

Greater Bend Community Wildfire Protection Plan

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Declaration of Agreement

The Greater Bend Community Wildfire Protection Plan (CWPP) was originally completed and approved in May 2006. As directed by this CWPP, extensive fuels reduction activities have been completed on public and private lands. The Steering Committee reconvened in September 2010 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.

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City of Bend Fire Department

Date

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Greater Bend Community Wildfire Protection Plan

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 valued by residents and visitors. Forests and other wildlands in greater Bend however, are now significantly altered due to past forest management practices, fire prevention efforts, modern suppression activities, residential development and a general lack of large scale fires. These activities have resulted in overgrown forests - some with closed canopies and all with 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.

The purpose of the Greater Bend 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 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 May 2006, this comprehensive revision outlines a clear purpose with updated priorities, strategies and action plans for fuels reduction treatments in the greater Bend wildland urban interface. This CWPP also addresses special areas of concern and makes recommendations for reducing structural vulnerability and creating defensible spaces in 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.

Planning Summary

The Bend City Council adopted the original Greater Bend Community Wildfire Protection Plan by resolution on May 3, 2006. The Greater Bend CWPP was also formally adopted by Deschutes County by resolution on May 8, 2006.

Since that time, tremendous efforts have been made by county, state and federal land management agencies to reduce the threat of high intensity wildland fires through fuels reduction activities on public lands. In addition, private residents have responded enthusiastically to the defensible space and preparation guidelines 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 forests and wildlands for hazardous fuels reduction and fire resilience is only one part of the larger picture. Residents and visitors desire healthy, fire-resilient forests and wildlands that provide habitat for wildlife, recreational opportunities, and scenic beauty.

In keeping with the strategy of the original Greater Bend 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 Bend CWPP Steering Committee reconvened in September 2010 to review the extensive amount of work completed within and adjacent to the WUI boundary on public and private lands; and reassess 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.

The Steering Committee is also comprised of members of local firefighting agencies, 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 adjusted the boundaries of the Communities at Risk based on new information for this revision.

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 – Highest and High. 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 Bend 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 Bend Community Wildfire Protection Plan was mutually approved by Bend Fire & Rescue, Deschutes County Rural Fire Protection District #2, 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 September 2010 with new members to update the Greater Bend CWPP. The Steering Committee group included community members from the greater Bend area along with representatives from the Bend Fire & Rescue, Deschutes County Rural Fire Protection District #2, Oregon Department of Forestry, the USDA Forest Service, the USDI Bureau of Land Management, Project Wildfire and Deschutes County to develop the Greater Bend 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 Bend City Council adopted the 2011 Greater Bend Community Wildfire Protection Plan by resolution on [REDACTED]. The Greater Bend CWPP was formally adopted by Deschutes County by resolution 2006-039 on May 8, 2006 and this 2011 updated plan on [REDACTED].

Updated Background Information

Bend, Oregon is located east of the Cascades and is the social, economic and recreational hub of Deschutes County. According to the 2000 census 52,029 residents called the greater Bend area home. The latest certified population estimates reveal a 60% increase in Bend's population to 83,125 (Population Research Center, Portland State University, July 2010 www.pdx.edu/sites/www.pdx.edu.prc/files/media_assets/CertCityTownPopEst2010.pdf).

Developed between 3,500 and 4,300 feet in elevations, in a classic wildland urban interface environment, the greater Bend 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 occupy these areas creating a seasonal challenge for those agencies responsible for fire suppression and evacuation.

Historically, the Bend area was a mix of forest types including ponderosa pine, some open tracts of western juniper, bitterbrush, sage and open grasslands. Forests in the higher elevations were composed of mixed conifers.

Today, with more development into the wildland urban interface, less stand management, less logging activity and highly effective wildland fire suppression, the greater Bend area is characterized by thicker stands of western juniper on the north and east sides with ponderosa pine, bitterbrush and bunchgrasses to the west and south. In some areas, invasive species such as rabbit brush and variety of noxious weeds are crowding out the native grasses and shrubs. The higher elevations are still a mix of conifers including ponderosa pine.

The Bend community has experienced several large fires (over 100 acres) in the last 100 years. Three large fires that occurred within the last 20 years have threatened lives, property, wildlife and the landscape. In 1990, the Awbrey Hall Fire burned 3,032 acres and destroyed 22 homes. In 1996, the Skeleton Fire consumed 22,000 acres, 19 homes and 15 outbuildings. In 2003, the 18 Road Fire charred 3,800 acres and threatened the southwest side of Bend and the High Desert Museum. In the summer of 2010, the Rooster Rock Fire charred over 6,100 acres north of the Bend CWPP boundary and threatened Bend's drinking water source.

As part of the ongoing wildland fire risk management of the surrounding public and private forestlands, the US Forest Service, Oregon Department of Forestry, Deschutes County and private landowners are engaged in several hazardous fuels treatment projects.

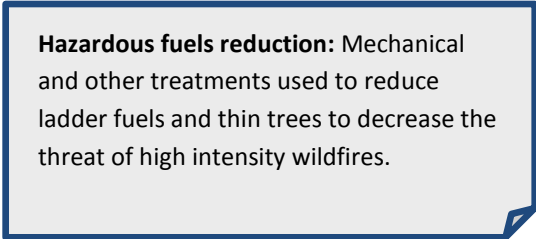
Oregon Department of Forestry

Over the last five years, Oregon Department of Forestry has been working with a number of private landowners to complete fuels reduction projects in the greater Bend area. These projects have been primarily west and south of Bend. The West Bend Fuels Break project created a fuel break along the Forest Service 4606 road from Skyliners road to Tumalo Reservoir. Five adjacent private landowners completed fuels reduction work on 176 acres adjoining the 4606

road. Two additional landowners treated a total of 225 acres of fuels reduction work adjacent to this fuel break or within close proximity. In summary, seven landowners completed 401 acres of fuels reduction on the west side of Bend in the WUI.

On the south side of Bend, three landowners completed 639 acres of hazardous fuels reduction.

Currently, ODF is working with two landowners to complete fuels reduction under the American Recovery and Reinvestment Act (ARRA) grant program. This project encompasses 31 acres of fuels reduction in the wildland urban interface. ODF also has multiple ongoing projects to assist landowners in compliance with Senate Bill 360 standards.



Hazardous fuels reduction: Mechanical and other treatments used to reduce ladder fuels and thin trees to decrease the threat of high intensity wildfires.

The US Forest Service

The US Forest Service – Bend Fort Rock District manages 37,047 acres of the federal lands in the greater Bend area and continues to make great strides to increase forest health and reduce the potential for high intensity wildland fire.

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 restore forest ecosystem health and reduce hazardous fuels. 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.

The following is a snapshot of fuels treatment projects on federal lands across the greater Bend area as a result of the Greater Bend CWPP:

Table 1 – Summary of Federal Fuels Projects as of January 2011

Project Name	Thinning (acres)			Mowing (acres)			Burning (acres)		
	Possible	Completed	Remaining	Possible	Completed	Remaining	Possible	Completed	Remaining
East Tumbull	4,957	1,393	3,564	4,622	1,223	3,399	377	336	41
Fuzzy	53	0	53	945	945	0	783	658	125
Katalo East	535	535	0	1,277	1,277	0	627	0	627
Katalo West	54	54	0	58	58	0	58	0	58
South Bend	1,026	0	1,026	2,695	2,256	439	2,035	0	2,035
West Tumbull	1,198	1,061	137	1,162	0	1,162	559	0	559
Fry	70	70	0	70	70	0	70	0	70
Totals	7,893	3,113	4,780	10,829	5,829	5,000	4,509	994	3,515

Collaborative Forests Landscape Restoration Act – Deschutes Collaborative Forest Project

In 2010, a collaborative group of local agencies and organizations formed a proposal for funding a large, collaborative forest restoration and hazardous fuels reduction project on public lands managed by the Deschutes National Forest. Under the federal Collaborative Landscape Forest Restoration Act, the proposal was funded and at the time of this CWPP update, the 130,000 acre Deschutes Collaborative Forest Project was taking shape with a new Steering Committee and several task-oriented sub-committees. The entire project spans the west side of the Greater Bend WUI, the western portion of the East & West Deschutes County CWPP boundary, and is also included in the Sisters CWPP boundary to the north and the Sunriver CWPP boundary to the south.

Once implemented the prescriptions and guidelines identified in the Greater Bend CWPP will be met marking a significant treatment of wildland hazardous fuels on a landscape scale, a priority in each of the CWPPs in Deschutes County. This will also allow the creation and realization of fire adaptive communities along the entire west side of the Greater Bend CWPP.

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 instituted 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. 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.

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; and build or retro-fit structures with non-combustible building materials such as siding, decks and roofing. The Awbrey Glen neighborhood became a recognized Firewise Community in 2009 and is now leading the charge to assist other neighborhoods in their Firewise and FireFree endeavors. Bend Fire and Rescue has made the development of additional Firewise Communities a top priority for the coming years.

Community Base Maps

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

- Greater Bend WUI boundary with eight revised Communities at Risk, and all private & public land ownership;
- Updated fire starts in the last five years and fires over 100 acres in the last 100 years;
- 2009 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.

Community Profile

The community of Bend 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 Bend are characterized by large trees and excessive ground vegetation or “ladder fuels” that contribute to its scenic beauty *and* the overall wildland fire risk. Closed canopies are rare inside the city limits. However, there are significant areas of hazardous wildland fuels intermixed with homes and businesses that in the event of a grass or brush fire, could sustain a wildland fire event with catastrophic losses likely. These areas are also susceptible to ember showers from wildland fire events nearby.

The climate in greater Bend is typical of the east slopes of the Cascade Mountains, with most of the annual precipitation 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 Bend. US Highway 20 also intersects the city of Bend in the north and east part 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.

Wildland Urban Interface Description

The Healthy Forests Restoration Act defines the WUI as an area within or adjacent to an at-risk community that has been identified by a community in its wildfire protection plan.

The Bend CWPP Steering Committee reviewed the overall WUI boundary and approved its use in this update. The southern edge of the boundary is the northern boundary of the Sunriver CWPP. The northern part of the WUI is the Greater Sisters Country CWPP boundary on the northwest side and the boundary for the Greater Redmond CWPP on the northeast side. The east and west portions of the WUI are defined by the rural fire district boundaries. An area around the Bridge Creek watershed is also included in the Greater Bend WUI. The city of Bend lies in the core of the Greater Bend WUI boundary. The Greater Bend wildland urban interface boundary is approximately 245 square miles and covers 156,041 acres.

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.

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 Steering Committee further reviewed the internal boundaries of the Communities at Risk. Based on topographical information and local fire agency knowledge, the Steering Committee agreed to adjust the North boundary and create a Northwest Community at Risk. The Deschutes River Woods, Skyliners and Saddleback boundaries from the original CWPP in 2006 were revised to create the Southwest and West Communities at Risk (see Appendix A).

It is important to note that the WUI boundary extends to the entire CWPP boundary. By comparison, the Greater Sisters Country CWPP outlines a WUI boundary that sits *inside* the overall CWPP boundary as there are large agricultural lands outside the interface with limited structural development. For the Greater Bend CWPP, the Steering Committee acknowledges that the wildland urban interface stretches across the entire planning area, with structural development and other values at risk.

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 redefined the existing boundaries of the Communities at Risk to identify these eight (8) Communities at Risk.

Table 2 – Communities at Risk

Community at Risk	Acreage	Structures	Estimated Population
North	25,441	2,284	5,710
Northwest	12,896	413	1,033
West	14,140	51	128
Southwest	17,397	2,458	6,145
Southeast	36,148	1,611	4,028
Northeast	27,302	1,877	4,693
West UGR	11,715	14,828	37,070
East UGR	11,002	15,920	39,800

Fuel Hazards and Ecotypes

The Greater Bend WUI encounters diverse vegetation types including:

- Ponderosa pine
- Western juniper
- Bitterbrush
- Manzanita
- Sagebrush

Ponderosa pine is currently found in the southern and western portions of the greater Bend area, and in the higher elevations. Historically, ponderosa pine forests contained more understory grasses and less shrubs than are present today. These plants combined with fallen pine needles, formed fast-burning fuels that led to recurrent widespread burning. The fire history for ponderosa pine is characterized by low-intensity ground fires that occur at intervals of 11-15 years. The pattern of low ground fires and stand dynamics resulted in the open park-like conditions that early inhabitants and visitors found in the region.



Less stand management, less logging activity and highly effective wildland fire suppression have significantly altered the ponderosa pine forest type. Removal of the larger pines has dramatically decreased open park-like forests, replacing them with more evenly spaced and smaller “black-bark” forests. Similar to other species of conifer forest types, the suppression of fire has greatly increased the number and density of trees, creating ladder fuels and putting the stands at risk of attack from insects and disease. These factors have contributed to more intense fires in ponderosa pine forests in recent years.

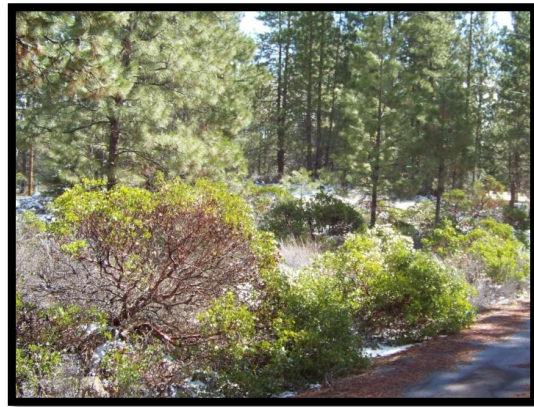


Western juniper occurs mainly in the northern and eastern sections of the Greater Bend WUI. The fire history of western juniper is characterized by fire that occurs approximately every 30 years and is generally limited by the availability of fuels. Western juniper trees have thin bark and fires kill them easily. Western juniper appears to be expanding its range over the previous century.



Bitterbrush occurs throughout the greater Bend area on all aspects and elevations and is frequently found with mixed shrubs such as manzanita and sage. 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 Greater Bend WUI area is rich with patches of bitterbrush that burn well on their own and provide fire-ready ladder fuels for taller tree stands.

Manzanita is a shrub that occurs throughout the greater Bend area, usually mixed with other shrub species such as bitterbrush. Manzanita is established both through sprouts and seeds that are stimulated by fire. Fires in manzanita are conducive to rapid and extensive fire spread due to both physical and chemical characteristics. The shrub has volatile materials in the leaves, low moisture content in the foliage and persistence of dead branches and stems. Manzanita is particularly susceptible to fire where it is the primary understory component.



Sagebrush is found on the eastern portions of the Greater Bend WUI and commonly grows in association with juniper and bitterbrush. Most fires kill sagebrush plants. In many sage communities, changes in fire occurrence along with fire suppression and livestock grazing have contributed to the current condition of sage communities. Prior to the introduction of



annuals, insufficient fuels may have limited fire spread in big sagebrush communities. Introduction of annuals, especially cheat grass, has increased fuel loads so that fire carries easily. Burning in sage communities commonly sets the stage for repeated fires. Fire frequency can be as little as 5 years, not sufficient time for the establishment and reproduction of big sagebrush. In these cases annuals such as cheat grass commonly take over the site.

The result of the fuel hazards and forest types in the greater Bend area is an overgrowth of trees and forest floor 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 and understanding with an 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 is rated HIGH in each of 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.

The current condition of the vegetation on the federal and private lands adjacent to and within the Greater Bend WUI poses an extreme risk of catastrophic loss from wildland fire. Bend is also threatened by the likely 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 Bend WUI are rated EXTREME under this assessment except the East UGR area which is rated HIGH.

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 life 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.

Values Protected

The human and economic values protected in the Greater Bend 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 MODERATE in this category and three are rated HIGH.

Based on Deschutes County tax records from 2009, there are approximately 36,207 homes in the Greater Bend WUI, with an appraised value of \$8.4 billion. In addition over 2,300 businesses operate in the Bend area, with an appraised value of \$3.3 billion.

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 Bend is the value placed on scenic beauty and recreational opportunities that exist on public lands both within and adjacent to the planning area. If a large wildland fire occurs in this area which resulted in area closures or the closure of either US Highway 97 or state highway 20, the economic loss to businesses could exceed \$3.5 million per day.

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 Bend area, but to the remainder of Deschutes County and neighboring cities like Sunriver, La Pine, Redmond 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 Bend area.

Protection capability

Fire protection capability ranges from LOW to MODERATE in the Greater Bend WUI. In this category, the lower the overall rating, the better the risk factor is. 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.

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.

Bend Fire and Rescue

Bend Fire and Rescue is the city of Bend's municipal fire department. With a predominantly career staff and small volunteer support personnel, Bend Fire and Rescue provides first response structural and wildland fire coverage within its 164 square mile service district. Through five stations Bend Fire and Rescue provides Emergency Medical Services, including Advanced Cardiac Life Support transport, within a 1,450 square mile boundary. The department also provides limited Hazardous Materials and River Rescue services. The department has adopted the National Incident Management Systems (NIMS) and all personnel have received training and continue to train in its use. Bend Fire and Rescue employs one Fire Chief, five Deputy Chiefs, three Battalion Chiefs, sixty eight Firefighter/Paramedics and Emergency Medical Technicians (EMTs), six members in the Fire Prevention Division, and three administrative staff members. The Department also employs six part-time EMTs and utilizes volunteers in other programs.

Bend Fire and Rescue commands a Fire Investigation Team (FIT) that provides 24/7 fire investigation across the district, including wildland fires. The benefit of the FIT is not only in the investigation to determine the cause of a fire, but to provide 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.

Bend Fire and Rescue utilizes a fleet of firefighting and EMS apparatus including six structural engines, six off-road brush engines, three water tenders, one ladder truck, one heavy rescue vehicle, six ambulances, three command vehicles, and seven fire prevention vehicles.

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. Bend Fire and Rescue is also a party to an Automatic Aid Agreement with Redmond, Cloverdale, Sunriver, Sisters, US Forest Service and ODF. Through a streamlined Computer Aided Dispatch (CAD) center, Bend Fire and Rescue responds automatically to certain calls in areas up to five miles beyond the fire district.

In addition to the firefighting resources, Bend Fire and Rescue puts 10% of its workforce towards fire prevention. The fire prevention team is comprised of one Fire Marshal and six Deputy Fire Marshals that provide enforcement of local fire codes and ordinances as well as provide public education across the 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 Bend area. Also reducing the threat of wildfires within the city limits are

ordinances which allow the department to enforce natural vegetation fuels reduction (the “weed abatement” program).

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. Address sign specifications and road signs are also managed by Bend Fire and Rescue. These opportunities give firefighters an expedient route to fires and allow residents to safely evacuate.

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

Deschutes County Rural Fire Protection District #2 (DCRFPD#2)

DCRFPD #2 is directed by a five-member, elected board of directors. Day-to-day operations of the fire district are handled by the Fire District Manager. The Fire District contracts with the Bend Fire and Rescue to provide fire and EMS services within the fire district.

Oregon Department of Forestry (ODF)

Within the greater Bend WUI, private forestland and State Parks are protected by the Central Oregon District of the Oregon Department of Forestry. ODF provides wildland fire response for fires burning on, or threatening private forestlands paying a Forest Patrol Assessment. There are some areas within the Greater Bend WUI that receive dual protection from ODF and Bend Fire and Rescue because they are located within the rural fire protection district and are also classified as private forestland within the ODF district.

Oregon Department of Forestry provides two off-road brush engines to patrol the Bend area during fire season, typically June through October. Twelve additional engines are available for response in the Prineville-Sisters unit. Statewide resources are also available to ODF including initial attack hand crews, dozers, water tenders, helicopters, air tankers, and overhead staff positions.

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 Bend 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 Bend 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; Bend Fire and 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 Bend and Deschutes County for protection in the greater Bend 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 looks at 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 FireFree information from other groups? In the Greater Bend WUI, the communities at risk varied from having a high level of organization to not having any. The Steering Committee used local knowledge to determine the level of preparedness. The average value rating for community preparedness was MODERATE.

Structural Vulnerability

In recent years, many neighborhoods in the greater Bend area have taken steps to decrease the vulnerability of structures to wildland fire. Although attitudes and behaviors towards fire are changing in the Bend 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 Bend WUI as fire safe as possible.

The ratings for structural vulnerability ranged from LOW to MODERATE. 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 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 3 - 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	Overall score	Rank
West UGR	High 40	Extreme 68	Low 6	High 50	Low 23	187	1
Southwest	High 35	Extreme 74	Low 8	High 35	Moderate 33	185	2
West	High 30	Extreme 76	Moderate 10	Moderate 22	Moderate 47	185	2
Northwest	High 30	Extreme 74	Moderate 10	Moderate 22	Moderate 46	182	3
Southeast	High 30	Extreme 74	Low 9	Moderate 22	Low 26	161	4
East UGR	High 40	High 51	Low 7	High 50	Low 10	158	5
Northeast	High 30	Extreme 66	Moderate 10	Moderate 22	Low 26	154	6
North	High 30	Extreme 61	Low 8	Moderate 22	Low 25	146	7

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 through IV are each represented on the landscape in the Greater Bend WUI. Ponderosa pine for example has an 11-15 year fire interval with low potential for stand replacement fires. Ponderosa pine therefore falls within Fire Regime I which describes species with fire return intervals between 0 – 35 years. Western juniper has a fire return interval of 31 years with high potential for stand replacement fires. Therefore, it falls within Fire Regime II.

Table 4 summarizes Fire Regimes.

Table 4 – 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 5 summarizes Condition Class.

Table 5 – Condition Class

Condition Class	Attributes
Condition Class 1	<ul style="list-style-type: none"> ▪ Fire regimes are within or near an historical range. ▪ The risk of losing key ecosystem components is low. ▪ Fire frequencies have departed from historical frequencies (either increased or decreased) by no more than one return interval. ▪ Vegetation attributes are intact and functioning within an historical range.
Condition Class 2	<ul style="list-style-type: none"> ▪ Fire regimes have been moderately altered from their historical range. ▪ The risk of losing key ecosystem components has increased to moderate. ▪ 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. ▪ Vegetation attributes have been moderately altered from their historic ranges.
Condition Class 3	<ul style="list-style-type: none"> ▪ Fire regimes have been significantly altered from their historical range. ▪ The risk of losing key ecosystem components is high. ▪ 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. ▪ Vegetation attributes have been significantly altered from their historic ranges.

There are 156,041 acres in the Greater Bend WUI area. Significant 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 has been completed by US Forest Service, 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.

The process of identifying forestland-urban interface areas follows steps and definitions described in Oregon Administrative Rules. Briefly, the identification criteria include:

- Lands within the county that are also inside an Oregon Department of Forestry protection district.
- Lands that meet the state's definition of "forestland."
- Lands that meet the definition of "suburban" or "urban"; in some cases, "rural" lands may be included within a forestland-urban interface area for the purpose of maintaining meaningful, contiguous boundaries.
- Lots that are developed, that are 10 acres in size or smaller, and which are grouped with other lots with similar characteristics in a minimum density of four structures per 40 acres.

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 fall 2009. At the same time, Deschutes County elected to classify *all* the lands within its boundaries, regardless of ODF protection.

The Oregon Department of Forestry is the agency steward of this program. It supplies information about the act's fuel-reduction standards to property owners. ODF also mails each of these property owners a certification card, which may be signed and returned to ODF after the fuel reduction standards have been met. Certification relieves a property owner from the act's fire cost recovery liability. This takes effect on properties that are within a forestland-urban interface area and for which a certification card has not been received by ODF. In these situations, the state of Oregon may seek to recover certain fire suppression costs from a property owner if a fire originates on the owner's property, the fuel reduction standards have not been met, and ODF incurs extraordinary suppression costs. The cost-recovery liability under the Oregon Forestland-Urban Interface Fire Protection Act is capped at \$100,000.

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

Each of the eight Communities at Risk in the Greater Bend CWPP has one or more corresponding classification ratings under Senate Bill 360. The ratings among the eight Communities include High, Extreme and High Density Extreme. The following table summarizes the percentages of Extreme and High Density Extreme in each Community at Risk.

Table 6 - SB 360 Rating and percentage of Extreme and High Density Extreme

Community at Risk	Percentage High Density Extreme	Percentage Extreme
North	0	4%
NW	2	4%
SE	0	33%
East UGR	0	0
West UGR	0	0
SW	21%	2%
W	0	5%
NE	0	4 %

The Steering Committee utilized this information to come to consensus in ranking the Communities at Risk based on the highest percentages of Extreme and High Density Extreme.

Table 7 – Consensus Ranking of SB 360 Ratings

Consensus Rank	Community at Risk
1	Southwest
2	Southeast
3	West
4	Northeast North Northwest
5	West UGR East UGR

These rankings produced the following composite for consideration.

Table 8 - Composite ODF Assessment & SB 360 ratings

Community at Risk	ODF Assess Rank	+ SB 360 Rating	= Total Score	Composite Rank
West UGR	1	5	6	3
Southwest	2	1	3	1
West	2	3	5	2
Northwest	3	4	7	4
Southeast	4	2	6	3
East UGR	5	5	10	5
Northeast	6	4	10	5
North	7	4	11	6

The Steering Committee agreed to add the ODF Assessment ranking number to the SB 360 ranking number to produce a final score, then the composite rank. Two groups of priorities for fuels reduction treatments emerged from this analysis:

Highest
Southwest
West
Southeast
West UGR
Northwest

High
East UGR
Northeast
North

Areas of special concern

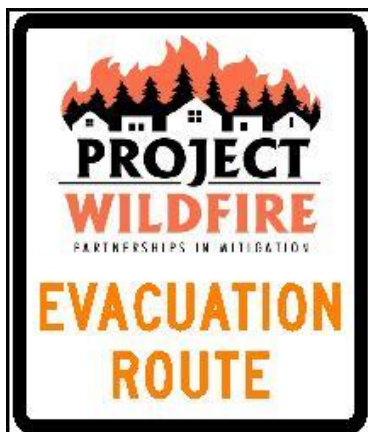
Critical Transportation Routes

Critical Transportation Routes do not have a standard definition in Deschutes County. For purposes of the Greater Bend 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 Bend 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).

With up to 20,000 visitors in Bend per day during peak summer months and an additional 20,000 people using recreation sites and the transportation corridors around Bend, 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 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.

Bend drinking water protection area

The Greater Bend CWPP Steering Committee included the Bridge Creek Watershed in the WUI boundary. Approximately half of Bend's water comes from this area. The watershed was established in 1926 in cooperation with the Deschutes National Forest and a subsequent 1991 Memorandum of Understanding which describes protection measures in place for the watershed. Annual inspections of the watershed are conducted with the Department of Environmental Quality and the Deschutes National Forest. A wildland fire occurring in or near this watershed could severely affect water quality in the Bridge Creek watershed. The Steering Committee recommends treatment for hazardous fuels as identified in this plan to prevent catastrophic damage from wildfires to the watershed.

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 Deschutes River Woods (Southwest) 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. These areas are dense with bitterbrush, rabbit brush, cheat grass and noxious weeds – all acting as ladder fuels to the ponderosa pine that shares 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. The Steering Committee recommends encouraging the owners of the railroad to comply yearly with requests that the weeds be maintained 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 Bend 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 Bend Community Wildfire Protection Plan.

Priorities

Based on the assessment composite as shown in Table 8 the Steering Committee has identified the following priorities:

Highest
Southwest
West
Southeast
West UGR
Northwest

High
East UGR
Northeast
North

Goals

The Steering Committee identified the following goals to meet the Purpose on page one of the Greater Bend 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 Bend CWPP and the recommended areas for treatments by reducing wildland fuel hazards on both public and private lands.

The standard of the Greater Bend 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 Bend 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 Bend WUI.

Public lands

Six of the eight Communities at Risk are adjacent to public lands managed by either the Forest Service or the Bureau of Land Management. State owned lands represent only a small percentage of the lands (1.6%) within the plan area.

It is the intent of the Steering Committee that the Greater Bend WUI 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 land managers are strongly encouraged to work toward the overall standard by restoring Condition Class 2 and 3 lands with the goal of returning the landscape to Condition Class 1. In mixed conifer, lodgepole and sub-alpine fir stands where Crown Fire Potential is rated Extreme by the federal agencies the recommended standard is to reduce fuel loads to that which can produce flame lengths of less than four feet, regardless of Condition Class:

- Within a ¼ mile buffer of the Greater Bend WUI boundary. Treatments should begin here and increase in ¼ mile increments until the WUI boundary is reached.
- Within 300 feet of any evacuation route from any of the 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 general, the dominant strategy in all areas should be thinning from below, in an effort to restore large tree, open, ponderosa pine dominated forests. In juniper and bitterbrush dominated stands, 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.

These treatments shall be consistent with the current COFMS Fire Management Plan on the federal lands and existing land management plans on state owned lands.

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

Industrial and non-industrial private forestlands

Private forestlands are generally larger land holdings managed for multiple values including timber, wildlife, recreation and water. The landowner may or may not live on the property however the property is largely forest vegetation excluding the area directly adjacent to any structures. There are still a few private forestland parcels in the Greater Bend WUI that directly border some of the Communities at Risk. The Steering Committee recommends continued partnerships with private forestland owners that encourage fuels management to the standards above as part of an overall plan for management of the forest resource.

Industrial and non-industrial private forestland owners can meet the overall standard by treating Condition Class 2 and 3 lands with the goal of returning the landscape to Condition Class 1 by reducing fuels loads to that which can produce flame lengths of less than four feet:

- Within a ¼ mile buffer of adjacent communities at risk. Treatments should begin here and increase in ¼ mile increments until the WUI boundary is reached.
- Within 300 feet of any evacuation route from adjacent Communities at Risk.

The standard can be achieved 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. These treatments shall be consistent with existing land management plans for these areas.

Private and county owned lands

The majority of the land (66%) in the Greater Bend planning area is private land and is considered developed, or in rare cases intermixed with development. The County owns less than 2% of the land in this planning area.

Private land with *or* without structural improvements

On private lands within the Greater Bend CWPP WUI boundary with structural improvements or those that are vacant, the goal is for each property to meet the Senate Bill 360 Standards for its individual classification rating. This statute outlines standards and requirements for defensible space on private property that has fire protection from Oregon Department of Forestry.

Not all property in the Greater Bend WUI is provided wildland fire protection by ODF. During the reclassification process in 2009 however, Deschutes County elected to classify every parcel of private land regardless of its protection status by ODF.

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 minimum Default Standards under the Oregon Forestland – Urban Interface Fire Protection Act of 1997 (Senate Bill 360) are:

- Establish a primary fuel break of 30 feet around structures;
- 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 a property is classified as High, the standard includes the above requirements and a secondary fuel break around structures up to 20 feet if the structure has a flammable roof. For properties rated Extreme or High Density Extreme, secondary fuel breaks around structures up to an additional 70 feet are required if the structure has a flammable roof. In addition, 20 foot fuel breaks are also required around the perimeter of a property if it is rated Extreme or High Density Extreme.

Property owners can also 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 by participating in programs like FireFree and Firewise which promote a variety of fire safe actions to help prevent the spread of fire to protect individual homes and neighborhoods.

Recommendations to Reduce Structural Vulnerability

Structural Vulnerability

Based on the assessment of structural vulnerability for the ODF Assessment of Risk Factors, Table 9 identifies the main hazards within the eight Communities at Risk in the Greater Bend planning area. For each hazard or risk listed, an action is recommended to address the threat or decrease the risk. The communities are listed in priority order from Table 8.

Table 9 – Structural Vulnerability Hazards & Recommendations

New Priority	Community at Risk	Primary Hazards	Recommended Actions
1	Southwest	Defensible Space – Hazardous Vegetation	FireFree, Firewise, SB 360 compliance
		Structural composition	FireFree, Firewise, SB 360 compliance
		Insufficient water supply	Improve water supply
		Poor condition of roads	Identify, upgrade and maintain
		Some inadequate signage	Identify and improve
2	West	Defensible space – hazardous vegetation	FireFree, Firewise, SB 360 compliance
		Structural composition	FireFree, Firewise, SB 360 compliance
		Draft sites only	Develop water supply
		Insufficient access & evacuation routes	Establish route(s), sign and maintain
		Some inadequate signage	Identify and improve
3	Southeast	Defensible space – hazardous vegetation	FireFree, Firewise, SB 360 compliance
		Structural composition	FireFree, Firewise, SB 360 compliance
		Insufficient access & evacuation routes	Improve route(s), sign and maintain
		Poor condition of evacuation routes	Identify, upgrade and maintain
3	West UGR	Defensible space – hazardous vegetation	FireFree, Firewise, SB 360 compliance
		Structural composition	FireFree, Firewise, SB 360 compliance
		Insufficient access & evacuation routes	Improve route(s), sign and maintain
4	Northwest	Defensible space – hazardous vegetation	FireFree, Firewise, SB 360 compliance
		Structural composition	FireFree, Firewise, SB 360 compliance
		Hydrants only, no draft sites	Improve water supply
		Insufficient access & evacuation routes	Establish route(s), sign and maintain
		Poor condition of interior roads	Identify, upgrade and maintain
5	East UGR	Defensible space – hazardous vegetation	FireFree, Firewise, SB 360 compliance
		Structural composition	FireFree, Firewise, SB 360 compliance
5	Northeast	Defensible space – hazardous vegetation	FireFree, Firewise
		Structural composition	FireFree, Firewise
		Insufficient access & evacuation routes	Improve route(s), sign and maintain
		Poor condition of some roads	Identify, upgrade and maintain
		Some inadequate signage	Identify and improve
6	North	Defensible space – hazardous vegetation	FireFree, Firewise
		Structural composition	FireFree, Firewise
		Insufficient access & evacuation routes	Establish route(s), sign and maintain
		Poor condition of some roads	Identify, upgrade and maintain
		Some inadequate signage	Identify and improve

Thanks to the educational efforts across the greater Bend WUI and in response to these recommendations, individuals and specific neighborhoods have responded enthusiastically to take the necessary steps to reduce the threat of wildfire. Project Wildfire has assisted multiple neighborhoods through “Sweat Equity” programs whereby residents complete the defensible space activities on their property and stack the debris at the roadside. Utilizing various grants,

Project Wildfire has the debris hauled away and the resulting biomass ground for use in the generation of clean electricity.

Table 10 provides a checklist for residents seeking to reduce the risk of catastrophic losses to their homes and properties.

Table 10 – 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.

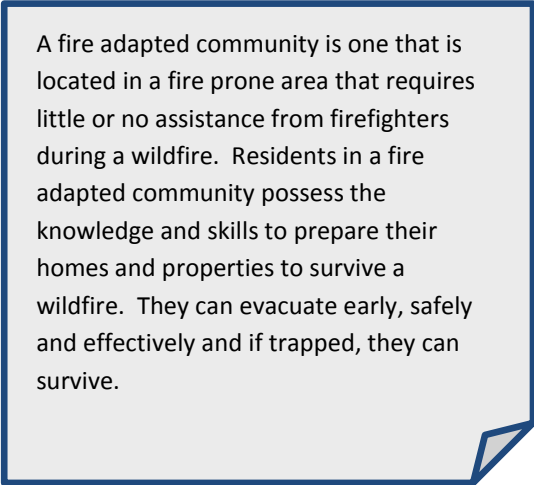
Education

As stated in the Purpose of the Greater Bend CWPP, four of the goals 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 Bend CWPP. The rapid influx of new residents is just one reason the Steering Committee places high value on the education of Bend 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 Bend 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 Bend 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 Bend area. Bend Fire and Rescue, the Central Oregon Fire Prevention Cooperative and Project Wildfire all provide wildland fire prevention programs through a variety of individual and collaborative efforts.

Some neighborhoods in the greater Bend 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 Bend 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 Bend 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 Bend CWPP is a living tool with multiple applications. The following actions are intended to assist individuals and agencies in the implementation of this CWPP across Bend and the adjacent WUI.

Reduce hazardous fuels on public lands

Immediately following the acceptance and signed approval of this plan, the Steering Committee will make copies of the 2011 Greater Bend CWPP available to all public land managers including the Deschutes National Forest and the Oregon Department of Forestry. The intention of the Steering Committee is to engage in continued discussions with the greater Bend 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.

Bend Fire and Rescue will work with Oregon Department of Forestry and Project Wildfire to identify and certify three (3) 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 Bend WUI. The ODF Assessment of Risk Factors and Tables 8 & 10 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, Bend Fire and Rescue will work with Oregon Department of Forestry and Project Wildfire to identify and certify three communities for application under the national Firewise Communities USA program.

The Steering Committee is also charged with the task of working with Bend Fire and Rescue to identify and assess the water resources available for fire suppression in Bend 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 Bend Fire and Rescue and Project Wildfire to review the educational programs available and identify potential projects for implementation.

Identify, Improve and Protect Critical Transportation Routes

The Steering Committee will work with Bend Fire and Rescue, City of Bend Police Department, Deschutes County, and Oregon Department of Transportation to identify and map existing transportation and evacuation routes. The Steering Committee will assist in conducting further assessments to determine the evacuation needs of greater Bend and identify potential projects that develop new routes and/or improve existing routes.

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.

Fund Projects

The Steering Committee 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 Bend Community Wildfire Protection Plan. Implementing and sustaining these efforts will require a significant commitment. Maintaining a collaborative and cooperative environment with Bend Fire and Rescue, Deschutes County RFPD #2, 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 Deputy Fire Chief from Bend Fire and Rescue; a representative from ODF; representatives from the US Forest Service, the BLM, and Deschutes County along with members of the greater Bend public.

The Steering Committee agrees that the Greater Bend 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.

Bend 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 Bend 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.