



GW Fire
Sisters, OR 2007

2009 Greater Sisters Country Community Wildfire Protection Plan

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Prepared by

Project Wildfire

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Declaration of Agreement

The Greater Sisters Country Community Wildfire Protection Plan was originally completed and signed on June 21, 2005. A revision to the original plan was approved on May 15, 2006. As directed by this CWPP, fuels reduction activities have been completed on public and private lands. The landscape has also been impacted by recent wildland fires. Combined, these events have changed the priorities outlined in the first two documents. The Steering Committee reconvened in 2008 to reassess the Communities at Risk and revise the priorities as appropriate. The Sisters City Council approved this plan on October 8, 2009 by resolution 2009-22. This CWPP was also formally adopted by Deschutes County by resolution # 2006-040.

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Sisters – Camp Sherman Rural Fire Protection District

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2009 Greater Sisters Country Community Wildfire Protection Plan



Purpose

The purpose of the Greater Sisters Country Community Wildfire Protection Plan (CWPP) is to:

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

Originally completed in 2005 with a revised planning boundary in 2006, this comprehensive revision maintains the original purpose and outlines the updated priorities, strategies and action plans for fuels reduction treatments in the Greater Sisters Country wildland urban interface (WUI). This CWPP also addresses special areas of concern and makes recommendations for reducing structural vulnerability and creating defensible space 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; revisited at least annually to address its purpose.

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

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 wildlands valued by residents and visitors. These landscapes however, are now significantly altered due to fire prevention efforts, modern suppression activities and a general lack of large scale fires, resulting in overgrown forests with dense fuels that burn more intensely than in the past. In addition, the recent increase in population has led to a swell in residential development into forested land, in the wildland urban interface.

The 2009 Greater Sisters Country Community Wildfire Protection Plan will assist the Sisters – Camp Sherman Fire District and Sisters area residents in the identification of surrounding lands, including federal and state lands at risk from high intensity wildland fire. The Greater Sisters Country CWPP identifies priorities and strategies for reducing hazardous wildland fuels while improving forest health, supporting local industry and economy and improving fire protection capabilities. It also identifies strategies to address special areas of concern such as evacuation routes as well as outlines actions that individuals can take to help protect themselves and their neighborhoods against the threat of wildland fires.



Collaboration

In 2002, President George Bush established the Healthy Forests Initiative (HFI) to improve regulatory processes to ensure more timely decisions, greater efficiency and better results in reducing the risk of 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 Community Wildfire Protection Plan (CWPP) which includes the identification and prioritization of areas needing hazardous fuels treatment. It further provides authorities 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 where federal agencies place their fuels reduction efforts. With a Community Wildfire Protection Plan 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.

As with the initial version, community members of Sisters, Oregon came together with representatives from Sisters – Camp Sherman Fire District, Oregon Department of Forestry (ODF), the USDA Forest Service (USFS), the USDI Bureau of Land Management (BLM), the City of Sisters, Deschutes County and Project Wildfire to revisit the Greater Sisters Country CWPP and refocus the priorities. The Steering Committee completed this revision in accordance

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

A draft of the Greater Sisters Country CWPP was available for public comment for 30 days prior to the final signing and approval of the plan. Interested parties provided comments for consideration by the Steering Committee during this period.

The Sisters City Council approved the 2009 Greater Sisters Country Community Wildfire Protection Plan on October 8, 2009. This CWPP was also formally adopted by Deschutes County by resolution # 2006-040.



Background information

The Greater Sisters Country is located in central Oregon on the east side of the Cascade Mountains. According to the census 975 residents called the city of Sisters home in 2000. Deschutes County estimates the 2008 Sisters population at 2,238 with another 9,437 in rural population that spills vigorously around the city. This is an increase of 229% within the city limits in only eight years. These figures do not include the influx of visitors during the tourist season.

Sisters is known for its outstanding recreational opportunities, cultural traditions and general small town feel. The annual Sisters Rodeo, the Starry Nights Music series and the Sisters Quilt Show consistently bring thousands of visitors to the area. Within the planning area there is also a significant amount of public land with developed and dispersed recreation sites which provide valuable recreation opportunities to both residents and visitors. In the summer months, the County estimates a transient population of up to 10,000 people that occupy these areas creating a seasonal challenge for those agencies responsible for fire suppression and evacuation.

The CWPP planning area boundary lies within the larger area of the eastern Cascade slopes and foothills. The area is dominated by western juniper, sage brush, and grasses on the high desert to the east; and a transition from ponderosa pine to mixed conifer to a sub-alpine mix of tree species near the crest of the Cascades in the west. The vegetation is adapted to the prevailing dry climate and is highly susceptible to wildland fire with major threats to the area each year. Volcanic cones and buttes dot the landscape across much of the region. Most of the communities in the area lie at an elevation of 3,200 feet.

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, Deschutes County and private landowners are engaged in hazardous fuels treatment projects across the planning area.

The US Forest Service – Sisters Ranger District manages 61% of the federal lands in the Greater Sisters Country planning area and continues to make great strides to increase forest health and reduce the potential for high intensity wildland fire. From 1998 to 2008 the Forest Service treated 28,771 acres (or 17%) of its lands within the WUI boundary.

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, small tree thinning (up to 8” diameter), hand piling, and under burning. Therefore, multiple entries are required in order to adequately restore forest ecosystem health and reduce hazardous fuels. The ultimate goal for these projects is to reduce the potential for high intensity fire that can spread to tree crowns, requiring costly suppression efforts and causing large losses on the landscape as well as in and around communities.

The following is a snapshot of USFS fuels treatment projects over the last decade that will continue into the future:

- The Sisters Area Fuels Reduction (SAFR) project is the largest of these and will encompass 17,573 acres when completed. The SAFR project is south of Highway 20 and the City of Sisters.
- The Highway 20 project stretches along State Highway 20, a major transportation route. This 3,300 acre project provides opportunities for residents and visitors to see a demonstration of the healthy results that can be achieved through fuels treatment work.
- The Forest Service is also actively treating 5,600 acres under the McCahee project, just west of the SAFR project near Black Butte Ranch.
- The 1,200 acre Glaze project is east of and adjacent to Black Butte Ranch.
- Also located adjacent to Black Butte Ranch is the Black Butte Ranch Fuels Reduction project that encompasses 3,600 acres west and northwest of the Ranch.
- The Metolius Basin project is 12,600 acres and surrounds the community of Camp Sherman and the headwaters for the Metolius River.

Oregon Department of Forestry (ODF) continues to work with large landowners in the Greater Sisters area reducing hazardous fuels and providing survivable spaces in and around subdivisions. In the last eight years over 1,400 acres have been treated under ODF cost share programs in the Sisters planning area.

Deschutes County owns 1% of all the privately owned land in the greater Sisters Country WUI. Through ongoing funding opportunities including grants, Deschutes County is taking steps to reduce the hazardous vegetation and provide for a more fire safe community. The County has reduced hazardous fuels on 400 acres of land in the last three years.

The City of Sisters is also actively engaged in reducing hazardous fuels on its lands. The City recently utilized a National Fire Plan Grant to reduce thick fuels around its wastewater treatment facility and along Edgington Road and now maintains the property with periodic mowing.

A relative newcomer to the state of Oregon is the Firewise Communities USA program. The program recognizes communities that have substantially reduced their exposure to high intensity wildfire by implementing Firewise standards such as the use of non-combustible roofing and siding, adapting landscapes using fire resistant plant materials and keeping ladder fuels in check to reduce the chance that fire could spread to a home. Adequate water availability and access are also required. Firewise Communities USA now recognizes five communities in Deschutes County, two of them in the Greater Sisters Country CWPP area – Aspen Lakes and Cascade Meadow Ranch.

Fires too, have significantly impacted the Greater Sisters Country landscape. The largest in recent history, the B&B Complex Fire in 2003 charred 90,769 acres near Suttle Lake and forced the evacuation of Camp Sherman, in the Greater Sisters Country WUI. In 2006, the Sisters area was hit again by two high intensity wildland fires – the Lake George Fire which consumed 5,550 acres and threatened evacuations; and the Black Crater Fire which consumed 9,400 acres and forced evacuations of Crossroads, Tollgate and Edgington Road areas within the WUI. In 2007, the Sisters area was threatened again by the GW Fire which burned 7,357 acres and caused the evacuation of Black Butte Ranch.



Community Base Maps

The Steering Committee agreed to utilize the best available information and data from the US Forest Service, Oregon Department of Forestry, the Fire Learning Network and Deschutes County databases. Using this data, the Steering Committee relied on the following maps and GIS data (Appendix A) to complete the updated risk assessment process:

- Greater Sisters Country WUI and CWPP boundaries with Communities at Risk;
- 2007 Deschutes County tax lot and population data;
- Fire starts in the last ten years; and
- Current Fire Regime - Condition Class.



Community Profile

The Greater Sisters community presents a unique challenge for the wildfire planning process. Not only are the core city business and residential areas at significant risk from wildfire, so too are the many subdivisions outside the city limits that have been developed in the thick of nearby forests. Dense stands of trees, topographical challenges and thick ground vegetation contribute to the overall wildland fire risk in the Greater Sisters planning area.

The climate in Sisters is typical of the east slopes of the Cascade Mountains, with most of the annual precipitation coming as winter snow or fall and spring rains. Summers are dry and prone to frequent thunderstorms that may be wet or dry. These thunderstorms frequently cause multiple fire ignitions.

The communities of Greater Sisters Country are bound together by Oregon State Highways 20, 126 and 242. The City of Sisters lies at the intersection of these corridors. As central Oregon grows, more residents and tourists crowd these highways and increase congestion, particularly during the summer months when fire season reaches its peak. The City of Sisters Transportation System Plan calls for improving access through Sisters. This will benefit emergency response by improving access routes in the event of a major wildland fire. The Highway 242 and Highway 20 corridor as well as Forest Road 16 (Three Creeks Road) are included in the consideration of the WUI boundary due to their critical role as roads and travel corridors that link communities together and serve as evacuation routes.

The Eagle General Aviation Airport is located at the intersection of Camp Polk Road and Barclay Drive, less than one mile from the Sisters city limits. Roberts Field in Redmond is the primary commercial aviation hub in Central Oregon and lies 20 miles east of the Sisters area. General aviation and wildland fire support facilities are also available at Roberts Field.

Wildland Urban Interface Description

The Healthy Forests Restoration Act defines the 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.

In the 2006 CWPP review and revision, the initial WUI boundary determination process was reviewed. The WUI was refined and adjusted to better reflect the definition of community as

outlined in this document and included considerations of community growth, seasonal recreation areas, and access and egress corridors that were not identified in the initial plan.

The committee then expanded the definition of the WUI based on the three categories of community as defined in the 2001 Federal Register. Those categories include:

Category 1. Interface Community

The Interface Community exists where structures directly abut wildland fuels. There is a clear line of demarcation between residential, business, and public structures and wildland fuels. Wildland fuels do not generally continue into the developed area. The development density for an Interface Community is usually three or more structures per acre, with shared municipal services. Fire protection is generally provided by a local government fire department with the responsibility to protect the structure from both an interior fire and an advancing wildland fire. An alternative definition of the Interface Community emphasizes a population density of 250 or more people per square mile.

Category 2. Intermix Community

The Intermix Community exists where structures are scattered throughout a wildland area. There is no clear line of demarcation; wildland fuels are continuous outside of and within the developed area. The development density in the Intermix ranges from structures very close together to one structure per 40 acres. Fire protection districts funded by various taxing authorities normally provide life and property fire protection and may also have wildland fire protection responsibilities. An alternative definition of Intermix Community emphasizes a population density of between 28-250 people per square mile.

Category 3. Occluded Community

The Occluded Community generally exists in a situation, often within a city, where structures abut an island of wildland fuels (e.g., park or open space). There is a clear line of demarcation between structures and wildland fuels. The development density for an Occluded Community is usually similar to those found in the Interface Community, but the occluded area is usually less than 1,000 acres in size. Fire protection is normally provided by local government fire departments.

For planning purposes in the 2009 Greater Sisters Country CWPP, the Steering Committee agreed that the defined wildland urban interface boundary will include all three categories of community as defined above.

The WUI also includes a ½ mile buffer on each side of the major transportation and evacuation routes through and out of the planning area. These routes include State Highways 20, 242, and 126; US Forest Service Roads 14 and 16 (Three Creeks Road). The WUI boundary continues all the way to the wilderness boundary of the Cascade Mountains on the west; to the Warm Springs Indian Reservation on the north; to the Greater Bend CWPP boundary and the East & West Deschutes County CWPP boundary on the south and the Greater Redmond CWPP boundary to the east.

There are additional lands not classified as WUI that are within the overall CWPP boundary. The Steering Committee chose not to classify the additional lands within the CWPP outside the WUI boundary as they are predominately agricultural with limited structural development. The wildland fire risk in those areas is significantly less than in the WUI areas. See community maps in Appendix A.

The Greater Sisters Country WUI boundary lies within the CWPP boundary and is approximately 409 square miles and covers 261,750 acres. There are non WUI areas in the remainder of the CWPP boundary that bring the total acreage under this CWPP to 425,937 acres or 665 square miles.

Communities at Risk

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

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

The Steering Committee identified the following fourteen (14) Communities at Risk within the Greater Sisters Country planning area. The structures and population data is based on 2007 Deschutes County tax information.

Tollgate – 410 acres with 420 structures; population 1,050.

Crossroads – 238 acres with 171 structures; population 428.

Camp Sherman – 1,689 acres with 425 structures; population 1,063.

Suttle Lake – 902 acres with 40 structures; population 10.

Black Butte Ranch – 1,913 acres with 1,229 structures; population 3,072.

Plainview Area – 5,690 acres with 615 structures; population 1,538.

Forked Horn Estates Area – 328 acres with 68 structures; population 170.

Squaw Creek Estates – 2,265 acres with 234 structures; population 585.

Panoramic View Estates – 1,127 acres with 113 structures; population 282.

Cascade Meadow Ranch – 365 acres with 22 structures; population 55.

Sage Meadow – 808 acres with 291 structures; population 728.

Indian Ford – 802 acres with 90 structures; population 225.

Aspen Lakes – 405 acres with 57 structures; population 142.

Sisters – 1,153 acres with 895 structures, including Edgington and Remuda Road neighborhoods; population 2,238.

Although the above Communities at Risk are located within the overall WUI acreage, they are also assessed separately under this CWPP.

Wildland Fuel Hazards

The vegetation in the Greater Sisters Country WUI includes:

- Ponderosa pine
- Western juniper
- Bitterbrush
- Manzanita
- Western sage
- Mixed conifer

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

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

Western juniper also occurs across the Sisters WUI but is more predominant to the east of the planning area. The fire history of western juniper is characterized by fire that occurs approximately every 30 years and is generally limited by the availability of fuels. Western juniper trees have thin bark and fires kill them easily. Western juniper is expanding its range over the previous century. Several factors may account for the expansion: a) fire suppression which allows the stands to grow unchecked by fire, b) overgrazing by domestic livestock which opens up new sites for colonization, c) reestablishment of juniper after being logged, and d) climate change.

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

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

Western sage is found on the eastern lowlands of the Sisters planning area and commonly grows in association with juniper and bitterbrush. Most fires kill western sage plants. In many western sage communities, changes in fire occurrence along with fire suppression and livestock grazing have contributed to the current condition of sage communities. Prior to the introduction of annuals, insufficient fuels may have limited fire spread in big sagebrush communities. Introduction of annuals, especially cheatgrass, has increased fuel loads so that fire carries easily. Burning in sage communities commonly sets the stage for repeated fires. Fire frequency can be as little as 5 years, not sufficient time for the establishment and reproduction of big sagebrush. In these cases annuals such as cheatgrass commonly take over the site.

Mixed conifer (wet and dry) is a complex forest type that varies considerably depending on elevation and site conditions. In the plan area, dry mixed conifer and wet mixed conifer forest types occur, depending on the elevation.

The dry mixed conifer includes Douglas-fir, ponderosa pine, lodgepole pine, western larch and true fir. Found at elevations ranging from 3,600 feet to 4,500 feet, it occupies a transitional zone between the higher elevation mixed conifer zone and the true ponderosa pine or lodgepole pine zone.

The wet mixed conifer is found in the higher elevations (4,000 – 7,000 feet) on the west side of the fire plan area. Similar to the dry mixed conifer sites, vegetation consists of Douglas-fir, white fir, ponderosa pine, western larch, and lodgepole pine. Spruce can be found in the wetter riparian areas.

The historical range of fire intervals in the wet and dry mixed conifer varies considerably; from 35 to 200 years and can be of variable intensity; from low intensity maintenance burns to stand replacement events.



Community Assessment of Risk

For the 2009 Greater Sisters Country Community Wildfire Protection Plan the Steering Committee utilized two risk assessment methodologies: 1) the Oregon Department of Forestry Assessment of Risk Factors on the 14 Communities at Risk; and 2) a specific rating for each Community at Risk under the Oregon Forestland-Urban Interface Fire Protection Act of 1997, more widely known as Senate Bill 360. Fire Regime – Condition Class is also noted to provide a general snapshot of the current condition of the landscape outside the Communities at Risk, in the WUI.

ODF Assessment of Risk Factors

The ODF 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 evidence from the USFS, ODF, the Sisters – Camp Sherman Fire Protection District, Cloverdale Fire Protection District and Black Butte Ranch Fire Protection District of fire occurrences per 1,000 acres per ten years, as well as home density and ready ignition sources like dry lightning storms, debris burning, equipment use, juveniles, campfires, and arson.

The current condition of the vegetation on the federal and private lands adjacent to and within the Communities at Risk poses an extreme risk of high intensity wildland fire. The City of Sisters and surrounding rural neighborhoods are also threatened by embers falling on the community from an adjacent wildland fire.

Hazard

The hazard rating describes resistance to control once a fire starts based on weather, topography (including slope, aspect and elevation), vegetation and crown fire potential. As stated earlier, effective wildland fire suppression has led to the extensive buildup of overstory and ground vegetation in the wildland urban interface.

A wildland fire could start within any of the Communities at Risk or in any of the forested areas adjacent to or surrounding the communities. With a fire of any significance, it could be difficult to assemble the resources necessary to adequately address all of the fire and life safety issues that could arise in the early stages of emergency operations.

Protection capability

The ratings for this category are based on fire protection capability and resources to control and suppress wildland and structural fires. The ratings also consider response times and community preparedness.

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

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

Sisters – Camp Sherman Rural Fire Protection District

The Sisters – Camp Sherman Rural Fire Protection District is a combination career and volunteer department providing structural and wildland fire services to over 240 square miles. The department also provides Advanced Life Support Emergency Medical Services to an ambulance service area of approximately 2,000 square miles in mountainous and high desert terrain. The District also provides rescue services including vehicle extrication and hazardous materials responses as well as fire prevention and education services. The Fire District currently employs a Fire Chief, an Assistant Fire Chief, a Fire Marshal, a Training Chief, three Shift Commander Paramedics, five Firefighter Paramedics, an Executive Assistant and an Administrative Assistant. The District relies heavily on its volunteer firefighters and emergency medical technicians.

The main station is located within the city limits of Sisters and there are three substations, one located in the Tollgate subdivision, one in Camp Sherman and one located in Squaw Creek Estates.

The Fire District utilizes a fleet of firefighting and EMS apparatus including: five structural and interface engines, five water tenders, one heavy brush engine, three light brush engines, one heavy rescue truck, four ambulances, four command vehicles and four staff vehicles.

The department is a party to the Central Oregon Mutual Aid Agreement. In the event of a major structural fire, the department may request assistance from all other fire departments that are signatory to the agreement. In addition, all Central Oregon fire departments and the wildland fire agencies including the US Forest Service (USFS), Oregon Department of Forestry (ODF), and the Bureau of Land Management (BLM) are party to the Central Oregon Cooperative Wildland Fire Agreement. These cooperative agreements allow for interactive coordination in the event of a wildfire that threatens communities in Central Oregon.

Black Butte Ranch Rural Fire Protection District

Black Butte Ranch Rural Fire Protection District serves the residential and resort community of Black Butte Ranch. Located at the foot of the Cascade Mountains and the Three Sisters

Wilderness, the district covers three square miles and protects 1,251 residences and a handful of light industrial buildings. Eight career staff, eight student interns and one volunteer respond to calls from one centrally located station. The district trains all personnel in structural firefighting, rescue operations, emergency medical delivery, hazardous materials operations, and wildland fire suppression. The fire district also provides primary services to three residences immediately adjacent to Black Butte Ranch property under contract.

Cloverdale Rural Fire Protection District

Cloverdale Rural Fire Protection District protects a 50 square mile district that spans between the Sisters – Camp Sherman and the Redmond Fire districts. The Cloverdale Fire district provides fire prevention and suppression services, along with first responder medical services, to assist the Sisters’ ambulance service. The district’s two career staff and 20 volunteers respond to calls out of two stations with a fleet of ten fire apparatus.

Oregon Department of Forestry (ODF)

Within the Greater Sisters planning area, private forestland is protected by the Central Oregon District of the Oregon Department of Forestry (ODF). ODF provides wildland fire response for fires burning on, or threatening private forestlands paying a Forest Patrol Assessment. There are some areas within the Greater Sisters WUI that receive dual protection from ODF and the local Fire Districts because they are located within the rural fire protection district and are also classified as private forestland within the ODF district. In those cases the fire district provides initial response and transfers fire command to ODF upon their arrival.

Oregon Department of Forestry provides two Type 6 engine in the Sisters area, typically June through October. Eight additional engines are available for response in the Prineville-Sisters unit. Statewide resources are also available to ODF including initial attack hand crews, dozers, water tenders, helicopters, air tankers, and overhead staff positions.

USDA Forest Service

The Forest Service provides wildland fire protection on the federal lands within the Greater Sisters planning area. Working in cooperation with the USDI Bureau of Land Management (BLM), 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: 15 engines, 4 initial attack hand crews, 6 prevention units, 2 dozers, 2 water tenders, and 1 helicopter with module. Additional regional and national resources are available and include 35 smokejumpers, 2 inter-regional Hotshot crews, 1 air tanker, 1 National Fire Cache, and 20 overhead staff positions.

Law Enforcement

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

Oregon State Police assists the law enforcement efforts and cooperates with Deschutes County for protection in the Greater Sisters area.

Community Preparedness

Also under the category of Protection Capabilities, the ODF Assessment of Risk examines a community's level of organization and preparedness to respond in an emergency situation. The assessment considers whether the area has an organized stakeholder group that looks out for its own area through mitigation efforts, a phone tree, etc., or whether the area receives only outside efforts such as newsletters, mailings or fire prevention information from other groups. The Steering Committee used local knowledge to determine the level of preparedness.

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 and tax records from 2007, there are approximately 4,670 residential structures in the Greater Sisters planning area, with an estimated real market value of \$623,237,336. In addition, approximately 350 businesses operate in the Sisters area. If a large wildland fire occurs in this area which resulted in the closure of either State Highway 20, 242 or 126, the economic loss to businesses in Sisters could exceed \$500,000 per day, and on the larger impacted area of central Oregon the loss could exceed \$3.5 million per day. The closure of Highway 20 for two weeks during the B&B Complex fire in 2003 resulted in the loss of \$500,000 of daily commerce in Sisters which resulted in the activation of the Federal Emergency Management Agency (FEMA) Disaster Loan program.

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

Structural Vulnerability

In recent years, many neighborhoods in the greater Sisters area have taken steps to decrease the vulnerability of structures to wildland fire. Although attitudes and behaviors towards fire are

changing thanks to educational programs like FireFree and Firewise, the population growth and continued development into the wildland urban interface present fresh challenges each year. The Steering Committee puts high value on the importance of making structures and neighborhoods in the Greater Sisters Country area as fire safe 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 is a summary of the fourteen Communities at Risk, the value ratings (with corresponding scores) and the total scores for each community in each category. The higher the total score in this assessment, the higher the overall risk.

Table 1 – ODF Assessment of Risk

	Aspen Lakes	Camp Sherman	Suttle Lake	Crossroads	Cascade Meadow	Indian Ford	Tollgate	Sage Meadow	Squaw Creek	Panoramic	Forked Horn	Plainview	Black Butte Ranch	Sisters
<u>Likelihood of fire occurring</u>														
Fire occurrence	5	10	5	5	5	5	5	10	5	5	5	10	10	5
Ignition risk - home density	5	5	0	10	0	5	10	5	5	5	5	5	10	10
Ignition risk - other factors	0	10	8	8	8	8	8	8	8	5	5	8	10	10
Total	10	25	13	23	13	18	23	23	18	15	15	23	30	25
Rating	Low	Mod	Low	Mod	Low	Mod	Mod	Mod	Mod	Mod	Mod	Mod	High	Mod
<u>Hazards</u>														
Weather	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Slope	0	0	3	0	0	2	0	0	3	0	0	0	0	0
Aspect	5	5	2	5	5	5	5	5	3	5	5	5	5	5
Elevation	2	2	1	2	2	2	2	2	2	2	2	2	1	2
Vegetation	5	18	5	15	5	15	5	15	15	15	5	5	15	5
Crown fire potential	0	6	0	5	0	4	0	5	5	5	0	0	8	2
Total	52	71	50	67	52	68	52	67	68	67	52	52	69	54
Rating	High	Ext	High	Ext	High	Ext	High	Ext	Ext	Ext	High	High	Ext	High
<u>Protection capabilities</u>														
Fire response	0	6	8	0	0	2	0	0	0	0	0	0	0	0
Community preparedness	1	1	2	0	2	2	0	0	2	0	0	2	0	0
Total	1	7	10	0	2	4	0	0	2	0	0	2	0	0
Rating	Low	Low	Mod	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
<u>Values protected</u>														
Home density	15	15	2	30	2	15	30	15	15	15	15	15	30	30
Community infrastructure	20	20	20	10	10	10	20	0	20	0	0	20	20	20
Total	35	35	22	40	12	25	50	15	35	15	15	35	50	50
Rating	High	High	Mod	High	Low	Mod	High	Low	High	Low	Low	High	High	High

Table 1 – ODF Assessment of Risk, continued.

Structural vulnerability	Aspen Lakes	Camp Sherman	Suttle Lake	Crossroads	Cascade Meadow	Indian Ford	Tollgate	Sage Meadow	Squaw Creek	Panoramic	Forked Horn	Plainview	Black Butte Ranch	Sisters
Flammable roofing														
non wood - 0	0													
wood - 30		6	3	3	10	4	9	2	1	8	3	5	5	1
Defensible space														
Meets SB 360 - 0	0						0	0	0					
Non compliant - 30		25	10	3	0	15				9	9	6	15	0
Ingress - egress														
Two or more roads - 0	0	0		0			0			0		0	0	0
One road - 7			7		7	7		2	7		7			
Road width														
Greater than 24 feet - 0	0		0		0	0			0			0		0
20 - 24 feet - 2														
Less than 20 feet - 4		3		2			4	2		2	2		4	
All season road condition														
surfaced, < 10% grade - 0	0			0	0	0	0	0	0				0	0
surfaced, > 10% grade - 1			1							1	1	1		
Non surfaced, <10% grade - 1														
Non surfaced, >10% grade - 3		2												
Other than all season - 4														
Street signs														
Present - 4" reflective ltrrs - 0	0	0	0	0	0	0	5	0	0	0	0	0	5	5
Absent - 5														
Fire Service Access														
< 300 ft. with turnaround - 0	0			0			0	0	0				0	0
> 300 ft. with turnaround - 2			2		2					2	2	2		
< 300 ft. w/o turnaround - 4						4								
> 300 ft. w/o turnaround - 5		5												
Total	0	41	23	8	19	30	18	6	8	22	24	14	29	6
Rating	Low	Mod	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low

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. A risk factor of low is the goal for each community.

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 assessed.

Table 2 provides a vertical summary of the ODF Assessment of Risk and the total score for each.

Table 2 – ODF Assessment of Risk Summary with Ranking

	Likelihood of fire occurring	Hazard	Protection capability	Values Protected	Structural Vulnerability	Total	Rank
Camp Sherman	25 Moderate	71 Extreme	7 Low	35 High	41 Moderate	179	1
Black Butte Ranch	30 High	69 Extreme	0 Low	50 High	29 Low	178	2
Indian Ford	18 Moderate	68 Extreme	4 Low	25 Moderate	30 Low	145	3
Tollgate	23 Moderate	52 High	0 Low	50 High	18 Low	143	4
Crossroads	23 Moderate	67 Extreme	0 Low	40 High	8 Low	138	5
Sisters	25 Moderate	54 High	0 Low	50 High	6 Low	135	6
Squaw Creek	18 Moderate	68 Extreme	2 Low	35 High	8 Low	131	7
Plainview	23 Moderate	52 High	2 Low	35 High	14 Low	126	8
Panoramic	15 Moderate	67 Extreme	0 Low	15 Low	22 Low	119	9
Suttle Lake	13 Low	50 High	10 Moderate	22 Moderate	23 Low	118	10
Sage Meadow	23 Moderate	67 Extreme	0 Low	15 Low	6 Low	111	11
Forked Horn	15 Moderate	52 High	0 Low	15 Low	24 Low	106	12
Aspen Lakes	10 Low	52 High	1 Low	35 High	0 Low	98	13
Cascade Meadow	13 Low	52 High	2 Low	12 Low	19 Low	98	14

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 wildland urban interface properties into less volatile zones where firefighters may more safely and effectively defend homes from wildfires. The law requires property owners in identified areas to reduce excess vegetation around structures and along driveways. In some cases, it is also necessary to create fuel breaks along property lines and roadsides.

The process of identifying wildland 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 wildland 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.

Wildland urban interface areas are identified in each county by a classification committee. Once areas are identified, a committee applies fire risk classifications to the areas. The classifications range from "low" to "high density extreme," and the classification is used by a property owner to determine the size of a fuel break that needs to be established around a structure. The classification committee reconvenes every five years to review and recommend any changes to the classifications.

During the summer of 2009, the Senate Bill Classification Committee met to review the original classifications and make recommendations based on new data, development and the new classification of previously unclassified areas. At the time this CWPP was completed, the Reclassification Committee had only made recommendations. The final public input and approval process was not complete so the CWPP Steering Committee agreed to accept the recommendations of the SB 360 Reclassification Committee for purposes of applying adjective ratings to each of the Communities at Risk.

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

standards have not been met, and ODF incurs extraordinary suppression costs. The cost-recovery liability under the Oregon Forestland-Urban Interface Fire Protection Act is capped at \$100,000. The specific recommendations under Senate Bill 360 for private lands are outlined under Prioritized Hazard Reduction Recommendations and Preferred Treatment Methods in this CWPP.

Each of the fourteen (14) Communities at Risk in the Greater Sisters Country CWPP fall under this legislation. The ratings among the 14 Communities include High, Extreme and High Density Extreme.

The Steering Committee agreed to add points to the ODF Assessment of Risk totals based on the Senate Bill 360 adjective ratings of each community. An additional 10 points was given to those communities that rated High, 20 points to those that rated Extreme and an additional 30 points afforded to those that rated High Density Extreme.

Table 3 is a summary of the Senate Bill 360 ratings for each Community at Risk and the associated additional points for overall scoring.

Table 3 – Senate Bill 360 Ratings

Community at Risk	Senate Bill 360 Ratings	Points for rating
Tollgate	High	10
Crossroads	Extreme	20
Camp Sherman	Extreme	20
Aspen Lakes	High	10
Suttle Lake	High	10
Cascade Meadow Ranch	High	10
Indian Ford	Extreme	20
Squaw Creek Estates	HDE	30
Sage Meadow	Extreme	20
Panoramic	Extreme	20
Forked Horn	High	10
Plainview	High	10
Black Butte Ranch	Extreme	20
Sisters	High	10

Table 4 is a summary of the ODF Assessment of Risk and SB 360 additions.

Table 4 – Summary ODF Assessment of Risk & SB 360 Rating Score

	Likelihood of fire occurring	Hazard	Protection capability	Values Protected	Structural Vulnerability	ODF Rating & Score	Total	Rank
Camp Sherman	25 Moderate	71 Extreme	7 Low	35 High	41 Moderate	20 Extreme	199	1
Black Butte Ranch	30 High	69 Extreme	0 Low	50 High	29 Low	20 Extreme	198	2
Tollgate	23 Moderate	67 Extreme	0 Low	50 High	18 Low	10 High	168	3
Indian Ford	18 Moderate	68 Extreme	4 Low	25 Moderate	30 Low	20 Extreme	165	4
Squaw Creek	18 Moderate	68 Extreme	2 Low	35 High	8 Low	30 High Density Extreme	161	5
Crossroads	23 Moderate	67 Extreme	0 Low	40 High	8 Low	20 Extreme	158	6
Plainview	23 Moderate	66 Extreme	2 Low	35 High	14 Low	10 High	150	7
Sisters	25 Moderate	54 High	0 Low	50 High	6 Low	10 High	145	8
Panoramic	15 Moderate	67 Extreme	0 Low	15 Low	22 Low	20 Extreme	139	9
Suttle Lake	13 Low	53 High	10 Moderate	22 Moderate	23 Low	10 High	131	10
Sage Meadow	23 Moderate	67 Extreme	0 Low	15 Low	6 Low	20 Extreme	131	10
Forked Horn	15 Moderate	66 Extreme	0 Low	15 Low	24 Low	10 High	130	11
Aspen Lakes	10 Low	66 Extreme	1 Low	35 High	0 Low	10 High	122	12
Cascade Meadow	13 Low	65 Extreme	2 Low	12 Low	19 Low	10 High	121	13

The 2005 version of this CWPP defined all fourteen Communities at Risk for assessment and prioritization. Since that initial assessment six additional CWPPs have been developed in Deschutes County utilizing a “grouping” process that combines geographically similar areas and areas with similar vegetation to priorities. The Steering Committee agreed that this process will eliminate a forced ranking of the fourteen original Communities at Risk and allow for subsequent groupings of high risk communities. For state and national grant programs, this enables communities to treat private lands in more than one high risk area at a time, thereby maximizing grant dollars across the landscape.

The Steering Committee presents the following groups of priorities for consideration under this CWPP:

Extreme Risk Priority Communities

Camp Sherman
Black Butte Ranch

Very High Risk Priority Communities

Tollgate
Indian Ford
Squaw Creek
Crossroads
Plainview
Sisters
Panoramic

High Risk Priority Communities

Suttle Lake
Sage Meadow
Forked Horn
Aspen Lakes
Cascade Meadow

Fire Regime - Condition Class

Fire Regime - Condition Class considers the type of vegetation and the departure from its natural fire behavior return interval. For planning purposes under this CWPP, this assessment is applied only to lands within the WUI boundary, not including the acreages of the Communities at Risk.

Five natural (historical) fire regimes are classified based on the average number of years between fires (fire frequency) combined with the severity of the fire on dominant overstory vegetation. All five fire regimes are represented on the landscape in the Greater Sisters Country WUI. Western juniper for example has a fire return interval of approximately 30 years with high potential for stand replacement fires. Therefore, it falls within Fire Regime II.

Table 5 summarizes Fire Regimes.

Table 5 – Fire Regimes

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

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

Table 6 summarizes Condition Class.

Table 6 – Condition Class

Condition Class	Attributes
Condition Class 1	<ul style="list-style-type: none"> ▪ Fire regimes are within or near an historical range. ▪ The risk of losing key ecosystem components is low. ▪ Fire frequencies have departed from historical frequencies (either increased or decreased) by no more than one return interval. ▪ Vegetation attributes are intact and functioning within an historical range.
Condition Class 2	<ul style="list-style-type: none"> ▪ Fire regimes have been moderately altered from their historical range. ▪ The risk of losing key ecosystem components has increased to moderate. ▪ Fire frequencies have departed (either increased or decreased) from historical frequencies by more than one return interval. This change results in moderate changes to one or more of the following: fire size, frequency, intensity, severity or landscape patterns. ▪ Vegetation attributes have been moderately altered from their historic ranges.
Condition Class 3	<ul style="list-style-type: none"> ▪ Fire regimes have been significantly altered from their historical range. ▪ The risk of losing key ecosystem components is high. ▪ Fire frequencies have departed (either increased or decreased) by multiple return intervals. This change results in dramatic changes to one or more of the following: fire size, frequency, intensity, severity, or landscape patterns. ▪ Vegetation attributes have been significantly altered from their historic ranges.

There are 261,750 acres in the Greater Sisters Country CWPP WUI boundary. Significant fuels reduction projects along with several major fires have reduced the amount of acreage now found in Condition Class 2 & 3. For planning purposes, the Steering Committee chose to address the landscape in the WUI boundary as a whole. Of the total WUI acres in the planning area, 119,903 acres are still classified as Condition Class 2 & 3. While this is 54% reduction in overall acres needing hazardous fuels reduction treatment, the Steering Committee agrees that there is still much work to be completed.

Areas of special concern

Critical Transportation Routes

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

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

The Steering Committee expressed great concern over the need to identify, develop and protect critical transportation routes as part of this planning process. A detailed look at specific ingress/egress issues for each Community at Risk is included under Recommendations to Reduce Structural Vulnerability. This issue is also highlighted under Action Plan and Implementation.



Prioritized Hazard Reduction Recommendations and Preferred Treatment Methods

The Steering Committee agreed that the Greater Sisters Country Community Wildfire Protection Plan is a living tool that can be used for multiple outcomes. The following is an outline of the prioritized Communities at Risk, as well as preferred treatments and goals for hazardous fuels reduction under the Greater Sisters Country Community Wildfire Protection Plan.

Prioritized Communities at Risk

Based on the combined assessment as shown in Table 4 and group consensus the Steering Committee has identified the following prioritized Communities at Risk for hazardous fuels reduction treatments on public and private lands in the Greater Sisters Country WUI:

Extreme Risk Priority Communities

Camp Sherman

Black Butte Ranch

Very High Risk Priority Communities

Tollgate
Indian Ford
Squaw Creek
Crossroads
Plainview
Sisters
Panoramic

High Risk Priority Communities

Suttle Lake
Sage Meadow
Forked Horn
Aspen Lakes
Cascade Meadow

Priorities and goals

With critical needs assessed and priority areas listed, the Steering Committee identified the following goals to meet the Purpose on page 1 of the Greater Sisters Country 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 wildfire threat
- Identify, improve and protect critical transportation routes

Preferred treatments and goals for hazardous fuels reduction

The overall standard of the Greater Sisters Country 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. This enables safe and effective initial attack. The overall goal is to reduce the potential for crown fires and provide for a healthy, fire resilient landscape that supports the social, economic and ecological values of Sisters area residents and visitors. The Steering Committee recognizes 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 Greater Sisters Country planning area.

Public lands

Federal lands make up 61% of the Greater Sisters Country planning area and are managed by the US Forest Service from the Sisters Ranger District and the Bureau of Land Management from the Prineville District. Oregon Department of Forestry has fire protection responsibility for the private lands within the Greater Sisters Country CWPP boundary. Each of the fourteen Communities at Risk is adjacent to public lands.

It is the intent of the Steering Committee that the Greater Sisters Country WUI area is subject to expedited measures for hazardous fuels treatment and allocation of funds to protect the Communities at Risk as stipulated by the Healthy Forests Restoration Act.

The maps in Appendix A detail the WUI boundary throughout the Greater Sisters Country CWPP area and the individual Communities at Risk calling for protection specifically by reducing wildland fuel hazards on public lands.

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 of each Community at Risk. This buffer will begin at the edge of private lands and extend onto the federal lands to the designated WUI boundary. This enables safe and effective initial attack. This standard will be achieved by the federal land management agencies through a variety of treatment methodologies such as thinning, prescribed burning and mechanical treatments.

Based on the risk assessments, the priorities of the Greater Sisters Country CWPP with regard to public lands within the WUI are as follows:

- All areas where Crown Fire Potential is rated Extreme by the federal agencies within the designated WUI boundary beginning with the first ¼ mile buffer around each Community at Risk utilizing the following priorities:

Extreme Risk Priority Communities

Camp Sherman
Black Butte Ranch

Very High Risk Priority Communities

Tollgate
Indian Ford
Squaw Creek
Crossroads

Plainview

Sisters

Panoramic

High Risk Priority Communities

Suttle Lake

Sage Meadow

Forked Horn

Aspen Lakes

Cascade Meadow

- Within 300 feet of any evacuation route from each Community at Risk.
- All areas where Crown Fire Potential is rated Extreme by the federal agencies beyond the initial ¼ mile of each prioritized Community at Risk above, in ¼ mile increments until the WUI boundary is reached.
- For mixed conifer and lodgepole stands which have missed typical fire cycles and still pose threats of potential crown fires to communities, specific fuels treatments shall be accomplished on federal and state lands to reduce and maintain fuel loads to that which can produce flame lengths of less than four feet to provide for effective initial attack and minimize the resistance to control.
- Although the treatments should focus on areas rated Extreme for Crown Fire Potential, maintenance of previously treated lands is also a top priority where treatment is critical to maintain this status within the CWPP area. Treatment and maintenance of previously treated lands before treatment begins again in other places is an important component of keeping communities safe.

In general, the dominant strategy in all areas should be thinning from below, in an effort to restore large tree, open park-like ponderosa pine dominated forests. In exclusively lodgepole pine and mixed conifer stands where site conditions are favorable to ponderosa pine, intensive thinning should occur with a reforestation strategy to restore a proper ratio, as determined by the agency, of lodgepole or mixed conifer to ponderosa pine.

In exclusively lodgepole pine stands where site conditions are not favorable to ponderosa pine, thinning should occur to provide a minimum of 20' X 20' spacing. Excessive dead/down fuels should be removed followed by understory maintenance.

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 make up 37% of the area in the planning area. The County owns only 1% of the land in this planning area. The Steering Committee recommends that County owned lands be treated in the same manner as privately owned lands.

Private lands with structural improvements

On private lands with structural improvements, the goal is for each structure to meet the specific standards for classified lands as identified in the Oregon Forestland – Urban Interface Fire Protection Act of 1997, also known as Senate Bill 360. This statute outlines standards and requirements for defensible space on private property that receives fire protection from Oregon Department of Forestry.

The Oregon Department of Forestry provides wildland fire protection in the Greater Sisters Country planning area and the Steering Committee supports the goals and standards of Senate Bill 360. Five classifications are possible under the Act – Low, Moderate, High, Extreme and High Density Extreme. East of the Cascades however, only three are possible due to an automatic rating for weather. The fourteen Communities at Risk fall under the ratings of High, Extreme or High Density Extreme. The Steering Committee agreed that the required standards under each classification from Senate Bill 360 are the goal to achieve on private and county owned lands throughout the Greater Sisters Country WUI.

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

The minimum Default Standards under the Oregon Forestland – Urban Interface Fire Protection Act of 1997 are:

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

If a property is classified as High, the standard includes the above requirements and a secondary fuel break around structures up to 20 feet if the structure has a flammable roof. For properties rated Extreme or High Density Extreme, secondary fuel breaks around structures up to an additional 70 feet are required if the structure has a flammable roof. The Steering Committee strongly encourages property owners to identify their own property classifications and follow defensible space guidelines for High, Extreme and High Density Extreme.

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

Vacant lots

Within the Greater Sisters Country WUI, approximately 20% of the private land is considered vacant, or lots with no structural improvements. Many of those are owned by “absentee owners”. In general, vacant lots owned by absentee owners present a specific threat to neighborhoods in that owners have little to no connections to the neighborhoods and in most cases do not recognize their responsibility to contribute to the safety of the entire neighborhood by reducing the hazardous vegetation on their properties. The risk of destructive wildland fires is thereby greater inside these neighborhoods due to the lack of owner attention on vacant lots.

The Steering Committee recommends that those vacant lots and acreages that are dominated by hazardous wildland fuels follow the guidelines under Senate Bill 360 for “High Density Extreme” which also includes the standard of a 20-foot fuel break around each vacant lot with an additional 80 feet of fuel break for a total of 100 feet of defensible space around the lot.

The Steering Committee recommends that those acres that are primarily agricultural in use follow the guidelines under Senate Bill 360 for “High”. Those guidelines are the same as described above for the Default Standards and also include a secondary fuel break of an additional 20 feet (a total of 50 feet).



Recommendations to Reduce Structural Vulnerability

Structural Vulnerability

Based on the assessment of structural vulnerability for the ODF Assessment of Risk, Table 7 identifies the main hazards within the fourteen Communities at Risk in the Greater Sisters Country planning area. For each hazard or risk listed, an action is recommended to address the threat or decrease the risk. Adequate water resources for fire suppression were not considered as part of this assessment. This topic is addressed under Action Plan and Implementation.

Table 7 – Recommendations to Reduce Structural Vulnerability

Community at Risk	Primary Hazards	Recommended Actions
Aspen Lakes	Firewise Community in 2008	Yearly maintenance of fuels & reapplication for Firewise status
Camp Sherman	20% have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	Almost all do not have defensible space	Homeowner education (FireFree, Firewise, SB 360)
	Evacuation routes not signed	Sign and maintain
	Some roads with insufficient width (<20 feet)	Identify, upgrade & maintain
Suttle Lake	10% have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	1/3 do not have defensible space	Homeowner education (FireFree, Firewise, SB 360)
	Only one road in/out	Establish additional routes, sign and maintain
	Some roads with insufficient width (<20 feet)	Identify, upgrade & maintain
Crossroads	10% have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	10% do not have defensible space	Homeowner education (FireFree, Firewise, SB 360)
	Few roads with insufficient width (<20 feet)	Identify, upgrade & maintain
Cascade Meadow Ranch	Firewise Community 2008	Yearly maintenance of fuels & reapplication for Firewise status
	1/3 have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	Few roads with insufficient width (<24 feet)	Identify, upgrade & maintain
	Few have only one road in/out	Establish additional routes, sign and maintain
Indian Ford	1/6 have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	50% do not have defensible space	Homeowner education (FireFree, Firewise, SB 360)
	Only one road in/out	Establish additional routes, sign and maintain
Tollgate	1/3 have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	No reflective street signs	Produce and install signs
	Few roads with insufficient width (<20 feet)	Identify, upgrade & maintain
Sage Meadow	1/3 have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	Few have only one road in/out	Establish additional routes, sign and maintain
	Few roads with insufficient width (<20 feet)	Identify, upgrade & maintain
Squaw Creek	Only a few have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	Only one road in/out	Establish additional routes, sign and maintain
Panoramic View Estates	1/3 have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	1/3 do not have defensible space	Homeowner education (FireFree, Firewise, SB 360)
	Few roads with insufficient width (<20 feet)	Identify, upgrade & maintain
Forked Horn	10% have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	1/3 do not have defensible space	Homeowner education (FireFree, Firewise, SB 360)
	Only one road in/out	Establish additional routes, sign and maintain
Plainview	1/6 have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	1/5 do not have defensible space	Homeowner education (FireFree, Firewise, SB 360)

Black Butte Ranch	1/6 have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	1/2 do not have defensible space	Homeowner education (FireFree, Firewise, SB 360)
Sisters	Only a few have flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	No reflective street signs	Produce and install signs

Table 8 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 8 – 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 outside city limits – call the Burn Line at the Sisters – Camp Sherman Fire District at 541-549-2333 to see if burning is allowed. Do not burn building materials.



Other Recommendations

Education

As stated in the Purpose of the Greater Sisters Country CWPP, three of the goals for this planning effort are to:

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

With these goals in mind, education and outreach are top priorities for the Greater Sisters Country CWPP. The rapid influx of new residents is just one reason the Steering Committee places high value on the education of Sisters 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 a fire resilient forest and community look like as well as easy access to resources that help them take action.

There are several opportunities to enhance educational efforts in the Greater Sisters area. All fire districts, the US Forest Service and BLM, the 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. The City of Sisters is working with the Sisters Area Chamber of Commerce to develop wildfire awareness and prevention information to place on the websites for both organizations.

Some neighborhoods in the Greater Sisters area are well organized through homeowners 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 Committee supports these groups and encourages their formation in the Sisters area to address the educational needs of current and incoming residents 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.

Utilizing the information in Tables 7 and 8, 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 their local fire department 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.



Action Plan and Implementation

The Steering Committee recognizes that the Greater Sisters Country CWPP is a living tool with multiple applications. The following priority actions are intended to assist individuals and agencies in the implementation of this CWPP across the Greater Sisters Country.

Priorities

Reduce hazardous fuels on public lands

Immediately following the acceptance and signed approval of this plan, the Steering Committee will make copies of the 2009 Greater Sisters Country CWPP available to all federal and state land managers including the Deschutes National Forest, the Bureau of Land Management, and the Oregon Department of Forestry. The intention of the Steering Committee is to engage in continued discussions with the Sisters community and adjacent landowners to implement the CWPP and accomplish hazardous fuels reduction projects that address the prioritized Communities at Risk in the most expeditious manner possible. The Steering Committee recognizes the effectiveness and value of maximizing treatment efforts in areas that are adjacent to federal, state or private projects and recommends that future projects consider these benefits when selecting areas for treatment.

Reduce hazardous fuels on private lands

The intention of the Steering Committee is to engage in continued discussions with landowners to facilitate fuels reduction projects on private lands utilizing the list of prioritized Communities at Risk. These actions can be accomplished through education activities or grants for specific projects on private lands.

Reduce Structural Vulnerability

The Steering Committee is charged with the task of engaging community members to review the Structural Vulnerability Assessment in this CWPP and identify projects that will strengthen the potential for the neighborhoods to survive a catastrophic wildland fire within the Greater Sisters Country WUI. Tables 7 and 8 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 individual sub regions.

The Steering Committee is also charged with the task of working with the fire districts to identify and assess the water resources available for fire suppression in the Communities at Risk. The

Steering Committee will make recommendations for projects to ensure adequate water resources are available for fire suppression.

Increase Awareness and Education

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

Identify, Improve and Protect Critical Transportation Routes

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

The Steering Committee encourages discussions with fire agencies and local landowners that address the issue presented when effective evacuation from an area is not available. Utilizing the 2009 Interagency Evacuation Guidelines, the Steering Committee will facilitate discussions to consider whether “sheltering in place” and safe staging areas are 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.

Fund Projects

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



Evaluation and Monitoring

The Steering Committee faced a complex task in the comprehensive revision of the Greater Sisters Country Community Wildfire Protection Plan. Implementing and sustaining these efforts will require a significant commitment. Building a collaborative and cooperative environment with the fire districts, 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 partners involved.

At a minimum, the Steering Committee shall include: the Program Coordinator from Project Wildfire; a Chief Officer from each fire district; a representative from Oregon Department of Forestry (ODF); a representative from Central Oregon Fire Management Service (COFMS), the City of Sisters and Deschutes County along with members of the Sisters area public.

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

Sisters – Camp Sherman Rural Fire Protection District will work with Project Wildfire to convene the Steering Committee at least once per year, or as often as the Steering Committee deems necessary to implement and review the Greater Sisters Country 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.

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