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# WILDFIRE MITIGATION PLAN

*May 31, 2022*

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## I. INTRODUCTION

Hood River Electric & Internet Co-op (HR Co-op) is a not-for-profit, member-owned cooperative corporation founded on June 15, 1945. The Co-op is headquartered in Odell, Oregon and provides electric service to approximately 3,900 electric meters in the upper Hood River Valley, along 273 miles of electric distribution lines. HR Co-op also provides internet service to approximately 2,800 subscribers over a fiber and fixed wireless network.

HR Co-op’s mission is, “To provide affordable, reliable services to members using sound business practices and following the cooperative principles.”

Figure 1. HR Co-op Service Area – Location in Oregon

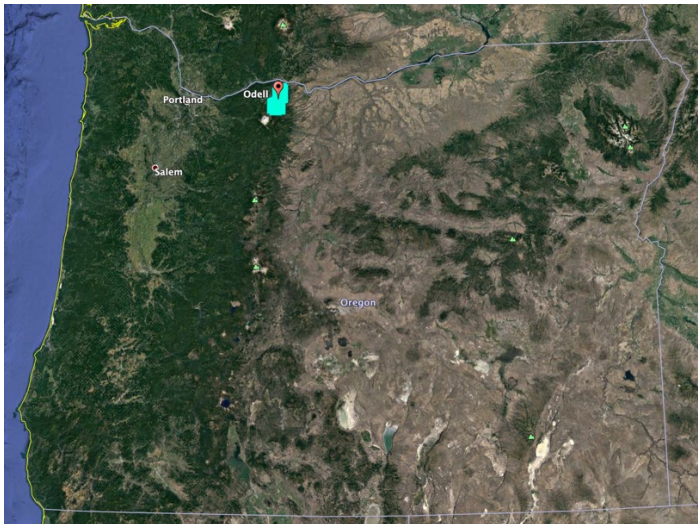
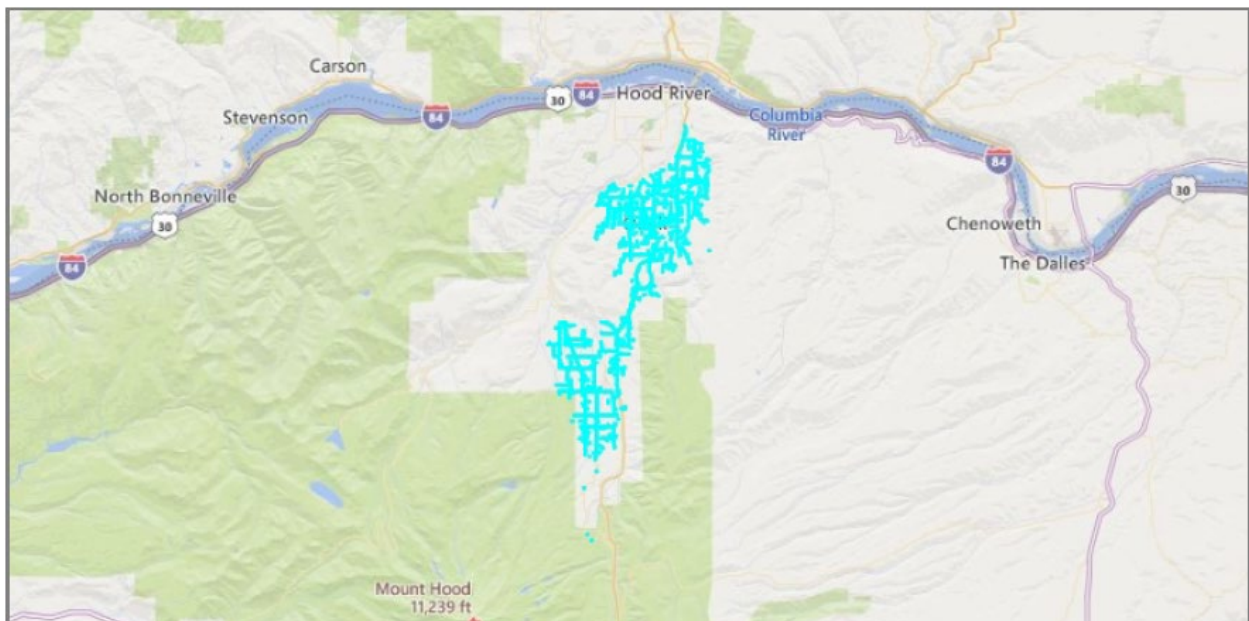


Figure 2 – HR Co-op Electric Service Area Detail



## A. POLICY STATEMENT

HR Co-op's overarching goal is to provide safe, reliable, and economic service to its local community. In order to meet this goal, HR Co-op constructs, maintains, and operates its electrical lines and equipment in a manner that minimizes the risk of catastrophic wildfire posed by such lines and equipment.

## B. PURPOSE OF THE WILDFIRE MITIGATION PLAN

This Wildfire Mitigation Plan (WMP) describes in detail the range of activities that HR Co-op is taking to mitigate the threat of power-line ignited wildfires, including its various programs, policies, and procedures. This plan is subject to direct supervision by the HR Co-op Board of Directors.

## C. ORGANIZATION OF THE WILDFIRE MITIGATION PLAN

This Wildfire Mitigation Plan includes the following elements:

- Objectives of the plan;
- Roles and responsibilities for carrying out the plan;
- Identification of key wildfire risks and risk drivers;
- Description of Wildfire Prevention Strategies;
- Metrics for measuring the performance of the plan and identifying areas for improvement;
- Community outreach and education.

## D. MINIMIZING SOURCES OF IGNITION

The primary goal of this Wildfire Mitigation Plan is to minimize the probability that HR Co-op's transmission and distribution system may be an original or contributing source for the ignition of a fire. HR Co-op has evaluated the prudent and cost-effective improvements to its physical assets, operations, and training that can help to meet this objective. HR Co-op has implemented those changes consistent with this evaluation.

## E. RESILIENCY OF THE ELECTRIC GRID

The secondary goal of this Wildfire Mitigation Plan is to improve the resiliency of the electric grid. As part of the development of this plan, HR Co-op assesses high fire risk areas and the cost-value to redesign or relocate those facilities that will reduce a disruption in service. HR Co-op monitors fire risk and evaluates changing current system protection settings that will reduce the likelihood for an ignition of a fire.

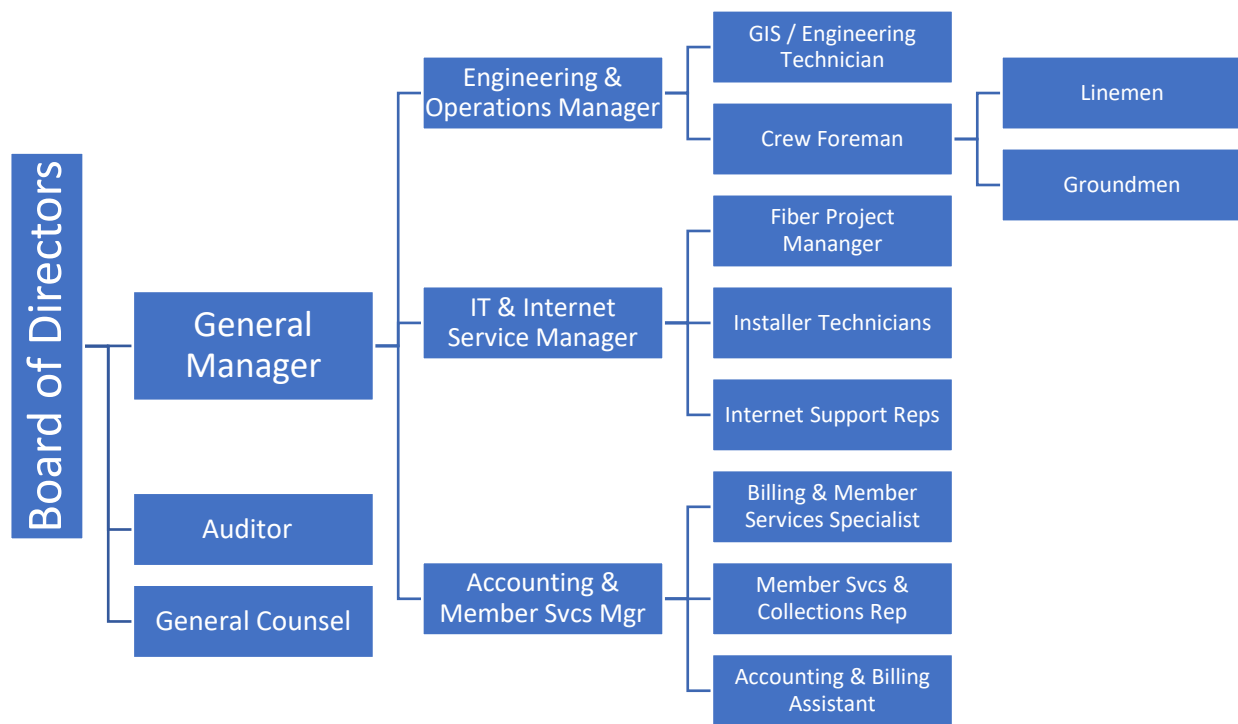
## F. MINIMIZING UNNECESSARY OR INEFFECTIVE ACTIONS

The final goal for this Wildfire Mitigation Plan is to measure the effectiveness of specific wildfire mitigation strategies. The Wildfire Mitigation Plan will have four performance metrics (1) number of fire

ignitions; (2) wires down within the service territory during the fire season; (3) number of red flag warnings issued in the service territory; (4) number of de-energizations in the service territory. Where a particular action, program, or protocol is determined to be unnecessary or ineffective, HR Co-op will assess whether a modification or replacement is merited. This plan will also help determine if more cost-effective measures would produce the same or better results.

## II. ROLES AND RESPONSIBILITIES

### A. HR CO-OP ORGANIZATIONAL STRUCTURE



A nine-member Board of Directors, elected by the membership at large, sets rates and policies for the co-op. The board appoints a General Manager, who oversees operations, and appoints the auditor and general counsel.

The Engineering & Operations Manager oversees electric operations, develops the construction & maintenance plan, and is responsible for the overall implementation and execution of the Wildfire Mitigation Plan.

### B. HR CO-OP EMERGENCY OPERATIONS

HR Co-op journeymen linemen participate in an on-call rotation, with one lineman on call during all non-working hours. For minor outages, the after-hours answering service contacts the lineman on call

directly to initiate response. The lineman on call determines whether additional personnel or resources are needed for repairs.

During major events, the Engineering & Operations Manager leads emergency response efforts and prioritizes and assigns field work. The General Manager serves as the backup for this role.

HR Co-op staff have the following responsibilities regarding fire prevention, response, and investigation:

- Conduct work in a manner that will minimize potential fire dangers.
- Take all reasonable and practicable actions to prevent and suppress fires resulting from HR Co-op electric facilities.
- Coordinate with federal, state, and local fire management personnel to ensure that appropriate preventative measures are in place.
- Immediately report fires, pursuant to specified procedures.
- Take corrective action when observing or having been notified that fire protection measures have not been properly installed or maintained.
- Ensure compliance with relevant federal, state, and industry standard requirements.
- Ensure that wildfire data is appropriately collected.
- Maintain adequate training programs for all relevant employees.

### C. NATIONAL INCIDENT MANAGEMENT SYSTEM

Oregon communities face a diversity of threats and hazards. The size, frequency and complexity of these incidents vary, but all can involve a range of personnel and organizations from different jurisdictions to coordinate efforts to save lives, stabilize the incident, and protect property and the environment. Success in these efforts depends on a common, interoperable approach to sharing resources, coordinating, and managing incidents, and communicating information. The National Incident Management System (NIMS) defines this comprehensive approach.

NIMS provides a consistent nationwide approach for federal, state, local, and tribal governments to work effectively and efficiently together to prepare for, prevent, respond to and recover from domestic incidents, regardless of cause, size or complexity. Oregon adopted NIMS as its Incident Management System through legislative statute 401.092 which states "Coordinate the activities of state and local governments to enable state and local governments to work together during domestic incidents as provided in the National Incident Management System."

HR Co-op has access to the Oregon Emergency Response System (OERS), which coordinates and manages state resources in response to natural and technological emergencies and civil unrest requiring cooperation between all levels of government and the private sector.

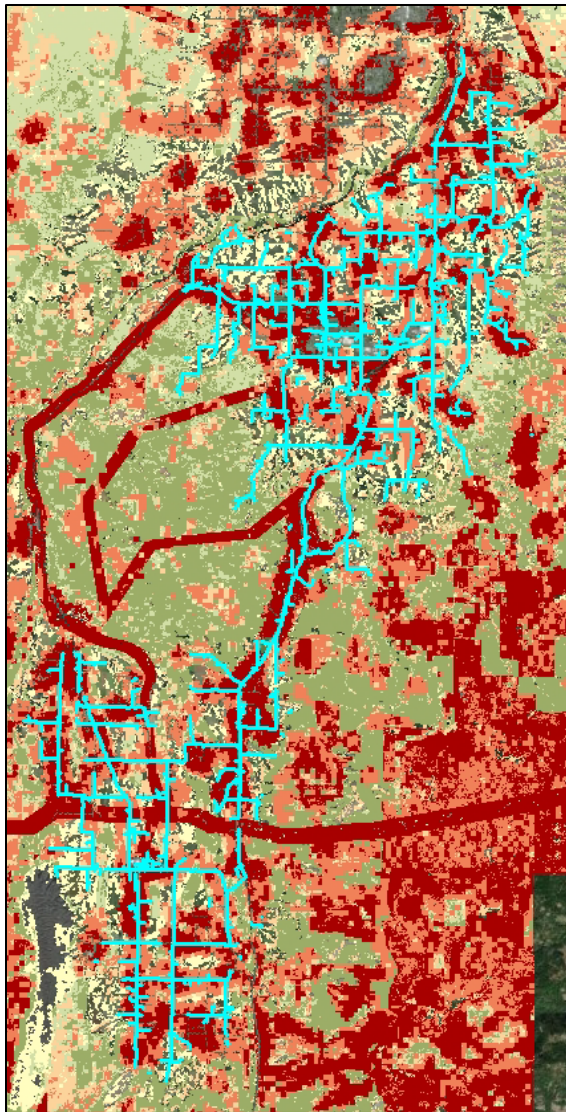


### III. WILDFIRE RISKS AND DRIVERS ASSOCIATED WITH DESIGN, CONSTRUCTION, OPERATION, AND MAINTENANCE

#### A. PARTICULAR RISKS AND RISK DRIVERS ASSOCIATED WITH TOPOGRAPHIC AND CLIMATOLOGICAL RISK FACTORS

- Extended drought
- Vegetation type
- High winds
- Steep terrain
- Lack of early fall rains

#### B. HR CO-OP FIRE THREAT MAP



This map from the Oregon Wildfire Risk Explorer details the overall wildfire risk within HR Co-op’s allocated service area.

Figure 3 – Wildfire Hazard Areas in HR Co-op Territory

Overall wildfire risk: Legend	
<span style="color: red;">■</span> Very High	Wildfire risk is very highly negative (top 5% of values).
<span style="color: red;">■</span> High	Wildfire risk is highly negative (80th to 95th percentile).
<span style="color: orange;">■</span> Moderate	Wildfire risk is moderately negative (50th to 80th percentile).
<span style="color: yellow;">■</span> Low	Wildfire risk is slightly negative (29th to 50th percentile).
<span style="color: lightgreen;">■</span> Low Benefit	Wildfire is slightly beneficial (14.5 to 29th percentile).
<span style="color: darkgreen;">■</span> Benefit	Wildfire is beneficial overall (0-14.5th percentile).
<span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> Non-burnable	There are no highly valued resources or assets mapped in the area, or it is considered non-burnable (urban, agriculture, etc).

## IV. WILDFIRE PREVENTATIVE STRATEGIES

### A. HIGH FIRE THREAT AREAS

HR Co-op staff identified areas within the service territory that are at an elevated or extreme risk of power line ignited wildfire. HR Co-op's capital improvement plan prioritizes plans to mitigate risks in High Fire Threat areas by maintaining sufficient clearances, converting lines from overhead to underground, and ensuring inspection, maintenance, and repair protocols are followed.

### B. WEATHER MONITORING

HR Co-op monitors the daily and forecasted fire weather data and Industrial Fire Precaution Levels (IFPLs) from the Oregon Department of Forestry's Central Oregon District during the fire season. (<http://odfcentraloregon.blogspot.com/>).

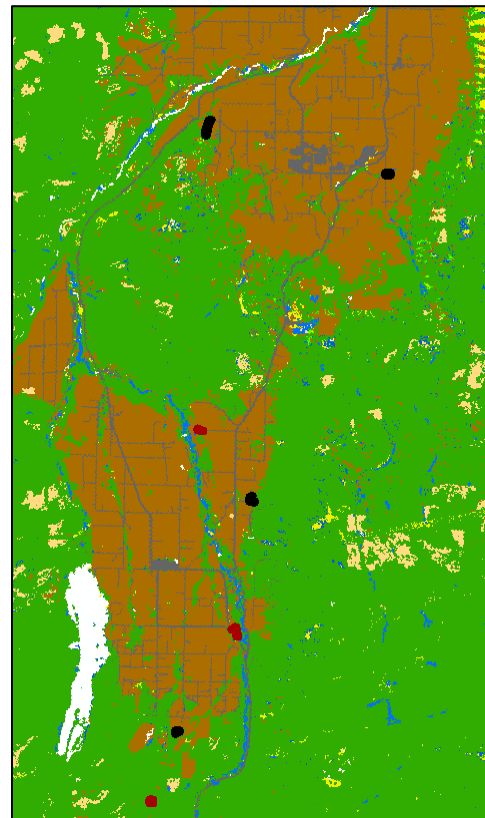
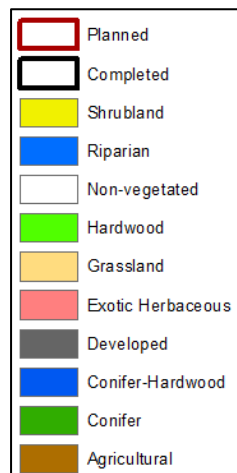
If a Fire Weather Watch or Red Flag Warning is issued, HR Co-op will assess and limit activities in areas identified fire risk areas and take the necessary precautions to mitigate risk when work is performed.

### C. DESIGN AND CONSTRUCTION STANDARDS

HR Co-op's electric facilities are designed and constructed to meet or exceed the relevant federal, state, or industry standards. Additionally, HR Co-op monitors and follows, as appropriate, the National Electric Safety Code.

HR Co-op strives to harden its electric system by identifying high risk fire areas in the service territory and is systematically converting overhead powerlines to underground. This process will help ensure a more resilient system for Co-op members by eliminating potential wildfire risk due to overhead powerlines. (See Figure 4)

Figure 4 – Map displays completed and planned overhead to underground line conversions.



## D. VEGETATION MANAGEMENT

HR Co-op meets or exceeds the minimum industry standard vegetation management practices. For both transmission and distribution level facilities, HR Co-op meets: (1) Oregon Public Utilities Commission (OPUC) 860-024-0016: Minimum Vegetation Clearance requirements. (2) Oregon Public Utilities Commission (OPUC) 860-024-0017: Vegetation Pruning Standards. An operator that is an electric utility as defined in ORS 758.505 must perform tree and vegetation work associated with line clearance in compliance with the American National Standard for Tree Care Operations, ANSI A300 (Part 1) 2008 Pruning, approved May 1, 2008, by the American National Standards Institute. These standards require increased clearances in High Fire Threat areas. The time-of-trim guidelines do not establish a mandatory standard, but instead provide useful guidance to utilities.

Within High Fire Threat areas, HR Co-op evaluates trees that have the potential to strike overhead facilities if they were to fall. HR Co-op performs more frequent and detailed inspections of any such trees, and in severe cases will work with the landowner to remove the tree.

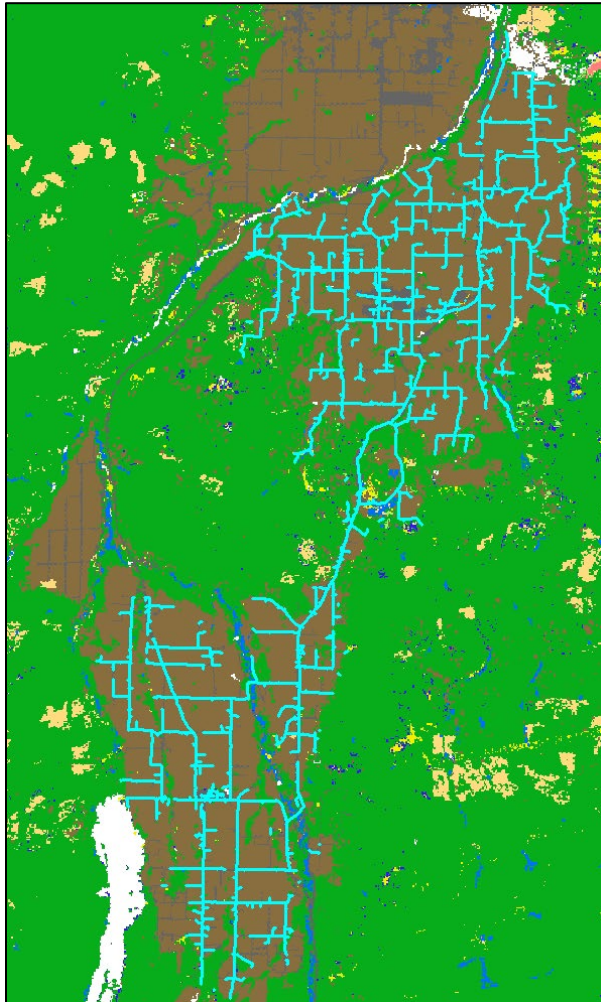
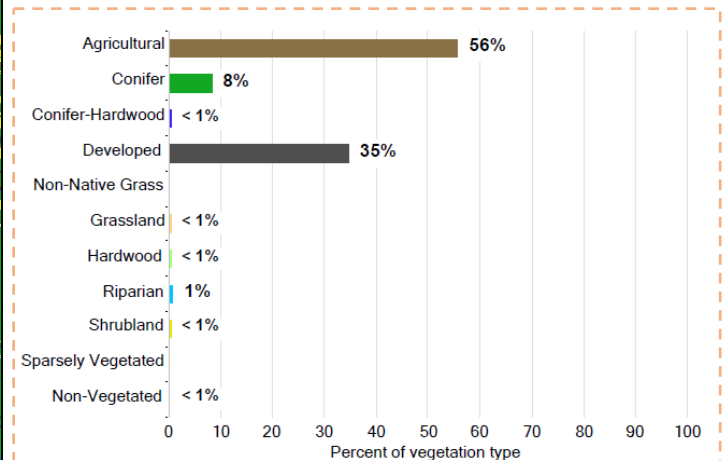


Figure 5 –HR Co-op Overhead Distribution Line Existing Vegetation Type



## E. INSPECTIONS

HR Co-op meets or exceeds the minimum inspection requirements provided in [OPUC 860-024-0011](#), Inspections of Electrical Supply and Communication Facilities. Pursuant to these rules, HR Co-op inspects electric facilities in the High Fire Threat areas more frequently than that of the other areas of its service territory. Additionally, HR Co-op staff uses their knowledge of the specific environmental and geographical conditions to determine when areas not considered to be High Fire Threats require more frequent inspections.

HR Co-op performs infrared thermography surveys utilizing a FLIR camera in certain areas of its service territory to identify potential issues and provide prevention of failures to HR Co-op facilities. This tool helps prioritize weaknesses in the system that need to be addressed to maintain safety and reliability.

HR Co-op inspects all its overhead lines annually. HR Co-op has identified areas that it considers High Fire Threat areas. (See Figure 6.) Inspections specific to these locations are completed and any

documented issues are resolved before the beginning of the fire season. HR Co-op monitors drought conditions and other relevant factors throughout the year to determine if inspections should be completed on a shorter timeframe.

HR Co-op tests and treats all its wood pole structures every 10 years. A contractor performs the inspections, and the co-op repairs or replaces poles identified during this inspection process. HR Co-op is utilizing GIS technology to assist in inspections. This new technology will help HR Co-op leverage the long-term recording of inspection information.

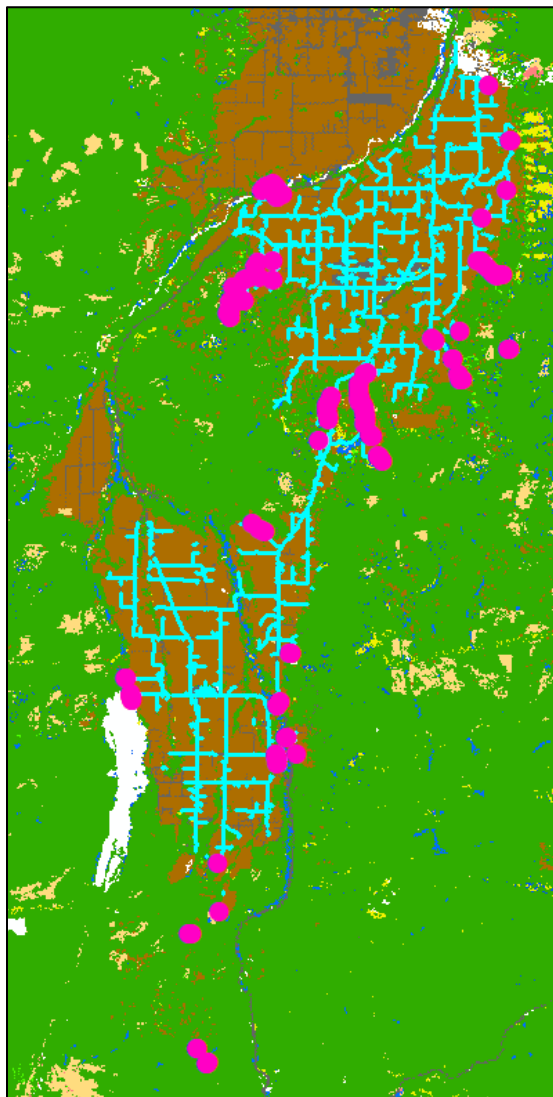
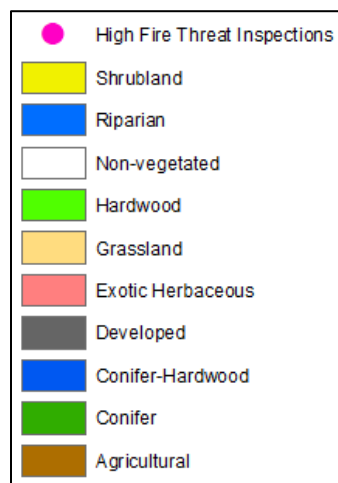


Figure 6 – Inspections specific to High Fire Threat in HR Co-op Territory



## F. WORKFORCE TRAINING

HR Co-op has implemented work rules and complementary training programs for its workforce to help reduce the likelihood of the ignition of wildfires.

- Identification of work practices that may ignite fires such as power equipment operation, line construction, and vehicle operation in high-risk areas such as parking off-road.
- In-house training on risk identification and reviews of the mitigation plan.
- Annual training on the proper use of fire extinguishers.
- Written reports of conditions needing attention.
- Equipping each crew with firefighting equipment to meet ODF and USFS requirements for specified Industrial Fire Protection Levels.
- Placing restrictions on vegetation management activities during high-threat periods.
- A requirement to patrol lines prior to re-energization after a line-trips.
- Train field employees annually on the heightened procedures and provide situational awareness in daily briefings.

## G. RECLOSING POLICY

The Co-op will evaluate fire risk and may set some or all Oil Circuit Reclosers (OCRs or reclosers) on its system to a one-shot setting that is more sensitive than the normal setting. Fire season is typically defined as early June through early October but may be extended based on actual fire danger. Operational needs may change due to extended/early winter conditions within the service territory. During these types of weather events the Engineering & Operations Manager may suspend or extend the one-shot settings based on weather conditions. In the event there was the lack of winter precipitation, reclosers may be placed on one-shot settings ahead of the fire season due to the potential wildfire conditions.

## H. DE-ENERGIZATION

HR Co-op has the authority to preemptively shut off power due to fire-threat conditions, however, this option will only be used in extraordinary circumstances. HR Co-op will make a case-by-case decision to shut off power based on the following considerations:

- HR Co-op staff assessments of local conditions, including wind speed (sustained and gust), humidity and temperature, fuel moisture, fuel loading, and data from weather stations.
- Real-time information from staff located in areas identified as at risk of being subject to extreme weather conditions.
- On-going fire activity throughout the service territory.
- HR Co-op will evaluate the impact to Public Safety prior to de-energization.
- HR Co-op will make every effort to notify members of the of de-energization. If possible, HR Co-op will provide notification to members 48 hours prior to the de-energization.

## V. COMMUNITY OUTREACH AND PUBLIC AWARENESS

HR Co-op communicates with members about outages and outage safety both before and during planned and unplanned outages. The co-op uses its website, social media platforms, and other communication channels to inform members of outage status and to convey critical information. When outages are widespread or emergent information needs to be conveyed, the co-op's answering service can send high-volume, automated phone notifications to affected members quickly.

Planned outages for system maintenance are rare. In these cases, HR Co-op provides at least a week's notice to affected members. HR Co-op's member service representatives contact affected members via phone, email, or door hanger to provide the details and to address any potential concerns. HR Co-op also uses its website and social media platforms including Facebook and Twitter to provide notification, updates, and information as needed in these cases.

With regard to fire prevention and mitigation education, HR Co-op uses its website, social media platforms, and Ruralite magazine to share information, and redirects members to an educational site maintained by the Hood River County: <https://www.getreadygorge.com>.

## VI. COORDINATION WITH STAKEHOLDERS

HR Co-op will coordinate local, state, and federal offices of emergency management and other critical stakeholders, such as the Hood River County Sheriff's Office Emergency Management, the Oregon Department of Forestry, and the US Forest Service, during an emergency. The Engineering & Operations Manager and the General Manager are the points of contact for communicating with these agencies during ongoing disasters.

The Hood River Fire Chief's Association serves as the coordinated wildfire protection group for the HR Co-op service area. The association meets monthly to discuss county conditions and action items. HR Co-op will coordinate with the association when the county's hazardous fuels reduction projects align with HR Co-op right-of-way fuels reduction needs.

## VII. RESTORATION OF SERVICE

If an outside emergency management/emergency response agency requests a power shutdown, or if HR Co-op elects to de-energize segments of its system due to extreme weather, HR Co-op staff will patrol the affected portions of the system before the system can be re-energized. Suspect equipment or distribution lines that cannot immediately be patrolled will remain de-energized. Poles and structures damaged in a wildfire must be assessed and rebuilt as needed prior to re-energization. Periodic customer and media updates of restoration status prior to full restoration will be made.

After a widespread outage, HR Co-op work crews take the following steps before restoring electrical service after a de-energization event. These measures intend to protect the worker, the public, and the system's reliability.

- **Patrol:** Crews patrol every de-energized line to ensure no hazards have affected the system during the outage. If an outage is due to wildfire or other natural disasters, as soon as it is deemed safe by the appropriate officials, crews inspect lines and equipment for damage, foreign contacts and estimate equipment needed for repair and restoration. Lines located in remote and rugged terrain with limited access may require additional time for inspection.
- **Isolate:** Isolate the outage and restore power to areas not affected.
- **Repair:** After the initial assessment, HR Co-op staff meet to plan the needed work. Rebuilding commences as soon as the affected areas become safe. Repair plans prioritize substations and transmission facilities, then distribution circuits serving the most critical infrastructure needs. While the goal to re-energize all areas is as soon as possible, emergency services, medical facilities, and utilities receive first consideration when resources are limited. Additional crew and equipment are dispatched as necessary.
- **Restore:** Periodic member and media updates of restoration status before full restoration are posted on HR Co-op’s website. After repairs are made, power is restored to homes and businesses as quickly as possible. Customers, local news, and other agencies receive notification of restored electric service.

## VIII. EVALUATING OF THE PLAN

### A. METRICS AND ASSUMPTIONS FOR MEASURING PLAN PERFORMANCE

HR Co-op will track four metrics to measure the performance of this Wildfire Mitigation Plan: (1) number of fire ignitions; and (2) wires down within the service territory during the fire season; (3) number of red flag warnings issued in service territory; (4) number of de-energizations in the service territory. Where a particular action, program, or protocol is determined to be unnecessary or ineffective, HR Co-op will assess whether a modification or replacement is merited. This plan will also help determine if more cost-effective measures would produce the same or better results.

#### 1. METRIC 1: FIRE IGNITIONS

For purposes of this metric, a fire ignition is defined as follows:

- HR Co-op facility was associated with the fire.
- The fire was self-propagating and of a material other than electrical and/or communication facilities.
- The resulting fire traveled greater than five feet from the ignition point and HR Co-op has knowledge that the fire occurred.

#### 2. METRIC 2: WIRES DOWN

The second metric is the number of distribution and transmission wires downed within HR Co-op’s service territory during the fire season. For purposes of this metric, a wires down event includes any

instance where an electric transmission or primary distribution conductor falls to the ground or on to a foreign object. HR Co-op will divide the wires down metric between wires down inside and outside of the High Fire Threat Areas.

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### 3. METRIC 3: RED FLAG WARNINGS

The third metric is to record the number of Red Flag warnings issues by the National Weather Service. A Red Flag warning is to alert regions of high fire risk due to a combination of weather factors such as low humidity, high temperatures and strong winds.

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### 4. METRIC 4: DE-ENERGIZATIONS

The fourth metric is to record the number of de-energizations and their locations in HR Co-op's territory. A de-energization is case-by-case intentionally planned outage to circuits or taps to reduce the Co-op's risk of fire ignitions.

## B. IMPACT OF METRICS ON PLAN

HR Co-op anticipates that there will be relatively limited data gathered through these metrics, particularly in the initial years. Therefore, it will be difficult to drawn meaningful conclusions based on this data. HR Co-op will evaluate modifying these metrics or adding additional metrics in future years.

## C. MONITORING AND AUDITING THE PLAN

A successful implementation of the Wildfire Mitigation Plan requires participation from all HR Co-op departments. Each department manager is responsible for the execution of all applicable tasks contained in the WMP.

Any deficiencies noted during the execution of this Plan will be recorded and recommended for implementation by the department manager on a yearly basis. The plan will then be revised based on the recommendations. The Plan will then be presented to the HR Co-op Board of Directors for review and approval.

## D. MONITORING THE EFFECTIVENESS OF INSPECTIONS

A data-driven approach will be used to determine the effectiveness of HR Co-op's WMP. Additionally, as HR Co-op gathers a history of records on past equipment failures and facilities-caused wildfires, the monitoring process will progress, and the Wildfire Mitigation Plan will mature.