



2024 WILDFIRE MITIGATION PLAN

October 2024

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1 Introduction

Unusually large wildfires¹ are on the rise in the Pacific Northwest, with an increase in fires in west-side conifer forests including a rare fire event in the coastal temperate rainforest on the Olympic Peninsula. In the western U.S. region encompassing the Pacific Northwest, the annual probability of very large fires is projected to increase by a factor of 4 in 2041-2070 compared to 1971-2000². As a result of this increased wildfire danger, a Utility Wildland Fire Prevention Advisory Committee (SSB 5305 and RCW 76.04) was formed by the Washington Department of Natural Resources (DNR) to address wildfire prevention and develop protocols in dealing with education, communication, vegetation management, and investigation thresholds among other considerations. Pursuant to Washington legislation, the DNR has released guidelines for the creation of wildfire mitigation plans (WMP) by electric utilities in Washington.

Prior to this legislative and administrative action, Inland Power and Light Company (IP&L) already had a WMP in place. This version of IP&L's WMP has been revised to

¹ The term "wildfire," as used in this WMP, also includes within its meaning the term "wildland fire." (See Appendix A, Definitions).

² Northwest Climate Adaptation Science Center.

address and incorporate relevant guidance provided by DNR and the requirements of Washington law.

1.1 DNR WMP Template.

As stated above, under the direction of the Washington Legislature, a Utility Wildland Fire Prevention Advisory Committee (SSB 5305 and RCW 76.04) was formed by the DNR to address wildfire prevention and develop protocols in dealing with education, communication, vegetation management, and investigation thresholds among other considerations.

In addition, the Washington Legislature enacted HB 1032, codified as RCW 19.29A, *et seq.*, which requires consumer owned utilities (such as IP&L) to review their wildfire mitigation plans every three years, starting on October 31, 2024. The plan must be approved by the governing board and local fire protection districts must be provided the opportunity to provide input. A copy of the plan must be provided to DNR, and the Utility Advisory Wildland Fire Prevention Advisory Committee will post the plan on its website. Utilities are required to “use” the recommended format and elements provided by statute. Those elements are:

- Vegetation management;
- Infrastructure inspection and maintenance;
- Cost-effective modifications or upgrades to infrastructure;
- Preventative programs (including new technologies);
- Operational procedures; and
- Public engagement and communication plans regarding risk and mitigation.

In April of 2024, DNR published its Washington’s Wildfire Mitigation Plan template. IP&L believes the development and execution of a WMP that generally follows the DNR’s guidelines, in their present form, is a prudent and reasonable effort to prepare for increased wildfire occurrences in Washington and Idaho, as well as preparing for any future State WMP requirements. RCW 19.29A.170(1) states that “a consumer-owned utility must use the recommended format and elements pursuant to RCW 76.04.185.” However, “recommended” does not mean (and cannot mean) “mandatory.” Furthermore, RCW 76.05.185(2) and (3) clearly state that both the elements and format are “recommended.” While IP&L did “use” the DNR template, the IP&L WMP does not follow the exact structure of the DNR template, nor is it required to do so.³

³ The Executive Summary of the DNR template expressly states that each utility’s situation is unique and that not all elements within the template must be used and that some utilities may not be equal in relation to their WMP preparation. Stated the template,

With that being said, all sections and elements of the DNR template are addressed in some form or another within this WMP.

The following table provides a comparison between the DNR template’s organization and the IP&L WMP’s organization:

DNR Template	IP&L Plan
Executive Summary - §1	Introduction - §1
Wildfire Mitigation Plan Overview - §2	Purpose and Implementation of the Wildfire Mitigation Plan - §1.2
Description of Where WMP Can be Found Online - §2.2	DNR WMP Template - §1.1
Utility Overview - §3; Utility Description and Context Setting Table - §3.1	IP&L Profile and History, Service Area, and Electrical System - §§1.4, 1.5, and 1.6; Wildfire History and Outlook - §3.3.1
Objectives of the Wildfire Mitigation Plan - §§4, 4.1, and 4.1	Objectives of the WMP - §1.3
Roles and Responsibilities - §5.0; Utility Roles and Responsibilities - §5.1	Purpose and Implementation of the Wildfire Mitigation Plan - §1.2
Emergency Management/Incident Response Organization - §5.4	Wildfire Event Internal Communication and Decisions - §5.1; Preparedness and

each section of the WMP format provides suggested topics, language, and guidance for its completion. This cover letter provides additional guidance to assist utilities in filling out the WMP format with relevant information. It is recognized that each utility faces unique geography, terrain, vegetation, and other characteristics that will present a variety of risk levels and result in unique and tailored approaches to address that risk. To that end, the WMP format has been designed to accommodate a broad range of recommended elements. It is not expected that all utilities will have practices or even a need to complete all sections or elements to the same degree. There are no statutory requirements directing what utilities must include in their plans. It is at the discretion of each utility to determine the elements applicable to its own wildfire mitigation efforts and the level of detail necessary to describe each element.

The WMP format was developed in recognition that some utilities may have wildfire mitigation programs that are more robust than others. It is acceptable to note these limitations when completing the WMP. For any section where a program overlaps two or more elements of the plan, it is acceptable to select the most applicable element to describe the program and reference that section where applicable for other areas. It is not necessary to repeat the program description multiple times.

	Response Planning - §5.2; IP&L First Responders - §5.2.1; Work Crew Communications - §5.2.2; Fire Suppression Equipment - §5.2.3; Jurisdictional Structure - §5.2.4; Department of Emergency Management Communication and Coordination - §5.2.5
Wildfire Risks and Drivers Associated with Design - §6	Risk Analysis and Risk Drivers - §3; Limited Accessibility - §3.1.6; Bare Wire Conductor - §3.1.9; Equipment Failure - §3.1.10
Risks and risk drivers associated with topography and climatological risk factors - §6.1	Climate Change - §3.2.1; Fire Weather/Drought - §3.1.3; High Winds - §3.1.4; Lightning - §3.1.5
Enterprise-wide Safety Risks - §6.2	Fire Risk Drivers - §3.1; Population Growth and Human Activities - §3.1.1; Vegetation Type/Fuels - §3.1.7; Tree Failure/Tree Mortality - §3.1.8
Wildfire Prevention Strategies - §7	§2 Overview of IP&L's Prevention Strategies; Key Risk Consequences - §3.2; Fire Threat Assessment in IP&L Service Territory - §3.3; Wildfire Prevention Strategy and Programs - §4; Situational Awareness - §4.1.1; Industrial Fire Precaution Levels - §4.1.2
Weather Monitoring - §7.1	Wildland Urban Interface - §3.3.2; Wildfire Threat Assessment Mapping - §3.3.3
Current Monitoring Strategy Overview - §7.1.1	Assets Within Wildfire Threat Index Tiers - §3.3.4
Design and Construction Standards - §7.2	Avian Protection Construction Standards - §4.3.1; Underground (UG) Conductor - §4.3.2; Bell, Cut-out, and Lightning Arrestor Replacement - §4.3.3; Conductor Replacement Program - §4.3.4; Circuit Reclosure Upgrade - §4.3.5
Fuel and Vegetation Management - §7.3	Vegetation Management - §4.2
Current Vegetation Strategy Overview - §7.3.1	Vegetation and Utility Inspection Manager - §4.2.1; Area Service Representative

	(ASR) Response - §4.2.2; Pruning Standards - §4.2.3; Vegetation Management Pruning Schedule - §4.2.4; Mid-Cycle Pruning - §4.2.5; Risk Tree Removal - §4.2.6; Routine & Emergency Pruning Service Orders - §4.2.7; Brush Moving Plan - §4.2.8
Asset Inspections and Response - §7.4	Infrastructure Inspection Overview - §4.1.4
Asset Inspections and Response - §7.4	Infrastructure Inspection Overview - §4.1.4
Current Inspection Strategy Overview - §7.4.1	Transmission and Distribution Line Inspections - §4.1.5; Transmission and Distribution Line Detailed Inspections - §4.1.6; Pole Management Program - §4.1.7; Substation Inspections - §4.1.8; Instruction to Line Inspection Department - §4.1.9; Annual Reclosure Inspection Program and Maintenance Program - §4.1.10; Aria Service Representatives - §4.1.11; Geographic Information Systems (GIS) Mapping - §4.1.12
Relay and Reclosure Practices - §7.6; Current Strategy Overview - §7.6.1	Fire Safety Mode/Reclosure Operational Practice - §4.1.3
Community Outreach and Public Awareness - §8	Emergency Response & Outage Restoration - §5
Current Community Outreach and Public Awareness Program - §8.1	Preparedness and Response Planning - §5.2; IP&L First Responders - §5.2.1; Work Crew Communications - §5.2.2; Fire Suppression Equipment - §5.2.3; Jurisdictional Structure - §5.2.4; Department of Emergency Management Communication and Coordination - §5.2.5; Public Agency and Member Communications for Outages - §5.2.6; Community Outreach - §5.2.7; Industry Collaboration - §5.2.8
Restoration of Service - §9	Restoration Priorities - §5.2.9; Service Restoration Process - §5.2.10
Planned Updates - §§ 7.1.2, 7.2.2, 7.3.2, 7.4.2, 7.5.2, 7.6.2, 7.7.2, and 8.2;	Plan Evaluation and Updates - §6.0

Evaluating the Plan - §10; Identifying and Addressing Areas of Continued Improvements to the Plan - §10.2	
Sections not listed above	DNR Template Section Considerations - §6.1; DNR Template Sections that May be Found in Future Versions of the IP&L WMP - §6.1.1; Template Sections that Likely Will Not Be Found in Future Versions of the IP&L WMP - §6.1.2

As stated above, this WMP is not a static document and is subject to modification and alteration as circumstances, laws, regulations, best practices, and technologies change over time. A copy of the IP&L WMP will be available through the DNR’s Utility Advisory Wildland Fire Prevention Advisory Committee.

1.2 Purpose and Implementation of the Wildfire Mitigation Plan

Reducing the risk of a utility-caused wildfire plays an essential role in IP&L’s operational practices. Its existing policies, programs, and procedures, as well as the incorporation of emerging technologies, are intended to directly or indirectly mitigate the risk of its utility infrastructure becoming the origin of or contributing factor to a wildfire.

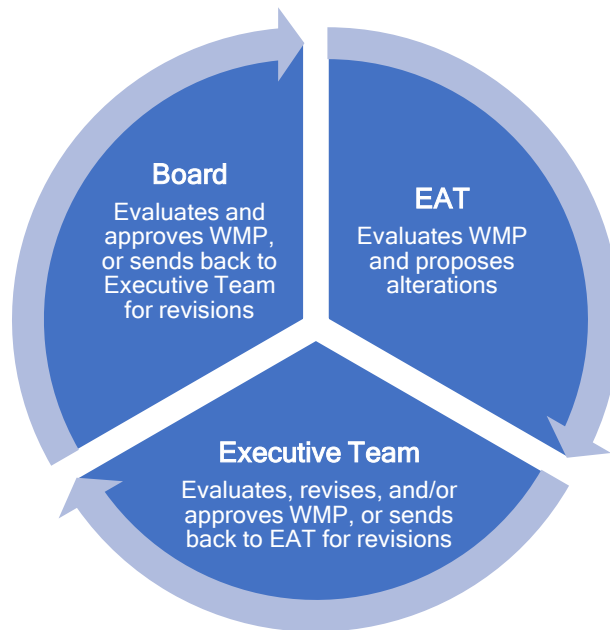
IP&L believes that the strategies and activities described in this WMP are effective, realistic, and affordable approaches to reduce fire-related risk for IP&L’s members in the near-term and will allow for refinement and alterations over time. As new information emerges, IP&L will assess, evaluate, and refine its practices and may make alterations, improvements, or changes based on need, ability, practicality, and affordability.

The WMP describes organizational activities addressing Transmission and Distribution (T&D), Operational Practices, Vegetation Management, and Fire Mitigation Construction. Additionally, it covers Emergency Response & Outage Restoration activities to ignition events. It also addresses the unique features of IP&L’s service area such as topography, weather, infrastructure, grid configuration, and potential wildfire risks.

While IP&L’s Board of Trustees adopts the plan, its implementation primarily resides with the Emergency Action Team (EAT). The EAT is made up of the Chief Executive Officer (CEO), President/Chief Operating Officer (COO), Chief General Counsel (GC), Operations Manager (OM), Engineering Manager (EM), General Foremen, Substation General Foreman, Vegetation and Utility Inspection Manager, and others as needs arise (or as position titles change). The CEO has delegated responsibility for the WMP to the

EAT. Recommendations of the EAT are brought to the Executive Team for approval, revision, and/or denial. The Executive Team is made up of the CEO, Chief Financial Officer (CFO), President/COO, Chief Technology Officer (CTO), and GC.

In relation to enacting and implementing the WMP, the initial deliberative body is the EAT while the final deliberative and primary decision-making body is the Executive Team and the IP&L Board of Trustees. Because the WMP is not a static document, this process may occur in multiple instances over time. The amendment and alteration flow is demonstrated in the chart below:



1.3 Objectives of the WMP

The WMP's main objective is to implement a reasonable and actionable plan to create increased reliability and safety of IP&L's system while minimizing the probability that IP&L assets may be the origin or contributing factor in the ignition of a wildfire. It is important to recognize that 85% of wildfires in the United States are human caused according to data analyzed by the United States Forest Service Research Data Archive⁴. Human-caused fires result from campfires left unattended, the burning of debris, equipment use and malfunctions, negligently discarded cigarettes, and intentional acts of arson⁵. Acts of God such as lightning or windstorms which can impact a utility company's power lines, cause the remainder of wildfires. Although the

⁴ [Forest Service Research Data Archive \(usda.gov\)](https://www.usda.gov/forestservice/research-data-archive); [Wildfire risks - Washington State Department of Ecology](https://www.wa.gov/department-of-ecology/wildfire-risks).

⁵ [Wildfire Causes and Evaluations \(U.S. National Park Service\) \(nps.gov\)](https://www.nps.gov/learn/management/planning/wildfire-causes-and-evaluations).

goal of this WMP is to mitigate wildfires and their impact, human error and Acts of God are beyond IP&L’s control. Furthermore, even when perceived best practices are employed by an electricity distribution provider (no matter how expensive or impractical), it is still possible that utility assets can be a fire ignition source. Therefore, the goal of the WMP is to mitigate, not completely prevent, risk.

Wildfire mitigation programs and strategies may be guided by current and anticipated Washington legislation and Washington Utilities and Transportation Commission (WUTC) regulations when adopted. As a consumer owned utility, IP&L is not regulated by the WUTC. Nevertheless, it is IP&L’s position that its WMP complies with current Washington State law, Idaho State law, and National Electric Safety Code (NESC) regulations and guidelines. As stated above, IP&L’s WMP has been revised to consider the guidelines provided by the DNR and to implement those guidelines that are relevant and applicable to, and can be reasonably accomplished within, IP&L’s service territory and under IP&L’s current circumstances.

1.4 IP&L Profile and History

Founded in 1937, IP&L is the largest electric cooperative in Washington serving over 46,000 meters and over 38,000 members as of December 31, 2023, and continues to grow. IP&L strives to uphold a commitment to service excellence while delivering safe, affordable, and reliable electricity to its members. These principal focuses are further enhanced with innovative energy solutions and a deep-rooted involvement in the communities it serves.

IP&L is governed by a seven-member popularly elected Board of Trustees that determines policy and appoints the CEO who is responsible for IP&L’s overall management and operations. The CEO hires additional employees to assist in the overall management and operations of IP&L. IP&L owns and operates its distribution system, which is critical to maintaining electric service to its members.

1.5 The Service Area

IP&L serves a large and diverse service area distributing electricity within a service area covering over 8,000 square miles. (See **Figure 1**). A summary of the IP&L service area, assets, and membership is provided below:

IP&L Summary	
Service Territory Size (sq miles)	Over 8,000 sq miles

Service Territory Geographic and Vegetation Make-up	See Sections 1.5 and 3.1.7
Service Territory Wildland Urban Interface	See Section 3.3.2
Members Served	Over 38,000 members and over 46,000 meters
Account Demographics (percentage of membership and not power supply or revenue)	91% Residential 1% Irrigation 7% Commercial/Industrial
Utility Equipment Make-up	Overhead Distr. - approx. 5,072 miles Overhead Trans. and Sub-trans. - 171 Miles Underground Dist. - approx. 1,754 miles Underground Trans. - NA

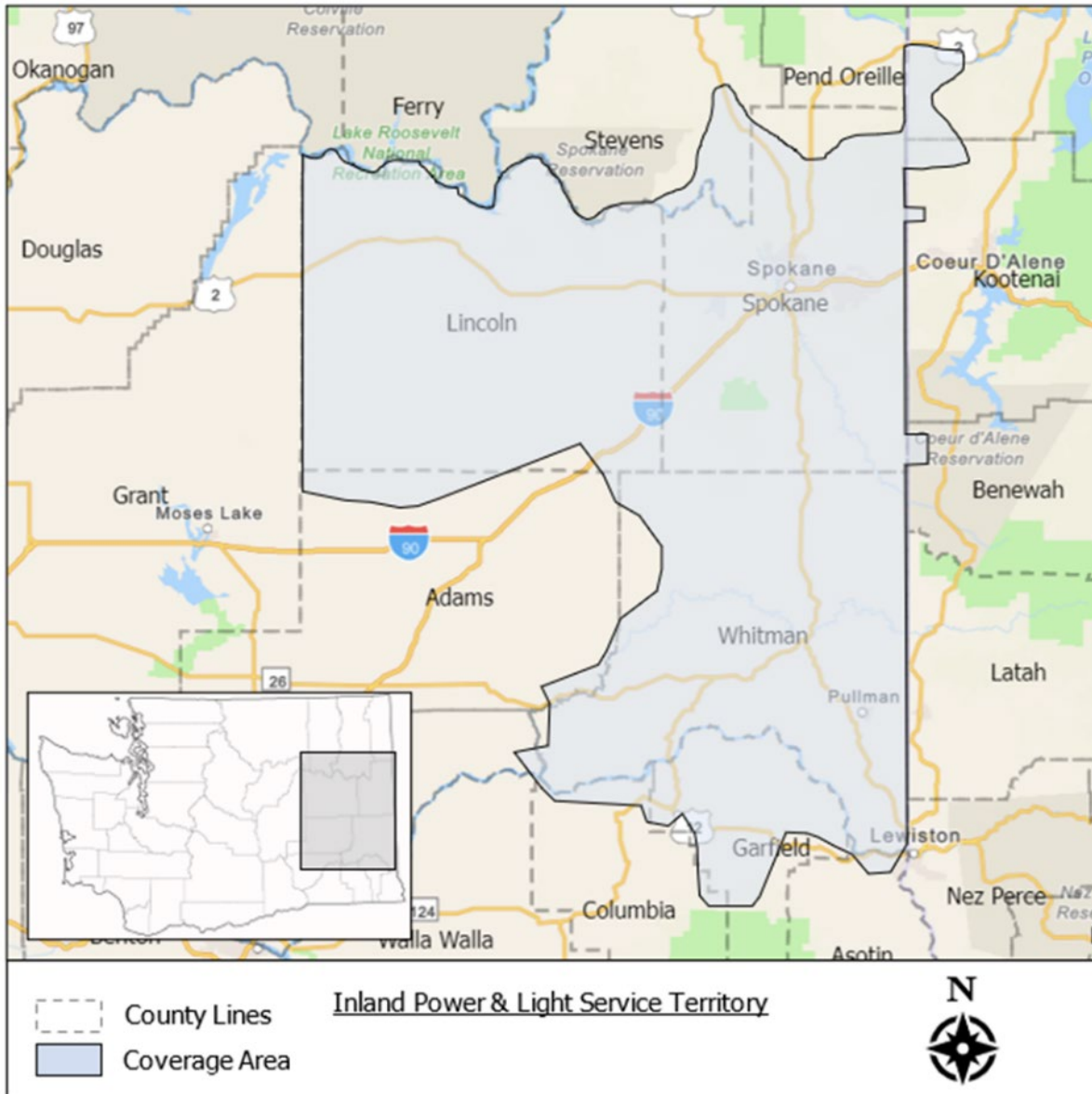


Figure 1. IP&L Coverage Area

Providing service in 13 counties⁶ in Eastern Washington and Northern Idaho, and two tribal nations⁷, the service territory stretches 135 miles from Newport, ID in the north to the Umatilla National Forest in the south and spans more than 100 miles from the Grant County line to Coleman, Idaho. IP&L’s headquarters office and operations center is located in Spokane, Washington. While the service territory primarily covers remote agricultural land with a system average of just 5.91 members per mile of line,

⁶ *WA Counties:* Adams, Asotin, Columbia, Franklin, Garfield, Lincoln, Spokane, Stevens, Walla Walla, Whitman

ID Counties: Benewah, Bonner, Kootenai

⁷ Kalispel Tribe and Spokane Tribe

IP&L does serve some more dense residential neighborhoods in and around the urban-rural interface surrounding the City of Spokane and the Spokane Valley area. The majority of IP&L's Right-of-Ways (ROWs) are located on privately owned properties with smaller portions being located on government held lands and within various road ROWs ⁸.

The service area is dominated by open spaces, whether used for farming, grassland, or open range. Some forest land exists and there are mountains and dramatic canyons and hillsides, especially along the Snake, Columbia, and Spokane Rivers, but also along smaller streams and creeks. These slopes can be focal points for wildfire, especially when strong winds blow through the canyons. There are significant variations in elevation, which range from ~650 feet above mean sea level (AMSL) at the Snake River, to ~5,100 feet AMSL at the summit of Hoodoo Mountain in Idaho. Most of the distribution system lies at ~2,200 feet AMSL.

The service area is primarily located in the Columbia Plateau ecoregion of Washington. Much of the native shrub-steppe and grassland habitat in the area has been converted to agriculture. What has not been converted is a bunchgrass-dominated grassland or steppe that is similar floristically to big sagebrush-dominated steppe but is defined by a more frequent fire regime and the absence or low cover of shrubs over large areas.

The Cascade Mountains cast a long rain shadow over the region. In this semi-arid interior, summers are hot and dry, and winters are cold and gray with precipitation of 11-23 inches annually. Over the course of the year, the temperature typically varies from 26°F to 88°F and is rarely below 11°F or above 97°F, though extremes can range from subzero to over 100°F. Drought and fire are not uncommon. The summer dry season is generally from mid-June to mid-September with the average daily high temperatures above 77°F. The hottest month of the year is July, with an average high temperature of 86°. However, recent summer temperatures have reached record levels with sustained highs over several days in the triple digits.

1.6 The Electric System

IP&L owns and operates an electric system that includes transmission and distribution facilities serving over 46,000 meters.

The local power network is a part of a larger electrical grid serving the greater Pacific Northwest region. Approximately 83% of the power for the electrical grid comes from

⁸ Turnbull National Wildlife Refuge

large hydroelectric generation facilities along the Columbia and Snake Rivers. The remaining comes from wind, nuclear, and non-federal market purchases. Electricity is purchased predominantly from the Bonneville Power Administration (BPA) and wheeled primarily over Avista Corporation and BPA transmission lines. In 2024, IP&L joined PNGC for its future power supply and purchasing needs.

IP&L owns, operates, or has equipment in 52 substations and maintains approximately 7,700 miles of line. Table 1 below outlines IP&L’s assets. BPA and Avista own major transmission facilities with 115kV, 230kV, 500kV lines carrying power into and through the service area.

Table 1. Asset Overview

ASSET CLASSIFICATION	ASSET DESCRIPTION
Sub-Transmission and Transmission Line Assets	Approximately 171 miles of 34.5kV, 69kV, and 115kV <u>sub-transmission and transmission</u> line, structures, and switches.
Distribution Line Assets	Approximately 5,072 miles of overhead (OH) and 1,754 miles of underground (UG) conductor, cabling, transformers, voltage regulators, capacitors, switches, line protective devices operating at 7.2kV.
Substation Assets	Equipment such as power transformers, voltage regulators, capacitors, protective devices, relays, open-air structures, switchgear, and control houses in 52 substation facilities, 42 of which are owned by IP&L.

2 Overview of IP&L’s Fire Prevention Strategies

2.1 Overview

The outlined wildfire prevention strategies can be categorized into several main components that align with IP&L’s best practices. Together, the components create a wildfire preparedness and response plan with a principal focus on Transmission and

Distribution (T&D) Operational Practices, Vegetation Management, Fire Mitigation Construction, and Emergency Response & Outage Restoration.

- **T&D Operational Practices:**
 - *Inspection and Maintenance Strategies:* These consist of diagnostic activities to assess system equipment and when performance deficiencies are found they are scheduled to be resolved. Additionally, IP&L performs various routine maintenance activities on equipment.
 - *Situational & Conditional Awareness:* This component consists of methods to improve system visualization and awareness of environmental conditions. The practices in this category aim to provide tools to improve the responsiveness of other components of the plan.

- **Vegetation Management:** IP&L and its vegetation management contractors perform removal and/or trimming of vegetation within its ROW. Additionally, this includes a Level 1 limited visual assessment of trees outside of ROW that may be dead, uprooting, or otherwise at risk of falling into powerlines which present a hazard to the public and IP&L assets. If a risk tree is identified, a Level 2 assessment will be performed on the tree to ensure it is truly a risk tree which includes completely walking around the tree looking for defects in all visible areas of a tree. Notice and approval from property owners is required before these risk trees can be removed unless they are making contact or causing damage to IP&L facilities. Therefore, as the owners of these trees, property owners have a responsibility to assist IP&L with approving the removal of risk trees that exist on their property.

- **Fire Mitigation Construction:** IP&L utilizes design and construction practices that consist of system, equipment, infrastructure design, and technical upgrades that reduce the likelihood of assets becoming an ignition source.

- **Emergency Response & Outage Restoration:** This strategy consists of IP&L's procedures in response to wildfire, de-energization, and other emergency events. This component aims to formalize protocols for these situations for thorough and efficient communications, emergency response and outage restoration.

3 Risk Analysis and Risk Drivers

To establish a baseline understanding of the risks and risk drivers involved, IP&L examined its exposure to fire-related hazards. Although inherent risks exist in

operating an electric utility, there are strategies and processes to better plan and manage those risks. After identifying key risk factors, IP&L prepared this WMP to outline and adopt reasonable and available utility practices in applicable areas.

3.1 Fire Risk Drivers

IP&L evaluated its own, state, and national data, as well as other utilities' fire causes in the region and applied its own field experience to determine the key potential risk drivers.

Ten categories were identified as contributors for heightened wildfire risk (in no particular order):

- Human Population Growth/Activities
- Climate Change
- Fire Weather/Drought
- High Winds
- Lightning
- Limited accessibility
- Vegetation Type/Fuels
- Tree Failure/Tree Mortality
- Foreign Contact
- Equipment/Facility Failure

IP&L identified the following drivers associated with each category. Some of these risk factors are within IP&L ability to mitigate while the majority are beyond IP&L ability to influence or change.

3.1.1 Population Growth and Human Activities

The fact of the matter is that human error causes most wildfires. As humans continue to encroach in wildfire prone territory either to build housing and other supporting infrastructure or to satisfy their recreational desires, the number of wildfires caused by human error will continue to grow. (See section 3.3.2 Wildland Urban Interface). IP&L is not able to control these human activities.

3.1.2 Climate Change

The Fourth National Climate Assessment, published in 2018, states that 2015 temperatures were 3.4°F above normal (as compared to the 1970-1999 average) with winter temperatures 6.2°F above normal. The warm 2015 winter temperatures are illustrative of conditions that may be considered "normal" by mid or late century. The lack of snowpack in 2015 in concert with extreme spring and summer precipitation deficits led to the most severe wildfire season in the Northwest's recorded history with more than

1.6 million acres burned across Oregon and Washington⁹. In the summer of 2024, Spokane experienced the five hottest days in its history¹⁰.

Climate change can affect forests by altering the frequency, intensity, duration, and timing of fire, drought, introduced species, insect and pathogen outbreaks, windstorms, ice storms, or landslides (Dale et al. 2001). Potential climate change effects on this ecosystem may include a shift to plant species that are more common in hotter, drier sites. Average annual temperature is projected to continue to increase in the Pacific Northwest along with increasing number and severity of wildfires and insect outbreaks¹¹. Rising temperatures are likely to increase bark beetle survival, but climate-induced changes to other insects and forest pathogens are more varied and less certain. Increased temperatures will have positive or negative effects on individual trees and forest-wide processes depending on local site and stand conditions but impacts from increased extreme heat will likely be negative overall. IP&L is not able to control climate change other than continuing to support clean and affordable hydropower.

3.1.3 Fire Weather/Drought

IP&L's service area can experience very hot and dry weather during late summer and early fall with drought conditions developing quickly. Drought, strong dry winds, which sometimes last for days, in combination with dry vegetation, can produce extreme fire conditions. This is exacerbated during years with an unusually wet spring, which can cause a large bloom of underbrush that then dries off in the beginning of the dry season. This abundant ground cover becomes ample kindling for wildfire in the late summer and fall and is an abundant fuel source across wide swaths of land. IP&L is not able to control whether there will be drought conditions.

3.1.4 High Winds

High wind events are common occurrences in the region. Conductors can sway under these conditions, and if extreme, phase-to-phase contact or cross-phasing can occur, which often results in momentary or sustained outages.

High winds can also cause trees to fall into power lines from outside the ROW. Downed powerlines are typically not caused by trees growing into powerlines but rather are knocked down by trees falling into powerlines. For this reason, it is

⁹ NCEI, 2018: Climate at a Glance. Regional Time Series: Northwest Climate Region, Average Temperature, January–December 2015.

¹⁰ [Sunday among the five hottest days in Spokane history, but temperatures expected to cool | The Spokesman-Review.](#)

¹¹ McKenzie et al. 2004, 2008, Westerling et al. 2006, Mote et al. 2014, Shafer et al. 2014.

imperative that public and private landowners inspect for and remove from their property trees that are dead, uprooting, or otherwise at risk of falling into powerlines and, additionally, authorize IP&L to remove any identified risk trees. Failure to remove these trees can bring the energized conductors into contact with fuel sources or pull down the conductor which allows it to contact dry ground covering. Ignition events are particularly dangerous on high wind days, as it can be difficult to suppress and contain a fire once it has started. IP&L is not able to control whether there will be high winds, but IP&L does work with landowners to remove risk trees.

3.1.5 Lightning

National Interagency Fire Center statistics show that between 2008-2012, an average of 9,000 (12%) of reported wildland fires were started by lightning per year. Lightning can cause wildfires when it strikes trees or other vegetation when these fuel sources are susceptible to ignition. When lightning hits a power line, the surge of electricity can cause a flashover. A flashover can occur when a lightning strike hits a conductor or insulator possibly leading to a pole top fire. IP&L is not able to control whether lightning will strike. However, IP&L does employ industry-standard equipment to help protect IP&L assets against lightning strikes.

3.1.6 Limited Accessibility

IP&L's service territory has some locations with steep rolling hills, sharp cliffs and rivers and river breaks. As a result of these unique areas, indirect routes, and natural barriers, it can take several hours to reach equipment in some remote locations. Many circuits are routed cross-country over difficult terrain with no or limited vehicle access. These factors negatively impact outage response and restoral times for IP&L line crews and access for emergency responders. IP&L is not able to control the natural topography.

3.1.7 Vegetation Type/Fuels

The service areas vegetation profile ranges from ponderosa pine and Douglas fir forests in the northern areas, and vast open range areas characterized by widespread stands of western juniper, bitterbrush, sage, and grasses in the plateau areas. The predominant forest type in the upper elevations of the service area is ponderosa pine, followed by interior Douglas fir and Grand fir types. These trees tend to grow tall, with short branches, and thick ground debris. The forested areas, without active forest management by public and private landowners, tend to grow thick with heavy underbrush making navigation difficult and available fuel for fire abundant. Much of the service area's lower elevation vegetation is comprised of open grasslands, dryland farming, and irrigated agriculture.

3.1.8 Tree Failure/Tree Mortality

Most line down events nationally are attributed to trees or branches falling into power lines. Since many portions of IP&L's distribution system are located in wooded or heavily treed areas, trees that are dead, uprooting, or otherwise at risk of falling into power lines are considered a potential threat to the electric system if it is within striking distance of the power lines. Electric utilities that investigate the actual causes of outages often find that the failure of hazardous branches and trees is a significant component of the tree-related outage category¹².

Within IP&L's service area, the number of acres with mortality due to the Fir Engraver Beetle, and to a lesser extent the Western Pine Beetle, have been increasing in the region annually since 2013¹³. Trees near the ROW that have succumbed to beetle or other damage can become "risk trees" which pose an increased threat to the distribution system.

3.1.9 Bare Wire Conductor

Like most electric utilities in the United States, IP&L predominantly utilizes bare conductor for its overhead distribution line. While IP&L's construction design practices attempt to minimize contact events, high wind conditions can lead to this bare conductor coming in contact with itself and vegetation. Animal contacts and actions of the public can also be causative factors. This can lead to short circuit events which cause protective equipment to interrupt the flow of electricity. Though these protective devices are in place to reduce or eliminate the damage associated with short circuit events, the potential for an ignition event does exist.

3.1.10 Equipment Failure

There are many reasons equipment failure can occur during its service life ranging from manufacturers defects and normal wear and tear to deliberate sabotage by the public (example: gunshot). When equipment fails, regardless of the reason, there can be a variety of unpredictable outcomes, some of which can lead to an ignition event. To mitigate equipment failures, IP&L conducts periodic inspections of line assets to assess system fitness and IP&L schedules the resolution of any issues found.

3.2 Key Risk Consequences

The aforementioned risks have many possible consequences should any be a contributing factor for an ignition. Those risks IP&L has the ability to mitigate are the

¹² NRECA Vegetation Management Manual

¹³ 2019 Forest Health Highlights Report-WADNR

impetus for the development of this WMP. The list below outlines some of the worst-case scenarios:

- Personal injuries or fatalities to the public, employees, and contractors
- Damage to public and/or private property
- Damage and loss of IP&L-owned infrastructures and assets
- Impacts to reliability and operations
- Damage claims and litigation costs, as well as fines from governing bodies
- Damage to IP&L's reputation and loss of public confidence
- Negative public opinion of the power industry in general

3.3 Fire Threat Assessment in IP&L Service Territory

As part of the risk analysis process, IP&L examined its asset locations to identify risks unique to its service area. This chapter will provide an overview of the service area properties and associated risks, which are factored into the wildfire mitigation strategy.

3.3.1 Wildfire History and Outlook

Large wildfires are frequent in Washington, and most occur on the drier east side of the Cascade Range. Figure 2 shows the regional wildfire occurrence since 2000. Of the approximately 13,500 fires that have ignited statewide in the past 12 years, only 20% have grown larger than one acre. Fire season in Washington lasts from mid-June through the end of mid-September, but research indicates that this is changing. Fire seasons from 2003 through 2012 averaged more than 84 days longer than in 1973 to 1982¹⁴. The largest fire years coincide with warm spring and summer temperatures, and early spring snowmelt. Annual large wildfire frequency in USFS, National Park Service, and Bureau of Indian Affairs (BIA) forests is significantly correlated with spring and

¹⁴ Westerling, A.L. 2016 Increasing Western US Forest Wildfire Activity; <https://royalsocietypublishing.org/doi/10.1098/rstb.2015.0178>

summer temperature.

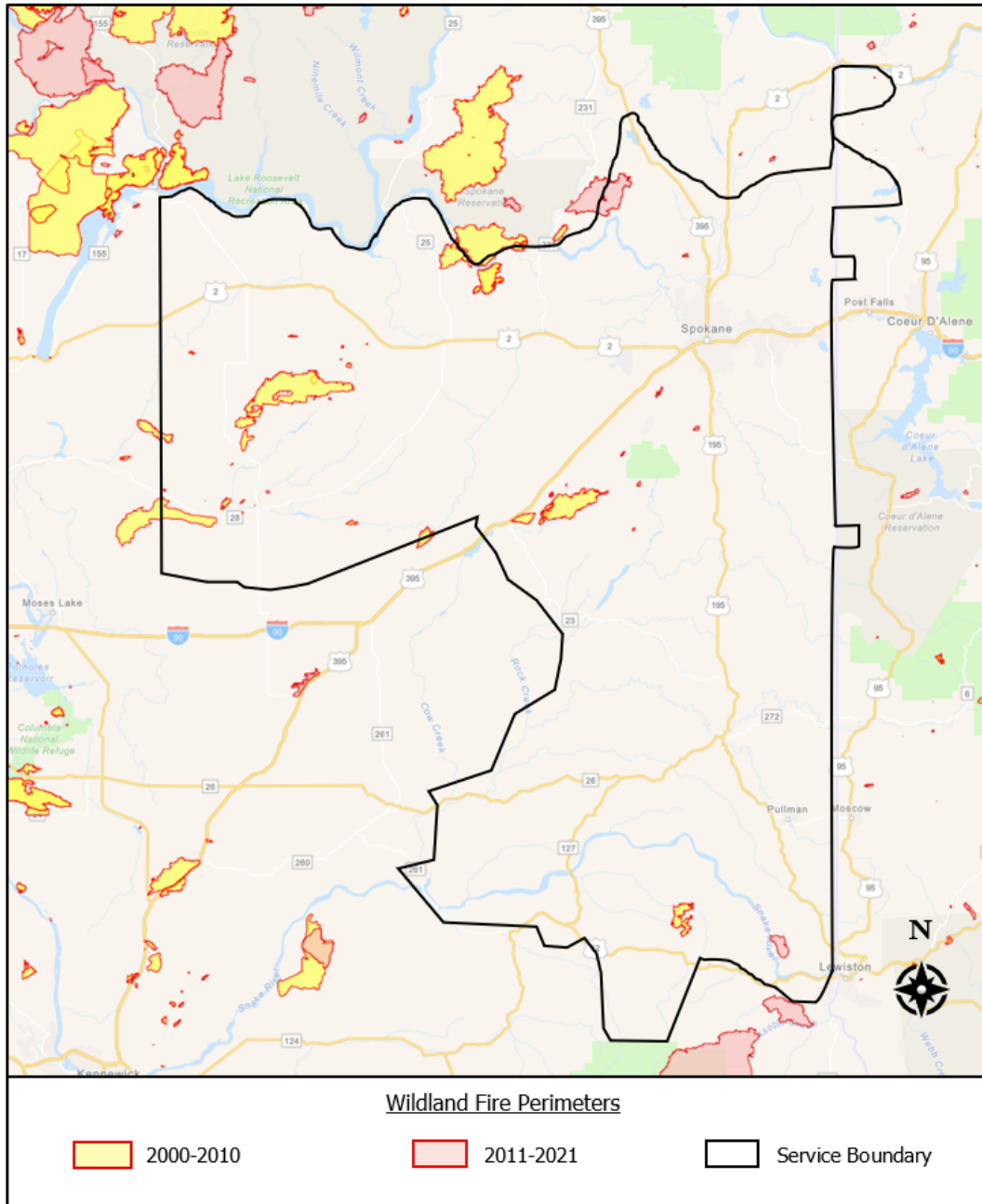


Figure 2. Wildfire Perimeters 2000-2021

3.3.2 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 30% in Washington from 1990

to 2010, with the number of homes increasing by 50%¹⁵. There are now nearly a million homes in Washington located in the WUI¹⁶.

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 3 illustrates the distribution of WUI areas in the service area.

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)

¹⁵ https://www.nrs.fs.fed.us/data/wui/state_summary/

¹⁶ https://www.dnr.wa.gov/publications/rp_wildfire_strategic_plan.pdf?lmvb8d

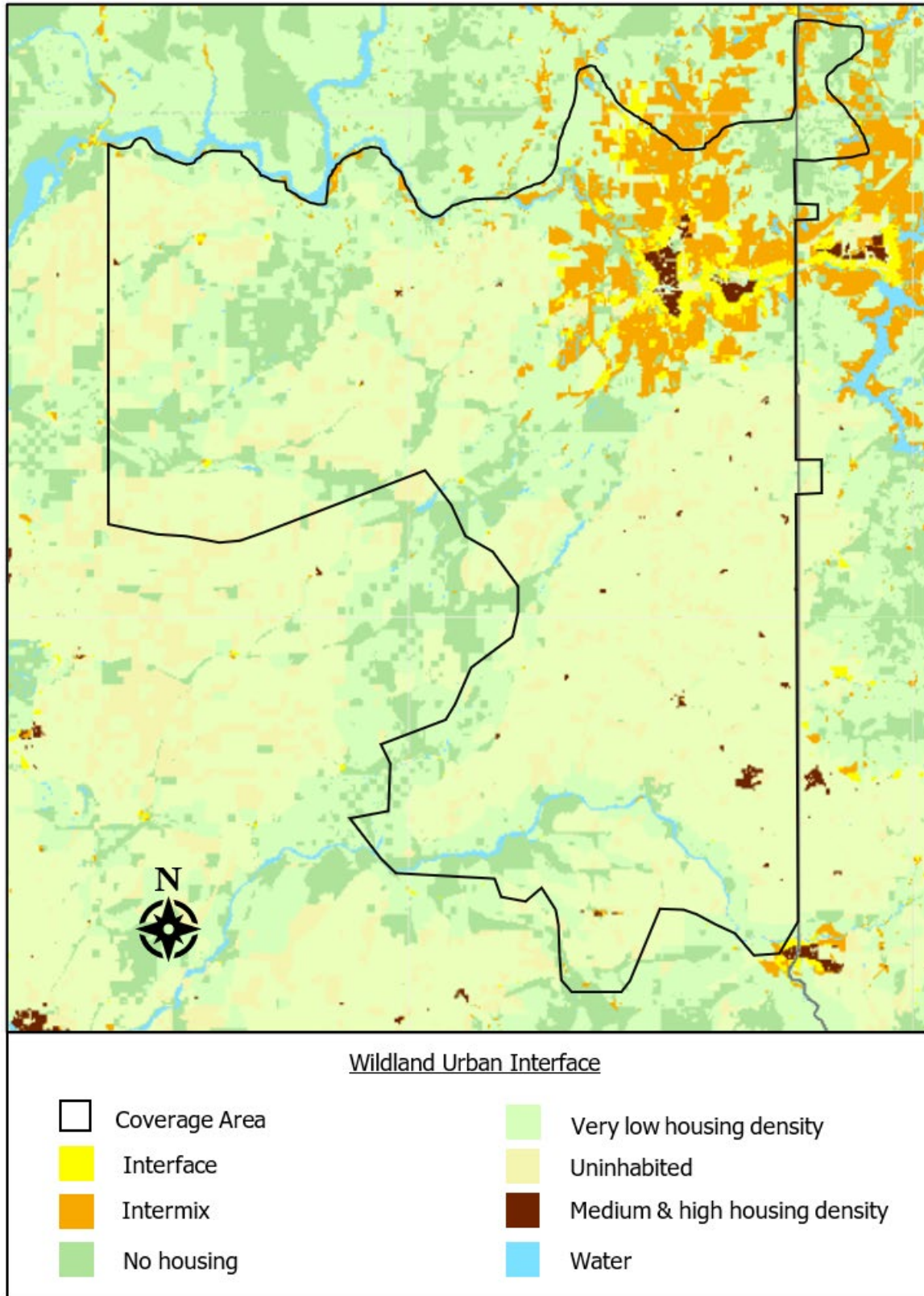


Figure 3. Wildland Urban Interface Map

3.3.3 Wildfire Threat Assessment Mapping

The Wildfire Hazard Potential (WHP) map (Figure 4) used in this plan is based on a raster geospatial dataset produced by the USDA Forest Service, Fire Modeling Institute that can help to inform evaluations of wildfire risk or prioritization of fuels management needs across very large landscapes. The specific objective of the WHP map is to depict the relative potential for wildfire that would be difficult for suppression resources to contain.

The 2020 version shown on the following page was built upon spatial datasets of wildfire likelihood and intensity generated for the conterminous U.S. with the Large Fire Simulator (FSim), as well as spatial fuels and vegetation data from LANDFIRE 2014 and point locations of past fire occurrence (ca. 1992 - 2015). Areas mapped with higher wildfire hazard potential values represent fuels with a higher probability of experiencing torching, crowning, and other forms of extreme fire behavior under conducive weather conditions, based primarily on landscape conditions at the end of 2014¹⁷.

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 communities, structures, or powerlines, it can approximate relative wildfire risk to those resources and assets. WHP is not a forecast or wildfire outlook for any particular season as it does not include any information on current or forecasted weather or fuel moisture conditions. It is instead intended for long-term strategic planning and as a fuels management tool.

The WHP map is used to prioritize Vegetation Management activities and for determining the location for focused T&D Operational Practices.

¹⁷ Dillon, Gregory K; Gilbertson-Day, Julie W. 2020. Wildfire Hazard Potential for the United States, version 2020 (270m). 3rd Edition. Fort Collins, CO: Forest Service Research Data Archive. <https://doi.org/10.2737/RDS-2015-0047-3>.

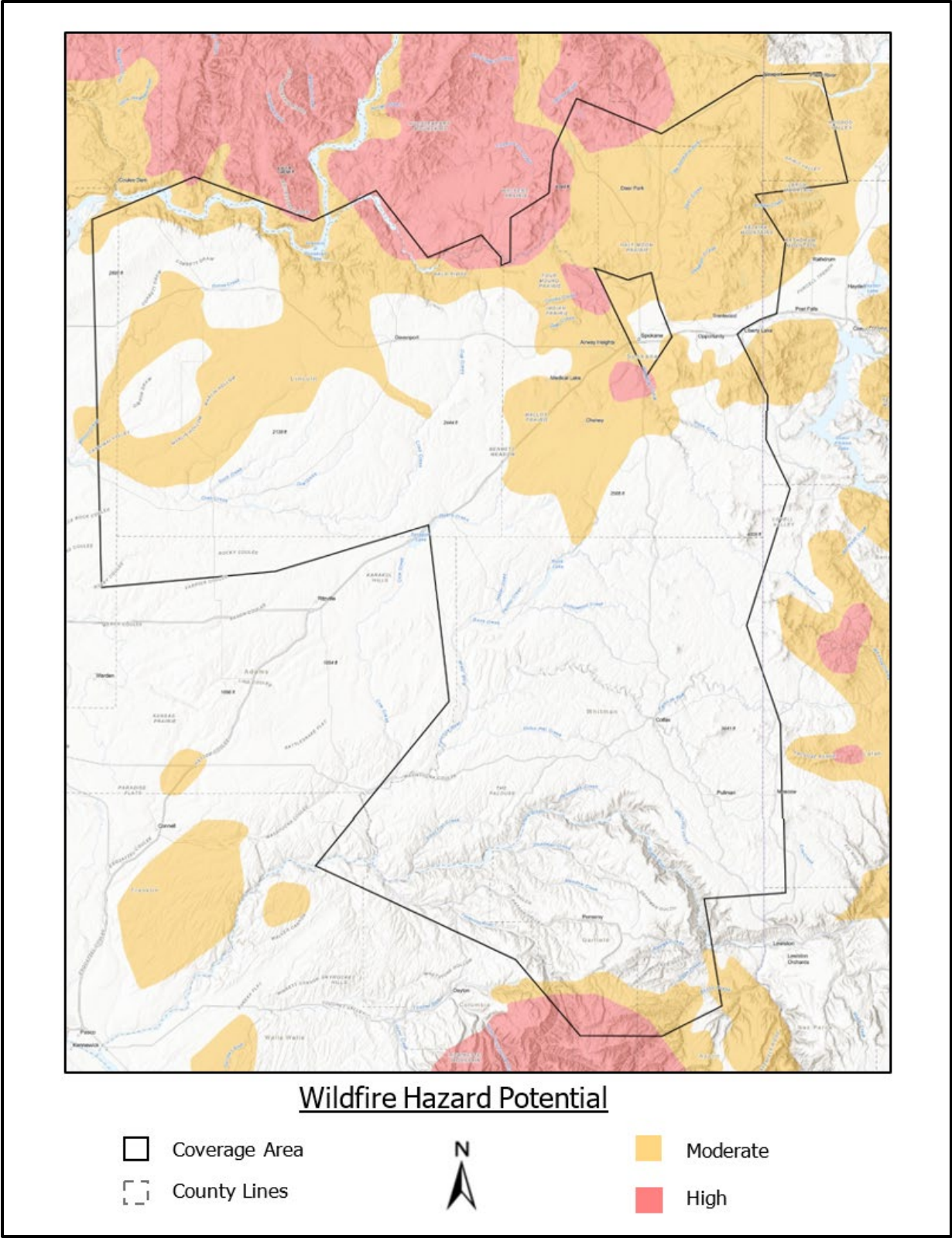


Figure 4. Wildfire Hazard Potential

3.3.4 Assets Within Wildfire Threat Index Tiers

Table 2 provides a high-level overview of IP&L’s various T&D assets as of 2023 relative to the Wildfire Hazard Potential tiers shown in the map above (Figure 4). It should be noted that this information represents miles of conductor or number of substations, not miles of ROW.

Assets	Total	Low		Moderate		High	
	Line-miles	Line-miles	%	Line-miles	%	Line-miles	%
115 kV OH Transmission	21	1	5%	18	86%	2	10%
69kV Sub-transmission	59	59	100%	0	0%	0	0%
34.5kV Sub-transmission	91	39	43%	52	57%	0	0%
7.2 kV OH Distribution	5072	2612	51%	2224	44%	236	5%
7.2 kV UG Distribution	1754	307	18%	1277	73%	170	10%
Substations	40	18	45%	20	50%	2	5%

Table 2. Overview of T&D Asset with WTI Tiers



4 Wildfire Prevention Strategy and Programs

The intent of this chapter is to describe and outline technologies and approaches that IP&L currently applies to its system to reduce the likelihood of electrically caused ignition events. IP&L updates its practices as new information emerges and then adopts improved strategies. IP&L's current activities intended to address key wildfire risk factors as they apply to T&D Operational Practices, Vegetation Management, and Fire Mitigation Construction are outlined in the following sections.

4.1 T&D Operational Practices

4.1.1 Situational Awareness

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.

To effectively respond to wildfire-conducive conditions, IP&L evaluates data provided by local fire protection agencies and the national weather service to determine the apparent risk of wildfire in its service territory. Based on available information, IP&L appropriately schedules work crews, adjusts equipment settings, and prepares for imminent fire conditions as needed.

IP&L's operations group use various resources to monitor evolving weather and climatological conditions that may lead to fire events such as:

- **USFS-Wildland Fire Assessment System (WFAS):** 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/>)
- **The National Weather Service (NWS):** The NWS provides 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:** This on-line map 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>)
- **Industrial Fire Level Precaution Levels (IFPL):** Fire season requirements become effective when fire season is declared in each Washington DNR Protection District. (<https://www.dnr.wa.gov/ifpl>)

4.1.2 Industrial Fire Precaution Levels

Each summer, when qualifying conditions of fire hazard exist, the State Forester will declare fire season to be in effect. The Industrial Fire Precaution Level (IFPL) system is intended to help prevent wildfires by regulating industrial and recreational activities on Washington Department of Natural Resources (DNR), Forest Service or Bureau of Land Management (BLM) forestlands.

IFPL restrictions¹⁸ are issued at one of four levels that begin with Level One at the start of the “closed fire season” and progress through Level Four as conditions warrant. Because conditions vary across the state, each protection district will declare fire season separately. The declaration of fire season affects forestry and other commercial operations as well as the activities of the general public within public lands. Fire season remains in effect until terminated by an additional declaration or the State Forester declares that conditions of fire hazard no longer exist.

4.1.3 Fire Safety Mode/Recloser Operational Practice

During wildfire season, or when high fire risk conditions exist in its service area, IP&L will implement protocols and procedures outlined in its Operational Procedure Non-Reclose Fire Safety Mode Plan, Procedure 9-2-1, to determine protection settings for select reclosers on the T&D system.

¹⁸ <https://app.leg.wa.gov/wac/default.aspx?cite=332-24-301>

4.1.4 Infrastructure Inspections Overview

Recognizing the hazards of equipment that operate high voltage lines, IP&L maintains time-based inspection programs for distribution, transmission, and substation equipment which plays an essential role in wildfire reduction. The following sections outline the inspection practices for the utility. Table 3 outlines the inspection schedule for all assets.

Definitions of Inspection Levels:

1. **Routine Patrol Inspection:** A general visual inspection of applicable utility equipment and structures designed to identify obvious structural problems and hazards. Patrol inspections may occur during other company business.
2. **Detailed Inspection:** Individual pieces of equipment and structures receive a specific visual examination using routine diagnostic testing as appropriate.
3. **Intrusive Pole Inspection:** This involves the movement of soil, boring holes in the wood pole above and below the ground line, checking for decay, and installing a fumigant as needed.

ASSET CLASSIFICATION	INSPECTION TYPE	FREQUENCY
Overhead Transmission	Routine Patrol Inspection	Continuous
	Detailed Inspection	Every 11 years
	Wood Pole Test and Treatment	Every 11 years
Overhead Distribution	Routine Patrol Inspection	Continuous
	Detailed Inspection	Every 11 years
	Wood Pole Test and Treatment	Every 11 years

Substation	Routine Inspection	Monthly
	Detailed Inspection	Annually

Table 3. Inspection Program Summary

4.1.5 Transmission and Distribution Line Routine Inspections

Routine line inspections consist of vehicle patrols, foot patrols, drone patrols, and all-terrain vehicle patrols to examine IP&L assets including poles, crossarms, conductors, and related equipment. Inspectors look for visible signs of defects, structural damage, broken hardware, abnormally sagging lines, vegetation encroachment, and wildlife contacts. The information accumulated informs planning and scheduling of future maintenance to avoid major faults and reduce ignition potential.

IP&L considers and prioritizes maintenance work by assessing the most urgent needs. The inspectors will document the overhead systems' condition, recording defects, deterioration, safety concerns, or any other factors requiring attention on the work management system. The inspections focus on any hazards that could affect the system's integrity or the safety of line workers and the public.

4.1.6 Transmission and Distribution Line Detailed Inspections

Detailed inspection for transmission and distribution lines are performed in conjunction with the Pole Management Program. Wood poles are inspected by IP&L staff on an 11-year cycle. The pole inspection procedure includes a visual inspection of the entire pole and associated hardware and equipment with photographs and documentation of noted deficiencies. Repairs are prioritized based on the severity of the deficiency.

4.1.7 Pole Management Program

To maintain the co-op's 100,000+ utility poles, IP&L has a Pole Management Program with the goal to inspect approximately 9% of the poles per year. The pole inspections are performed by two full-time pole testers on a planned basis to determine whether the wood pole has degraded below design strength requirements with safety factors. This program includes a detailed Transmission and Distribution Line Detailed Inspection as part of the work process (see 4.1.6)

This program facilitates a one-stop assessment of a pole's condition, both above and below ground on an 11-year cycle. Newer wood poles and thru-bored poles receive a visual and sound inspection while non-wood poles receive only a visual inspection. Non-thru bored, and older poles receive a visual, sound & intrusive bore inspection

utilizing resistograph technology. All poles are visually evaluated for the condition of cross arms, hardware, and devices, as well as the condition and clearances of the wire spans. This process serves as the detailed line inspection of IP&L's T&D assets.

Poles which fail inspection are prioritized based on level of structural defect and scheduled for replacement or corrective repair accordingly. Wood poles that pass the intrusive inspections are re-tested with a target interval of 11 years.

4.1.8 Substation Inspections

IP&L conducts both routine and detailed inspections of substations. Routine inspections of the substations are performed by area service representatives (ASRs) on a regular basis throughout the year. Each substation also receives a detailed inspection performed by the substation and metering technicians at least annually. All substation inspections involve examining the substation to confirm that there are no structural or mechanical deficiencies, hazards, or vegetation encroachment issues. Additionally, detailed inspections also include transformer oil testing, thermal imaging for hotspots, and DC system load testing.

4.1.9 Instruction to Line Inspection Department

IP&L's maintenance plan is based on sound industry principles and practices and is designed to provide safe reliable service. Maintenance work shall be based on a two-level rating system to prioritize action items to resolve safety and reliability issues.

The inspector will document the condition of the overhead and underground systems on a digital inspection form. This digital form prompts the inspector to record resistograph data and provide comments on any issues found during the inspection. The intent of the inspection is to identify any elements of the T&D that could adversely affect the integrity of the system, the safety of line workers, and/or the general public.

Inspection results (overhead & underground) will be prioritized and issued for correction as follows:

- *Priority # 1* – Immediate hazard:

Conditions that may affect the integrity of the system or present a hazard to workers or the general public. Priority #1 tags will be responded to *immediately* and appropriate action taken until the hazardous condition is remedied.

- *Priority # 2* – Non-emergency repair condition:

Conditions that require maintenance that can be scheduled to maintain the integrity of the system. Priority #2 tags will be prioritized by urgency and will be scheduled to have appropriate repairs made to correct the condition within two years where practicable.

4.1.10 Recloser Inspection Program and Maintenance Program

The circuit recloser inspection program details a full visual device inspection as well as a counter read verification. Inspectors inspect the exterior of the device, looking for any oil leaks (if oil filled), physical damage, and take an operations counter read.

Any hydraulic recloser found to be deficient are prioritized for service as part of IP&L's hydraulic recloser modernization program in which they are replaced. Any non-hydraulic reclosers found to be deficient are removed from service and replaced.

4.1.11 Area Service Representatives (ASRs)

IP&L's ASRs are assigned and are responsible for responding to their assigned portion of the IP&L electric system. Currently, the IP&L system is divided into 11 strategic regions, each with an ASR designated to respond to their area and to support the membership of their territory. The typical area encompasses roughly 450 miles of power line. The average monthly miles traveled by an ASR is 3,500 miles. ASRs are responsible for executing routine line patrols within their service territory.

4.1.12 Geographic Information Systems (GIS) Mapping

IP&L geolocates and manages its assets utilizing GIS mapping technology which has been integrated into its asset inspection and maintenance programs. This provides the ability to record and map this work to ensure all assets are maintained on a prescribed schedule.

This GIS is also used for a variety of other utility functions involved in managing, planning, and operating the IPL Transmission & Distribution system.

4.2 Vegetation Management (VM)

Trees that grow within or adjacent to powerline Right of Ways (ROWs) are a common cause of outages and damage to facilities, as well as a potential cause for wildfire. Tree caused outages make up approximately 16% of all outages.

IP&L maintains over 5,200 miles of overhead T&D ROW to minimize interruptions of services and to provide a safe and reliable supply of electricity to its members. This includes not only the maintenance of hardware, conductors, and poles but trees and other vegetation that threatens to fall onto or grow into the electrical conductors. To this end, IP&L has developed a VM program intended to maintain safe and reliable electric facilities, provide safety for the public and for utility workers, and promote fire mitigation throughout the service area.

State and Federal Agencies allow maintenance of the ROW under or around the co-op's power lines pursuant to a franchise agreement with the respective public agency. IP&L is authorized to remove vegetation and trees in private ROWs on private property pursuant to the easement the property owner executes when initially installing a new service. IP&L provides notice to private property owners in areas where ROW maintenance is going to be performed in the near future. IP&L removes trees outside the ROW when removal of the tree prevents a potential threat to life or property that may affect the operation of IP&L's system and the member agrees that IP&L can remove the tree. When a member refuses to permit IP&L to remove a tree outside of the ROW, IP&L provides documentation to the member that the member may be held responsible for any loss or damage caused by the tree. To prevent loss or damage, it is critical for public agencies and members of the public to take responsibility for their trees and assist IP&L with removal of trees that are visually dead, visually uprooting, or otherwise at risk of falling into powerlines.

4.2.1 Vegetation and Utility Inspection Manager

The Vegetation and Utility Inspection Manager (VUIM) oversees the VUIM Team, the VM program, and manages all tree-related issues with the assistance of staff. To ensure all components of the overall program are being satisfactorily completed, the Team performs periodic site inspections throughout the system. This quality control practice enables IP&L to verify system condition when all work is completed. The VUIM Team audits approximately 60% of the contracted tree work, and 80-90% of the tree work in heavily forested areas. Work areas are mapped after the quality control work has been completed.

The Team inspects the system's electrical lines in a two, three, or four-year tree trimming cycle depending on vegetation and environmental conditions. Not only is the Team inspecting vegetation growth, but they are also visually evaluating the condition of poles, lines, and devices. Should Team identify a problem it is quickly reported and scheduled for repairs. The Team serves as an additional resource in identifying potential issues before they can impact the system, especially in situations where arcing or sparking may occur.

4.2.2 Area Service Representative Response (ASR)

Distribution lines that make up the Inland Power system are assigned to an area service representative (ASR) by geographical area. These could be trees contacting lines or a member's concern for potential contact. ASRs will generally mitigate the issues during the initial response. There are certain situations when a full tree crew is required to mitigate the issue. The mitigation response timeline is based on the emergent nature of the situation.

4.2.3 Pruning Standards

Trees are trimmed or removed for safety, reliability, board policies, and compliance with the National Electric Safety Code (NESC) and RCW 64.12.035 requirements. IP&L's tree pruning crews and contractors are governed by principles of modern arboriculture using the following standards:

- American National Standards Institute (ANSI) A300 Part 1 concepts and utility directional pruning, which supports proper pruning/tree health while achieving and maximizing the pruning cycle
- International Society of Arboriculture Tree Pruning Standards (1995)
- International Society of Arboriculture Utility Pruning of Trees Best Management Practices. (2004)

Tree clearance is determined by the growth rate of the species. Correct tree trimming should promote tree growth away from electrical conductors, provide longer periods of clearance, and reduce future work. Correct tree pruning techniques include, but are not limited to, collar cuts, directional pruning, and drop-crotch pruning.

4.2.4 Vegetation Management Pruning Schedule

IP&L has evaluated the vegetation characteristics and growth rates of the predominant species along the OH lines to determine the years of growth until they contact the conductor. Contracted VM crews are responsible for pruning trees and vegetation in the ROW around the energized power lines, utility poles, and underground equipment to obtain the minimum required clearance with due regard to current and future tree health. While clearing the ROW, a contracted VM crew will perform a Level 1 Limited Visual Assessment. A Level 1 Limited Visual Assessment is a large area scan of the trees outside the ROW while in the ROW to identify high or extreme risk trees but does not include a walk completely around trees or "sounding" a tree with a rubber mallet or using probes to evaluate the cavity of a tree.

Cycle pruning is the cornerstone of the vegetation management program. Under this concept all system electrical distribution lines are assigned a schedule for tree trimming and/or removal in ROW and the performance of a Level 1 Visual Assessment. Currently, the tree trimming cycle is two, three, or four-years depending on vegetation and environmental conditions. Certain areas may receive more frequent pruning in addition to the two, three, or four-year cycle pursuant to the Risk tree mitigation plan. Table 4 illustrates scheduled trimming cycles for the T&D lines on the IP&L system.

Table 4. Vegetation Management Schedules

ASSET CLASSIFICATION	OPERATION TYPE	FREQUENCY
Overhead Transmission	Pruning	Every 2, 3, or 4 years
Overhead Distribution	Pruning	Every 2, 3, or 4 years

4.2.5 Mid-Cycle Pruning

The VM inspection process is driven by the VUIM Team providing an ongoing assessment of vegetation growth throughout the system with special attention given to areas with increased potential for tree-caused damage to powerlines and utility equipment. By a continuous evaluation of our entire system, IP&L focuses tree pruning resources in certain high growth areas more frequently than the normal three-year tree trimming cycle. The goal of this program is to address potential problems that may arise outside the three-year tree pruning cycle.

4.2.6 Risk Tree Removal

Electric utilities that investigate the actual causes of outages often find that the failure of branches and trees is a significant component of the tree-related outage category¹⁹. A risk tree is defined as any tree that is a threat to a power line because it is visually dead, visually uprooting, or has other defects that cause it to be at risk of falling into powerlines. After giving notice to the property owner, IP&L makes it a priority to remove risk trees as soon as they are identified and, if necessary, an agreement with the property owner is reached. If an agreement with the property owner is not reached, IP&L advises the property owner that the property owner may be liable for any damage caused by the risk tree.

Risk tree removals are assessed and completed as part of the normal cycle trim as well as in response to hot spot identification. These trees are generally outside the right-of-way and are deemed to pose a potential threat to power lines. The risk tree removal

¹⁹ NRECA Vegetation Management Manual

practice is above and beyond the normal standard for clearing power line rights of way. On an annual basis, 2,000 to 8,000 Risk trees are removed as part of IP&L's Vegetation Management program, in support of this WMP.

4.2.7 Routine & Emergency Pruning Service Orders

For routine pruning service orders, members occasionally proactively contact IP&L to address vegetation areas of the system that they may be concerned with. The VUIM Team works with these members to identify and assess their concerns and if needed schedules a tree crew to address the issue.

If the area of concern presents an imminent threat to IP&L assets or public safety, the service order is elevated to an emergency trimming service order and is urgently addressed. An example of this would be reports of arcing and sparking where trees are contacting the high voltage lines.

4.2.8 Brush Mowing Plan

The brush mowing process is used to remove under-growth within IP&L's ROWs. Brush and small trees are removed with a large tractor mounted shredder that cuts and mulches the undergrowth into small pieces and spreads them across the ROW. The result is a ROW that is resistant to fire and easy to navigate by repair crews. This work is prioritized in areas identified as having high fire risk where access to lines may be difficult.

In 2024, IP&L was awarded a \$10,000,000 grant from the United States Department of Agriculture, Forestry Service, to reduce fuel buildup in high wildfire risk areas through an intensive program of ROW clearing and hazard tree removal. The project spans 138 miles of power lines and will clear 582 acres. In addition to its ordinary vegetation management practices, IP&L will be utilizing \$2,000,000 of grants funds per year over five years to accomplish the objectives of the grant award.

4.3 Fire Mitigation Construction

4.3.1 Avian Protection Construction Standards

IP&L has employed design and construction standards with the protection of raptor and migratory birds in mind. These include the use of covered jumpers, perches, flight diverter/powerline markers, predator decoys, and conductor shields where a risk to protected avian species has been identified. The current standard practice is to install 600V insulated jumper wires, where practical to do so, on primary voltage applications to reduce the incidence of animal contacts.

These measures have substantially reduced the electrocution and collision risk to avian wildlife and the number of birds injured. Consequently, these measures have also mitigated against wildfire risk. New construction, as well as rebuilds, are completed with avian protection standards in areas identified in need of such measures. Wildlife protective devices are installed on some substation equipment in addition to poles.

These procedures included instructions on the situations that linemen will encounter in the field regarding raptors and their nests. New construction projects are evaluated to determine the need for avian protection hardware or avian construction specifications. An example of an avian protection design is shown in Figure 5 below.





Figure 5. Nesting Platform and Perch Deterrent

4.3.2 Underground (UG) Conductor

As funding allows, IP&L converts problem-prone overhead lines to underground. The undergrounding of overhead distribution lines eliminates the impacts of ice loading, improves reliability in high wind events and functions as an effective mitigation of wildlife related outages. The key indicators when considering which lines to convert are exposure to trees, extreme weather, and traffic.

Currently, IP&L has approximately 1,754 miles of 7.2kV UG distribution line on its network. While there are many benefits to undergrounding distribution lines, these facilities are significantly more costly, and take longer to construct and repair.

4.3.3 Bell, Cut-out, and Lightning Arrestor Replacement

Certain varieties of porcelain insulators (bells), cut-outs and lightning arrestors have been identified as being prone to failure. The failure modes are associated with premature cracking of the porcelain caused by moisture and freezing temperatures. In response to this issue, IP&L has developed proactive goals to eliminate these devices from the system.

4.3.4 Conductor Replacement Program

IP&L has made proactive efforts to identify and locate conductors that have been spliced multiple times. Lines that have seen excessive repairs are scheduled for replacement as soon as practicable. Undergrounding these sections of line is a consideration where vegetation is the primary driver of the damage.

4.3.5 Circuit Recloser Upgrades

A recloser is a resettable high-voltage electric overcurrent protective device. These devices shut off electric power when trouble occurs, such as a short circuit. Reclosers will re-close the circuit multiple times to attempt to restore power. If the problem was temporary, the recloser automatically resets and restores power²⁰.

Historically, these devices were electromechanically actuated and were oil filled. Modernized equipment is electronically controlled and utilizes a vacuum bottle to interrupt the flow of electricity. Electronically controlled vacuum reclosers are the preferred reclosure because they provide fast, low energy interruption with long contact life.

IP&L is engaged in a years-long recloser modernization and sectionalizing program. Starting with highest wildfire risk areas and working down toward lower risk areas, IP&L is updating and replacing its protective equipment. Through the program, oil-based reclosers and other older equipment are being replaced with modern Schweitzer Engineering Laboratory (SEL) reclosers and communications equipment in order to add additional protections to IP&L's system. These replacements and improvements are being made as budgets and supplies permit.

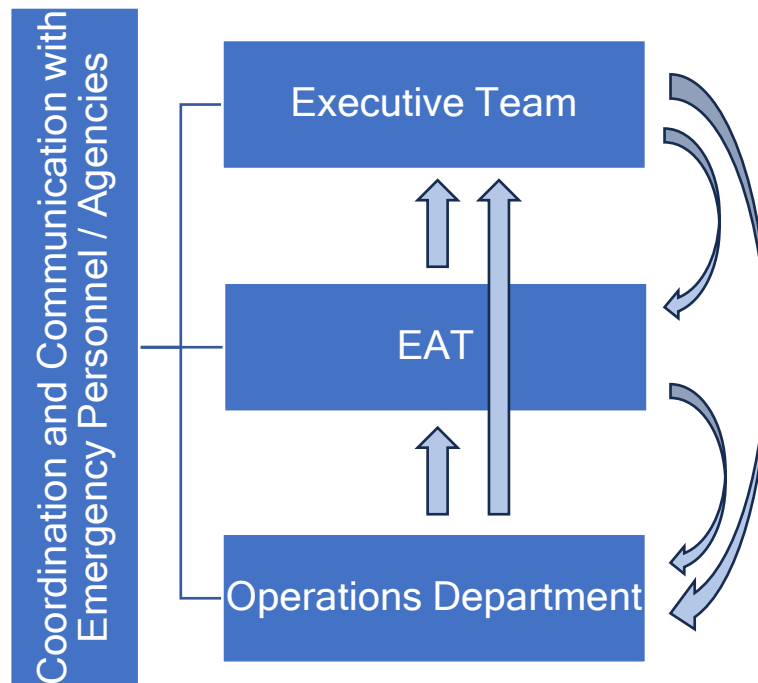
5 Emergency Response & Outage Restoration

5.1 Wildfire Event Internal Communications and Decisions

A wildfire event can present itself to IP&L in a number of ways: (1) the threat of wildfire ignition stemming from IP&L infrastructure; (2) actual wildfire ignition from IP&L infrastructure; (3) wildfire threat or imminent harm to IP&L infrastructure regardless of the ignition source; (4) wildfire threat to IP&L members within the IP&L service territory regardless of the ignition source; and/or (5) requests for assistance, de-energization, or energization from emergency personnel/agencies.

²⁰ <https://www.eaton.com/content/dam/eaton/products/medium-voltage-power-distribution-control-systems/reclosers/recloser-definition-information-td280027en.pdf>

In each situation, IP&L attempts to coordinate and communicate with applicable emergency personnel/agencies and will elevate its internal decision-making and/or responses from the Operations Department to the EAT and from EAT to the Executive Team and back and forth, as circumstances warrant. The following diagram details how that process works:



Because each situation is unique, exactly what organizations within IP&L must be immediately informed and make decisions is situation-specific and fluid.

Other than the real-time situational efforts described in Sections 5.2.1, 5.2.2, and 5.2.3, IP&L will, in coordination with any emergency personnel/agencies, utilize the Operations Department, EAT, and the Executive Team (depending on the circumstances) to evaluate the situation and make decisions regarding any responsive action.

Because situations vary and it is difficult to anticipate how any given scenario will need to be addressed, the IP&L WMP does not detail how each potential scenario could or would play out. However, IP&L is committed to real-time situational communication with internal and external stakeholders and decision makers when it comes to wildfire risk, mitigation, and response as situations allow. The primary decision-making body at IP&L is the Executive Team with ultimate decision-making authority vested in the CEO.

5.2 Preparedness and Response Planning

IP&L strives to minimize the impacts of any disruptive event regardless of the size or scope while consistently focusing attention on the community's most critical systems and infrastructure.

IP&L's primary goal in emergency response situations is to provide assistance to government and professional emergency personnel and agencies. IP&L intends to follow all lawful instructions in relation to emergency response, including (but not limited to) de-energizing lines, re-energizing lines (when safe to do so), providing fire suppression equipment, avoiding "being in the way" of emergency personnel, and otherwise assisting emergency personnel. To this end, Inland will not fly any drones in or around any active fire area unless specifically requested to do so by emergency personnel and, even then, only with documented permission from relevant governmental agencies (such as the FAA).

5.2.1 IP&L First Responders

Given the nature of their assignments, IP&L's ASRs are typically the first responder to outage/fire emergency situations. Depending upon their availability, this may not always be the case. ASRs work remotely from their areas of assignment and are equipped with fully tooled bucket trucks, which facilitates rapid emergency response. This is especially important when faced with issues involving fires and the safety of firefighters.

5.2.2 Work Crew Communications

IP&L or its contractors have and maintain reliable communications (e.g., cell phone, satellite phone or radio) present and available on the job site. In situations where cellular coverage is not available, crews possess hand-held communication devices that can issue a simple text message via satellite uplink and issue a 911 emergency call along with latitude / longitude coordinates to 911 dispatchers. This equipment is available to be utilized at all times due to the hazardous nature of electrical line work.

5.2.3 Fire Suppression Equipment

IP&L trucks contain fire extinguishers and some trucks in the summer months also have fire extinguishers containing water. Additionally, IP&L currently owns, and has strategically placed, six flatbed trucks outfitted with a 300-gallon fire suppression water tank. This equipment has proven very valuable in helping to minimize fire damage to both members' property and IP&L's system components.

5.2.4 Jurisdictional Structure

IP&L has considered the jurisdictional structure of the service area when developing or implementing its strategic plan, including those related to wildfires. Figure 6 illustrates the general land ownership within the service area. The following describes the various stakeholders, and agencies with management responsibilities.

Counties:

- **Washington:** Adams, Asotin, Columbia, Franklin, Garfield, Lincoln, Spokane, Stevens, Walla Walla, Whitman
- **Idaho:** Benewah, Bonner, Kootenai

Washington State Agencies:

- Department of Natural Resources, Northwest Region
- Washington State Parks, Northwest Region
- Dept. of Fish and Wildlife

Federal Government:

- Turnbull National Wildlife Refuge
- Bureau of Land Management
- Army Corps of Engineers
- Idaho Panhandle National Forests, Sandpoint Ranger District²¹

Tribal Lands:

- Spokane Tribe
- Kalispel Tribe

²¹ IP&L does not currently communication with the National Park Service because no national parks are within IP&L's service territory.

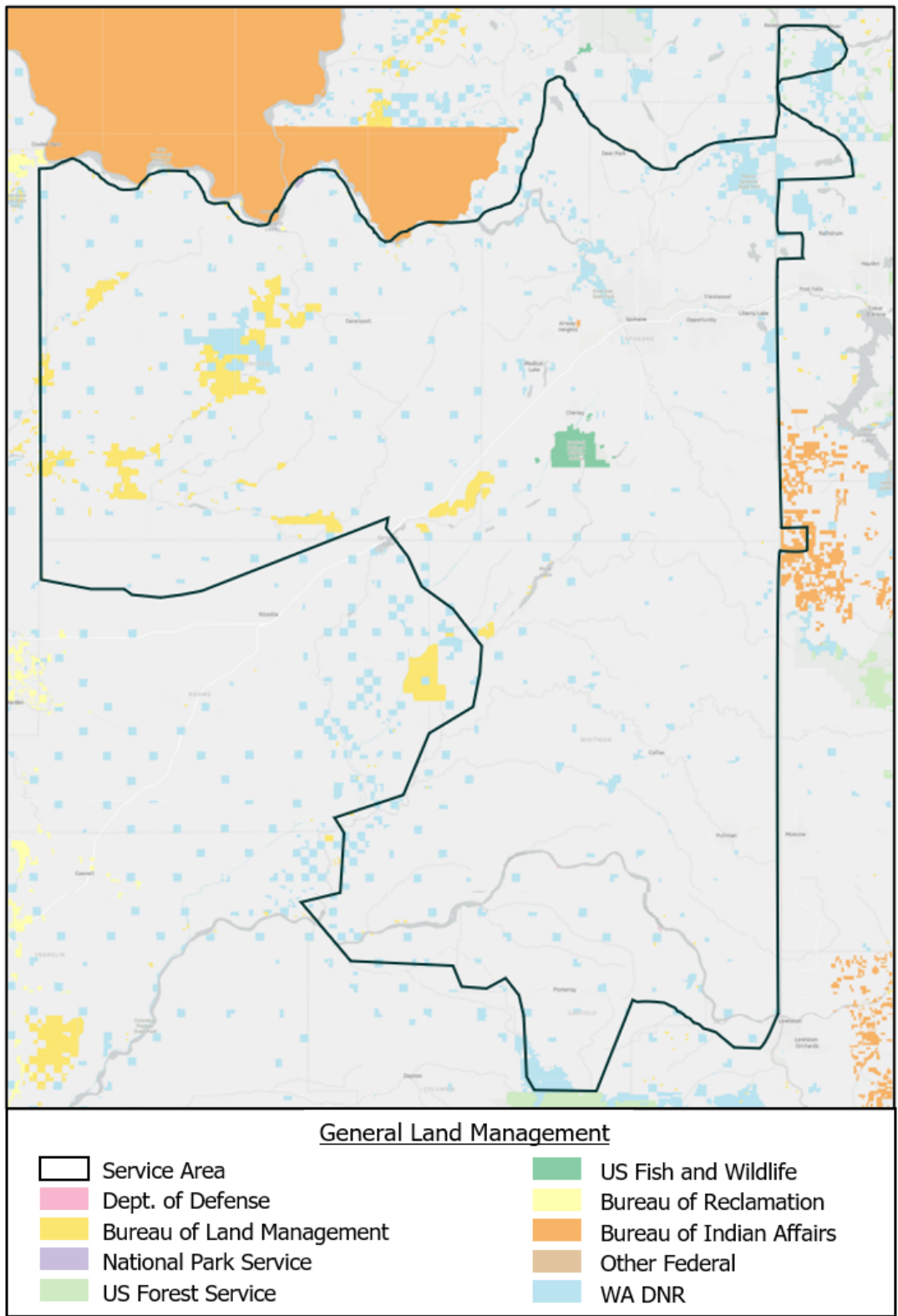


Figure 6. General Land Ownership

5.2.5 Department of Emergency Management Communication and Coordination

IP&L coordinates with its local emergency response agencies as well as other relevant local and state agencies, as a peer partner. In response to all emergency events, IP&L collaborates with the emergency response organization acting as the operational lead, which may include the Washington Department of Natural Resources (DNR), local fire districts, and local Departments of Emergency Management (DEM). IP&L provides a representative to communicate with appropriate lead emergency organizations.

In addition, IP&L is an active participant in the Spokane County Wildfire Mitigation Coalition, where it works with public agencies and other stakeholders on wildfire mitigation efforts and wildfire response procedures and practices.

Likewise, IP&L has a representative on the DNR Utility Wildland Fire Prevention Advisory Committee as one of two representatives for rural elect cooperatives in Washington. Work on that committee includes work on the statewide wildfire mitigation plan DNR template and related utility wildfire mitigation practices.

5.2.6 Public Agency and Member Communications for Outages

IP&L communicates with its members prior to planned outages and during un-planned outages. For scheduled maintenance outages, IP&L provides as much notice as possible, typically at least 24-hour advanced notice. For scheduled maintenance outages, IP&L uses automated phone notifications/text messages, email, the IP&L website, NISC SmartHub, and may use Facebook and Instagram social media platforms for further communications.

Key stakeholders and key accounts affected by a de-energization of the power lines are notified in all cases. IP&L calls the local communications companies (phone and internet providers), county government officials and Spokane County Department of Emergency Management (SCDEM) prior to large, planned outages. Businesses receive automated calls if current contact information has been provided. In addition, IP&L has a key account contact to ensure that key accounts have an immediate way to reach IP&L for any questions and/or updates.

During outages, information and geographical location are posted on the IP&L web-based outage map. The map shows outages currently reported and provides details (when available) such as the cause, time of report, number of members affected, and the estimated time of restoration. Additional information, such as phone numbers for reporting downed lines and outages, safety information, and a FAQ page are also provided.

5.2.7 Community Outreach

Defensible space is often defined as an area around a home or outbuilding, where the flammable vegetation is modified and maintained to slow the rate and intensity of an advancing wildfire. In practice, this is an area with a minimum of 30 to 100 feet around a structure that is cleared of flammable brush or vegetation. This area would also provide room for firefighters to work to protect a structure from advancing wildfire as well as protect the forest from a structure fire.

IP&L encourages its members to take proactive measures to safeguard their homes and structures from wildfire danger and to prepare for emergency events. To help create an awareness of fire danger in the service area, and what homeowners can do to minimize it, IP&L provides information on prevention and mitigation on its website and social media platforms.

One resource that members can use is the information published by the National Fire Protection Association (NFPA) on [firewise.org](https://www.firewise.org). According to the NFPA, a member can prepare their home to defend against wildfire by using the Home Ignition Zone (HIZ) approach to fire defense. Under the HIZ approach, the area around a home is divided into three zones: the Immediate Zone, the Intermediate Zone, and the Extended Zone, each requiring different levels of protection and preparation.

Immediate zone²²

The home and the area 0-5' from the furthest attached exterior point of the home; defined as a non-combustible area. Science tells us this is the most important zone to take immediate action on as it is the most vulnerable to embers. **START WITH THE HOUSE ITSELF** then move into the landscaping section of the Immediate Zone.

- Clean roofs and gutters of dead leaves, debris and pine needles that could catch embers.
- Replace or repair any loose or missing shingles or roof tiles to prevent ember penetration.
- Reduce embers that could pass through vents in the eaves by installing 1/8 inch metal mesh screening.

²² The descriptions of Immediate Zone, Intermediate Zone, and Extended Zone were taken from [NFPA - Preparing homes for wildfire](#) as of September 2024. These descriptions may be subject to change by the NFPA.

- Clean debris from exterior attic vents and install 1/8 inch metal mesh screening to reduce embers.
- Repair or replace damaged or loose window screens and any broken windows. Screen or box-in areas below patios and decks with wire mesh to prevent debris and combustible materials from accumulating.
- Move any flammable material away from wall exteriors – mulch, flammable plants, leaves and needles, firewood piles – anything that can burn. Remove anything stored underneath decks or porches.

Intermediate zone

5-30' from the furthest exterior point of the home. Landscaping/hardscaping- employing careful landscaping or creating breaks that can help influence and decrease fire behavior

- Clear vegetation from under large stationary propane tanks.
- Create fuel breaks with driveways, walkways/paths, patios, and decks.
- Keep lawns and native grasses mowed to a height of four inches.
- Remove ladder fuels (vegetation under trees) so a surface fire cannot reach the crowns. Prune trees up to six to ten feet from the ground; for shorter trees do not exceed 1/3 of the overall tree height.
- Space trees to have a minimum of eighteen feet between crowns with the distance increasing with the percentage of slope.
- Tree placement should be planned to ensure the mature canopy is no closer than ten feet to the edge of the structure.
- Trees and shrubs in this zone should be limited to small clusters of a few each to break up the continuity of the vegetation across the landscape.

Extended zone

30-100 feet, out to 200 feet. Landscaping – the goal here is not to eliminate fire but to interrupt fire's path and keep flames smaller and on the ground.

- Dispose of heavy accumulations of ground litter/debris.
- Remove dead plants and tree material.

- Remove small conifers growing between mature trees.
- Remove vegetation adjacent to storage sheds or other outbuildings within this area.
- Trees 30 to 60 feet from the home should have at least 12 feet between canopy tops.*
- Trees 60 to 100 feet from the home should have at least 6 feet between the canopy tops.*

**The distances listed for crown spacing are suggested based on NFPA 1144. However, the crown spacing needed to reduce/prevent crown fire potential could be significantly greater due to slope, the species of trees involved and other site specific conditions. Check with your local forestry professional to get advice on what is appropriate for your property.*

For more information, see [NFPA - Preparing homes for wildfire](#).

Members will also find links to the following information on the IP&L website:

- Home Emergency Planning
- Trees Near Power Lines/Right Tree, Right Place
- Safety during a power outage
- Outage preparation
- Downed power line safety
- Portable generator safety

Additionally, as noted in the VM section, IP&L notifies members when tree trimming/removing crews will be in their area. Members are encouraged to assist these crews in identifying trees that are visually dead, visually uprooting, or otherwise at risk of falling into powerlines that are a hazard and allowing these crews to remove risk trees.

5.2.8 Industry Collaboration

In addition to its commitment to supporting the local community, IP&L is heavily involved with the northwest and national public utility community as a peer partner. IP&L is a member and/or contributor to the following organizations.

- Utility Wildland Fire Prevention Advisory Committee (Member/Contributor)
- Regional Wildfire Mitigation Taskforce (Member/Contributor)
- Electric Utility Safety Advisory Committee (EUSAC)

- Rural Electric Safety Achievement Program (RESAP)
- Northwest Public Power Association (NWPPA)
- National Rural Electric Cooperative Association (NRECA)
- First Responder Electrical Safety Training Program (Trainers)
- Washington Rural Electrical Cooperative Association (WRECA)

5.2.9 Restoration Priorities

If an outside emergency management or emergency response agency requests a power shutdown, if IP&L elects to de-energize segments as part of line restoration efforts, or if IP&L elects to de-energize segments as part of a wildfire mitigation strategy, IP&L staff will patrol the de-energized portions of the system before the system is 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 member and media updates of restoration status prior to full restoration will be made.

After a large outage, transmission circuits are given priority over distribution lines during the restoration process. IP&L prioritizes outages at the higher-voltage level, which power substations. Substations serving large numbers of members, schools, businesses, and hospitals are restored first, then work is done to restore the largest feeders. Smaller outages are then addressed, followed by outages affecting non-essential streetlights.

5.2.10 Service Restoration Process

IP&L work crews will take the following steps prior to restoring electrical service after a de-energization event. These measures are intended to protect the worker, the public, and the reliability of the system.

- **Patrol:** De-energized lines are patrolled to ensure no hazards have affected the system during the outage. If an outage is due to wildfire or other natural disaster, as soon as it is deemed safe by emergency response officials, lines and equipment are inspected for obvious damage or foreign objects and to estimate equipment needed for repair and restoration. Lines located in remote and rugged terrain with limited access may require additional time for inspection. VM crews are called on to assist in clearing downed trees and limbs as needed. Line patrolling and inspection may be performed in difficult to reach areas, or if otherwise needed, through drone flights performed by authorized, qualified, and licensed personnel (subject to IP&L's restrictions for flying drones at or around active fire areas).

- **Isolate:** Outages are isolated and power is restored to areas not requiring repair.
- **Repair:** After the initial assessment, IP&L supervisors, managers, and engineers meet to plan the needed work. Rebuilding will commence as soon as affected areas become safe. Repair plans prioritize substations and transmission facilities, then distribution circuits that serve the most critical infrastructure needs. While the goal is to reenergize all areas as soon as possible, emergency services, medical facilities, and utilities are given first consideration when resources are limited. Utilizing mutual aid agreements with local utilities and/or contacting other utilities and contract line crews may be necessary in a major outage event.
- **Test:** After repairs are completed and the equipment is safe to operate, line segments are energized and tested.
- **Restore:** After successful line testing, power is restored to homes and businesses as quickly as possible. Members, local news, and other agencies are then notified of the restoration of electric service. Periodic member and media updates of restoration status prior to full restoration will be made. After initial power restoration, further demolition and rebuilding may take place.

6 Plan Evaluation and Updates.

IP&L desires to continue to build upon the present framework of its WMP to improve wildfire mitigation efforts within its service territory, as circumstances allow.

Although only required to by Washington law to review its WMP every three years, IP&L intends to review its WMP annually to determine if any sections need to be updated and to capture additional wildfire mitigation strategies or practices being implemented at IP&L. IP&L will also always consider input and guidance from local fire districts and emergency personnel and IP&L will provide local fire districts with opportunities to comment on the WMP prior to statutory deadlines.

6.1. DNR Template Section Considerations.

Within the DNR template, several topics were covered that are not presently included within the WMP or are not fully developed. IP&L believes that some of the recommended information in the DNR template could be incorporated into the IP&L plan in time. DNR recognizes that just because something is listed within the DNR template does not mean that the utility must also list that item or have a plan in place

in relation to that item. Indeed, the DNR template expressly states that not all sections within the DNR template must be included within the WMP:

It is not expected that all utilities will have practices or even a need to complete all sections or elements to the same degree. There are no statutory requirements directing what utilities must include in their plans. It is at the discretion of each utility to determine the elements applicable to its own wildfire mitigation efforts and the level of detail necessary to describe each element.

The WMP format was developed in recognition that some utilities may have wildfire mitigation programs that are more robust than others. It is acceptable to note these limitations when completing the WMP.

(DNR Template, §1,0).

6.1.1 DNR Template Sections that May be Found in Future Versions of the IP&L WMP.

With the above being said, a few sections within the DNR template that are not presently found within the IP&L WMP may be included in future versions (after IP&L has been able to fully contemplate those sections and develop a plan to implement those practices or processes). Those sections or topics include:

- IP&L may develop a utility description and context setting table in the future. (DNR Template, §3.1 - Utility Description and Context Setting Table). The information that would be detailed in said table is already detailed within the WMP in other formats.
- IP&L may develop more robust relationships with other utilities (water, sewer, gas, etc.) within its service territory in relation to wildfire mitigation and wildfire response, coordination, and communication. (DNR Template, §5.2 - Coordination with Local Utility and Infrastructure Providers).
- IP&L may develop and detail a process or processes of emergency coordination with Tribal entities. (DNR Template, §5.3 - Coordination with Local Tribal Entities). IP&L already has a good working relationship with the Kalispel Tribe and the Spokane Tribe and IP&L can build upon that good working relationship to identify processes and plans to coordinate with those Tribal entities in relation to wildfire mitigation and wildfire response.
- IP&L may identify and develop training exercises that a utility may participate in relating to red flag conditions and wildfires. (DNR Template, §5.4 - Emergency Management / Incident Response Organization). IP&L recently invited DNR to provide fire behavior training and fire command training to IP&L. Such efforts can continue in the future.

- IP&L may develop a PSPS program. (DNR Template, §7.7 - De-energization / Public Safety Power Shutoff; §7.7.1 - Current Strategy Overview).
 - IP&L currently does not have a Public Safety Power Shutoff (PSPS) program. Like most utilities in the West and the PNW, IP&L's primary protection against wildfire mitigation is recloser and other protective equipment and their fire risk settings.
 - However, IP&L is in the process of developing a PSPS plan that may be implemented in future years, once the necessary information is gathered, processes developed, appropriate staffing and vendor assistance is identified and secured, and personnel is trained.
 - IP&L is in the process of, and will be for the foreseeable future, gathering the data necessary to create an effective and targeted PSPS plan.
 - Once IP&L has the infrastructure, data, processes, personnel, and other things necessary to implement an appropriate, effective, and targeted PSPS plan, and such a plan makes sense for IP&L and its members, IP&L will implement that plan.
 - In the meantime, will continue to set its system to fire safety modes in times of high wildfire risk.

6.1.2 DNR Template Sections that Likely Will Not be Found in Future Versions of the IP&L WMP

There are a few sections within the DNR template that do not fit IP&L's circumstances, do not fit IP&L's internal reporting or record keeping systems, or do not match the reality regarding wildfire mitigation best practices (if any). Those sections include:

- Best Practices Cross-Reference Table - §2.3
 - There are no authoritative best practices when it comes to wildfire mitigation efforts. Each utility is unique with unique systems, geography, topography, climate, and other conditions and each utility has varying degrees of resources. There is no "one size fits all" when it comes to wildfire mitigation strategies and practices. Should such an authoritative best practices be developed that fits IP&L's specific needs and circumstances, IP&L will consider adding and referencing that resource in its WMP.
- Metrics and Assumptions for Measuring Plan Performance - §10.1; Monitoring the Performance of Inspections - §10.3
 - IP&L's departments in charge of different aspects detailed within the WMP keep track of their own efforts internally. For example, the Vegetation and Utility Inspection Team keeps track of its own vegetation management and infrastructure inspection. The Operations team keeps track of its

maintenance, repair, and replacement efforts. The WMP is not designed to track those efforts but merely describe the efforts that are occurring and being tracked by those responsible departments.

Appendix A: Definitions

Circuit Breaker: An electrical switch designed to protect an electrical circuit from damage caused by overcurrent/overload or short circuit. The basic function is to interrupt current flow after protective relays detect a fault.

Distribution System: The final stage in the delivery of electric power carrying electricity from the transmission system to individual members. The IP&L distribution system includes 7.2Kv lines not tied to generation facilities.

Defensible Space: An area around a structure, either natural or manmade, where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildfire and the structure. In practice, it is defined as an area a minimum of 30 feet around a structure that is cleared of flammable brush or vegetation.

Electric Utilities Wildland Fire Prevention Task Force: The tasks assigned to the Task Force by the legislature are to advise the department on the following issues:

- a) Developing, for consideration by the department and individual electric utilities, a model agreement for managing risk trees and other vegetation that pose a risk of wildland fire and associated utility liability due to the proximity to electrical transmission wires and other utility equipment;
- b) Assist the department with the distribution of the model risk tree management agreement developed in (a) to utilities for their consideration for execution with the department;
- c) Developing communication protocols and educational exchanges between the department and electric utilities for identifying and addressing issues relating to utility infrastructure to reduce the risks of wildland fires;
- d) Developing protocols, including thresholds, for implementing the relevant provisions of RCW 76.04.015 when the department's investigation involves electric utility infrastructure or potential electric utility liability;

e) Creating rosters of certified wildland fire investigation firms or persons and third-party qualified utility operations personnel who may be called upon by the parties as appropriate; and

f) Other issues brought forward by Task Force members.

Fire Hazard: "Hazard" is based on the physical conditions that give a likelihood that an area will burn over a 30 to 50-year period without considering modifications such as fuel reduction efforts.

Fire Risk: "Risk" is the potential damage a fire can do, to the area under existing conditions, including any modifications such as defensible space, irrigation and sprinklers and ignition resistant building construction which can reduce fire risk. Risk considers the susceptibility of what is being protected.

Fire Season: 1) Period(s) of the year during which wildfires are likely to occur, spread, and affect resource values sufficiently to warrant organized fire management activities; and/or 2) A legally enacted time during which burning activities area regulated by state or local authority.

Fire Weather Watch: A term used by fire weather forecaster to notify using agencies, usually 24 to 72 hours ahead of the event, that current and developing meteorological conditions may evolve into dangerous fire weather.

Hardening: Modifications to electric infrastructure to reduce the likelihood of ignition and improve the survivability of electrical assets.

Risk tree: A tree that is in proximity of overhead powerlines that is visually dead, visually uprooting, or otherwise at risk of falling into powerlines that has the potential to make contact with those lines in the event of structural failure of the tree.

Industrial Fire Precaution Level (IFPL): Activated when needed during the summer fire season, IFPL is an activity closure system to reduce wildfire risk. By law (WAC 332-24-301), it applies to woods workers and other industrial forest users on 13 million acres of unimproved private, federal, and state forestlands protected by the WADNR, BLM or USFS. Levels range from Level-1 to Level-4.

Landscape: Refers generally to the area of interest in a project or study and could refer to modeled or on-the-ground conditions.

National Fire Danger Rating System (NFDRS): A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels. It combines the effects of existing and expected states of selected fire danger factors into one or more qualitative or numeric indices that reflect an area's fire protection needs.

Raster: An array or regular grid of square cells used to store data. Raster data is made up as a matrix of pixels, also referred to as cells in much the same way as you might find when working within a spreadsheet. They are often square and regularly spaced on a field divided into a grid of squares with each square representing a value which can be discrete (e.g., soil type) or continuous (e.g., elevation).

Recloser: Recloser is a device that is used in over-head distribution systems to interrupt the circuit to clear faults. Automatic reclosers have electronic control senses and vacuum interrupters that automatically reclose to restore service if a fault is temporary. There are several attempts that may be made to clear and reenergize the circuit and if the fault still exists the recloser locks out. Reclosers are made in single-phase and three-phase versions and use oil or vacuum interrupters.

Red Flag Warning (RFW)²³: A term used by fire- weather forecasters to call attention to limited weather conditions of importance that may result in extreme burning conditions. It is issued when it is an on-going event, or the fire weather forecaster has a high degree of confidence that Red Flag criteria will occur within 24 hours of issuance. Red Flag criteria occurs whenever a geographical area has been in a dry spell for a week or two, or for a shorter period, if before spring green-up or after fall color, and the National Fire Danger Rating System (NFDRS) is high to extreme and the following forecast weather parameters are forecasted to be met:

- A sustained wind average 15 mph or greater;
- Relative humidity less than or equal to 25 percent; and
- A temperature of greater than 75 degrees F

In some states, dry lightning and unstable air are criteria. A Fire Weather Watch may be issued prior to the RFW.

Remote Automatic Weather Station (RAWS): An apparatus that automatically acquires, processes, and stores local weather data for later transmission to the GOES Satellite, from which that data is retransmitted to an earth-receiving station for use in the national Fire Danger Rating System.

Right of Way (ROW): The corridor of land under (and adjacent to) a transmission or distribution line.

²³ Source: <https://w1.weather.gov/glossary/index.php?word=Red%20Flag%20Warning>

Risk: A measure of the probability and severity of adverse effects that result from exposure to a hazard.

SCADA: SCADA is an acronym for Supervisory Control and Data Acquisition. SCADA generally refers to an industrial computer system that monitors and controls a process. In the case of the transmission and distribution elements of electrical utilities, SCADA will monitor substations, transformers, and other electrical assets. It is possible to control or reset some equipment remotely using SCADA.

Substation: Part of the electrical generation, transmission and distribution system, substations transform voltage from high to low, or the reverse, or perform any of several other important functions. Between the generating station and consumer, electric power may flow through several substations at different voltage levels. A substation may include transformers to change voltage levels between high transmission voltages and lower distribution voltages, or at the interconnection of two different transmission voltages.

Summer Fire Rules: Washington's "summer fire rules" are in effect April 15 through October 15. These rules apply to the 13 million acres of private and state forestlands protected from wildfire by the Washington Department of Natural Resources.

These regulations affect loggers, firewood cutters, land clearers, road builders, heavy equipment operators, off-road motorcyclists, and others. During fire season, people using motorized equipment in the woods must have approved spark arresters and follow fire safety precautions. In addition, those working in the woods must have fire prevention and extinguishing equipment in good working order at the job site and workers trained in proper use.

The rules are intended to prevent forest fires and to extinguish small fires before they spread to the forested lands. These rules restrict cigarette smoking in forested areas to roads, gravels pits, or other clearings and prohibit lighting fireworks on forestland.

Transmission System: The bulk delivery of electrical energy from a generating site to an electrical substation. At IP&L, for line maintenance purposes, the transmission system is comprised of 34kV (sub-transmission), 69kV (sub-transmission), and 115kV lines, structures, and switches.

UAV: An unmanned aerial vehicle is a powered, aerial vehicle that does not carry a human operator, uses aerodynamic forces to provide vehicle lift, can fly autonomously or be piloted remotely.

Vegetation: Trees, shrubs, and any other woody plants.

Vegetation Management: A broad term that includes tree pruning; brush removal through the use of power saws and mowers; the judicious use of herbicides and tree growth regulators; risk tree identification and removal; the implementation of strategies to minimize the establishment of incompatible species under and near power lines; and the control of weeds.

Wildfire: Also called wildland fire, an unplanned, uncontrolled fire in a forest, grassland, brushland or land sown to crops.

Wildfire Mitigation Plan (WMP): A comprehensive plan to reduce the threat and severity of wildfire within an electric utility's service area. Plans include the preventive strategies and programs adopted by the utility to minimize the risk of its facilities causing wildfires along with its emergency response and recovery procedures.

Wildlands: Forests, shrub lands, grasslands, and other vegetation communities that have not been significantly modified by agriculture or human development. A more specific meaning for fire managers, used by the National Wildfire Coordinating Group (which coordinates programs of participating wildfire management agencies nationwide), refers to an area in which development is essentially non-existent (except for roads, railroads, power lines, and similar transportation facilities); structures, if any, are widely scattered.

Wildland Urban Interface (WUI): Line, area, or zone where structures and other human development meet or intermingle with vegetative fuels in wildlands.

Appendix B: Acronym Glossary

ANSI	American National Standards Institute
BIA	Bureau of Indian affairs
BLM	U.S. Bureau of Land Management
BMP	Best management practices
BPA	Bonneville Power Administration
CAO	Chief Administrative Officer
CEO	Chief Executive Officer
COO	Chief Operating Officer
EOC	Emergency Operation Center
HFTA	High Fire Threat Area
IFPL	Industrial Fire Protection Level
IP&L	Inland Power & Light
KV	Kilovolt
KWH	Kilowatt Hours
LDE	Line Down Event
MW	Mega Watts
MVCD	Minimum Vegetation Clearance Distance
NESC	National Electric Safety Code
NFDRS	National Fire Danger Rating System
NF	National Forest
OH	Overhead
OM	Operations Manager
OEM	Office of Emergency Management
PSPS	Public Safety Power Shutoff
QA	Quality Assurance
QC	Quality Control
RAWS	Remote Automated Weather Station

RFW	Red Flag Warning
ROW	Right of Way
SCADA	Supervisory Control and Data Acquisition
T&D	Transmission and Distribution
UG	Underground
USFS	United States Forest Service
VM	Vegetation Management
VUIM	Vegetation and Utility Inspector Manager
WADNR	Washington Department of Natural Resources
WA	Washington State
WDFW	Washington Department of Fish and Wildlife
WHP	Wildfire Hazard Potential
WMP	Wildfire Mitigation Plan
WUI	Wildland Urban Interface