

East & West Deschutes County Community Wildfire Protection Plan

2018



Prepared by

Alison Green, Project Wildfire - (541) 322-7129
projectwildfire.pw@gmail.com

Executive Summary

Purpose

Community Wildfire Protection Plans (CWPPs) are documents that are designed by a local group of stakeholders who are invested in the wildland fire threat to their area. The group of stakeholders typically consists of a representative from the fire department(s), the state Forestry Department, any governing bodies, and especially property owners. Each of these representatives should bring their concerns regarding wildland fire to the discussion and propose solutions to their concerns.

Although reducing the risk of high intensity wildland fire is the primary motivation behind this plan, managing the larger landscape to restore forest and rangeland health and more resilient conditions and improving fire response by all fire agencies are also discussed and addressed in the action plan. Continued efforts have been made by 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 property owners have responded enthusiastically to the defensible space and preparation guidelines and recommendations to reduce hazardous fuels on their own properties by participating in programs such as Firewise and FireFree. All of these activities allow the planning area to become more Fire Adapted.

Since its creation in December 2007, the East & West Community Wildfire Protection Plan has been reviewed twice (2012 and 2018) by a local steering committee to be applied as it was intended by a wide variety of private landowners and public agencies to decrease the risks of high intensity wildfire in the planning area.

The 2018 East & West Community Wildfire Protection Plan will assist all agencies and Alfalfa, Brothers, Hampton and Millican area property owners in the identification and prioritization of all lands, including surrounding public lands that are at risk from high intensity wildland fire. The East & West CWPP identifies priorities and strategies for reducing hazardous wildland fuels while improving forest health, supporting local industry and economy and improving fire protection capabilities.

Addressing these goals in a cooperative, collaborative manner maintains alignment with the goals outlined in the National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) – resilient landscapes, Fire Adapted Communities and safe and effective wildfire response. For more information on Cohesive Strategy, visit <http://www.forestsandrangelands.gov/>.

The goals of the East & West CWPP are 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;
- Provide guidance to federal agencies for implementing fuels reduction treatments;
- Prioritize the use of limited funds for the treatment of hazardous fuels;
- Create and maintain fire adapted communities; and
- Improve the fire resilience of the landscape while protecting other social, economic and ecological values.

The East & West CWPP integrates information from a variety of sources to present a comprehensive picture of risk and possible treatments on the landscape and enable community organizations and their partners to act in a coordinated fashion. A completed plan also allows the adjacent federal land management agencies to make use of the expedited authorities provided by the Healthy Forest Initiative (HFI) and the Healthy Forest Restoration Act (HRFA). In addition, for communities seeking federal grant funding from the National Fire Plan, a completed community wildfire protection plan has become a *de facto* requirement. Lastly, developing a community wildfire protection plan is a powerful tool to help get local residents and visitors involved in fire protection efforts.

Planning Area Boundaries

The East & West CWPP is multi-jurisdictional and addresses all lands and all ownerships within the boundaries of the plan area. The planning boundary of the East & West CWPP straddles multiple other CWPPs. Each rating area in this plan is distinct in fire response, vegetation, and fire history. Each rating area will be provided their own section in this plan.

The overall plan encompasses 1,345,763 acres or approximately 2,102 square miles. Much of this land is considered in the CWPP and action plan as outlying lands. The East & West wildland urban interface areas total approximately 840 square miles and covers 537,529 acres.

Geography and the Environment

The western portion of Deschutes County and the southern region around Paulina Lake and East Lake were historically characterized by open stands of ponderosa pine and native grasslands. Following logging in the first half of the 1900's many of these stands naturally regenerated to lodgepole pine. Lodgepole pine is a species that lives and dies by high intensity and active stand replacement crown fires. It is therefore less desirable from a

wildland fire perspective because of the risk these stands pose to the communities and activities nearby.

Today, with less stand management, logging activity and highly effective wildland fire suppression, the forestland is predominantly dense lodgepole pine with some mixed stands of lodgepole and ponderosa pine. Much of the understory consists of dense bitterbrush and manzanita with some areas of native bunchgrasses. Due to the lack of disturbance, these stands continue to become more and more overcrowded.

In the Alfalfa area, the historical vegetation included western juniper and sagebrush. Today, the mix is predominantly western juniper and sage than 100 years ago, with sporadic ponderosa pine in areas with consistent irrigation. With larger private acreages, the Alfalfa area is also plentiful in large tracts of agricultural/farming lands.

Historically, the Brothers/Hampton/Millican area included a mix of sagebrush, scarce western juniper and some ponderosa pine. This vegetation type was maintained by frequent low to moderate intensity fires. Today the area is characterized by widespread stands of western juniper, western sage, and non-native grasses, predominantly cheat grass. This area is also abundant with large private agricultural lands.

Wildland Fire Risk Assessment

The CWPP steering committee undertook a wildland fire assessment to gauge the relative risk and hazard due to wildland fire for the lands and communities within the planning area. It is a tool to direct implementation of wildfire mitigation activities to the highest priority areas and promote cross-boundary coordination. The assessment:

- 1) Assessed risk, hazard, fire protection capability, structural vulnerability, and values to be protected
- 2) Identified and ranked “communities at risk” within the plan area. These community rankings identified the priority areas for fuel reduction activities and other mitigation projects within the plan area.

The East & West CWPP used the risk assessment methodology from the National Association of State Foresters and the Oregon Department of Forestry. The assessment considers five categories in determining the relative severity of fire risk:

- **Risk**– the likelihood of a fire occurring (based on past occurrences of human and lightning caused fires)
- **Hazard**– the conditions that hinder control of a wildland fire once it starts (fuels, slope, aspect, elevation and weather)
- **Values**– the people, property, natural resources, and other resources that could be lost in a wildland fire event

- **Structural Vulnerability**–the elements of a structure (roof type and building materials, access to the structure, and existing defensible space or fuels reduction around the structure) that affect its likelihood of burning
- **Protection Capability**–the ability to mitigate losses and prepare for, respond to, and suppress wildland and structural fires

Assessment Community Rankings (Table 1)

Community Name	Average	2018 Rank
Alfalfa	128	3
Brothers/Hampton/Millican	135	2
Cascade Lakes/FS Recreation Sites	145	1

While the public lands in the Cascade Lakes and Forest Service Recreation sites scored higher in the risk assessment, the recommendations are tailored for each rating area in this CWPP.

The East & West Community Wildfire Protection Plan was developed by and for the community members to enhance their understanding of their local surroundings and how their landscape determines their risk of wildland fire. Each risk assessment and recommendation in this plan has been made after careful consideration by the Steering Committee. Specific recommendations for homeowners to reduce their risk can be found on pages 36, 37, and 41 of this CWPP. The Steering Committee’s recommendations to achieve more fire resilient landscapes can be found on pages 34 and 43 of this CWPP.

Declaration of Agreement

The East & West Deschutes County Community Wildfire Protection Plan (CWPP) was originally completed and signed in December 2007 and a revision was completed in June 2012. As directed by that CWPP, fuels reduction and fire prevention activities have been completed on public and private lands. Recent wildland fires have also impacted the landscape and neighborhoods. Combined, these events have changed the priorities outlined in the previous documents.

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.

Talya Taitano, Chair
Brothers Hampton Rangeland Fire Protection Association

Date

Chad LaVallee
Chief, Alfalfa Fire District

Date

Gordon R. Foster, Unit Forester
Oregon Department of Forestry

Date

Tony DeBone, Chair
Deschutes County Board of Commissioners

Date

Acknowledgements

The following people are acknowledged for their participation, collaboration and commitment resulting in the creation of the East & West Deschutes County Community Wildfire Protection Plan.

Alex Enna	US Forest Service
Gordon R. Foster	Oregon Department of Forestry
Alison Green	Project Wildfire
Larae Guillory	US Forest Service
Brenda Hallmark	Bureau of Land Management
Ed Keith	Deschutes County Forester
Chad LaVallee	Chief, Alfalfa Fire District
Don Patterson	Brothers/Hampton Rangeland Fire Patrol Association
Hettie Patterson	Brothers/Hampton Rangeland Fire Patrol Association
Talya Taitano	Brothers/Hampton Rangeland Fire Patrol Association
Ron Thompson	Chief (ret.), Alfalfa Fire District
Kim Vanderford	Brothers/Hampton Rangeland Fire Patrol Association
John Vanderford	Brothers/Hampton Rangeland Fire Patrol Association
Marvin Vetter	Oregon Department of Forestry

Table of Contents

Executive Summary.....	i
Declaration of Agreement.....	v
Acknowledgements	vi
Contact information.....	ix
Purpose	1
Planning Summary	3
Collaboration	5
Community Profile	7
Private & Public Accomplishments	9
US Forest Service & Bureau of Land Management	9
Oregon Department of Forestry (ODF).....	11
Oregon Forestland-Urban Interface Fire Protection Act 1997	11
Deschutes County.....	13
Firewise.....	13
Fire Adapted Communities (FAC)	14
Deschutes Collaborative Forest Project	14
Private Landowner Accomplishments	15
Community Base Maps	16
Wildland Urban Interface descriptions	16
Alfalfa – Community at Risk	17
Brothers/Hampton/Millican– Community at Risk	18
Fuel Hazards and Ecotypes	19
Cascade lakes & FS Recreational Sites – Community at Risk	21
Fuel Hazards and Ecotypes	22
Community Assessment of Risk.....	26
ODF Assessment of Risk Factors.....	26
Risk of Wildfire Occurrence	26
Hazard.....	26
Values Protected	27
Protection Capability.....	27
Structural Vulnerability	30
ODF Assessment Summary.....	31
Areas of special concern	32
Prioritized Hazard Reduction Recommendations	
and Preferred Treatment Methods	34
Priorities & Goals.....	34
Preferred Treatments & Goals for Hazardous Fuel Reduction.....	34
Federal & State owned lands	35
Private and County owned lands	36

Recommendations to Reduce Structural Vulnerability	37
Structural vulnerability hazards and recommendations	37
Defensible space check list	38
Education.....	39
Action Plan and Implementation.....	41
Improving Fire Protection Response	41
Working Toward a More Fire-Adapted Community	42
Restoring Fire Resilient Landscapes	44
Evaluation and Monitoring	46
Appendix A – Community Base Map	48
Appendix B – Community Assessments	49
Appendix C – Detailed Structural Vulnerability Risk Assessment	58
Appendix D – Glossary of Terms.....	61
Appendix E – Post Fire Recovery	65



Contact Information

Ed Keith, County Forester

Deschutes County
61150 SE 27th Street
Bend, OR 97702
(541) 322-7117

Gordon R. Foster, Unit Forester

Oregon Department of Forestry
3501 NE 3rd Street
Prineville, OR 97754
(541) 447-5658

Brenda Hallmark, Fuels Program Lead

Prineville District, Bureau of Land Management & Ochoco National Forest
3050 NE 3rd Street
Prineville, OR 97754
(541) 416-6780

Kevin Stock, Fire Management Officer

US Forest Service, Bend-Fort Rock District
63095 Deschutes Market Road
Bend, OR 97701
(541) 383-5300

Chad LaValle, Chief, Alfalfa Fire District

25889 Alfalfa Market Rd.
Bend, OR 97701
(541) 382-2333

Alison Green, Program Director

Project Wildfire
61150 SE 27th Street
Bend, OR 97702
(541) 322-7129

This page intentionally left blank

East & West Deschutes County Community Wildfire Protection Plan

Purpose

The purpose of the East & West Deschutes County 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;**
- **Provide guidance to federal agencies for implementing fuels reduction treatments;**
- **Prioritize the use of limited funds for the treatment of hazardous fuels;**
- **Create and maintain fire adapted communities; and**
- **Improve the fire resilience of the landscape while protecting other social, economic and ecological values.**

Since its creation November 2007, the East & West Deschutes County Community Wildfire Protection Plan has been reviewed twice (2012 and 2018) by a local steering committee to be applied as it was intended by a wide variety of private landowners and public agencies to decrease the risks of high intensity wildfire in the planning area. This revision continues its legacy by outlining a clear purpose with updated priorities, strategies and action plans for fuels reduction treatments in the unincorporated and/or unprotected wildland urban interface areas in Deschutes County.

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 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 the east, south and west portions of Deschutes County are now significantly altered, or “out of whack” due to fire prevention efforts, modern suppression activities and a general lack of large scale fires.

The result on the west end of the county is large tracts of overstocked ponderosa, mixed conifer and lodgepole pine forests with dense ground fuels of bitterbrush and saplings. On the east side of the county, the effect on the rangelands and grasslands is seen in the replacement of native bunchgrass and ponderosa pine with sage, juniper and cheat grass. Although vastly different in vegetation and topography, these ecosystems are now similarly altered to a state, which allows fires to burn rapidly and more intensely than in the past with an increased capacity to threaten lives and property.

Within these boundaries, there is a significant amount of public land with numerous destination resorts, and developed and dispersed recreation sites which provide valuable recreation and economic opportunities to both residents and visitors in Deschutes County. In the summer months, transient populations of up to 40,000 people occupy these areas creating a seasonal challenge for those agencies responsible for fire suppression and evacuation.

In addition, the recent explosion in population over the last two decades has led to increased residential development in forested areas, in the wildland urban interface (WUI). To address these and other related issues, members of fire agencies, local businesses and organizations, and individuals collaborated to develop the East & West Deschutes County Community Wildfire Protection Plan.

The identification of priority areas for hazardous fuels treatment in these areas along with the identification of treatment standards are key components of this plan.

Planning Summary

Since the most recent adoption, continued efforts have been made by 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 and economic opportunities, and scenic beauty.

In keeping with the strategy of the original East & West 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); and Deschutes County Resolution 2004-093.

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

Step one: Convene the decision makers.

The East & West CWPP Steering Committee reconvened in the fall of 2017 to review the work completed within and adjacent to the WUI boundaries 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 the Communities at Risk participated on the Steering Committee. The Steering Committee also included members of local rangeland fire protection agencies, local businesses, homeowner/neighborhood associations, and other organizations and individuals. The Steering Committee encouraged a collaborative environment for the stakeholders to accomplish the 2018 revision of the East & West

CWPP. Collaboration and coordination between agencies, community members, and landowners is the fundamental goal of the Cohesive Strategy.

Step four: Establish a community base map.

The Steering Committee reviewed the previous maps and boundaries from the 2012 CWPP and approved the 2018 CWPP boundary with some changes to the defined Wildland Urban Interface (WUI) on the public lands within the planning boundary. This created a more accurate depiction of the WUI present in the populated areas within the planning boundary. Changes were also made to reflect boundary changes of adjacent CWPPs including Greater Bend and Greater Sisters.

Step five: Develop a community risk assessment.

The Steering Committee relied on the ODF Assessment of Risk Factors and the Structural Vulnerability factors for each of the three (3) Communities at Risk.

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

Based on the assessments, the Steering Committee produced items in the action plan for each rating area. The Steering Committee also made recommendations to reduce structural vulnerability 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 East & West CWPP was available for public comment prior to the final signing and approval of the plan. The East & West Community Wildfire Protection Plan was mutually approved and signed by local stakeholders, Alfalfa Fire District, Oregon Department of Forestry, and the Deschutes County Board of Commissioners as demonstrated in the Declaration of Agreement.

Collaboration

In 2002, President George W. 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 high intensity wildfire. This initiative allowed forest management agencies for the first time, to expedite the documentation process for the purpose of reducing hazardous fuels on public lands.

In 2003, the US Congress passed historical bi-partisan legislation: the Healthy Forests Restoration Act (HFRA). This legislation expands the initial effort under the Healthy Forests Initiative and directs federal agencies to collaborate with communities in developing a CWPP, which includes the identification and prioritization of areas needing hazardous fuels treatment. It further provides opportunities and authority for federal agencies to expedite the National Environmental Policy 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.

Communities now have the opportunity to participate in determining where federal agencies place their fuels reduction efforts. With a CWPP in place, community groups can apply for federal grants to treat hazardous fuels and address special concerns to reduce the risk of catastrophic loss as a result 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.

In 2009, Congress passed the Federal Land Assistance, Management, and Enhancement (FLAME) Act and called for a National Cohesive Wildland Fire Management Strategy to address wildland fire related issues across the nation in a collaborative, cohesive manner. The Cohesive Strategy was finalized in 2014 and represents the evolution of national fire policy:

To safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a Nation, live with wildland fire.

The primary, national goals identified as necessary to achieving the vision are:

Resilient landscapes: Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.

Fire-adapted communities: Human populations and infrastructure can withstand a wildfire without loss of life and property.

Wildfire response: All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.

Building a collaborative and cooperative environment with the fire department(s), community-based organizations, local government, and the public land management agencies has been the first step in reducing the risk of loss from wildland fire. The Steering Committee pledges to maintain this cooperation with the public over the long term with the commitment of all the participants involved. The importance of collaboration with neighboring CWPPs is recognized by the Steering Committee and is referenced throughout this CWPP as documentation of collaborative efforts to maximize hazardous fuels reduction efforts in the area. The Steering Committee agrees that the East & West Community Wildfire Protection Plan will be a living document, intended to promote fuels reduction, education, and other projects to decrease overall risks of loss from wildland fire; it is intended to be revisited at least annually to address its purpose.

At a minimum, the East & West CWPP Steering Committee shall include: representatives from Alfalfa Fire District; representatives from Brothers/Hampton Rural Fire Patrol Association; representatives from Oregon Department of Forestry (ODF); representatives from Bureau of Land Management (BLM); representatives from the US Forest Service; the Deschutes County Forester; and the Program Director from Project Wildfire, along with members of the public.

For planning in the western and southern regions of the county, these same representatives collaborated with special use permittees who lease federal lands for recreational and resort use to develop priorities and recommendations for these regions of Deschutes County.

Community Profile

Deschutes County is located in central Oregon and is a rapidly growing social, economic and recreational destination. Deschutes County continues to be the fastest growing county in Oregon, according to [Portland State University](#). In just the past year Deschutes County's population has grown by 3.6%. Portland State University also forecasts that approximately 54,650 residents live in the unincorporated areas within the county.

According to Recreation Information Management data from Deschutes National Forest, the recreational areas included in this CWPP planning area are occupied by as many as 40,000 people from June 1st through September 15th of each year.

The East & West CWPP addresses three project areas: Cascade Lakes/Forest Service Recreational Sites, Alfalfa, and Brothers/Hampton/Millican.

The western portion of Deschutes County and the southern region around Paulina Lake and East Lake were historically characterized by open stands of ponderosa pine and native grasslands. Following logging in the first half of the 1900's many of these stands naturally regenerated to lodgepole pine. Lodgepole pine is a species that lives and dies by high intensity and active stand replacement crown fires. It is therefore less desirable from a wildland fire perspective because of the risk these stands pose to the communities and activities nearby.

Today, with less stand management, logging activity and highly effective wildland fire suppression, the forestland is predominantly dense lodgepole pine with some mixed stands of lodgepole and ponderosa pine. Much of the understory consists of dense bitterbrush and manzanita with some areas of native bunchgrasses. Due to the lack of disturbance, these stands continue to become more and more overcrowded.

In the Alfalfa area, the historical vegetation included ponderosa pine, scarce western juniper and sagebrush. Today, the mix is predominantly western juniper and sage than 100 years ago, with sporadic ponderosa pine. With larger private acreages, the Alfalfa area is also plentiful in large tracts of agricultural/farming lands.

Historically, the Brothers/Hampton/Millican area included a mix of sagebrush, scarce western juniper and some ponderosa pine. This vegetation type was maintained by frequent low to moderate intensity fires. Today the area is characterized by widespread stands of western juniper, western sage, and non-native grasses, predominantly cheat grass. This area is also abundant with large private agricultural lands.

The climate in all areas 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, five miles to the west of Alfalfa. US Highway 20 intersects Alfalfa and Brothers, running east and west in the middle of town. As Central Oregon grows, more residents and tourists crowd the highways and increase congestion, particularly during the summer months when fire season reaches its peak. The transportation corridors and evacuation routes will not be considered their own rating area in this plan. However, specific action items for the transportation corridors are included in the action plan.

Public and Private Accomplishments

As part of the ongoing wildland fire risk management of the surrounding public and private forestlands, the US Forest Service, the Bureau of Land Management, Oregon Department of Forestry, and private landowners are engaged in hazardous fuels treatment projects across the county in or near these areas.



US Forest Service & Bureau of Land Management

Currently, under the combined management of the Central Oregon Fire Management Service (COFMS), the US Forest Service and the Bureau of Land Management are involved in multiple fuels projects in WUI areas that stretch across this planning area to reduce hazardous fuels and the likelihood of high intensity wildfire.

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.

Projects in Planning Phase

Kew – Located west of Sunriver and adjacent to FS Road 41 and the Cascade Lakes Scenic Byway. Project includes approximately 6,500 acres of commercial harvest and fuels reduction for the purpose of restoring historic stand structure and reducing fire hazard. Project is in predominantly mixed conifer stand types. Implementation is planned to begin in 2020.

Lex - Project area is on the south side of Cascade Lakes Highway, 10 miles southwest of Bend, surrounding the Wanoga and Kapka snow parks. Project will treat roughly 6,500 acres of lodgepole and mixed conifer forests to restore historic species composition and structure and reduce fuels. Implementation is planned to begin in 2019.

Twin –The Twin project area surrounds Crane Prairie and Wickiup reservoirs. Planned work includes fuels reduction around Twin Lakes Resort, Crane Prairie Resort and the numerous recreation sites surrounding the reservoirs. Nearly 22,000 acres of fuels reduction and forest restoration work are expected with this project. Implementation of this project likely to begin in 2021.

New Implementation Projects

Flat – 13,500 acres of thinning, mowing and underburning two miles east of La Pine. Planning was completed in 2016 and implementation is expected to begin in 2018.

Junction –Project area is near Klak Butte and includes approximately 13,000 acres of vegetation treatments along Forest Service Road 45, the primary transportation route from the Sunriver area to Mt. Bachelor and Forest Service Road 40, which is a primary access route from the Sunriver area to Cascade Lakes Highway. Implementation on this project started in 2017 and is expected to continue through 2021.

Shield – This 1,500 acre project removes dead and dying trees around Newberry Caldera recreation sites and along Forest Service Road 21, the primary access road to Paulina and East Lakes. Implementation will begin in 2018.

Ongoing Projects

Bend Municipal Watershed Fuel Break Project– The intent of this project is to improve firefighter effectiveness during future wildfires threatening the Bend Watershed. Treatments will create roughly 15 miles of strategic roadside fuel breaks along the 4601-370 road in the Todd Lake and Happy Valley areas. Implementation on this project began in 2015 with completion expected in 2019.

Deadlog – Approximately 11,000 acres in size, this ponderosa pine restoration project area surrounds Quartz Mountain on the far eastern side of the Bend-Ft. Rock Ranger District. The thinning and mowing is complete with only underburning remaining. Underburning is expected to continue in this area through 2020.

Flank – This project is approximately 20 miles southeast of the city of Bend on the northeast flank of Newberry Caldera. Consists of roughly 5,600 acres of treatments with the objectives of improving forest resiliency and reducing fuels. All of the thinning and mowing work has been completed, only underburning remains. Underburning will likely begin in 2019 and continue through 2021.

Lavacast - 9,500 acres of fuels reduction work east of Highway 97 and Sunriver. Project area is partially within the Newberry Volcanic National Monument. This project is nearing completion, the thinning and mowing treatments have been completed and the remaining underburning will continue through 2020.

Rocket – 9,000 acres of fuels reduction surrounding Highway 97, Lava River Cave and Lava Butte. Project is primarily in second growth ponderosa pine forest. Thinning and mastication work is underway, prescribed burning will likely begin in 2020.

Opine – The Opine project area surrounds Camp 2 on the east side of the Bend-Ft. Rock Ranger District. Implementation on the Opine project began in 2009 and all of the mechanical hazardous fuels reduction work has been completed. Several thousand acres of prescribed underburning in the Pine Mountain and Camp 2 areas remain.

Snow Project – Approximately 6,000 acres of hazard fuels work in lodgepole pine stands south of Hosmer Lake and north of Crane Prairie Reservoir along Cascade Lakes Highway. Implementation on the Snow project began in 2010 and the project is nearing completion with only a few hundred acres of work remaining.

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.

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.

A classification committee identifies forestland-urban interface areas in each county. 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 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.

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 to areas within the the East & West CWPP boundary, Deschutes County has classified all private lands in the County under Senate Bill 360 and strongly recommends that residents comply with the standards of the legislation. These classifications are key components when considering the requirements under the Deschutes County burning and defensible space ordinances in the unprotected areas of the County such as in the community of Alfalfa.

In the Millican, Hampton and Brothers communities, ODF also works with local residents to form and support the Brothers/Hampton Rangeland Fire Protection Association to improve the wildland fire response.

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.

Deschutes County



In 2004, Deschutes County hired a County Forester to work collaboratively with adjacent land managers and stakeholders including private citizens, the US Forest Service, the Bureau of Land Management, Oregon Department of Forestry and Project Wildfire to reduce the potential for catastrophic fires that impact Deschutes County citizens.

The County Forester has made huge strides in those efforts including working with Oregon Department of Forestry to classify all lands within the County under the Oregon Forestland-Urban Interface Fire Protection Act.

Ever responding to the wildland fire awareness and protection needs in Deschutes County, the Board of County Commissioners approved two important ordinances. In 2009, the Board approved a burning ordinance that limited the “open burning of commercial waste, demolition material, domestic waste, industrial waste, land clearing debris or field burning from July 1 through November 1,” (Deschutes County Ordinance 8.20, Oct 16, 2009). The Board followed in 2011 with an approved defensible space ordinance that states “owners of unprotected lands shall comply” with the minimum defensible space standards for their classification under the Oregon Forestland-Urban Interface Fire Protection Act of 1997, also known as Senate Bill 360. (Deschutes County Ordinance 8.21, April 26, 2011).

In partnership with Deschutes County, Project Wildfire plans and implements two FireFree events every year in the spring and the fall. The spring days are completely free for residents to drop off yard debris at landfills and transfer stations throughout Deschutes County. The public has come to expect these FireFree events and there is a high level of participation each year. The events are an easy and cost effective way for homeowners to create and maintain their defensible space.



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 Project Wildfire, they are leading the charge to identify and assist neighborhoods in their Firewise and FireFree endeavors.

The Firewise Communities program recognizes communities who have demonstrated their commitment to wildfire preparedness. Through these steps, the Firewise Communities in Deschutes County have effectively lowered their wildfire risk. They have fostered collaboration between neighbors, increased awareness and their communities' ability to respond to wildfire.

Fire Adapted Communities (FAC)



This CWPP contributes to the over-arching framework and goal of the national Fire-Adapted Communities (FAC) program. The FAC program acknowledges that people and nature are increasingly threatened by fire, despite fire's natural, beneficial role. At the same time, firefighting costs are escalating and diverting money away from proactive land management. The solution is to make natural areas and communities more fire-ready so that fire can be allowed to play its natural role at a meaningful scale. This program is in direct alignment with the Cohesive Strategy goal of creating more fire-adapted communities.

The Fire Adapted Communities (FAC) initiative and the FAC Learning Network are also helping homeowners, communities and land managers in fire-prone areas prepare for inevitable fires -- to "live with fire" safely. Deschutes County participates in the Fire Adapted Communities Learning Network. This network encourages the development and sharing of best practices and innovations in order to accelerate the adoption of fire adapted community concepts nationwide. The Network currently supports eighteen hub organizations and pilot communities that have committed to implementing, assessing and sharing the work that they are doing to increase their communities' resilience to wildfire.

A fire-adapted community acknowledges and takes responsibility for its wildfire risk, and implements appropriate actions at all levels. Actions address resident safety, homes, neighborhoods, businesses and infrastructure, forests, parks, open spaces and other community assets. There is no end-point in becoming a fire-adapted community. Sustaining, growing and adapting strategies, partnerships and capacity through time are key. Visit www.fireadapted.org for more information.

Collaborative Forests Landscape Restoration Act – Deschutes Collaborative Forest Restoration Project



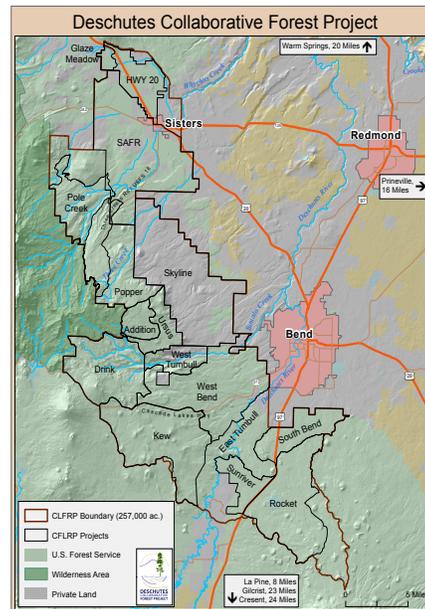
In 2010, a collaborative group of local agencies and organizations formed a proposal for funding a large, collaborative forest restoration and hazardous fuels reduction project on public lands managed by the Deschutes National Forest. This landscape level project is known as the Deschutes Collaborative Forest Project (DCFP). Under the federal Collaborative Forest Landscape Restoration Act (CFLRA), the proposal was approved for funding up to \$10 million over

the next ten years. The Steering Committee and several task-oriented sub-committees now provide input and recommendations to the Deschutes National Forest for projects located on the 257,000 acre landscape.

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. An amendment to the original boundary was approved in 2012 to include additional landscape acreage near Sunriver and Black Butte Ranch. Now portions of the \$10 million award can be expended across a broader area.

As restoration projects on this landscape are implemented, the prescriptions and guidelines identified in this 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 for the creation and realization of fire adapted communities along much of the west side of the county.

The Deschutes Collaborative Forest Project now has a website in place – www.deschutescollaborativeforest.org – along with a social media presence on Facebook to continue the stakeholder dialogue and educational outreach for this important landscape.



Private Landowner Accomplishments

Since the implementation of the original East & West CWPP, the communities of Brothers, Hampton, Alfalfa and Elk Lake have made tremendous strides in reducing the potential for catastrophic losses on private lands. Working with Deschutes County and Project Wildfire, they have participated in fuels reduction projects, FireFree and Sweat Equity programs annually. Since the 2012 revision of this plan, Alfalfa has formed a fire district to provide life safety services to their community.

Community Base Maps

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

- Alfalfa area WUI boundary; Brothers, Hampton, and Millican area WUI boundaries; Forest Service sites WUI Boundary; and all private and public land ownership;
- 2017 Deschutes County tax lot and population data; and
- Wildland fire starts in the last ten years

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

This CWPP addresses three project areas, which are profiled below:

- Alfalfa
- Brothers/Hampton/Millican
- Cascade Lakes/Forest Service Recreational Sites

For each area, the specific characteristics of each area were carefully considered, including population, geographic, and vegetative information. Each group also identified wildland urban interface (WUI) areas, within each project area according to the Healthy Forests Restoration Act.

Wildland Urban Interface Description

Generally, wildland urban interface (WUI) can be defined as any developed areas where conditions affecting the combustibility of both wildland and built fuels allow for the ignition and spread of fire through the combined fuel complex. 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 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 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.

Alfalfa

The Alfalfa region of Deschutes County encompasses 77,222 acres and includes the unincorporated community of Alfalfa. The residential area of Alfalfa is predominantly agricultural, used for grazing and farming.

Approximately 80% or 61,778 acres of the lands in the Alfalfa planning area are publicly owned and federally managed by Central Oregon Fire Management Service, the combined managing organization of the Bureau of Land Management and the US Forest Service.

The Alfalfa planning area is bordered on the eastern and northern sides by Crook County. The southern edge of the Alfalfa planning boundary meets State Highway 20 and Crook County. The western edge borders the Greater Bend CWPP boundary.

Located southeast of the Alfalfa planning area is the Badlands Wilderness Area. Approximately 30,000 acres of public land is reserved here as a wilderness area. The Badlands was created as a wilderness study area by a BLM resource area land management plan in 1981 and the Badlands Wilderness was designated by Congress in 2009. Current management activities restrict all motorized vehicles and consequently no mechanical treatment of fuels.

The Bureau of Land Management is currently working on a Fire Management Plan for the Badlands, which will allow a full range of management strategies including the monitoring of wildland fire.

Because Alfalfa WUI does not include any portion of the Badlands Wilderness Area, there will be no effect on fuels treatments within those zones.

Wildland Urban Interface Description – Alfalfa

For assessment and prioritization purposes, the Steering Committee confirmed the following WUI area, or Community at Risk, within the Alfalfa planning area:

Alfalfa – 48,587 acres with 403 structures. Resident population 993.

Brothers/Hampton/Millican

The Brothers/Hampton/Millican planning area encompasses 685,381 acres (1,070 square miles). There are 33 structures in this area and an estimated population of 83. This planning area is predominantly rangeland and agricultural with grazing and farming the principal land use.

The Bureau of Land Management manages 75% (514,035 acres) of the lands in the Brothers/Hampton/Millican planning area, while Oregon Department of State Lands manages 7% or 47,976 acres. The balance of the land, 117,610 acres, is privately owned.

The Lake County line borders the southern edge of the Brothers/Hampton/Millican planning boundary and the west side meets the Alfalfa planning area. The Deschutes/Crook County line borders the area to the east and north with a small portion of Harney County meeting the boundary on the east side.

Wildland Urban Interface Description – Brothers/Hampton/Millican

For assessment and prioritization purposes, the Steering Committee confirmed the following WUI area, or Community at Risk, within the planning area:

Brothers/Hampton/Millican – 401656 acres with 33 structures. Resident population 83.

Fuel Hazards and Ecotypes – Alfalfa & Brothers/Hampton/Millican

The majority of the vegetation in the these two defined WUIs and outlying areas includes:

- Western juniper
- Western sage
- Bitterbrush
- Cheat Grass & noxious weeds

Throughout the above planning areas, western juniper, western sage, bitterbrush, and areas of cheat grass are the predominant forest fuels along with a mosaic of agricultural and farm lands.

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. 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.



Western sage and a variety of sagebrush species are also found throughout the planning areas. Like western juniper, 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.

Bitterbrush occurs throughout the planning areas 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.

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.

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 both

wildland urban interface areas are rich with patches of bitterbrush that burn well on their own and provide fire-ready ladder fuels for taller tree stands.



Native Bunchgrass occurs throughout the planning areas on all aspects and elevations and is frequently found with all over story species in the landscape. Most bunchgrasses in our region are cool-season grasses; they accomplish most of their growth during cooler, moister weather before the summer drought. Fire has historically been an important natural disturbance process in bunchgrass communities and remains so today.

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 and other 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.

Cheatgrass provides a flammable link in the brush and forests vegetation types. It cures early in the fire season and ignites readily during dry periods because of its very fine structure that responds readily to changes in the atmospheric moisture, tendency to accumulate litter and invasive nature. Cheatgrass promotes more frequent fires by increasing the biomass and horizontal continuity of fine fuels that persist





during the summer lightning season. Its expansion has dramatically changed fire regimes and plant communities over vast areas of western rangelands by creating an environment where fires are easily ignited, spread rapidly, cover large areas, and occur frequently. Fire in these habitats can have severe effects on native species of plants and animals.

Historic fire seasons occurred between July and September, with the middle to end of August being the period of the most extreme fire conditions. Cheatgrass matures by July, while most native species it replaces mature in late August. With Cheatgrass dominant, wildfires tend to occur earlier in the season, when native perennials are more susceptible to injury by burning. These fires are larger and more uniform, with fewer patches of unburned vegetation remaining within burns. Cheatgrass thrives in grounds that have been disturbed by activities such as recreation or building. There are many areas within this CWPP Boundary that have Cheatgrass invading the landscape, in some cases creating ladder fuel adjacent to homes in the WUI. Cheatgrass is recognized as a noxious weed in Deschutes County.

The result of the fuel hazards and forest types in these WUIs and outlying areas is overstocked juniper fuel beds with an abundance of sage and ground fuels that contribute to a substantially elevated risk of wildland fires that are difficult to control. These conditions lead to fire behavior that produces flame lengths over eight feet with crowning, torching and ember showers 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.

Cascade Lakes & Forest Service Recreational Sites

This planning area encompasses 87,288 acres (136 square miles) of heavily forested ponderosa, mixed conifer and lodgepole pine. The forest floor is thick with bitterbrush, rabbitbrush, downed wood and other native and non-native species.

The western region of Deschutes County presents a unique challenge for the wildfire planning process. The Forest Service manages 651,704 acres or 88% of the land in this area, and allows for long-term leases by special use permittees at recreation sites. These include Crane Prairie Resort, Cultus Lake Resort, Elk Lake Resort, Twin Lakes Resort, Paulina and East Lakes, the Newberry National Volcanic Monument Lava Caves, Lava Forest, Sugar Pine Butte, and numerous other developed and dispersed recreation sites including trailheads to the wilderness areas in the Cascade Mountains.

These resorts and recreation sites are nationally recognized for outstanding camping, fishing and recreational opportunities. This area serves a transient population that numbers in the tens of thousands on any given weekend during the summer months, during the height of fire season. In the event of a wildfire, this area presents tremendous challenges for fire suppression, evacuation and life safety.

The eastern edge of the West planning boundary meets the west side of the Bend CWPP, Sunriver, Upper Deschutes River Coalition and Greater La Pine CWPP boundaries and the northern portion of the planning area is bordered by the Greater Sisters Country CWPP boundary. The western edge of the planning area is the Deschutes/Linn and Deschutes/Lane County lines while the Deschutes/Klamath County line flanks the southern portion.

Unlike other CWPPs in Deschutes County, the standard 1½-mile boundary around the WUI areas, or Communities at Risk, does not meet the planning area boundary. For planning and assessment purposes under this CWPP, “outlying areas” refers to the lands outside the WUI boundaries described below.

Wildland Urban Interface Description – Cascade Lakes & Forest Service Recreational Sites

For assessment and prioritization purposes, the Steering Committees confirmed the following WUI area, or Community at Risk, within the planning area:

Cascade Lakes & Recreational Sites – 87,288 acres with recreational structures. Permanent resident population 0.

The outlying areas that surround the WUI boundaries in the planning area include 650,710 acres with no structures and no population. These acres are not included in the assessments. There are over 1,000 individual developed campsites in the outlying areas that are not included either in the assessment.

Fuel Hazards and Ecotypes – Cascade Lakes & Forest Service Recreational Sites

The majority of the vegetation in this WUI and outlying areas includes:

- Ponderosa pine
- Lodgepole pine
- Mixed conifer
- Bitterbrush
- Riparian areas

Ponderosa pine is currently found throughout the West planning area. Historically, ponderosa pine forests contained more understory grasses and sporadic shrubs than are present today. These plants combined with fallen pine needles, formed fast-burning fuels that led to recurrent widespread burning. Frequent low-intensity ground fires that occurred every 11-15 years characterized the fire regime for ponderosa pine. 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, logging activity and highly effective wildland fire suppression, have significantly altered the ponderosa pine forest type. Removal of the larger “pumpkin” pines has dramatically decreased clumpy open forests, replacing them with more evenly spaced and smaller, younger “black-bark” forests. Similar to other species of conifer forest types, the suppression of fire has greatly increased the stocking levels 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.



Mature **lodgepole pine** in central Oregon is characterized by dense, uniform stands, an absence of other species, and a general lack of understory shrubs (although bitterbrush is often found with mature lodgepole pine). Lodgepole pine forests exhibit a moderate severity fire regime with a fire return interval between 60 and 80 years. Fire in lodgepole pine stands can be low, moderate, or severe over time and often result in full stand replacement.

In addition to fire, mountain pine beetles are worth noting as a significant disturbance agent as the two processes are linked. The fire cycle in lodgepole pine is 60-80 years and occurs as follows: a stand replacement fire leads to stand regeneration → Dead snags from the fire fall to the forest floor and fuels begin to accumulate → Windstorms blow more trees to the ground → Forest fires burn some of the downed logs and lead to heart rot in the standing trees → The heart rot stresses the stands and makes it vulnerable to attack by the mountain pine beetle → A major outbreak of the mountain pine beetle causes significant mortality and soon the conditions are ripe for another stand replacement fire.



Mixed conifer forests include mixed stands of ponderosa pine, Douglas-fir, grand fir, western larch, lodgepole pine, white fir and subalpine fir. Generally, these forests are adjacent to ponderosa pine stands at lower elevations and mountain hemlock or subalpine fir forests at the upper limits. Because mixed conifer forests span such a wide range of environments, they are divided into two types: warm and dry, and cool and moist. The warm, dry mixed conifer type is found at lower elevations, down to 800 feet in

some cases. As elevation increases, conditions become favorable for the cool and moist mixed conifer types. While elevation is a major factor in how these forest types are distributed, other factors such as soils, aspect, topographical features, and climate patterns also play a role.

Historically, mixed conifer stands experienced both low intensity and stand replacement fires at 35 – 100 year intervals.

Bitterbrush occurs throughout the planning area on all aspects and elevations and is frequently found with mature lodgepole pine. 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 West planning area is rich with patches of bitterbrush that burn well on their own and provide fire-ready ladder fuels for taller tree stands.



A **riparian area** is defined as the strip of moisture-loving vegetation growing along the edge of a natural water body. The exact boundary of the riparian area is often difficult to determine because it is a zone of transition between the water body and the upland vegetation. With eight bodies of water within the WUI areas in this planning region, riparian areas are of great concern from the wildland fire perspective. Vegetation types in these riparian areas vary

and include trees, shrubs, grasses, forbs and willows. The primary exposure from a wildland fire perspective is during the spring before “green up” has occurred and autumn when the vegetation has cured and is highly flammable. Riparian areas include all rivers and tributaries within the planning area.

The result of the fuel hazards and forest types in the Cascade Lakes & Forest Service Recreational Sites WUI and outlying areas is an overgrowth of trees, forest floor fuels and 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, torching and ember showers 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 Assessments of Risk

For the 2018 East & West Deschutes County Community Wildfire Protection Plan the Steering Committee relied on the ODF Assessment of Risk Factors to determine numerical value for the three (3) Communities at Risk.

ODF Assessment of Risk Factors

The Oregon Department of Forestry Assessment of Risk Factors is based on five categories of evaluation that include a variety of information designed to identify and evaluate wildland fire risk across Oregon: risk of wildfire occurrence, hazard, protection capability, human and economic values protected and structural vulnerability.

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 calculations are based on the number of wildland fire starts per 1,000 acres per ten years, as well as home density and ready ignition sources like dry lightning storms, debris burning and equipment use. A score is given for each evaluation with the total scores corresponding to a level of risk in each category.

The current condition of the vegetation on the federal and private lands adjacent to and within the WUI boundaries ranges from low to high, with an average rating of moderate based on the risk of fire occurring in these areas. The conditions pose an elevated risk of catastrophic loss from wildland fire. The communities of Bend, La Pine, Sunriver, Sisters, and Redmond and surrounding rural neighborhoods are also threatened by embers falling on the community from an adjacent 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.

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, effective wildland fire suppression has led to the extensive buildup of overstory and ground vegetation in the wildland urban interface. The hazard ratings follow for each WUI area.

A wildland fire could start within any of these areas or in any of the forested areas adjacent to or surrounding them. 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.

Values Protected

These ratings are based on home density per ten acres and community infrastructure such as power substations, transportation corridors, water and fuel storage, etc.

Based on Deschutes County tax records from 2016, there are 30 structures within the planning area on public lands. If a large wildland fire occurs in this area the loss to property and businesses could be in the hundreds of thousands. A larger concern is with the potential closure of US Highway 97, the only north/south interstate highway east of the Cascade Mountains in Oregon. The economic loss to the Central Oregon region could exceed \$3.5 million per day.

There is a total estimated population of 83 in the Brothers/Hampton/Millican WUI area and a total of 993 in the Alfalfa WUI areas. Like the Cascade Lakes WUI areas, although a wildland fire could cause a substantial economic loss to homes and businesses there, of great concern is the potential closure of State Highway 20, a major transportation route and known as the second busiest highway in Oregon.

Across the three project areas, the essential infrastructure at risk is minimal but includes roads, some utilities, one electrical sub-station, and the two transportation corridors mentioned above. Although the list is short, the cost to replace any of the essential infrastructure could be in the tens of millions.

Protection capability

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. In each of the three sub regions, there is one organized structural fire protection agency in Alfalfa. This is a major addition from the 2012 plan.

Some of the areas in the CWPP have wildland fire protection provided by Oregon Department of Forestry, the Forest Service and/or the BLM. 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.

Although the inter-agency cooperation is high in these areas, the fact remains they are outside any organized fire district, and response times to a fire are greatly reduced. The hazard rating for each WUI area within the three project areas is high, posing an extreme risk of catastrophic loss for residents and visitors in these areas. [RFPA]

Oregon Department of Forestry (ODF)

The Central Oregon District of the Oregon Department of Forestry does not provide structural fire protection in the planning areas. ODF does provide a wildland fire

response for fires burning on, or threatening private forestlands paying a Forest Patrol Assessment.

USDA Forest Service and USDI Bureau of Land Management

The Forest Service and BLM provide wildland fire protection on the federal lands within the Cascade Lakes/Recreational Sites, Alfalfa, and Brothers/Hampton/Millican planning areas. Together, with the Forest Service (USFS), 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 Coordination Center for fire and fuels operations, as well as safety and training issues for COFMS.

In total, COFMS provides the following resources: 26 engines, six initial attack hand crews, six prevention units, two dozers, two water tenders, one Type 3 helicopter, 35 smoke jumpers, two interagency Hotshot Crews (Redmond & Prineville), one Type 2 helicopter with 20 rappellers, one Type 1 helicopter, Central Oregon Dispatch Center (COIDC), Redmond Air Center, an air tanker base, a regional fire cache and required overhead staff positions. During fire season these resources are in high demand and may not always be available. Anytime an incident grows beyond the capability of the local resources a request may be made to ODF and to the [Pacific Northwest Coordination Center](#) for additional wildland fire fighting resources.

Brother Hampton Rangeland Patrol Association

The Brothers Hampton Rangeland Fire Patrol Association provides wildland fire protection on the private lands within Brothers/Hampton/Millican planning area. With an all volunteer staff, Brothers Hampton Rangeland Fire Patrol Association provides first response wildland coverage within its service district. Brothers Hampton Rangeland Fire Patrol Association utilizes a fleet of firefighting apparatus including 4 off-road brush engines and 1 water tender.

Brothers Hampton Rangeland Fire Patrol Association responded to 7 fire dispatches and provided mutual aide on 3 incidents in 2017.

Alfalfa Fire District

Alfalfa Fire District is the community's sole fire department. With an all volunteer staff, Alfalfa Fire District provides first response structural and wildland coverage within its 65 square mile service district. The District also employs one part time staff, the Fire Chief, and volunteers provide first response EMS coverage with Bend Fire and rescue holding the ASA for the community.

Alfalfa Fire District utilizes a fleet of firefighting and EMS apparatus including 3 structural engines, 4 off-road brush engines, 2 water tenders, and one EMS response vehicle.

The District is a party to the Central Oregon Mutual Aide Agreement. In the event of a major fire, the district 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 Bureau of Land Management. Conversely, when these agencies need assistance and the District has resources available, it assists them. Alfalfa Fire District is also party to an Automatic Aid Agreement with Bend Fire, US Forest Service, and Oregon Department of Forestry. Through a streamlined Computer Aided Dispatch (CAD) center, Alfalfa Fire District responds automatically to certain calls in areas up to 10 miles beyond the fire district.

Law Enforcement

Police services are provided by Deschutes County Sheriff. The Sheriff's Department also has responsibility for ensuring safe and orderly evacuations 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 with cell phone registry; and Sheriff's Department staff. The Countywide Disaster Plan and the County Department of Emergency Services address any issues relative to a major emergency.

Oregon State Police assists the federal agency law enforcement efforts and cooperates with Deschutes County for protection in the three planning areas.

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 and will respond to meet the needs of fire events.

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? The Steering Committees used local knowledge to determine the level of preparedness.

In the Cascade Lakes/Forest Service Recreational Sites planning area, preparedness for a wildland fire emergency is difficult to measure due to the transient nature of the visiting population. With no permanent residents, in the defined WUI areas the residents are at a strong disadvantage when it comes to preparation for and notification of an emergency.

In the Alfalfa and Brothers/Hampton/Millican planning areas, community preparedness is somewhat better. With a year round population, although relatively small at 1,076 a phone tree or similar neighbor-to-neighbor notification is the main vehicle of community contact. In both areas, most residents are aware of the high risk of fire in the area and have taken steps to educate themselves about those risks and reduce some of the potential for catastrophic loss.

The **American Red Cross** offers a gamut of tools to boost community preparedness such as community presentations on emergency preparedness kits. The Red Cross gives presentations to church groups, HOAs, citizen groups, etc. Red Cross plays a vital in emergency response during large wildfire events and in the recovery post fire. At any time of day or night, trained Red Cross volunteers respond to the scene of structural or wildland fires and provide food, shelter, and emotional support to those affected.

Structural Vulnerability

In recent years, many neighborhoods in the planning areas have taken steps to decrease the vulnerability of structures to wildland fire. Although attitudes and behaviors towards fire are changing in the Central Oregon area thanks to educational programs like FireFree and Firewise, the previous two decades of exponential population growth and continued development into the wildland urban interface present fresh challenges each year. The Steering Committees put high value on the importance of making structures and neighborhoods as safe from fire as possible.

Adequate water resources were not considered in this assessment and are addressed as a priority item under Action Plan and Implementation.

The following table – Table 2 – is a summary of the three 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.

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. **Rank:** An ordered numerical ranking based on the total points.

Table 2 – ODF Assessment of Risk – 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
Cascade Lakes/FS Sites	High 30	Extreme 68	Moderate 10	Moderate 17	Low 20	145	1
Alfa	Moderate 25	Extreme 61	Low 3	Moderate 22	Low 17	128	3
Brothers/Hampton/Millican	Moderate 25	Extreme 61	Moderate 10	Moderate 22	Low 17	135	2

After considering the risk assessment priorities the Steering Committee agreed that each rating area had different values driving the overall risk assessment score. Instead of assigning priority groups, the Steering Committee accepted Table 3 as the risk assessment priority and addressed the specific recommendations in the action plan for each rating area.

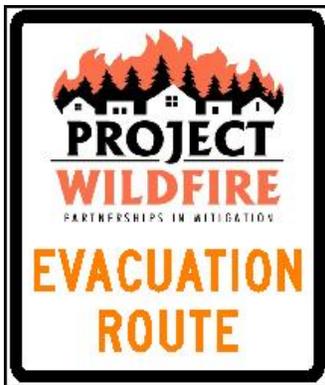
The representatives from Brothers Hampton Rangeland Fire Patrol Association specifically noted that the highest occurrence of ignition is from human activity on Highway 20 and lightning storms in the summer months.

Areas of special concern

Critical Transportation Routes

Critical Transportation Routes do not have a standard definition in Deschutes County. For purposes of this CWPP, the Steering Committees define Critical Transportation Routes as:

- all routes necessary for the support of routine flow of commerce to and/or through the greater planning areas,
- 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).



Deschutes County estimates an additional transient population of up to 40,000 people who visit recreation sites and utilize the transportation corridors in these planning areas. Critical transportation routes are a prime concern for those agencies responsible for fire suppression and evacuation.

The Steering Committee is also 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, neighborhoods within the Communities at Risk can take 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.

Wildland/Structural Fire Protection

Since the 2012 plan, Alfalfa residents voted to establish a structural fire district. This will provide vital life/safety services to residents within the Alfalfa Community At Risk. With multiple recent examples of significant structural losses, the Steering Committees expressed great concern for this issue and recognized the need for the strengthening of both structural and wildland protection within the CWPP planning boundary. This is a high priority for the Steering Committees and is addressed in the Action Plan and Implementation sections.

Water

Some of the WUI areas in this CWPP are either unprotected or unincorporated or both. This presents significant challenges in the event of a wildland fire as there are no water resources for fire suppression or protection. Adequate water resources were not considered in the assessment.

Hazard Reduction Recommendations and Preferred Treatment Methods

The Steering Committees agreed that the East & West Deschutes County Community Wildfire Protection Plan is a living tool that can be used for multiple outcomes. The following is an outline of the prioritized WUI areas, or Communities at Risk, as well as preferred treatments and goals for hazardous fuels reduction under this Community Wildfire Protection Plan.

Priorities and goals

With critical needs assessed and priority areas listed, the Steering Committees identified the following goals to meet the Purpose on page one of the 2017 East & West Deschutes County CWPP:

- Reduce hazardous fuels on public lands
- Reduce hazardous fuels on private lands (both vacant and occupied)
- Reduce structural vulnerability
- Increase education and awareness of wildland fire threat
- Identify, improve and protect critical transportation routes

Preferred treatments and goals for hazardous fuels reduction

The standard of the East & West Deschutes County CWPP is to decrease the risk of uncharacteristic 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.

In general, the goal is to return the public lands to a resilient condition, resembling the forests of the past and provide for a healthy, fire resilient landscape that supports the social, economic and ecological values of Central Oregon area residents and visitors. In mixed conifer and lodgepole stands however, historical conditions still present a highly volatile and fire prone landscape. In these stands, the goal is also to reduce the potential for extreme fire behavior for firefighter and public safety.

The Steering Committees recognize the effectiveness and value of maximizing treatment efforts in areas that are adjacent to federal, state, 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 WUI in each of the project areas.

Federal and state owned lands

Federal lands are managed by the US Forest Service and the Bureau of Land Management and occupy 85% of lands in the planning area, located in all of the project areas.

State owned lands 3% of the planning area but include blocks of land in the Alfalfa and Brothers/Hampton/Millican planning areas.

It is the intent of the Steering Committees that each of the three project areas 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 the potential of extreme fire behavior by reducing fuel loads to that which can produce flame lengths of less than four feet:

- Within a ¼ mile buffer of adjacent WUI areas. Treatments should begin here and increase in ¼ mile increments until the WUI boundary is reached.
- Within 500 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 Prineville Ranger District, Bureau Land Management (PRD-BLM) 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

Private lands occupy 12% of the three planning areas. This is privately owned land and is considered developed, or in rare cases intermixed with development. The County owns approximately 2,585 acres in this planning area. The Steering Committees recommend that County owned lands be treated in the same manner as privately owned lands.

Private lands with structural improvements

All private lands in Deschutes County are classified under the Oregon Forestland – Urban Interface Fire Protection Act of 1997, also known as Senate Bill 360. On private lands with structural improvements, the goal is for each structure to meet the standards identified under Senate Bill 360 for its particular classification rating.

Although the Oregon Department of Forestry does not provide wildland fire protection in the CWPP planning area, Deschutes County has classified each area under Senate Bill 360 (page 9) 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.

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.

Recommendations to Reduce Structural Vulnerability

Structural Vulnerability

There are structures spread across the rating areas in this CWPP. Structural vulnerability is addressed as a required evaluation under the ODF Assessment of Risk but more importantly, to assist local residents in preparing their properties against the threat of wildland fire. In addition, special use permittees can use the recommendations to address issues of structural vulnerability surrounding recreation sites and resorts.

Based on the assessment of structural vulnerability for the ODF Assessment of Risk, Table 3 provides recommendations for property owners to reduce their homes' probability of igniting.

Table 3 – Recommendations to Reduce Structural Vulnerability



How can I reduce my home's probability of igniting?

- Increase Homeowner education with programs such as, FireFree, Firewise, & Senate Bill 360
- Establish additional evacuation routes, sign and maintain evacuation routes
- Identify, upgrade and maintain any roads <20 feet in width
- Produce & install reflective signs for any non-reflective that may exist
- Maintain fuel reduction projects annually

Table 4 provides a checklist for residents seeking to reduce the risk of catastrophic losses to their homes and properties. The list is compiled from tips and suggestions from the FireFree and Firewise programs, which promote homeowner responsibility for reducing fire hazards on their property. The Steering Committee approves this combined checklist. More information about these programs can be found at www.firefree.org and www.firewise.org.

Table 4 – 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 the density of nearby trees.
- Clear wood piles and building materials at least 20 feet away from your home.
- Remove low tree branches and shrubs. Trim up juniper and other trees at least 4 feet from the ground. Remove “ladder fuels” among trees.
- Keep grass and weeds cut low.
- Remove all branches and limbs that overhang roofs.
- 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 or fire resistant siding.
- Keep decks free of flammable lawn furniture, toys, doormats, etc.
- Choose fire-resistant roofing materials like metal, tile or composition shingles.
- Trim vegetation along driveways a minimum distance of 14’ wide x 14’ high for fire trucks.
- Choose fire resistive plants. Visit www.extension.oregonstate.edu/deschutes to view *Fire-Resistant Plants for the Home Landscape*.
- Use alternatives to burning debris like composting or chipping.
- If burning debris - do not burn building materials. Alfalfa residents should call their Fire District to see if burning is allowed on that day.

Other Recommendations

Education

As stated in the Purpose of the East & West Deschutes County CWPP, the goals for this planning effort are to:

- Instill a sense of personal responsibility for taking preventive 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. The rapid influx of new residents and visitors over the last decade is just one reason the Steering Committee places high value on the education of area residents and landowners. Many new residents are unfamiliar with wildland fire and have limited experience with issues like defensible space. Residents and visitors will continue to benefit from clear examples of what fire resilient forests and communities look like as well as easy access to resources that help them take action.

There are several opportunities to enhance educational efforts in the project areas. Oregon Department of Forestry, the Central Oregon Fire Prevention Cooperative, and Project Wildfire all provide wildland fire prevention programs through a variety of individual and collaborative efforts.

Some homeowners in the Alfalfa and Brothers/Hampton/Millican areas are well organized through homeowners associations, rangeland fire associations, and other groups. These groups provide valuable ongoing education to their populations about the risks of catastrophic wildland fire and ways to improve their protection. The Steering Committees support these groups and encourages their formation in each project area to address the educational needs of current and incoming residents and visitors about living in a fire adapted environment and increasing personal responsibility for creating defensible space.

The Steering Committee also recommends support for projects that enhance a community's ability to communicate necessary information in the event of a wildfire. Programs that develop and maintain neighborhood phone trees or communication lists that identify neighbors who may need additional assistance during an evacuation are encouraged.

The creation of fire adapted communities is a continued goal of the East & West CWPP. As residents employ the recommendations in this CWPP, fire adapted communities will

begin to surface. A 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.

Deschutes County and Project Wildfire 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.

Utilizing the information in Tables 4 and 5, property owners are strongly encouraged to learn more about how they can reduce the hazards on their own property. Local residents are encouraged to contact Project Wildfire at (541) 322-7129 for information. Residents may also find additional information on how they can reduce hazards and protect themselves at www.firefree.org and www.firewise.org.



Figure 1

Action Plan and Implementation

The East & West Deschutes County CWPP identifies priorities and strategies for reducing hazardous wildland fuels while improving forest health, supporting local industry and economy, and improving fire protection capabilities. Addressing all three of these goals maintains local residents commitment to aligning with national goals, which are outlined in the Cohesive Strategy.

The Steering Committees recognize that the East & West Deschutes County CWPP is a living tool with multiple applications. The value of the action plan is to establish measureable activities or actions that will further the goals outlined by the CWPP. The following actions are intended to assist individuals and agencies in the implementation of this CWPP across the planning boundary.

Improving Fire Protection Capabilities

Immediately following the acceptance and signed approval of this plan, the Steering Committee will forward copies of the 2018 East & West Deschutes County 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
- Deschutes County

Since the update in 2012, Alfalfa established a volunteer fire department that is addressing the structural and wildland fire issues in that rating area. The Steering Committees encourages local residents to continue working with county and state officials to develop an organized wildland and structural response to those unprotected areas within the CWPP boundary.

The Steering Committee encourages Brother Hampton RFPA & Alfalfa Fire District to join the national Ready Set Go program to leverage small educational grants and free educational materials.

The Steering Committees also encourage local residents, special use permittees and Deschutes County to identify and assess the water resources available for fire suppression and protection in the WUI areas. The Steering Committees will make recommendations for projects to improve and ensure adequate water resources.

The intention of the Steering Committees is to engage in continued dialogue with the communities in each project area and adjacent landowners to implement the CWPP and accomplish hazardous fuels reduction projects that address the prioritized WUI areas in the most expeditious manner possible. The Steering Committees recognize the effectiveness and value of maximizing treatment efforts in areas that are adjacent to

federal, state, or private projects and recommend that future projects consider these benefits when selecting areas for treatment.

The Steering Committee will work with Deschutes County, and the Oregon Department of Transportation to identify and map existing transportation and evacuation routes in each WUI area. The Steering Committee will assist in conducting further assessments to determine the evacuation needs of each Community at Risk and identify potential projects to develop new routes and/or improving existing routes.

The Steering Committee encourage exploratory discussions with fire agencies and local landowners that address the issue presented when effective evacuation from an area is not available. Are “sheltering in place” and safe staging areas an option?

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

The Steering Committee will work with local fire and land management agencies, Deschutes County and residents to identify, map and make recommendations to improve potential water resources that may be utilized to contribute to fire suppression during a wildland fire.

Working Towards a more Fire Adapted Community

The intention of the Steering Committee is to engage in continued discussions with landowners to facilitate fuels reduction projects on private lands utilizing the list of prioritized WUI areas. These actions can be accomplished through education activities or grants for specific projects on private lands. Specific action items for each Community at Risk are listed below in Table 5.

The Steering Committee are 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 catastrophic wildland fire within the WUI areas. Tables 4 and 5 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 in the WUI areas.

The Steering Committee will work with Project Wildfire to review the educational programs available and identify potential projects for implementation in those Communities at Risk that have limited programs or that do not already participate in fire prevention education activities. 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.

One important piece of a Fire Adapted Community is preparing for the recovery process after a wildland fire occurs. There are many resources for residents who are recovering

from a wildland fire that can impact their small business and home. Building community and business resiliency is the key to being fully adapted to fire. An After the Fire resources page can be found in the appendices of this document.

Table 5 –Action Items for Residents

Community at Risk	Specific Action Item
<p>Cascade Lakes/Forest Service Recreational Sites</p>	<p>This rating area encompasses a vast amount of land with varying vegetation types. Strategic fuel projects next to critical infrastructure will be the key to success.</p> <p>Ensuring the access & evacuation routes are clear of vegetation will ensure access for emergency personnel during large wildfires and/or other emergency incidents.</p> <p>Residents/Visitors should develop evacuation kits for their family in case of a large wildfire.</p>
<p>Alfalfa</p>	<p>The presence of juniper & numerous brush species still create a high potential for crown fires. Residents should reduce ladder fuels and thin where appropriate to reduce fire behavior.</p> <p>There is typically a longer response time by emergency personnel.</p> <p>Ensuring the access & evacuation routes are clear of vegetation will ensure access for emergency personnel during large wildfires and/or other emergency incidents.</p> <p>Residents should develop evacuation kits for their family in case of a large wildfire.</p>
<p>Brothers/Hampton/Millican</p>	<p>The presence of juniper & numerous brush species still create a high potential for crown fires. Residents should reduce ladder fuels and thin where appropriate to reduce fire behavior.</p> <p>There is an extended response time by emergency personnel in emergency situations.</p> <p>Ensuring the access & evacuation routes are clear of vegetation will ensure access for emergency personnel during large wildfires and/or other emergency incidents.</p> <p>Residents should develop evacuation kits for their family in case of a large wildfire.</p> <p>Residents are encouraged to prepare any large animals for fire conditions and/or evacuation</p>

The Steering Committees 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.

Restoring Resilient Landscapes

This portion of the action plan is especially pertinent to the Cascade Lakes/Forest Service Recreational Sites rating area.

As stated above, immediately following the acceptance and signed approval of this plan, the Steering Committee will forward copies of the 2017 East & West Deschutes County CWPP available to all public land managers and public safety officials. The intention of the Steering Committee is to engage in continued discussions with the local community and adjacent landowners to implement the CWPP and accomplish hazardous fuels reduction projects that address the Communities at Risk in the most expeditious manner possible.

Significant fuels reduction projects continue to improve the overall health and fire resiliency of the landscape. Achieving a resilient healthy landscape 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 prescribed burning component of the project may not occur for another year while the land recovers from the thinning and mowing; the time also produces adequate shrub content and allows for the slash to cure, to support prescribed fire activities.

Therefore, the Steering Committee recognizes that although significant fuels reduction work has been completed the need continues on the landscape as a whole. The Steering Committee supports the ongoing planning and treatment process on public lands, especially an increase in use of prescribed fire. There are multiple prescribed fire techniques that land managers may use to best suit the area they are working within. The ultimate goal is to restore low intensity fire, or also known as a broadcast burn or underburn, to the local ecosystem, which has been historically dependent on fire for its health.

Treating ground fuels is a critical component of any effort designed to reduce fire threat, and it has added ecological benefits, such as recycling nutrients. Once an area, or unit, has been thinned and the slash has been treated, the site can be broadcast burned. Fire practitioners prepare the area by constructing firelines and/or use natural breaks such as roads or existing trails for containment lines for the prescribed burn. Where site objectives dictate that standing dead trees and large downed woody material need to be protected, they can be either hand lined or otherwise excluded from the burn block. Extra protection measures may not be necessary for many fire-tolerant cultural or archaeological sites: treating these areas with prescribed fire has the advantage of protecting them from emergency suppression activities during a wildfire. Generally, the

target flame length is under four feet, although some sites require a “hotter” burn to achieve the resource objectives.

Historically, large-scale broadcast burning has occurred in the spring. As the demands to boost prescribed fire use increase, utilizing as many “burn windows”, or days when the weather conditions are favorable, will be a critical piece in achieving restoration goals. This, however, is a more challenging time to use prescribed fire and will depend on the availability and preparedness of appropriate resources and weather.

Burn operations usually begun by mid-morning following the break-up of the nighttime temperature inversion and the establishment of the daytime wind pattern. Completion of ignition should be targeted early enough to ensure adequate smoke dispersal prior to the onset of cooler nighttime temperatures.

Extensive public notification is an essential element of the program. The public can contact the Deschutes National Forest if they have health concerns that are exacerbated by smoke so that they can be notified prior to a prescribed burn. The Deschutes National Forest uses social media; especially [Twitter](#), their handle is [@CentralORFire](#) and [Central Oregon Fire](#), www.centraloregonfire.org, to notify local residents of prescribed burns on the Forest. Fire personnel also rely on their local partners to notify and educate the local public through educational programs with civic groups, service clubs, homeowner associations, etc.

Once thinning, slash treatment, and first under-burning have been completed, the treated area constitutes an effective fuel-break for the next several years. Follow-up thinning and maintenance burns must be scheduled as necessary to ensure the treated areas remain free of the risk of catastrophic wildfire. Adequate access must be assured, not only to conduct needed follow-up treatments, but also to permit rapid response of fire suppression forces. For our area, it is not a question of if a wildfire will occur, but when, where, and how much damage will result. Working with residents before the wildfire, not during or after it, is preferred. Experience with wildfires burning in previously treated areas demonstrates the following:

- Improved access for fire fighters and apparatus
- Increased efficiency when locating and constructing firelines
- Easier detection and suppression of spot fires
- Decreased mop up time and effort
- Reduced fire intensity, torching and mortality
- Improved public safety
- Reduction of loss
- Reduction of air emissions

Another benefit, particularly in interface areas, is reduced trash accumulation through elimination of hiding cover necessary for transient camps and party spots.

Evaluation and Monitoring

The Steering Committees faced a complex task in the development of the East & West Deschutes County Community Wildfire Protection Plan. Implementing and sustaining these efforts will require a significant commitment. Building a collaborative and cooperative environment with residents, community-based organizations, local government and the public land management agencies have been the first step in reducing the risk of loss from wildland fire. The Steering Committees pledge to maintain this cooperation with the public and stakeholders over the long-term with the commitment of all the partners involved.

At a minimum, the East & West CWPP Steering Committee shall include: representatives from Alfalfa Fire District; representatives from Brothers/Hampton Rural Fire Patrol Association; representatives from Oregon Department of Forestry (ODF); representatives from Bureau of Land Management (BLM); representatives from the US Forest Service; the Deschutes County Forester; and the Program Director from Project Wildfire, along with members of the public.

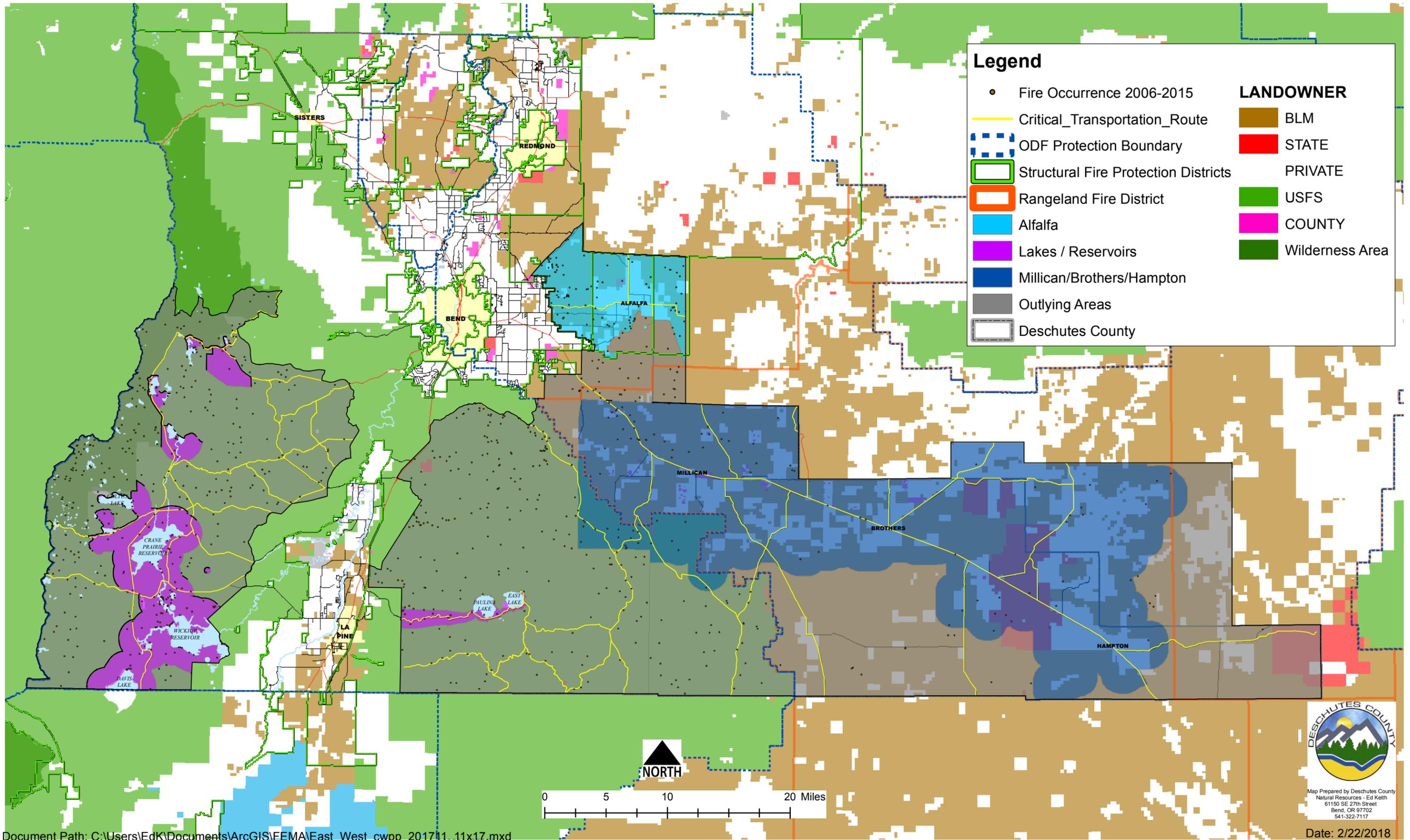
The Steering Committee agrees that the East & West Deschutes County Community Wildfire Protection Plan will be a living document, intended to promote fuels reduction, educational, and other projects to decrease overall risks of loss from wildland fire; updated and revisited regularly to address its Purpose.

Project Wildfire will convene the Steering Committee as often as the Steering Committee deems necessary to implement and review the East & West Deschutes County 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 a Steering Committee each year. As members of the Steering Committees change, Project Wildfire will ensure that it maintains a balanced representation of agency and public members, with a continued focus on inviting interested parties and stakeholders to participate in the review and planning process.

EAST WEST DESCHUTES COUNTY COMMUNITY WILDFIRE PROTECTION PLAN

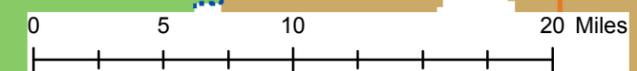


Legend

- Fire Occurrence 2006-2015
- Critical_Transportation_Route
- - - ODF Protection Boundary
- ▭ Structural Fire Protection Districts
- ▭ Rangeland Fire District
- ▭ Alfalfa
- ▭ Lakes / Reservoirs
- ▭ Millican/Brothers/Hampton
- ▭ Outlying Areas
- ▭ Deschutes County

LANDOWNER

- ▭ BLM
- ▭ STATE
- ▭ PRIVATE
- ▭ USFS
- ▭ COUNTY
- ▭ Wilderness Area



Map Prepared by Deschutes County
 Natural Resources - Ed Keith
 61150 SE 27th Street
 Bend, OR 97702
 541-322-7117

Date: 2/22/2018

Cascade Lakes/Forest Service Recreational Sites

87,288 acres 12 structures 30 population

1. What is the likelihood of a fire occurring?

2017

Fire occurrence (per 1000 acres per 10 years) 0 – 0.1 (low) 5 points 0.1 – 1.1 (moderate) 10 points 1.1+ (high) 20 points	20 (1.8)
Ignition Risk – Home Density (homes per 10 acres) 0 - 0.9 (rural) 0 points 1 – 5 (suburban) 5 points 5.1+ (urban) 10 points	0 (0.0)
Ignition Risk – Other Factors Present < 1/3 present 0 points 1/3 – 2/3 present 5 points > 2/3 present 10 points	10
Total points:	30
Risk category rating: 0 – 13 points = Low 13 – 27 points = Moderate 27 – 40 points = High	
Rating:	High

Other factors: power lines or stations, logging, construction, debris burning, mining, dispersed or developed camping, off-road vehicle use, flammables, fireworks, dry grass mowing, woodcutting, equipment use, target shooting, military training, arson, cultural activities, railroad, highways, county or public access road, camps/resorts/stables, schools, business, ranch or farm, lightning prone, dumping

2. Hazards

Cascade Lakes/Forest Service Recreational Sites

2017

Weather Zone 3	40
Topography - Slope 0 – 25% 0 points 26 – 40% 3 points 41% + 5 points	0
Topography - Aspect N, NW, NE 0 points W, E 3 points S, SW, SE 5 points	5
Topography - Elevation 5001 feet + 0 points 3501 – 5000 feet 1 point 0 – 3500 feet 2 points	1
Vegetation (SB 360 definition) Non-forest 0 points HV 1 5 points HV 2 15 points HV 3 20 points	17
Crown Fire Potential Passive - Low 0 points Active – Moderate 5 points Independent – High 10 points	5
Total points:	68
Risk category rating: 0 – 9 points = Low 10 – 40 points = Moderate 41 – 60 points = High 61 – 80 points = Extreme	
Rating:	Extreme

HV 1 – produces flame lengths up to 5 feet with very little spotting, torching or crowning.
HV 2 – produces flame lengths 5-8 feet high with sporadic spotting, torching or crowning.
HV 3 – produces flame lengths over 8 feet with frequent spotting, torching and crowning.

3. Protection Capabilities

Cascade Lakes/Forest Service Recreational Sites

2017

Fire response		
Organized structural response < 10 minutes	0 points	8
Inside fire district, response > 10 minutes	8 points	
No structural protection, only wildland response	15 points	
No structural or wildland protection	36 points	
Community Preparedness		
Organized stakeholder group, community fire plan, phone tree, or mitigation efforts	0 points	2
Primarily agency efforts (mailings, FireFree, etc.)	2 points	
No efforts	4 points	
Total points:		10
Protection Capability Category Rating:		
0 – 9 points = Low		
10 – 16 points = Moderate		
17 – 40 points = High		
Rating:		Moderate

4. Values Protected: Human and economic

Homes (density per 10 acres)		
0.1 – 0.9 (rural)	2 points	2 (0.0)
1 – 5 (suburban)	15 points	
5.1 + (urban)	30 points	
Community Infrastructure		
None	0 points	15
One present	10 points	
More than one present	20 points	
Total points:		17
Values Protected Category Rating:		
0 – 15 points = Low		
16 – 30 points = Moderate		
31 – 50 points = High		
Rating:		Moderate

Community infrastructure – Power substations and corridors, transportation corridors, municipal watersheds, water storage and distribution, fuel storage, health care facilities, landfills and waste treatment, schools, churches, community centers, and stores.

Brothers/Millican/Hampton

401,656 acres 33 structures 83 population

1. What is the likelihood of a fire occurring?

2017

Fire occurrence (per 1000 acres per 10 years) 0 – 0 .1 (low) 5 points 0.1 – 1.1 (moderate) 10 points 1.1+ (high) 20 points	10 (0.2)
Ignition Risk – Home Density (homes per 10 acres) 0 - 0 .9 (rural) 0 points 1 – 5 (suburban) 5 points 5.1+ (urban) 10 points	0 (0.0)
Ignition Risk – Other Factors Present < 1/3 present 0 points 1/3 – 2/3 present 5 points > 2/3 present 10 points	5
Total points:	15
Risk category rating: 0 – 13 points = Low 13 – 27 points = Moderate 27 – 40 points = High	
Rating:	Moderate

Other factors: power lines or stations, logging, construction, debris burning, dispersed or developed camping, off-road vehicle use, flammables, fireworks, dry grass mowing, woodcutting, equipment use, target shooting, arson, cultural activities, highways, county or public access road, ranch or farm, lightning prone, dumping

2. Hazards

Brothers/Millican/Hampton

2017

Weather Zone 3	40
Topography - Slope 0 – 25% 0 points 26 – 40% 3 points 41% + 5 points	0
Topography - Aspect N, NW, NE 0 points W, E 3 points S, SW, SE 5 points	5
Topography - Elevation 5001 feet + 0 points 3501 – 5000 feet 1 point 0 – 3500 feet 2 points	1
Vegetation (SB 360 definition) Non-forest 0 points HV 1 5 points HV 2 15 points HV 3 20 points	12
Crown Fire Potential Passive - Low 0 points Active – Moderate 5 points Independent – High 10 points	3
Total points:	61
Risk category rating: 0 – 9 points = Low 10 – 40 points = Moderate 41 – 60 points = High 61 – 80 points = Extreme	
Rating:	Extreme

- HV 1** – produces flame lengths up to 5 feet with very little spotting, torching or crowning.
- HV 2** – produces flame lengths 5-8 feet high with sporadic spotting, torching or crowning.
- HV 3** – produces flame lengths over 8 feet with frequent spotting, torching and crowning.

3. Protection Capabilities

Brothers/Millican/Hampton

2017

Fire response Organized structural response < 10 minutes 0 points Inside fire district, response > 10 minutes 8 points No structural protection, only wildland response 15 points No structural or wildland protection 36 points	10
Community Preparedness Organized stakeholder group, community fire plan, phone tree, or mitigation efforts 0 points Primarily agency efforts (mailings, FireFree, etc.) 2 points No efforts 4 points	0
Total points:	10
Protection Capability Category Rating: 0 – 9 points = Low 10 – 16 points = Moderate 17 – 40 points = High	
Rating:	Moderate

4. Values Protected: Human and economic

Homes (density per 10 acres) 0.1 – 0.9 (rural) 2 points 1 – 5 (suburban) 15 points 5.1 + (urban) 30 points	2 (0.0)
Community Infrastructure None 0 points One present 10 points More than one present 20 points	20
Total points:	22
Values Protected Category Rating: 0 – 15 points = Low 16 – 30 points = Moderate 31 – 50 points = High	
Rating:	Moderate

Community infrastructure – Power substations and corridors, transportation corridors, municipal watersheds, water storage and distribution, fuel storage, health care facilities, landfills and waste treatment, schools, churches, community centers, and stores.

Alfalfa

48,585 acres 397 structures 993 population

1. What is the likelihood of a fire occurring?

2017

Fire occurrence (per 1000 acres per 10 years) 0 – 0.1 (low) 5 points 0.1 – 1.1 (moderate) 10 points 1.1+ (high) 20 points	20 (2.2)
Ignition Risk – Home Density (homes per 10 acres) 0 - 0.9 (rural) 0 points 1 – 5 (suburban) 5 points 5.1+ (urban) 10 points	0 (0.08)
Ignition Risk – Other Factors Present < 1/3 present 0 points 1/3 – 2/3 present 5 points > 2/3 present 10 points	5
Total points:	25
Risk category rating: 0 – 13 points = Low 13 – 27 points = Moderate 27 – 40 points = High	
Rating:	Moderate

Other factors: power lines or stations, logging, construction, debris burning, dispersed or developed camping, off-road vehicle use, flammables, fireworks, dry grass mowing, woodcutting, equipment use, target shooting, arson, cultural activities, county or public access road, ranch or farm, lightning prone, dumping

2. Hazards

Alfalfa

2017

Weather Zone 3	40
Topography - Slope 0 – 25% 0 points 26 – 40% 3 points 41% + 5 points	0
Topography - Aspect N, NW, NE 0 points W, E 3 points S, SW, SE 5 points	5
Topography - Elevation 5001 feet + 0 points 3501 – 5000 feet 1 point 0 – 3500 feet 2 points	1
Vegetation (SB 360 definition) Non-forest 0 points HV 1 5 points HV 2 15 points HV 3 20 points	12
Crown Fire Potential Passive - Low 0 points Active – Moderate 5 points Independent – High 10 points	3
Total points:	61
Risk category rating: 0 – 9 points = Low 10 – 40 points = Moderate 41 – 60 points = High 61 – 80 points = Extreme	
Rating:	Moderate

HV 1 – produces flame lengths up to 5 feet with very little spotting, torching or crowning.

HV 2 – produces flame lengths 5-8 feet high with sporadic spotting, torching or crowning.

HV 3 – produces flame lengths over 8 feet with frequent spotting, torching and crowning.

3. Protection Capabilities

Alfalfa

2017

Fire response Organized structural response < 10 minutes 0 points Inside fire district, response > 10 minutes 8 points No structural protection, only wildland response 15 points No structural or wildland protection 36 points	3
Community Preparedness Organized stakeholder group, community fire plan, phone tree, or mitigation efforts 0 points Primarily agency efforts (mailings, FireFree, etc.) 2 points No efforts 4 points	0
Total points:	3
Protection Capability Category Rating: 0 – 9 points = Low 10 – 16 points = Moderate 17 – 40 points = High	
Rating:	Low

3. Values Protected: Human and economic

Homes (density per 10 acres) 0.1 – 0.9 (rural) 2 points 1 – 5 (suburban) 15 points 5.1 + (urban) 30 points	2 (0.08)
Community Infrastructure None 0 points One present 10 points More than one present 20 points	20
Total points:	22
Values Protected Category Rating: 0 – 15 points = Low 16 – 30 points = Moderate 31 – 50 points = High	
Rating:	Moderate

Community infrastructure – Power substations and corridors, transportation corridors, municipal watersheds, water storage and distribution, fuel storage, health care facilities, landfills and waste treatment, schools, churches, community centers, and stores.

Cascade Lakes/Forest Service Recreational Sites

Structural Vulnerability Assessment

Flammable roofing Non-wood roofing Wood roofing	2
Defensible space Meets local requirements Non-compliant with local standards	1
Ingress/egress Two or more roads in/out One road in/out	4
Road width Greater than 24 feet 24 – 20 feet Less than 20 feet	4
All-season road condition Surfaced with grade less than 5% Surfaced with grade more than 5% Non-surfaced with grade less than 5% Non-surfaced with grade more than 5% Other than all-season	4
Fire service access Less than 300 feet with turnaround More than 300 feet with turnaround Less than 300 feet without turnaround More than 300 feet without turnaround	5
Street signs Present with 4” reflective characters Absent	0
Total	20
Category rating for each column: 0 – 30 = Low 31 – 60 = Moderate 61 – 90 = High	Low

Brothers/Millican/Hampton

Structural Vulnerability Assessment

Flammable roofing Non-wood roofing Wood roofing	1
Defensible space Meets local requirements Non-compliant with local standards	5
Ingress/egress Two or more roads in/out One road in/out	3
Road width Greater than 24 feet 24 – 20 feet Less than 20 feet	2
All-season road condition Surfaced with grade less than 5% Surfaced with grade more than 5% Non-surfaced with grade less than 5% Non-surfaced with grade more than 5% Other than all-season	1
Fire service access Less than 300 feet with turnaround More than 300 feet with turnaround Less than 300 feet without turnaround More than 300 feet without turnaround	4
Street signs Present with 4” reflective characters Absent	1
Total	17
Category rating for each column: 0 – 30 = Low 31 – 60 = Moderate 61 – 90 = High	Low

Alfalfa

Structural Vulnerability Assessment

Flammable roofing Non-wood roofing Wood roofing	1
Defensible space Meets local requirements Non-compliant with local standards	5
Ingress/egress Two or more roads in/out One road in/out	3
Road width Greater than 24 feet 24 – 20 feet Less than 20 feet	2
All-season road condition Surfaced with grade less than 5% Surfaced with grade more than 5% Non-surfaced with grade less than 5% Non-surfaced with grade more than 5% Other than all-season	1
Fire service access Less than 300 feet with turnaround More than 300 feet with turnaround Less than 300 feet without turnaround More than 300 feet without turnaround	4
Street signs Present with 4” reflective characters Absent	1
Total	17
Category rating for each column: 0 – 30 = Low 31 – 60 = Moderate 61 – 90 = High	Low

Glossary of Terms

- **Assessment of Risk Factors:** Risk Assessment process developed by the Oregon Department of Forestry that allows for an objective identification and wildfire risk assessment of Oregon's Communities that is appropriate at all levels of resolution, i.e. statewide, community to individual tax lot. Includes five factors that sum to an overall score to assess and compare risk: risk, hazard, protection capabilities, values protected and structural vulnerability.
- **Cohesive Strategy:** In 2009, Congress passed the Federal Land Assistance, Management, and Enhancement (FLAME) Act and called for a National Cohesive Wildland Fire Management Strategy, also known commonly as the Cohesive Strategy, to address wildland fire related issues across the nation in a collaborative, cohesive manner. The Cohesive Strategy was finalized in 2014 and represents the evolution of national fire policy: To safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a Nation, live with wildland fire. The primary, national goals identified as necessary to achieving the vision are: **Resilient landscapes:** Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives. **Fire-adapted communities:** Human populations and infrastructure can withstand a wildfire without loss of life and property. **Wildfire response:** All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.
- **Crown Fires:** A fire that advances from top to top of trees or shrubs more or less independent of a surface fire. Crown fires are sometimes classed as running or dependent to distinguish the degree of independence from the surface fire.
- **Defensible Space:** Defensible Space, in the context of fire control, is the natural and landscaped area around a structure that has been maintained and designed to reduce wildfire danger by using vegetation that is fire resistant.
- **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. This landscape level project is known as the Deschutes Collaborative Forest Project (DCFP).
- **Dispersed Campgrounds & Recreational Sites:** Campsites or recreational sites members of the public use that are outside of a designated campground or developed recreation site. These sites do not have trash removal or facilities such as tables and fire pits. For more information on how to use dispersed recreational sites visit: <http://www.fs.usda.gov/>

- **Fire Adapted Community:** One of the tenets of the Cohesive Strategy. A Fire Adapted is one that acknowledges and takes responsibility for its wildfire risk, and implements appropriate actions at all levels. Deschutes County is a pilot community for the Fire Adapted Communities Learning Network. For more information visit: <http://www.facnetwork.org>
- **Fire Break:** A gap in vegetation or other combustible materials that acts as a barrier to slow or stop the progress of a wildfire.
- **Fire Prone Area:** A geographic area that can support a wildfire due to weather and vegetation.
- **Fire Resiliency:** A landscape or geographic location that is able to withstand wildfire without suffering catastrophic effects, such as loss of life, home loss or damage and/or environmental damage.
- **Fire Return Interval:** The time between fires in a defined area or landscape.
- **Fire Suppression Costs:** The financial figure that is incurred during any operations by fire fighting agencies to suppress (or put out), a wildland fire.
- **FireFree:** A local program in Central Oregon that uses ten steps to educate property owners on how to defend their home from wildfire. FireFree also provides two annual events where homeowners can dispose of debris created from wildfire preparedness activities.
- **Firewise:** A national program that provides a process that empowers neighbors to work together in reducing their wildfire risk. The National Fire Protection Association sponsors the Firewise program.
- **Hazardous Fuel Reduction:** Reducing vegetation that could accelerate a wildland fire.
- **Hazardous Fuels:** Any fuel or vegetation that will sustain or accelerate a wildland fire.
- **High Intensity:** Fire intensity represents that energy releases during various phases of the fire. High intensity fires are damaging to certain vegetation and ecosystems that are not adapted to them. Much of the lower elevation forests in Central Oregon are adapted to lower intensities.
- **Overstory:** Also called the canopy. Made up of the tallest trees that stand over the rest of the plants in the landscape.

- **Pacific Northwest Coordination Center:** The Northwest Interagency Coordination Center (NWCC) is the Geographic Area Coordination Center for the Northwest Region, which includes the States of Oregon and Washington. Located in Portland, OR, the NWCC serves as the focal point for interagency resource coordination, logistics support, aviation support and predictive services for all state and federal agencies involved in wildland fire management and suppression in the region. Cooperating agencies include the: Bureau of Land Management, US Forest Service, Oregon Dept of Forestry, US Fish and Wildlife Service, Bureau of Indian Affairs, Washington Dept. of Natural Resources and the National Park Service.
- **Resilient Landscapes:** A landscape that is able to recover quickly or repel disturbances that may be a departure from normal circumstances.
- **Silvicultural Treatments:** A planned series of treatment that aide in achieving the goals set forth by a diverse set of values. Silviculture is the practice of controlling the establishment, growth, composition, health and quality of forests to meet diverse needs and values.
- **Stand Dynamics:** The underlying physical and biological forces that shape and change a particular area or forest stand.
- **Structural Ignitability:** Also known as Structural Vulnerability; which refers to the probability of a home igniting during a large wildfire.
- **Structural Vulnerability Factors:** Factors that can increase or decrease a home's probability of igniting during a large wildfire. Examples include: roof composition, roof cleanliness, vent covers, deck composition & cleanliness, etc.
- **Thick Bark Pine:** a local species is Ponderosa Pines. Their thick bark makes them a fire resistant species. The lower elevation forests that were/are dominated by Ponderosa Pines are adapted to low intensity fire that would burn through as often as every ten years.
- **Tree Crowns:** See overstory. Also known as the tree canopy.
- **Understory:** The layer of vegetation beneath the main canopy of a forest.
- **Wildfire Preparedness:** Changing behaviors and/or process to reduce the impact a wildfire may have on the population.
- **Wildland Fire:** Any non-structural fire that occurs in vegetation or natural fuels. An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all

other wildland fires where the objective is to put the fire out.

- **Wildland Fuels:** Vegetation that is located in an area in which development is essentially non-existent, except for roads, railroads, powerlines, and similar transportation facilities. Structures, if any, are widely scattered.
- **Wildland Urban Interface (WUI):** The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Describes an area within or adjacent to private and public property where mitigation actions can prevent damage or loss from wildfire. Much of Deschutes County is considered Wildland Urban Interface.

Appendix E: Post Fire Recovery

During the Fire Contacts

Deschutes County 911 Non-Emergent Line (541) 693-6911
American Red Cross (Eastern & Central Oregon Chapter) (541) 382-2142

Web links for Fire and Evacuation Information:

- Central Oregon Fire Information [Central Oregon Fire Info](#)
- Deschutes County Emergency Blog [Deschutes County Emergency Info](#)
- Central Oregon Interagency Twitter Feed twitter.com/CentralORFire
- Deschutes County Sheriff's Twitter Feed twitter.com/DeschutesSO
- Evacuation Guide [Ready, Set, Go](#)
- Emergency Notifications [Deschutes County Alerts](#)

After the Fire Resources for Affected Residents

Fire Management Assistance (FMAG) is available to States, local and tribal governments, for the mitigation, management, and control of fires on publicly or privately owned forests or grasslands, which threaten such destruction as would constitute a major disaster. The Fire Management Assistance declaration process is initiated when a State submits a request for assistance to the Federal Emergency Management Agency (FEMA) Regional Director at the time a "threat of major disaster" exists. The entire process is accomplished on an expedited basis and a FEMA decision is rendered in a matter of hours.

The Fire Management Assistance Grant Program (FMAGP) provides a 75 percent Federal cost share and the State pays the remaining 25 percent for actual costs. Before a grant can be awarded, a State must demonstrate that total eligible costs for the declared fire meet or exceed either the individual fire cost threshold - which is applies to single fires, or the cumulative fire cost threshold, which recognizes numerous smaller fires burning throughout a State. Eligible firefighting costs may include expenses for field camps; equipment use, repair and replacement; tools, materials and supplies; and mobilization and demobilization activities.

FEMA Individual Assistance (FEMA IA) has created a set of tools to help those facilitating their community's recovery. Community Services Programs deliver a variety of services to assist in disaster recovery. Disaster Housing Resources provides links to access information on multiple disaster housing programs and strategies. FEMA Voluntary Agency and Donations Coordination delivers information, support and guidance during disaster recovery. The National Emergency Child Locator Center and National Mass Evacuation Tracking System are both tracking databases that can be activated during disasters and assist in reunifying family members. The National Shelter System is a database that supports the agencies responsible for Mass Care and Emergency Assistance. For

information on these tools follow this link to [FEMA's site](#).

FEMA Public Assistance (FEMA PA) mission's to provide assistance to State, Tribal and local governments, and certain types of Private Nonprofit organizations so that communities can quickly respond to and recover from major disasters or emergencies declared by the President.

Through the PA Program, FEMA provides supplemental Federal disaster grant assistance for debris removal, emergency protective measures, and the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and the facilities of certain Private Non-Profit (PNP) organizations. The PA Program also encourages protection of these damaged facilities from future events by providing assistance for hazard mitigation measures during the recovery process.

The Federal share of assistance is not less than 75% of the eligible cost for emergency measures and permanent restoration. The grantee (usually the State) determines how the non-Federal share (up to 25%) is split with the sub-grantees (eligible applicants).

Small Business Disaster Loans through the [Small Business Administration \(SBA\)](#). SBA provides low-interest disaster loans to businesses of all sizes, private non-profit organizations, homeowners, and renters. SBA disaster loans can be used to repair or replace the following items damaged or destroyed in a declared disaster: real estate, personal property, machinery and equipment, and inventory and business assets.

Oregon VOAD (Voluntary Organizations Active in Disaster) is a group of faith-based, community service organizations with disaster relief roles related to short and long-term recovery from disasters.

Functions include but are not limited to: damage assessment, cleanup, building repair, donations management, child care, clothing, communication, counseling, disaster welfare inquiry, financial assistance, food, human relations, mass care, sheltering, transportation, volunteer staffing, warehousing and bulk distribution. ORVOAD coordinates disaster planning with member agencies to ensure reduction of duplication and an increase in effective delivery of services.

Natural Resources Conservation Services (NRCS) may provide funding they are allocated to help with fire recovery efforts for agricultural and private, non-industrial forestland owners. Program and application announcements will be made as funding becomes available. Please check [this site](#) frequently for updates.

American Red Cross Casework: Providing Emergency Assistance is trains Red Cross caseworkers how to conduct effective client interviews and provide appropriate assistance to help meet a client's immediate disaster-caused or disaster-aggravated needs.

Fire Recovery Safety Tips

REMEMBER – use caution and good judgment. Hazards may still exist, even though the fire is controlled.

ELECTRICAL

Electrical Safety Facts

General: An important part of the disaster recovery is hazard recognition. Should you come across damaged or fallen power poles or lines, contact your local electrical power authorities. **DO NOT TOUCH THE DOWNED WIRES.** In the cleanup area, be especially careful when cutting trees and operating heavy equipment around power lines. Vegetation and power poles may have lost stability due to fire damage.

If a power line or pole should fall next to you while working in the area, *do not walk – hop out of the area.* (Using this technique, you will be less likely to be a conductor of electricity).

Electricity is always trying to go somewhere. It goes easily through conductors; it does not go easily through non-conductors.

Conductors	Non-Conductors
Metal	Rubber
Water	Glass
Wet Things	Plastic
Things In Water (including animals/pets)	

One of the most important fixtures in the conduction of electric current are utility poles. The fire or fire suppression actions may have dislodged or broken some of these poles, causing the wires to sag or break, resulting in extremely hazardous conditions. Do not touch anything at the scene.

Trees can also be dangerous conductors of electricity. When a tree falls or grows into contact with power wires, the electric power diverts and finds a path to the ground through the branches and the trunk. Anyone who comes into contact with these trees is subject to tragic consequences, since electric power can easily jump from the tree to the person.

Electrical Safety Tips

- Do not overload circuits; don't operate several large appliances at the same time on the same circuit.
- Do not use extension cords to plug in many items on one outlet.
- Turn off appliances when you finish using them. Provide adequate air circulation around all appliances to prevent over-heating. Keep appliances clean, repaired and serviced.

- Check wires and plugs regularly. Replace worn or frayed wires. Do not run cords under carpets or across doorways.
- Be careful when replacing fuses or breakers. Keep the area near the circuit box dry and turn the main switch off before changing the fuse/breaker.
- Temporary lines should be removed from service.

Electrical Locations To Avoid

- Electrical meters and service lines coming into the home or other outbuildings.
- Any power supply line which appears to sag, show bare wire, or have insulation missing.
- Secured power sub-stations or any area identified as high voltage.
- Downed power lines.

Emergency Procedures for an Electrical Fire

- Call the fire department.
- Shut off power supply at the breaker if possible.

Restoring Electric Power

If, upon returning to your residence, there is no electrical power, please check to make sure the main breaker is on. If the breakers are on and power is still not present, please call to report the power outage to your local electrical power authorities.

Reporting problems like a down or broken wire will speed up the process of power restoration.

- Stand off to one side of the breaker box when turning on the main breaker. Do not stand directly in front of the box.
- If any smells of hot electrical insulation or sparking occurs, turn off the breaker immediately and call an electrician.
- If electrical lights or appliances appear brighter than normal, turn off main breaker. The service entrance needs to be checked.

To Change A Fuse

Try to find the cause of the blown fuse, and correct it by disconnecting the defective appliance or appliances causing the overload or short circuit. Shut off the main power switch when you change the fuse.

- Do not replace fuses with a higher amp rating fuse than you removed.
- Turn on the main switch to restore the power.
- If the fuse blows again, leave it alone and contact a certified electrician. Other problems may exist and should be investigated to remove the possibility of an electrical fire.

To Reset A Circuit Breaker

Try to find the cause of the overload or short circuit and correct it by disconnecting the defective appliance or appliances. Turn the switch to “on” to reset and restore power. If breaker trips again leave it alone, and contact a certified electrician. Other problems may exist and should be found to remove the possibility of an electrical fire.

Special Information of Fuses & Circuit Breakers

Fuses and circuit breakers shut off the current whenever too much current tries to flow through a wire because of:

- A short circuit, possibly caused by a bare wire touching the ground;
- Overloading, possibly caused by too many lights or appliances on one circuit; or
- By defective parts in an appliance.

Know where the main circuit or fuse box is located in your house. Be sure you can locate the main switch; it controls all of the power coming into the house and is usually inside the circuit box. In some cases, however, it may be located outside of the house. Fuse or circuit boxes generally are labeled to designate which area of the house the circuits or fuses serve.

DRINKING WATER

Restoring Water Systems

Unless impacted by a fuel spill, the fire should not have affected wells at undamaged homes. If your house was damaged, your water system may potentially have become contaminated with bacteria due to loss of water pressure. In this case it is recommended that the well be disinfected and the water be tested before consumption. To disinfect your water system, pour ½ - 1 cup of chlorine bleach inside the well casing and turn on all faucets until a chlorine scent is noticed. Allow the chlorine solution to remain in the system overnight. The following morning, open all faucets and flush the system until free of chlorine smell.

If you have a public use well or water system, contact the County Health Department for specifics on testing prior to consumption of any water.

SOLID WASTE

Removing Debris

Cleanup of your property can expose you to potential health problems from hazardous materials. Wet down any debris to minimize health impacts from breathing dust particles. The use of a two-strap dust particulate mask with nose clip and coveralls will provide the best minimal protection. Leather gloves should be worn to protect your hands from sharp objects while removing debris.

Hazardous materials such as kitchen and bathroom cleaning products, paint, batteries, contaminated fuel and damaged fuel containers must be handled properly. Contact your local County Officials for specific handling restrictions and disposal options.

All hazardous materials should be labeled as to their contents if known!

HEATING FUELS

Checking Propane Tanks

Propane suppliers recommend homeowners contact them for an inspection prior to reusing their system. If the fire burned the tank, pressure relief valve probably opened and released the contents of the tank. Tanks, brass and copper fittings, and lines may be heat-damaged and unsafe. Valves should be turned off and remain closed until the propane suppliers inspect the system.

Checking Home Heating Oil Tanks

Heating oil suppliers recommend homeowners contact them for an inspection prior to reusing their system. The tank may have shifted or fallen from the stand and fuel lines may have kinked or weakened. Heat from the fire may have caused the tank to warp or bulge. Non-vented tanks are more likely to bulge or show signs of stress. The fire may have loosened or damaged fittings and filters. If the tank is in tact and heating oil remains in the tank, the heating oil should still be good. If you have questions on the integrity of the tank, fuel lines, tank stand, or the fuel, or need assistance in moving the tank or returning it to service, contact your fuel supplier.

MISCELLANEOUS SAFETY AWARENESS

Ash Pits

Holes created by burned trees and stumps create ash pits, which are full of hot ashes. Mark them for your safety, as they can stay hot for many days following the fire, causing serious burns. Warn your family and neighbors, especially children. Tell them to watch for ash pits and to not put hands or feet in these holes—they are hot!

Evaluation of Trees Damaged by Fire

The following information will assist you in evaluating any trees that have been scorched or burnt by the fire. Identification of the type of tree affected is important and can easily be done. Two basic types of trees exist in this area: deciduous and evergreen. Deciduous trees are broad leaf trees that lose their leaves in the fall.

In this area we have a variety of deciduous tree species. Evergreen trees have needles and in this area we mainly have Ponderosa Pine, Lodgepole Pine and Western Juniper.

First: visually check the tree stability. Any tree weakened by fire may be a hazard. Winds are normally responsible for toppling weakened trees. The wind patterns in your area may have changed as a result of the loss of adjacent tree cover. Seek professional assistance before felling trees near power lines, houses or other improvements.

If the tree looks stable:

- Visually check for burnt, partially burnt or broken branches and tree tops that may fall.
- Check for burns on the tree trunk. If the bark on the trunk of the tree has been burned off or scorched by very high temperatures completely surround the tree's circumference, the tree will not survive. This is because the living portion of the tree (cambium) was destroyed. The bark of the tree provides protection to the tree during fire. Bark thickness varies based upon tree species: check carefully to see if the fire or heat penetrated the bark. Where fire has burnt deep into the tree trunk, the tree should be considered unstable until checked.
- Check for burnt roots by probing the ground with a rod around the base of the tree and out away from the base several feet. The roots are generally six to eight inches below the surface. If you find that the roots have been burned you should consider this tree very unstable; it could easily be toppled by wind.

If the tree is scorched

- A scorched tree is one that has lost part or all of its needles. Leaves will be dry and curled. Needles will be a light red or straw colored. Healthy deciduous trees are resilient and may possibly produce new branches and leaves, as well as sprouts at the base of the tree. Evergreen trees, particularly long-needled trees, may survive when partially scorched. An evergreen tree that has been damaged by fire is subject to bark beetle attack. Please seek professional assistance concerning measures for protecting evergreen trees from bark beetle

attack.

Residual Smoke In Fire Interior

Smoke may be present on the interior of the fire for several days following containment. This occurs as a result of stumps, roots, and other surface materials being exposed to changing temperatures and wind conditions. Smoke volume from these materials may fluctuate depending on weather conditions. This activity should not pose a risk and smoke will continue to dissipate until materials are fully consumed or extinguished by fire crews or weather.

Flooding Risk

With the recent large high intensity wildfires in Oregon certain locations within burned areas, or downhill and downstream of burned areas are much more susceptible to flash flooding and debris flows. Even areas that are not traditionally flood prone are at risk due to changes to the landscape caused by wildfire. Rainfall that would normally be absorbed will run off extremely quickly after a wildfire, as burned soil can be as water repellent as pavement. As a result, much less rainfall is required to produce a flash flood. A good rule of thumb is, if you can look uphill from where you are and see an area burned by wildfire, you are at risk.

Preparing for Flooding

In the event of moderate to heavy rainfall, do not wait for a flash flood warning in order to take steps to protect life and property. Thunderstorms that develop over the burned area may begin to produce flash flooding and debris flows before a warning can be issued. If you are in an area vulnerable to flooding and debris flows, plan in advance and move away from the area. There may be very little time to react once the storms and rain start.

- Have an evacuation/escape route planned that is least likely to be impacted by Flash Flooding or Debris Flows
- Have an Emergency Supply Kit available
- Stay informed before and during any potential event; knowing where to obtain National Weather Service (NWS) Outlooks, Watches and Warnings via the NWS Pendleton Website, Facebook, Twitter, or All Hazards NOAA Weather Radio
- Be alert if any rain develops. Do not wait for a warning to evacuate should heavy rain develop.
- Call 911 if you are caught in a Flash Flood or Debris Flow
- Contact local officials for additional risk information and potential mitigation efforts
- Contact The US Army Corps of Engineers regarding their [Silver Jackets Program](#)