fire and Rescue successfully transitioned from a municipal fire department to a fire district. Under the leadership of its five-member elected board of directors, Redmond Fire and Rescue provides fire suppression services within its 150 mile service district and extends Emergency Medical Services (EMS), including Advanced Cardiac Life Support transport, within a 450 square mile service boundary.

The department provides specialized firefighting coverage for Redmond International Airport at Roberts Field. Redmond Fire & Rescue adopted the National Incident Management Systems (NIMS) and all personnel have received training and continue to train in its use.

Redmond Fire & Rescue is a combination career and volunteer department that employs one Fire Chief, one Deputy Chief, two Division Chiefs, three Battalion Chiefs, 33 line firefighter/paramedics, one fire prevention staff member, and two administrative staff members. The department also manages a strong student volunteer program with seven student volunteers and seven regular volunteers.

Through its four stations, Redmond Fire & Rescue utilizes a fleet of firefighting and EMS apparatus including: three structural engines, three interface engines, one ladder truck, three water tenders, two heavy brush engines, two light brush engines, one light rescue truck, four ambulances, two hazardous materials response vehicles and trailers, two Aircraft Rescue Fire Fighting (ARFF) engines, two command vehicles and six staff vehicles.

In addition to the firefighting resources, Redmond Fire and Rescue puts a portion of its workforce towards fire prevention. The fire prevention team is comprised of one Fire Marshal and one Deputy Fire Marshal that provide enforcement of local fire codes and ordinances as well as provide public education across the district. This team is responsible for fire cause determination and providing information about the science of fire so the department can focus on a prevention message, campaign and code development to prevent those fires in the future.

The department is a party to the Central Oregon Mutual Aid Agreement. In the event of a major fire the department may request assistance from all other fire departments that are signatory to the agreement. In addition to Central Oregon Fire Departments, this includes the US Forest Service, Oregon Department of Forestry, and the BLM. Conversely, when these agencies need assistance and the District has resources available, it assists them. Redmond Fire and Rescue is also a party to an Automatic Aid Agreement with Bend, Cloverdale, Sunriver, Sisters, US Forest Service and ODF. Through a streamlined Computer Aided Dispatch (CAD) center, Redmond Fire and Rescue responds automatically to certain calls in areas up to five miles beyond the fire district.

Local Ordinances provide the department with the control of burning practices. This step alone has contributed positively to the decrease in the amount of fire calls and reduced the threat of wildfire in the greater Redmond area.

Local building codes and fire codes also reduce the catastrophe from wildfires as they allow the department to restrict the use of combustible roofing materials, design new communities with adequate and proper access (ingress/egress) for emergency vehicles as well as adequate water supply and hydrant distribution. These opportunities give firefighters an expedient route to fires and assist residents in safe evacuations.

All of these enforced code and ordinance provisions help reduce the number and severity of fires in the greater Redmond area.

Oregon Department of Forestry (ODF)

The Central Oregon District of the Oregon Department of Forestry does not provide fire protection for any private landowners in the greater Redmond area. ODF does however participate in mutual aid requests for fire suppression on wildland fires within the Redmond CWPP boundary as described above.

USDA Forest Service and USDI Bureau of Land Management

The US Forest Service and BLM provide wildland fire protection on the federal lands within the greater Redmond area. Together, they are identified as the Central Oregon Fire Management Service (COFMS). COFMS includes the Deschutes National Forest, the Ochoco National Forest, the Crooked River National Grassland, and the Prineville District of the BLM. These four units are managed cooperatively under combined leadership, with an Interagency Fire Management Officer, two Deputy Fire Management Officers, and a Board of Directors including decision makers from both agencies, with Forest Service District Rangers and BLM Field Managers. COFMS has a central dispatching facility in partnership with the Oregon Department of Forestry that serves as a communications hub for fire and fuels operations, as well as safety and training issues for COFMS. In total, COFMS provides the following resources: 25 engines, 6 initial attack hand crews, 6 prevention units, 2 dozers, 2 water tenders, 1 air attack, 3 lead planes and 3 helicopters. Additional regional and national resources are available and include 53 smokejumpers, 2 inter-regional Hotshot crews, 1 air tanker, 1 National Fire Cache, and 23 overhead staff positions.

Law Enforcement

Police services are provided by the City of Redmond Police Department and Deschutes County Sheriff. Both entities have responsibility for ensuring the safe and orderly evacuation of the community in the event of a major emergency. A number of resources have been allocated to accomplish this task including hi/lo sirens on vehicles; emergency notification via radio and television; reverse 9-1-1 capability; Police and Sheriff's Department staff; Deschutes County Search & Rescue; Redmond Fire & Rescue staff and community-wide volunteers. Any other issues relative to a major emergency are addressed by the Countywide Disaster Plan and the Deschutes County Department of Emergency Services.

Oregon State Police assists the law enforcement efforts and cooperates with the City of Redmond and Deschutes County for protection in the Redmond area.

Community Preparedness

Also under the category of Protection Capabilities, the ODF Assessment of Risk examines a community's level of organization and preparedness to respond in an emergency situation. The assessment considers whether the area has an organized stakeholder group that looks out for its own area through mitigation efforts, a phone tree, etc. Or, does the area only receive outside efforts such as newsletters, mailings or fire prevention information from other groups? In the Greater Redmond WUI, the Communities at Risk varied from having a high level of organization to not having any with most efforts made by outside agencies such as the fire department's FireFree efforts and Project Wildfire's Sweat Equity projects in individual neighborhoods. The Steering Committee used local knowledge to determine the level of preparedness.

## Values Protected

The human and economic values protected in the Greater Redmond WUI are based on home density per ten acres and community infrastructure such as power substations, transportation corridors, water and fuel storage, etc. Five Communities at Risk are rated HIGH in this category and three are rated MODERATE. See Table 2 on page 20.

Based on Deschutes County tax records from 2010, there are approximately 16,104 residential structures in the Greater Redmond planning area, with an estimated real market value of $3,386,315,729. In addition, 1,500 businesses operate in the Redmond area. If a large wildland fire occurs in this area which resulted in the closure of either US Highway 97 or state highway 126, the economic loss to businesses could exceed $3.5 million per day.

Redmond is also home to the Deschutes County Fair & Expo Center. If local transportation routes are closed due to fire, events at the Expo Center and the resulting income to the community could be greatly affected. For example, the 2011 Motor Coach Rally brought 7,000 visitors and $4.7 million in revenue to businesses in Redmond over four days (Redmond Chamber, 2011). Receipts and revenue generated from events such as these would be negatively impacted if transportation routes were closed.

The essential infrastructure includes multiple webs of utilities, roads, water and sewer systems and has an approximate replacement value of $275,000 per mile for electrical transmission lines; $150,000 per mile of electrical distribution lines; and $2 million per electrical sub-station. Loss to roads, water and sewer systems would be minimal because most are underground or otherwise not flammable.

## Other Community Values

Of high importance to residents and business owners in Redmond is the value placed on scenic beauty and recreational opportunities that exist on public lands both within and adjacent to the planning area. Redmond residents and visitors value Smith Rock State Park and Cline Falls State Park as two of the many scenic gems in the area.

The loss of recreational use by visitors to the area as a result of scenic quality, specifically large "burn over" areas, will have an unknown economic impact not only to the Redmond area, but to the remainder of Deschutes County and neighboring cities like Bend, La Pine, Sunriver and Sisters. If a large wildland fire occurs in this area, the result will be catastrophic loss to both the developed and dispersed recreational opportunities in the greater Redmond area.

## Structural Vulnerability

In recent years, many neighborhoods in the greater Redmond area have taken steps to decrease the vulnerability of structures to wildland fire. Although attitudes and behaviors towards fire are changing in the Redmond area thanks to educational programs like FireFree and Firewise, the population growth and continued development into the wildland urban interface present fresh challenges each year. The Steering Committee puts high value on the importance of making structures and neighborhoods in the Greater Redmond WUI as fire safe as possible.

The ratings for structural vulnerability for each sub region rated LOW. See Table 2 on page 20. The survey included assessments of the following:

- Flammable roofing – wood or non-wood present;
- Defensible space – meets local requirements or not;
- Ingress/egress – one, two or more roads in/out;
- Road width – 0 to more than 24 feet wide;
- All season road conditions – surfaced or not with grade more or less than 10%;
- Fire Service access – more or less than 300 ft with or without turnaround;
- Street signs – Present with 4" reflective characters or absent.

The following table – Table 2 – is a summary of the eight Communities at Risk, the value ratings (with corresponding scores) and the total scores for each community in each category. The higher the total score in this assessment, the higher the overall risk.

## Table 2 - ODF Assessment Summary

| Community at risk | What is the likelihood of a fire occurring? | Hazard rating | Protection capability | Human and economic values protected | Structural vulnerability | | Total score | Rank |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| **Northeast** | Moderate 20 | Extreme 68 | High 17 | Moderate 22 | Low 17 | | 144 | 5 |
| **Southeast** | High 30 | Extreme 68 | High 22 | Moderate 22 | Low 21 | | 163 | 2 |
| **Northwest** | Moderate 20 | Extreme 68 | High 26 | Moderate 22 | Low 27 | | 163 | 2 |
| **Southwest** | High 35 | Extreme 68 | High 17 | High 35 | Low 25 | | 180 | 1 |
| **Urban NE** | Moderate 20 | High 53 | Low 2 | High 35 | Low 8 | | 118 | 7 |
| **Urban SE** | Moderate 25 | High 60 | Low 2 | High 35 | Low 9 | | 131 | 6 |
| **Urban NW** | Moderate 25 | High 60 | Low 2 | High 50 | Low 24 | | 161 | 3 |
| **Urban SW** | High 30 | High 55 | Low 2 | High 50 | Low 17 | | 154 | 4 |

**The higher the overall score, the greater the risk.**

**Risk:** Describes the likelihood of a fire occurring based on historical fire occurrence and ignition sources. Low = 0 – 13 points; Moderate = 14 – 27 points; High = 28 – 40 points.

**Hazard:** Describes resistance to control once a fire starts based on weather, topography and fuel. Low = 0 – 9 points; Moderate = 10 – 40 points; High = 41 – 60 points; Extreme = 61 – 80 points.

**Protection capability:** Describes fire protection capability and resources based on type of protection, response times and community preparedness. Low = 0 – 9 points; Moderate = 10 – 16 points; High = 17 – 40 points. The lower the score here, the better the risk factor.

**Values protected:** Describes the human and economic values in the community based on home density per ten acres and community infrastructure such as power substations, transportation corridors, water and fuel storage, etc. Low = 0 – 15 points; Moderate = 16 – 30 points; High = 31 – 50 points.

**Structural vulnerability:** Describes the likelihood that structures will be destroyed by wildfire based on roofing and building materials, defensible space, separation of homes, fire department access and street signage. Low = 0 – 30 points; Moderate = 31 – 60 points; High = 61 – 90 points.

**Total score:** A sum of all the points from each category surveyed.

## Fire Regime and Condition Class

*Although not used as an assessment tool for this updated CWPP, the Steering Committee notes it here because of its description and goals for the overall landscape.*

Fire Regime - Condition Class considers the type of vegetation and the departure from its natural fire behavior return interval.

Five natural (historical) fire regimes are classified based on the average number of years between fires (fire frequency) combined with the severity of the fire on dominant overstory vegetation. Fire regimes I and II are each represented on the landscape in the Redmond WUI. Western juniper for example has a 31 year fire interval with high potential for stand replacement fires. Western juniper therefore falls within Fire Regime II which describes species with fire return intervals between 0 – 35 years.

Table 3 summarizes Fire Regimes.

**Table 3 – Fire Regimes**

| Fire Regime Group | Fire Frequency | Fire Severity | Plant Association Group |
|---|---|---|---|
| | | | |
| **I** | 0 – 35 years | Low severity | Ponderosa pine, manzanita, bitterbrush |
| | | | |
| **II** | 0 – 35 years | Stand replacement | Western juniper |
| | | | |
| **III** | 35 – 100+ years | Mixed severity | Mixed conifer dry |
| | | | |
| **IV** | 35 – 100+ years | Stand replacement | Lodgepole pine |
| | | | |
| **V** | > 200 years | Stand replacement | Western hemlock, mixed conifer wet |

Condition Class categorizes a departure from the natural fire regime based on ecosystem attributes. In Condition Class 1, the historical ecosystem attributes are largely intact and functioning as defined by the historical natural fire regime. In other words, the stand has not missed a fire cycle. In Condition Class 2, the historical ecosystem attributes have been moderately altered. Generally, at least one fire cycle has been missed. In Condition Class 3, historical ecosystem attributes have been significantly altered. Multiple fire cycles have been missed. The risk of losing key ecosystem components (e.g. native species, large trees, soil) is low for Class 1, moderate for Class 2, and high for Class 3.

Table 4 summarizes Condition Class.

**Table 4 – Condition Class**

| Condition Class | Attributes |
|---|---|
| **Condition Class 1** | ▪ Fire regimes are within or near an historical range.<br>▪ The risk of losing key ecosystem components is low.<br>▪ Fire frequencies have departed from historical frequencies (either increased or decreased) by no more than one return interval.<br>▪ Vegetation attributes are intact and functioning within an historical range. |
| **Condition Class 2** | ▪ Fire regimes have been moderately altered from their historical range.<br>▪ The risk of losing key ecosystem components has increased to moderate.<br>▪ Fire frequencies have departed (either increased or decreased) from historical frequencies by more than one return interval. This change results in moderate changes to one or more of the following: fire size, frequency, intensity, severity or landscape patterns.<br>▪ Vegetation attributes have been moderately altered from their historic ranges. |
| **Condition Class 3** | ▪ Fire regimes have been significantly altered from their historical range.<br>▪ The risk of losing key ecosystem components is high.<br>▪ Fire frequencies have departed (either increased or decreased) by multiple return intervals. This change results in dramatic changes to one or more of the following: fire size, frequency, intensity, severity, or landscape patterns.<br>▪ Vegetation attributes have been significantly altered from their historic ranges. |

There are 111,003 acres in the Greater Redmond WUI area. Fuels reduction projects continue to reduce the amount of acreage in Condition Class 2 & 3. Achieving Condition Class 1 on public lands however, requires multiple entries on treatment sites, over a period of years. For example, thinning and mowing may occur over a 12-24 month project period. The under-burning component of the project may not occur for another year while the land recovers from the thinning and mowing and produces an adequate shrub content to support prescribed fire.

Condition Class applies on the landscape level. Therefore, the Steering Committee recognizes that although significant fuels reduction work is underway by the BLM, the need continues on the landscape as a whole. The Steering Committee supports the ongoing planning and treatment process on public lands.

## Oregon Forestland-Urban Interface Fire Protection Act of 1997

The Oregon Forestland-Urban Interface Fire Protection Act, also known as Senate Bill 360, enlists the aid of property owners toward the goal of turning fire-vulnerable urban and suburban properties into less volatile zones where firefighters may more safely and effectively defend homes from wildfires. The law requires property owners in identified forestland-urban interface areas to reduce excess vegetation around structures and along driveways. In some cases, it is also necessary to create fuel breaks along property lines and roadsides.

Forestland-urban interface areas are identified in each county by a classification committee. Once areas are identified, a committee applies fire risk classifications to the areas. The classifications range from "low" to "high density extreme," and the classification is used by a property owner to determine the level of hazardous fuel reduction that needs to be established on the property to minimize risk of experiencing structural property loss from unwanted wildfire.

The classification committee reconvenes every five years to review and recommend any changes to the classifications. This process was completed and approved in February 2010. At the same time, Deschutes County elected to classify *all* the lands within its boundaries, regardless of ODF protection.

It is important to note that while Oregon Department of Forestry *does not* provide fire protection in the greater Redmond area other than what is approved under the Mutual and Automatic Aid agreements with Redmond Fire and Rescue, Deschutes County has classified all private lands in the Greater Redmond WUI under Senate Bill 360 and strongly recommends that residents comply with the standards of the legislation.

A detailed description of the standards is available from the Oregon Department of Forestry in the handbook for the Oregon Forestland – Urban Interface Fire Protection Act of 1997. This information is also available at www.oregon.gov/ODF/fire/SB360.

The Standards for properties classified as HIGH under the Oregon Forestland – Urban Interface Fire Protection Act of 1997 are:

- Establish a primary fuel break of 30 feet around structures (additional 20 feet if flammable roofing material is present);
- Create fuel breaks around driveways longer than 150 feet;
- Remove tree branches within 10 feet of chimneys;
- Remove any dead vegetation that overhangs a roof;
- Remove flammable materials from under decks and stairways;
- Move firewood 20 feet away from structures;

If the property is classified as EXTREME, a total of 50 feet of defensible space around structures is required (an additional 20 if flammable roofing is present).

A fuel break consists of: Removal of dead/dry/flammable brush around home, roof, chimney, decks and under nearby trees; removal of low hanging branches on trees; and reposition of wood piles at least 20 feet away from home during fire season.

The specific recommendations under Senate Bill 360 for private lands are also outlined under Prioritized Hazard Reduction Recommendations and Preferred Treatment Methods in this CWPP.

The ratings among the eight Communities include High and Extreme. The following table summarizes the percentages of each in the Communities at Risk.

**Table 5 - SB 360 Rating**
**and percentage of High and Extreme**

| Community at Risk | Rating | Acres | Percentage |
|---|---|---|---|
| | | | |
| Northeast | Extreme | 285.0 | 2.1% |
| | High | 13,509.7 | 97.9% |
| Southeast | High | 26,353.2 | 100.0% |
| Northwest | Extreme | 2,266.4 | 6.5% |
| | High | 32,533.0 | 93.5% |
| Southwest | Extreme | 608.6 | 3.0% |
| | High | 19,779.9 | 97.0% |
| Urban Northeast | High | 3,263.5 | 100.0% |
| Urban Southeast | High | 4,461.6 | 100.0% |
| Urban Northwest | High | 3,351.3 | 100.0% |
| Urban Southwest | High | 4,578.6 | 100.0% |
| | | | |
| **Overall** | | | |
| | High | 107,830.8 | 97.2% |
| | Extreme | 3,160.0 | 2.8% |
| | | | |
| **Total Acres** | | 110,990.8 | |

The Steering Committee considered the percentages of High and Extreme ratings under Senate Bill 360 (Table 5 above) and compared it to the information revealed by the ODF Assessment of Risk (Table 2 on page 20). Based on the aggregate information, the Steering Committee came to consensus on the prioritization for fuels treatment in the eight Communities at Risk.

Two groups of priorities are presented for hazardous fuels treatments on public and private lands:

**1st Priority**

Northwest

Southwest

Urban Northwest

Southeast

Northeast

**2nd Priority**

Urban Southwest

Urban Southeast

Urban Northeast

## Areas of special concern

Critical Transportation Routes

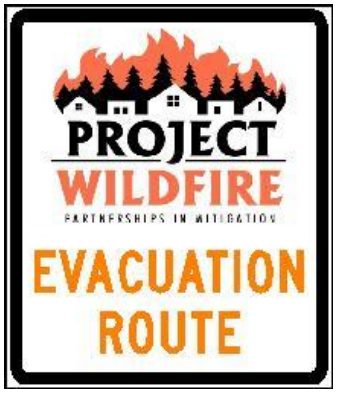
Critical Transportation Routes do not have a standard definition in Deschutes County. For purposes of the Greater Redmond CWPP, the Steering Committee defines Critical Transportation Routes as:

- all routes necessary for the support of routine flow of commerce to and/or through the Redmond area,
- all routes that could be used for potential evacuation of citizens and/or visitors from a wildland fire threat to public safety,
- routes needed for emergency ingress and egress to a wildland fire incident, not including unimproved or "two-track" roads,
- and, all routes needed to protect and support critical infrastructure (power substations, communication transmission lines, water and fuel storage, public service facilities, recreation facilities, etc).

As mentioned earlier, local knowledge suggests that most of the growth and development in the greater Redmond area has occurred within the city limits west of US Highway 97.

Deschutes County estimates an additional transient population of up to 20,000 people who visit recreation sites and utilize the transportation corridors around Redmond. Critical transportation routes are a prime concern for those agencies responsible for fire suppression and evacuation.

As noted in the 2006 CWPP, the Steering Committee is concerned with the lack of maintained roads leading in and out of the high risk areas in the WUI. Should an evacuation be necessary, the Steering Committee expressed great concern over the number and quality of the evacuation routes. Many of the egress routes are dirt roads that contribute to substantial dust and debris clouds as vehicles attempt to use them. During the summer months, after a few cars travel the road, the dust is so dense that it is not safe for vehicles to continue using the road until the dust settles. Lack of maintenance has led to deteriorated road surfaces with large potholes, ruts and washboards that slow evacuation efforts and cause some vehicles to break down, further complicating a mass departure from the area. The current condition of some of the evacuation routes is a life safety issue.




Working with Deschutes County and Project Wildfire, several neighborhoods within the Communities at Risk have taken advantage of a signage program to increase visibility of evacuation route signs along roads. The signs are made from high intensity reflective material and indicate proper exit routes from these neighborhoods.

The Steering Committee underscored the need to continue to identify, develop and protect critical transportation routes as part of this planning process. Ingress/egress issues are included under Recommendations to Reduce Structural Vulnerability. This issue is also highlighted under Action Plan and Implementation.

Hazardous vegetation along railroads

The Steering Committee expressed concern over the condition of the vegetation in the railroad right of way in those Communities at Risk that the railroad transects. In the Northeast and Urban Northeast sub regions for example, residents are concerned about the increased flammability of the weeds due to their unchecked growth. In some areas, the railroad right of way extends 100 feet from the center of tracks on both sides of the rails. In the past, trains traveling in the area have ignited dry weeds along the railways. In addition to the size of the railroad right of way is the amount and type of flammable vegetation. In some cases, the right of way is thick with sage, bitterbrush, cheat grass and noxious weeds – all acting as ladder fuels to the trees that share the right of way. Sheer size along with the amount and type of vegetation can lead to a large fire with high spreading potential to nearby homes and neighborhoods already at risk.

While the vegetation management of the railroad right of ways has improved in recent years, the Steering Committee strongly recommends encouraging Burlington Northern Santa Fe Railroad Corporation to maintain weeds below 4" to deter the spread of any potential fires.

# Prioritized Hazard Reduction Recommendations and Preferred Treatment Methods

As maintained in the original CWPP, the Steering Committee agreed that the Greater Redmond Community Wildfire Protection Plan is a tool that can be used for many outcomes. The following is an outline of the priorities, as well as preferred treatments and goals under the Greater Redmond Community Wildfire Protection Plan.

## Priorities

Based on consensus of the assessment information, the Steering Committee has identified the following priorities:

**1st Priority**

Northwest

Southwest

Urban Northwest

Southeast

Northeast

**2nd Priority**

Urban Southwest

Urban Southeast

Urban Northeast

## Goals

The Steering Committee identified the following goals to meet the Purpose on page one of the Greater Redmond CWPP:

- Reduce hazardous fuels on public lands;
- Reduce hazardous fuels on private lands;
- Reduce structural vulnerability;
- Increase education and awareness of the wildfire threat;
- Identify, improve and protect critical transportation routes;

## Preferred treatments and goals for hazardous fuels reduction

Appendix A includes detailed maps of the WUI boundary throughout the Greater Redmond CWPP and the recommended areas for treatments by reducing wildland fuel hazards on both public and private lands.

The standard of the Greater Redmond CWPP is to decrease the risk of uncharacteristic and high intensity wildland fire behavior by reducing fuel loads to that which can produce flame lengths of less than four feet. This enables safe and effective initial attack.

The CWPP goal is also to provide for a healthy, fire resilient landscape that supports the social, economic and ecological values of Redmond area residents and visitors. The Steering Committee recognizes the effectiveness and value of maximizing treatment efforts in areas that are adjacent to federal or private projects and recommends that future projects consider these benefits when selecting areas for treatment. The following specific standards are recommended for treatments on public and private lands within the Greater Redmond WUI.

### Public lands

Public lands are managed by the BLM and occupy 40.15% of lands in the Greater Redmond planning area, all located in the four rural Communities at Risk. The Oregon Military Department leases 22% of the lands for its Biak Training Center in the Southeast sub region. The Steering Committee includes the training center lands within the WUI boundary and in this section for fuels treatment recommendations.

State owned lands represent only 2.71% of the planning area but include the valuable recreation and scenic areas of Smith Rock State Park and Cline Falls State Park. The state also owns blocks of land in the Northwest and Southwest planning areas. The parks are managed by Oregon State Parks and the blocks of land are managed by the Division of State Lands.

It is the intent of the Steering Committee that the Greater Redmond planning area is subject to expedited measures for hazardous fuels treatment and allocation of funds to protect the communities and neighborhoods as stipulated by the Healthy Forests Restoration Act.

The overall standard for public lands under this CWPP is to decrease the risk of high intensity wildland fire behavior by reducing and maintaining fuel loads to that which can produce flame lengths of less than four feet in the areas within the WUI boundary. This buffer will begin at the edge of private lands (except where other land management practices prohibit it such as riparian or wetland areas) and extend onto the federal lands to the designated WUI boundary. This enables safe and effective initial attack. This standard can be achieved by federal land management agencies through a variety of treatment methodologies such as thinning, prescribed burning and mechanical treatments. Specific treatments should address fuels issues on a landscape scale rather than acre by acre.

Federal and state land managers are strongly encouraged to work toward the overall standard by reducing and maintaining fuel loads to that which can produce flame lengths of less than four feet in the following areas:

- Within a ¼ mile buffer inside the Greater Redmond WUI. Treatments should begin here and increase in ¼ mile increments until the WUI boundary is reached.
- Within 300 feet of any critical transportation route or ingress/egress that could serve as an escape route from adjacent communities at risk.
- Maintenance of previously treated lands is also a top priority. Treatment and maintenance of previously treated lands before treatment begins again in other places is an important component of keeping communities safe.

In juniper, sage and bitterbrush dominated wildlands, federal land managers are strongly encouraged to utilize mechanical treatments including prescribed fire to reduce fuel loads to that which can produce flame lengths of less than four feet.

The standard can be achieved through a variety of treatment methodologies such as thinning, prescribed burning and mechanical treatments. These treatments shall be consistent with the current Upper Deschutes Resource Management Plan and the COFMS Fire Management Plan on the federal lands.

The Steering Committee also encourages federal land managers to work with local landowners to minimize road closures that could be used as alternate evacuation routes from Communities at Risk.

**Private and county owned lands**

The majority of the land (53.91%) in the Greater Redmond planning area is privately owned land and is considered developed, or in rare cases intermixed with development. The County owns only 3.22% of the land in this planning area. The Steering Committee recommends that County owned lands be treated in the same manner as privately owned lands.

<u>Private lands with structural improvements</u>

On private lands with structural improvements, the goal is for each structure to meet the Standards identified in the Oregon Forestland – Urban Interface Fire Protection Act of 1997 (aka

Senate Bill 360) for its individual classification rating. This includes properties with structural improvements that are vacant from foreclosure or other legal transactions.

Although the Oregon Department of Forestry does not provide wildland fire protection in the greater Redmond planning area, Deschutes County has classified each area under Senate Bill 360 (Table 5 on page 24) and the Steering Committee supports the standards recommended for each.

A detailed description of the standards is available from the Oregon Department of Forestry in the handbook for the Oregon Forestland – Urban Interface Fire Protection Act of 1997. This information is also available at www.oregon.gov/ODF/fire/SB360.

The Standards for properties classified as HIGH under the Oregon Forestland – Urban Interface Fire Protection Act of 1997 are:

- Establish a primary fuel break of 30 feet around structures (additional 20 feet if flammable roofing material is present);
- Create fuel breaks around driveways longer than 150 feet;
- Remove tree branches within 10 feet of chimneys;
- Remove any dead vegetation that overhangs a roof;
- Remove flammable materials from under decks and stairways;
- Move firewood 20 feet away from structures;

If the property is classified as EXTREME, a total of 50 feet of defensible space around structures is required (an additional 20 if flammable roofing is present).

A fuel break consists of: Removal of dead/dry/flammable brush around home, roof, chimney, decks and under nearby trees; removal of low hanging branches on trees; and reposition of wood piles at least 20 feet away from home during fire season.

Property owners can also achieve the Senate Bill 360 standards by taking advantage of FireFree and Firewise recommendations to create and/or maintain defensible space, a fire-resistant buffer that allows for effective first-response firefighting and a significantly reduced risk of the spread of fire. These national education programs promote a variety of fire safe actions to help prevent the spread of fire to protect individual homes and neighborhoods. Information about these programs can be found at www.firefree.org and www.firewise.org. More information is also listed in this plan under Recommendations to Reduce Structural Vulnerability.

Vacant lots

Within the Greater Redmond WUI, approximately 20% of the private land is considered vacant, or lots with no structural improvements. Many of those are owned by "absentee owners". In general, vacant lots owned by absentee owners present a specific threat to neighborhoods in that owners have little to no connections to the neighborhoods and in most cases do not recognize their responsibility to contribute to the safety of the entire neighborhood by reducing the

hazardous vegetation on their properties. The risk of destructive wildland fires is thereby greater inside these neighborhoods due to the lack of owner attention on vacant lots.

The Steering Committee recommends that those vacant lots and acreages that are dominated by hazardous wildland fuels follow the guidelines under Senate Bill 360 for "High Density Extreme" which includes a 20-foot fuel break around the perimeter of the lot.

## Recommendations to Reduce Structural Vulnerability

**Structural Vulnerability**

Based on the assessment of structural vulnerability for the ODF Assessment of Risk Factors in Table 2 on page 20, the following table identifies the main hazards within the eight Communities at Risk in the Greater Redmond planning area. For each hazard or risk listed, an action is recommended to address the threat or decrease the risk.

## Table 6 – Structural Vulnerability Hazards & Recommendations

| Community at Risk | Primary Hazards | Recommended Actions |
|---|---|---|
| **Northeast** | 1/3 have no defensible space – hazardous vegetation | FireFree, Firewise, SB 360 compliance |
| | 10% wood roofs | FireFree, Firewise, SB 360 compliance |
| | Some access/egress issues | Establish route(s), sign and maintain |
| | Some roads in poor condition | Identify, upgrade and maintain |
| **Southeast** | Hazardous vegetation along Hwy 97 | Mow to 4" - FireFree, Firewise, SB 360 compliance |
| | Some access & evacuation route issues | Improve route(s), sign and maintain |
| | Some roads in poor condition | Identify, upgrade and maintain |
| **Northwest** | 1/3+ have no defensible space – Hazardous Vegetation | FireFree, Firewise, SB 360 compliance |
| | 1/6 wood roofing | FireFree, Firewise, SB 360 compliance |
| | Insufficient access & evacuation routes | Improve route(s), sign and maintain |
| | Poor condition of some roads | Identify, upgrade and maintain |
| **Southwest** | About 50% with no defensible space – hazardous vegetation | FireFree, Firewise, SB 360 compliance |
| | 1/7+ wood roofing | FireFree, Firewise, SB 360 compliance |
| | Some roads in poor condition | Identify and improve |
| | Some access & evacuation route issues | Establish route(s), sign and maintain |
| | Some inadequate signage | Identify and improve |
| **Urban Northeast** | 1/6 have no defensible space – hazardous vegetation | FireFree, Firewise, SB 360 compliance |
| | Some access & evacuation route issues | Establish route(s), sign and maintain |
| | Poor condition of some roads | Identify, upgrade and maintain |
| **Urban Southeast** | Very few with no defensible space – hazardous vegetation | FireFree, Firewise, SB 360 compliance |
| | 10% wood roofing | FireFree, Firewise, SB 360 compliance |
| | Some access & evacuation route issues | Improve route(s), sign and maintain |
| | Poor condition of some roads | Identify, upgrade and maintain |
| **Urban Northwest** | 1/3 with no defensible space – hazardous vegetation | FireFree, Firewise, SB 360 compliance |
| | About 1/3 wood roofing | FireFree, Firewise, SB 360 compliance |
| | Some access & evacuation route issues | Improve route(s), sign and maintain |
| | Poor condition of some roads | Identify, upgrade and maintain |
| **Urban Southwest** | About 1/3 with no defensible space – hazardous vegetation | FireFree, Firewise, SB 360 compliance |
| | 10% wood roofing | FireFree, Firewise, SB 360 compliance |
| | Some access/egress issues | Establish route(s), sign and maintain |
| | Some roads in poor condition | Identify, upgrade and maintain |

Table 7 provides a checklist for residents seeking to reduce the risk of catastrophic losses to their homes and properties.

**Table 7 – Defensible Space Checklist**

☑ **What can I do to help prevent losses to my property and my neighborhood?**

- ❑ Post easy-to-read address signs so emergency crews can find your home.
- ❑ Reduce flammable vegetation and brush around your home.
- ❑ Reduce the density of nearby trees.
- ❑ Clear wood piles and building materials away from your home.
- ❑ Remove low tree branches and shrubs.
- ❑ Keep grass and weeds cut low.
- ❑ Remove overhanging branches and limbs.
- ❑ Remove leaves & needles from gutters, roofs and decks.
- ❑ Remove dead plants and brush.
- ❑ Maintain a minimum of 30 feet of defensible space around your home.
- ❑ Screen vents and areas under decks with 1/8" metal mesh.
- ❑ Keep decks free of flammable lawn furniture, doormats, etc.
- ❑ Choose fire-resistant roofing materials.
- ❑ Trim vegetation along driveways a minimum distance of 14' x 14' for fire trucks.
- ❑ Use alternatives to burning debris.

**Education**

As stated in the Purpose on page one of the Greater Redmond CWPP, four outcomes for this planning effort are to:

- Instill a sense of personal responsibility for taking preventative actions regarding wildland fire,
- Increase public understanding of living in a fire-adapted ecosystem, and
- Increase the community's ability to prepare for, respond to and recover from wildland fires;
- Create and maintain fire adapted communities.

With these goals in mind, education and outreach are top priorities for the Greater Redmond CWPP. The rapid influx of new residents is just one reason the Steering Committee places high value on the education of Redmond area residents and landowners. Many new residents are unfamiliar with wildland fire and have limited experience with issues such as defensible space. Residents and visitors will continue to benefit from clear examples of what a fire resilient forest and community look like as well as easy access to resources that help them take action.

The creation of fire adapted communities is new to the Greater Redmond CWPP as a goal. As residents employ the recommendations in this CWPP, fire adapted communities will begin to surface. A recent public paradigm shift across the United States, a fire adapted community engages a higher degree of personal responsibility on the part of residents in fire prone areas. Residents and neighbors are encouraged to prepare not only their properties but also their families in fire safe practices including necessary evacuation protocols. Utilizing pre-fire strategies such as defensible space and fire resistant landscaping and construction materials, communities can turn entire neighborhoods into fire adapted communities where even in the event of a wildland fire, people can safely evacuate themselves, homes survive with little or no intervention from fire agencies and if trapped, people know what to do to survive the fire.

A **fire adapted community** is one that is located in a fire prone area that requires little or no assistance from firefighters during a wildfire. Residents in a fire adapted community possess the knowledge and skills to prepare their homes and properties to survive a wildfire. They can evacuate early, safely and effectively and if trapped, they can survive.

Deschutes County, Project Wildfire and Redmond Fire and Rescue endorse the nationwide Ready, Set, Go! Program that provides a framework for enhancing current education programs that will lead to the development of fire adapted communities.

There are several opportunities to enhance these educational efforts in the greater Redmond area. Redmond Fire and Rescue, the Central Oregon Fire Prevention Cooperative and Project Wildfire all provide consistent wildland fire prevention programs through a variety of individual and collaborative efforts.

Some neighborhoods in the greater Redmond area are well organized through homeowners associations and other groups. These groups provide valuable ongoing education to their populations about the risks of high intensity wildland fire and ways to improve their protection. The Steering Committee supports these groups and encourages their formation in the greater Redmond area to address the educational needs of current and incoming residents about living in a fire adapted community and increasing personal responsibility for creating defensible space.

Local residents are encouraged to contact Redmond Fire and Rescue for information. Residents may also find additional information on how they can reduce hazards and protect themselves from loss due to wildland fires at www.firefree.org and www.firewise.org.

## Action Plan and Implementation

The Steering Committee recognizes that the Greater Redmond CWPP is a living tool with multiple applications. The following actions address the goals on page 28 and are intended to assist individuals and agencies in the implementation of this CWPP across Redmond and the adjacent WUI.

**Reduce hazardous fuels on public lands**

Immediately following the acceptance and signed approval of this plan, the Steering Committee will forward copies of the 2011 Greater Redmond CWPP available to all public land managers and public safety officials including:

- Central Oregon Forest Management Service - US Forest Service and BLM
- Oregon Department of Forestry
- Redmond Fire and Rescue
- Deschutes County Sheriff's Office
- Redmond Police
- Oregon Department of Transportation
- Burlington Northern Santa Fe Railroad Corporation
- City of Redmond

The intention of the Steering Committee is to engage in continued discussions with the greater Redmond community and adjacent landowners to implement the CWPP and accomplish hazardous fuels reduction projects in the most expeditious manner possible. The Steering Committee recognizes the effectiveness and value of maximizing treatment efforts in areas that are adjacent to federal or other private projects and recommends that future projects consider these benefits when selecting areas for treatment.

**Reduce hazardous fuels on private lands**

The intention of the Steering Committee is to engage in continued discussions with landowners to facilitate fuels reduction projects on private lands through the implementation of Senate Bill 360. These actions can be accomplished through education activities and grants for specific projects on private lands.

The Steering Committee will make the 2011 Greater Redmond CWPP available to Homeowner Associations, developers and other entities providing guidance to communities and organized neighborhoods.

Redmond Fire and Rescue will work with Project Wildfire to engage four new communities in Sweat Equity projects by the end of 2014. These projects shall be in addition to any ongoing Sweat Equity projects in any of the Communities at Risk.

Redmond Fire and Rescue will work with Oregon Department of Forestry and Project Wildfire to identify and certify two communities for application under the national Firewise Communities USA program.

**Reduce Structural Vulnerability**

The Steering Committee is charged with the task of engaging community members to review the Structural Vulnerability Assessment in this CWPP and identify projects that will strengthen the potential for the neighborhoods to survive a wildland fire within the Greater Redmond WUI. The ODF Assessment of Risk Factors (Table 2) and Tables 6 & 7 can be utilized as a resource for homeowners to improve the fire resistance of their homes on an individual basis and also by groups to implement education programs.

As asserted above, Redmond Fire and Rescue will work with Oregon Department of Forestry and Project Wildfire to identify and certify two communities for application under the national Firewise Communities USA program.

The Steering Committee is also charged with the task of working with Redmond Fire and Rescue to identify and assess the water resources available for fire suppression in Redmond and the surrounding WUI. The Steering Committee can make recommendations for projects to ensure adequate water resources are available for fire suppression.

**Increase Awareness and Education**

The Steering Committee will work with Redmond Fire and Rescue and Project Wildfire to review the educational programs available and identify potential projects for implementation.

Redmond Fire and Rescue will work with Project Wildfire to provide FireFree and Firewise education and materials to at least five new groups each year. These are in addition to any ongoing educational events completed by Redmond Fire and Rescue.

The action item above, to identify and certify two communities under the national Firewise Communities USA program, will assist greatly in achieving this goal.

**Identify, Improve and Protect Critical Transportation Routes**

The Steering Committee will work with Redmond Fire and Rescue, City of Redmond Police Department, Deschutes County, and Oregon Department of Transportation to identify and map existing transportation and evacuation routes of concern.

The Steering Committee will assist in conducting further assessments to determine the evacuation needs of greater Redmond and identify at least one neighborhood per year to approach and develop evacuation signage projects.

The Steering Committee will continue to encourage federal land managers to work with local landowners to minimize closures of roads that can be used as alternate evacuation routes.

**Table 8 – Summary of Goals & Action Plan**

| Goals | Action | Entity Responsible | Timeline |
|---|---|---|---|
| | | Steering Committee with: | |
| **Reduce hazardous fuels on public lands** | Upon approval of this CWPP, forward copies of the 2011 Greater Redmond CWPP available to all public land managers and public safety officials. In addition make the CWPP available to developers, HOAs and any entities providing governance to communities and organized neighborhoods. | Project Wildfire | Upon CWPP approval in 9/30/2011 |
| **Reduce hazardous fuels on private lands** | Engage four new communities in Sweat Equity projects. | Redmond Fire & Rescue, Project Wildfire | By 12/2014 |
| | Identify and certify two (2) communities for application under the national Firewise Communities USA program. | ODF, Redmond Fire & Rescue, Project Wildfire | By 12/2014 |
| **Reduce Structural Vulnerability** | Identify and certify two (2) communities for application under the national Firewise Communities USA program. | ODF, Redmond Fire & Rescue, Project Wildfire | By 12/2014 |
| | Identify and assess the water resources available for fire. Make recommendations for projects to ensure adequate water resources are available for fire suppression. | Redmond Fire & Rescue | By 12/2014 |
| **Increase Awareness and Education** | Provide FireFree and Firewise education and materials to at least five (5) new groups each year - in addition to any ongoing educational events completed by RF&R. | Redmond Fire & Rescue, Project Wildfire | By 12/2014 |
| **Identify, Improve and Protect Critical Transportation Routes** | Identify and map existing transportation and evacuation routes of concern. Identify at least one neighborhood per year to approach and develop evacuation signage projects. | Redmond Fire and Rescue, City of Redmond Police Department, Deschutes County, ODOT | By 12/2014 |

**Fund Projects**

The Steering Committee and Project Wildfire will encourage and assist community groups in seeking funding for fuels reduction, educational, and other projects to decrease overall risks of loss from wildland fire.

## Evaluation and Monitoring

The Steering Committee faced a complex task in the update of the Greater Redmond Community Wildfire Protection Plan. Implementing and sustaining these efforts will require a significant commitment. Maintaining a collaborative and cooperative environment with Redmond Fire and Rescue, community-based organizations, local government and the public land management agencies continues to be an important step in reducing the risk of wildland fire. The Steering Committee pledges to maintain this cooperation with the public over the long-term with the commitment of all the partners involved.

At a minimum, the Steering Committee shall include: a Division Chief from Redmond Fire and Rescue; a representative from ODF; representatives from COFMS, and Deschutes County along with members of the greater Redmond public.

The Steering Committee agrees that the Greater Redmond Community Wildfire Protection Plan will be a living document, intended to promote fuels reduction, educational, and other projects to decrease overall risks of loss from wildland fire; revisited at least annually to address its Purpose.

Project Wildfire will ensure that the evaluation and monitoring activities listed above are addressed by the Steering Committee each year. As members of the Steering Committee change, Project Wildfire will ensure that it maintains a balanced representation of agency and public members, with a continued focus on inviting interested parties to participate in the review and planning process.

Redmond Fire and Rescue will work with Project Wildfire to convene the Steering Committee as often as the Steering Committee deems necessary to implement and review the Greater Redmond Community Wildfire Protection Plan. Topics for discussion can include:

- Identification and assessment of new or treated risks.
- Evaluation and tracking of progress toward goals.
- Updating of maps.
- Adoption of new and/or revised priorities.
- Identification of specific projects.

- Discussion of grant opportunities and determination of projects eligible for funding.
- Writing of grants.
- Identification of appropriate projects to address additional items as outlined in the Action Plan for Structural Vulnerability, Education and Critical Transportation Routes.
- Coordination of additional items, projects and assessments.

Project Wildfire will ensure that the evaluation and monitoring activities listed above are addressed by the Steering Committee each year. As members of the Steering Committee change, Project Wildfire will ensure that it maintains a balanced representation of agency and public members, with a continued focus on inviting interested parties to participate in the review and planning process.