2022 **WILDFIRE MITIGATION PLAN**

Columbia Power Cooperative Association

JUNE, 2022

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1 Introduction/Executive Summary

Oregon has recently experienced some of the most devastating and catastrophic wildfires in the country. These unusually large wildfires are on the rise in the PNW due to warm, dry weather becoming more common in Oregon with the average Oregon fire season increasing by 78 days compared to 30 years ago. Alongside weather changes, previous forest management practices have allowed for fuel to be left on the ground further exacerbating the risk. Oregon's 2020 wildfire season became the most destructive in the state's history burning more than 1.5 million acres. The annual probability of very large fires is projected to increase by a factor of 4 in 2041-2070 compared to 1971-2000[1].

As a result of this increased wildfire danger the Oregon legislature passed Senate Bill 762 in 2021. SB 762 establishes new programs to fight and mitigate wildfires, bolster recovery, help communities adapt to smoke, and implement changes to the state's building code for structures within high-risk areas in the wildland-urban interface (WUI). It also requires consumer owned electric utilities develop risk-based wildfire mitigation plans and submit them to the Oregon Public Utility Commission (OPUC) by June 30, 2022.

For Columbia Power Cooperative (CPC), which aims to protect public safety and preserve the reliable delivery of electricity, wildfire mitigation is without question a top priority. CPC is an electrical distribution utility serving approximately 1,881 meters and 1,131 miles of distribution line in parts of four counties in Eastern Oregon. CPC serves the communities of Mitchell, Spray, Monument and Ukiah, and the surrounding areas. CPC also operates and maintains approximately 90 miles of transmission line. While an electric utility can never fully eliminate the risk of fire, CPC is committed to taking all practical actions available to prevent the devastation that a wildfire could bring to the people and communities we serve. This wildfire mitigation plan lays out the steps we are taking to do so.

1.1 Purpose of the Plan

The Plan describes CPC's strategies, programs, and procedures to mitigate the threat of electrical equipment ignited wildfires, and addresses the unique features of its service territory, such as topography, weather, infrastructure, grid configuration, and areas most prone to wildfire risks. This includes the maintenance of its transmission and distribution (T&D) assets as well as the management of vegetation in the Right Of Ways (ROWs) that contain these assets.

CPC's Board of Directors reviews, and approves the Plan as needed, while the General Manager is responsible for its implementation. Primary accountability for plan implementation resides with the General Manager.

[1] Northwest Climate Adaptation Science Center

1.2 Objectives of the WMP

The main objective seeks to implement an actionable plan to create increased reliability and safety while minimizing the likelihood that CPC's assets may be the origin or contributing factor in the ignition of a wildfire. This plan was developed to be consistent with current industry best management practices, will comply with current Oregon State law, and National Electric Safety Code (NESC) regulations and guidelines. To help develop the Plan, CPC compared emerging technologies that not only reduce the likelihood of a service interruption, but also minimize the risk of ignition from the fault causing the outage.

The secondary objective is to measure, through the annual evaluation of certain performance metrics, the effectiveness of the specific wildfire mitigation strategies. Where a particular action, program component or protocol proves unnecessary or ineffective, CPC will assess whether modification or replacement is suitable.

1.3 Utility Profile and History

President Franklin Roosevelt established the Rural Electrification Administration (REA) under authority of the Emergency Relief Appropriation Act of 1935. At the time, only 27.5% of the farms in Oregon had electricity. REA programs proved popular, and Congress provided loan programs for utilities to extend power lines to rural customers, but many utilities were reluctant to do so because of the cost – it was more expensive per customer to build and maintain lines to rural customers than to those who lived in cities. In response to the utilities' reluctance, electric cooperatives formed to take advantage of the 10-year loan program. With the completion of the Bonneville Dam in 1938, increased in farms receiving power rose dramatically to 59% by 1940. During World War II a shortage of materials halted construction of rural electric lines, but after the war construction boomed as poles and wires became available. With further low-rate loans becoming available through the 1944 Pace Act, more consumers were connecting to rural electricity systems. In 1948 Columbia Power Cooperative Association was founded.

CPC serves 1,881 meters and 1,131 miles of distribution line in parts of four counties (Grant, Wheeler, Crook and Umatilla) in Eastern Oregon. CPC serves the communities of Mitchell, Spray, Monument and Ukiah, and the surrounding areas. CPC also operates and maintains approximately 90 miles of transmission line.

The governing Board of Directors comprises of seven directors responsible for the business and affairs of the Cooperative. Each director holds a three-year term, and is a member and a bona fide resident in the CPC service territory. Regular monthly meetings are held the second Monday of each month at CPC headquarters, with the Annual General Meeting being held in December each year.

CPC is a small rural frontier cooperative whose operations are managed by the CEO/General Manager, a crew of six journeyman-lineman, mechanic and an administrative team.

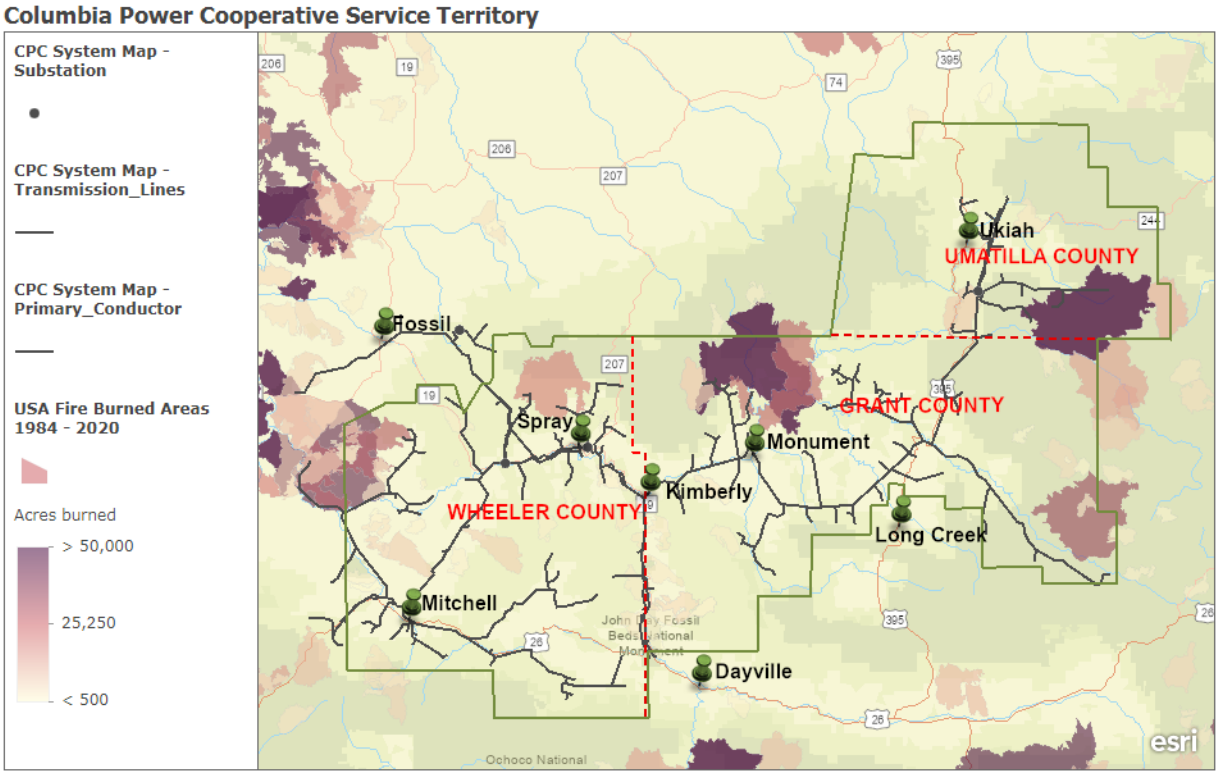
1.4 The Service Area

CPC operations are headquartered in Monument, Oregon, with the service territory spanning across parts of the four counties of Grant, Wheeler, Wasco, and Umatilla. While CPC serves 1,881 meters and 1,131 miles of distribution line, the service territory is very geographically spread, spanning approximately 90 miles east to west and 80 miles north to south.

In addition to the service territory's broad span, the topography of the land is very challenging, with diverse complex mountain ranges, valleys, and plateaus of the Blue Mountains. This ecoregion contains deep rock-walled canyons, glacially-cut gorges, sagebrush steppe, juniper woodlands, mountain lakes, forests and meadows. Broad alluvial-floored river valleys support ranches surrounded by irrigated hay meadows and alfalfa fields. The climate varies over a broad temperature and precipitation ranges because of elevational differences. Overall, it has short, dry summers and long, cold winters. Because much of the precipitations falls as snow, snow melt gives life to rivers and irrigated areas.

The region has a limited network of state highways and local roads upon which both locals and summer tourists navigate the spectacular offering of scenic lakes and rivers, geologic features and alpine areas.

Figure 1. Service Area



2 Overview of Utility's Fire Prevention Strategies

This WMP integrates and interfaces with CPC's existing operations plans, asset management, and engineering principles, which are themselves subject to change. Future iterations of the WMP will reflect any changes to these strategies and will incorporate new best management practices as they are developed and adopted.

Table 1 summarizes CPC's five mitigation components with associated programs and activities that support CPC's ongoing commitment to wildfire prevention and mitigation.

Table 1. Mitigation Strategies/Activities

DESIGN AND CONSTRUCTION
Retirement/replacement of original 1948 distribution line
Field recloser to vacuum-type breaker change-out program
Covered jumpers and animal guards
Non-expulsion fuses in select high-risk areas
Avian protection construction standards
Increase overhead wire spacing to reduce wire to wire contact
Substation perimeter fencing for security and protection
INSPECTION AND MAINTENANCE
Wood pole intrusive inspection and testing (OSMOSE)
Enhanced T&D vegetation right-of-way maintenance
Distribution system line patrols and detailed inspections
T&D system vegetation management program
Increased removal rate of undesirable trees on right-of-ways
Enhanced vegetation management prior to fire season
Enhanced line patrols during fire season

OPERATIONAL PRACTICES
Work procedures and Fire Hazard training for persons working in locations with elevated fire risk conditions
Community outreach/wildfire safety awareness
Contractor/staff safety training and orientation for vegetation management work
Alternate recloser practices during fire weather
Fire suppression equipment on worksite during fire season
Provide liaison to county offices of emergency services (OES) during fire event
SITUATIONAL AWARENESS
Weather Monitoring in the service area
Monitoring active fires in CPC's T&D system area and service territory boundaries
RESPONSE AND RECOVERY
Pre-emptive de-energizing protocols
Coordination with local Department of Emergency Management
Customer assistance programs for post-disaster recovery
Line patrols before re-energizing

3 Utility Asset Overview

Columbia Power Cooperative has a single location headquartered in Monument, Oregon. The site includes the corporate administrative office, mechanic workshops, inventory storage buildings and yards, equipment storage facilities, and other yards. The map below highlights CPC property asset boundaries.

CPC does not own or operate any generational energy sources, and is a Bonneville Power Administration (BPA) full requirements customer with purchased power from BPA's hydroelectric facilities operated on the Columbia and Snake Rivers.

CPC operates and maintain approximately 90 miles of transmission line, with 27.4 miles of 69KV line running from Ukiah to Pilot Rock in Umatilla County, and 69KV line running to Antelope and Kinzua, the latter two being leased by BPA. CPC also operates transmission lines from Fossil to Kinzua and Service Creek and Spray.

CPC also operates 1,131 miles of overhead primary distribution line, along with 4 substations at Spray, Ukiah, Service Creek and Kinzua. Operating voltages are shown in the table below.

Substation Name	Classification	kV
Service Creek	High Voltage Low Voltage	69/115 kV 24.9/14.4 kV
Ukiah	High Voltage Low Voltage	69/115 kV 24.9/14.4 kV
Spray	High Voltage Low Voltage	69/115 kV 24.9/14.4 kV
Kinzua	High Voltage Low Voltage	69 kV 4.0/2.3kV

Table 2 provides a high-level description of CPC's T&D assets.

Table 2. Asset Overview

ASSET CLASSIFICATION	ASSET DESCRIPTION
Transmission Line Assets	Approximately 90 miles of conductor, transmission structures and switches at 69/115 kilovolt (kV).
Distribution Line Assets	Approximately 1,131 miles of overhead (OH) and 4.5 miles of underground (UG) conductor, cabling, transformers, voltage regulators, capacitors, switches, lined protective devices operating at or below 24.9/14.4 kV.
Substation Assets	Major equipment such as power transformers, voltage regulators, capacitors, reactors, protective devices, relays, open-air structures, switchgear, and control houses in 4 substation/switchyard facilities.

4 Risk Analysis and Risk Drivers

To establish a baseline understanding of the inherent risks and risk drivers, fire-related hazards exposures specific to CPC's service territory are assessed. Although inherent risks exist in operating an electric utility, there are strategies and processes to effectively plan and manage them. Enterprise Risk Management (ERM) is a tool utilized to anticipate and mitigate risks while also considering how multiple risks can pose additional significant challenges. The overall objective seeks to determine the residual risk level after applying all strategies to manage the initial inherent risk.

The process of ERM as seen in Figure 2 is an ongoing and forward-looking management discipline that enables CPC to analyze risks continually and adapt to changing conditions. The key or critical risks affect the entire service territory and are interrelated. Therefore, a holistic management structured approach is appropriate.

Figure 2. CPC Enterprise Risk Management Process

The objective of each step in the ERM process is as follows:

Risk Identification: Identify all hazards and threats
Report risk

Risk Evaluation: Analyze the nature of the risk
Determine risk level, likelihood and outcomes

Risk Response: Develop control plan
Implement industry standard management practices

Risk Monitoring: Monitor how risks are evolving
Monitor success of response strategies

One major risk factor of the Pacific Northwest is the natural phenomenon of continual climate change. The *Fourth Oregon Climate Change Assessment* has determined that climate change would make forests more susceptible to extreme wildfires due to the overall warming in the region. 2016 to 2018 were warmer years than the 1970-1999 average, and 2015 still stands as Oregon's warmest year on record. Fire is the most obvious impact of climate change in recent years, with the extreme wildfires occurring extensively in hot and dry summers. Record-breaking catastrophic fires in both California and Oregon in 2020 highlight increased vulnerabilities in a warming climate. The report also projects fire risk will only increase across the entire state by the mid-century, particularly in Eastern Oregon and the Willamette Valley.

4.1 Fire Risk Drivers Related to Construction and Operations

CPC staff evaluated other utility's fire causes and applied its own field experience to determine the critical potential risk drivers. The categories listed below were identified as having the potential for causing powerline sparks and ignitions:

- Aging infrastructure
- Foreign contact
- Equipment / Facility failure
- Standard expulsion fuses
- Cross-phasing
- Drought
- Vegetation type / fuels / dead trees / hazard green trees
- Legacy tree attachments
- High winds /contamination
- Limited accessibility to rugged terrain
- Lightning / high wind
- Fire weather
- Vandalism

Aging Infrastructure

CPC has been in operation since 1948. As a rural electric utility on the east side of the Cascades, a relatively dry region of Oregon, some of the wood poles have been in service for 50+ years. Many of the older poles are cedar which are not as far resistant as modern Douglas Fir poles.

Foreign Contact

Utilities typically install bare wire conductors supported by insulators on overhead powerlines. Bare wire is lighter and easier to work with and a more cost-effective method to deliver power than insulated/covered wire. However, a bare wire is susceptible to contact from foreign objects

such a wildlife, vegetation and foreign objects. Protection equipment helps isolate faults, but there are time delays associated with circuit breakers, reclosers and fuses. These time delays are not fast enough, in many cases, to prevent sparking before tripping. Ejected molten metal, sparks, or burnt foreign objects can potentially ignite fuels in the vicinity of the fault.

Equipment Failure

Equipment malfunction can occur during its service life for many reasons. Most equipment requires regular maintenance for optimal performance. Even though CPC's qualified personnel carry out regular scheduled inspections and maintenance on all system equipment, internal defects not visible or predictable can cause destructive equipment failure resulting in the ejection of parks and/or molten metal. The failure of hotline clamps, connectors, and insulators can result in wire failure and wire to ground contact. Transformers and capacitor banks can have internal shorts, potentially resulting in the ejection of materials, which could equally become a potential ignition source.

Standard Expulsion Fuses

As CPC performs maintenance on current infrastructure or installs new infrastructure, non-expulsion fuses are replacing previously used standard expulsion fuses to eliminate the ejection of hot or burning materials landing on the floor where potential fuels could be ignited.

Drought

Oregon's interior areas and high deserts can experience abnormally dry conditions during late summer and fall, which can quickly exacerbate prolonged periods of drought. During the summer of 2020, large portions of the state of Oregon, including CPC's service territory, were categorized as having D3 (Extreme Drought) conditions. These conditions contributed to the state's record breaking fire season in 2020.

Vegetation Type/Fuels

CPC's service territory topography ranges from dense pine forests to vast open range areas depicting widespread dense western juniper, sage brush and grasses. Portions of the service area have steep and rugged terrain comprised of river valleys and eroded hillsides. Much of the service area's vegetation is shrubs and grassland interspersed with hay and alfalfa fields and other agriculture, much of which is at risk to range fires. Tree mortality factor in areas served by CPC are also subject to extensive insect damage.

High Winds/Contamination

The service territory of CPC can be subject to winds ranging from 30 to 60mph throughout the year. These winds cause tree braqnches to break free and contact an electrical conductor or blow trees from outside the rights-of-way (ROW) into the power lines. High winds also blow other objects such as carport roofs into the conductors. Such contacts with the lines can result in faults, arcing, or downed lines, sometimes causing an ignition. High wind events are also a potential cause of wire-to-wire contact due to extreme sway, causing sparks to emit, or fuses to open emitting sparks and ejecting molten material.

Limited Accessibility to Rugged Terrain

CPC's approximate 6,000 square mile service territory is crisscrossed by steep rolling hills, sharp cliffs and many rivers and river breaks. It can take several hours to reach equipment in some remote locations, due to the indirect routes and natural barriers. Sometimes, given current conditions at the time, accessing an area can be insurmountable due to high water, deep snow, or unsafe conditions to deploy crews. Many circuits are routed cross-country over difficult terrain with no vehicle access. These factor significantly impact the inspection capability and outage response times for CPC line crews.

Lightning

Twenty million lightning strikes hit the ground in the U.S. every year. Many possible effects of a direct strike to power lines or structures include flashovers, ignition of wood poles, melted and broken conductors, or ground wire damage. While the flash density for the western states is comparatively low, in August alone nearly 14,000 dry lighting strikes caused almost 900 fires in California over a three-day period. Several large wildfires historically were caused by lighting. Eastern Oregon experiences dry lighting storms during the summer, an additional and exceptionally high-risk weather event.

Fire Weather/Red Flag Warning Conditions

The National Weather Service issues warnings at the onset or possible onset of critical weather and dry conditions that can rapidly increase wildfire activity. A Red Flag Warning (RFW) is the highest level alert and is issued when weather events may results in extreme fire behavior within 24 hours. A Fire Weather Watch, one level below an RFW, goes out when weather conditions over the next 12-72 hours put fire danger as a high elvel. During an RFW, CPC crews limited vegetation management (VM) and construction activities. If critical work must happen in an elevated fire risk area, VM and line crews have fire suppression equipment on-site. After a crew has completed work in a remote or high-risk area, designated staff remain on fire-watch for up to 3 hours to ensure no ignitions have occurred.

4.2 Fire Risk Drivers Related to the Service Area

As part of the risk analysis process, CPC examines its asset locations to identify risk drivers unique to the service area. These identified risk drivers include:

- Topography
- Accessibility
- Climate
- Vegetation Types / fuels
- Fire history
- Tree mortality / tree failure
- Lightning
- Fire Weather
- Wildlife

4.3 Key Risk Impacts

Ignitions caused by the aforementioned risk drivers have many possible outcomes. The list below outlines some of the worst-case scenarios and consequences:

- Personal injuries or fatalities to the public, employees, and contractors
- Damage to public and/or private property
- Damage and loss of CPC owned infrastructures and assets
- Impacts to reliability and operations
- Damage claims and litigation costs, as well as fines from governing bodies
- Damage to CPC's reputation and loss of public confidence
- Wildlife fatalities and loss of revenue to ODFW
- Greenhouse gas emissions from smoke

4.4 Wildfire History and Outlook

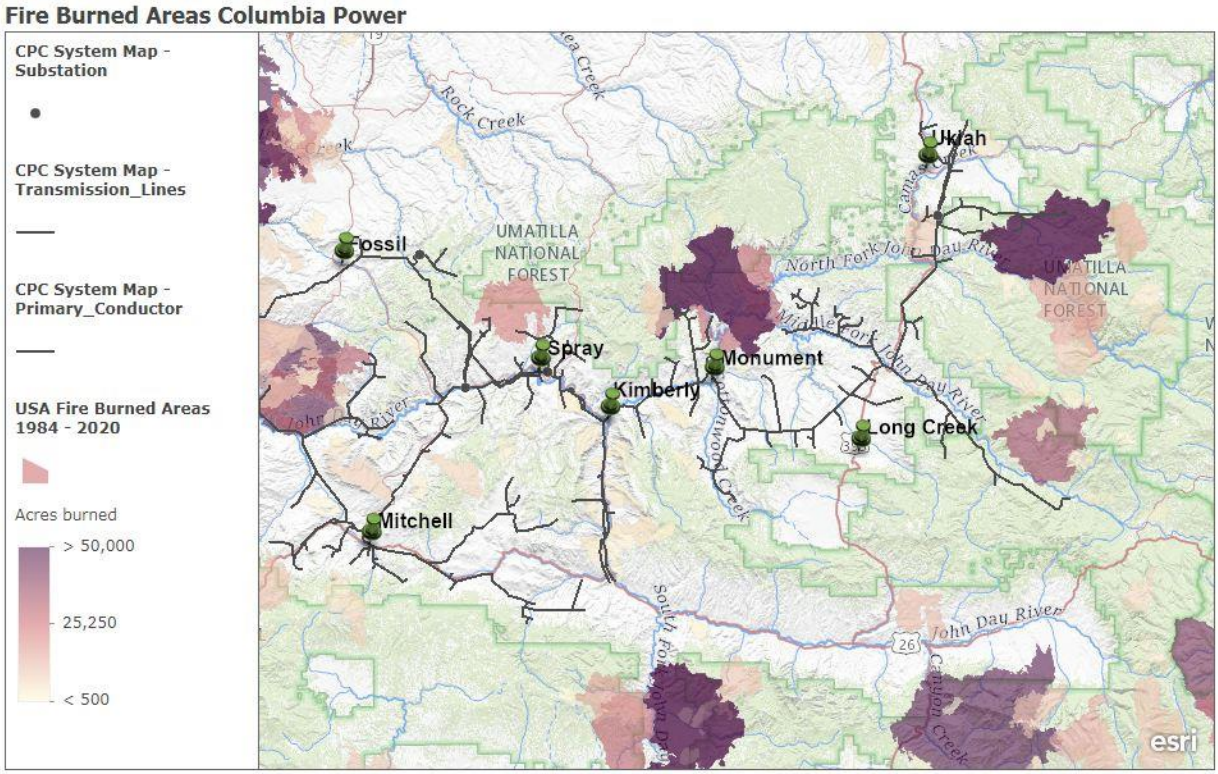
The fire history map (Figure 4) below represents the large fire history from 1984 through 2020. Historically, most large fires have occurred.

Almost every year we have a large wildfire in our western geographical area. This is an area that typically doesn't receive significant resources to support fire suppression efforts. It comprises of large areas of Bureau of Land Management (BLM) and tribal areas and their firefighting strategy and approach has been to watch it burn rather than contain and extinguish. Most of the fires are lightning triggered.

CPC's crew go through a pumper/fire training every year prior to fire season. CPC has purchased two fire pumpers. CPC also hires a weed spraying contractor to spray around CPC's transmission poles in the area of service.

Within the CPC service territory, wildfire logistics and practices have been present that are counter to the protection and safety of the electrical grid infrastructure and assets, such as back-burning during a wind event with no extended fire watch practices being implemented into the evening and night by those responsible. On three separate occasions in the last 20 years CPC has lost assets/power lines to such wildfires. This has caused great hardship for CPC. Crews have had to work all night and day to restore and replace power poles and lines, at the expense of CPC's members.

Figure 3. Historic Wildfire Perimeters 1984-2020



Base Map with Fire Burned Areas

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed August, 2021.

4.4.1 Wildland Urban Interface

The United States Forest Service (USFS) defines the wildland urban interface (WUI) as a place where humans and their development meet or intermix with wildland fuel. Communities that are within 0.5 miles of the zone are included. According to the USDA Forest Service, the area considered WUI has expanded 39% in Oregon from 1990 to 2010, with the number of homes increasing by 53.6%[2]. There are now over 615,000 homes in Oregon located in the WUI[3].

The WUI is composed of both interface and intermix communities. The distinction between these is based on the characteristics and distribution of houses and wildland vegetation across the landscape. Intermix WUI refers to areas where housing and wildland vegetation intermingle, while interface WUI refers to areas where housing is in the vicinity of a large area of dense wildland vegetation. Figure 25illustrates the distribution of WUI areas in the service area.

[2] https://www.nrs.fs.fed.us/data/wui/state_summary/

The USFS has established five classes of WUI in its assessment:

WUI Intermix: Areas with ≥16 houses per square mile and ≥50 percent cover of wildland vegetation

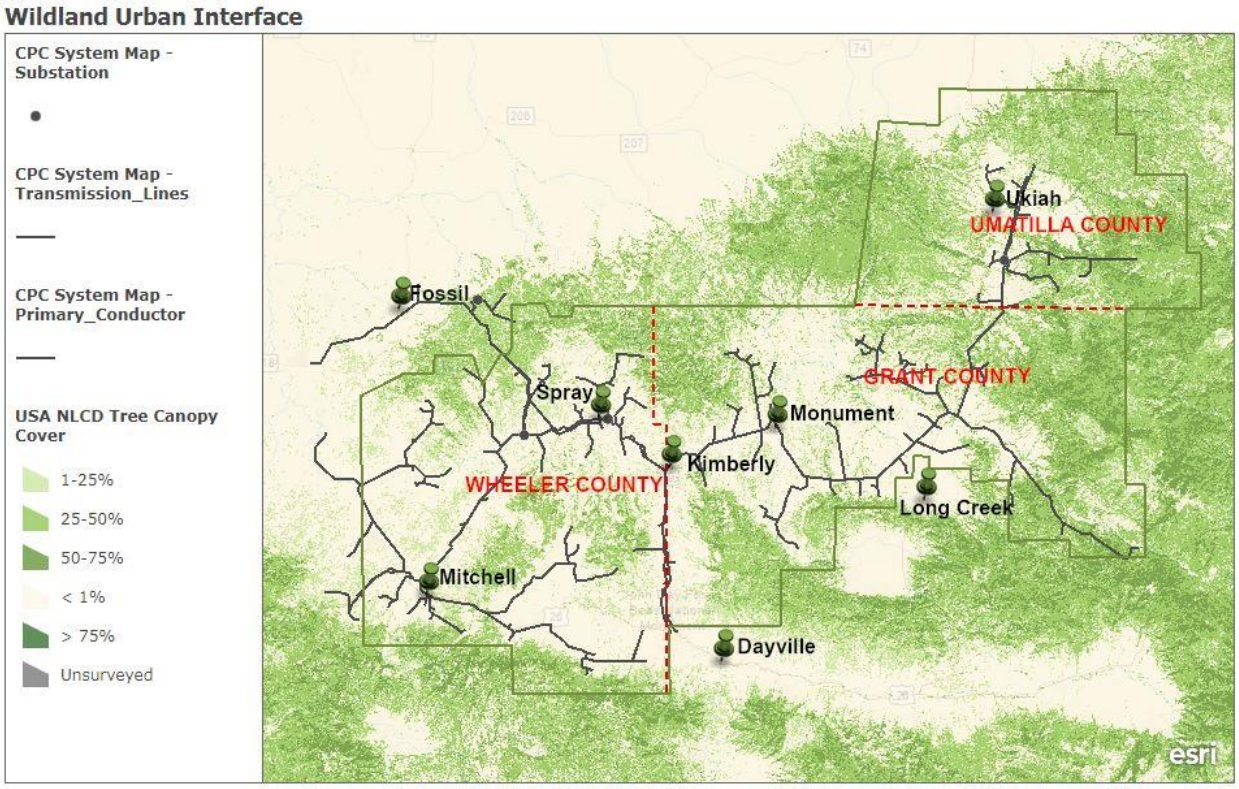
WUI Interface: Areas with ≥16 houses per square mile and <50 percent cover of vegetation located <1.5 miles from an area ≥2 square miles in size that is ≥75 percent vegetated

Non- WUI Vegetated (no housing): Areas with ≥50 percent cover of wildland vegetation and no houses (e.g., protected areas, steep slopes, mountain tops)

Non-WUI (very low housing density): Areas with ≥50 percent cover of wildland vegetation and <16 houses per square mile (e.g., dispersed rural housing outside neighborhoods)

Non-Vegetated or Agriculture (low and very low housing density): Areas with <50 percent cover of wildland vegetation and <128 houses per square mile (e.g., agricultural lands and pasturelands)

Figure 4. Wildland Urban Interface



State of Oregon GEO, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS | Source: USDA - FIA Program, RSAC, Esri | Esri, USDA Farm Service Agency | Source: USDA Forest Service FHAAST, Esri | Esri

4.5 Fire Threat Assessment Mapping

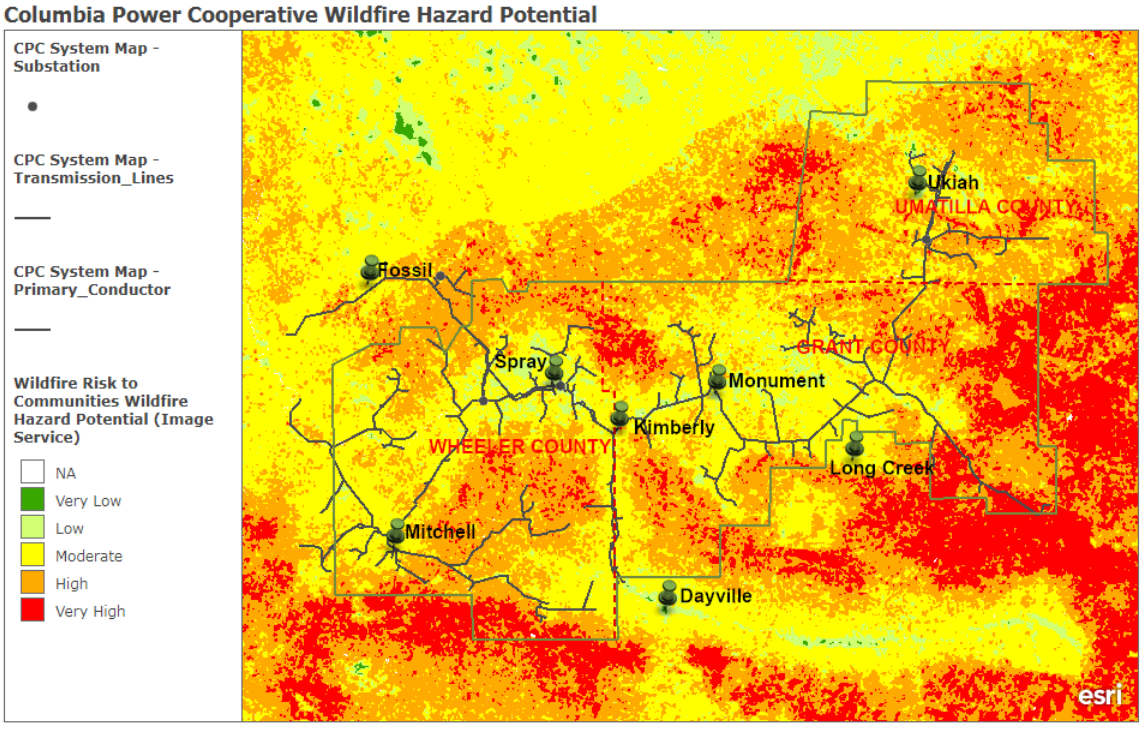
The Wildfire Hazard Potential (WHP) risk map is derived from a 270-meter resolution raster geospatial product created by the USDA/USFS, Fire Modeling Institute. The specific dataset

used is the Wildfire Hazard Potential[4] Version 2020, which is the third edition of the WHP product and depicts landscape conditions of the conterminous United States as of the end of 2014.

WHP was built upon spatial datasets of wildfire likelihood and fire intensity using the Large Fire Simulator (FSim), as well as spatial fuels and vegetation data from Landfire 2014, and point locations of historic fire occurrence (ca. 1992-2015). The objective of the map was to depict relative potential for wildfire that would be difficult for suppression resources to contain and for long-term strategic fuels management planning. On its own, WHP is not an explicit map of wildfire threat or risk, but when paired with spatial data depicting highly valued resources and assets such as structures or powerlines, it can approximate relative wildfire risk to those specific resources and assets.

The data described here are derived from wildfire simulation modeling, and their exact accuracy cannot be measured. They are intended to be relative measures of wildfire risk for planning purposes.

Figure 5. Wildfire Hazard Potential



Source: USDA - FIA Program, RSAC, Esri | Esri, USDA Farm Service Agency | Esri | Source: USDA Forest Service FHAAST, Esri | State of Oregon GEO, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS

[4] Product citation: *Dillon, Gregory K. 2015. Wildfire Hazard Potential (WHP) for the conterminous United States (270-m GRID), version 2020 classified. 3rdd Edition. Fort Collins, CO: Forest Service Research Data Archive. https://doi.org/10.2737/RDS-2015-0047-3*

5 Wildfire Prevention Strategy and Programs

This section provides descriptions of the preventive strategies and programs in use, or to be adopted by CPC to minimize the risk of asset related wildfires, in addition to those previously mentioned in Table 1 of Section 2.

5.1 Transmission and Distribution System Operational Practices

5.1.1 De-energization – Public Safety Power Shutoff

A Public Safety Power Shutoff (PSPS) preemptively de-energizes power lines during high wind events combined with hot and dry weather conditions. CPC does not operate under a PSPS policy. However, when considering manual de-energization, CPC examines the impacts on fire response, water supply, public safety, and emergency communications.

CPC considers the external risks and potential consequences of de-energization while striving to meet its main priority of protecting the communities and members served. They include:

- Potential loss of water supply to fight wildfires due to loss of production wells and pumping facilities.
- Negative impacts to emergency response and public safety due to disruptions to the internet and mobile phone service during periods of extended power outages.
- Loss of key community infrastructure and operational efficiency that occurs during power outages.
- Medical emergencies for members of the community requiring powered medical equipment or refrigerated medication. Additionally, the lack of air conditioning can negatively impact medically vulnerable populations.
- Negative impacts on medical facilities.
- Traffic congestion resulting from the public evacuation in de-energized areas can lengthen response times for emergency responders.
- Negative economic impacts from local businesses forced to close during an outage.
- The inability to open garage doors or motorized gates during a wildfire event can lead to injuries and fatalities.

Based on the above considerations, CPC reserves the option of implementing manual de-energizing when conditions dictate. On a case-by-case basis, CPC has historically and will continue to consider de-energizing a portion of its system in response to a known public safety issue or response to a request from an outside emergency management/response agency. Any de-energizing of the lines is performed in coordination with key local partner agencies, however, the final determination is made by CPC.

5.1.2 Recloser Operational Practices

CPC has a one-shot protocol for fire season. CPC enables single shot on all feeder lines that have such capability. Typically, it is all in timbered areas. The recloser operation is not remotely engaged; CPC has to physically drive to each one of the reclosers and manually reset.

5.1.3 Situational Awareness

Situational assessment is the process by which current operating conditions are determined. Situational Awareness is the understanding of the working environment, which creates a foundation for successful decision making and the ability to predict how it might change due to various factors.

CPC relies on various resources to monitor evolving fire weather and climatological conditions that may lead to fire events. Sources for weather information may include, but are not limited to the following:

- **USFS-Wildland Fire Assessment System (WFAS):** For immediate and short-term situational awareness, mapping tools from the USFS-WFAS help determine daily and short-term forecasted risk, with daily or weekly fire weather status maps produced as needed to assess PNW wildfire conditions. (https://www.wfas.net/index.php/fire-danger-rating-fire-potential--danger-32/fire-danger-subsets-fire-potential--danger-55)

- **The National Weather Service (NWS):** The NWS provide on-line predictive fire weather forecasting tools in the form of a current fire-weather outlook, 2-day, and a 3-8 day outlook. (https://www.spc.noaa.gov/products/fire_wx/)

- **NOAA Weather and Hazards Data Viewer:** The on-line mapping provides historic or real-time surface observations including wind speed and direction, wind gust, dew point, relative humidity, and sea level pressure collected from remote automated weather stations (RAWS). Extreme-weather alerts such as fire weather watch, high wind watch, and red flag warning are provided from this resource. (https://www.wrh.noaa.gov/map/?wfo=psr)

5.1.4 Communications

Communications is key to any safe operation within the power utility sector and even more so in a high-risk environment such as an active wildfire. In addition to specific and pertinent communications between CPC personnel, effective interagency information transference is critical in mitigating risk and ensuring effective and timely delivery of action.

CPC uses VHF frequency radio communications, repeaters and towers. The infrastructure is aging, and given the rugged terrain of the service territory, consistent communications can be challenging, with significant channel interference making operators difficult or impossible to hear. Clear communications is crucial when energizing and de-energizing distribution and transmission lines being worked upon by linemen. CPC plans to seek grant opportunities and partnership with other agencies and business, such as private telecommunications business, to leverage collaborative efforts to develop a robust and optimal communications network.

5.2 Infrastructure Inspections and Maintenance

Recognizing the hazards of equipment that operate high voltage lines, CPC maintains a formal

inspection and maintenance program for distribution, transmission, and substation equipment which play an essential role in wildfire prevention. CPC currently patrols its system regularly and is increasing the frequency of inspections in high-risk areas.

Oregon Administrative Rules Chapter 860-024-0011 provides inspection schedule requirements for electric distribution and transmission facilities. These standards require that an operator of electric supply facilities to:

- Construct, operate, and maintain its facilities in compliance with the Commission Safety Rules.
- Conduct detailed inspections on a prescribed schedule of its overhead facilities to identify violations of the Commission Safety Rules.

Table 3 summarizes the inspection schedule for all assets, while the following sections outline inspection practices for the utility.

Table 3. Inspection Program Summary

ASSET CLASSIFICATION	INSPECTION TYPE	FREQUENCY
Transmission	Routine Safety Patrol Inspection	Yearly
	Detailed Inspection	Yearly
	Wood Pole Testing	Every 10 years
Overhead Distribution	Routine Safety Patrol Inspection	Biannually
	Detailed Inspection	Every 10 years
	Wood Pole Testing	10% per year
Underground Distribution	Routine Safety Patrol Inspection	Biannually
Substation	Routine Inspection	Monthly
	Detailed Inspection	Monthly

5.2.1 Definition of Inspection Levels

1. **Routine Safety Patrol Inspection:** A simple visual inspection of applicable utility equipment and structures designed to identify obvious structural problems and hazards. Patrol inspections may be carried out in the course of other company business.

2. **Detailed Inspection:** Individual pieces of equipment and structures are carefully examined visually, or through use of routine diagnostic testing.

3. **Intrusive Pole Inspection:** Inspections involving the movement of soil, taking samples of the wood pole for analysis, and/or using more sophisticated diagnostic tools beyond visual inspections.

5.2.2 Routine Safety Patrol Inspections

CPC targets physically patrolling 50% of CPC assets per year. CPC does this utilizing side-by-sides and 4-wheeler ATVs to navigate the rugged terrain, using binoculars for closer inspections when needed. All problems observed are documented. Documented problems are then prioritized and then corrected as needed. The following is a list of items CPC looks for during those inspections:

- Low clearance of primary conductor, secondary wires, and service drops
- Objects too close to electric lines
- Encroachments
- Physical damage to facilities
- Deterioration of facilities

5.2.3 Detailed Inspections of Transmission and Distribution Lines

Detailed inspections of the overhead transmission, overhead, and underground electrical distribution system fall within a 10-year cycle to ensure all equipment is assessed on a regular schedule. Inspections and maintenance employ measures intended to protect the worker, the public, and the system's integrity and reliability. The inspection cycles seek to ensure safety and reliability based on standards found in the Oregon Administrative Rules (OAR) 860-024-0011.

Qualified personnel perform all inspections. System equipment found to be in need of maintenance or repair is categorized depending on the severity of the condition. Repairs are done in prioritized order of rating per OAR 860-024-0012.

CPC performs a pole-to-pole inspection of all CPC's transmission lines using ATVs annually. Physical damage or deterioration to any facilities is documented, together with any encroachments and/or conductor issues. All documentation is then prioritized and corrected in a timely manner.

CPC performs a pole-to-pole inspection on all CPC's main feeder three-phase distribution lines over 25 years old annually.

CPC performs pole to pole inspections on all other distribution lines on a ten year cycle. CPC also uses a company called Osmose to assist with these inspections. Physical damage, deterioration to any assets is documented. As well as any encroachments and/or conductor issues. All documentation is then prioritized and corrected in a timely manner.

5.2.4 Wood Pole Testing and Inspection

To maintain CPC's wood poles, a formal Wood Pole Assessment Plan was initiated with the goal to inspect 10% of the system each year. Wood pole inspections are carried out on a planned basis to determine whether they have degraded below National Electric Safety Code (NESC) design strength requirements with safety factors.

Osmose is CPC's third party contractor. Osmose inspects and tests all poles on a cycle meeting the interval recommended in RUS Bulletin 1730B-121. Osmose performs and intrusive pole inspection on poles over ten years old. Osmose also performs and NESC violation inspection for CPC.

A third-party contractor inspects and tests all poles on a cycle meeting the interval recommended in RUS Bulletin 1730B-121. Circuits are identified, mapped, and scheduled for inspection and testing using latest industry standards and practices. If a pole must be replaced or reinforced for any reason, a priority code is assigned and entered into records for correction.

5.2.5 Substation Inspections

The Preventive Maintenance Plan provides for regular inspections of CPC's substations on a 30 day cycle. Qualified personnel will use prudent care while performing inspections following all required safety rules to protect themselves, other workers, the general public, and the system's reliability.

The substation inspection involves a thorough look at the system to confirm that there are no structural or mechanical deficiencies, hazards, or tree trimming requirements. Individual pieces of equipment and or structures receive careful visual examination and routine diagnostic tests as appropriate.

5.2.6 Prioritization of Repairs

CPC considers and prioritizes maintenance work by assessing the most urgent needs. The inspector will document the overhead and underground systems' condition, recording defects, deterioration, violations, safety concerns, or any other factors requiring attention on the inspection records. The inspection should focus on any hazards that could affect the system's integrity or the safety of line workers and the public.

Inspection data (overhead & underground) will be prioritized and issued as follows per OAR 860-024-0012[5] safety standards:

[5] Stat. Auth.: ORS 183, 756, 757 & 759 Stat. Implemented: ORS 757.035

- **Priority # 1** – Immediate hazard: A violation of the Commission Safety Rules posing imminent danger to life or property must be repaired, disconnected, or isolated by the operator immediately after its discovery.
- **Priority # 2** – Non-emergency repair condition: Except as otherwise provided by this rule, the operator must correct violations of Commission Safety Rules no later than two years after discovery.
- **Priority # 3** – Non-emergency repair condition: An operator may elect to defer correction of violations of the Commission Safety Rules that pose little or no foreseeable risk of danger to life or property until the next major work activity.

5.3 Vegetation Management (VM)

CPC uses in-house VM crews and hires contractors. Contractors are used to spray vegetation around CPC's transmission poles in the west service territory. All other VM programs are in-house. When CPC performs their routine safety patrols, any clearance issues are then documented and addressed in a timely manner.

5.3.1 Vegetation to Conductor Clearance

CPC has an operational and management responsibility and is required by State and Federal Agencies to maintain the right of way, under or around its power lines. CPC will meet the minimum standards for conductor clearances from vegetation to provide safety for the public and utility workers, reasonable service continuity and fire prevention.

Vegetation Management (WM) operations are scheduled to ensure all lines are cleared of vegetation hazards on a 10-year timeline. During tree work, contractors aim to achieve the clearance specifications described below, which meet or exceed OAR 860-024-0016 clearance guidelines.

- **OH Distribution:** 10 feet from the conductor
- **Roadside Transmission with distribution underbuild:** 10 feet from the conductor
- **Transmission ROW (defined width):** 10 feet between the conductor and the rooted tree stem. Defined width ROWs are generally found on cross-country corridors.
- **Trees Under Conductors:** Trees that are under conductors should have crowns reduced to a height 10 feet below the primary conductors or be removed.
- **Overhanging Branches:** Removed to a height of 10 feet above all distribution conductors and from conductor to sky on all transmission lines.
- **Secondary Conductor:** Trees near open wire secondary are pruned to provide a minimum of 2 feet of clearance.

- **Service Wire:** Branches that deflect or weigh heavily upon service or other secondary wires beyond the last CPC pole are removed, but not pruned in their entirety without specific direction by CPC operations

- **Pole Base:** A 4 foot radius area around the base of all poles is cleared of vegetation that would prevent the pole from being safely accessed and climbed.

- **Brush removal:** 10 feet beyond the maximum side clearances (15-18 feet)

5.3.2 Vegetation Trimming Standards

CPC's VM crews follow American National Standards Institute (ANSI) A300 concepts and utility directional pruning, which supports proper pruning/tree health while achieving and maximizing the pruning cycle. The VM program was developed with RUS, ANSI A300, ANSI C2, and the National Electrical Safety Code (NESC)[6] and OAR 860-024-0017 requirements.

Work performed to the above guidelines provides reasonable service continuity, public safety, and guards against wildfire damage caused by supply conductors. Consideration is given to the impact of pruning on power line reliability, individual tree condition, and tree aesthetics. All work is conducted in a safe manner in accordance with the work rules set forth in OR-OSHA 1910.269 and CPC's Technical Guidelines.

5.3.3 VM Trimming and Inspection Schedule

CPC personnel perform annual, ground-based inspections of tree conductor clearances and hazard tree identification for CPC ROWs and easements. CPC line crews also address vegetation concerns in response to service calls or field observations. Proactive maintenance during routine operations and prompt action during emergency events maintain system reliability, a safe work environment, and reduces fire danger. Any VM issues that cannot be immediately handled by the line crews are referred to the CPC General Manager for priority trimming. Scheduled patrols ensure all lines are inspected for vegetation hazards and systematically trimmed. On-going, year-round patrols identify targeted areas for vegetation pruning or removal and ensure compliance with state and federal regulatory requirements.

5.3.4 Hazard Trees

A subset of Danger Trees[7], A Hazard Tree is defined as any tree or portion of a tree that is dead, rotten, decayed, or diseased and which may fall into or onto the overhead lines or trees leaning toward transmission and distribution facilities. These trees are sometimes located beyond the easement or ROW. Any tree that is located outside of the ROW and is deemed a hazard tree will be removed or topped to make safe for conductors.

A hazard tree will have one or more of the following characteristics:

[6] Rules 012,013 and 218
[7] As defined by ANSI 300 Part 7 standards

- Dead or dying - all dead or dying trees along, or outside the CPC right-of-way may be removed depending on the height of tree and the direction of the lean.

- Leaning trees - trees that have such a lean toward the right-of-way that they cannot be trimmed without removing the tops and slanting the tree back. Removal depends on height and species of the tree and direction of the lean.

As previously mentioned in an earlier subsection of this plan, CPC removes hazard trees pursuant to NESC regulations.

5.3.5 Controlling Incompatible Vegetation

In addition to the annual patrols by CPC crews observing and reporting on incompatible uses and encroachments, CPC make efforts to educate public and private landowners about incompatible vegetation that can pose risks if planted under or near conductors on a case-by-case basis due to the uniqueness of circumstances as they arise.

5.4 Fire Mitigation Construction

CPC is taking steps to harden the electrical system with several upgrades and design changes. These designs stem from many decades of engineering experience and adoption of emerging technologies. CPC's design practices continue to advance with the addition of newer safety and reliability-related technologies.

Examples of this approach include the following: CPC has been increasing conductor spacing on all new construction for over 20 years. CPC has also been using polymer crossarms in most three-phase construction along with increased conductor spacing. CPC has been installing non-expulsion fuses on all new construction as well as replacing on existing construction as time permits.

5.4.1 Avian Protection Program

As a component of CPC's avian protection program, CPC has installed numerous power poles with pallets on top of them for osprey in an effort to deter them away from poles with transformers on them. CPC installs bird guards on all newly installed transformers or existing transformers worked on. CPC now installs covered jumpers on all new installations. CPC also install insulated triangles on some of CPC's construction.

5.5 Emerging Technologies

CPC explores new technologies, strategies and practices to evaluate their effectiveness and resulting benefits. Based on the results of the those, CPC may elect to integrate the technologies or practices into ongoing maintenance programs.

A previously mentioned example would be that of using non-expulsion fuses.

CPC has also used fireproof wood coating in the past but found it to not be as effective as desired. Instead, CPC now hires a contractor to spray around these poles to deter vegetation from growing.

6 Emergency Response

6.1 Preparedness and Response Planning

In response to active emergencies, CPC's management and office staff communicate with relevant agencies regarding relevant impacts that transpire, whether it is with County Sheriffs, Oregon Department of State Forestry, United States Forest Service, BLM, Search & Rescue, etc. CPC can then contact CPC's line crews via its radio network and dispatch as needed.

6.1.1 Emergency Management Communication and Coordination

CPC has a 24/7 on-call response and dispatch system in place. During normal business hours of operation CPC's General Manager or designated staff would become the Emergency Management Coordinator (EMC) point of contact. This person would become CPC's primary duty officer in charge of all coordination and communications. After normal business hours the dispatcher on call would become CPC's primary duty officer. CPC is a very small utility company having a total of eleven full-time employees, notwithstanding vacations and sickness.

CPC serves the 4 counties of Grant, Umatilla, Wheeler and Wasco. CPC's primary coordination point is the County Department of Emergency Management (DEM), which is usually administered by the Sheriff's office in each county with the Sheriff designated as the Director of Emergency Services. CPC's dispatcher contacts the local DEM and establishes themselves as the duty officer for coordination purposes when needed. The dispatcher on call or the General Manager acts as the communications officer during an emergency.

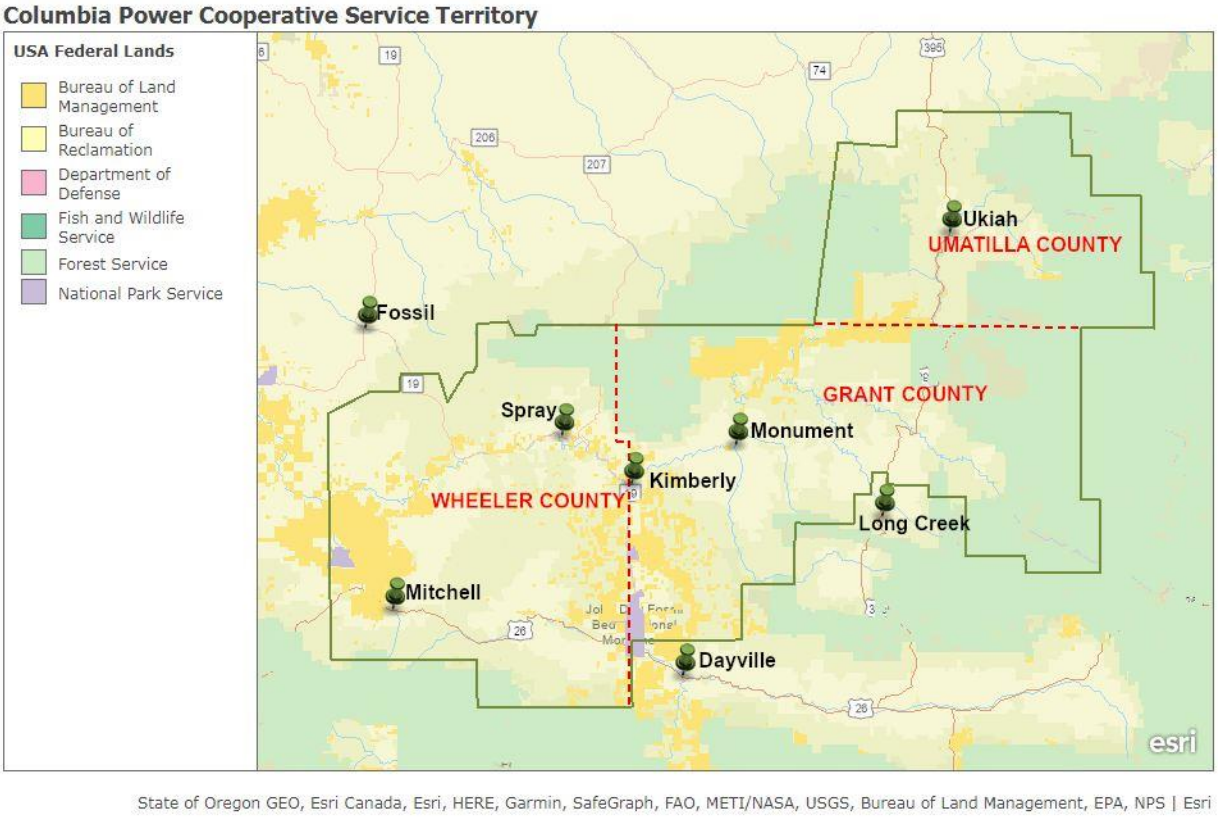
6.1.2 Jurisdictional Structure

Land ownership in the CPC service territory is predominantly privately owned or federal lands, as can be seen in the map below.

Agencies include:

- National Park Service
- US Forest Service
- Bureau of Land Management
- Department of Fish and Wildlife

Figure 6. General Land Ownership



6.1.3 Public Agency and Customer Communications for Outages

Depending on the scope of the planned outage, CPC has put up flyers in community gathering places with a comment period. CPC also notifies all known businesses in the planned outage areas as well as schools to be affected. If the planned outage happens to be one of a short duration and/or an emergency situation CPC will then notify all affected businesses via telephone. This notice will be given with as much advance notice as possible depending on the scope and safety concerns related to the outage.

6.1.4 Community Outreach

At this time CPC does not have a public website running due to the fact that CPC is located in a very remote city in rural Eastern Oregon with limited low bandwidth internet, no cell service, and no fiber lines currently. Telephone service is also limited at times.

6.2 Restoration of Service

If an outside emergency management/emergency response agency requests a power shutdown, or if CPC elects to de-energize segments of its system due to extreme weather, CPC staff may 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 until CPC staff can do so. Poles and structures damaged in a wildfire must be assessed and rebuilt as needed prior to re-energizing.

6.2.1 Service Restoration Process

After a widespread outage event, CPC crews would take the following steps before restoring electrical service. These measures intend to protect the worker, members, 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. CPC personnel assist in clearing downed trees and limbs as needed.
- **Isolate:** Isolate the outage and restore power to areas not affected.
- **Repair:** After the initial assessment, CPC 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 reenergize 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:** After repairs are made, power is restored to homes and businesses as quickly as possible. Members who have called in to notify us they are experiencing an outage are frequently called back to ensure their services have been fully restored and that there is not another outage related problem still in play. CPC does not have a website at this time, and given the communications challenges of the service territory, most members would be unable to access the internet during an outage.

7 Performance Metrics and Monitoring

This section addresses implementation, plan performance monitoring, deficiency identification, and the Quality Control process.

7.1 Plan Accountability

Staff responsibility for plan implementation and general communications is described below:

- The Board of Directors makes policy decisions relative to the utility and is responsible for approving and adopting the Wildfire Mitigation Plan.
- The General Manager directs staff responsible for operations, customer service and finance.
- The General Manager supervises the office staff, foreman and all work crew.
- The General Manager is responsible for the overall execution the WMP. Staff will be directed as to their roles and responsibilities in support of the plan.
- The General Manager and/or Dispatcher on duty is responsible for communicating with public safety, media outlets, public agencies, first responders, local Office of Emergency Management, and health agencies during an emergency or planned maintenance outages.
- The General Manager and/or Dispatcher on duty determines when and how to notify outside agencies in cases of wildfire emergency events.
- CPC's General Manager is responsible for monitoring and auditing the targets specified in the WMP to confirm that the objectives of the WMP are met, as well as the implementation of the plan in general.

7.2 Monitoring and Auditing of the WMP

The WMP will be reviewed annually for the purpose of updating the plan as needed to reflect knowledge gained in the preceding year and modified accordingly.

7.2.1 Identifying Deficiencies in the WMP

The General Manager is responsible for ensuring that this WMP meets all public agency guidelines to mitigate the risk of its assets becoming the source or contributing factor of a wildfire. Staff responsible for assigned mitigation areas have the role of vetting current procedures and recommending changes or enhancements to build upon the strategies in the WMP. Either due to unforeseen circumstances, regulatory changes, emerging technologies or other rationales, deficiencies within the WMP will be sought out and reported to the Board of Directors in the form of an updated WMP on a yearly basis.

The General Manager or their designee will be responsible for spearheading discussions on addressing any plan deficiencies and collaborating on solutions when updating the WMP. At any point in time when deficiencies are identified, the General Manager or their delegates are responsible for making the appropriate policy adjustments. CPC staff and qualified stakeholders are encouraged to bring any potential deficiencies to the attention of the General Manager. The

General Manager, along with the appropriate staff, will evaluate each reported deficiency, and if determined to be valid, shall record the deficiency for further action.

7.3 Performance Metrics

CPC is currently in the process of creating a wildfire documentation program, something previously not consistently carried out by the cooperative. CPC is currently creating a wildfire form to document any and all wildfires in CPC's service territory that CPC has knowledge of.

7.4 Programmatic QA/QC processes

7.4.1 Transmission and Distribution System Inspection QC Process

In December 2021 CPC recruited a new General Manager. One of the key focuses under the new management is to develop comprehensive, repeatable and robust inspection and maintenance programs of the T&D line and substation assets that are specific and measurable. These programs will ensure the safe operation of CPC's T&D and substation assets. Key objectives will be to:

- Reduce the risk of power related wildfire
- Meet federal and state regulatory requirements
- Achieve reliable performance within mandated limits and to optimize capital

Currently, CPC is performs these inspections by either contract agencies or in-house crews who suggest corrective measures. If deficiencies are found, work orders are prioritized as to remove safety hazards immediately and minor deficiencies are prioritized according to risk level. Work orders are monitored throughout the year on a constant basis.

In Oregon, each utility operator is required to conduct management quality assurance checks to ensure that inspections, record keeping, and repairs are being properly conducted. The following is recommended as the minimum level of checking necessary to achieve compliance:

- Inspections of new and repaired installation: annually check 10% of all such work performed.
- Detailed facility inspections: annually check 5% of all such work performed.
- Maintain adequate written records of policies, plans and schedules to show that inspections and corrections are being carried out in compliance with this rule and OAR 860-024-0011 and OAR 860-024-0012. Each operator must make these records available to the Commission upon its request.

7.4.2 Vegetation Management QC Process

At the present time nearly 100% of VM for CPC is performed by in-house crews. CPC crews patrol T&D lines and document any encroachment or hazards. This documentation is then prioritized and corrected in a timely manner, pursuant to regulatory requirements.

7.5 Plan Approval Process

7.5.1 Board Presentation

The CPC Board of Directors will approve the WMP at their regular monthly Board of Directors meeting in June 2022, and documented adoption of the plan will appear in the meeting minutes.

Appendix A: Plan and Mapping Disclaimers

WILDFIRE MITIGATION PLAN DISCLAIMER

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