Washington Wildfire Mitigation Plan

2024-2027

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1 EXECUTIVE SUMMARY

When the Washington Legislature passed House Bill 1032 in July 2023 it stated that, "…it is in the best interest of the state, its citizens, and its natural resources to identify the sources of wildland fires; identify and implement best practices to reduce the prevalence and intensity of those wildland fires; put those practices in place; and by putting those practices in place, reduce the risk of wildland fires and damage and losses resulting from those fires."

Wildfire has long been an issue of notable public concern. Electric utilities have always needed to be concerned with the potential of a fire starting because of sparks that could be emitted from an electrical facility, typically during a fault condition. The growth of wildfire size and intensity have magnified these concerns. Regardless of the causes, or political debates surrounding the issue, the reality is stark. Despite effective fire suppression agencies and increased suppression budgets, wildfires have grown in number, size, and intensity. Increased human development in the wildland-urban interface, the area where people, and their structures, are intermixed with, or located near, substantial wildland vegetation has increased the probability and the costs of wildfire damage in terms of both harm to people and property damage. A wildfire in an undeveloped area can have ecological consequences – some positive, some negative – but a wildfire in an undeveloped area will not typically have a direct effect on many people. A wildfire engulfing a developed area, on the other hand, can have significant consequences on people and property. For all these reasons, Pacific Power is committed to the operational practices and investments as described in the 2024 Wildfire Mitigation Plan (WMP) to reduce the risk of wildfire.

2 WILDFIRE MITIGATION PLAN OVERVIEW

2.1 PURPOSE OF THE WILDFIRE MITIGATION PLAN

Wildfire threats have been growing in the United States and Pacific Power has developed a comprehensive plan describing the wildfire mitigation efforts performed. The 2024 Wildfire Mitigation Plan (WMP) guides the mitigation strategies that are, or will be, deployed in Washington. These efforts are intended to reduce the risk of utility-related wildfires, and proactively mitigate damage to Pacific Power facilities because of wildfire. The measures in this WMP describe the operational practices and investments to construct, maintain and operate electrical lines and equipment in a manner that will minimize the risk of wildfire. In evaluating which engineering, construction, and operational strategies to deploy, Pacific Power was guided by the following core principles:

- Frequency of ignition events related to electric facilities can be reduced by engineering more resilient systems that experience fewer fault events.
- When a fault event does occur, the impact of the event can be minimized using equipment and personnel to shorten the duration to isolate the fault event.
- Systems that facilitate situational awareness and operational readiness are central to mitigating fire risk and its impacts.

A successful plan must also consider the impact on Washington customers and Washington communities, and balance costs, benefits, operational impacts, and risk mitigation in the overall imperative to provide safe, reliable, and affordable electric service. In 2024, Pacific Power is forecasted to invest approximately $9.3 million in capital and $1.1 million of expense in Washington to further many of the company's wildfire mitigation strategies, including:

- Implementation of risk modeling tools, datasets, and software.
- Installation of five new weather stations.
- Continued implementation of increased asset inspections, enhanced asset inspections, and accelerated condition correction.

- Continued transition to a three-year vegetation management cycle for overhead distribution.
- Radial clearing of over 200 poles.
- Rebuilt approximately seven miles of over overhead lines with covered conductor.
- Upgraded five reclosers for enhanced functionality.
- Execution of two Washington WMP public engagement forums and four public safety partner meetings and workshops

Many of Pacific Power's wildfire mitigation efforts are focused in the defined geographic area of heightened wildfire risk. Pacific Power refers to the area as the Fire High Consequence Area (FHCA) as described in Section 6.1. The strategies embodied in this plan are evolving and are subject to change. As new analyses, technologies, practices, network changes, environmental influence or risks are identified, changes to address them may be incorporated into future iterations of the plan.

2.2 DESCRIPTION OF WHERE THE WILDFIRE MITIGATION PLAN CAN BE FOUND ONLINE

Pacific Power's Wildfire Mitigation Plan can be found online at Wildfire Protection Plans (pacificorp.com).

2.3 BEST PRACTICES CROSS-REFERENCE TABLE

In Table 1 below are industry standards or practices referenced in the 2024 WMP.

Table 1: Industry Standards and Best Practices Referenced in the 2024 WMP

Standard or Best Practice Name and Description	Document, Page Number, or Citation
National Electric Safety Code (NESC)	Section 7.2: Design And Construction Standards, pg. 133 Section 7.4 Asset Inspections And Response , pg. 150, 151, 156
Federal Energy Regulatory Commission (FERC) – FAC 003-04: Transmission Vegetation Management	Section 7.3 Fuel & Vegetation Management , pg. 145
American National Standards Institute (ANSI) – A300: Tree Care Standards	Section 7.3 Fuel & Vegetation Management , pg. 93

3 UTILITY OVERVIEW

Pacific Power provides electricity to approximately 140,000 customers via 33 substations, 4,074 overhead transmission and distribution line miles, and 796 underground line miles across nearly 2,731 square miles in Washington. Figure 1 below shows the service territory. Table 2 below has details on Pacific Power's service territory and customers served.

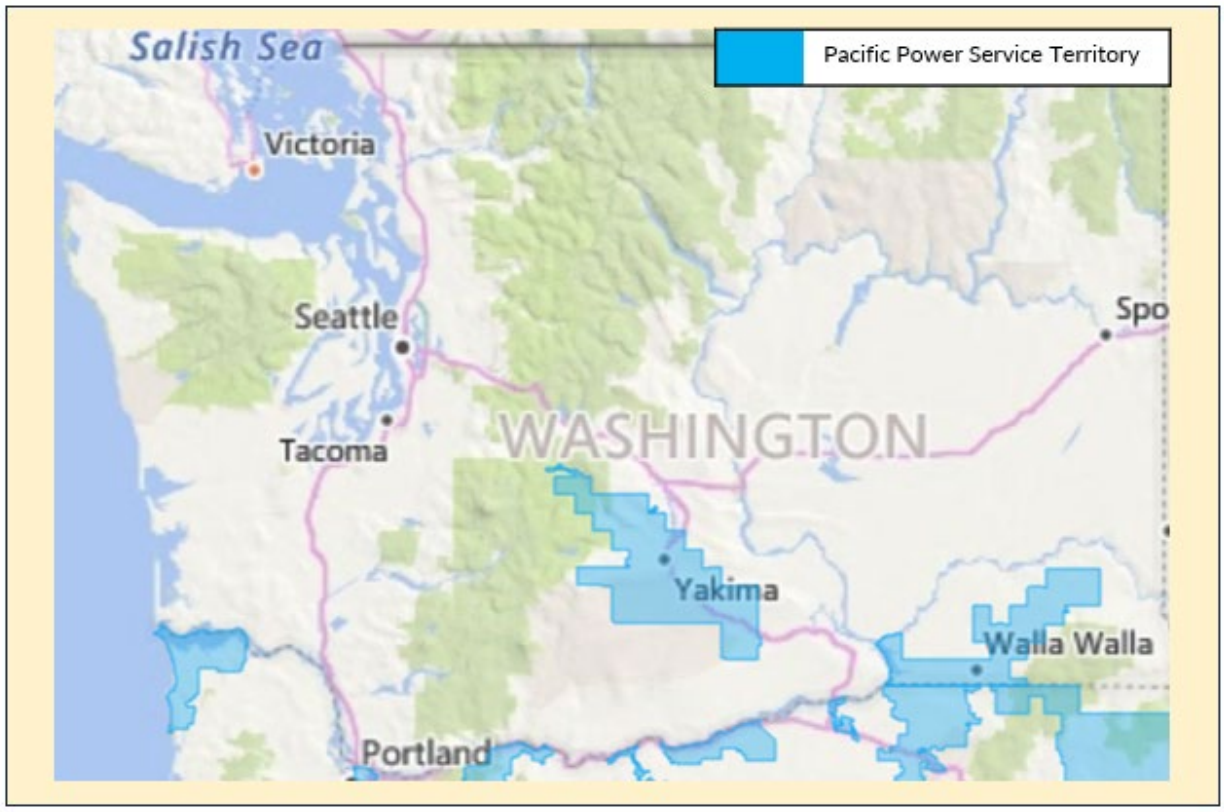

Figure 1: Pacific Power's Service Territory

3.1 UTILITY DESCRIPTION AND CONTEXT SETTING TABLE

Table 2 and Table 3 below provide a summary of Pacific Power's service territory.

Table 2: Context-Setting Information Table

Utility Name	Pacific Power
Service Territory Size	2,731 Sq. Miles
Service Territory Make-up	42% Agriculture 26% Herbaceous 13% Shrub 8% Conifer Forest 7% Urban 2% Barren/Other 2% Water 0% Conifer Woodland 0% Desert 0% Hardwood Forest 0% Hardwood Woodland
Service Territory Wildland Urban Interface (based on total area)	12% Wildland Urban Intermix 5% Wildland Urban Interface
Customers Served	140,134
Account Demographic	83% Residential 13% Commercial/Industrial 4% Agricultural
Utility Equipment Make-up (circuit miles)	Overhead Distribution: Please see Table 3 below. Overhead Transmission: Please see Table 3 below. Underground Dist.: 796 Miles Underground Trans.: 0 Miles
Has developed protocols to pre-emptively shut off electricity in response to elevated wildfire risks?	Yes ✓ No ☐ A description of Public Safety Power Shutoff (PSPS) Protocols are in Sections 7.7 and 9.
Has previously pre-emptively shut off electricity in response to elevated wildfire risk?	Yes ☐ No ✓ If yes, then provide the following data for the three trailing calendar years: N/A Number of shut-off events: N/A Customer Accounts that lost service for >10 minutes: N/A For prior response, average duration before service restored: N/A

The breakdown of the Overhead transmission and distribution line miles are summarized in Table 3 below.

Table 3: Overhead Transmission and Distribution

	Total Service Territory (Line Miles)	FHCA (Line Miles)	FHCA % of Service Territory
Overhead Transmission	673	-	0%
57kV Transmission Lines	-	-	0%
69kV Transmission Lines	169	-	0%
115 kV Transmission Lines	222	-	0%
230 kV Transmission Lines	282	-	0%
500kV Transmission Lines	-	-	0%
Overhead Distribution	3,400	20	0.6%
Total	4,074	20	0.5%

4 OBJECTIVES OF THE WILDFIRE MITIGATION PLAN

Pacific Power's WMP is designed to provide timely and cost-effective wildfire mitigation benefits through a range of programs. While described in more detail through the plan itself, Table 4 below summarizes the program elements, 2024 achievements, and 2025-2027 program objectives.[1] Milestones and quantities for the programs listed below can be viewed in Appendix A.

Table 4: Summary of 2024-2027 Program Objectives

Program Category	General Program Description	2024 Program Objectives	2025-2027 Program Objectives
Risk Modeling & Drivers 	Maintain baseline risk maps and framework to identify areas that are subject to a heightened risk of wildfire and inform longer term, multi-year investment and programs.	✓ Updated FireSight composite risk. ✓ Improved advanced data analytics tools.	➢ Continued FireSight model updates. ➢ Update FireSight composite risk. ➢ Continued development of advanced data analytics
Inspection & Correction 	Continue FHCA inspection programs (annual visual assurance), accelerated correction timeframes for fire threat conditions (six months or less), and implementation of infrared (IR) inspections on transmission.	✓ Fire threat conditions corrected. ✓ IR inspections completed on more than 220 miles.	➢ Continuation of FHCA inspection programs. ➢ Continue to evaluate IR inspection program beyond the FHCA. ➢ Pilot drone inspections ➢ Transition to annual visual inspection of all overhead distribution assets.
Vegetation Management 	Transition to a three-year trim cycle system wide, increase post trim clearances in the FHCA, implement annual pole clearing of subject poles in the FHCA, and perform annual inspections in the FHCA.	✓ Radially cleared over 200 poles	➢ Continue implementation of three-year vegetation management distribution cycle. ➢ Continue FHCA Vegetation Management programs including expanded post work clearances.
System Hardening 	Long term investment to mitigate wildfire risk including line rebuilds, system protection and control equipment upgrades, and	✓ Seven miles of line rebuild constructed. ✓ Five system protection and control devices upgraded.	➢ Evaluate need for additional grid hardening.

[1] 2024 objectives are estimates or end of year forecasts based on document preparation ahead of the filing.

Program Category	General Program Description	2024 Program Objectives	2025-2027 Program Objectives
	replacement of OH fuses and adjacent equipment.		
Situational Awareness 	Install and operate a company owned weather station network, implement a risk forecasting and impact-based fire weather model, and inform key decision making and protocols.	✓ Install five weather stations.	➢ Evaluate the expansion of weather station program. ➢ Improve weather forecasting. ➢ Increase modeling capacity.
System Operations 	Risk-based implementation of Enhanced Safety Settings (ESS) and re-energization practices in a manner that balances risk mitigation with potential impacts to customers.	✓ Risk-based implementation of ESS and re-energization practices. ✓ Evaluate circuits for ESS outage mitigation	➢ Continued risk-based implementation of ESS and re-energization practices
Field Operations & Work Practices 	Acquire and maintain key equipment and implement risk-based work practices and resource adjustments.	✓ Risk based work practices. ✓ Acquired equipment needed for wildfire activities.	➢ Continued implementation of risk-based work practices. ➢ Assess additional equipment needs.
PSPS Program 	Maintain the ability to actively monitor conditions, assess risk, and implement a PSPS as a measure of last resort in a manner that limits the impacts to customers and communities consistent with regulatory requirements.	✓ Maintain readiness to implement PSPS.	➢ Maintain readiness to implement PSPS. ➢ Expand general preparedness beyond the FHCA.
Public Safety Partner Coordination 	Develop and implement a public safety partner engagement strategy to enhance coordination and ensure preparedness.	✓ Conducted four pre-wildfire season workshops. ✓ Complete PSPS portal development.	➢ Continue to hold workshops and forums to engage local communities for enhanced coordination and preparedness.

Program Category	General Program Description	2024 Program Objectives	2025-2027 Program Objectives
Wildfire Safety & Preparedness Engagement Strategy 	Manage a multi-pronged approach to engage and inform the public and customers regarding wildfire safety and preparedness.	✓ Host one webinar with general interest groups, community-based organizations, and customers. ✓ Hold one in-person public forum.	➢ Continue multi-pronged outreach campaign. ➢ Continue to refine information for ease of use and access. ➢ Identify community engagement opportunities with external stakeholders.
Industry Collaboration 	Participate in consortiums, forums, and advisory boards to collaborate with industry experts, maintain expertise in leading edge technologies and operational practices, and continue to improve and advance the WMP and its programs.	✓ Participate in the California joint (Investor-Owned Utility) (IOU) workstreams for learnings applicable to all Pacific Power. ✓ Collaborated with Oregon joint IOUs for learnings applicable to all Pacific Power.	➢ Collaborate with California joint IOU workstreams for more learnings. ➢ Collaborate with Oregon joint IOU efforts for more learnings. ➢ Discover experiences through participation in the International Wildfire Risk Management Consortium (IWRMC).
Plan Monitoring & Implementation	Leverage a centralized, dedicated team to develop, monitor, implement, and continuously improve the WMP.	✓ Complete negotiation of invited grant funding opportunity ✓ Better Quality Assurance/Quality Control (QA/QC) for program tracking.	➢ Investigate other grant funding opportunities. ➢ Continue review of QA/QC processes for program tracking. ➢ Develop mitigation selection process.

Pacific Power anticipates continuously improving its WMP in a way that aligns with community and agency expectations. Key takeaways from collaborations with other utilities, Public Safety Partners, regulatory agencies, communities, and customers will be evaluated for incorporation into future Wildfire Mitigation Plans (WMPs) and may require corresponding changes or updates program objectives.

Through partnerships, there are opportunities to secure general and state grant funding which have the potential to progress wildfire mitigation objectives and offset potential impacts to the customer. Beginning in 2022, Pacific Power began applying for, and actively pursuing grant funding opportunities and in 2023, Pacific Power was invited to

negotiations by the Grid Resilience and Innovation Partnerships (GRIP) grant program. Should the GRIP grant be awarded as proposed, it would support funding of several programs in this plan.

4.1 MINIMIZING LIKELIHOOD OF IGNITION

Adjustments to power system operations can help mitigate wildfire risk. System operations adjustments may include the modification of relay settings for protective devices on distribution lines or changes to line re-energization testing protocols described further in Section 7.6. These adjustments are not universally applied to power system operations because there are certain disadvantages in their use, especially because they may increase outage frequency and duration experienced by customers. In other words, a balance is required to provide customers with reliable power while still mitigating wildfire risk. To help balance these concerns, Pacific Power is deploying technologies such as fault indicators and assessing outages to inform short term mitigation practices. This is discussed in more detail in Section 7.6.

4.2 RESILIENCY OF THE ELECTRIC GRID

Pacific Power recognizes that the ability to react to and recover from fire weather conditions is important because of the impacts to customers from extended outages. As described in Section 7.6 Pacific Power will set modified and more sensitive protection and control schemes, referred to as Enhanced Safety Settings (ESS) during fire weather conditions.

Section 7.6 below describes how line protective devices, such as line reclosers, are currently deployed on various transmission and distribution lines throughout Pacific Power's service territory. Reclosers can be programmed to momentarily open, allow the fault to dissipate, then reclose to assess whether the fault is temporary. The reclosing function gives the ability to restore service on a line that has tripped while maintaining the option to open again if the fault persists.

When a line is de-energized due to ESS or other line protection devices, installed fault indicators can help identify the location of the outage, regional operators and field personnel use these tools to narrow down potential fault locations, optimize the deployment of resources, and expedite restoration.

While Public Safety Power Shutoffs (PSPS) events are rare, Pacific Power will deploy crews who will begin patrols as soon as the event has passed. Restoration practices are discussed in Section 9.

5 ROLES AND RESPONSIBILITIES

Pacific Power's approach to wildfire and emergency response is grounded in its commitment to serving the communities it serves. By maintaining a well-organized structure, fostering collaboration with local partners, and prioritizing clear and effective communication, the utility ensures that it is well-prepared to handle the challenges posed by wildfires and other emergencies.

Pacific Power's Emergency Management Department is an organization that was established to enhance the utility's readiness and responsiveness to incidents, including the wildfire threats. The team is actively involved in weather monitoring, as described in Section 7.1 using advanced meteorological tools to track and analyze conditions that could heighten wildfire threats. This real-time data is crucial for making informed decisions, such as activating public safety power shutoffs and coordinating response efforts.

In addition to weather monitoring, Emergency Management engages in extensive community outreach as described further in Sections 5.2, 5.3, and 5.4. This includes working closely with local governments, utilities, and emergency services to ensure a coordinated response during wildfire events. Through these efforts, Emergency Management enhances the resilience of communities across Washington, helping them to better withstand and recover from emergency situations. The Emergency Management Department is illustrated in Figure 2 below.

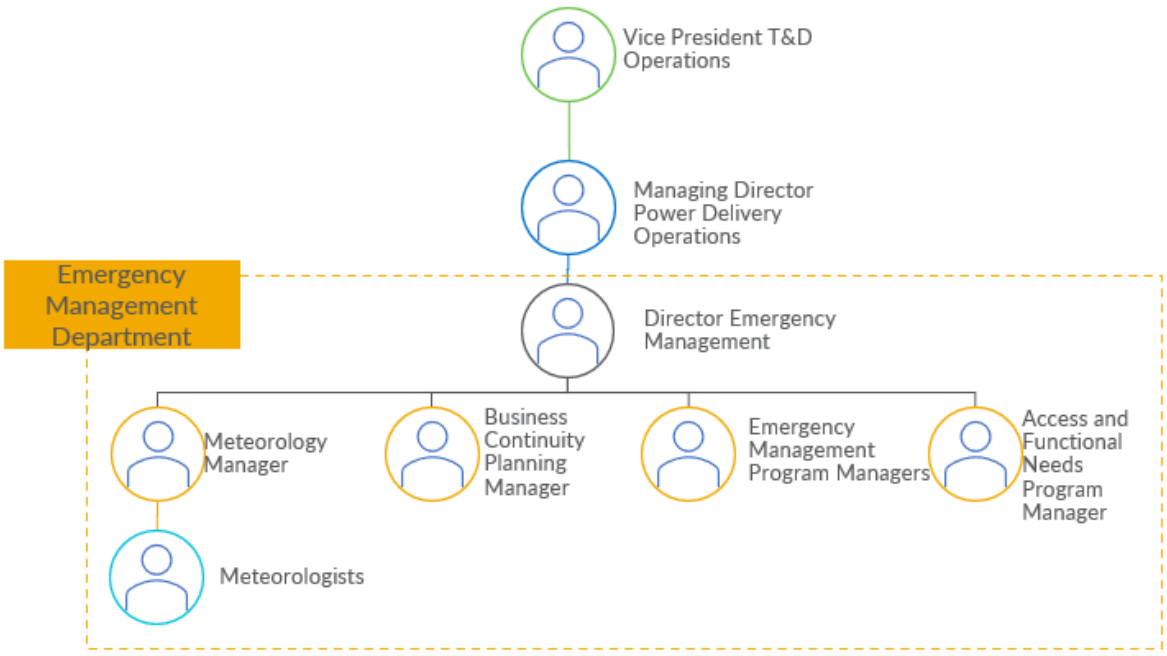

Figure 2: Pacific Power Emergency Management Organization

5.1 UTILITY ROLES AND RESPONSIBILITIES

In 2021 Pacific Power created a department, commonly referred to as Wildfire Program Delivery. The department as shown in Figure 3 below depicts the two primary functions of the organization, on the left is the plan implementation and monitoring function that coordinates with other Pacific Power departments such as asset management, vegetation management, field operations, and emergency management to ensure the plan are delivered. On the right is the regulatory alignment and monitoring function ensures that the WMP is aligned with regulatory requirements.

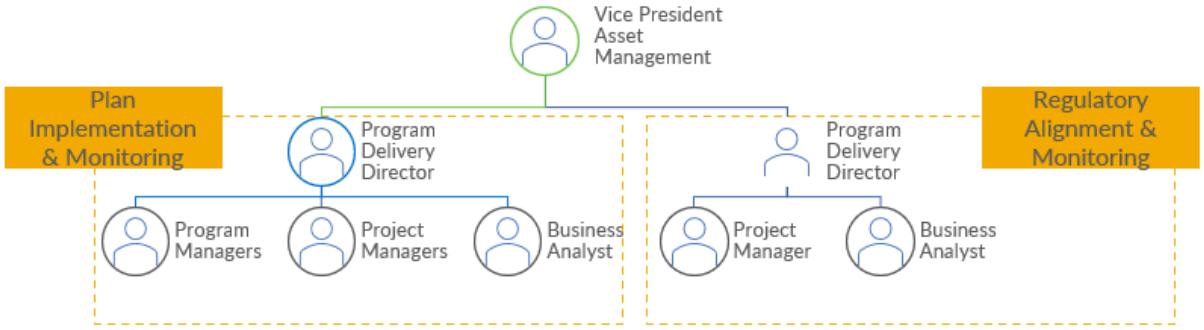

Figure 3: Wildfire Program Delivery Organization

In addition to Emergency Management and Wildfire Mitigation Program Delivery, the following departments shown in Table 5 below also play an important role in wildfire mitigation at Pacific Power.

Table 5: Wildfire Mitigation Roles and Responsibilities

Department	Responsibility	WMP Section(s)
Asset Management	Develop and ensure execution of asset inspection and correction program consistent with inspection frequencies and correction timeframes. Administer proposed system hardening programs and plan new grid hardening projects.	7.2, 7.4, 10.3
Asset Risk	Evaluation of components baseline risk in the service territory to support identification of areas of heightened wildfire risk for mitigation planning such as grid hardening, asset inspections, and vegetation management.	6
Corporate Communications	Responsible for customer wildfire mitigation communication efforts.	8
Emergency Management	Responsible for monitoring and responding to emergency incidents, including PSPS events and wildfires. Outreach to public safety partners. Support situational awareness through monitoring of near-term weather and fuels conditions.	5.2, 5.3, 5.4, 7.1, 7.7, 9
Power Delivery Support	Administers annual training for Transmission and Distribution (T&D) Operations employees and contractors on all elements of its Wildfire Mitigation Plan (WMP) and associated internal operating policies and procedures.	7.6
Real Time Grid Engineering	Implement system operations procedures such as ESS during wildfire season.	7.6
Transmission and Distribution Operations	Implement fire season work practices.	7.6
Vegetation Management	Implement annual vegetation inspections, increased minimum clearances, and pole clearing program.	7.3
Wildlife Mitigation Program Delivery	Responsible for execution and monitoring of the WMP.	5.1, 10
Wildfire Mitigation Delivery	Responsible for execution of grid hardening projects.	7.2

5.2 COORDINATION WITH LOCAL UTILITY AND INFRASTRUCTURE PROVIDERS

Ahead of the 2024 fire season, Pacific Power attended a pre-season wildfire workshop hosted by the Washington Utilities and Transportation Commission (UTC). While at the workshop Pacific Power discussed wildfire mitigation and response with other attendees, including the following utilities that are adjacent to Pacific Power's service territory:

- Avista
- Benton Rural Electric Association
- Bonneville Power Administration
- Grant County Public Utility District
- Puget Sound Energy
- Tacoma Public Utilities

5.3 COORDINATION WITH LOCAL TRIBAL ENTITIES

In partnership with Yakima Nation Emergency Management and Yakima Nation Fire, Pacific Power is developing a plan for coordination with tribal entities. Tribal partners also attended the pre-season wildfire workshop and community wildfire forum hosted by Pacific Power in June 2024. Community wildfire forum details are described in Section 8.1.

5.4 EMERGENCY MANAGEMENT / INCIDENT RESPONSE ORGANIZATION

During periods of extreme weather, Pacific Power activates an Emergency Coordination Center (ECC). Its structure adheres to FEMA's National Incident Management System standards is used during PSPS events described in Section 7.7.

Pacific Power takes a multi-step approach to coordination with its public safety partners on wildfire mitigation and PSPS preparedness, as shown in Figure 4 below.

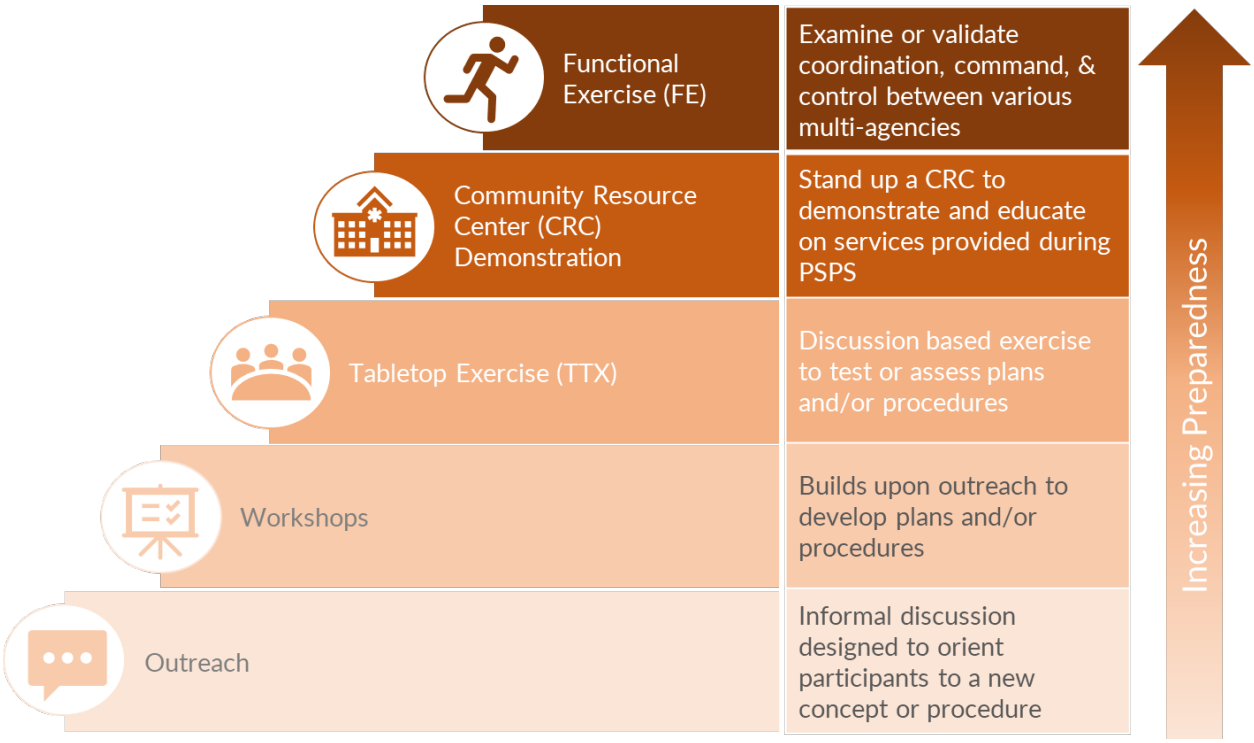

Figure 4: PSPS Preparedness Strategy

As a part of this strategy, each element builds upon the previous step to increase overall preparedness. They include outreach, workshops, Tabletop Exercises (TTXs), Community Resource Center (CRC) demonstrations, and functional exercises (FEs) that are described in more detail in the following subsections.

General Outreach

Pacific Power participates in multiple public safety partner meetings and workshops throughout the calendar year across its service territory. Meetings may include monthly, quarterly, and annual County and State Emergency Management partner meetings, in addition to pre- and post-fire season collaboration meetings with local, state, and federal fire suppression agencies. These informal discussions are designed to familiarize participants with existing and new concepts or procedures and continue fostering key working relationships. Additionally, Pacific Power provides an annual customer webinar, described at greater length in Section 8.1 that provides additional information about PSPS.

The webinar is displayed prominently on the Wildfire Safety website, alongside other information related to wildfire preparedness and resilience.

Workshops

Workshops are more local, targeted discussions that build upon general outreach to further compare and refine plans, streamline processes, and confirm capabilities (such as customer outreach, critical facilities, and CRC locations and operations) with local public safety partners. In 2024 the company conducted four workshops. Going forward, it expects to continue to leverage these events to bring communities and public safety partners up to speed on its wildfire mitigation and preparedness activities.

Tabletop Exercises

Pacific Power facilitates discussion-based and functional tabletop exercises to develop awareness of PSPS planning and procedures. These exercises aim to facilitate public and private sector coordination, validate communications protocols, and verify interorganizational capability to support communities during extreme risk events through mitigation actions such as the deployment of community resource centers. Additionally, the exercises include the collective identification of critical infrastructure at the county level to better inform restoration planning and notifications. Pacific Power collects after-action reports from exercises and real-world events involving wildfire safety and PSPS. The after-action reports request feedback on areas for improvement, potential corrective actions and suggestions for plan or procedure development. The company considers suggestions for inclusion in a comprehensive plan that is subsequently shared with the appropriate public safety partners. While it did not host any tabletop exercises in Washington in 2024, the company does plan to host one in 2025.

Community Resource Center Demonstrations

Pacific Power may provide a public demonstration of a Community Resource Center (CRC) prior to the start of wildfire season. This public event provides an opportunity for members

of the public, as well as public safety partners, to learn about the type of services offered at a CRC during a PSPS event.

Functional Exercise (FE)

Functional Exercises (FE) are the last step in PSPS preparedness. Pacific Power coordinates these exercises to examine or validate coordination, command, and control between various agencies. Unlike TTXs or workshops, which are discussion based, these exercises are larger scale, require significantly more planning and coordination, and include deployment of resources to practice protocols and processes. A functional exercise also requires that part of the plan be executed. Examples relevant to a PSPS FE might include performing customer calls or updating websites. To be successful, functional exercises require that foundational planning like workshops and TTXs be complete, and formal plans to be in place. Currently, Pacific Power is not planning to conduct an FE in Washington. However, the company does expect to leverage its experience conducting functional exercises in other states with more mature PSPS programs and incorporate functional exercises in Washington in the future as needed.

2024 Activities

In 2024, Pacific Power conducted four workshops. While these events still targeted certain counties, the company encouraged expanding participation by inviting officials from adjacent counties.

Table 6 below summarizes the company's 2024 planned and completed activities.

Table 6: 2024 Completed Workshops and Exercises

Planned Activity	General Location[2]	Target Counties[3]	Planned Timeframe	Completed Date
Workshop	Southeast Washington	Walla Walla and Columbia Counties	April 2024	April 2024
Workshop	South Central	Yakima County	May 2024	May 2024
Community Wildfire Forum	South Central	Yakima County	June 2024	June 2024
Workshop	South Central	Yakima County	August 2024	August 2024

In addition to executing the 2024 planned activities above, Pacific Power also participated in and hosted other events to ensure coordination and preparedness with public safety partners, state agencies and other utilities. Some examples include a working group meeting with other Washington utilities on wildfire mitigation plans and practices, and a customer webinar. In September, Pacific Power also reviewed a draft of the 2025 WMP with fire districts in the service territory for feedback.

2025 Emergency Preparedness and Exercise Plan

In 2025, the company plans to continue building upon previous years' experience to engage and coordinate with public safety partners. Based on the company's experience to date, planning, in collaboration with public safety partners, is most effective when completed closer to the start of fire season. Therefore, Pacific Power intends to solicit input from public safety partners in early 2025 to firm up the details and schedule of its activities for the year.

[2] Pacific Power outlined general locations and then worked with public safety partners to select the most appropriate location and dates for these activities.

[3] While the target counties informed the plan and strategy, Pacific Power did not limit participation to the event.

6 WILDFIRE RISKS AND DRIVERS ASSOCIATED WITH DESIGN, CONSTRUCTION, OPERATION, AND MAINTENANCE

Pacific Power's baseline risk evaluation process employs the general concept that risk is the product of the likelihood of a specific risk event multiplied by the impact of the event, also referred to as risk consequence. The likelihood, or probability, of an event is an estimate of a particular event occurring within a given time frame. The impact of an event is an estimate of the effect to people and property when an event occurs. Impact can be evaluated using a variety of factors, including considerations centered on health and safety, the environment, customer satisfaction, system reliability, and financial implications. Pacific Power uses modeling tools described in this section to evaluate both likelihood and impact.

6.1 RISKS AND RISK DRIVERS ASSOCIATED WITH TOPOGRAPHIC AND CLIMATOLOGICAL RISK FACTORS

FireSight

To perform baseline risk evaluation, Pacific Power strives to combine utility and public data to analyze the components of risk associated with utility facilities in a consistent, repeatable way. Pacific Power procured and has implemented FireSight, a commercially available risk model from Technosylva. Technosylva has provided advanced wildfire products and services to utilities throughout the United States since 1997 and other products are used by the California Department of Forestry and Fire Protection (Cal Fire). With in-house fire and data scientists, Technosylva partners with key providers in fire planning, advanced data modeling, and wildland fire research and development to enhance the models used in their software. Technosylva has also published studies in scientific

journals and wildfire industry publications such as Current Opinion in Environmental Health and Science[4] and International Journal of Wildland Fire.[5]

FireSight specifically builds upon the quantitative risk model developed by Technosylva that associates wildfire hazards with the location of electric overhead assets. FireSight is used to forecast the consequence or impact of a wildfire from a given ignition point in Pacific Power's service territory based on the potential spread of a wildfire, should it occur. Pacific Power chose to implement FireSight based on Technosylva's experience with other West Coast utilities and their partnerships with experts in wildfire risk modeling and fire data science.

The FireSight model inputs and outputs, which are generally depicted in Figure 5 below, combines the utility asset information and data described in Section 6.2 with public data regarding community characteristics, terrain, vegetation, and weather information, to provide ignition risk scores at points along a circuit. Specific to this model, Technosylva sources information on climate, historic weather conditions, terrain, fuels, population, and

[4] Cardil, Adrián, Santiago Monedero, Gavin Schag, Sergio de Miguel, Mario Tapia, Cathelijne R. Stoof, Carlos A. Silva, Midhun Mohan, Alba Cardil, and Joaquin Ramirez, "Fire behavior modeling for operational decision-making." Current Opinion in Environmental Health and Science, Volume 23. October 2022.

[5] Cardil, Adrián, Santiago Monedero, Phillip SeLegue , Miguel Ángel Navarrete, Sergio de-Miguel, Scott Purdy, Geoff Marshall , Tim Chavez, Kristen Allison, Raúl Quilez, Macarena Ortega, Carlos A. Silva, and Joaquin Ramirez, "Performance of operational fire spread models in California," International Journal of Wildland Fire, July 7, 2023, Sourced November 2, 2023.

the built environment (buildings and roads) from public sources. A complete list of inputs, with source and frequency of update, is provided in Appendix C – Risk Models Inputs .

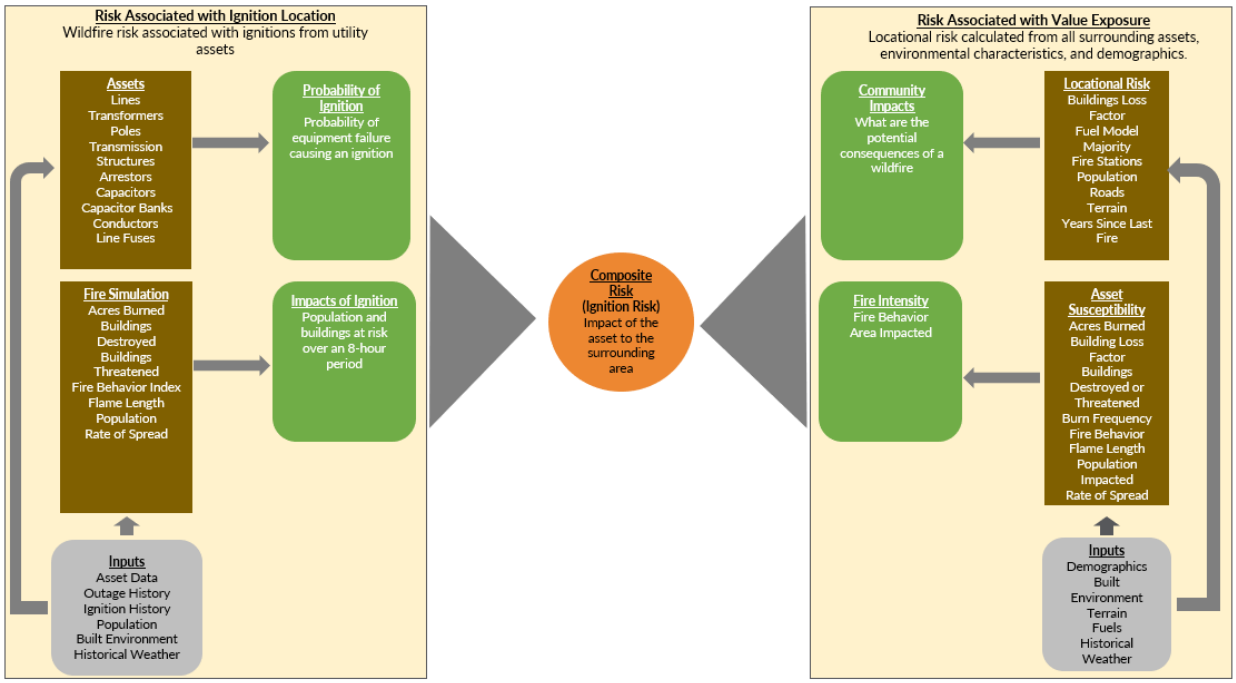

Figure 5: High Level FireSight Model Inputs and Outputs for Risk Scores

The FireSight model has two primary parts, Risk Associated with the Ignition Location (RAIL) and Risk Associated with Value Exposure (RAVE). RAIL, depicted on the left side of the figure above, represents the risk presented by the asset, based on its characteristics, including age and materials. RAIL assesses the risk by associating fire spread over an eight-hour period to a specific asset, the eight-hour period is the typical period used by utilities to model risk.

Factors considered in RAIL calculations include:

- Surface and canopy fuels outlook in 2030, including consideration of climate change impacts in the modeling.
- Topography.
- Wind speed and direction.

- Historical fire occurrence identifying time of data, typical weather conditions, and duration.

Outputs from RAIL include:

- Ignition risk from overhead transmission and distribution assets approximately every 100 meters along the circuit.
- Potential fire characteristics: Fire size, rate of spread, potential for crown fire, flame length.
- Population at risk.
- Number of buildings at risk.

Risk Associated with Value Exposure (RAVE), depicted on the right side of the figure above, assesses the characteristics of the area that is under risk of fire spread. Community demographics, geography, and the built environment influence how risky or resilient a community is to wildfire. RAVE is independent of the asset risk calculated in RAIL and considers the risk associated with additional factors:

- Population density.
- Socially vulnerable populations such as the elderly, people with a disability, or people at or below the poverty level.
- Infrastructure: Major and minor road density and building density.
- Suppression difficulty: Terrain, fuels, and fire station locations all impact how quickly firefighters can respond to a fire in the initial attack.
- Crown fire crowning acres: the amount the fire can spread through crowning in continuous spread through the tree crowns.

RAVE Outputs Include:

- Community impacts: How vulnerable a community is to wildfire and the potential consequences.
- Fire intensity: How a fire is expected to behave and what area may be impacted from the point of ignition.

Consideration of Climate Change in Wildfire Risk Modeling

Climate change does have impacts on wildfire risk. A 2018 study by the Climate Adaptation Science Centers warned that, "*A warming climate will have profound effects on fire frequency, extent, and severity in the Pacific Northwest. Increased temperatures, decreased snowpack, and earlier snowmelt will lead to longer fire seasons, lower fuel moisture, higher likelihood of large fires, and greater area burned by wildfire. Interactions between fire and other disturbance agents (e.g., drought, insect outbreaks) will drive ecosystem changes in a warming climate. Increased tree stress and interacting effects of drought, insects, and disease may also contribute to increasing wildfire severity and burned areas. Climatic changes and associated stressors will interact with vegetation conditions, as affected by historical land uses such as tree harvest and fire suppression, to affect fire regimes and forest conditions in the future.*[6]"

On July 23, 2023, California Office of Energy Infrastructure Safety (OEIS), led a scoping meeting with the California IOUs[7] regarding how utilities can best learn from each other, external agencies, and outside experts on the topic of integrating climate change into projections of wildfire risk.[8] Pacific Power intends to participate in subsequent workshops to learn more about how other IOUs are integrating climate change into their wildfire risk models and guidance experts are providing regarding impacts of climate change on wildfire risk.

Currently, the FireSight model accounts for climate change in the fuels moisture model that is an input to the Composite Risk Score. Pacific Power will use learnings from the

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[6] Harvey, B., Peterson, D., Havlovsky, J. "Changing Fires, Changing Forests: The Effects of Climate Change on Wildfire Patterns and Forests in the Pacific Northwest." Sourced September 22, 2023.

[7] PacifiCorp, d/b/a Pacific Power in Washington, Oregon, and California, and Rocky Mountain Power in Idaho, Utah, and Wyoming, provides electric service to customers in Washington, Oregon, California, Utah, Idaho, and Wyoming.

[8] California Office of Energy Infrastructure Safety. "Scoping Meeting: Climate Change and Fire Risk-Consequence Modeling - July 25, 2023." Sourced October 19, 2023.

OEIS workshops as an input to evaluating if there are additional risk variables that are impacted by climate change and the feasibility of integrating them into wildfire risk modeling. This is discussed further in Section 10.2 below as improvement initiative "Evaluation of Climate Change Impacts on Wildfire Risk Models."

Composite Risk Score

The composite risk score is a combination of the RAIL and RAVE and reflects three components:

1. Where is the predicted impact? This is the measure of the population and buildings if there is an ignition.
2. How destructive could the fire be? This is the expected fire behavior over the forecast fire area.
3. How resilient is the community? This is affected by the difficulty of suppression and population characteristics.

Pacific Power models and calculates separate composite risk scores for wind-driven and fuel/terrain-driven wildfires to account for the unique characteristics of its service territory that spans both steep forested areas as well as high desert areas. Table 7 below shows the unique characteristics of each wildfire type modeled.

Table 7: Comparison of General Characteristics of Wind-Driven and Fuel/Terrain-Driven Wildfires

Category	Wind-Driven Wildfires	Fuel/Terrain-Driven Wildfires
Locational Risk	More likely in areas subject to Public Safety Power Shutoff (PSPS)	Confined to areas of complex fuels and terrain with difficult access
Frequency	Some years have none; others several	Annually during peak fire season
Event Duration	One-three days per event	Can persist several weeks or months
Outage Risk	Wind-driven and somewhat predictable	Difficult to predict
Consequence	Immediately catastrophic	May be catastrophic over time

Calculating the risk separately and then combining them into a single composite risk, as shown in Figure 6 below, provides a robust risk calculation and identification of the risk driver at a location to apply the appropriate mitigation.

Figure 6: Composite Risk Consideration Wind-Driven and Fuel/Terrain-Driven Events

Figure 7 below shows the inputs and weightings for the composite risk for wind-driven and fuel/terrain-driven wildfires. On the left side of the table are the RAIL inputs with the selected input for the type of wildfire, the percentile selected and the weighting for each variable. On the right side of the table are the RAVE inputs with the weightings for each variable, there are no percentiles for these inputs as they are relatively static values, i.e., the number of fire stations the number of disabled people in geographic area.

Fuel/Terrain

Risk Associated with Ignition Location (RAIL) Component: 60%		
RAIL Inputs	**Percentile**	**Weight (%)**
Fire Behavior Index	95	20%
Fire Size Potential	95	20%
Flame Length	95	20%

+

Risk Associated with Value Exposure (RAVE) Component: 40%		
RAVE Inputs	**Percentile**	**Weight (%)**
Terrain Difficulty Index	N/A	25%
Fire Station Density	N/A	10%
Fuel Model Majority	N/A	5%

Wind

Risk Associated with Ignition Location (RAIL) Component: 80%		
RAIL Inputs	**Percentile**	**Weight (%)**
Rate of Spread	95	30%
Population Impacted	95	25%
Buildings Destroyed	95	25%

+

Risk Associated with Value Exposure (RAVE) Component: 20%		
RAVE Inputs	**Percentile**	**Weight (%)**
Terrain Difficulty Index	N/A	10%
Disability Population	N/A	5%
Poverty Population	N/A	5%

Figure 7: Inputs and Weightings for Composite Risk Calculation

The inputs and percentages above were selected by Pacific Power based on inputs from internal Subject Matter Experts (SMEs) and reviews of risk models by other utilities. A sensitivity analysis was performed on the selected inputs and weightings to validate that the selected percentiles and weightings identified circuits expected to be higher risk for fuels or terrain driven wildfires based on subject matter expertise.

Figure 8 below is an example of the difference in the Wind-Driven and Fuel/Terrain-Driven Composite Risk Score on a Pacific Power circuit near Dayton, WA. Here the terrain is flatter, so the wind-driven risk score is higher than the fuel-terrain score. Also as seen in the example, the composite risk scores can vary along a circuit due to changes in fuels, terrain, build environment, assets and community demographics that affect the risk score inputs. This variation is seen below in the change in composite risk score for a circuit segment as well as visually in the change in color along the circuits.

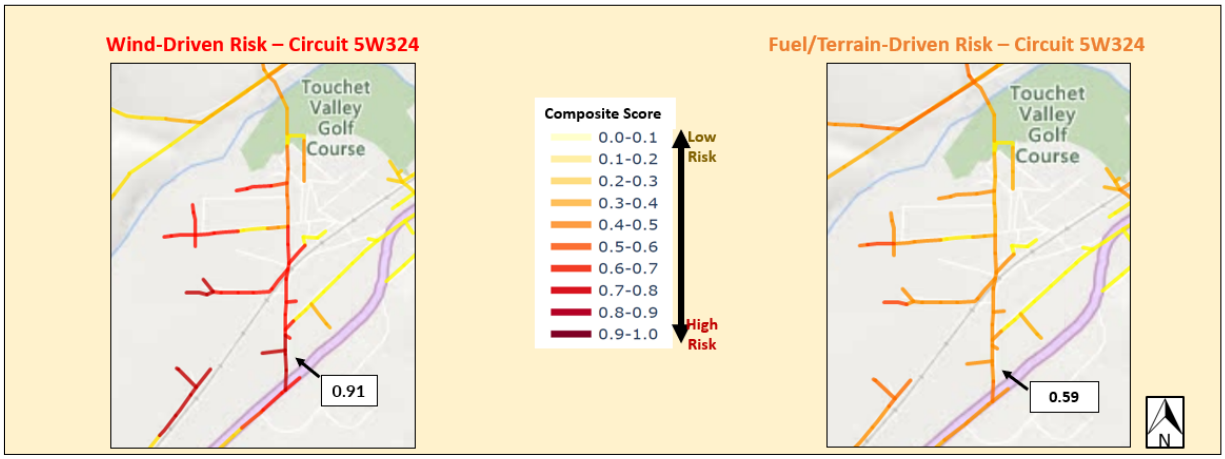


Figure 8: Illustrative Example of the Wind-Driven (left) and Fuel/Terrain Driven (right) Composite Risk Scores on Circuit 5W324 Near Dayton, WA

The composite score is calculated for each circuit segment using an equation that calculates a wind-driven and terrain-driven risk as shown in Figure 9 below.

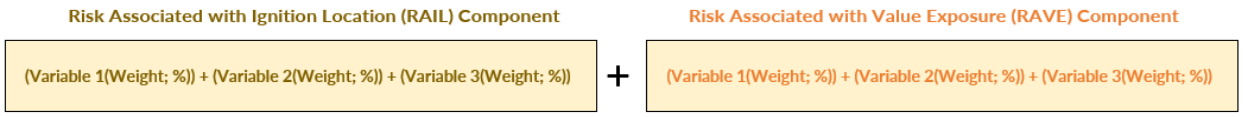


Figure 9: Calculation of Wind-Driven and Fuel/Terrain-Driven Composite Risk

The calculation for the combined risk score for each circuit segment is shown in Figure 10 below. Each composite score is on a scale of 0-1.

Figure 10: Combined Composite Risk Score Calculation

The FireSight tool, together with composite and combined composite risk score methodology described above, were leveraged to create two, parallel evaluations. First, assuming a fixed, equal probability, the wind-driven and fuel/terrain-driven composite risk scores were calculated and compiled to inform an evaluation of baseline wildfire risk, including whether to modify the geographic boundaries of the FHCA. As part of a parallel effort, the combined, composite risk scores were calculated using the risk driver analysis

as an indicator of probability to inform a risk ranking of circuits and potential prioritization for grid hardening.

Fire High Consequence Area (FHCA)

Using the FireSight risk data and the calculation of the risk scoring described above, Pacific Power has identified areas of heighted risk of wildfire, with delineated geographic areas referred to as the Fire High Consequence Area or "FHCA." The FHCA sets geographic boundaries for wildfire mitigation programs including vegetation management and asset management discussed in Section 7.3.

Existing FHCA Boundaries

As described in Pacific Power's 2023 Washington WMP Pre-Rulemaking Draft[9], the FHCA was developed in collaboration with Reax Engineering, a consultant specializing in wildland fire computer modelling, and patterned after the methodology developed through a multi-year, iterative process in California. Reax conducted the wildfire risk analysis using Monte-Carlo simulations incorporating the multiple datasets and data sources generally outlined in prior WMPs. Through this process, individual blocks of geographic area, each a two-kilometer square cell, received a grid score corresponding to its relative wildfire risk. As a result, Pacific Power generated a map of the FHCA, which was included as Figure 4 in the 2023 Washington WMP Pre-Rulemaking Draft and depicted in Figure 11 below.

[9] Washington Wildfire Mitigation Plan Pre-Rulemaking Draft. Pages 6-9.

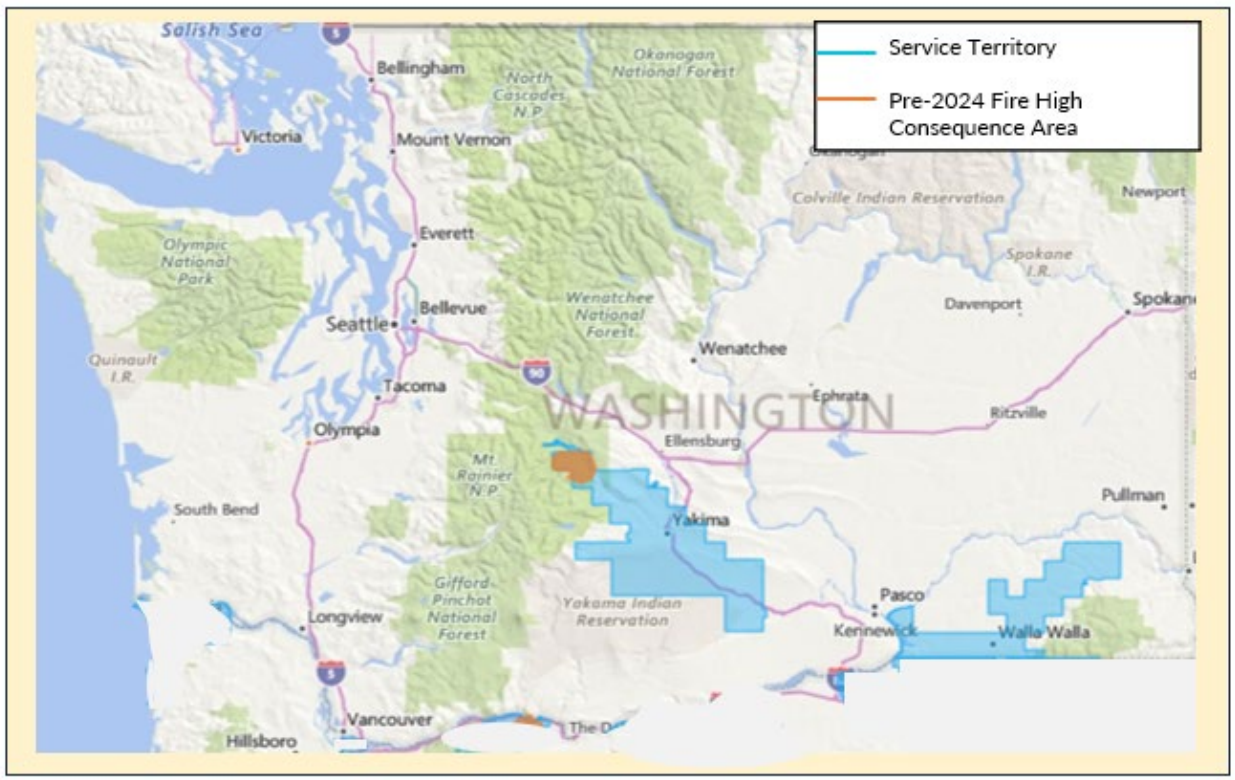


Figure 11: Pre-2024 WMP Fire High Consequence Area (FHCA) Map

2024 Modifications to the FHCA

In 2023, Pacific Power incorporated new data, tools, and processes to evaluate additional areas for inclusion in the FHCA. More specifically, Pacific Power leveraged FireSight to model risk scores for wind-driven and fuel/terrain-driven risk on each circuit assuming a probability factor of 1 as described in Section 6.1 above to focus on the consequence of potential ignitions. Based on this approach and, specifically, the FireSight model risk scores, Pacific Power identified no additional geographic areas for inclusion within the FHCA, depicted in purple in Figure 12 below.

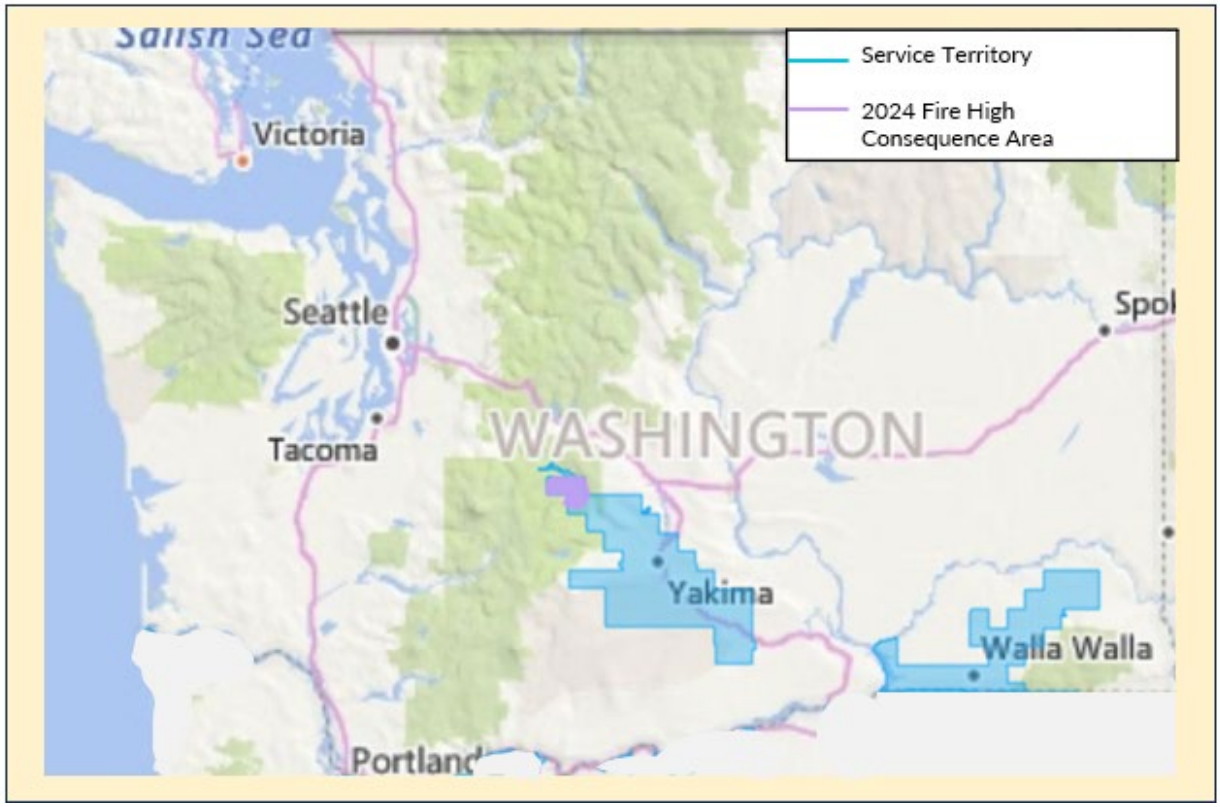


Figure 12: 2024 FHCA

Comparing the FHCA map with the Wildfire Risk[10] map of risk to homes as depicted in Figure 13 below, there is general alignment with Pacific Power's FHCA with the identified areas of wildfire risk to homes. Pacific Power will confer with state agencies such as the Washington Department of Natural Resources (DNR) regarding the FHCA to determine whether additional modifications might be appropriate.

[10] United States Forest Service. Wildfire Risk to Communities. Sourced August 9, 2024.

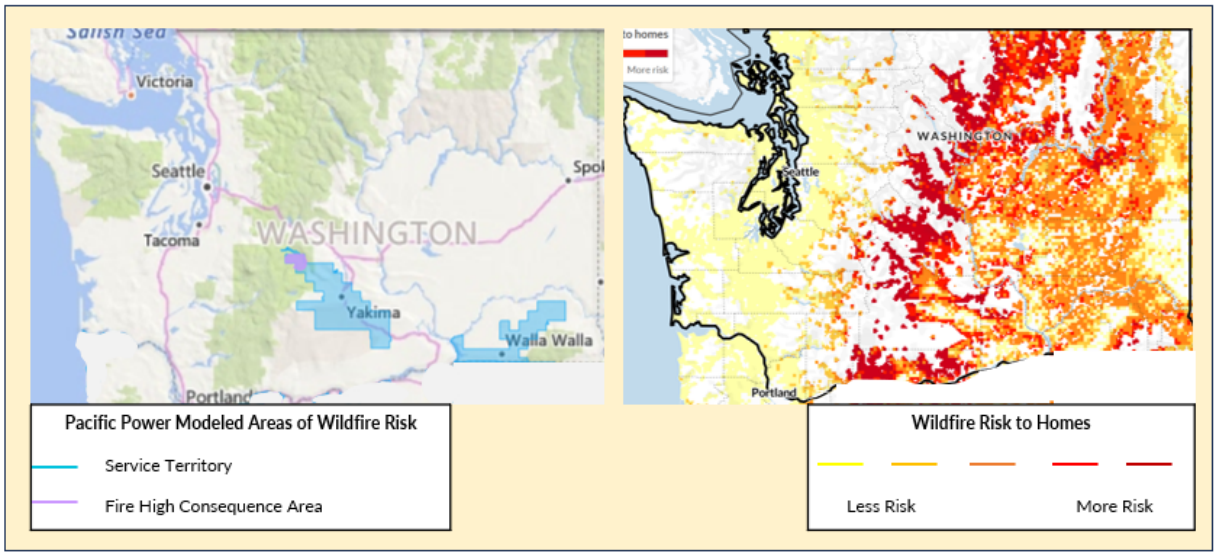


Figure 13: Comparison of Pacific Power FHCA (left) to Wildfire Risk Map of Risk to Homes (right)

Areas of Interest

While no new FHCA was identified through the FireSight analysis, Pacific Power continues to study other geographic areas for wildfire risk, even if FireSight model risk scores did not warrant inclusion of such areas in the FHCA at this time. The FireSight model risk scores reflect that there is a spectrum of wildfire risk. Not surprisingly, certain areas, such as wooded forests have more wildfire risk than other areas, such as irrigated agricultural areas. Along those same lines, certain areas have FireSight model risk scores which approach the scores resulting in FHCA treatment. Pacific Power will continue to evaluate those areas, including for possible future expansion of the FHCA. To that end, Pacific Power has identified additional "Areas of Interest," which reflect geographic areas with above average FireSight model risk scores. The Areas of Interest are grouped in two parts: Area of Interest I refers to areas with risk scores closest to the risk scores used to demarcate the FHCA, while Area of Interest II refers to areas with risk scores lower than Area of Interest I. Expressed as risk values, the FHCA reflects areas with FireSight model risk scores of 0.85-1.0; Area of Interest I reflects areas with risk scores of 0.65-0.84; and Area of Interest II reflects areas with risk scores of 0.45-0.64. The Areas of Interest, juxtaposed against the 2024 FHCA, are shown in Figure 14 below. Pacific Power also

intends to continue evaluating the FHCA to incorporate new data, modeling techniques, and stakeholder input.

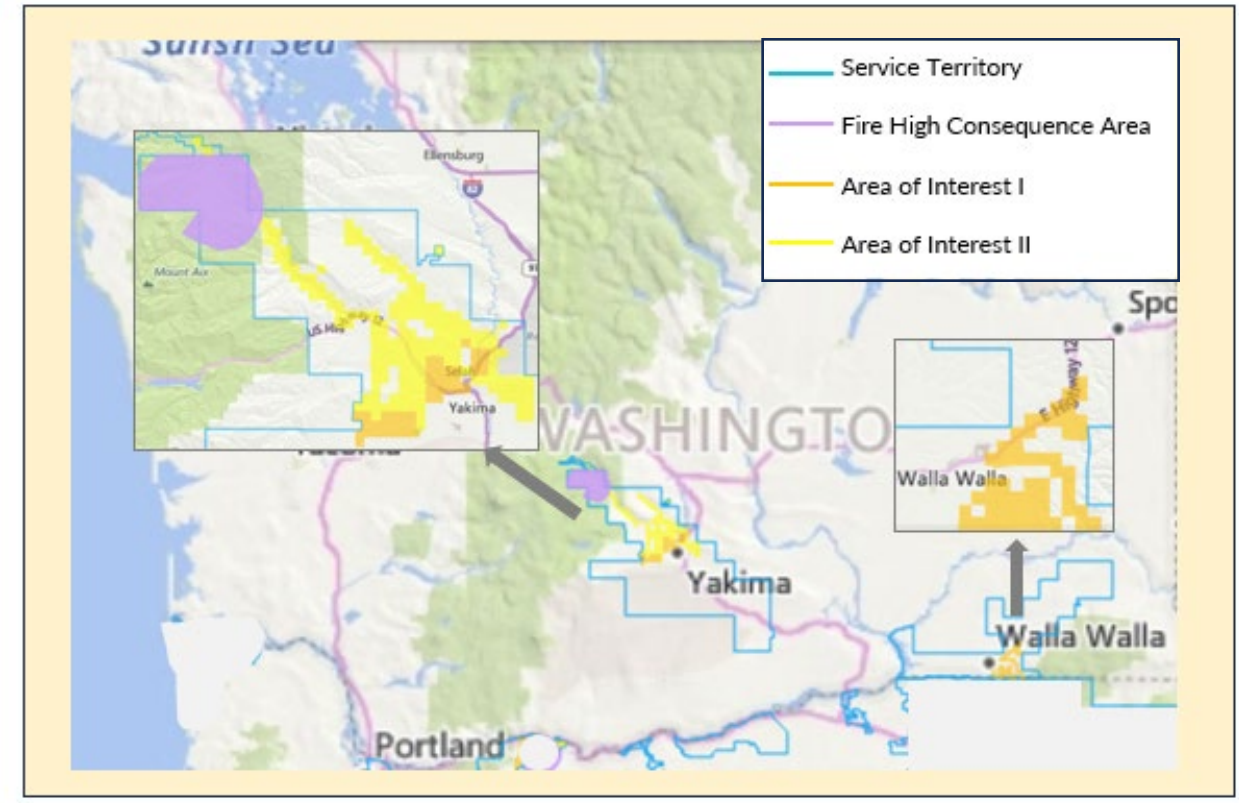


Figure 14: 2024 FHCA and Areas of Interest

6.2 ENTERPRISE-WIDE SAFETY RISKS

Pacific Power's baseline risk analysis framework consists of four main components as depicted in Figure 15 below. The framework is a cycle consisting of data collection and analysis, risk evaluation, risk treatment, and risk monitoring and evaluation.

Figure 15: Pacific Power's Baseline Risk Assessment Framework

Data Collection and Analysis provides enhanced data collection and analytics for incident tracking, trend analysis and measurement of mitigation effectiveness.

Risk Evaluation includes the development of tools and models to supports location-specific risk identification to inform mitigation programs. These risk evaluation tools and models include the delineation of geographic areas of heightened risk of wildfire designated as the FHCA, as described and shown in Section 6.1 above, as well as the asset-specific risk modeling tool, FireSight, also explained in Section 6.1.

Risk Treatment involves the development and implementation of mitigation programs informed by the data analysis and risk evaluation.

Finally, **Risk Monitoring and Review** supports quantitative evaluation of the effectiveness of mitigation strategies using a consistent framework and process. Continuous monitoring of programs is also summarized in Section 10. The framework in Figure 15 is represented as a cycle to depict a process geared to make continuous improvement. For example, data collection and analysis support inputs to risk evaluation in a repeatable, transparent way to identify areas of risk. This in turn supports development and updates to risk evaluation tools, such as mapping of the FHCA, to inform risk mitigation programs such as vegetation management and asset inspections. Finally, risk is monitored, and programs are evaluated to enable continuous improvement.

Data Collection and Analysis

The following types of data described below are continuously collected, organized, and analyzed to support development of risk assessment tools and evaluation and inform Pacific Power's understanding of the wildfire risk. Additional details regarding the specific types of data collected can be found in Appendix C – Risk Models Inputs

Risk Driver Analysis

Pacific Power analyzes the components of risk associated with utility facilities. An understanding of risk drivers informs specific mitigation tactics or strategies that can be used to reduce the total amount of risk associated with utility operations. For example, if a risk of utility-related-wildfire exists due to the potential for equipment failure, an increase in inspections or maintenance activities might help to mitigate the risk. If a risk exists due to potential contact between power lines and third-party objects, installing conductor more resilient to contact with objects might help to mitigate that particular risk.

In determining the potential risk drivers, Pacific Power employs a data driven approach that references certain categories of historical outage records as a proxy for risk events. Outage data is the best available data to correlate an identifiable event on the electrical network to the risk of a utility-related-wildfire. There is a logical physical relationship: if a fault creates a spark, there is a risk of fire. An unplanned outage – which is when a line is

unintentionally de-energized – is most often rooted in a fault. Accordingly, outage records were organized into categories to understand the cause of each outage with the potential for an ignition as shown in Table 8 below. The outage categories in the table align with potential correlation to an ignition.[11]

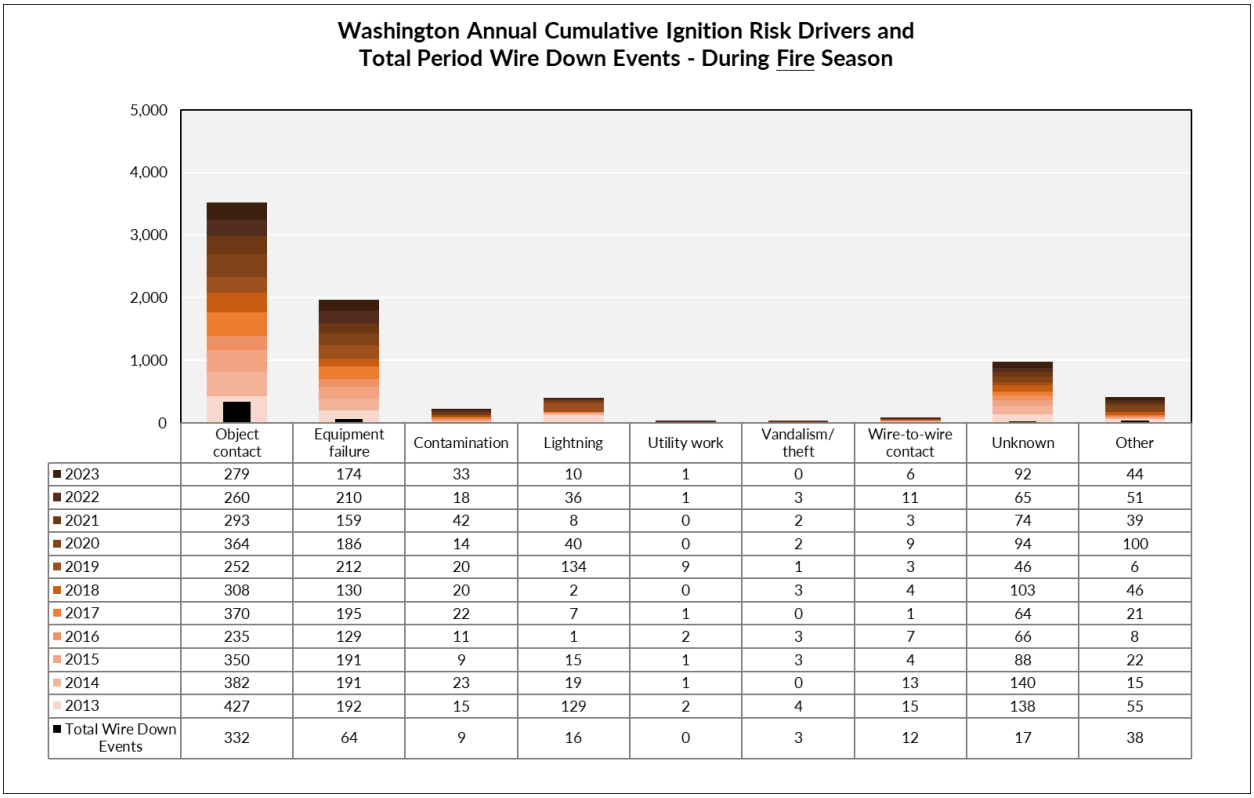
Table 8: Outage Causes with Possible Correlation to Ignition Potential

Outage Category	Risk Driver Description
Animals	Animals make unwanted direct contact with energized assets
Environment	Exposure to environmental factors, such as contamination
Equipment Damaged	Broken equipment from car hit-poles, vandalism, or other non-lightening weather- related factors.
Equipment Failure	Failure of energized equipment due to normal deterioration and wear, such as a cross arm that has become cracked or the incorrect operation of a recloser, circuit breaker, relay, or switch
Lightning	Outage event directly caused by lightning striking either (i) energized utility assets or (ii) nearby vegetation or equipment that, as a result, contacts energized utility assets
Other External Interference	External factors not relating to damaged equipment such as mylar balloons, hay or other interference resulting in a potential ignition source
Not Classifiable	Outage event with unknown cause or multiple potential probable causes identified
Operational	Unplanned outage resulting from operations
Tree-Within Right of Way (ROW)	Outage attributed to vegetation contact with vegetation located within the power line Right-of-Way (ROW)
Tree-Outside Right of Way (ROW)	Outage attributed to vegetation contact with vegetation from outside the Right-of-Way (ROW)

Pacific Power compiled outage history from the past ten years grouped by these ten outage categories, both inside of fire season (June 1 through October 1) and outside of fire season. Because "wire down" events represent situations with heightened ground fuel ignition correlation, wire down event data is also assessed. This data is overlaid in Figure

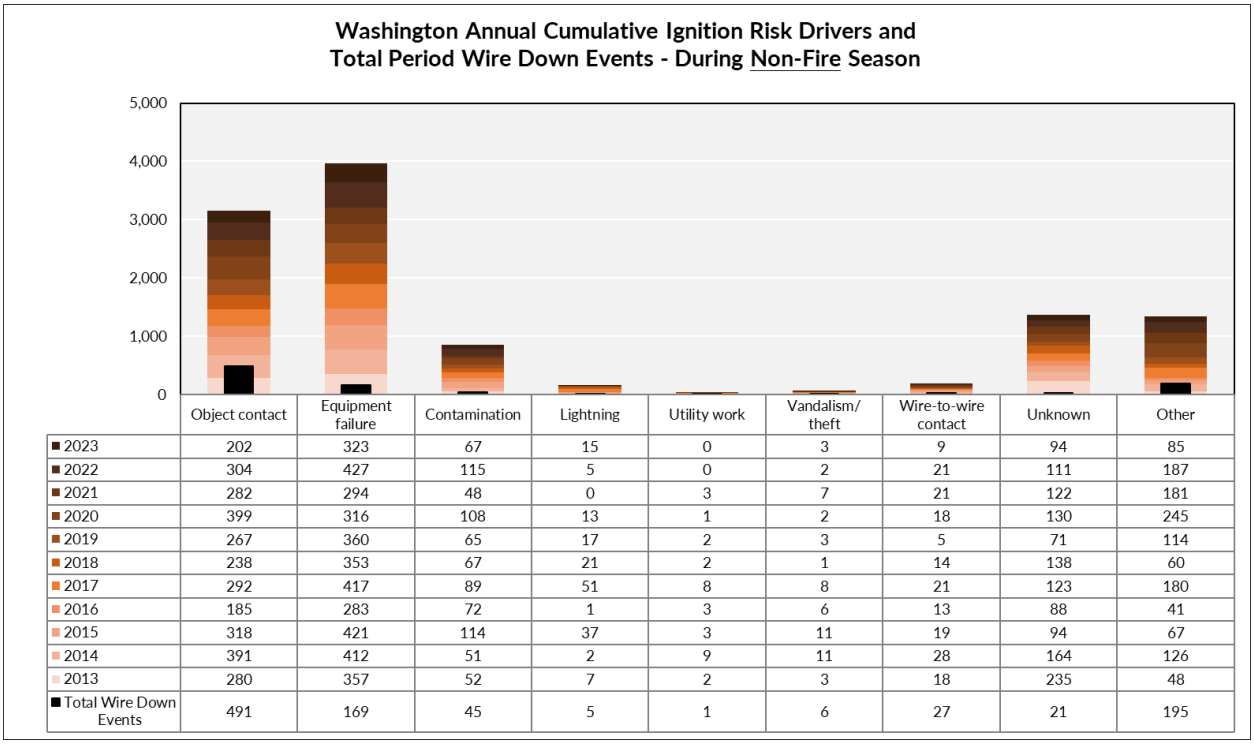
[11] These outage categories are not exactly the same as the outage classifications traditionally used for reliability reporting. For example, certain outage categories, such as loss of upstream transmission supply, planned outage, or not an outage (misclassification), do not correlate to the potential for an ignition and were excluded from the data set used for risk driver analysis.

16 and Figure 17 below. As seen in Figure 17, outage and wire down events may happen more frequently outside of wildfire season which may be due to other factors such as winter storms.



	Object contact	Equipment failure	Contamination	Lightning	Utility work	Vandalism/ theft	Wire-to-wire contact	Unknown	Other
2023	279	174	33	10	1	0	6	92	44
2022	260	210	18	36	1	3	11	65	51
2021	293	159	42	8	0	2	3	74	39
2020	364	186	14	40	0	2	9	94	100
2019	252	212	20	134	9	1	3	46	6
2018	308	130	20	2	0	3	4	103	46
2017	370	195	22	7	1	0	1	64	21
2016	235	129	11	1	2	3	7	66	8
2015	350	191	9	15	1	3	4	88	22
2014	382	191	23	19	1	0	13	140	15
2013	427	192	15	129	2	4	15	138	55
Total Wire Down Events	332	64	9	16	0	3	12	17	38

Figure 16: Historic Ignition Risk Drivers During Fire Season



	Object contact	Equipment failure	Contamination	Lightning	Utility work	Vandalism/ theft	Wire-to-wire contact	Unknown	Other
2023	202	323	67	15	0	3	9	94	85
2022	304	427	115	5	0	2	21	111	187
2021	282	294	48	0	3	7	21	122	181
2020	399	316	108	13	1	2	18	130	245
2019	267	360	65	17	2	3	5	71	114
2018	238	353	67	21	2	1	14	138	60
2017	292	417	89	51	8	8	21	123	180
2016	185	283	72	1	3	6	13	88	41
2015	318	421	114	37	3	11	19	94	67
2014	391	412	51	2	9	11	28	164	126
2013	280	357	52	7	2	3	18	235	48
Total Wire Down Events	491	169	45	5	1	6	27	21	195

Figure 17: Historic Ignition Risk Drivers During Non-Fire Season

The analysis of risk drivers incorporates outage data collected through the company's normal outage response systems. As Pacific Power's risk modeling efforts evolve, there may be opportunities to gather more detailed data regarding outages, which may further refine the analysis of such data, to support the modeling and correlations between outages, risk events and ignition probabilities.

Fire Incident History

Pacific Power tracks fires potentially originating from Pacific Power equipment, as well as other fires that impact Pacific Power's facilities. An initial report of a fire can be obtained through a variety of sources. It is common for an initial report to come via a call to Pacific Power's system operations center from an emergency response agency or local government. Other times, Pacific Power field personnel may observe a fire or fire damage while performing work in the field and report the event. If certain regulatory criteria are

met, information about the fire is reported to the Washington Department of Natural Resources[12].

After receiving an initial report of a fire incident, Pacific Power records the incident in a fire incident tracking database. Pacific Power gathers other information, as available, to record in the database. Fields maintained in this database include fire start date and time; location, with a latitude and longitude reference; land use in the area; fire size; suppression agency; facility identification; voltage; associated equipment; outage information; and the suspected initiating event. Data fields are organized to align with regulatory reporting requirements. Information is often estimated, based on known available information. For example, a recorded fire start time may be the time when the fire is first observed or when a report of fire is first received; but the precise time that the fire ignited may not be known. Fields are sometimes populated as "unknown" when there is insufficient available information. Fire incidents have been tracked since 2020, and the data is an input to the risk model.

Asset Information

Information on transmission and distribution equipment, including type of equipment, location, installation date, and material is captured and used during analysis, where available.

Risk Evaluation and Tools

Pacific Power's baseline risk evaluation process employs the general concept that risk is the product of the likelihood of a specific risk event multiplied by the impact of the event, also referred to as risk consequence. The likelihood, or probability, of an event is an

[12] Washington Department of Natural Resources. RCW 76.04.445. Sourced August 19, 2024.

estimate of a particular event occurring within a given time frame. The impact of an event is an estimate of the effect to people and property when an event occurs. Impact can be evaluated using a variety of factors, including considerations centered on health and safety, the environment, customer satisfaction, system reliability, the company's image and reputation, and financial implications. Pacific Power uses modelling tools like the FireSight model discussed in Section 6.1 to evaluate both likelihood and impact.

7 WILDFIRE PREVENTATIVE STRATEGIES

Pacific Power takes a holistic view to wildfire prevention with the strategies described in Section 7 and supported by the understanding of baseline risk that is described in Section 6 above, that helps identify the long-term view of risk. This view of risk modelling can inform program strategy, such as where to focus expedited inspection finding corrections or where to do vegetation management more frequently that are described in Sections 7.3 and 7.4 below.

Additionally, increasing resilience can be accomplished through long term investment such as installing covered conductor in those areas that are identified as having long-term risk such as in the FHCA. This strategy in particular aims to retrofit the system and protect against the impacts of incidental contact with powerlines, which in turn reduces the risk that the electric line can become a source of a fault or spark and is explained further in Section 7.2.

Pacific Power utilizes a short-term risk modelling approach, or dynamic risk modeling, to complement that long term risk view, which is used to generate a daily risk forecast for the next five days for situational awareness of where the risk is across the service territory. The weather monitoring is described in Section 7.1

Next, is to have the strategy is to have a system that reacts quicker when there is a fault, and that is where operational practices come into the plan as explained in Section 7.6. This involves replacing our relays, reclosers and fuses with new equipment that has increased capabilities to enable the use of more sensitive settings and alternate protection and control schemes. This strategy also includes the risk-based deployment of these alternate settings; referred to as ESS. Paired with the installation of new fault indicators to facilitate faster restoration during outages regional operators and field personnel will use fault indicators to narrow down fault locations. Workforce training as described in Section 7.5 reinforces the operational practices needed to operate safety in elevated fire risk conditions.

Finally, Pacific Power may de-energize power lines as a preventative measure during periods of the greatest wildfire risk using the PSPS protocols as described in Section 7.7.

7.1 WEATHER MONITORING

CURRENT STRATEGY OVERVIEW

As described in Section 6.1, Pacific Power uses the Fire High Consequence Area (FHCA), the company's baseline risk map, layered with a risk driver analysis to inform longer term strategic investment and modifications to asset inspections and vegetation maintenance practices. However, as climate and weather patterns change, extreme weather events are predicted to become more frequent, and the potential exists for seasonal, dynamic, and/or isolated risk events to occur that compound or deviate from this baseline risk. Therefore, having an additional sophisticated, dynamic risk model grounded in situational awareness is pertinent to ensure electric utilities know when, where, how, and why to take additional action to mitigate the risk of wildfire in the shorter term.

Pacific Power's approach to situational awareness includes the acquisition of data to forecast, model, and assess the risk of potential and actual events to inform operational strategies, response to local conditions, and decision making. These key components, as outlined below and illustrated in Figure 18, rely on a core team of utility meteorologists to guide, execute, and continuously evolve.

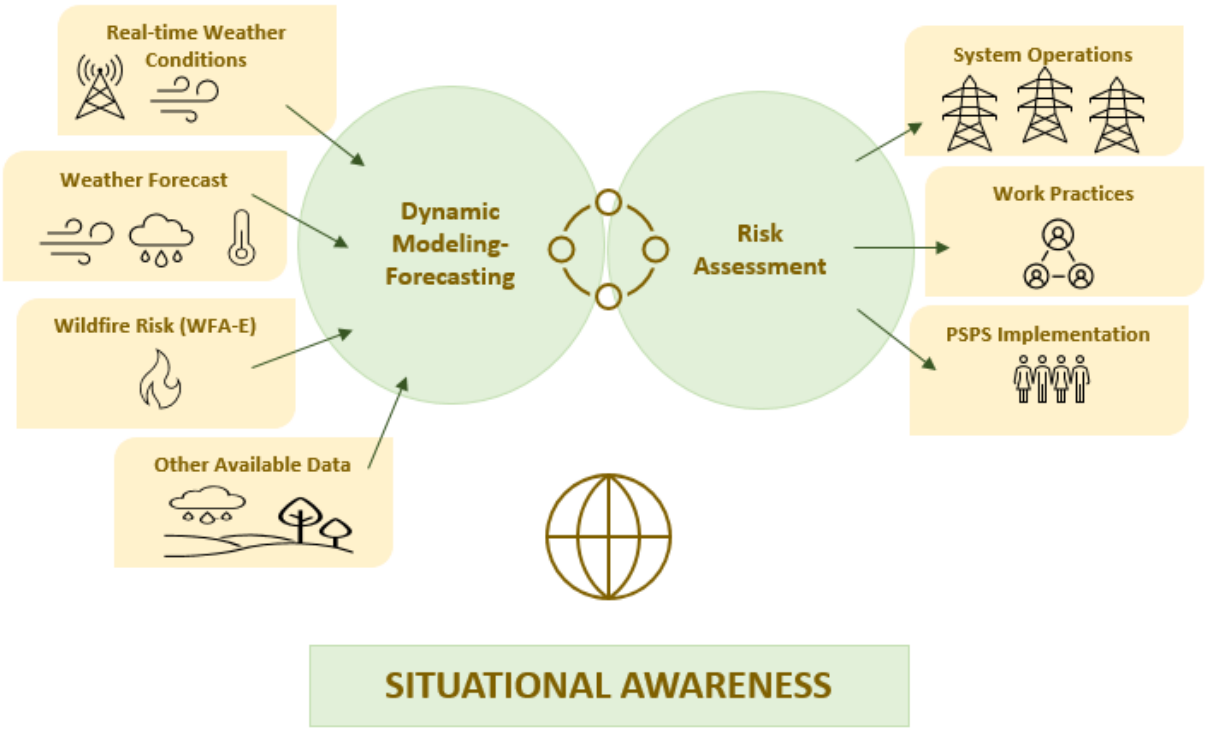


Figure 18: Overview of Situational Awareness

Meteorology

As described above, the ability to gather, interpret, and translate data into an assessment of utility specific risk and informed decision making is a key component of Pacific Power's situational awareness capability. To support this effort, Pacific Power developed a meteorology department that consists of four full-time meteorologists, one data scientist, and one manager. The team's experience includes decades of fire weather forecasting for various government agencies such as the National Weather Service (NWS) and Geographic Area Coordination Center (GACC).

The objectives of this department are to supplement the company's longer term risk analysis capabilities by:

- Implementing a real-time risk assessment and forecasting tool,
- Identifying and closing any forecasting data gaps,
- Managing day-to-day threats and risks, and

- Providing information to operations to inform and recommend changes to operational protocols during periods of elevated risk, as depicted below in Figure 19.

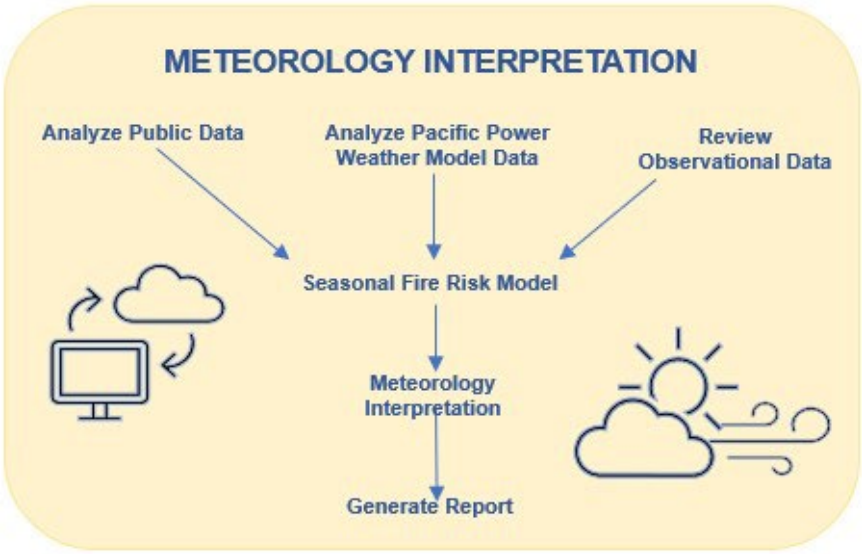


Figure 19: Meteorology Daily Process

Pacific Power's meteorology department also coordinates with government agencies that provide weather warnings. For instance, during high-risk weather events, the company's meteorologists participate as a represented partner in daily coordination calls hosted by the NWS and/or GACC. In these calls, they ingest information and updates, and may provide additional pertinent information to the GACC. Additionally, the NWS may host briefings during high-risk weather events that are geared toward an emergency management audience. The company's meteorology department also participates in these calls to ensure that forecasting discrepancies are understood and that there is alignment and/or clarity regarding external messages from a utility or the NWS.

Numerical Weather Prediction

The creation of an impacts-based forecasting system consisting of an operational Weather Research and Forecasting (WRF) model and a complimentary 30-year WRF reanalysis across the company's entire service territory forms the foundation of Pacific Power's meteorology program. Using the WRF reanalysis and other training data, the company

plans to build and train machine learning models to improve its operational thresholds and convert its weather forecasts into a prediction of system impacts. To assess confidence in the calculated values, forecasts are actively monitored to assess trends and potential convergence or divergence between forecasts and actuals during period(s) of elevated risk. As the time of observation nears the forecast period, confidence in the forecasted values increases.

Operational WRF Model

Pacific Power's meteorology department uses a twice daily, two-kilometer-resolution, hourly weather research and forecasting model. It produces a comprehensive forecast of atmospheric, fire weather, and National Fire Danger Rating System (NFDRS) parameters out to a timescale of 96 hours (four days). The model's high resolution gives a much more complete picture of finer scale atmospheric features than what is available with most public four-day ahead timescale models. In addition, the WRF data is overlayed on overhead distribution circuits and transmission lines, along with other relevant utility asset data, for further analysis.

30-Year WRF Reanalysis

Pacific Power's meteorology department developed a 30-year, two-kilometer resolution, hourly WRF reanalysis. The 30-year WRF reanalysis uses the same configuration and contains the same weather, fire weather, and NFDRS parameters as the company's operational WRF to minimize any potential forecast biases between the two datasets. This reanalysis data was correlated with historic outage data and wildfire events using statistical and machine learning techniques to improve the company's weather-related outage and wildfire risk thresholds. Output from Pacific Power's operational WRF model is then ingested by the company's machine-learning models and GIS tools to convert the daily forecast into potential circuit-level system impacts and to map the intersection of fire weather and outage related risks across its service territory. The 30-year WRF re-analysis provides a daily circuit-level look at the severity of fire weather conditions relative

to the past 30 years and, based on that historic data, an assessment of whether the forecast weather event would historically have resulted in an outage on that circuit.

PLANNED UPDATES

Continual Improvement

The Pacific Power WRF domain covers the entirety of PacifiCorp's six-state service territory. From 2021-2022, Pacific Power invested in the procurement of two High Performance Computing Clusters (HPCC) to provide the computational resources needed to run an operational WRF model that large. Currently, the two systems provide a high resolution, four-day forecast of the WRF domain twice daily through a single, deterministic model.

This single, deterministic WRF model has allowed Pacific Power to take meaningful action in advance of severe weather to reduce restoration times and increase reliability. However, it does not account for multiple weather scenarios, which makes it more difficult to forecast the types of low probability, high-impact weather events that are becoming both more common and more impactful. To address this issue, Pacific Power plans to implement a multi-member WRF ensemble forecasting system. This new forecasting system will enable analysis of multiple weather scenarios simultaneously, thereby improving the accuracy of the company's forecasts and its ability to respond to severe weather in advance. Additionally, the company also plans to increase the computational capacity of its forecast system by purchasing new HPCCs. These new supercomputers will add the computational power needed to implement the new forecasting system and, at the same time, allow for full system redundancy, which can be critical during severe weather events.

Weather Station Network

Public weather data has been available for many years for reference. However, relying only on publicly available data can have limitations. When using publicly available weather data the utility does not have visibility into the maintenance and calibration records or standards used to maintain the weather station collecting the data. Additionally, the

frequency of data collection may not match the requisite intervals needed to perform real time risk assessments and dynamic modeling. Finally, publicly available data may have geographic coverage gaps within the utility's service territory.

When weather stations are owned by the utility, the calibration date and usability of the data is known, the data reporting intervals can be adjusted to report more frequently, and the data can be used to inform real time operations. For instance, Pacific Power's weather station data is updated every ten minutes. However, many of the company's weather stations also can update every 30 seconds during events that must be monitored closely, in real time.

For all these reasons Pacific Power is continuing to invest in a utility-owned and operated weather station network within the company's service territory. Currently, Pacific Power's weather station network in Washington consists of 22 micro stations. The micro stations are typically installed directly on utility infrastructure. Additionally, the company maintains a small fleet of portable weather stations that can be deployed, as needed, during extreme weather events.

Weather stations can be installed and adjusted to pinpoint specific locations needed to inform utility risk assessment. As shown in Figure 20 below, data gaps are a key consideration. These can include a lack of data granularity, as well as the absence of data altogether. For example, as part of its weather station siting methodology, Pacific Power accounts for geographic gaps in publicly available weather data from within its service territory, to include factors like data resolution, and consistency.

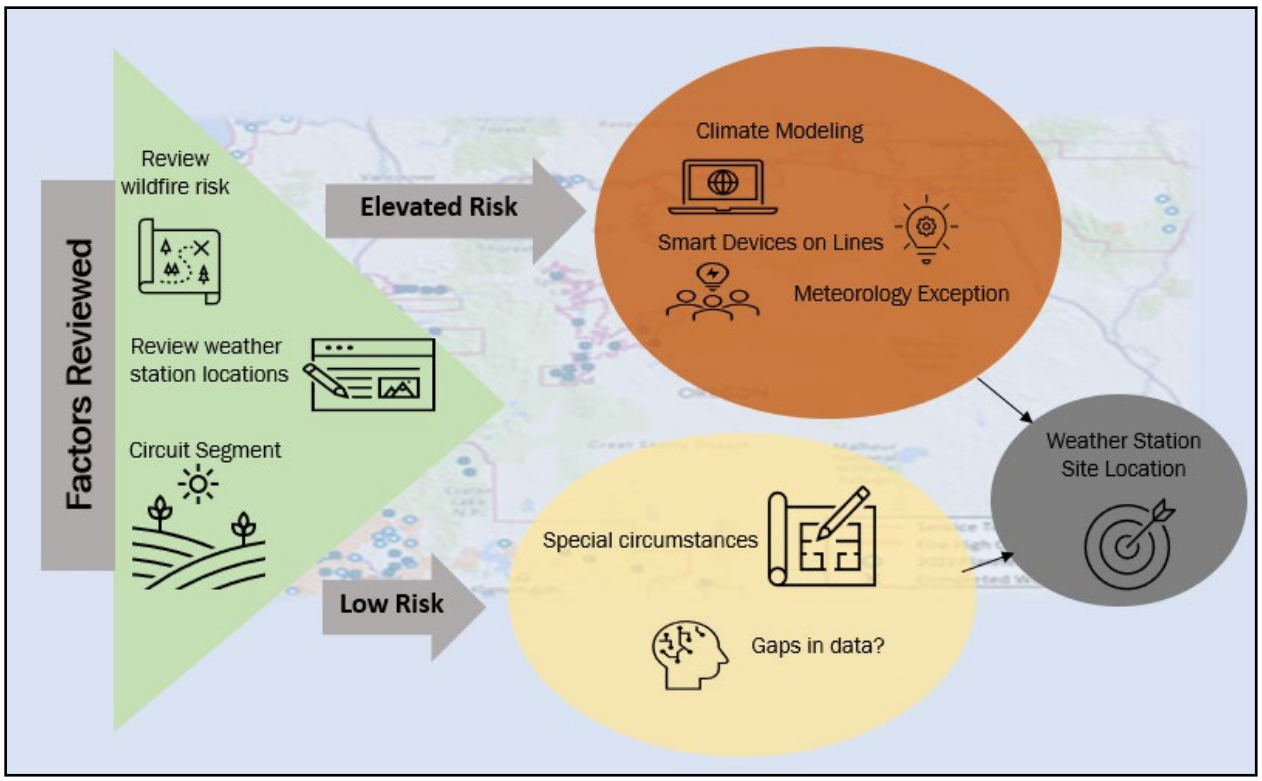


Figure 20: General Weather Station Siting Methodology

Weather station data is used to create a model of routine weather patterns in specific areas. This weather data is then leveraged alongside the operational WRF, its companion 30-year weather data reanalysis, and Technosylva's Wildfire Analyst-Enterprise (WFA-E) software (described below), to model potential impacts to infrastructure associated with forecasted weather events and inform operational protocols and decision making, such as when and where to stage resources and how to prioritize restoration times. This improved modeling allows for better anticipation of impactful weather events and is a key component of situational awareness.

In 2024, Pacific Power completed installation of five weather stations in Washington. Additionally, the company anticipates growing its Washington weather station fleet to 38 stations by the end of 2025. The company's meteorology department will continue to evaluate the benefit of installing additional weather stations.

Table 9 below depicts the plan and annual phasing for the company's weather station installation work through 2026.

Table 9: Weather Station Build Out Plan

	2024 Actuals	2025 Plan	2026 Plan	Total Installations
New Weather Stations	5	5	-	**10**
Total Washington Fleet	23	28	28	**28**

Wildfire Detection Cameras

Beginning in 2023, Pacific Power launched a pilot program to install Pano Pan Tilt Zoom (PTZ) Artificial Intelligence (AI) enabled cameras in California. The program expanded in 2024 to include six more cameras in California, five in Oregon and five in Utah for a total network of 18 cameras. The cameras have detected smoke and fire within Pacific Power's service territory and informed first responders to smoke and fire alerts. The program is being evaluated for expansion into Washington as a tool in Pacific Power's situational awareness program.

Publicly Available Situational Awareness Data

Pacific Power's weather stations and WRF model generate a considerable amount of data each day. The company makes this data available to its employees, customers, and public safety partners through its situational awareness website, pacificorpweather.com, alongside weather station observations and forecast data from other trusted government sources, including the NWS. Combining weather station observations with forecast data allows Pacific Power to compare real-time weather observations with forecast data. Further, the wind climatology of each weather station is considered, with real-time and forecast wind conditions color-coded based on station-specific statistics like 95th and 99th percentile values. All the above data are automatically updated on the website as new data is available and can be viewed in maps, tables, and meteograms. Figure 21 below includes sample material from the public situational awareness website.

Figure 21: Sample of Publicly Available Situational Awareness Information from a Weather Station near Maryhill, WA

This data is also ingested into an internal dashboard used for situational awareness during periods of elevated risk like a PSPS. The dashboard is customizable based on the scale of the event and includes station alert speeds and/or other decision points. For example, there may be times when wind forecasts indicate the potential for wind-related power outages when wildfire danger is high. In these cases, the data plots on the forecasts in the internal dashboard can provide the approximate timing of outage-producing winds at multiple weather stations across the service territory, thereby supporting operational decision-making around targeted de-energization(s).

Wildfire Risk Models and Tools

Pacific Power leverages a variety of models and tools to assess dynamic wildfire risk, which are described in the subsections below.

FireRisk and FireSim

In 2022, Pacific Power procured and implemented Wildfire Analyst Enterprise (WFA-E), the broad suite of wildfire risk modeling tools from Technosylva, the same company that has the FireSight risk modeling discussed in Section 6.1. WFA-E includes two seasonal

wildfire models, FireRisk and FireSim, and is used by the company to forecast the risk of wildfire and the potential behavior of a wildfire, should it occur. As described in Figure 21, the inputs for the various WFA-E models are similar. They are, however, used for different purposes. FireRisk performs simulations daily to assess wildfire risk more broadly, while FireSim is used to simulate growth and spread of specific and unique fire events.

FireRisk performs millions of wildfire simulations daily across the company's service territory to provide a 96-hour look ahead that identifies the risk of wildfire (both of ignition and impact) in particular locations. This output is then joined with overhead distribution and transmission asset location data to provide location-specific wildfire risk and consequence forecasts. It is important to note that the asset location data does not assess the probability of a utility asset causing an ignition but, instead, is used to inform operational decision-making, as discussed in Section 7.7. FireRisk outputs include the following information:

- An assessment of the potential for a wildfire given fuel, weather, and other conditions.
- A simulation of how a wildfire would behave in the event of an ignition. This would include, for instance, the forecasted rate of spread, size, and flame length.
- Data on the population threatened and potential impact to assets (e.g., identification of buildings that would be threatened in the event of a wildfire).

Figure 22 is an example of a FireRisk output for Pacific Power's Yakima operating district dated July 22, 2024. It shows the potential acreage burned should an ignition occur near a circuit. The areas around the circuits highlighted in blue are not forecasted to be impacted by wildfire spread. In contrast, the areas around the circuits highlighted in yellow are forecast to be within 100 acres of wildfire spread. This information is then used to inform operational practices like whether to de-energize proactively or, if time allows, take measures to protect utility assets and communities that could be in the path of a wildfire. This example does not make any assumptions about the effectiveness of the initial or extended attack that may impact the forecast of acres burned.

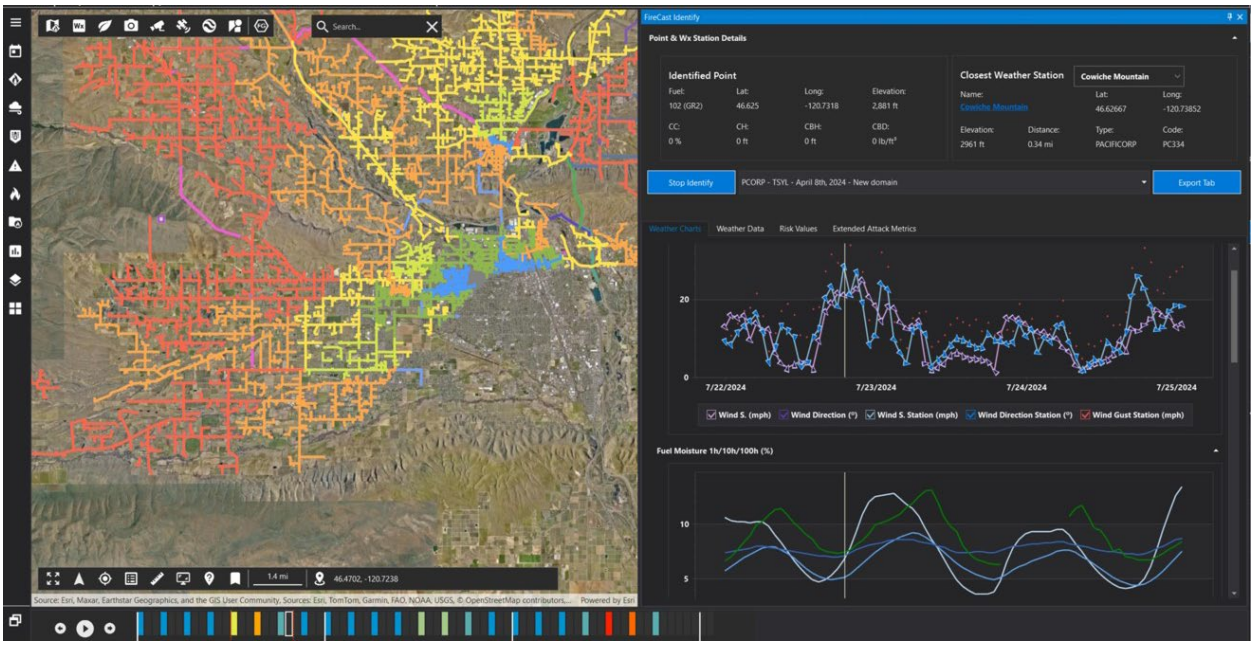


Figure 22: Example of FireRisk Output from July 22, 2024

FireSim: FireSim runs simulations that forecast potential fire behavior and spread from a one to 96-hour period and assess the potential impact on populations, buildings, utility assets, and other resources in the field. FireSim's model assumes no suppression efforts to slow the fire's spread and considers the following elements:

- **Initial Attack Assessment**. Assessment of how difficult initial attack could be for first responders and the probability of stopping the fire within the first operating period. An operational period is "The period of time scheduled for execution of a given set of tactical actions"[13] and varies from incident to incident.
- **Population at Risk**. Projection of the number of people in the path of the fire and the timing of when the fire is likely to arrive.

[13] Federal Emergency Management Agency. FEMA Operational Planning Manual FEMA P-1017. June 2014. Sourced November 6, 2023.

- **Assets at Risk**. Physical assets like utility equipment, residential and commercial structures, barns, outbuildings, other structures, and the timing of when the fire is likely to arrive.
- **Places at Risk**. These are locations identified on the maps that may not be physical assets but have other significance. These could include parks, reservoirs, cultural sites, campgrounds, or other locations.
- **Weather and fuels conditions**: Wind speed, direction, fuel moisture content.

Figure 23 below is an example of a FireSim output and report for the company's Yakima operating district on July 22, 2024. The area shaded red on the left side of the figure represents the current fire area, meaning the known perimeter of the fire at the time that simulation was run. The red line ahead of the fire area is a forecast of the estimated growth and spread of the fire.

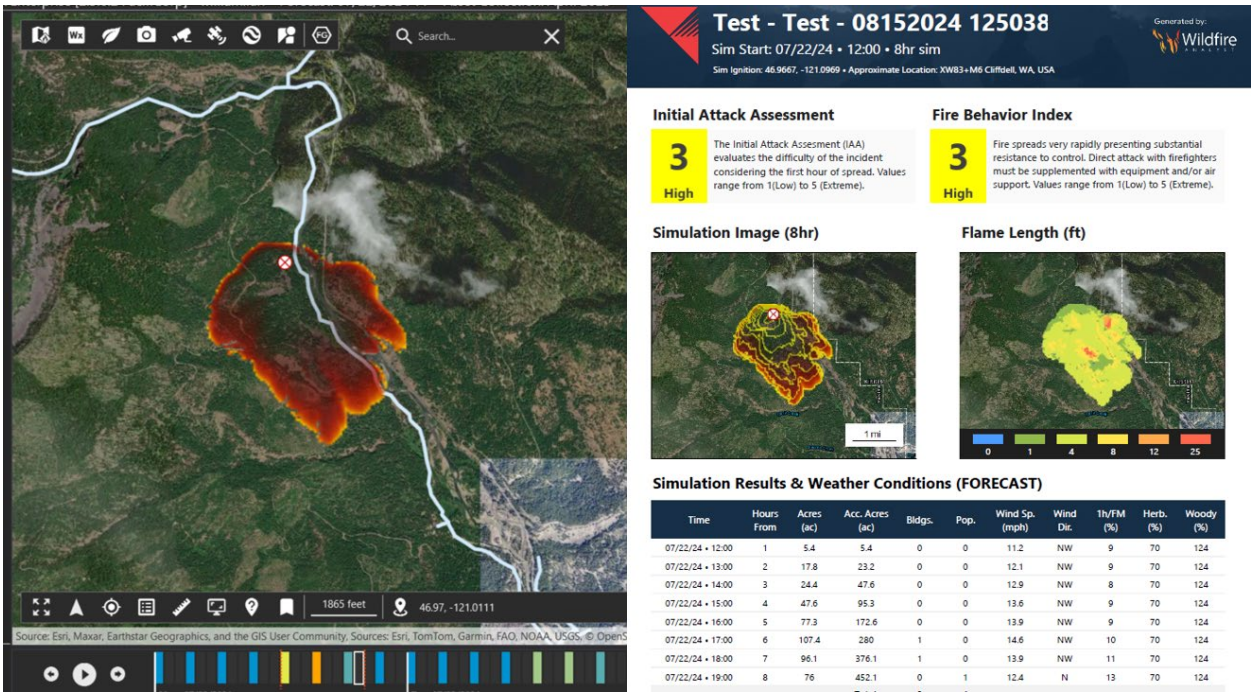


Figure 23: Example FireSim Output (left) and Report (right) from July 22, 2024

The shaded area in the graphic on the left shows the forecasted spread of the simulated fire over a period of 12 hours. In the companion FireSim report to the right, the rating of

the Initial Attack Index difficulty and Fire Behavior Index are highly influenced by fuels models and forecasted weather conditions. The image on the left shows the forecasted direction of the fire and the image on the right shows the forecasted flame length. Below the images is a table showing a time-based impact analysis of forecasted acres burned, population and buildings at risk and weather and fuel conditions. In sum, FireSim modeling is used to assess potential fire growth, spread, and damage to inform response efforts and decision-making by Pacific Power operations.

Fire Potential Index

Prior to the start of the 2023 fire season, Technosylva developed a complementary metric called the Fire Potential Index (FPI) for Pacific Power. The FPI is a supplementary metric that quantifies the potential for large or consequential wildfires based on weather, fuels, and terrain. In combination with the Modified Hot Dry Windy Index (mHDWI), the FPI is used to guide operational decision-making as it relates to wildfire risk and spread.

The following three inputs contribute to the final FPI score:

- **A Fuel Model Complex** that assesses the type of fuels and the time elapsed since the last fire to quantify how the fuels may affect fire behavior, type, and suppression difficulty. The model considers fire history, fuel growth, and fuel dryness over time in response to weather conditions to support accurate wildfire modeling.
- **Weather Conditions** that consist of a combination of wind gusts, temperatures, and fuel conditions. For wind driven risk events in particular, Pacific Power has identified some geographically driven patterns that correlate to higher risk.
- **Terrain Difficulty Index** which represents the level of geographical complexity to access an area. For instance, regarding fuels and terrain driven risk events, large areas of contiguous complex fuel and terrain in areas of limited or difficult access present the greatest risk when fuels are dry, and weather is hot and dry.

The scores from these inputs are then correlated to an FPI value and percentile level of fire risk, as depicted in Figure 24 below. An FPI value or FPI percentile can be used to

determine the FPI risk level. For instance, FPI values >37.5 or percentiles >99% indicate that fire risk is extremely high. In contrast, an FPI value <5 or percentile <60% indicate that fire risk is low.

FPI Category	FPI Values		FPI Percentiles
Very Low	<5		<60
Low	5-10		60-80
Moderate	10-13.5	OR	80-85
High	13.5-23		85-95
Very High	23-37.5		95-99
Extreme	> 37.5		>99

Figure 24: Fire Potential Index Scale

Modified Hot Dry Windy Index

In 2023, Pacific Power analyzed over 2,000 wildfires between 1991-2021 across the western United States that were known to be or widely suspected of being caused by power lines.[14] Based on its analysis of the ignitions, which included fire size and consequence, the company identified a correlation between utility ignition and a measure of fire weather based on temperature, relative humidity, wind, and fuels conditions. As a result, Pacific Power created an index called Modified Hot Dry Windy Index (mHDWI). The mHDWI combines the Energy Release Component (ERC) from fuels with weather data from the surface and low levels of the atmosphere from the Hot Dry Windy Index (HDWI)[15] to help determine what days are more likely to have conditions that could result in consequential wildfires. Based on this analysis, levels of risk (non-fire season, low, elevated, significant, and extreme) were assigned to certain combinations of environmental conditions that can be used to inform decision-making. Figure 25 visually

[14] States included in the analysis were Utah, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Washington, and Wyoming.

[15] United States Forest Service. "A Brief Introduction to the Hot Dry Windy Index."

depicts the historic analysis, correlation of utility ignitions to the mHDWI and wind gust percentiles and assigned levels of risk expressed using a five color-code scheme where a higher percentile of wind gusts and mHDWI correlated to a higher level of risk. In terms of the historic analysis, circles in blue reflect fire events where no structure damage or injuries occurred. The circles in red reflect events where one or more structure was damaged, or one or more injury occurred. As depicted in Figure 25, the events in red, where structure damage or injuries occurred, correspond to significant or extreme risk levels.

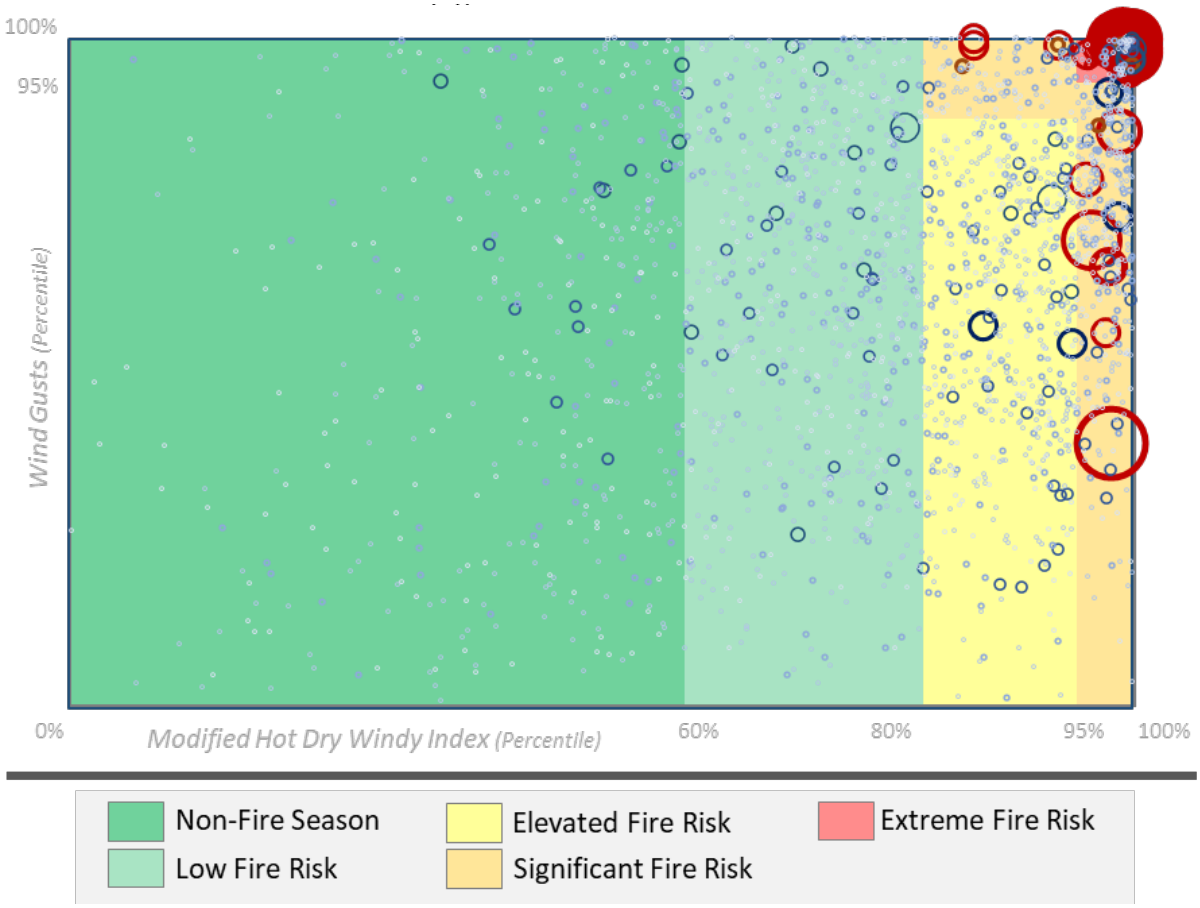


Figure 25: Correlation of Utility Ignitions to mHDWI and Wind Gust Percentiles to Determine Risk Levels

Application and Use

Pacific Power's meteorology team leverages the various analysis, model outputs, and indices described above to produce a district-based, weather-related system impact forecast. It combines the Fire Potential Index (FPI), the mHDWI and (where applicable) an analysis of the state of grass curing to produce a daily district-based, weather-related system impacts forecast that guides operational decision-making. Additionally, when moving into an elevated, significant, or extreme wildfire risk, meteorology also performs an additional review of fuels and fire weather forecasts and observations by using some or all the metrics and methods identified in Table 10 below.

Table 10: Additional Considerations for District Fire Risk

	Additional Considerations when Considering District Fire Risk
Current or Recent Wildfire Activity	Current or recent wildfire activity is an indication that the weather and fuels conditions will contribute to fire occurrence and spread.
Geographic Area Coordination Center (GACC) Products	Seven-Day Significant Wildfire Potential, Fuels & Fire Behavior Advisories, and other outlooks or discussion products.
National Weather Service Watches or Warnings	Fire Weather Watches, Red Flag Warnings, High Wind Warnings, and other products issued by the National Weather Service
Evaporative Demand Drought Index (EDDI)	EDDI identifies anomalous atmospheric evaporative demand and provides an early warning of increased wildfire risk.
Fire High Consequence Areas (FHCA) (Y/N)	Fire High Consequence Areas are pre-identified areas of elevated risk based on historical fires, climatology, geography, and populations
Fire Potential Index (FPI)	FPI quantifies the potential for large or consequential wildfires based on weather, fuels, and terrain.
Fuels Conditions (Grasses, Live Fuels, & Dead Fuels)	Observations of the local fuel conditions including 1, 10, 100, and 1000-hour dead fuel moisture, herbaceous and woody live fuel moisture, tree mortality, Energy Release Component, etc.
High Resolution Fire Weather Forecasts (WRF)	Pacific Power's two-kilometer WRF model produces a twice daily territory-wide forecast of fire weather and National Fire Danger Rating System (NFDRS) outputs across a 96-hour time horizon.
Severe Fire Danger Index	Publicly available index that uses two United States National Fire Danger Rating System indices that are related to fire intensity and spread potential.
Vapor Pressure Deficit (VPD) one month running average	Vapor Pressure Deficit is a measure of the atmospheric demand (thirst) for water. Values above the 94th percentile have been associated with large wildfires.

Wildfire Consequence Modeling (WFA-E)	Millions of wildfire simulations are performed daily to map out potential wildfire risk and consequence across the service territory.

If the forecast indicates that a significant fire weather event is possible within the forecast period, the meteorology team may leverage more resources to analyze concerns such as timing, strength, areas potentially impacted, and forecast confidence. These resources include tools like wildfire consequence modeling and high-resolution models to identify localized areas of greatest risk. Additionally, the meteorology team may collaborate with the local NWS office and/or the regional GACC if there is significant or extreme wildfire risk.

Significant fire potential forecasts issued by the GACC are also used as supplemental criteria to the mHDWI, an output of PacifiCorp's WRF model. In addition to the GACC forecast, the meteorology team closely monitors fuel and Energy Release Component (ERC) charts that are published by regional GACC coordination centers. Wildfire and traffic cameras are also used to assess fuel conditions. Additionally, the on-duty meteorologist also reviews the most recent publicly available weather forecast model trends and NWS products (forecast discussions, watches, warnings, advisories, etc.) to complete a more comprehensive analysis.

The risk level for each district is then determined by the on-duty meteorologist's evaluation of all the information gathered relative to the criteria listed in Figure 24. In addition to the system impact forecast matrix shown below, a written weather summary is prepared in which the on-duty meteorologist provides key forecast takeaways and additional detail regarding the strength and timing of any weather threats. This analysis is then combined with the team's district-based fire risk forecast to produce a complementary system impact forecast that is used to support decision-making related to implementation of the operational, short term risk mitigation programs and measures discussed in Section 7.7. An example of a district-based system impact forecast is depicted in Figure 26 below.

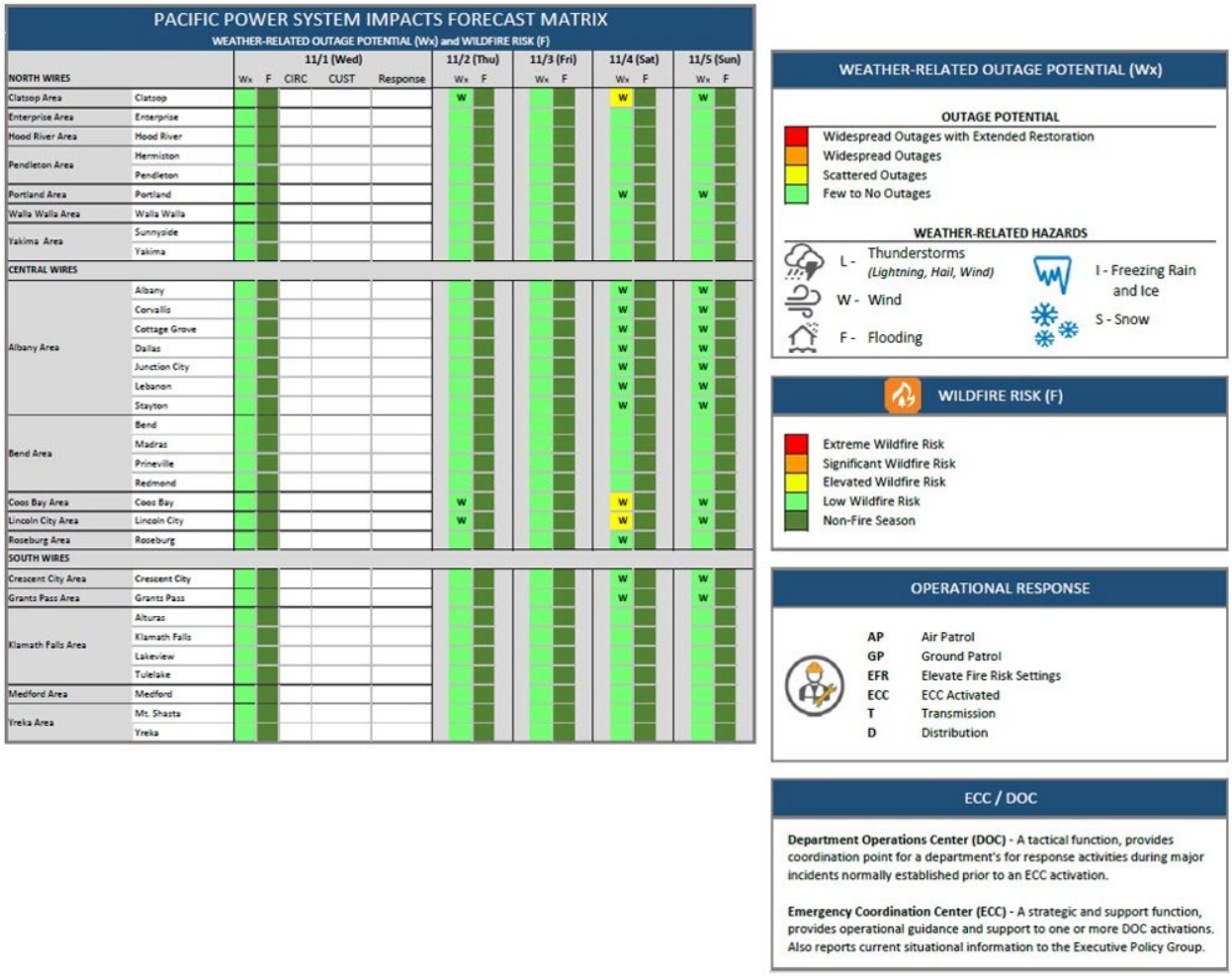


Figure 26: Example System Impacts Forecast

In sum, Pacific Power's meteorology team leverages a considerable number of resources to produce its forecast reports. These include internal and external data sources and metrics, like the company's Weather Research Forecast (WRF) model, Modified Hot Dry Windy Index (mHDWI), Fire Potential Index (FPI), Geographic Area Coordination Center (GACC) forecast reports, and publicly available weather trends.

The company recognizes that under certain conditions, wildfires can occur anywhere there is wildland vegetation that is dry and flammable, even in historically low-risk areas; therefore, the system impacts forecast covers the company's entire service territory. Typically, the forecast reports are produced on normal business days, and references to

"daily" refer to normal business days. During periods of extreme weather or wildfire risk, however, a forecast may be generated every day, including weekends and holidays.

Seasonal Forecast

To supplement the system impacts forecast, Pacific Power provided public safety partners with a 2023 district level seasonal summary that incorporated known areas of change for 2024. This information was provided to highlight climatology of interest in specific areas based on the 2023 experience and known areas of change in 2024. In turn, public safety partners were able to use this information for additional situational awareness. This information was intended only for Pacific Power's public safety partners only to avoid confusion for the public.

7.2 DESIGN AND CONSTRUCTION STANDARDS

CURRENT STRATEGY OVERVIEW

Pacific Power's electrical infrastructure is engineered, designed, and operated in a manner consistent with utilities best practice, enabling the delivery of safe, reliable power to all customers. When installing new assets as a part of corrective maintenance or growth projects, Pacific Power incorporates the latest technology and engineered solutions that have been assessed and proven to be effective. When conditions warrant, Pacific Power engages in strategic system hardening, like replacing or modifying existing assets and/ or utilizing a new design or technology to make the asset more resilient. With the growing risk of wildfires, the company supplements existing asset replacement projects with system hardening programs designed to mitigate operational risks associated with wildfire. System hardening programs are designed in reference to the equipment on the electrical network that could be involved in the ignition of a wildfire or be subject to an existing wildfire event. In general, system hardening programs attempt to reduce the occurrence of events involving the emission of sparks, or other forms of heat, from electrical facilities or reduce the impact of an existing wildfire on utility infrastructure. System hardening programs represent the greatest long-term mitigation tool available for use by electric utilities. The phasing and prioritization of such programs utilize risk modeling described in

Section 6.1 and assessments for program identification which are evaluated for implementation as a strategic hardening initiative.

No single system hardening program mitigates all wildfire risk related to all types of equipment. Individual programs address several factors, different circumstances, and different geographic areas. Each program described below, however, shares the common objective of reducing overall wildfire risk associated with the design and type of equipment used to construct electrical facilities. In prioritizing a particular design or equipment elements, these programs can also consider environmental factors impacting the magnitude of a wildfire. Extreme weather conditions such as dry and windy conditions, present an increased risk of wildfire ignitions and spread. Consequently, system hardening programs may specifically attempt to reduce the potential of an ignition event when it is dry and windy, by utilizing equipment that is less likely to release energy if failure or contact with foreign objects occur.

It must be emphasized that system hardening cannot prevent all ignitions, no matter how much is invested in the electrical network. Equipment does not always work perfectly and, even when manufactured and maintained properly, can fail; in addition, there are external forces and factors impacting equipment, including from third parties and natural conditions. Therefore, Pacific Power cannot guarantee that a spark or heat coming from equipment owned and operated by the company will never ignite a wildfire. Instead, the system hardening efforts seek to reduce the potential of an ignition associated with any electrical equipment by making investments with targeted system hardening programs.

Line Rebuild Program

Circuits within the FHCA constructed with bare overhead wire are evaluated for potential system hardening work. As a part of this program, certain overhead lines may either be moved, removed, retrofitted with more resilient materials such as covered conductor or non-wooden poles, or converted to underground. After completion of system hardening, such lines will be more tolerant to incidental contact, thereby reducing the risk of wildfire.

Covered Conductor

Historically, most distribution power lines in the United States, including in Pacific Power's service territory, were installed with bare overhead conductor. As the name "bare" suggests, the wire surface is uninsulated and exposed to the elements. For purposes of wildfire mitigation, covered conductor which can also be called tree wire or aerial spacer cable, has been installed to provide an insulating layer around the conductor.

The dominant characteristic of covered conductor is manufactured with multiple high-impact resistant extruded layers forming an insulation around stranded hard drawn conductor. The inherent design provides insulation for the energized metal conductor. As a comparison, covered conductor is like an extension power cord that might be used in a garage. To be clear, covered conductor is not insulated enough for people to directly handle an energized high voltage power line (as discussed below). The insulating layers reduce the risk of wildfire by minimizing the potential of vegetation or ground contact with the conductor.

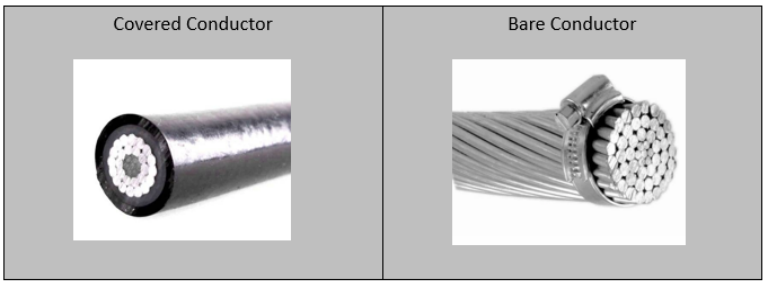


Figure 27: Covered Conductor Compared (left) to Bare Conductor (right) Images from VW Wire and Cable Product List

Variations in covered conductor products have been used in the industry for decades. Due to many operating constraints, however, use of covered conductor tended to be limited to locations with extremely dense vegetation where traditional vegetation management was not feasible or efficient. Recent technological developments have improved covered conductor products, reducing the operating constraints historically associated with the design. These advances have improved the durability of the product and reduced the impact of conductor thermal constraints. There are still logistical challenges with covered conductor. The wire is heavier, especially during heavy snow/ice loading, meaning that more and/or stronger poles may be required to support covered conductor.

The wildfire mitigation benefits of covered conductor are significant. As discussed in the risk assessment in Section 6.2, a disruption on the electrical network, a fault, can result in emission of a spark or heat that could be a potential source of ignition. Covered conductor reduces the potential of many kinds of faults. For example, contact from an object is a major category of real-world faults which can cause a spark. Whether it is a tree branch falling into a line and pushing two phases together or a Mylar balloon carried by the wind drifting into a line, contact with energized bare conductor can cause the emission of sparks. If those same objects contact covered conductor, the wire is insulated enough that there are no sparks. Likewise, many equipment failures are a wildfire risk because the equipment failure then allows a bare conductor to contact a grounded object. Consequently, covered conductor reduces the risk of ignition associated with most types of equipment failure. For example, if a cross arm breaks, the wire held up by the cross arm often falls to the ground (or low and out of position, so that the wire might be contacting vegetation on the ground or the pole itself). In those circumstances, a bare conductor can emit sparks (or heat) that can cause an ignition. The use of covered conductor, in those exact same circumstances, would almost certainly not lead to an ignition, because the insulation around the wire is sufficient to prevent any sparks and limit energy flow, even when there is contact with an object.

Covered conductor is especially well-suited to reduce the occurrence of faults linked with the worst wildfire events. Dry and windy conditions increase the wildfire risks. Wind is the primary driving force behind wildfire spread. At the same time, wind has distinct and negative impacts on a power line. The wind blows objects into lines; a strong wind can cause equipment failure; and even parallel lines slapping in the wind can cause sparks. Covered conductor specifically reduces the potential of an ignition event because covered conductor is especially effective at limiting the kinds of faults that occur when it is windy. Taken together, these substantial benefits warrant the use of covered conductor in areas with a high wildfire risk.

Underground

Pacific Power also continues to evaluate the potential to convert overhead lines to underground lines for the rebuild projects. The potential wildfire mitigation benefits are undeniable. While an underground design does not eliminate every ignition potential (i.e., because of above-ground junctions), it is the most effective design to reduce the risk of a utility-related ignition. Currently, the cost and operational constraints of underground construction often make it difficult to apply on a widespread basis. Nonetheless, some electric utilities are planning to employ an underground strategy more broadly.

Pacific Power is continuing to evaluate the use of underground design as part of the rebuild program on a project-by-project basis; and it uses under-grounding where practical. Through the design process, every rebuild project is assessed to determine whether sections of the rebuild should be completed with underground construction. Some communities and landowners may prefer, for aesthetic reasons, to pursue a higher cost underground alternative. Consistent with electric service regulations and company design standards, Pacific Power will collaborate with communities or individual landowners who are willing to pay the incremental cost and obtain the necessary legal entitlements for underground construction.

Non-Wooden Poles

Traditionally, overhead poles are replaced or reinforced within the service territory consistent with the NESC, company policies, and prudent utility practice. When a pole is identified for replacement, typically through routine inspections and testing, major weather events, or joint use accommodation projects, a new pole consistent with engineering specifications suitable for the intended use and design is installed in its place. Engineering specifications typically reflect the use of wooden poles which is consistent with prudent utility practice as they are considered safe and structurally sufficient to support overhead electrical facilities during standard operating conditions. However, the use of alternate non-wooden construction, such as steel or fiberglass, can provide additional structural resilience in high-risk locations during wildfire events and, therefore, aid in restoration efforts. For example, as a part of covered conductor installation, the strength of existing poles is evaluated. In many cases, the strength of existing poles may not be sufficient to accommodate the additional weight of covered conductor. In these instances, the existing wooden pole is upgraded to support the increased strength requirements and replaced with a non-wooden solution to remove the fuel that a wooden pole becomes in the event of a fire.

Figure 28: Distribution Fiberglass Poles

Line Rebuild Summary

At the time of document preparation, Pacific Power has successfully scoped, designed, and constructed 21 miles of covered conductor. Unlike many distribution construction projects, the use of covered conductor often requires a custom engineered design for each project. Additionally large-scale line rebuild projects, overhead and undergrounding, require long lead unique materials, specialized resources, and a larger volume of personnel

to construct. In addition, permitting can incrementally increase project timelines significantly. As a result, project timelines are usually longer than bare conductor projects, often requiring over a year for scoping and design phases and another year for material delivery, permitting, and deployment. Opportunities are assessed for project acceleration where possible.

In 2024, seven line miles will be construction complete by the end of the year. These specific projects are depicted in Figure 29.

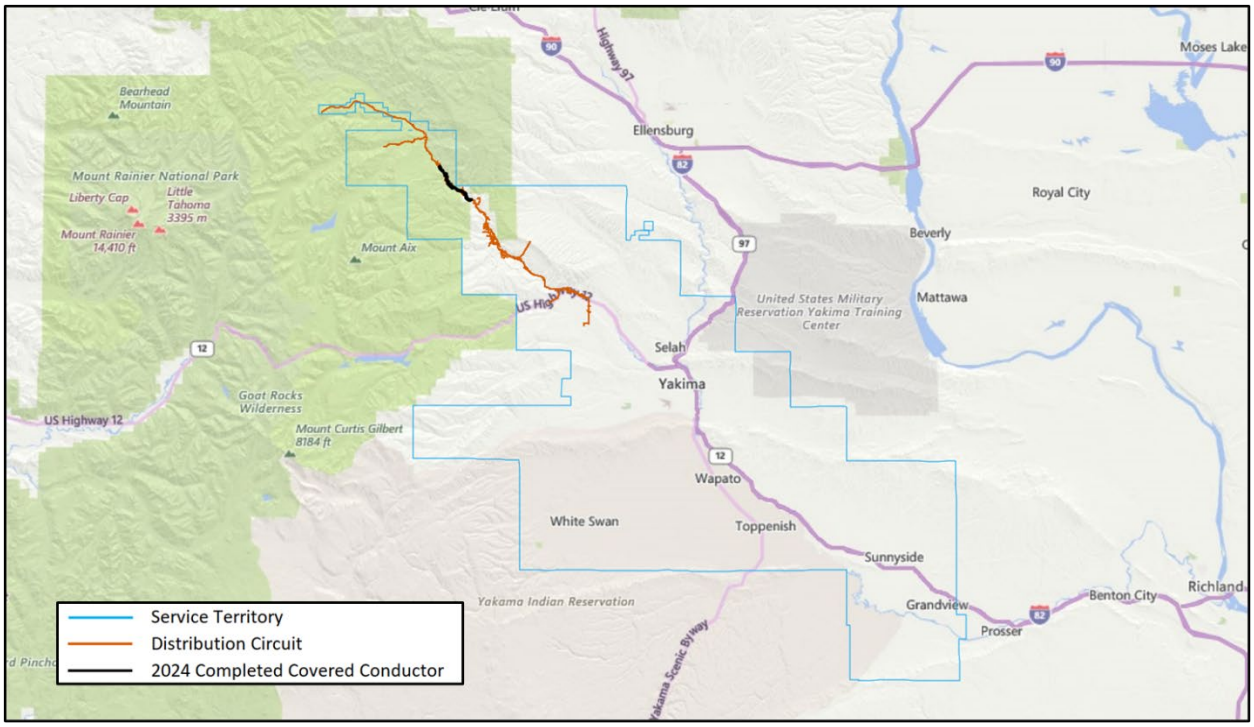


Figure 29: 2024 Planned Construction Projects

The 21 line-miles currently forecasted to complete construction in 2024, as shown in Figure 29 represents 0.65% of Pacific Power's overhead distribution lines throughout Washington, and as shown in Table 11 below has no additional line rebuilds planned in Washington. With the new risk modeling tools described in Section 6.1, Pacific Power will continue to evaluate if new line rebuilds are the most effective approach to reduce risk in specific areas.

Table 11: Line Rebuild Program Forecast

Project Component	2023 Actuals	2024	2025	2026	2027	2028	Total
Scoping and Design (miles)	0	0	0	0	0	0	**0**
Construction (miles)	14	7	0	0	0	0	**21**

Advanced System Protection and Control

Pacific Power is continuing to replace and upgrade electro-mechanical relays with microprocessor relays throughout the FHCA. Microprocessor relays provide multiple wildfire mitigation benefits. They can exercise programmed functions much faster than an electro-mechanical relay and, most importantly, the faster relay limits the length and magnitude of fault events. After a fault occurs, energy is released, posing a risk of ignition, until the fault is cleared. Reducing the duration of a fault event reduces the risk that the fault might result in a fire.

Additionally, microprocessor relays also allow for greater customization to address environmental conditions through a variety of settings and are better able to incorporate complex logic to execute specific operations. These functional features allow for the company to use more refined settings for application during periods of greater wildfire risk, as discussed in Section 7.6. As part of replacing an electro-mechanical relay, the associated circuit breaker or other line equipment may also be replaced, as appropriate to facilitate the functionality of a microprocessor relay.

Starting in 2020, Pacific Power initiated a plan to replace three relays and six reclosers over a multi-year period, with completion planned in 2024. Pacific Power upgraded a total of six devices in 2023 as a part of this program and is targeting completion of three more in 2024. Figure 30 and Figure 31 below provide visual representations of the existing program scope and overall progress.

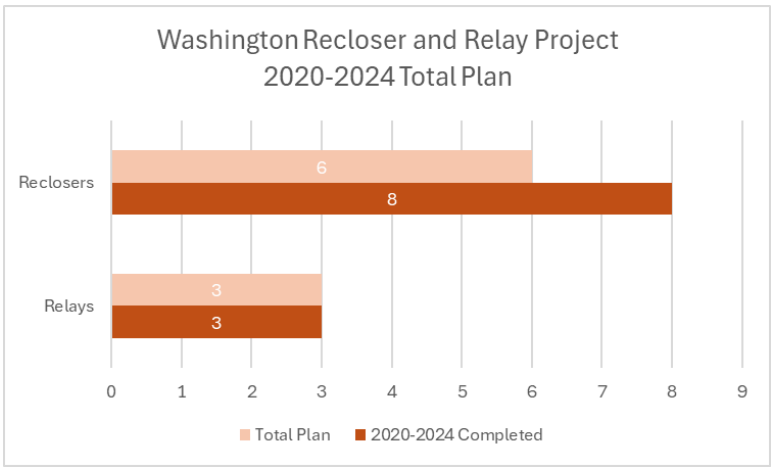


Figure 30: System Automation 2020-2026 Project Progress

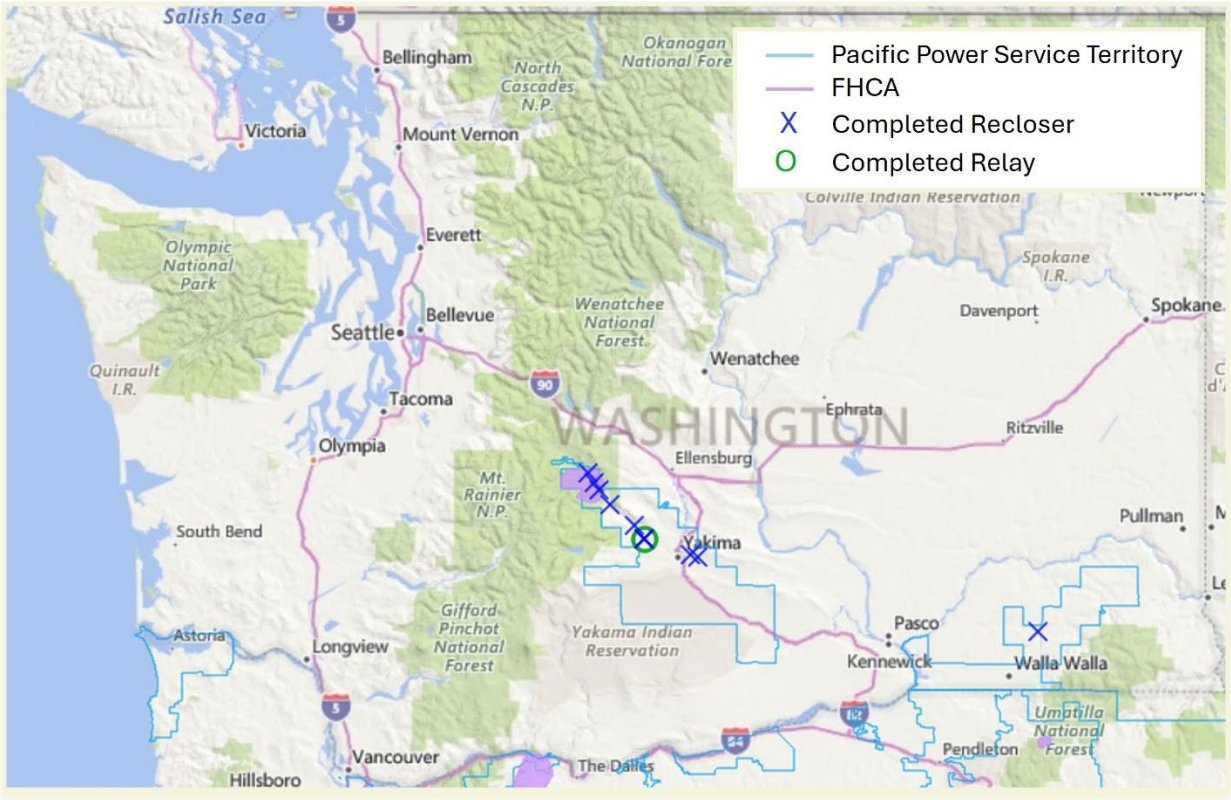


Figure 31: Washington Completed Reclosers and Relays Map

Fault Indicators

As described above, Pacific Power is continuing to replace and upgrade electro-mechanical relays with microprocessor relays throughout the FHCA and enable the use of more refined settings for application during periods of greater wildfire risk, discussed in detail in Section 4.1. To supplement these programs and mitigate the potential impacts to customers of these types of wildfire mitigation strategies to the greatest extent possible, 41 communicating fault indicators were installed in 2024. As Pacific Power continues to understand risk and implement mitigation programs such as ESS, the company may install additional communicating fault indicators as needed to continue balancing the impact to customers and wildfire mitigation.

PLANNED UPDATES

Pacific Power's design and construction standards constantly evolve due to various factors, including but not limited to system hardening, wildfire mitigation, industry best practices, new regulatory requirements, and internal feedback. Pacific Power's design and construction standards are continually updated to reflect the latest industry and regulatory requirements. The current published standards for design and construction meet all criteria for a sound and safe design.

Key anticipated updates include the potential introduction of SF6 (sulfur hexafluoride used in high voltage insulation designs) reduction requirements, the creation of standards for distribution automation, and updates to spacer cable used in covered conductor standards based on expanded field and engineering experience. Additional standards for protection and control may evolve to incorporate advanced fire risk detection technologies such as ESS and high-impedance fault detection (HIF). Transmission construction standards may expand to include conductors that support resiliency and renewable generation transfer.

7.3 FUEL & VEGETATION MANAGEMENT

CURRENT STRATEGY OVERVIEW

Pacific Power's vegetation management program is designed to reduce the potential of vegetation contact with power lines, which reduces the potential of an ignition originating from electrical facilities. While it is impossible to eliminate all vegetation contact, at least without radically altering the landscape near power lines, a primary objective of the vegetation management program is to minimize contact by addressing both grow-in and fall-in risks. Pacific Power manages a comprehensive vegetation management program throughout Pacific Power's territory. All the work performed in the core program provides wildfire mitigation, and the core program is designed to minimize the risk of vegetation contact. In addition, Pacific Power supplements the core program with heightened activities both inside and outside of the FHCA, further reducing the potential of vegetation contact in those areas.

REGULAR VEGETATION MANAGEMENT PROGRAM

Tall growing vegetation is pruned to maintain a safe distance between vegetation and power lines. Dead, dying, diseased, or otherwise impacted trees or vegetation, which are at an elevated risk of falling into a power line, are removed. Like other utilities, Pacific Power contracts with vegetation management service providers to perform the pruning and tree removal work for both transmission and distribution lines.

DISTRIBUTION

Distribution cycle maintenance in Washington is completed on a three-year cycle.

Vegetation near distribution facilities is pruned to maintain a clearance between conductors and vegetation. Vegetation work is performed on a regular cycle. When cycle work is planned, the circuit is inspected to identify vegetation that needs to be pruned because it may grow

too close to power lines before the next scheduled cycle work. When vegetation is identified for pruning, it is pruned to achieve minimum post-work clearance distances, designed to maintain a sufficient clearance until the next scheduled cycle work. Tree growth rates influence the minimum post-work clearance distance. For example, faster growing trees need a greater minimum post-work clearance to maintain required clearance throughout the cycle. Pacific Power also integrates spatial concepts to distinguish between side clearances, under clearances, and overhang clearances. The distances for the minimum post-work clearances used for routine cycle maintenance are listed in Table 12.

Figure 32: Hazard Tree Removal

Table 12: Normal Distribution Minimum Post-Work Vegetation Clearance Distances

	Slow Growing (<1 feet per year)	Moderate Growing (1-3 feet per year)	Fast Growing (> 3 feet per year)
Side Clearance (feet)	8	12	14
Under Clearance (feet)	10	14	16
Overhang Clearance (feet)	12	14	14

Pacific Power also removes hazard trees as part of distribution cycle work, to minimize fall-in risk. Hazard trees are dead, dying, diseased, deformed, or unstable trees which have a high probability of falling and contacting a substation, distribution conductor, transmission conductor, structure, guys, or other electric facility. High-risk trees pose a

safety and reliability risk and are, therefore, removed. Hazard trees are identified for removal in any vegetation inspection. To identify hazard trees, the inspector applies the best management practices set forth in ANSI A300 (Part 9).

Figure 33: High-Risk Tree Removal

Distribution cycle work also includes work designed to reduce future work volumes. Namely, volunteer saplings, or small trees that were not intentionally planted, are typically removed if they could eventually grow into a power line. From a long-term perspective, reducing unplanned vegetation growth helps mitigate wildfire risk by eliminating a potential vegetation contact long before it could ever occur.

TRANSMISSION

Vegetation management on transmission lines is also focused on maintaining clearances between vegetation and electrical facilities, which vary according to the voltage of the transmission line. At all times, Pacific Power must maintain the required minimum clearances set forth in FAC-003-05,[16] are referred to as the "Minimum Vegetation Clearance Distance" (MVCD). To determine whether work is needed, an action threshold distance is applied, meaning that work is required if vegetation has grown within the action threshold distance. When work is completed, vegetation is cleared, at a minimum, to a minimum post-work clearance distance. The applicable distances for various voltages of transmission lines are shown in Table 13.

[16] See Table 2 of FAC-003-04, at https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-003-4.pdf. Sourced September 5, 2024.

Table 13: Transmission Minimum Vegetation Clearance (in Feet) by Line Voltage

Minimum Clearance Type	500 kV	345 kV	230 kV	161 kV	138 kV	115 kV	69 kV	> 69 kV
Minimum Vegetation Clearance Distance (MVCD)	8.5	5.3	5.0	3.4	2.9	2.4	1.4	N/A
Action Thresholds	18.5	15.5	15.0	13.5	13.0	12.5	10.5	10
Minimum Clearances Following Work	50	40	30	30	30	30	25	20

In some circumstances, when local conditions and property rights allow, Pacific Power may use "Integrated Vegetation Management" (IVM) practices to manage vegetation in a manner designed to establish desired vegetation characteristics compatible with the electric facilities over the long-term and prevent growth from violating clearances. Under such an approach, Pacific Power may remove tree species that could potentially threaten clearance requirements, while encouraging low-growing cover vegetation, which would never bring about clearance issues.

Main grid transmission lines are inspected annually. Other transmission lines ("local" transmission) are inspected at least once every three years and as needed. Vegetation work is scheduled dependent on several local factors, consistent with industry standards and best management practices. When transmission lines are overbuilt, meaning they are located on the same poles as distribution lines, vegetation management work is completed on the normal distribution cycle schedule. Figure 34 below shows examples of the right of way clearances for transmission and distribution lines.

Figure 34: Example Right of Way Clearances for Transmission (left) and Distribution (right)

Post-Work Audits

After work is completed, whether on distribution or transmission, Pacific Power conducts post-audits (quality control reviews) to compare completed work against required specifications. Post-audits are conducted after the vegetation management work is completed at a location, typically as soon as reasonably practicable to arrange for prompt corrective work if any exceptions are identified. Pacific Power targets to perform a full post-work audit on distribution cycle and correction work associated with the distribution annual vegetation inspection program.

FHCA Vegetation Management

In addition to the regular vegetation maintenance program discussed above, Pacific Power's vegetation management specifically targets risk reduction in the FHCA with three distinct strategies. First, annual vegetation inspections are conducted by vegetation management on all lines in the FHCA, with correction work also completed based on inspection results. Second, increased minimum clearance distances are used for distribution cycle work completed in the FHCA. Third, annual pole clearing is conducted

within the FHCA on subject equipment poles which are defined as poles having switches, clamps, fuses, or other devices that could create a spark.

Annual FHCA Vegetation Inspection

Pacific Power annual vegetation inspection program is designed to identify and complete vegetation management work outside of the normal cycle maintenance program. If a circuit in the FHCA is not scheduled for cycle maintenance in a particular year, the circuit (or the portion of the circuit in the FHCA) will be scheduled for an annual vegetation inspection. An annual inspection is typically scheduled with the goal to complete the inspection prior to the height of fire season. An inspector conducting an annual inspection will identify vegetation likely to exceed minimum clearance requirements prior to the next scheduled inspection, including any hazard trees. After an annual inspection is completed, vegetation management work is promptly completed as reasonably practicable, including removal of any hazard trees.

Extended Clearances

Pacific Power uses increased minimum post-work clearance specifications distances for any distribution cycle work in the FHCA. In simple terms, more clearance equates to less chance of a contact. These minimum post-work clearance distances require pruning to at least 12 feet, in all directions and for all types of trees by increasing the minimum distance required at the time pruning is done, Pacific Power further minimizes the potential of vegetation contacting a power line at any time. The minimum clearance distances for the FHCA are listed in Table 14 below.

Table 14: Distribution Minimum Vegetation Clearance Specifications in the FHCA

	Slow Growing (<1 feet per year)	Moderate Growing (1-3 feet per year)	Fast Growing (>3 feet per year)
Side Clearance (feet)	12	12	14
Under Clearance (feet)	12	14	16
Overhang Clearance (feet)	12	14	14

Pole Clearing

Pacific Power vegetation management performs pole clearing on subject equipment poles located in the FHCA. Pole clearing involves removing all vegetation within a ten-foot radius cylinder (up to eight feet vertically) of clear space around a subject pole and applying herbicides and/or soil sterilant to prevent any vegetation regrowth (unless prohibited by law or the property owner), as illustrated in Figure 35.

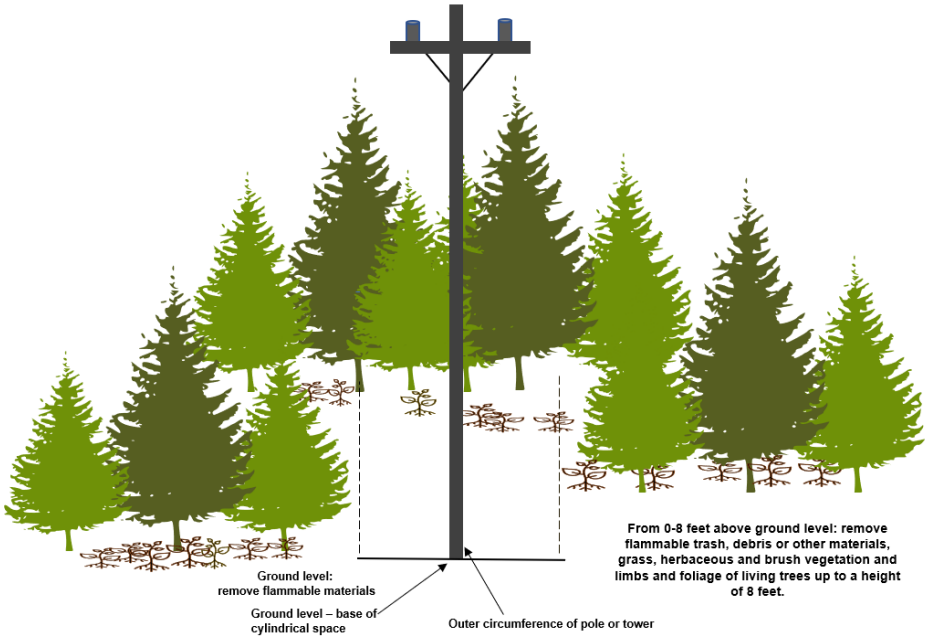


Figure 35: Pole Clearing Strategy

This strategy is distinct from the clearance and removal activities discussed above because it is not designed to prevent contact between vegetation and a power line. Instead, pole clearing is designed to remove fuels at the base of equipment poles, to reduce the risk of fire ignition if sparks are emitted from electrical equipment. Pole clearing as shown in the example in Figure 37 is performed on vegetation, generally that is not landscaped and maintained, in the FHCA around poles that have fuses, air switches, clamps, or other devices that could create sparks.

Figure 36: Pole Clearing at Pole Base

PLANNED UPDATES

While no specific changes in practices are anticipated in the next three years, Pacific Power's fuel and vegetation management practices may evolve due to various factors, including but not limited updated risk modeling, industry best practices, new regulatory requirements, and internal feedback.

7.4 ASSET INSPECTIONS AND RESPONSE

CURRENT STRATEGY OVERVIEW

Inspection and correction programs are tailored to identify conditions that could result in failure or a fault. These scenarios can arise when the infrastructure may no longer be able to operate as designed, including because of external factors such as weather conditions. Pacific Power performs inspections on a routine basis as dictated by company policies that align with regulatory requirements.

When an inspection is performed on an asset, inspectors use a predetermined list of condition codes and priority levels (defined below) to describe any noteworthy observations or potential noncompliance discovered during the inspection. Once recorded, the condition codes are used to establish the scope of and timeline for corrective action to maintain conformance with National Electric Safety Code (NESC) requirements and company policies. This process is designed to correct conditions while reducing impact to normal operations.

Key terms associated with Pacific Power's Inspections & Corrections Program are defined as follows:

- **Visual Assurance Inspection:** A brief visual inspection performed by viewing each facility from a vantage point allowing reasonable viewing access, which is intended to identify clearance violations, damage or defects to the transmission and distribution system, or other potential hazards or right-of-way-encroachments that

may endanger the public or adversely affect the integrity of the electric system, including items that could potentially cause a spark.

- **Detailed Inspection:** A careful visual inspection accomplished by visiting each structure, as well as inspecting spans between structures. This inspection is intended to identify potential nonconformance with the NESC or company standards, infringement by other utilities or individuals, defects, potential safety hazards, and deterioration of the facilities that need to be corrected to maintain reliable and safe service.
- **Pole Test & Treat:** An inspection of wood poles to identify decay, wear, or damage. Inspections may include pole-sounding, inspection hole drilling, and excavation to assess the pole condition at groundline to identify the need for any repair or replacement. When applicable, preservative treatment is also applied as part of this inspection.
- **Enhanced Inspection:** A supplemental inspection performed that exceeds the requirements of normal detailed or visual inspections; typically, a capture of infrared data.
- **Patrols:** Patrols are visual inspections performed in addition to scheduled inspection cycles during elevated fire risk conditions. Patrols can be performed prior or during significant weather events and are usually performed prior to re-energization of lines in FHCA during fire season. Patrolling can result in conditions being identified and corrected like scheduled inspections.
- **Condition:** The state of an asset regarding appearance, quality, or working order that can sometimes be used to identify potential impact to normal system operation or clearance, which is typically identified by an inspection.
- **Energy Release Risk Condition:** A type of condition that, under certain circumstances, can correlate to increase the risk of a fault event and potential release of energy at the location of the condition.
- **Condition Codes:** Predetermined list of codes for use by inspectors to efficiently capture and communicate observations and inform the scope of and timeline for potential corrective action.

- **Correction:** Scope of work required to remove a condition within a specified time frame.
- **Priority Level:** The level of risk assigned to the condition observed, as follows:
    - Imminent – imminent risk to safety or reliability
    - Priority A – risk of high potential impact to safety or reliability
    - Priority B – low or moderate risk to safety or reliability

Standard Inspection and Correction Programs

Pacific Power's asset inspection program involves three primary types of inspections: (1) visual assurance inspection; (2) detailed inspection, and (3) pole test and treat. Inspection cycles, which dictate the frequency of inspections, are set by Pacific Power asset management department. In general, visual assurance inspections are conducted more frequently, to quickly identify any obvious damage or defects that could affect safety or reliability. Detailed inspections have a more detailed scope of work, so they are performed less frequently than visual assurance inspections. The frequency of pole test and treat is based on the age of wood poles, and such inspections are typically scheduled in conjunction with certain detailed inspections. Regardless of the inspection type, any identified conditions are entered into a database for tracking purposes, which is Pacific Power's facility point inspection (FPI) system. For any condition identified, the inspector conducting the inspection will assign a condition code and the associated priority level. Corrections are then scheduled and completed within the correction timeframes established by Pacific Power asset management, as discussed below. While the same condition codes are used throughout Pacific Power's service territory, the timeframe for corrective action varies depending on location, wildfire risk area, and if the condition has the potential to release energy. In all cases, the timeline for corrections considers the priority level of any identified condition. Under the normal correction program, conditions are corrected within the following timeframes: an A priority condition which represents an "imminent" risk to safety or reliability is corrected immediately after discovery through repair, disconnection, or isolation; an A priority level condition is addressed within 30 days in the FHCA or 120 days outside the FHCA or if the energy release risk is listed as "NO"

in Procedure 069. Similarly, B priority conditions are addressed within one year within FHCA and 24 months outside. Please note that open non-FHCA B priority conditions are two years starting 1/1/2024. Although there is no compliance timeline, we plan to correct those B priority conditions found prior to 2024 over the coming years. See Table 15 below for correction timelines.

Table 15: Condition Correction Timelines

Priority	Energy Release Risk	Non-FHCA	FHCA
Imminent	N/A	Immediately	
A	Yes	120 Days	30 Days
B	Yes	2 Years	1 Year
A	No	120 Days	120 Days
B	No	2 Years	2 Years

FHCA Inspection and Correction Programs

The existing inspection and correction programs are effective at maintaining regulatory compliance and managing routine operational risk. They also mitigate wildfire risk by identifying and correcting conditions which, if uncorrected, could potentially ignite a fire. Pacific Power supplements the regular inspection and correction program in areas of elevated wildfire risk. Within the FHCA, the inspection and correction program include: (1) a fire threat classification for specific condition codes which correlate to a heightened risk of fire ignition (energy release risk); (2) more frequent inspections; and (3) expedited correction of any fire threat conditions.

Fire Threat Conditions

Certain conditions are classified as energy release risk conditions. As the name suggests, this category includes conditions which, under certain circumstances, can increase the risk of a fault event and potential release of energy at the location of the condition. Certain condition codes are categorically designated as an energy release risk. If a condition is designated as an energy release risk and the condition is located within the FHCA, the

condition is designated as a fire threat condition, which means that the condition is treated as a type which corresponds to a heightened risk of fire ignition. See Figure 37 below.

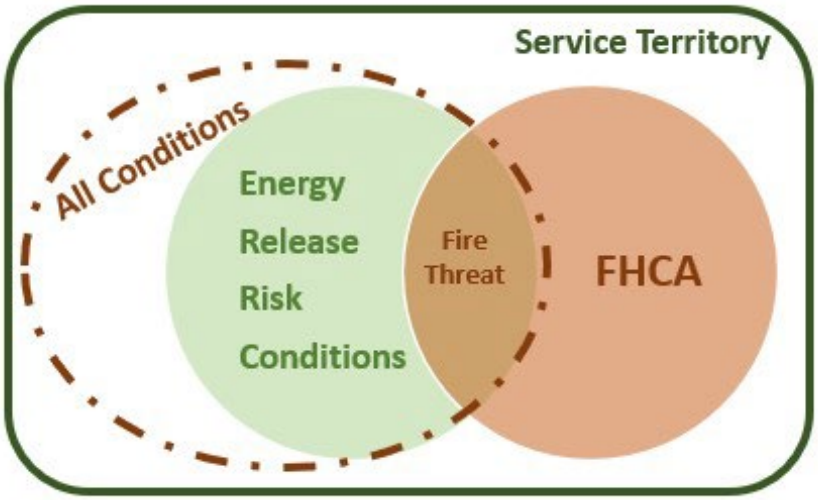


Figure 37: Fire Threat Condition Identification

Condition codes reflecting an appreciable risk of energy release are designated as energy release risk conditions. For example, a damaged or frayed primary conductor has a condition code CONDFRAY, which is designated as an energy release risk condition because the condition could eventually result in a release of energy under certain circumstances. CONDFRAY conditions identified within the FHCA are then designated as a fire threat condition because, due to escalation and environmental factors, the condition reflects a greater wildfire risk. In contrast, the observation of a missing or broken guy marker would result in the condition code GUYMARK, which is not designated as an energy release risk condition or a fire threat condition. Table 16 below describes the general types of energy release risk conditions designated by Pacific Power that, if located within the FHCA, correlate to a heightened risk of fire ignition, and then designated as fire threats.

Table 16: Energy Release Risk Conditions

Condition Type	Description
Broken / Missing Grounds	Broken or missing ground on a pole or equipment identified during visual or detail inspections.
Frayed Or Damaged Conductor	A conductor identified with damage/fraying on conductor strands because of visual or detail inspection
Infrared	Components or equipment that has a temperature rise that exceeds thresholds in company policy identified during enhanced inspection.
Improperly Installed Equipment/Hardware	Components or equipment that are installed or applied improperly and identified because of visual or detailed inspections.
Loose / Broken Anchors and Guys	Loose or broken anchor and guying identified on the pole as a result visual or detail inspections
Loose / Broken Communication Lashing Wires	One or more lashing wires (Telco, CATV, Fiber) that are broken or loose identified during visual or detail inspections
Loose / Damaged Equipment (Capacitors, Regulators, Etc.)	Loose or damaged equipment (capacitors, regulators, reclosers, etc.) identified on the pole because of visual or detail inspections
Loose Connections / Bolts / Hardware	A connection, bolt, or hardware component identified that is loose or missing from equipment or framing on the pole because of visual or detail inspections
Pole Replacement	A pole identified for replacement because of intrusive testing or visual inspection that does not meet strength requirements / safety factors
Primary and Secondary Conductor Clearances	Primary and secondary conductor clearances from the pole, buildings, or ground that do not meet minimum clearance requirements specified in the NESC identified during visual or detail inspections
Unstable Soils	Soil or backfill on a pole that is unstable or insufficient identified during visual or detail inspections.
Vegetation Clearances	Vegetation clearances from the pole, primary/secondary conductor, and climbing space that do not meet minimum clearance requirements specified in the NESC identified during visual or detail inspections

Inspection Frequency

Pacific Power conducts inspections on assets located within the FHCA more frequently than assets located outside of the FHCA. Consistent with industry best practices, inspections are the company's preferred mechanism to identify conditions. Pacific Power believes that performing more frequent inspections in the FHCA is a good mitigation strategy because more regular inspections should identify a certain percentage of conditions at an earlier stage. Pacific Power has no transmission lines inside the FHCA and focus its FHCA inspection on the distribution lines according to a five-year cycle for detailed inspections which alternate with annual visual assurance inspections. If conditions are identified at an earlier date, they will be corrected sooner. If a particular condition exists for a shorter amount of time, that condition is then less likely to cause a fault event or release energy, which could lead to a wildfire ignition.

Expedited Correction Time Periods

Pacific Power will further mitigate wildfire risk by reducing the time for correction of fire threat conditions. As expressed above, certain types of conditions have been identified as having characteristics associated with a heightened risk of wildfire potential. Identified violations, recorded as energy release risk conditions, are on an accelerated correction schedule within the FHCA, as they are considered a heightened risk to safety or reliability. Additionally, any condition classified as imminent, regardless of location or condition designation are corrected immediately. All other fire threat conditions that correlate to a heightened risk of wildfire are required to be corrected within 180 days. Correction timeframes for conditions are summarized in Table 17 below.

Table 17: Planned Correction Timeframes for Energy Release Conditions in the FHCA

Condition Priority	Correction Timeframes
Imminent Fire Threat conditions	Immediate
All other Fire Threat conditions within FHCA	Up to 180 days

FHCA Inspection and Correction Programs Reasoning

In straightforward terms, Pacific Power believes that performing more frequent inspections is a good mitigation strategy as more frequent inspections should, by nature, identify a certain percentage of conditions at an earlier stage than they would have otherwise been identified with less frequent inspections. If conditions are identified at an earlier date, they will be corrected at an earlier date. If a particular condition exists for a shorter amount of time, that condition is then less likely to cause a fault event or energy release, which could lead to a wildfire ignition.

When initiated in 2020, Pacific Power applied general operations judgement and leveraged experience in other states to decide that a five-year cycle for detailed inspections on distribution circuits and local transmission would be appropriate.

Since implementation of the new inspection frequencies in 2020, Pacific Power has identified more energy release conditions per year. By reducing the inspection cycle from a ten-year cycle to a five-year cycle the number of structures inspected on average has doubled. The number of conditions identified has also roughly doubled in comparison leading to the conclusion that the reduced inspection frequency has provided the identification of more conditions earlier then if the longer inspection cycle had remained.

In 2024, Pacific Power continues to perform inspections in the FHCA to mitigate wildfire risk. With the implementation of new risk assessments and data analytics tools, Pacific Power intends to evaluate how new datasets can inform inspection and correction programs. For example, if the data were to demonstrate that certain types of equipment correlated to greater risk, this information could inform inspection requirements, condition types, and condition correction priorities. Additionally, Pacific Power will continue collaborating with other IOUs and share information regarding inspection programs and outcomes.

Foreign Owned Fire Threat Conditions

As a part of the inspection programs described above where conditions are identified for correction, the company may also identify conditions associated with foreign owned equipment or poles that pose a potential heightened risk of wildfire. For example, a foreign owned anchor observed to be broken or loose can potentially impact the structural integrity of a pole supporting Pacific Power owned electrical equipment, posing a heightened risk of wildfire. Additionally, foreign owned lose or broken bolts and hardware necessary to secure foreign owned equipment to Pacific Power owned poles can also pose a heightened risk of wildfire. As a part of the same programs described above, these conditions are collected and categorized into Energy Release Risk conditions. When these Energy Release Risk conditions are located within the FHCA, these conditions are further categorized as fire threat conditions.

Notification

For such conditions on Pacific Power owned poles, notifications are communicated to attaching entities based upon Pacific Power attachment records. For such conditions on foreign owned poles, notifications are communicated to the foreign pole owners based upon Pacific Power's pole ownership records. These notifications include a description of the condition in question, location information, correction timeframes, and next steps available to Pacific Power in the event the notified party does not take action to correct the conditions.

Correction

Table 18 following describes the required timelines associated with correction of foreign owned asset related energy release conditions.

Table 18: Energy Release Condition Correction Timeframes for Foreign Owned Equipment & Assets

Condition Priority	Correction Timeframes
Imminent Energy Release conditions	Immediate
All other Energy Release conditions within FHCA	Up to 180 days

Pacific Power requires correction of energy release conditions associated with foreign owned equipment and assets consistent with these timeframes. Where the equipment or asset owner is unresponsive, Pacific Power may correct some conditions on behalf of the owner to mitigate wildfire risk and charge the pole owner or equipment owner a replacement fee of the total amount of work.

Enhanced Inspections

Pacific Power's enhanced inspection programs use alternate technologies such as infrared or drone imagery to supplement visual inspections. identify hot spots, equipment degradation, and potentially substandard connections. The infrared inspection may identify hot spots which could be a potential issue not visible through other inspection programs. The drone inspections can provide enhanced imagery, alternate perspectives, and the ability to package new technology (e.g., LiDAR, IR, and detailed imagery) to view assets and assess conditions.

Infrared Inspection Program

The transmission infrared inspection program is performed using a helicopter flying over designated lines within the service territory near peak loading intervals and is performed incrementally to existing inspection programs. Hot spots on power lines identified through infrared data gathering can be indicative of loose connections, deterioration, and/or potential future energy release locations. Therefore, identification and removal of hot spots on overhead transmission lines can reduce the potential for equipment failure and faults and mitigate the risk of ignition.

Identified Lines.

The company performs enhanced inspections annually on overhead transmission lines operating at 69kV or above that are within or are interconnected with the FHCA.

Inspection Intervals/Bundling

Different than patrol or detailed inspections, IR inspections are performed by a trained thermographer assisted by a qualified transmission line patrolman, where lines are "bundled" depending on peak loading events. In general, peak loading events are seasonal between winter, spring, and summer. Inspections performed during peak loading supports the highest probability of detecting abnormal thermal rises on equipment induced by system loading.

Corrective Action

Like other inspection and correction programs, Pacific Power assesses the condition severity and follows the general process as described above to set the correction timeframe. Findings are separated into three severity ranges depending on the measured temperature rise over anticipated conditions, a general assessment, and recommendation from the trained thermographer.

Infrared Inspection & Correction Reasoning

When Pacific Power implemented its enhanced infrared inspection program, the company applied general operations judgment and leveraged experience in other states to determine whether an annual enhanced inspection was warranted in areas with heightened wildfire risk.

The comparison image in Figure 38 below demonstrates the ability of infrared technology to detect a condition not visible in the photograph.

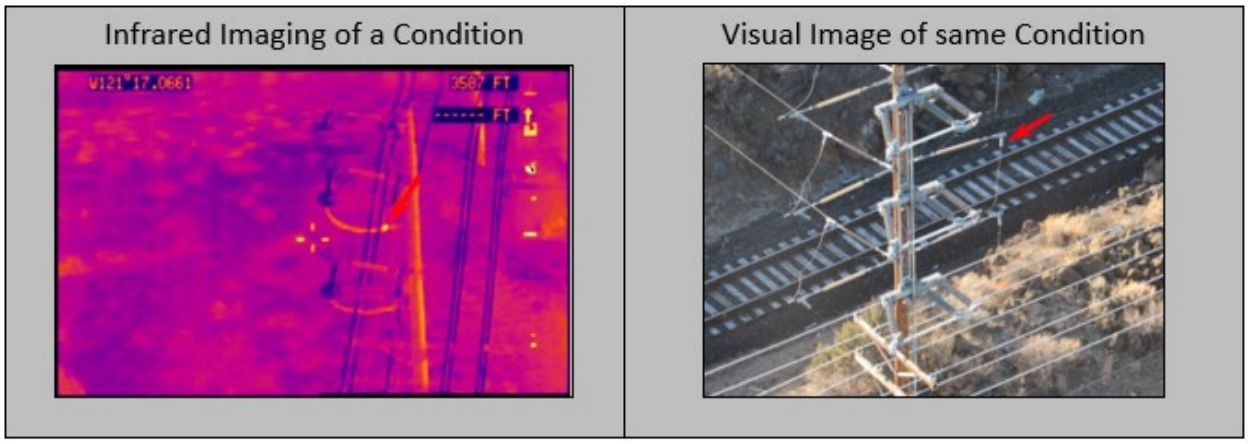


Figure 38: Infrared Inspection Compared to Visual Image

PLANNED UPDATES

Beginning in 2025, Pacific Power overhead line visual assurance inspection program is transitioning to an annual inspection for all lines in the service territory. Overhead visual assurance inspections are utilized to identify damages or defects to PacifiCorp's electric transmission and distribution facilities as well as potential hazards or right-of-way encroachments. The visual assurance inspections identify issues that may endanger the public or adversely affect system performance with additional attention is paid to identify conditions that could pose an energy release risk.

7.5 WORKFORCE TRAINING

CURRENT STRATEGY OVERVIEW

Pacific Power completes annual training for Transmission and Distribution (T&D) Operations employees and contractors on all elements of its WMP and associated internal operating policies and procedures. This is accomplished through a combination of instructor led training for frontline employees and the company has developed a suite of eBooks (electronic training manuals) and hands on iOS applications to simulate technology and more complex response scenarios. The electronic materials are available to any company employee on an ad hoc basis when or if they need to reference some aspects of the training in a field situation but are also utilized more comprehensively to assign and complete coursework for support roles and non-T&D departments.

Training encompasses the following topics:

- Situational Awareness
- Preventive and corrective maintenance practices
- Operational Work Practices
- Public Safety Power Shutoff (PSPS)

Planned Updates

In the next three years, Pacific Power's workforce training plans to undergo significant enhancements. Future training plans include iterating on both instructor-led and electronic training materials to ensure they remain current with updates to the Wildfire Mitigation Plan (WMP) and evolving internal policies and procedures.

7.6 RELAY AND RECLOSER PRACTICES

CURRENT STRATEGY OVERVIEW

Distribution line protective devices, such as line reclosers, are currently deployed on various distribution lines throughout Pacific Power's service territory. When a recloser trips due to an event on the system it will open and deenergizing the fault. After a short open interval, the recloser may be programmed to reenergize the line. If the fault initiating event was of a temporary nature the line will remain energized and service will be restored. If the event was of a permanent nature the recloser or an inline fuse will again interrupt the fault, and the line will remain deenergized until crews can be dispatched to investigate the interruption. Figure 39 below generally depicts one potential configuration of a distribution circuit with multiple line reclosers installed.

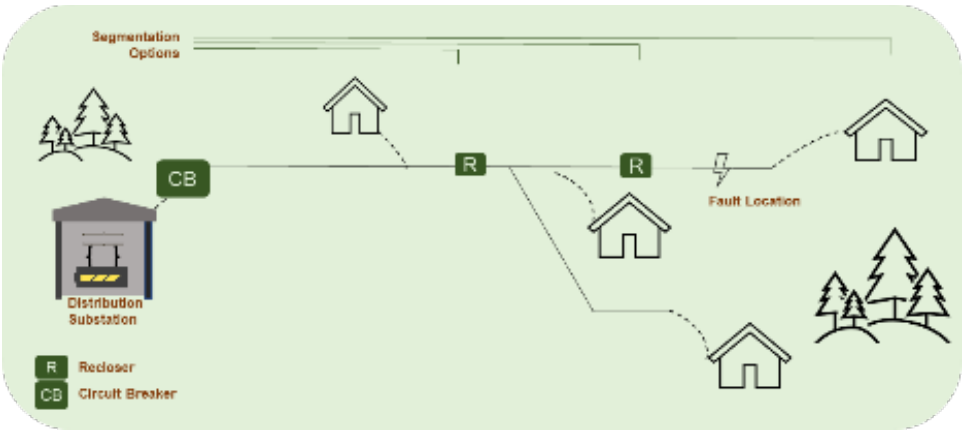


Figure 39: Example of Distribution Circuit with Multiple Reclosers

In general, recloser operation is beneficial because it reduces the number of sustained outages and improves customer reliability. The reclosing function, however, involves some risk of ignition due to possible reenergization of a persistent fault.

Pacific Power has implementing additional strategies on the distribution network, including the use of modified protection and control schemes, referred to as ESS. Such applications on the distribution network, can have an impact on customer reliability and Pacific Power is constantly working to balance the need for safety and reliability.

For example, the company does not disable reclosing seasonally. Instead, the daily risk assessment process and situational awareness reports described in Section 7.1 are leveraged to implement a risk-based approach to the use of ESS. When meteorological conditions indicate an increased risk of wildfire, an alternative operating mode may be used to increase protection element sensitivity and speed. Additionally, there is a reduction or elimination in the number of reclose attempts and an increase in the open interval time between trip and reclose operations. Pacific Power plans to continue evaluating situational awareness, customer outages and other information to further optimize the settings and implementation of ESS.

FAULT INDICATORS TO MITIGATE IMPACTS

The time it takes to patrol a line and the impact to customers can be significantly reduced when a fault location can be determined. Therefore, as described in Section 7.2 and depicted in Figure 40, the utility has installed fault indicators across its Washington service territory on circuits where ESS are more likely to be implemented, such as the FHCA and surrounding areas. When an outage occurs, regional operators and field personnel use these tools to narrow down potential fault locations, optimize the deployment of resources, and expedite restoration.

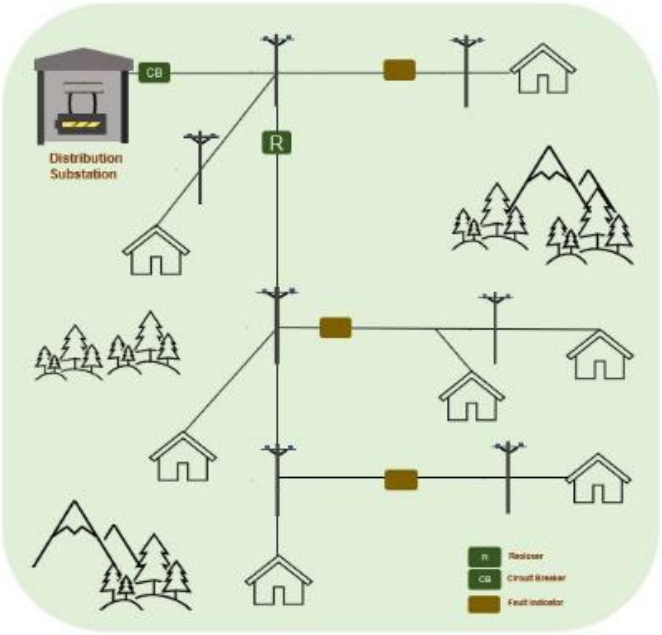


Figure 40: General Fault Indicator Configuration

ESS will continue to be implemented to reduce the wildfire risk associated with prolonged fault events while being strategic in the ESS implementation to balance the reliability impacts to customers.

Enhanced Safety Settings Experience

Pacific Power implements its ESS program across the company's service territory based on dynamic risk assessment forecasts and tracked outages with ESS enabled. ESS as discussed above, leverage a faster isolation scheme to reduce the amount of energy that may be released during an event, which can lead to more frequent outages. Each outage

that correlates to a device having ESS enabled is considered an event where risk was mitigated through the refined settings as the settings limit the amount of energy that may be released. The correlation between ESS being enabled and an outage being recorded does not mean the settings caused an outage. Outages can be caused by a variety of factors, not limited to, planned work and/or environmental factors. Figure 41 below depicts the number of outages with and without ESS enabled each month in 2024 compared to a five-year average.

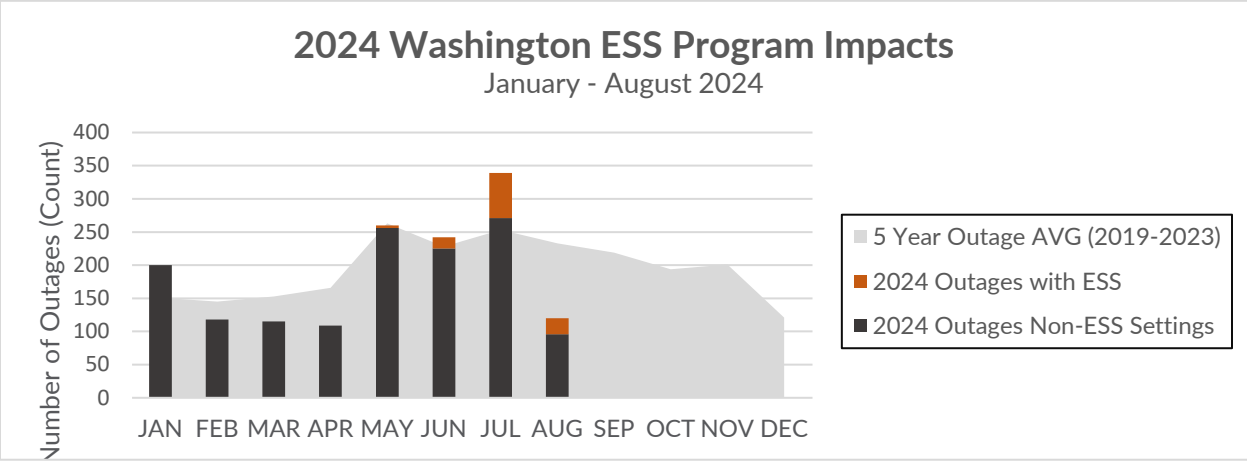


Figure 41: 2024 Enhanced Safety Settings Impact

As shown above, Pacific Power experienced approximately 113 ESS outages between May and August in 2024 during periods of elevated fire risk. This represents approximately 7% of the total outages experienced in 2024 and 12% of outages experienced from May to August 2024. Pacific Power continues to review ESS outages in conjunction with seasonal risk experienced in current years. This is to identify and prioritize short term mitigation projects for completion prior to future fire seasons to mitigate potential reliability impacts to customers associated with the ESS program. Examples of prioritized projects may include upgrading cutouts, fuses, crossarms, and insulators on circuits that experienced ESS outages in prior years.

RE-ENERGIZATION PRACTICES

In addition to enabling ESS as described above, Pacific Power also implements risk-based changes to re-energization practices, which can include patrols and line testing. Line testing can be an efficient tool to maintain customer reliability, like the use of reclosing, as described in the previous section. At the same time, line testing can potentially result in arcing or an emission of sparks if a fault has not yet cleared when the line is evaluated. To mitigate this risk (depending on local circumstances), an enhanced patrol that includes a patrol and step restoration of the entire circuit prior to line testing, may be required under certain conditions. This often results in an increase to restoration time and costs.

PLANNED UPDATES

While no specific changes in practices are anticipated in the next three years, Pacific Power's practices may evolve due to various factors, including but not limited updated risk modeling, industry best practices, new regulatory requirements, and internal feedback.

7.7 DE-ENERGIZATION / PUBLIC SAFETY POWER SHUTOFF

CURRENT STRATEGY OVERVIEW

Pacific Power may de-energize power lines as a preventative measure during periods of the greatest wildfire risk. This practice is referred to as "proactive de-energization" or is more commonly known as a "Public Safety Power Shutoff" or "PSPS." The decision to implement a PSPS is based on extreme weather and area conditions, including high wind speeds, low humidity, and critically dry fuels. A PSPS event is implemented as a temporary measure and is intended to supplement, not replace, existing wildfire mitigation strategies. The general process is depicted below in Figure 42.

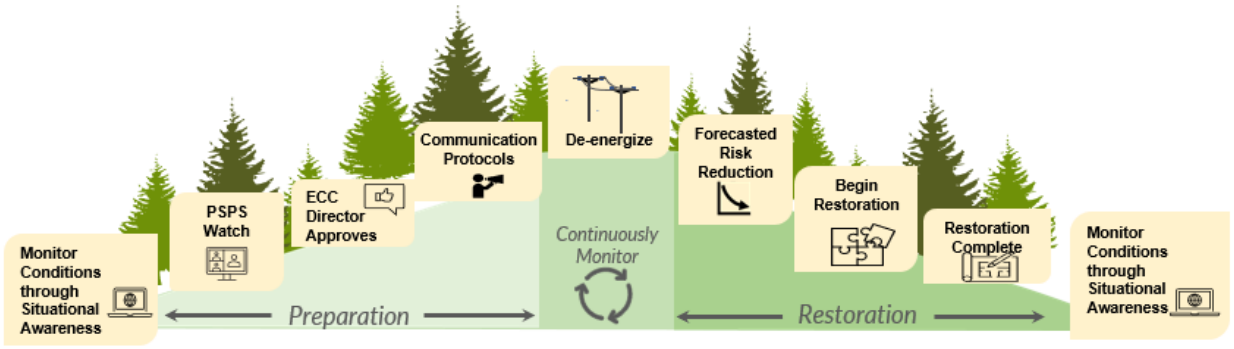


Figure 42: PSPS Overview

The following subsections describe Pacific Power's PSPS program in greater detail. Many of the program elements revolve around the successful execution of a PSPS event, while other elements bolster decision-making, mitigate the potential impact of a PSPS event, or help to avoid use of the tool altogether.

It is important to note that Pacific Power may de-energize for other types of events. For example, during emergencies, such as a significant water main break, the company may de-energize at the request of emergency response services, like the fire department. Pacific Power may also de-energize to complete planned construction work on a line to ensure the safety of construction personnel. These types of de-energizations are not considered PSPS.

Initiation

As discussed in Section 7.1, situational awareness reports are generated daily during business days by the meteorology department to aid in decision-making during periods of elevated risk. During periods of extreme risk like during PSPS assessment and activation, these reports are generated daily and on weekends. They identify where fuels (dead and live vegetation) are critically dry, where and when critical fire weather conditions are expected (gusty winds and low humidity), and where and when the weather is forecast to negatively impact system performance and reliability. It is the intersection of these triggers that result in the potential for a PSPS event, as shown below in Figure 43.

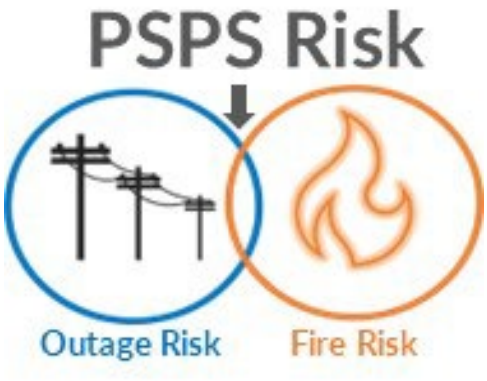


Figure 43: PSPS Assessment Methodology

As described previously, meteorology generates a daily weather briefing that includes a system impact forecast matrix for Pacific Power's entire service territory. This matrix includes a district-level forecast of weather-related outage potential and fire risk as described in detail in Section 7.1 of this document. When the district fire risk is significant or extreme, meteorology will use a combination of its WRF and outage models, Technosylva's WFA-E, and subject matter expertise to identify circuits of concern. Emergency management will also schedule a coordination meeting to discuss circuits of concern and to determine the appropriate operational response, up to and including PSPS. A PSPS is typically discussed and/or considered when the forecast matrix indicates a combination of wind-related outage potential and extreme wildfire risk in the same district.

De-Energization Watch Protocol

Pacific Power actively monitors real-time weather conditions. When real-time observations and weather forecasts indicate extreme risk, a de-energization watch protocol is initiated that includes:

- Activation of an Emergency Coordination Center (ECC).
- Communication with local public safety partners.
- Implementation of additional monitoring activities.

The ECC is staffed by a team of company representatives who assemble during de-energization warning and implementation to provide critical support to operational resources through the collection and analysis of data. The ECC makes decisions to maintain the safety and reliability of the transmission and distribution system and helps facilitate cross-organization coordination. The ECC is led by an ECC Executive and has the support of a safety officer, a joint information team, emergency management, meteorology, and operational stakeholders representing field operations, system operations, vegetation management, engineering, and other specialties.

Upon activation of the ECC, Pacific Power emergency management gathers input from public safety partners to properly characterize and consider impacts to local communities. The ECC also sends advance notifications to the operators of pre-identified critical facilities, partner utilities, and adjacent local public safety partners. The company's customer service team then coordinates through the ECC to confirm customer lists for the subject area to develop a communication plan for customers that may be impacted.
Local assessments of lines may occur during a PSPS watch by way of various methods depending on the accessibility of locations, the reliability of the line, area conditions and other factors. The ECC reviews several factors and may deploy crews to perform these assessments in the field or remotely monitor from the operations center.

PSPS is a temporary mitigation measure. Consistent with existing regulations and the general mandate to operate the electrical system safely, the ECC has discretion to determine when (or if) a PSPS is appropriate. Given the potential impacts to customers and communities, the ECC Executive will consider all available information, including real-time feedback and other considerations from other ECC participants, public safety partners, and field observers, to determine whether a PSPS should be executed. Additionally, the ECC Executive may decide to further refine the PSPS areas identified.

De-Energization Protocol

When a PSPS event is initiated, an action plan is prepared to include affected location details, event timing and projected event duration. Once approved by the ECC Executive, an internal notification is sent to initiate appropriate communications to customers, critical facilities, public safety partners, regulatory organizations, large industrial customers, and required field and system operations team members. If needed, coordination with public safety partners for the opening of community resource centers (CRCs) begins and additional field resources are deployed or staged accordingly. Conditions are continually monitored during the event; when they no longer meet the requirement for a PSPS, the lines are patrolled and assessed for damage to begin the process of re-energization.

Communication Protocol

Pacific Power recognizes that adequate and clear communication is a key component to the successful implementation of a PSPS event, and the company will always strive to provide as much notice as practical to impacted parties. Nonetheless, PSPS decisions are made based on weather forecasts, and weather can change quickly or dramatically with little forewarning. This requires some degree of balancing in communication protocols and, accordingly, advanced notice may not always be possible.

Public Safety Partners and Critical Facilities

Public safety partners, like dispatch centers, emergency management, fire agencies, and law enforcement agencies, are an essential component to any communication plan during an event. They provide essential insight into the geographic and cultural demographics of affected areas to advise on protocols that address limited broadband access, languages, medical needs, and vision or hearing impairment. Pacific Power's initial communication with local public safety agencies starts as early as possible when weather forecasts indicate a PSPS event is possible. Typically, this occurs during a PSPS watch to allow them to prepare for operational impacts internally and mitigate any community-wide impacts that may occur because of de-energization. Collaboration with these agencies also

supports impact reduction of de-energization and communication of information regarding the impacted areas and expected event duration.

Upon activation of the ECC, emergency management coordinates, as appropriate, with local, county, tribal, and state emergency management to provide information through the assigned representative of the agency. ECC-assigned staff provide event details including estimated timing and event duration, potential customer impacts, and GIS shapefiles that include PSPS boundaries for areas subject to de-energization. Throughout a PSPS event, Pacific Power's emergency management group maintains regular communication with local, regional, and state emergency responders, mutual assistance groups, tribal emergency managers, the state EOC through ESF-12, and other entities as applicable. The company will also support efforts to send out emergency alerts and status updates, as appropriate, until restoration efforts begin.

Critical facilities are particularly vulnerable to the impact of PSPS events. Pacific Power's emergency management maintains a list of critical facilities within its service territory. Upon activation of an ECC, they will work to establish and maintain direct contact with these facilities' emergency points of contact to provide projected PSPS timing, estimated duration, regular status updates, and restoration notifications. Additionally, the company will provide, where possible, GIS shapefiles to communications facility operators in potentially impacted areas.

During a PSPS event, Pacific Power recognizes the importance of providing additional geographic details of the affected area to its public safety partners. In response, it has developed a secure web-based public safety partner portal. The public safety partner portal is a secure, map-centric application that hosts information regarding critical facilities and infrastructure like Geographic Information System (GIS) files for location, primary/secondary contact information, and known backup generation capabilities. An example screenshot from the Public Safety Partner Portal is shown in Figure 44 below.

The circles in the map indicate the location of critical facilities that could be impacted by a PSPS.

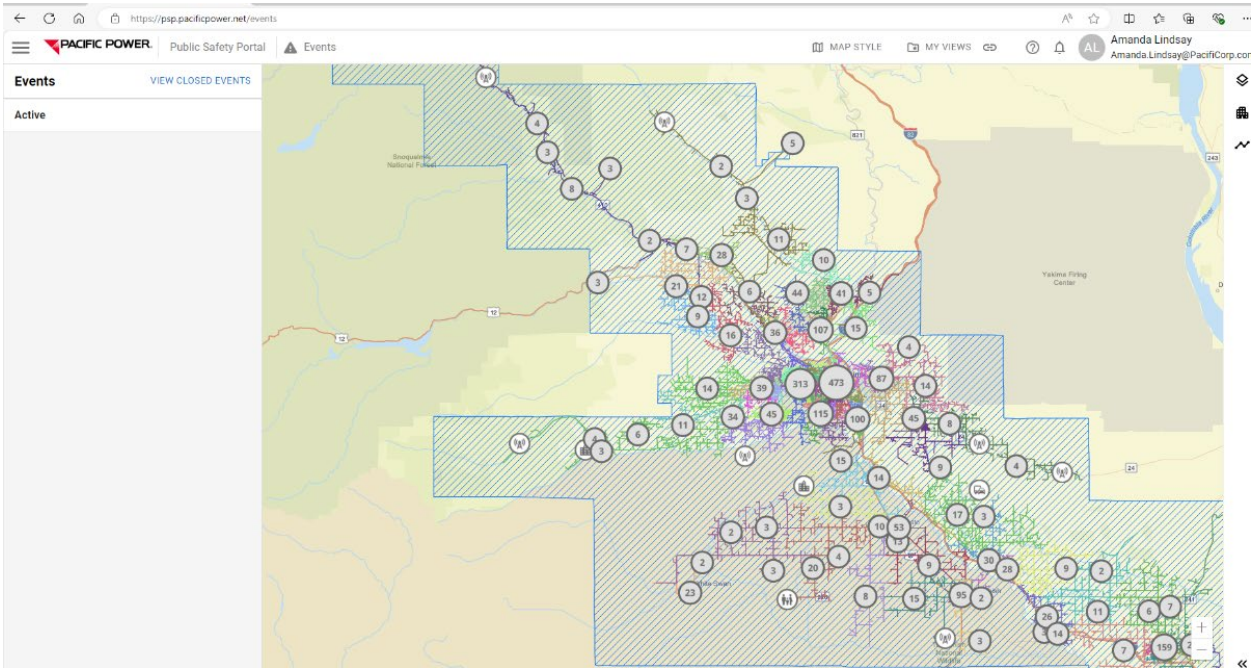


Figure 44: Screenshot of the Public Safety Partner Portal

Customers

The Pacific Power PSPS webpage[17] provides timely and detailed information regarding potential and actual PSPS events for a specific location. The website has the capacity to manage site traffic under extreme demand because it has implemented bandwidth to a level that will allow for increased customer access while maintaining site integrity. The PSPS webpage provides visitors with an interactive map where users can input an address to see if a residence or business could be affected by a PSPS. When a potential PSPS is announced, the map is updated to show the geographic boundaries of potentially impacted areas. The boundaries are colored yellow, or "Watch" prior to de-energization,

[17] See https://www.pacificpower.net/psps.

then red or “Event” once de-energization begins. The website is easily accessible by mobile device and a Pacific Power ‘app’ that enables customer access to real-time outage updates and information is available for mobile devices.

Customers with specific language needs can also contact the company’s customer care number and request to speak with an agent that speaks their preferred language. Pacific Power employs Spanish-speaking customer care professionals and contracts with a 24/7 service that provides interpretation in real-time over the phone in multiple languages and dialects. Customer care agents have received training on wildfire safety and preparedness, and PSPS-related information to facilitate a conversation between the customer and interpretive service to ensure the customer receives the wildfire safety and preparedness, or PSPS-related information they are looking for. Additional information on the company’s customer wildfire safety and preparedness engagement strategy can be found in Section 8 of this document.

Pacific Power’s communications plan also includes procedures that ensure appropriate notifications and additional if time allows, to medically vulnerable customers. The utility leverages insight from its partners and customer records to pre-identify these customers. Upon activation of the ECC, customer care agents will attempt, time and circumstances allowing, to make personal outbound calls to known vulnerable customers.

The communication plan allows for informational updates to customers using multiple methods of communication. Direct customer notifications are made by way of outbound calls, text messaging, and email notifications. Customers will receive an outbound call, when possible, within:

- 48 hours of a potential PSPS event,
- 24 hours prior to de-energization,
- 1 to 4 hours prior to de-energization,
- At the commencement of the event,
- At the beginning of the re-energization process, and

- Upon the event conclusion.

Additional methods of notification include the use of social media sites including Facebook and X (formerly Twitter). Upon activation of the ECC, and following appropriate customer notifications, the public information officer will distribute press releases to news outlets that serve the affected areas. Regular updates across all available channels are distributed as they are available, and the public information officer will manage press inquiries as appropriate.

In making the customer notifications described above, Pacific Power provides a statement with:

- A description of the pending PSPS execution that includes information about the estimated date, time, and duration of the event.
- A 24-hour means of contact for customer inquiries, and links to pertinent PSPS websites.
- Event status updates, and re-energization expectation notices.

Notification Timing

When a potential PSPS event is forecasted, customers and local government representatives will be provided with advanced notice; if feasible, notifications will begin 72 or 48 hours in advance of a potential de-energization event. If this is not possible due to rapidly changing weather conditions, or other emerging circumstances, the notification process will begin as soon as possible. Additional notice will be provided at appropriate times, as conditions are monitored and depending on the circumstances. There is some degree of balancing required because customers want ample advance notice of an actual de-energization. At the same time, recognizing that weather forecasts are inherently speculative, it is possible to overburden customers with notices of potential PSPS events that never materialize, especially given that the company's fundamental business objective is to keep the grid energized except under the most extreme conditions.

Table 19 below illustrates Pacific Power's planned PSPS notification timeline for notifications sent to customers, public safety partners and operators of critical facilities. Timelines may be reduced if rapidly changing conditions do not allow for advance notification. In these cases, the company will make all notifications as promptly as possible.

Table 19: PSPS Notification Timeline Summary

PSPS Notification Timeline and Summary	
48-72 Hours Prior	De-energization Warning to Public Safety Partners & Operators of Critical Facilities
24-48 Hours Prior	De-energization Warning
1-4 Hours Prior	De-energization Imminent / Begins
Re-energization Begins	Re-energization Begins
Re-energization Completed	Re-energization Completed
Cancellation of Event	De-energization Event Canceled *(if needed)*
Status Updates	Every 24 hours during event *(if needed)*

Community Resource Centers

Pacific Power is aware of the potential impacts of PSPS events to all customers, businesses, and communities and plans to provide community support through Community Resource Centers (CRCs). By taking advantage of established relationships with community and public safety partners, the company may activate a CRC in an impacted area, to give community members and businesses access to items that may be affected by the interruption of electrical service. The services, which vary across CRCs, may include:

- Potable water,
- Shelter from hazardous environment,
- Air conditioning,
- Seating and tables,
- Restroom facilities,
- Refrigeration for medicine and/or baby needs,
- Interior and area lighting,
- On-site security,

- Communications including internet, Wi-Fi, cellular access, and satellite phone,
- Television and radio,
- On-site medical support (where available),
- Charging stations for cellular devices, radios, and computers.

CRCs adhere to all existing local, county, state and federal public health orders and will have personal protective equipment on site and available to customers if needed.

With the elimination of PSPS zones, Pacific Power has concluded that pre-identification of CRCs is not feasible. Instead, CRC activation timing, protocols and locations are coordinated with area emergency management and community-based organizations during emergency management workshops and tabletop exercises. The company also works with local emergency management and community-based organizations to stand up CRCs when they are needed. Nonetheless, depending on the needs of its public safety partners as identified in workshops, tabletop exercises, and other events (described at length in Section 5.2, CRC locations may be pre-identified.

When it is necessary to activate CRCs in locations that have not been pre-identified and/or are temporary, siting decisions are made with close coordination between Pacific Power and its public safety partners. Depending on the location of the PSPS and community needs, a temporary CRC could be activated in a location that has not been pre-identified. If an adequate physical facility does not exist, Pacific Power may engage a logistics vendor to stand up a CRC in a large self-contained tent to provide resources. Additionally, CRCs may also be collocated with county services like shelters or points of dispensing (PODs).

Figure 45: Example of a Temporary CRC

PLANNED UPDATES

Pacific Power does not expect to make changes to its Public Safety Power Shutoff (PSPS) program in the next three years.

8 CURRENT COMMUNITY OUTREACH AND PUBLIC AWARENESS -

8.1 CURRENT COMMUNITY OUTREACH AND PUBLIC AWARENESS PROGRAM

Pacific Power employs a multifaceted approach to support community engagement and outreach with the goal of providing clear, actionable, and timely information to customers, community stakeholders and regulators. Over the past several years, the company has engaged customers and the general public throughout its service area on wildfire safety and preparedness through a variety of tactics including webinars, targeted paid advertising campaigns, informational videos featuring company subject matter experts, press engagement, website content, infographics, social media updates, and among other communication channels. Pacific Power maintains an awareness and engagement strategy that is flexible and allows for dynamic tactics, informed by customer survey data, community stakeholder input and community needs. Overall, Pacific Power's plan includes information that can be heard, watched, and read in a variety of ways with the goal of accessibility and understandability.

Awareness and Engagement Campaign

For the past several years, the company has deployed some form of paid media campaign to raise awareness and action on wildfire safety and preparedness. included radio spots, digital over-the-top (OTT) pre-roll video ads (Hulu, Pluto TV, Roku, etc.), digital audio ads (Spotify, Pandora, etc.), display ads (search and web banners), and social media static and video ads (Facebook, Instagram, and YouTube) – each delivered in English and Spanish. Metropolitan Statistical Areas in Washington targeted through the paid campaign focusing on five main topics: personal preparedness and safety, PSPS, emergency de-energization, Enhanced Safety Settings (ESS) and grid hardening/investments. A breakdown of media type, target area, and language are shown in Table 20 below.

Table 20: 2023 Media Campaign Summary

Media Type	Target Area	Language
Pre-Roll	Walla Walla Yakima	English, Spanish
Social Media	Walla Walla Yakima	English, Spanish

The call-to-action in each campaign vertical compelled the audience to visit Pacific Power's wildfire safety and preparedness online resources. In 2023, the various ads across multiple channels collectively received 885,082 impressions and 1,325 clicks to company-hosted wildfire safety and preparedness informational webpages. There have been 270,651 impressions and 875 clicks as of July 31, 2024.

Engaging with local and regional news media outlets is another key component of the awareness and engagement campaign. Each year prior to fire season, Pacific Power distributes updated wildfire safety information and information on the company's WMP to press outlets across its service area as an additional low-cost outreach method. During the 2023 wildfire season, company wildfire safety and mitigation subject matter experts provided 11 interviews on wildfire mitigation and response. Ten wildfire mitigation interviews have been done in 2024 by the end of Q3.

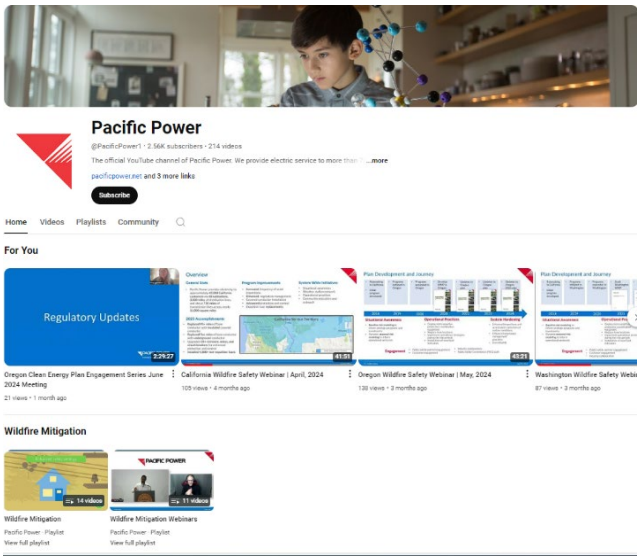


Figure 46: Awareness and Engagement Campaign

In addition to paid and earned (news media engagement) awareness and engagement strategies, Pacific Power also communicates to customers about wildfire safety and preparedness through website and social media updates, emails, texts, automated phone calls are also an additional low cost means to reach customers.

Support Collateral

Pacific Power has developed several print and digital wildfire safety and preparedness collateral pieces including factsheets, flyers, brochures, infographics, and safety checklists. These items are accessible through the company wildfire safety webpages and are utilized at public meetings and community events to describe PSPS (its necessity, considerations

and what to expect throughout the event, etc.), and to provide general information on emergency kits/plans and preparation checklists, among other topics.

The Pacific Power communications team updates these materials annually to ensure the information is relevant, accessible, and actionable. Spanish versions of each piece of collateral are also made available. Some examples of support collateral are shown in Figure 47: Sample Support Collateral.

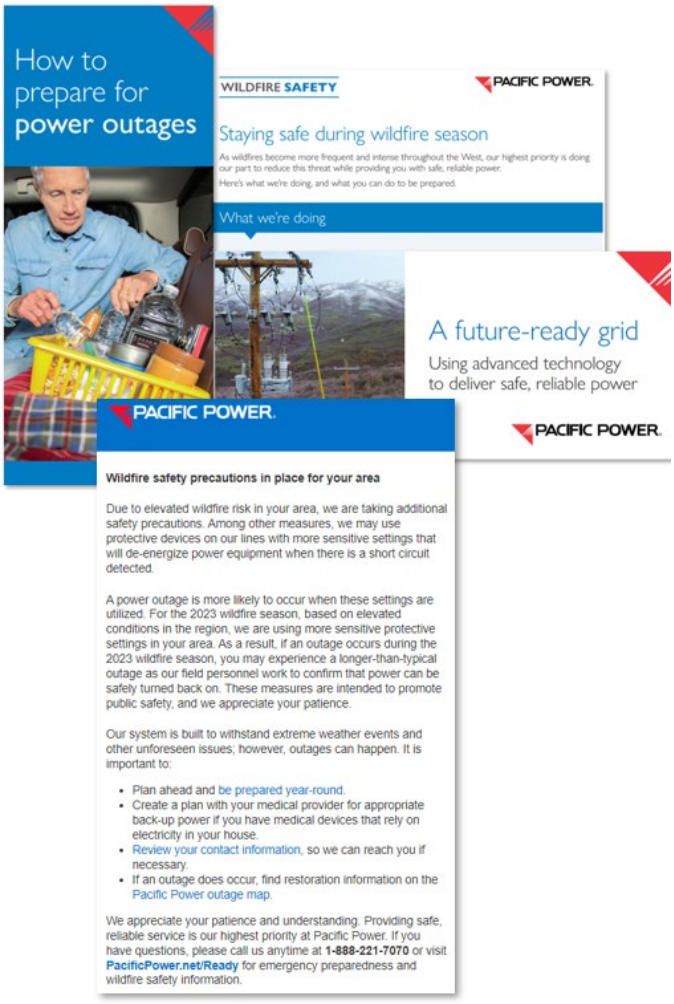


Figure 47: Sample Support Collateral

Additionally, the company engages customers as needed via direct communications like email. For instance, beginning in 2023, during periods of elevated risk, modified operational settings (described in greater detail in Section 7.6 may be implemented in some areas. Customers that are impacted by implementation of these settings are sent a notification via email or paper letter, depending on their communication preferences, when this occurs. Pacific Power strives to align on its communication regarding modified operational settings with its peer utilities.

Customer Service Training

Customer care agents have received training on wildfire safety and preparedness and PSPS-related information to ensure that customers who call in looking for information about wildfire safety and preparedness or PSPS get information they are looking for. Additionally, customers with specific language needs can also contact the company's

customer care number and request to speak with an agent that speaks their preferred language. Pacific Power employs Spanish-speaking customer care professionals and contracts with a 24/7 service that provides interpretation in real-time over the phone in multiple languages and dialects.

In 2022, Pacific Power established a process to track customer calls regarding wildfire safety, wildfire preparedness, and other wildfire concerns. This process allowed customer care specialists to select the term 'wildfire' from a drop-down menu at the conclusion of calls. From September 2023 up to September 2024, the company received 294 calls from customers regarding wildfire safety. Of those, 233 occurred at what is typically the peak of fire season, August 2024.

Wildfire Safety, Preparedness, and PSPS Webpages

The Pacific Power website provides robust and comprehensive information on company wildfire mitigation programs, general wildfire safety, PSPS information, and more. In 2022, the company launched updated wildfire safety webpages to improve customer experience and allow for improved accessibility to wildfire-related information. The page refreshes include a new infographic depicted in Figure 48 that demonstrates the work in progress to improve the safety and reliability of the grid.

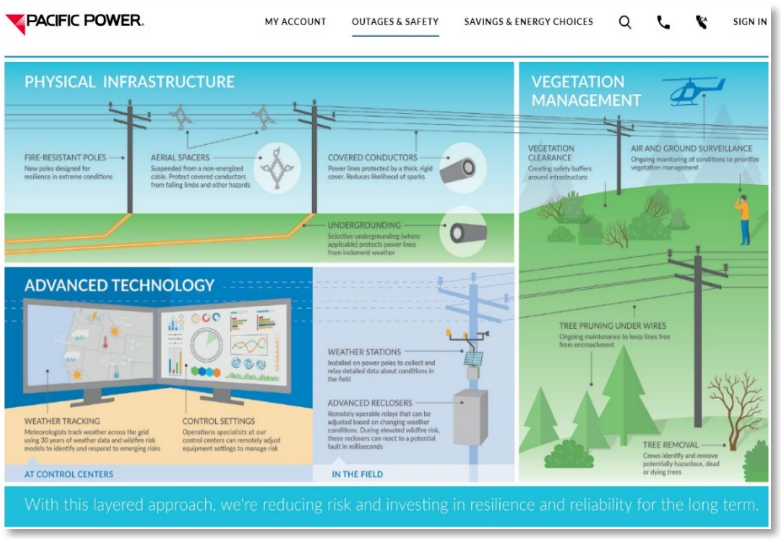


Figure 48: Wildfire Safety Infographic

Additionally, the page was updated with embedded videos highlighting the work Pacific Power will complete to improve the system, increase situational awareness, and prepare for events that may result in outage activity.

The wildfire safety webpages are in process of update and plan to be completed in 2024 to include a 1-to-1 translated Spanish wildfire safety pages as shown in Figure 49. This includes a frequently asked questions section, links to public safety power shutoff maps and information, and resources including public safety power shutoff and wildfire preparedness brochures.

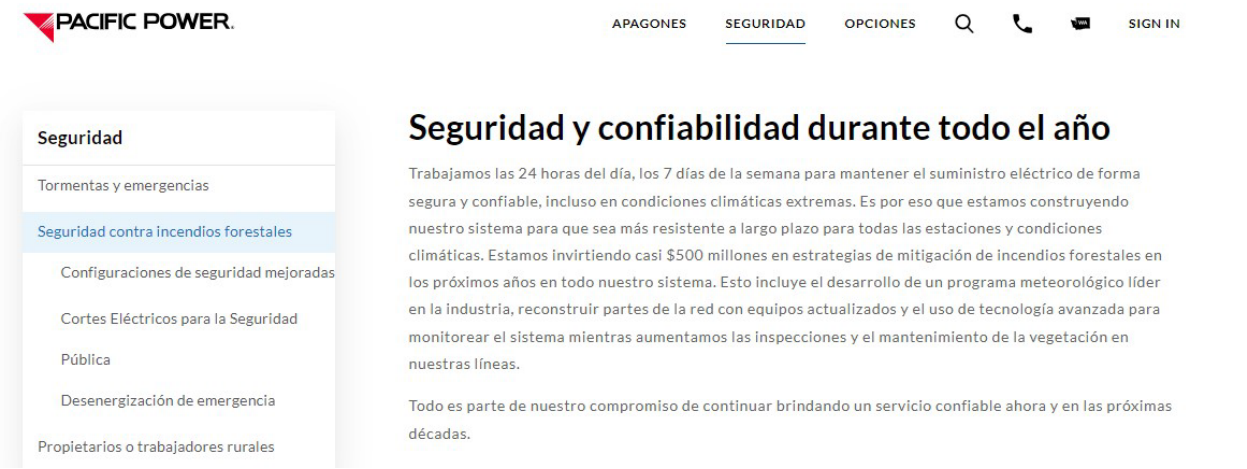


Figure 49: English to Spanish Webpage Translation

Various resources and tools for community preparedness can be found on the Pacific Power wildfire mitigation webpage.[18] Prompts for customers to update contact information are displayed prominently on the page. Guides and checklists for creating an emergency plan/outage kit are easily accessible. The wildfire safety webpages also include links to the Wildfire Mitigation Plans for each state, as well as links to webinars and videos describing key components of the plan. Overall, site visitors have a variety of ways to

[18] www.pacificpower.net/wildfiresafety

consume and engage with wildfire safety and preparedness information, as shown below in Figure 50.

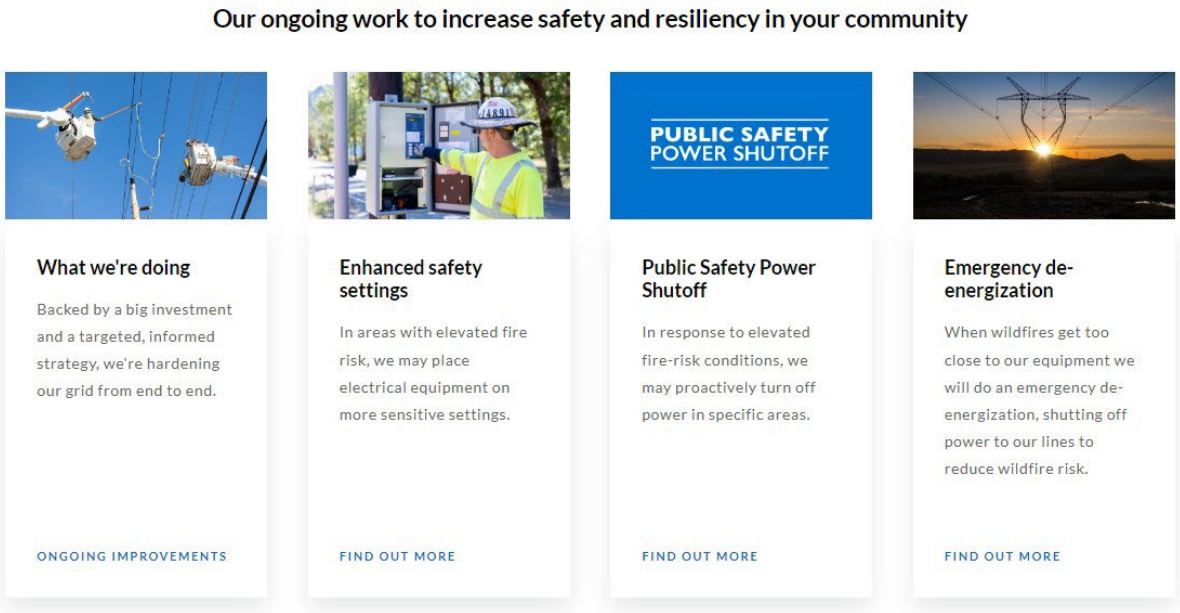
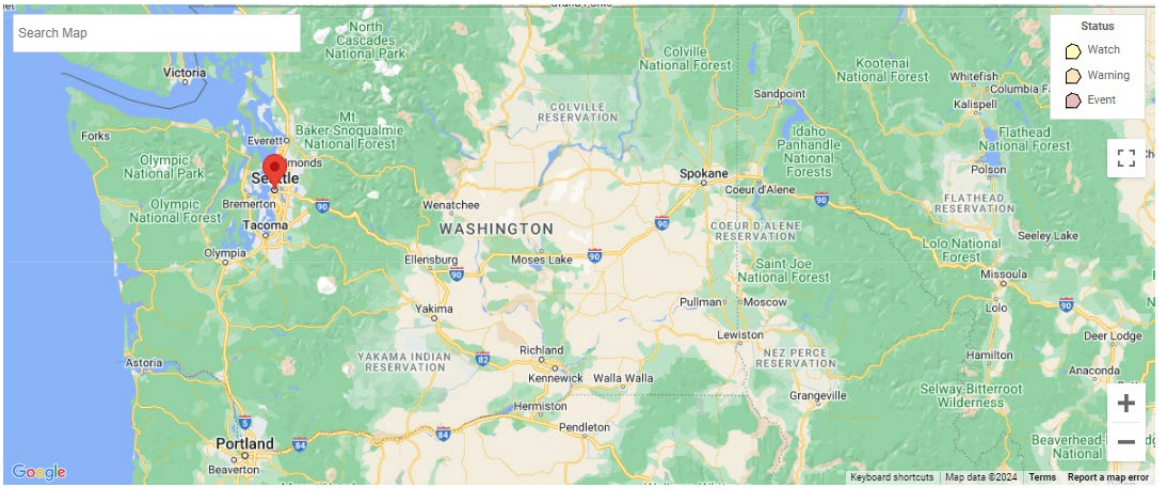


Figure 50: Sample Website Material

Additionally, the PSPS webpage provides educational material on PSPS. It describes why a PSPS would happen, includes details of conditions monitored prior to executing a PSPS, and on how customers can prepare. Information on how customers will be notified, what to expect during an event, and about the service restoration process if a PSPS is deemed necessary are detailed on the webpage. There is also an interactive map of PSPS areas (shown in Figure 51) that provides a visualization of whether the company is considering a PSPS, and which areas might be affected if one is necessary.

Public Safety Power Shutoff map



**Some customers outside of Public Safety Power Shutoff areas could be impacted by a Public Safety Power Shutoff due to the interconnected nature of the electrical grid.*

DEFINITIONS

Watch: This area is being monitored for elevated weather conditions that could **possibly** lead to a Public Safety Power Shutoff.

Warning: This area is being monitored for elevated weather conditions that will **likely** lead to a Public Safety Power Shutoff.

Event: This area is currently experiencing a Public Safety Power Shutoff during elevated weather conditions.

Figure 51: Pacific Power PSPS Webpage

To ensure that the website information is provided in identified prevalent languages, the PSPS webpage has a message in nine languages – Chinese traditional, Chinese simplified, Tagalog, Vietnamese, Mixteco, Zapoteco, Hmong, German, and Spanish - that states “A customer care agent can speak with you about wildfire safety and preparedness. Please call 888-221-7070.” The company will continue to work with Public Safety Partners and Community-Based Organizations (CBOs) to determine if additional languages should be included.

Additionally, the webpages have the capacity to manage site traffic under extreme demand because the company has implemented the bandwidth to allow for increased customer access without compromising site integrity. For example, the Wildfire Safety and PSPS webpages were successfully visited by over 14,000 people during a 2022 PSPS event in another state Pacific Power serves without issue.

Webinars and Community Forums

Pacific Power also hosts an annual webinar that provides an overview of the company's wildfire mitigation program and strategies for each state. Among other items, key mitigation topics addressed in the webinar include situational awareness capabilities, system hardening investments, the PSPS process, and general emergency preparedness. The webinar brings to focus how the company engages with local communities and public safety partners on wildfire safety. It also serves as a forum for customers, community stakeholders, and the public-at-large to ask questions during the live stream. The 2024 webinar was held on April 30, 2024, and posted to the Pacific Power website and YouTube channel.[19]

Campaign and Engagement Evaluation

2024 Wildfire Communications and Outreach Plan

The company's overall approach to wildfire communications and its outreach plan remains the same year over year. For example, the company always runs a paid advertising, customer email, and proactive media campaign and conducts a customer webinar as well.

Wildfire program modifications are also made annually based on metrics that evaluate customers' level of engagement in messaging for the prior year's campaign, internal analysis, public safety partner input, and subject matter expertise. These inputs are summarized in Table 21 below.

[19] Washington Wildfire Safety Webinar | April 2024 - YouTube

Table 21: Communication and Outreach Summary

Topic Area	Before Wildfire Season	During Wildfire Season	After Wildfire Season
Tabletop Exercise	✓		
Customer Emails	✓	✓	✓
Bill Messages	✓	✓	
Webinars	✓		
Awareness and Engagement Campaign	✓	✓	✓

8.2 PLANNED UPDATES

The wildfire safety and preparedness community engagement plan will continue to evolve year-over-year as customer and stakeholder feedback and regulatory guidance is incorporated.

Pacific Power is evaluating launching a generator rebate program in Washington, specifically targeting customers enrolled in the medical certificate program. This initiative is designed to provide financial assistance to vulnerable customers who rely on electricity for critical medical equipment. The program offers a rebate on the purchase of a qualified portable power station, battery, or standby backup power system, helping to ensure that these customers have access to reliable power during outages. By launching this program in Washington, Pacific Power aims to enhance the safety and resilience of our medically dependent customers, offering them greater peace of mind and security.

9 RESTORATION OF SERVICE

As described in Section 7.7, local conditions are continually monitored during a Public Safety Power Shutoff (PSPS) event. Based on forecasted risk reduction, Pacific Power may begin staging resources to expedite restoration. Then, when local conditions subside consistent with the forecasted reduction in risk, restoration activities can begin. The general steps for restoration are depicted below in Figure 52.

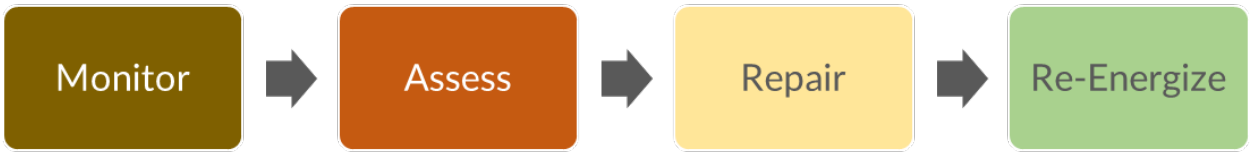


Figure 52: General Re-Energization Process

Once the local and forecasted conditions are favorable to reenergize and no new risk(s) have been identified, field personnel begin assessing the deenergized circuits through ground or air patrols. Power lines that have been deenergized during a PSPS event have been exposed to strong winds and the potential for damage. In addition, even after the wind has dropped to levels low enough to support a decision to re-energize, fire weather conditions typically remain elevated. Therefore, before reenergizing a circuit, post-event assessments are completed to determine whether any damage has occurred that needs to be corrected prior to reenergization (e.g., downed lines, broken crossarms, etc.). Field personnel report any damage identified to Pacific Power's facilities to the ECC where it is tracked. If issues are discovered, the necessary repairs are made within an appropriate corrective time-period.

While all lines and facilities deenergized as part of a PSPS event are assessed, a step restoration process is leveraged where possible so that power to customers may be restored as the assessment. While not to scale or representative of an actual event, this concept is visually depicted in Figure 53 below.

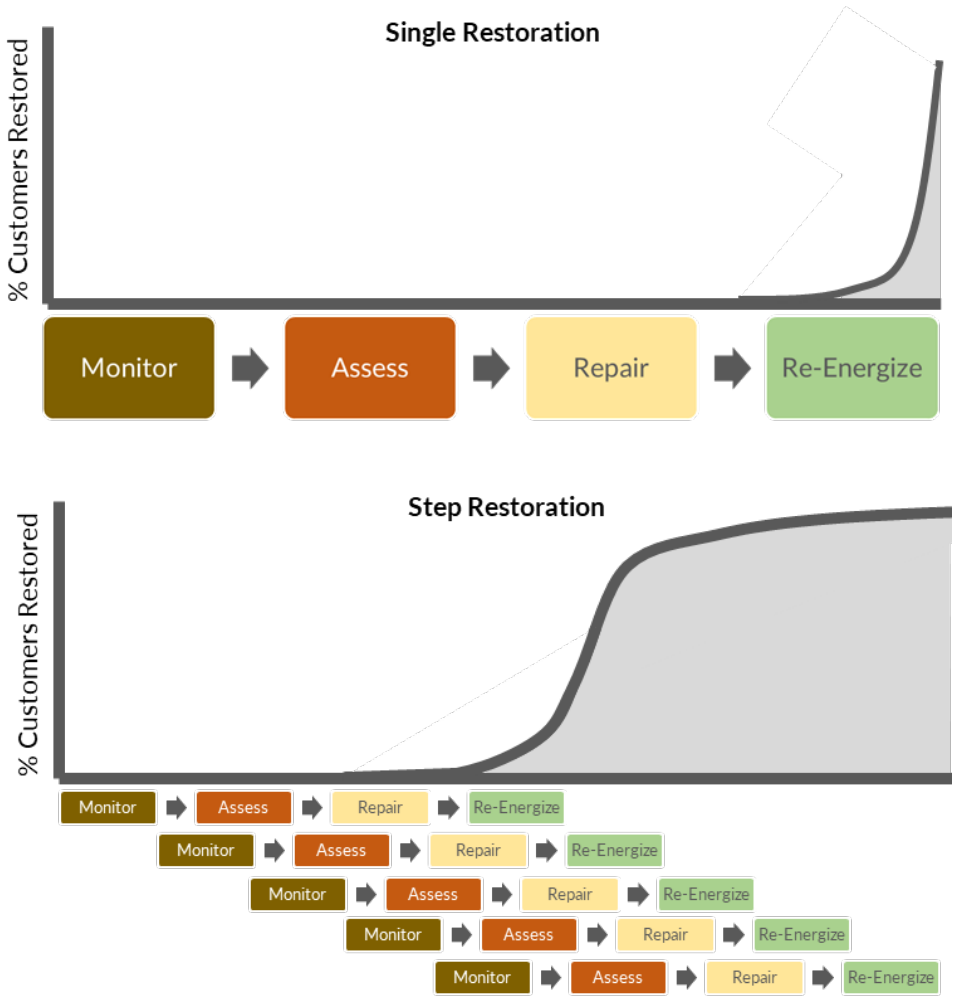


Figure 53: Visual Depiction of a Step Restoration

Wherever possible, Pacific Power also works with emergency and public safety partners to identify critical customers, leveraging tools like the Public Safety Partner Portal as described in Section 7.7 for restoration prioritization. After the line patrol and facility inspection is completed, the impacted circuits/ portions of circuits are reenergized, and the date and time of reenergization is logged. Once service is restored to all customers impacted by the PSPS event, the event concludes.

10 EVALUATING THE PLAN

As discussed in Section 5.1, Wildfire program delivery is tasked with supporting all types of wildfire mitigation initiatives and strategies across the company's entire service territory, the key function of wildfire program delivery team is to develop, implement, monitor, and improve the company's wildfire plan in Washington. It is the responsibility of wildfire program delivery to coordinate with other internal departments such as the project management office, asset management, vegetation management, field operations, and emergency management to ensure all aspects of the plan are delivered.

The wildfire program and asset management team, specifically the wildfire program delivery group, is responsible for developing the wildfire mitigation plan, incorporating enhancements to existing initiatives, and scoping new initiatives. Developing the plan requires internal collaboration across many different departments to establish the lessons learned applied with existing initiatives; for example, the streamlining of system hardening projects as described in Section 7.2. Wildfire program delivery is also responsible for making sure the elements of the plan meet the regulatory requirements in accordance with RCW 76.04.185.

Implementation of the plan requires processes in place to ensure each initiative is progressing toward the established plan. Initiative owners are responsible for developing individual project plans to ensure the plan objectives are met. Wildfire program delivery ensures that the project plans are aligned with the WMP's objectives, and that key performance metrics are in place to monitor progress.

Once the plan is filed it is the wildfire program team's responsibility to ensure the mitigations are being performed as described in the plan. Monitoring includes verification that initiative owners have plans to deliver projects on time and regular status checks to ensure work is progressing as planned. The regular status checks ensure that risks and issues are being appropriately monitored and prompt action is taken to resolve issues and remove barriers to successful project execution.

10.1 METRICS AND ASSUMPTIONS FOR MEASURING PLAN PERFORMANCE

Please see Appendix A – Program Goal for metrics Pacific Power tracks regarding plan performance.

10.2 IDENTIFYING AND ADDRESSING AREAS OF CONTINUED IMPROVEMENT IN THE PLAN

In addition to the planned updates discussed in Sections 7 and 8, the Company has identified three areas for continued improvement for 2024-2027:

- Fire Incident Root Cause Evaluations
- Evaluation of Climate Change Impacts on Wildfire Risk Modeling
- Improve Emergency Management Practices

Fire Incident Root Cause Evaluation

In conjunction with the new Fire Incident Tracker implementation in 2024, employees received updated training on reporting outages and ignitions. This training is anticipated to reinforce data collection practices to support trend analysis of outage events and ignitions associated with the events to support the analysis outage incident analysis described above.

Based on the data collected in the new Fire Incident Tracker, Pacific Power will assess if there is a trend of increased ignition incidents that may require acquiring fire investigation resources and developing specialized processes. Given the limited ignition history, there may be no discernable trends in the short term, but Pacific Power will monitor and assess.

Evaluation of Climate Change Impacts on Wildfire Risk Models

As discussed in above in Section 6.1, Pacific Power will use learnings from the California OEIS workshops on climate change as an input to evaluating if there are additional risk variables that are impacted by climate change and the feasibility of integrating them into wildfire risk modeling. In addition to the OEIS workshops, Pacific Power plans to engage

with internal subject matter experts and review research to identify how climate change may impact wildfire risk models and if any adjustments are needed to the models.

Improve Emergency Management Practices

Pacific Power plans to continuously improve all aspects of its emergency management practices. As of this filing, Pacific Power has not implemented a PSPS in Washington, however, from the company's multi-year, overall experience, it has identified four general opportunities for improvement to its Public Safety Power Shutoff Program moving forward. These include:

- **Broaden public outreach and engagement.** Pacific Power plans to expand its communication and overall preparedness as appropriate to ensure adequate public outreach and engagement regarding PSPS and wildfire safety. As noted above, more detailed information on the company's customer wildfire safety and preparedness engagement strategy can be found in Section 8 of this document.
- **Strategize community resource center (CRC) locations.** During the 2022 PSPS event in Oregon, the location of all the CRCs were determined by collaboration with local emergency management. The company will continue to emphasize CRC planning during workshops and tabletop exercises, and, during events, it will work with local public safety partners to better identify the needs of communities impacted.
- **Streamline GIS and information sources.** Due to the dynamic nature of a PSPS event, there is a need to manually update multiple sources of information and GIS layers among various internal platforms. Pacific Power plans to leverage its public safety partner coordination plan to streamline and better align GIS layers and information sources to communicate information quickly. For instance, Pacific Power a secure, web-based public safety partner portal where critical information can be shared with its partners during a PSPS event. More information about this public safety partner portal can be found in Section 7.7 of this document.
- **Internal communication and coordination.** Most documents, communication protocols, and processes have worked well. Nevertheless, there is still an

opportunity to build out new tracking tools, documents, and training within the existing response structure. To that end, in 2023 a tracking tool for meetings and other events was developed and implemented and Pacific Power has begun to look at building out additional situational awareness tools.

Additionally, from its experience in 2022 specifically, the company identified and recommended actions to evolve its processes accordingly. These are summarized in Table 22 below:

Table 22: Summary of 2022 PSPS Experiences

Description of Experience	Recommended Action	Status
Multiple points of contact among partners resulted in missed opportunities for communication with partners.	• Update documentation and incident action plan to include a single point of contact for partners.	• **Implemented**. Pacific Power emergency management has established service territories for its emergency managers to create a single point of contact for partners.
Critical facility (customer) identification (GIS information).	• Complete implementation of the Public Safety Partner Portal. • Identify steps for producing shapefiles with critical customer information and identify who should receive them.	• The Public Safety Partner Portal was delivered in 2024.
Inconsistent documentation created potential for confusion internally and external partners.	• Improve documentation consistency. • Task Information Management Specialist (IM) or Joint Information Team (JIT) with ensuring that all sources of information match. • Include details on who is responsible for what information.	• **Implemented**. Joint information Team training has been given to corporate communications, Regional Business Managers (RBMs), customer service, and regulatory on the documentation process to include roles and responsibilities.
Feedback from partners.	• Provide more outreach and training on PSPS to partners.	• Expanded PSPS outreach and workshops to three Washington counties and participated in statewide pre-season workshop.

10.3 MONITORING THE PERFORMANCE OF INSPECTIONS

Asset Inspection QA/QC

Pacific Power's asset QA/QC centers around a field audit of 5% of all inspected facilities each year to assess inspection completeness and condition categorization accuracy. Where a trend or observation emerges, the audit results are reviewed with the inspectors and program managers at the following year's annual pre-inspection program meeting typically held during the first quarter of each year. At this meeting, inspectors, inspection support staff, and program managers discuss the previous year's accomplishments, modifications or updates to inspection policies or procedures, and finalize the inspection plan for the subsequent year's work. To enhance data quality, Pacific Power also leverages electronic tools to capture inspection and condition records. The electronic tools use drop-down menus for standardization of data capture, facilitate automatic processing into the company's system of record reducing the potential for human error, and enable streamlined data reviews and analytics.

Vegetation Management QA/QC

Pacific Power targets post-audits (quality control reviews) on 100% of distribution cycle and correction work associated with the distribution annual vegetation inspection program. Sample audits are conducted of pole clearing, transmission, and corrective work. Audits compare completed work against specifications, such as those described in Section 7.3. Post-audits are conducted soon after the vegetation management work is completed at a location, to identify any issues before vegetation management crews leave the area for their next work assignment. Post-audits are intended to identify recurring quality-related issues early on, so that Pacific Power staff can review results with the contractors conducting the work and implement any needed corrective measures.

Post-audits include review of routine maintenance (work identified during detailed inspections), and additional work completed annually within the FHCA (work identified during patrol inspections). Post-audits are conducted primarily by Pacific Power internal staff; however, contract staff may assist on an as needed basis. The staff conducting post-

audits record audit exceptions which include inconsistencies with Pacific Power specifications or work missed. These audit exceptions are then visible to the vegetation management contractor within the mobile data management system (MDMS) who remains responsible for the work, including any corrective action. Pacific Power also conducts ad hoc tree crew audits or crew visits where a Pacific Power forester engages with the vegetation management contractor, such as a crew leader, and/or supervisor to review work and/or discuss opportunities for improvement. If an exception is identified during an audit that poses an imminent safety or reliability risk, the audit will be suspended, and the exception addressed through corrective actions. During post-audits, observations and instruction about corrections are documented in the MDMS, observations are discussed, and feedback is provided to the vegetation management contractor.

APPENDIX A – PROGRAM GOALS

In Table 23 below are the milestones per year for the programs described throughout the WMP that Pacific Power tracks. Please note that future year inspection targets are not finalized until closer to the inspection year. Counts for future year asset and vegetation management inspection goals are approximate and based on information at the time.

Table 23: Pacific Power Program Goals 2025-2027

Program	Units	2024	2025 Goals	2026 Goals	2027 Goals
Asset Inspection - Perform incremental inspections as part of the wildfire mitigation program.					
Distribution Overhead Safety Patrol Inspection	Inspections	0	628	628	628
Distribution Overhead Detail Inspections	Inspections	628	0	0	0
Transmission IR Inspections	Miles	228	430	228	430
Vegetation Management - Perform incremental vegetation inspections and mitigations as part of the wildfire mitigation program.					
Distribution Vegetation Inspections	Miles	0	20	20	0
Distribution Vegetation Mitigations	Miles	0	20	20	0
Pole Clearing	Poles	214	214	214	214
System Hardening					
Line Rebuild	Miles	7	0	0	0
Recloser Installation	Devices	5	0	0	0
Pole Replacements (Distribution)	Poles	180	0	0	0
Pole Replacements (Transmission)	Poles	50	0	0	0
Situational Awareness					
Weather Station Installations	Devices	5	5	0	0
Public Safety Partner Coordination					
Webinars	Events	1	1	1	1
Wildfire Forums	Events	1	1	1	1

Program	Units	2024	2025 Goals	2026 Goals	2027 Goals
Workshops	Events	3	1	1	1

APPENDIX B – ADHERENCE TO REQUIREMENTS

In Table 24 below are the Wildfire Mitigation Plan statutory requirements and where they are addressed in Pacific Power's 2024 WMP.

Table 24: Statutory Requirement and Corresponding Section

Requirement	Corresponding Plan Section / Reference
RCW 76.04.185 (2)(a) – The recommended elements must include, but are not limited to: Vegetation management along transmission and distribution lines and near associated equipment;	Section 7.3 Fuel & Vegetation Management
RCW 76.04.185 (2)(g)) – The recommended elements must include, but are not limited to: Public and interested parties' engagement and communication plans addressing wildfire safety and risk mitigation.	Section 5.2 Coordination with Local Utility and Infrastructure Providers Section 5.3 Coordination with Local Tribal Entities Section 5.4 Emergency Management / Incident Response Organization Section 8 Current Community Outreach and Public Awareness
RCW 80.28.440 Wildfire mitigation plan—Review/revision – (1) By October 31, 2024, and every three years thereafter, each Investor-Owned Utility (IOU) must review and, if appropriate, revise its wildfire mitigation plan."	Section 1. Executive Summary
RCW 80.28.440 (1)(a) – Local fire protection districts must be provided the opportunity to provide input for each wildfire mitigation plan.	Pacific Power met with representatives of local fire protection districts on September 16, 2024, to review the WMP and receive feedback.
RCW 80.28.440 (1)(a) – Each investor-owned utility must submit its wildfire mitigation plan to the utilities and transportation commission for review, and the commission will confirm whether the plan contains the recommended elements.	Per direction from the Washington Utility and Transportation Commission (UTC), the WMP may be filed at the UTC at the same time as filing the DNR.
RCW 80.28.440 (1)(a) – Each investor-owned utility must provide a copy of their wildfire mitigation plan to the department of natural resources, along with a list and description of wildland fires involving utility equipment over the previous two years as reported by the department of natural resources.	Please see Appendix D – Wildland Fires for the list of wildland fires tracked by the Washington Department of Natural Resources. Per the Department of Natural Resources' records, they did not track any wildfire fires involving Pacific Power utility equipment from October 3, 2022-October 3, 2024.

APPENDIX C – RISK MODELS INPUTS

The following describes the general model inputs, data sources, update frequency, and update plans for data included in the company's planning and dynamic, seasonal risk model described in Sections 6.1 and 7.1. Many of the data sources below are provided and managed by Technosylva.

Dataset	Spatial Resolution (Meters)	Dataset Update Frequency	Start of Dataset	Source
Landscape Characteristics				
Terrain	10	Yearly		United States Geological Survey (USGS)
Surface Fuels	30/10	Pre-Fire Season, Monthly Update in Fire Season, End of Fire Season	2020	Technosylva
Wildland Urban Interface (WUI) and Non-Forest Fuels Land Use	30/10	Twice A Year	2020	Technosylva
Canopy Fuels (CBD, CH, CC, CBH)	30/10	Pre-Fire Season, Monthly Update in Fire Season, End of Fire Season	2020	Technosylva
Roads Network	30	Yearly		USGS
Hydrography	30	Yearly		USGS
Croplands	30	Yearly	1997	USDA
Weather And Atmospheric Data				
Wind Speed	2000	Hourly / 96 Hour Forecast	1990	Atmospheric Data Solutions (ADS)
Wind Direction	2000	Hourly /96 Hour Forecast	1990	ADS
Wind Gust	2000	Hourly / 96 Hour Forecast	1990	ADS
Air Temperature	2000	Hourly / 96 Hour Forecast	1990	ADS
Surface Pressure	2000	Hourly / 96 Hour Forecast	1990	ADS

Dataset	Spatial Resolution (Meters)	Dataset Update Frequency	Start of Dataset	Source
Relative Humidity	2000	Hourly / 96 Hour Forecast	1990	Technosylva
Precipitation	2000	Hourly / 96 Hour Forecast	1990	ADS
Radiation	2000	Hourly / 96 Hour Forecast	1990	ADS
Water Vapor Mixing Ratio 2 meter	2000	Hourly / 96 Hour Forecast	1990	ADS
Snow Accumulated – Observed	1000	Daily	2008	National Oceanic and Atmospheric Administration (NOAA)
Precipitation Accumulated - Observed	4000	Daily	2008	NOAA
Burn Scars	10	5 Days	2000	National Aeronautics and Space Administration (NASA)/ European Space Agency (ESA)
Weather Observations Data	Points	10 Min	1990	Synoptic
Fuel Moisture				
Herbaceous Live Fuel Moisture	250	Daily / 5-Day Forecast	2000	Technosylva
Woody Live Fuel Moisture	250	Daily / 5-Day Forecast	2000	Technosylva / ADS
1-Hour Dead Fuel Moisture	2000	Hourly / 124 Hour Forecast	1990	Technosylva / ADS
10-Hour Dead Fuel Moisture	2000	Hourly / 124 Hour Forecast	1990	Technosylva / ADS
100-Hour Dead Fuel Moisture	2000	Hourly / 124 Hour Forecast	1990	Technosylva / ADS
Values at Risk				
Buildings	Polygon Footprints	Yearly	2020-21	Microsoft/Technosylva
Damage Inspection (DINS)	Points	Yearly	2014-21	Cal Fire
Population	90	Yearly	2019	Landscan, Oak Ridge National Laboratory (ONRL)
Roads	Vector Lines	Yearly	2021	Caltrans

Dataset	Spatial Resolution (Meters)	Dataset Update Frequency	Start of Dataset	Source
Social Vulnerability	Plexels	Yearly	2021	Esri Geoenrichment Service
Fire Stations	Points	Yearly	2021	Esri, USGS
Building Loss Factor	Building Footprints	Yearly	2022	Technosylva
Critical Facilities	Points	Yearly	2021	Fire Resource Assessment Program (FRAP), Cal Fire
Potential Ignition Locations				
Distribution & Transmission Lines	Linear Segments	Updated Quarterly	2022	Pacific Power
Poles & Equipment	Points	Updated Quarterly	2022	Pacific Power
Outage History	Points	Annual	1989-2022	Pacific Power
Ignition History	Points	Annual	2020-2022	Pacific Power
Fire Activity				
Hotspots MODIS	1000	Twice A Day	2000	NASA
Hotspots VIIRS	375	Twice A Day	2014	NASA
Hotspots GOES 16/17	3000	10 Minute	2019	NASA
Fireguard	Polygons	15 Minute	2020	National Guard
Fire Season Perimeters	Polygons	Daily	2021	National Incident Feature Service (NIFS)
Historic Fire Perimeters	Polygons	Yearly	1900	Cal Fire
Alert Wildfire Cameras	Live Feeds	1 Minute	Real Time	Alert Wildfire Consortium
Lighting Strikes	1000	1 Minute	Real Time	Earth Networks / Others

APPENDIX D – WILDLAND FIRES

Per RCW 80.28.440 (1)(a), in Table 25 below are the list of wildland fires involving utility equipment from October 3, 2022-October 3, 2024, as tracked by the Washington Department of Natural Resources (DNR). As noted in the letter from Washington DNR to utilities. “This list only includes wildfires which DNR responded to, either because the fire was solely burning on lands protected by DNR or posed a threat or burned onto to those lands, and DNR conducted an origin and cause investigation.” Also “Fires on Federal System Lands not investigated by DNR are not included on the list.”

Table 25: Washington Department of Natural Resources Tracking Wildland Fires Involving Utility Equipment

Object ID	Incident Name	Fire Number	General Cause	Acres	Discovered Date	Latitude	Longitude	Utility Name	Shared Fire: Occurs in overlapping service territories and is reported in this data twice
1	Tilley	2022-WASPS-000265	Power generation/transmission/distribution	0.32	10/10/2022	46.924	-122.9162	Puget Sound Energy Inc	Not Shared
2	Kingsway	2022-WASPS-000268	Power generation/transmission/distribution	0.1	10/12/2022	47.575383	-122.8345	Puget Sound Energy Inc	Not Shared
3	Packmule	2023-WANES-001253	Power generation/transmission/distribution	0.2	5/27/2023	47.888483	-117.45888	Inland Power & Light Company	Shared
4	White	2023-WAPCS-000095	Power generation/transmission/distribution	0.31	6/6/2023	46.26128	-122.9288	PUD No 1 Of Cowlitz County	Not Shared
5	Aladdin Fork	2023-WANES-001335	Power generation/transmission/distribution	0.1	6/10/2023	48.619604	-117.77577	Avista Corp	Not Shared
6	Columbia Daisy	2023-WANES-001342	Power generation/transmission/distribution	0.1	6/11/2023	48.365333	-118.16342	Avista Corp	Not Shared
7	Keene	2023-WANES-001375	Power generation/transmission/distribution	0.1	6/15/2023	47.582783	-117.65912	Inland Power & Light Company	Shared
8	Rock Creek	2023-WANES-001360	Power generation/transmission/distribution	27.9	6/13/2023	48.374133	-119.75568	PUD No 1 Of Okanogan County	Not Shared
9	Bisping	2023-WASES-000231	Power generation/transmission/distribution	0.1	6/13/2023	47.763	-120.33958	PUD No 1 Of Chelan County	Not Shared
10	Aladdin Pole	2023-WANES-001322	Power generation/transmission/distribution	0.4	6/8/2023	48.610383	-117.80192	Avista Corp	Not Shared
11	Shipwreck	2023-WAOLS-000025	Power generation/transmission/distribution	0.1	6/22/2023	48.3065	-124.4681	PUD No 1 Of Clallam County	Not Shared
12	Pleasant Valley	2023-WANES-001436	Power generation/transmission/distribution	1	6/26/2023	48.33695	-119.68258	PUD No 1 Of Okanogan County	Not Shared
13	Half Moon	2023-WANES-001443	Power generation/transmission/distribution	0.1	6/27/2023	47.860517	-117.39098	Inland Power & Light Company	Not Shared
14	Smiley	2023-WANES-001565	Power generation/transmission/distribution	0.1	7/7/2023	48.040717	-117.05064	Inland Power & Light Company	Not Shared
15	Maple Canyon	2023-WASES-000301	Power generation/transmission/distribution	0.1	6/28/2023	47.681227	-120.31146	PUD No 1 Of Chelan County	Not Shared
16	Spearfish	2023-WASES-000412	Power generation/transmission/distribution	0.25	7/12/2023	45.622206	-121.13332	PUD No 1 Of Klickitat County	Not Shared
17	Martin Road	2023-WANES-001555	Power generation/transmission/distribution	0.1	7/6/2023	48.27855	-118.12997	Avista Corp	Not Shared
18	Nile Creek	2023-WASES-000439	Power generation/transmission/distribution	0.1	7/17/2023	46.827717	-120.94738	Yakama Power	Not Shared
19	Eloika	2023-WANES-001665	Power generation/transmission/distribution	0.1	7/17/2023	48.010333	-117.38873	Inland Power & Light Company	Not Shared

Object ID	Incident Name	Fire Number	General Cause	Acres	Discovered Date	Latitude	Longitude	Utility Name	Shared Fire: Occurs in overlapping service territories and is reported in this data twice
20	Skidmore Road	2023-WANES-001717	Power generation/transmission/distribution	0.1	7/24/2023	48.458617	-117.89692	Avista Corp	Not Shared
21	Kallman Rd	2023-WAOLS-000057	Power generation/transmission/distribution	0.1	7/28/2023	47.8897	-124.3561	PUD No 1 Of Clallam County	Not Shared
22	Gold	2023-WANES-001789	Power generation/transmission/distribution	0.3	8/2/2023	48.5399	-117.9712	Avista Corp	Not Shared
23	Frosty Creek	2023-WANES-001794	Power generation/transmission/distribution	0.1	8/2/2023	48.590133	-118.96893	PUD No 1 Of Ferry County	Not Shared
24	Meridian	2023-WASPS-000226	Power generation/transmission/distribution	0.1	8/4/2023	47.09205	-122.7376	Puget Sound Energy Inc	Not Shared
25	Silver Queen	2023-WANES-001822	Power generation/transmission/distribution	0.1	8/5/2023	48.56475	-118.11312	Avista Corp	Not Shared
26	Katie Lane	2023-WANES-001770	Power generation/transmission/distribution	12.4	7/30/2023	47.578682	-117.33272	Inland Power & Light Company	Shared
27	Challenger	2023-WANWS-000157	Power generation/transmission/distribution	0.1	8/2/2023	48.54122	-121.8352	Puget Sound Energy Inc	Not Shared
28	Salmon Falls	2023-WAPCS-000220	Power generation/transmission/distribution	0.25	8/13/2023	45.78127	-122.4104	PUD No 1 Of Clark County - (Wa)	Not Shared
29	Pease Hill	2023-WANES-001964	Power generation/transmission/distribution	0.1	8/17/2023	47.855867	-117.45763	Inland Power & Light Company	Shared
30	Hardy	2023-WAPCS-000240	Power generation/transmission/distribution	0.1	8/17/2023	45.64107	-121.9854	PUD No 1 Of Skamania Co	Not Shared
31	Watson	2023-WANES-001987	Power generation/transmission/distribution	0.9	8/19/2023	48.069	-119.88833	PUD No 1 Of Okanogan County	Not Shared
32	Dean Road	2023-WASES-000560	Power generation/transmission/distribution	0.1	8/14/2023	45.994977	-121.53505	PUD No 1 Of Klickitat County	Not Shared
33	Willmorth	2023-WASES-000568	Power generation/transmission/distribution	0.1	8/15/2023	47.843937	-119.97437	PUD No 1 Of Chelan County	Not Shared
34	Cascade River Road	2023-WANWS-000201	Power generation/transmission/distribution	0.5	8/18/2023	48.530883	-121.4122	Puget Sound Energy Inc	Not Shared
35	Gray	2023-WANES-001974	Power generation/transmission/distribution	10064	8/18/2023	47.538033	-117.74397	Inland Power & Light Company	Shared
36	Huff	2023-WASPS-000268	Power generation/transmission/distribution	0.1	8/21/2023	47.23547	-123.1187	PUD No 3 Of Mason County	Not Shared
37	Monroe	2023-WANES-002004	Power generation/transmission/distribution	0.1	8/21/2023	47.829573	-117.44327	Inland Power & Light Company	Shared
38	House Canyon	2023-WANES-002032	Power generation/transmission/distribution	0.2	8/25/2023	47.9318	-117.68547	Avista Corp	Not Shared
39	Counts Spring	2023-WASES-000594	Power generation/transmission/distribution	1	8/21/2023	45.88424	-120.96446	PUD No 1 Of Klickitat County	Not Shared
40	Mountvale	2023-WASES-000603	Power generation/transmission/distribution	0.25	8/26/2023	46.86863	-120.77618	Yakama Power	Not Shared
41	Thatcher	2023-WAPCS-000213	Power generation/transmission/distribution	19	8/8/2023	46.52947	-121.8177	City Of Tacoma - (Wa)	Shared

Object ID	Incident Name	Fire Number	General Cause	Acres	Discovered Date	Latitude	Longitude	Utility Name	Shared Fire: Occurs in overlapping service territories and is reported in this data twice
42	Onion	2023-WANES-002148	Power generation/transmission/distribution	0.1	9/13/2023	48.720883	-117.87672	Avista Corp	Not Shared
43	Mitchell Road	2023-WASES-000670	Power generation/transmission/distribution	0.25	9/8/2023	46.962283	-120.79867	Puget Sound Energy Inc	Not Shared
44	Louise	2023-WANWS-000182	Power generation/transmission/distribution	0.25	8/14/2023	48.73178	-122.3759	Puget Sound Energy Inc	Shared
45	Springdale	2024-WANES-001059	Power generation/transmission/distribution	0.1	3/20/2024	48.044167	-117.7765	Avista Corp	Not Shared
46	Highway 20	2024-WANES-001088	Power generation/transmission/distribution	0.1	4/3/2024	48.464283	-117.32345	PUD No 1 Of Pend Oreille County	Not Shared
47	Long Prairie	2024-WANES-001093	Power generation/transmission/distribution	0.1	4/4/2024	48.1498	-117.76313	Avista Corp	Not Shared
48	Hidden Valley	2024-WASES-000041	Power generation/transmission/distribution	0.1	4/1/2024	47.161667	-120.7505	Puget Sound Energy Inc	Not Shared
49	Fairway Park	2024-WAOLS-000012	Power generation/transmission/distribution	0.1	4/20/2024	46.963099	-123.72226	PUD No 1 Of Grays Harbor County	Not Shared
50	North Euclid	2024-WANES-001202	Power generation/transmission/distribution	1	5/16/2024	47.686433	-117.55913	Inland Power & Light Company	Shared
51	Mudgett	2024-WANES-001203	Power generation/transmission/distribution	9.6	5/16/2024	48.0238	-118.21568	Avista Corp	Not Shared
52	Hawk Creek	2024-WANES-001256	Power generation/transmission/distribution	1.5	6/3/2024	47.711265	-118.27186	Inland Power & Light Company	Shared
53	Hawk	2024-WANES-001259	Power generation/transmission/distribution	0.1	6/4/2024	47.718717	-118.2771	Inland Power & Light Company	Shared
54	Grandview	2024-WANES-001290	Power generation/transmission/distribution	0.1	6/11/2024	48.878867	-117.3532	PUD No 1 Of Pend Oreille County	Not Shared
55	Park Rapids	2024-WANES-001362	Power generation/transmission/distribution	0.1	6/23/2024	48.51275	-117.6832	Avista Corp	Not Shared
56	Wytcoff Road	2024-WAOLS-000041	Power generation/transmission/distribution	0.1	7/8/2024	47.966655	-122.88565	Puget Sound Energy Inc	Not Shared
57	Flynn Rd	2024-WAPCS-001097	Power generation/transmission/distribution	0.01	7/6/2024	46.564629	-122.50268	City Of Tacoma - (WA)	Shared
58	Hidden Highlands	2024-WAOLS-000044	Power generation/transmission/distribution	0.1	7/9/2024	48.07225	-123.30683	PUD No 1 Of Clallam County	Not Shared
59	Osprey	2024-WASES-000453	Power generation/transmission/distribution	1	7/20/2024	47.83996	-119.99211	PUD No 1 Of Chelan County	Not Shared
60	Wallbridge	2024-WANES-001559	Power generation/transmission/distribution	0.1	7/21/2024	47.960857	-117.55182	Avista Corp	Not Shared
61	Helena	2024-WANES-001627	Power generation/transmission/distribution	0.1	7/26/2024	47.60014	-117.38751	Inland Power & Light Company	Shared
62	Stensgar Creek	2024-WANES-001638	Power generation/transmission/distribution	0.1	7/27/2024	48.2953	-117.93823	Avista Corp	Not Shared
63	West Fork	2024-WANES-001536	Power generation/transmission/distribution	0.1	7/18/2024	48.543367	-119.75913	PUD No 1 Of Okanogan County	Not Shared

Object ID	Incident Name	Fire Number	General Cause	Acres	Discovered Date	Latitude	Longitude	Utility Name	Shared Fire: Occurs in overlapping service territories and is reported in this data twice
64	Hunters Campground	2024-WANES-001671	Power generation/transmission/distribution	3.5	8/1/2024	48.116683	-118.22317	Avista Corp	Not Shared
65	Upper Peoh	2024-WASES-000504	Power generation/transmission/distribution	0.1	7/28/2024	47.160367	-120.8988	Puget Sound Energy Inc	Not Shared
66	Sterling	2024-WANES-001756	Power generation/transmission/distribution	0.2	8/10/2024	47.361183	-117.62308	Inland Power & Light Company	Shared
67	Evans Line	2024-WANES-001777	Power generation/transmission/distribution	0.5	8/13/2024	48.724533	-118.03582	Avista Corp	Not Shared
68	Deep Lake	2024-WANES-001494	Power generation/transmission/distribution	2.2	7/12/2024	48.8699	-117.60035	Avista Corp	Not Shared
69	Ballard	2024-WASES-000701	Power generation/transmission/distribution	0.1	8/20/2024	47.20092	-120.759	Puget Sound Energy Inc	Not Shared
70	Cedar Creek	2024-WANES-001885	Power generation/transmission/distribution	0.1	8/23/2024	48.983367	-117.5667	Avista Corp	Not Shared
71	Cashmere	2024-WANES-001871	Power generation/transmission/distribution	0.6	8/23/2024	48.3312	-117.87372	Avista Corp	Not Shared
72	Addy	2024-WANES-001870	Power generation/transmission/distribution	0.3	8/23/2024	48.3375	-117.87063	Avista Corp	Not Shared
73	Rocky Lane	2024-WANES-001872	Power generation/transmission/distribution	0.1	8/23/2024	48.498133	-117.89897	Avista Corp	Not Shared
74	Mellenberger	2024-WANES-001874	Power generation/transmission/distribution	0.4	8/23/2024	48.600583	-118.14208	Avista Corp	Not Shared
75	McNitt	2024-WANES-001876	Power generation/transmission/distribution	0.3	8/23/2024	48.802467	-118.11205	Avista Corp	Not Shared
76	Doyle	2024-WANES-001878	Power generation/transmission/distribution	0.2	8/23/2024	48.748167	-118.13517	Avista Corp	Not Shared
77	Usk	2024-WANES-001905	Power generation/transmission/distribution	0.1	8/27/2024	48.297933	-117.28465	PUD No 1 Of Pend Oreille County	Not Shared
78	Goodnoe	2024-WASES-000735	Power generation/transmission/distribution	0.25	8/28/2024	45.784728	-120.55662	PUD No 1 Of Klickitat County	Not Shared
79	Coles Corner	2024-WASES-000786	Power generation/transmission/distribution	0.1	9/11/2024	47.75595	-120.74042	PUD No 1 Of Chelan County	Not Shared
80	Waverly	2024-WANES-002031	Power generation/transmission/distribution	0.1	9/19/2024	47.376283	-117.3157	Inland Power & Light Company	Shared
81	Little Bridge Creek	2024-WANES-000526	Power generation/transmission/distribution	0.1	8/2/2024	48.378827	-120.28459	Okanogan County Elec Coop, Inc	Not Shared
82	Chicken	2024-WAOLS-000081	Power generation/transmission/distribution	0.1	8/17/2024	48.05034	-122.93806	Puget Sound Energy Inc	Not Shared
83	Boulder	2024-WANES-002069	Power generation/transmission/distribution	0.27	9/25/2024	48.95685	-118.21172	Avista Corp	Not Shared
84	Webley	2024-WANES-002060	Power generation/transmission/distribution	0.3	9/25/2024	48.56625	-117.97888	Avista Corp	Not Shared
85	Spur Road	2024-WANES-002077	Power generation/transmission/distribution	0.1	9/26/2024	48.83225	-119.31838	PUD No 1 Of Okanogan County	Not Shared

Object ID	Incident Name	Fire Number	General Cause	Acres	Discovered Date	Latitude	Longitude	Utility Name	Shared Fire: Occurs in overlapping service territories and is reported in this data twice
86	Double R	2024-WANES-002104	Power generation/transmission/distribution	0.4	9/30/2024	48.7192	-119.53895	PUD No 1 Of Okanogan County	Not Shared
87	Packmule	2023-WANES-001253	Power generation/transmission/distribution	0.2	5/27/2023	47.888483	-117.45888	Avista Corp	Shared
88	Keene	2023-WANES-001375	Power generation/transmission/distribution	0.1	6/15/2023	47.582783	-117.65912	Avista Corp	Shared
89	Katie Lane	2023-WANES-001770	Power generation/transmission/distribution	12.4	7/30/2023	47.578682	-117.33272	Avista Corp	Shared
90	Pease Hill	2023-WANES-001964	Power generation/transmission/distribution	0.1	8/17/2023	47.855867	-117.45763	Avista Corp	Shared
91	Gray	2023-WANES-001974	Power generation/transmission/distribution	10064	8/18/2023	47.538033	-117.74397	Avista Corp	Shared
92	Monroe	2023-WANES-002004	Power generation/transmission/distribution	0.1	8/21/2023	47.829573	-117.44327	Avista Corp	Shared
93	North Euclid	2024-WANES-001202	Power generation/transmission/distribution	1	5/16/2024	47.686433	-117.55913	Avista Corp	Shared
94	Hawk Creek	2024-WANES-001256	Power generation/transmission/distribution	1.5	6/3/2024	47.711265	-118.27186	Avista Corp	Shared
95	Hawk	2024-WANES-001259	Power generation/transmission/distribution	0.1	6/4/2024	47.718717	-118.2771	Avista Corp	Shared
96	Helena	2024-WANES-001627	Power generation/transmission/distribution	0.1	7/26/2024	47.60014	-117.38751	Avista Corp	Shared
97	Sterling	2024-WANES-001756	Power generation/transmission/distribution	0.2	8/10/2024	47.361183	-117.62308	Avista Corp	Shared
98	Waverly	2024-WANES-002031	Power generation/transmission/distribution	0.1	9/19/2024	47.376283	-117.3157	Avista Corp	Shared
99	Louise	2023-WANWS-000182	Power generation/transmission/distribution	0.25	8/14/2023	48.73178	-122.3759	PUD No 1 Of Whatcom County	Shared
100	Huff	2023-WASPS-000268	Power generation/transmission/distribution	0.1	8/21/2023	47.23547	-123.1187	City Of Tacoma - (WA)	Not Shared
101	Thatcher	2023-WAPCS-000213	Power generation/transmission/distribution	19	8/8/2023	46.52947	-121.8177	PUD No 1 Of Lewis County	Shared
102	Flynn Rd	2024-WAPCS-001097	Power generation/transmission/distribution	0.01	7/6/2024	46.564629	-122.50268	PUD No 1 Of Lewis County	Shared

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