

## **CHAPTER 4: WILDFIRE RISK ASSESSMENT**

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One of the core elements of the Clackamas Community Wildfire Protection Plan is developing an understanding of the risk and potential losses to life, property, and natural resources during a wildfire in order to identify and implement the most effective strategies for preventing losses from fire, while allowing natural fires to take their course in shaping a more healthy and sustainable forest.

### **Risk Assessment Objectives**

- I. Develop and conduct a wildfire risk assessment to accurately portray vulnerable populations, property, and infrastructure.
- II. Utilize fire district boundaries to identify Communities-at-Risk (CARs), and encourage the identification of more detailed CARs during local planning processes
- III. Identify wildland-urban interface and forest-urban interface areas consistent with the state methodology and appropriate for future SB 360 development.
- IV. Coordinate with fire districts to determine risk level of highly vulnerable and/or unprotected areas.
- V. Develop a risk assessment at a level detailed enough to use in prioritizing fuels treatment and other fire prevention projects, but broad enough to encompass entire county.
- VI. Develop a risk assessment that can be adapted to reflect changing forest conditions.
- VII. Develop an appropriate point distribution system for risk assessment (protection capability, structural vulnerability, values, etc.) consistent with fire district priorities.
- VIII. Utilize state, county, and local data to create a seamless risk assessment that can be used as a foundation for fire districts can build their own more localized risk assessments for their community fire plans.

### **Risk Assessment Accomplishments**

The primary Risk Assessment Actions on which progress has been include:

- 1.) Improved the understanding of local wildfire risks.
  - ✓ Local Communities at Risk Map (Map #3)
  - ✓ Refined Wildland Urban Interface Map (Map#4)
- 2.) Improved structural ignitability data.
  - ✓ Structural triage GPS units were used to create structural ignitability dataset (Map #14).

## **Risk Assessment Actions**

The Risk Assessment Action Plan has been updated since 2005 to reflect accomplishments and ensure that the action plan remains relevant to current issues (Table 1-1.2012 CCWPP Action Plan). The high priority risk assessment actions to be addressed by the wildfire planning team will be to:

- 1) Maintain and Update the Fuels Reduction and Communities at Risk Maps and databases.
- 2) Continue to track structural vulnerability data throughout the County through structural triage assessments.
- 3) Update the Overall Wildfire Risk Assessment as new data becomes available.

## **Communities at Risk**

Different scales of CAR's are necessary to direct large-scale State and Federal planning efforts as well as local outreach projects. For a listing of Federal and State CAR's, please see the 2005 CCWPP. The Clackamas CWPP addresses wildfire hazards county-wide (not just those areas in close proximity to state or federal lands) and as such, identified each local fire district or department as individual Communities at Risk.

### **Local Communities at Risk/ Strategic Planning Areas**

CCWPP partners also recognize that there are smaller-scale Communities at Risk that have unique wildfire hazards to be addressed at the more local scale. These areas were referred to as Strategic Planning Areas in the 2005 iteration of the CWPP, but will now be referenced as Local Communities at Risk to be consistent with state and federal language. Communities that have been identified as being particularly vulnerable to wildfires are illustrated in Map # 3 CCWPP Communities at Risk and listed in Table 4-1. Fire professionals considered the following factors to determine the local CARs including:

- Need for defensible space
- Access limitations (narrow driveways, lack of address signage, one way in/one way out)
- Steep slopes that can hinder access and accelerate the spread of wildfire
- Lack of water available for wildland fire fighting
- Heavy fuels on adjacent public lands
- Potential ignition sources from recreationists and transients
- Agricultural and backyard burning
- Lack of community outreach/awareness
- Communication issues

**Table 4-1. Local Communities at Risk in Clackamas County**

Fire Agency	Priority	Community At Risk	Fire Agency	Priority	Community At Risk
Aurora Fire	High	Whiskey Hill	Gladstone Fire	High	Parkway Woods
Aurora Fire	High	Eilers	Gladstone Fire	High	Billy Goat Island
Aurora Fire	High	Butteville	Gladstone Fire	High	Dahl Beach
Boring Fire	High	Damascus Lava Domes	Gladstone Fire	Med	Risley Wetlands
Boring Fire	High	Donna Court	Gladstone Fire	Low	Meldrum Bar
Boring Fire	High	Hwy 224 Corridor	Hoodland Fire	High	Marmot Road
Boring Fire	High	Bartell Road	Hoodland Fire	High	Government Camp
Boring Fire	High	Gold, Bronze, Nickel	Hoodland Fire	High	Summer Homes
Boring Fire	High	Mountain View	Hoodland Fire	High	Rhododendron
Boring Fire	Med	Amisigger Road	Hoodland Fire	High	Lolo Pass
Boring Fire	Med	Tickle Creek	Hoodland Fire	High	Cherryville-Alder Creek
Boring Fire	Low	Eagle Fern Park	Hoodland Fire	Med	Trillium Lake
Canby Fire	High	Adkins Circle	Hoodland Fire	Med	Welches-Wemme
Canby Fire	High	Sundowner	Hoodland Fire	Med	Timberline Rim
Canby Fire	Med	Public Works	Hoodland Fire	Med	Sleepy HolLow
Canby Fire	Med	Dutch Vista	Hoodland Fire	Med	Brightwood
Canby Fire	Med	N Side Molalla River	Hoodland Fire	Med	Wildwood
Canby Fire	Low	River Park	Lake Oswego Fire	High	Iron Mountain
Canby Fire	Low	South End	Lake Oswego Fire	High	Palisades
Clackamas Fire	High	Canemah	Lake Oswego Fire	High	Cooks Butte
Clackamas Fire	High	Mt Talbert	Lake Oswego Fire	Med	Mountain Park Area
Clackamas Fire	High	Scouters Mountain	Lake Oswego Fire	Med	Tryon Creek
Clackamas Fire	High	Redland Area	Lake Oswego Fire	Low	Waluga Park
Clackamas Fire	High	Beaver Lake	Lake Oswego Fire	Low	Springbrook Park
Clackamas Fire	High	Clarkes	Molalla Fire	High	Alder Creek
Clackamas Fire	High	Leisure Woods	Molalla Fire	High	Rosewood
Clackamas Fire	Med	Holcomb	Molalla Fire	High	Sawtell
Clackamas Fire	Med	Three Creeks	Molalla Fire	Med	Molalla Heights
Clackamas Fire	Med	Dianne/Shelly	Molalla Fire	Med	Fernwood Area
Colton Fire	High	Boomer Springs	Molalla Fire	Med	Dickey Prairie
Colton Fire	High	Walton Road	Molalla Fire	Low	Big Rock
Colton Fire	High	Deardorff Road	Molalla Fire	Low	Salo Area
Colton Fire	Med	Elwood	Molalla Fire	Low	Blue Road
Colton Fire	Med	Hunter Road	ODF	High	Sawtell, Cooper Road
Colton Fire	Med	Holt	ODF	High	Elk Prairie & Family Camp
Colton Fire	Med	Dhooghe Road	ODF	High	East Highland
Colton Fire	Med	Fernwood Road	ODF	Med	Butte Creek Unprotected
Estacada Fire	High	Paradise Park	ODF	Med	Lais Rd & North Fork Rd
Estacada Fire	High	George	ODF	Med	Ramsby Rd Unprotected
Estacada Fire	High	Garfield/Porter	ODF	Med	Lower Highland & Ridge
Estacada Fire	High	Dodge Hillockburn	ODF	Med	Wapanitia
Estacada Fire	Med	Viola	Sandy Fire	High	Cedar Creek
Estacada Fire	Med	Ranger Woods	Sandy Fire	High	Firwood
Estacada Fire	Med	Mclver State Park	Sandy Fire	High	Wildcat Mountain
Estacada Fire	Med	Metzler Park	Sandy Fire	Med	Bull Run
Estacada Fire	Low	Silver Fox RV Park	Sandy Fire	Med	Bluff Road

**Table 4.1. Local Communities at Risk in Clackamas County (continued)**

Fire Agency	Priority	Community At Risk
Silverton Fire	High	Maple Grove
Silverton Fire	High	Boy Scout Camp
Silverton Fire	High	Butte Creek Rd
Silverton Fire	Med	S Wildcat
Silverton Fire	Med	Meadow Ct/Marquam
Silverton Fire	Low	Prospect
Silverton Fire	Low	Groshong Rd
TVF&R	High	Skye Parkway Area
TVF&R	High	Wilderness Park
TVF&R	High	I 205 Corridor
TVF&R	High	Ladd Hill Area
TVF&R	Med	Prosperity Park
TVF&R	Med	Palomino Loop
TVF&R	Med	Rosemont
TVF&R	Med	Wisteria
TVF&R	Med	Frobese
TVF&R	Med	Wheatland
TVF&R	Med	Frogpond
TVF&R	Med	Pete's Mountain Area
USFS	High	Ripplebrook
USFS	Med	Joe Graham
USFS	Med	Timberlake
USFS	Med	Three Lynx

### **Wildland Urban Interface (Map #4)**

The CCWPP risk assessment subcommittee used the federal register and HFRA’s guidance for determining the WUI. In an effort to identify the areas where “humans and their development intermix with wildland fuel,” we identified the areas that have an urban density of at least one structure per forty acres *and* have hazardous fuels (Fuel Type III: tall flammable grass, heavy flammable brush, or heavy timber).

The 2005 iteration of the WUI included a larger-scale, *Primary WUI* that would be used for planning larger-scale fuels modification work (the Intermix Community). In addition, the committee determined that a smaller scale, *Secondary WUI* will be used to target property owners for educational efforts for reducing wildfire hazards around the home (the Interface Community). The difference in the Primary and Secondary WUI is the buffer associated with the original overlay of housing density and hazardous fuels (Map #4: Primary and Secondary Wildland Urban Interface).

Although the idea of 2 separate scales of the WUI worked well theoretically, it did not provide the level of detail or include local knowledge to truly make a distinction between high risk and low risk areas. In addition, there were many “outliers” that showed small areas of WUI in extremely rural areas with no development.

The 2012 WUI improves upon the 2005 WUI by creating a more realistic Wildland Urban Interface Boundary that includes all of the Communities at Risk identified by fire agencies. It also eliminates the outliers. Specifically, the analysis used a density indicator of 4 structures per 40 acres (as opposed to 1 structure per 40 acres used in the 2005 edition) to identify clusters of residences. Areas meeting the density requirement were overlaid with Fuel Type III (tall flammable grass, heavy flammable brush, or heavy timber) to determine where hazardous vegetation is adjacent to communities. To reduce the number of outliers, communities had to be larger than 5 acres to be included. The resulting areas were buffered to 660' and some areas were expanded to include Communities at Risk (CARs) identified by local fire professionals.

**Overall Wildfire Risk**

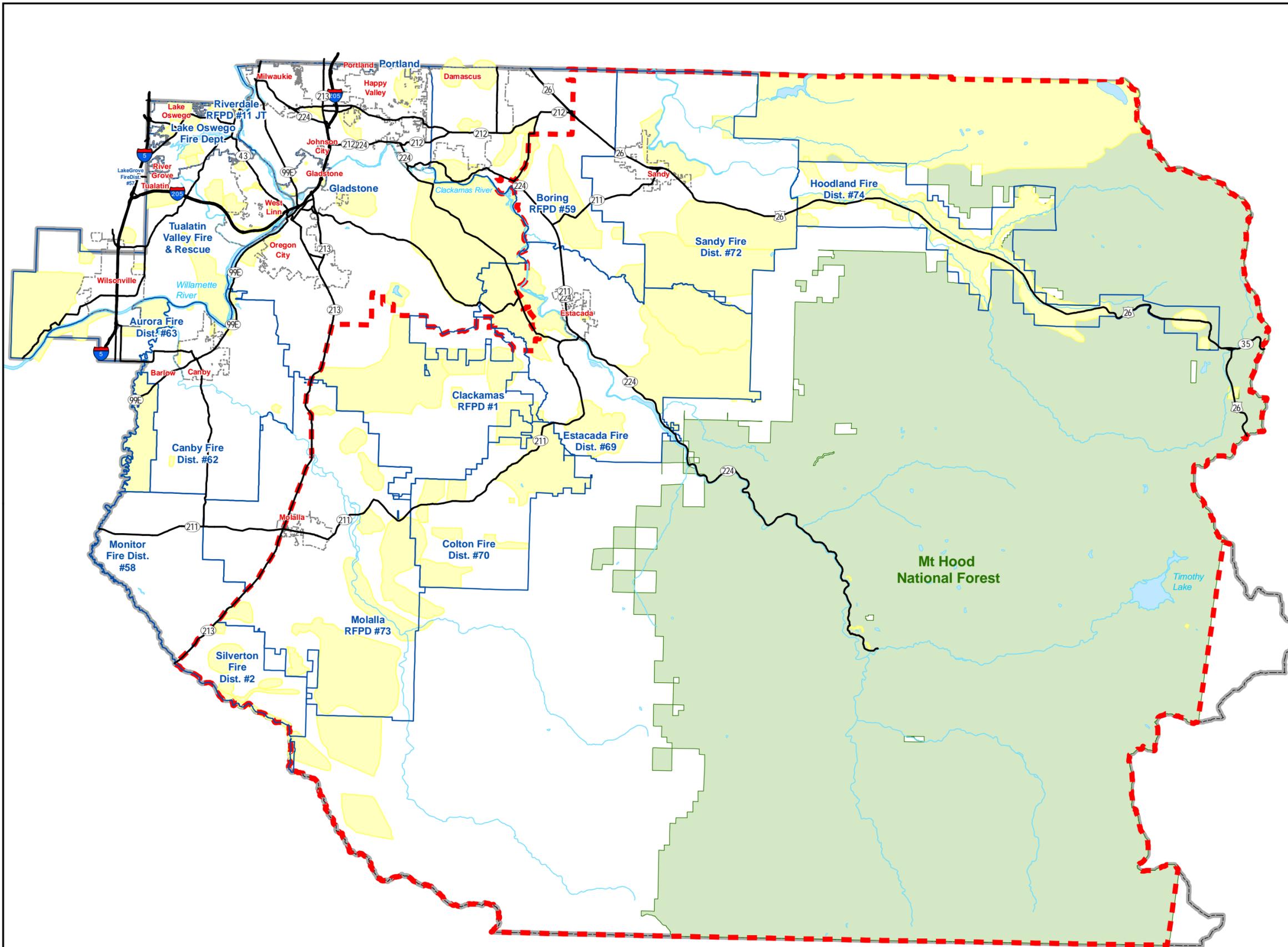
There have been no significant changes to the data included in the 2005 Overall Wildfire Risk Assessment (Map # 10). The primary landscape-level change would be additional development in the WUI, which is captured in the 2012 Wildland Urban Interface Map. The data used to determine the Overall Wildfire Risk Assessment are described in Table 4-2.

**Table 4-2. Risk Assessment Elements**

The Assessment considers four categories in determining the relative severity of fire risk. Structural Vulnerability is a fifth category that will be examined in local plans but is not considered at the state or county level due to limited available data.

<b>Assessment Categories</b>	<b>Elements</b>	<b>Score</b>
Hazard	Fuels (developed from vegetation information), Slope, Aspect, Elevation, Weather	0-80
Risk	Historic Fire Occurrence (derived from state and federal fire agency databases) and an estimation of ignition risk based on expert opinion and home density	5-40
Values	Life/Property as determined by home density (homes per 10 acres) and community infrastructure	0-50
Protection Capability	Fire Response Time (determined from fire district boundaries and district-reported response times) and Community Preparedness	0-40
Structural Vulnerability	Roof type, Defensible space, and Access	No Data

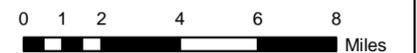
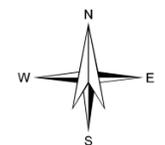
# CCWPP Communities at Risk 2012



- Communities at Risk
- Fire Districts
- Oregon Department of Forestry
- Mt Hood National Forest
- City Boundaries

Fire agencies identified local Communities at Risk as those being particularly vulnerable to wildfires due to access, water, communications, terrain, ignition sources, public awareness and heavy vegetation.

**Map #3**

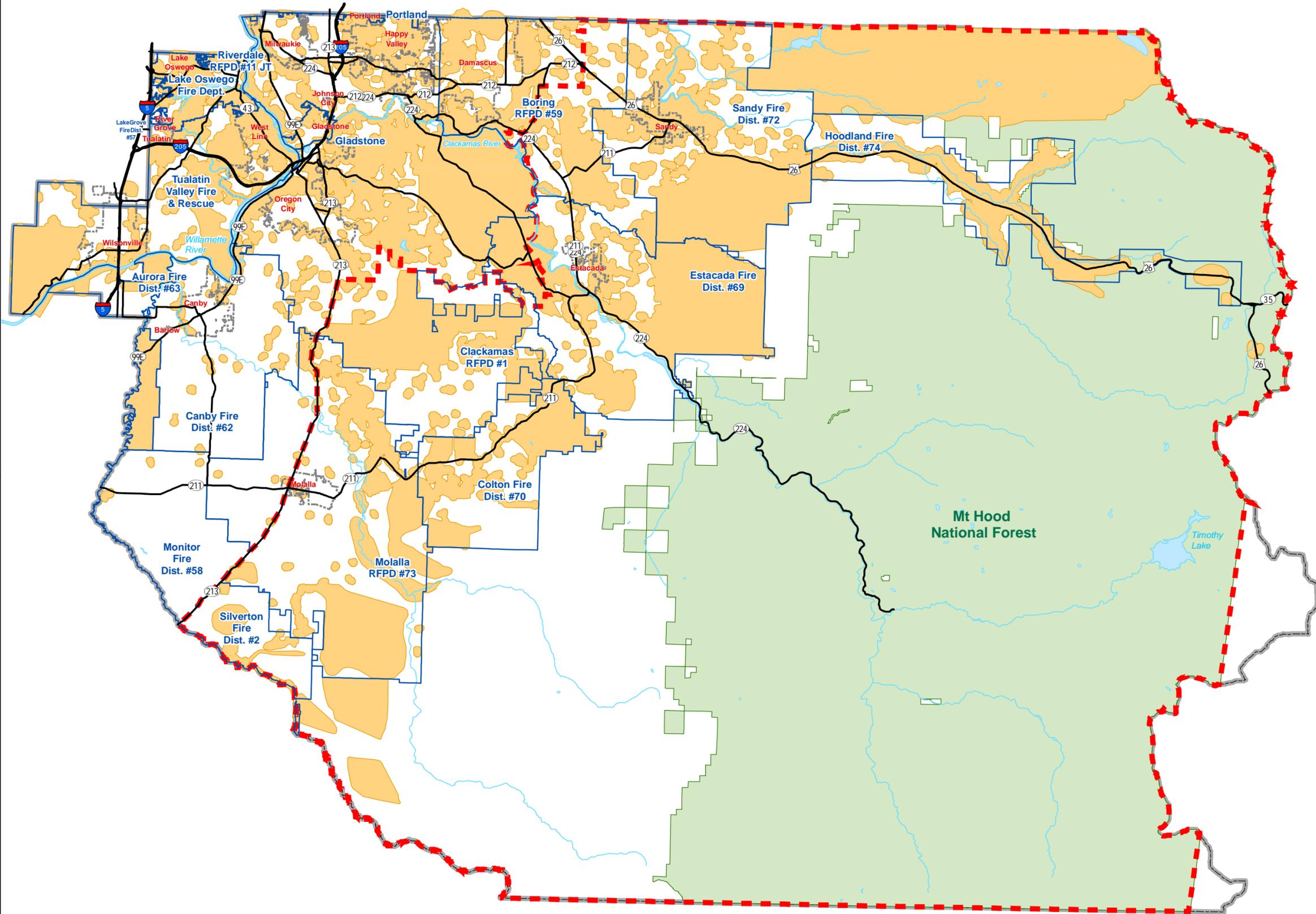


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# Wildland Urban Interface (WUI) 2012



- WUI
- Fire Districts
- Oregon Department of Forestry
- Mt Hood National Forest
- City Boundaries

WUI areas contain 4 structures per 40 acres and are within Fuel Type III (tall flammable grass, heavy flammable brush, or heavy timber). Each area meeting these criteria had to be larger than 5 acres to be included. The resulting areas were buffered to 660' and some areas were expanded to include entire locally-defined Communities at Risk (CARs).

## Map #4

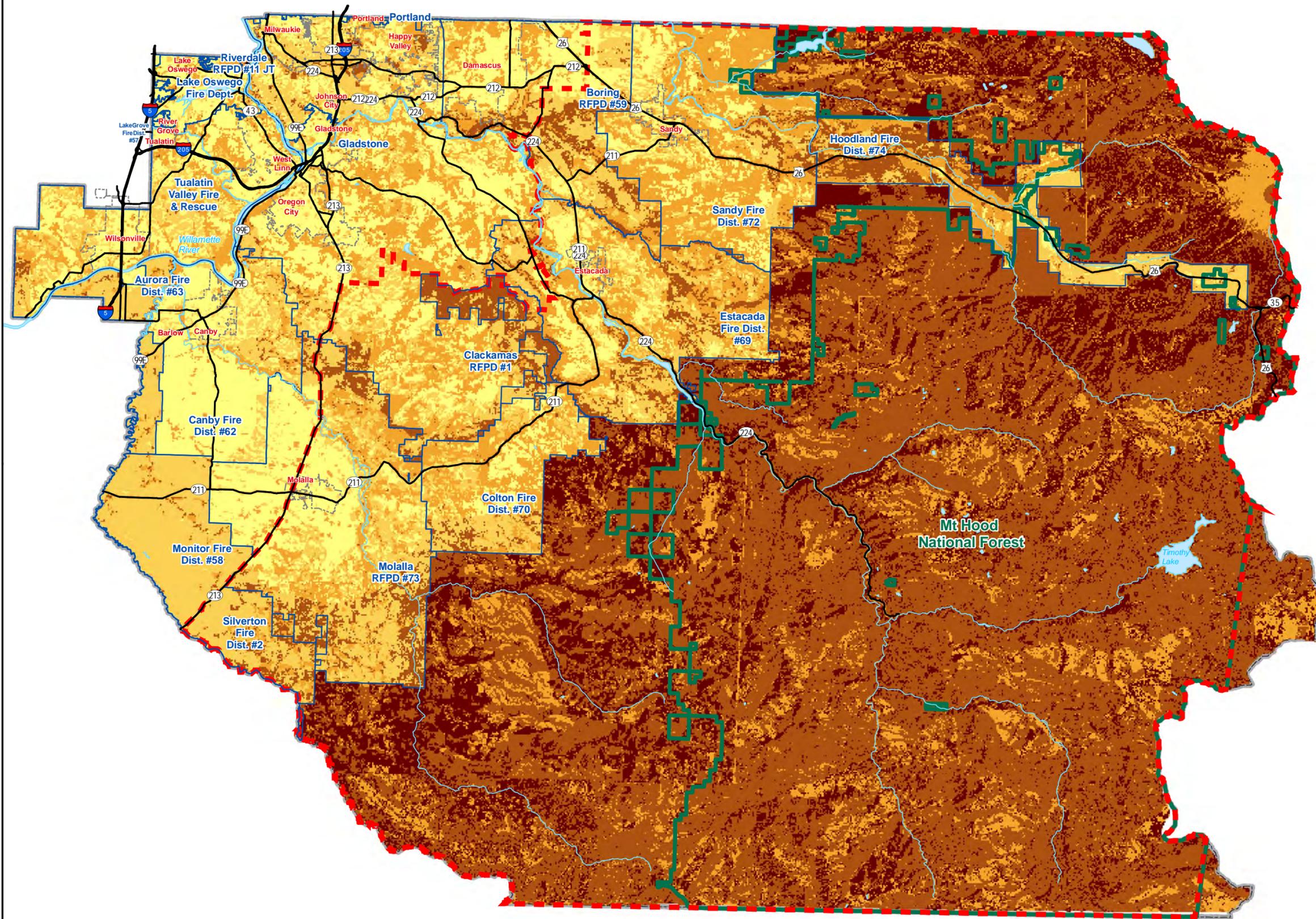


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# Overall Risk of Wildfire in Clackamas County



- Fire Districts
- Oregon Department of Forestry
- Mt Hood National Forest
- City Boundaries

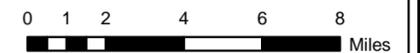
## Overall Wildfire Risk

### Value

- Low
- Low - Moderate
- Moderate
- Moderate - High
- High

Overall Risk of Wildfire in Clackamas County determined from state-wide risk assessment model outlined in 2004 by the Oregon Department of Forestry using topography, weather, fuels, historic fire and ignition risk, community values and protection capabilities. Overall risk was not updated in 2012 due to lack of significant data changes.

## Map #10



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