BEFORE THE

IDAHO PUBLIC UTILITIES COMMISSION

CASE NO. IPC-E-23-11

IDAHO POWER COMPANY

COLBURN, DI TESTIMONY

EXHIBIT NO. 4

Wildfire Mitigation Category	Program Activity	2022 Actuals
Quantifying Wildland Fire Risk	Risk Analysis and Map Updates	$4,125
Situational Awareness	Weather Forecasting - System Development, Aupport, and Personnel	$156,201
Mitigation - Field Personnel Practices	Tools/Equipment	$10,720
Mitigation - Transmission & Distribution Programs	O&M Component of Capital Work	$160,123
	Annual O&M T&D Patrol Maintenance Repairs	$100,461
	Environmental Management Practices	$9,225
	T&D Thermography Inspection Mitigation & Personnel	$97,888
	Transmission Wood Pole Fire Resistant Wraps - Red Risk Zone	$127,258
	Transmission Wood Pole Fire Resistant Wraps - Yellow Risk Zone	$236,817
	Wildfire Mitigation Program Manager Function	$135,006
	Covered Wire Evaluation - Pilot Program in PSPS Zones	$32,189
Enhanced Vegetation Management	Transition to/Maintain 3-Year Vegetation Management Cycle	$24,848,875
	Enhanced Practices for Distribution Red & Yellow Risk Zones (Pre-Season Patrols/Mitigation, Pole Clearing, Removals, Work, QA)	
	Line Clearing Personnel	$150,927
	Vegetation Mgmt Satellite and Aerial Patrols	$151,620
Communications	Wildfire/Wildfire Mitigation Communications - Advertisements/Meetings/Other	$106,779
	PSPS Customer Education/Communication - Advertisements, Bill Inserts/Other	
Information Technology	Communication/Alert Tool development (System set up, outage maps, critical facilities identification)	$80,531
TOTAL O&M		**$26,408,745**

Mitigation Program	Description of the Program	Risk Reduction Benefit	Plant Closings in 2021 and 2022
Overhead Primary Hardening Program	Systematic replacement of hardware, equipment, and materials, 113-line miles in Red Risk Zones	Reduced potential of equipment failure, utilizing material and equipment with less energy release and potential of ignition, increased resiliency	$9,869,070
Strategic Undergrounding	Select conversion of overhead to underground conversion in Red Risk Zones, 1.85 miles completed in 2022	Reduce exposure and potential of ignition by locating power lines underground	$1,822,482
Red Risk Zone Overcurrent Protection Segmentation	Installation, relocation, and expanded communication for Automatic Reclosing overcurrent protection devices	Isolate circuit segments and improve reliability for enhanced Fire Potential Index settings and PSPS	$367,899
TOTAL CAPITAL			**$ 12,059,451**

BEFORE THE

IDAHO PUBLIC UTILITIES COMMISSION

CASE NO. IPC-E-23-11

IDAHO POWER COMPANY

COLBURN, DI TESTIMONY

EXHIBIT NO. 5

WILDFIRE MITIGATION PLAN

Version 5 – Updated December 2022

2023

IDAHO POWER®

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Review/Revision History

This document has been approved and revised according to the revision history recorded below.

Review Date	Revisions
Jan. 22, 2021	WMP Version 1 was filed with the Idaho Public Utilities Commission and posted to the Idaho Power website.
Dec. 29, 2021	Modifications including expanded cost-benefit discussion, plan progress and updates, and inclusion of Idaho Power's Public Safety Power Shutoff plan.
March 18, 2022	Added Appendix C.
June 28, 2022	Added information to comply with the Public Utility Commission of Oregon's conditions of approval of Idaho Power's 2022 Wildfire Mitigation Plan.
Oct. 19, 2022	Updated cost table within the WMP and filed with the Idaho Public Utilities Commission.
Dec. 29, 2022	WMP Version 5.0, including 2022 season in review, changes for 2023 season, and addition of Appendix C—Oregon Wildfire Requirements and Recommendations.

EXECUTIVE SUMMARY

Idaho Power is dedicated to the safety of our customers and communities, and to delivering reliable, affordable energy. In pursuit of that mission, we built off our existing Wildfire Mitigation Plan (WMP) and took major steps in 2022 to enhance our situational awareness in the field, enhance vegetation management, further harden the electrical system, and expand and better the ways in which we communicate and alert customers and communities about wildfire and wildfire risk. As the company enters its third year with a WMP, this new edition (Version 5.0) has been improved to reflect key learnings, feedback from stakeholders, and a focus on new technology. The WMP also provides supporting information on wildfire requirements and actions specific to our Idaho and Oregon regulators, but the document remains—first and foremost—an evolving guide that provides holistic and prudent strategies for reducing wildfire risk.

This Executive Summary—a new introduction in the 2023 WMP—provides a comprehensive summary of the 2022 wildfire season and the company's lessons learned and progress toward our wildfire mitigation objectives. Additionally, the Executive Summary previews changes to the company's risk management framework and lessons learned that will inform 2023 wildfire mitigation efforts and beyond.

2022 Weather and Fire Potential

The spring of 2022 brought above normal precipitation and below normal temperatures. As an example, parts of southern Idaho—including the Boise area—experienced heavy snowfall in the second week of May 2022.[1] This led to an abundance of fuels across the region. The summer months saw record high temperatures and below normal relative humidity that increased wildfire potential. Idaho Power atmospheric scientists conducted regular forecasts during wildfire season to determine a daily Fire Potential Index (FPI) value across the company's service area. The FPI is used to inform Idaho Power's on-the-ground, operational strategies when the fire potential is high.

A combination of record heat and low humidity led to a dramatic increase in FPI levels throughout the summer of 2022. There were nearly three times as many high-fire-potential days as in 2021. Despite the seasonal challenges, the company fulfilled and executed the WMP as planned for 2022.

[1] Carolyn Komatsoulis. 2022. Idaho Press. It's Pretty Unusual: Half-Inch of Snow, Power Outages Make for Manic Monday in Boise. May 2, 2022.

Figure 1
A field team installs a mesh wrap on a wood pole in 2022

Idaho Power continues to monitor climate variability and changing conditions to determine how wildfire risk is shifting season to season and in the longer term. Historical data shows temperature has increased over the past 80 years in southern Idaho and eastern Oregon. Studies show a connection between higher temperatures and increased wildfire activity, both in intensity and size of wildfires.[2] Further, extreme fire weather days are increasing, and fire season is getting longer.[3]

As climate conditions change, the company is committed to monitoring increased wildfire risk and enhancing the WMP to keep customers and communities safe.

Impacts of Wildfires in 2022

This year, both Idaho and Oregon had fewer wildfires and acres burned during wildfire season than the previous 20-year average.[4] However, wildfires did affect Idaho Power equipment both

[2] Idaho reviewed academic, scientific, and governmental climate change studies, including those from the Center for Climate and Energy Solutions, the US Environmental Protection Agency, the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, North Carolina State University, and National Geographic.

[3] In late 2022, Idaho Power analyzed temperatures over the last 80 years in the Idaho Power service area to assess changing climate conditions. The analysis showed that daily high temperatures and extreme weather events are increasing.

[4] Interagency Fire Center. Current National Statistics. www.nifc.gov/fire-information/statistics.

inside and outside of our service area. Three major wildfires threatened or burned wood structures. In some cases, we de-energized lines to keep firefighters safe.

Table 1
Wildfires impacting Idaho Power operations and facilities in 2022

Incident Name	Location	Fire Discovery Date	Containment Date	Acres	Cause	Facilities Impacted
Moose	17 Miles North of Salmon, ID	7/17/2022	11/9/2022	130,144	Unattended Campfire	Transmission
Four Corners	6 Miles west of the City of Cascade, ID	8/13/2022	10/20/2022	13,702	Lightning	Distribution
Double Creek	10 miles SE of Imnaha, OR	8/30/2022	10/25/2022	175,937	Lightning	Transmission

Idaho Power's mapping applications include geographic information system (GIS) data for active wildfires to inform operational planning and provide insight into areas that could be threatened throughout the fire season. The company monitored fire activity throughout the season to compare fire behavior to modeling. We expect to learn more about how real-time fire analytics can inform risk-based decision-making in coming fire seasons.

Key Objectives of 2022 WMP

Idaho Power met the 2022 WMP's key objectives, including the completion of major projects to ensure the WMP could be effectively carried out. A new Public Safety Power Shutoff (PSPS) program was implemented and all processes and procedures guiding customer communication, weather forecasting, switching plans and de-energization criteria were completed before fire season. This includes the installation and commissioning of a new communication system used to expedite notifications of PSPS events via voice, text messaging, and e-mail. We also installed 17 protective devices to isolate line segments and provide a means of remote de-energization.

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Figure 2
A line worker installs a spark prevention unit near Eagle, Idaho

Overview of 2022 WMP Progress

By almost all measures, Idaho Power met or exceeded its WMP goals in 2022. Work plans are established at the beginning of the year and these items are tracked throughout the year to identify areas needing corrective action or attention. As some wildfire mitigation work is on a rotating cycle based on wildfire season (and not the calendar year), some of the items listed are still in progress at the time of writing this 2023 WMP.

Idaho Power's Progress Toward 2022 Wildfire Mitigation Goals

Table 2
2022 WMP activity summary and results

Plan Area	Wildfire Mitigation Plan Activities	2022 Goal	Completed	% Complete	2023 Goal
System Hardening	**Distribution System Hardening**				
	System Hardening Line Miles	48	48.91*	102%	69
	Overhead Line Miles Converted to Underground	1.85	1.85	100%	1
	Expulsion Fuse Replacement	930	942	101%	1319
	Surge Arrester Replacement	830	839	101%	1175
Feeder Segmentation	**Segmentation Devices**				
	Installation or Relocation of Automatic Reclosing Devices	17	17	100%	8
Fire Mesh Installation	**Transmission Fire Mesh Installation**				
	Red Risk Zone Poles	492	492	100%	-
	Yellow Risk Zone Poles	406	585	144%	870
Asset Inspections	**Transmission Inspections**				
	Wildfire Pre-Season Patrol - Red Risk Zones (Structures)	923	923	100%	923
	Infrared Thermography Patrol (Structures)	923	923	100%	923
	Distribution Inspections				
	Wildfire Pre-Season Patrol - Red Risk Zones (Structures)	20,192	20,192	100%	20,192
	Infrared Thermography Patrol - Red Risk Zones (Structures)	3,000	3,800	127%	4,000
Vegetation Management	**Pruning Cycle**				
	Transition to a 3-Year Pruning Cycle (circuits)	282	173	70%**	320
	Enhanced Vegetation Management				
	Annual Patrol - Red & Yellow Risk Zones (circuits)	65	65	100%	65
	Annual Mitigation - Red & Yellow Risk Zones (circuits)	65	65	100%	65
	Mid-Cycle Patrols - Red & Yellow Risk Zones (circuits)	47	47	100%	1
	Mid-Cycle Pruning - Red & Yellow Risk Zones (circuits)	47	47	100%	1
	Hazard Trees Identified and Pruned	-	77	100%	100% of All Identified
	Hazard Trees Identified and Removed	-	49	100%	100% of All Identified
	Audits of Pruning Activities - Red & Yellow Risk Zones (worksites)	6,324	977	15%**	100% of All Identified
Meteorology	**Idaho Power Weather Stations**				
	Weather Station Installations	5	5	100%	5

*Excludes hardening work outside of wildfire risk zones
**Estimated year end completion

As can be observed from the numbers above, vegetation management is a challenging area. Much of the delay in reaching 2022 goals is attributable to broader challenges in the workforce. Idaho Power uses contractors to perform vegetation management and audit work. The company witnessed labor shortages, more inexperienced contract workers than in the past, and increased turnover that led to lower vegetation management production levels throughout the year. Vegetation management production was also lower than anticipated because more climbing work was required than originally expected. Climbing to prune or remove vegetation requires contractors with more skill and takes more time. Despite these challenges, Idaho Power continues to work with contractors to push toward its goals and estimates that, by the end of the calendar year, the production level will be near 70% of target.

Audits were also impacted by resource availability, as contractors did not reach full staff levels until December 2022. Because of this, random sampling was used in lieu of auditing all vegetation management work in wildfire risk zones. Idaho Power will work with contractors at the end of 2022 to develop corrective action plans and make necessary adjustments to meet targeted performance levels in 2023.

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Regarding customer communication in 2022, Idaho Power used several methods to inform customers throughout the year of our WMP and PSPS plan. These included social media, radio, customer newsletters, postcards, and voice and text messaging. Before the 2022 wildfire season, the company focused on asking customers—especially those in PSPS potential zones—to update their contact information and prepare for potential PSPS events. Additionally, the company conducted over 20 in-person and virtual meetings to engage with customers, counties, and fire and other public agencies to discuss and seek feedback on the WMP and PSPS efforts.

Figure 3
Idaho Power developed an educational video to explain PSPS

Fortunately, the company did not need to fully implement a PSPS in 2022. However, the company's planning and communication apparatuses were tested in one instance in Pocatello, Idaho, where the company anticipated a PSPS event due to high winds and extremely high fire potential. The company took the steps to inform public safety partners, critical facilities, and customers in the area that a PSPS was imminent. Rain showers preceded high winds in the area and the PSPS event was canceled before de-energization took place.

Looking Ahead—Expanded Mitigation Activities

As detailed in the WMP, Idaho Power deploys a comprehensive and multi-faceted strategy to reduce wildfire risk. The company plans to implement new activities and expand existing ones in 2023. The list below summarizes new or expanded activities.

Infrastructure Hardening
In 2022, we hardened approximately 49 line miles to decrease the risk of wildfire in Red Risk Zones—areas with the highest wildfire risk based on wildfire probability and potential impacts. The hardening program is 26% complete, with Red Risk Zones given the highest priority at this time. This work will increase in 2023 by 40% and include hardening to 69 line miles.

Strategic Undergrounding
In 2022, Idaho Power buried approximately 1.85 miles of overhead distribution line in areas of highest wildfire risk. This work primarily targeted the main trunk of distribution feeders. In 2023, we will target a smaller line segment in an area that includes residences.

The company's goal is to work through the complexities and costs associated with burying primary overhead powerlines, overhead services, and converting customer-owned service-entrance equipment. This work will take place in a PSPS zone in Idaho with high fire probability and potential impact. The projects in 2022 and upcoming work in 2023 will inform future underground conversion strategies by helping us weigh costs and risk-reduction benefits against those of traditional feeder hardening and covered conductor conversions.

Vegetation Management

Idaho Power's effort to achieve a three-year pruning cycle will continue in 2023. It is a critical aspect of meeting our objective to reduce wildfire risk. We will expand brush clearing and applying ground sterilant around wood poles to reduce fuels. We are also exploring an opportunity to partner with the National Forest Foundation, Boise National Forest, Bureau of Land Management, and local fire districts on a shared stewardship program in the Boise Front. This work is expected to provide a means for Idaho Power to participate in fuel reduction activities outside of the right of way, which will reduce wildfire risk by decreasing surface fuels and the potential of tree contact.

Figure 4
A contractor trims trees in a bucket truck

Risk Modeling

Risk modeling of Idaho Power's service area is used to prioritize mitigation activities. In 2023, we will re-evaluate our risk modeling by incorporating new structure information based on 2020 Census data and explore new areas of consequence based on the feedback received in the past year from fire agencies and customers.

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Situational Awareness
The FPI is forecasted daily during fire season and provides critical information that informs operational changes during days with high fire potential. In 2023, we will work to improve the communication and calculation of the FPI by creating more clear and concise messaging to stakeholders.

PSPS
While the company did not proactively de-energize any customers as part of its PSPS program in 2022, engagement with communities and customers this year highlighted their concerns—specifically the inability to communicate or suppress fire via electric wells and water pumps without power. This feedback highlights the need for the company to find ways to limit the impact and frequency of future PSPS events. Many of the activities being pursued here, such as strategic undergrounding and utilizing covered conductor, will decrease the likelihood of PSPS. However, PSPS will remain a tool available to the company to mitigate wildfire risk during extreme fire weather conditions.

Figure 5
Idaho Power uses visual graphics to illustrate the conditions that could require a PSPS event

Segmentation
We completed the installation of 17 automatic reclosing devices (reclosers) in Red Risk Zones as part of an effort to isolate circuit segments and improve reliability for customers outside of those zones. In 2023, we will continue this work and install an additional eight reclosers in Red Risk Zones.

New Technology and Innovations
New technology and innovative programs were explored in 2022 to find new ways to reduce the risk and impacts of wildfire. In 2023, we will conduct pilots based on our findings with the goal of learning more about their implementation complexities and to analyze costs and risk reduction benefits prior to fully integrating into the WMP. These pilots or trials include the following:

- Satellite Imagery—Using satellite imagery to detect vegetation encroachment and hazard trees.

- Covered Conductor—Covered conductor is a solution used throughout the industry to decrease the potential of ignition if an object contacts powerlines. A trial of covered conductor will be carried out in our training yard to determine overall costs, tooling requirements, work methods, and construction standards and specifications.

- Structural Resilience of Wood Poles—We will increase situational awareness in Red Risk Zones by performing a survey of distribution poles using Light Detection and Ranging (LiDAR) technology to identify structural loading capacity of existing wood poles.

- Shared Stewardship—We will partner with federal agencies on a shared stewardship fuel reduction program in forested areas and evaluate the benefits in terms of reduced surface fuels and fire spread potential. The collaboration will also provide the company with the opportunity to work with land managers and owners to expand vegetation management and reduce the potential of ignition from vegetation contact.

- Fire Detection Cameras—In 2022, we explored the benefits that cameras can have in early fire detection and became part of the Wildfire Detection Camera Strategy Work Group in Oregon. We are working to identify optimal locations and developing partnerships with state and federal agencies and will expand our knowledge of cameras that utilize artificial intelligence for fire detection. We plan on piloting cameras in 2023 to further understand the complexities of installations, permitting, systems used for notification, and overall accuracy. The pilot will be critical in determining a long-term strategy for the use of cameras to reduce wildfire risk.

Lessons Learned

Idaho Power has conducted its own assessment of lessons from the 2022 wildfire season and the company's wildfire mitigation practices. The following lessons learned were developed by supplementing this analysis with feedback heard from stakeholders, customers, public safety partners, peer utilities, and through wildfire-related forums, research, and education.

Pre-Wildfire Season Patrols

Idaho Power strives to complete wildfire patrols prior to the start of each wildfire season to identify issues that may pose a risk of ignition if left unchecked. Above-normal precipitation and below-normal temperatures in the spring months of 2022 created access issues in mountain areas where snow levels were several feet deep. Late, heavy snow delayed completion of these patrols until mid-June, which, while later than target, was still prior to the onset of conditions conducive for wildfire.

Situational Awareness

The FPI is an essential tool to support operational decision making. It includes detailed forecasts of 148 different geographical areas or zones throughout the service area and is used to determine when a PSPS is necessary. The preparation for a PSPS event in August 2022 highlighted an opportunity to improve the communication and precision of the forecasts. In that case, a line segment subject to the potential PSPS was included in two different FPI zones that had different fire potential across their geographical areas. Initially, this created

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confusion as to which forecast to use for decision-making purposes. In 2023, we will review areas that have overlapped FPI zones and refine mapping and forecasted boundaries to eliminate the potential of this situation occurring again.

Vegetation Management

Pruning levels in 2022 did not meet the target established for the year largely due to labor issues. We added outsourced crews from throughout the country to assist in conducting vegetation management activities and expect to reach approximately 70% of targeted vegetation management pruning by the end of 2022. In 2023, we will conduct a thorough review of all activities and assess means of working with contractors to drive towards 2023 production goals.

Expansion of the Wildland Urban Interface

As the population in Idaho Power's service area continues to grow, we've seen an expansion of new construction in the wildland urban interface (WUI). This expansion creates challenges for wildfire mitigation as new wildfire risks emerge. In 2023, we will analyze the growth of the WUI and create new strategies to address new risks.

Functional Exercises

Two functional exercises were conducted in the spring of 2022 to test processes and procedures needed to fully execute the PSPS program. The exercises were beneficial and ensured that the company was prepared to effectively carry out a PSPS prior to the onset of severe fire weather. Forty action items were identified throughout the exercises and consisted of refining and improving communication methods, timing, documentation, and website functionality. We found that PSPS events can be complex and occur within different parts of the company's service area simultaneously. To help ensure expedited and accurate communication for all potential scenarios, templates were developed for communication activities involving customers, Public Safety Partners, Emergency Support Function (ESF-12), and departments within the company. The templates will be reviewed and improved as needed in 2023.

List of Stakeholders

The PSPS functional exercises highlighted the need for accurate and readily available lists of Public Safety Partners and critical facilities. We developed a central repository for all information related to PSPS which includes contacts for Public Safety Partners, operators of critical facilities, and Emergency Support Function ESF-12 personnel.

Estimated Time of Restoration

As with all outages, having accurate estimates for the time or restoration (ETR) is a priority. The PSPS functional exercises highlighted that setting an initial ETR for PSPS events is more challenging than ordinary unplanned or planned outages. The company determined that the ETR for a PSPS should take into consideration the duration of the weather event and the time needed for safety patrols to occur. Internal atmospheric scientists became a crucial part of determining the duration of weather events. Operational plans were developed for each region to guide restoration and switching procedures to expeditiously restore power during a PSPS. These plans include estimated patrol times which are also used for establishing an initial ETR. We plan on reviewing any assumptions in the operational plans each year and

include lessons learned from the previous year into the patrol estimates to ensure we are providing the best information possible.

Field Observer Program

PSPS events are carefully evaluated by an assessment team to balance wildfire risk with potential PSPS impacts on the customers and the communities we serve. In 2022, we expanded the PSPS decision-making process to include real-time on-site conditions from Field Observers (FOBs). FOBs are Idaho Power personnel positioned within pre-defined PSPS zones to monitor system conditions and periodically report observations to help inform the PSPS assessment team. The location of FOBs in PSPS zones was examined to ensure their safety during severe weather conditions and communication templates were developed to ensure accurate and consistent fire weather reporting. We found that, in some areas, cellular and radio communication does not exist and we had to rely on satellite messaging services. The FOB program became more complex than anticipated, and we will work in 2023 to improve the documentation and procedures as well as increase the number of qualified resources to perform FOB duties in situations where multiple areas are at risk of PSPS.

Customer Communication

Notifying customers in PSPS zones was a priority this year and consisted of telephone, text, and e-mail outreach. We found that some of the targeted customers did not have up-to-date contact information associated with their account. Several efforts were made to encourage customers to update their contact information, and additional information was mailed to those customers without current contact information. This will be a continued focus in 2023.

Community Feedback

The company conducted over 20 WMP and PSPS plan presentations throughout the service area, to advise customers of our plans and to solicit feedback to help inform future versions of the WMP. Seven public meetings were held in Oregon at the end of fire season, and we received good feedback from local fire chiefs, emergency managers, and the general public. Feedback and themes from these meetings and others throughout the year will be incorporated into the 2023 WMP and include:

- Adjusting the timing of public meetings in Oregon to coincide with fire season
- Partnering with agencies and other programs, such as Firewise, when conducting public meetings
- Reviewing risk modeling to include additional areas of consequence
- Having more collaboration with fire agencies including the Idaho Bureau of Land Management (BLM), Forest Service, Baker County, and La Grande Rural Fire Protection District

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Vulnerable Populations

Idaho Power participated in two mock events, one conducted by Malheur County in Oregon and another as part of the Idaho Office of Emergency Management's Cascade Rising event. These two events highlighted two opportunities to improve our support for vulnerable populations during an outage or PSPS event. First, the Red Cross was added as a Public Safety Partner in Malheur County based on their role in coordinating Community Resource Centers (CRC). Second, the emPower program was identified as a tool to help notify customers on durable medical devices (DME) if a PSPS event is predicted. Targeted outreach to vulnerable populations was also conducted to include outage preparedness flyers sent to Meals on Wheels participants. In 2023, Idaho Power will further the efforts made in identifying and communicating with vulnerable populations.

Risk Management Process

A review of Idaho Power's risk management process used in developing previous versions of the WMP was completed in 2022. The review found opportunities to improve by strategically incorporating a more formalized risk management process into the WMP. The International Standardization Organization (ISO 31000-2018) is a recognized standard for risk management and will be integrated into the 2023 plan. The standard will help position the company to achieve the objectives of the WMP by fostering continuous improvement and ensuring a consistent approach to risk-based decision making.

REGULATORY CONTEXT

As part of Idaho Power Company's (Idaho Power or company) commitment to deliver safe, reliable, and affordable energy, the company developed a comprehensive Wildfire Mitigation Plan (WMP) to reduce wildfire risk associated with its facilities. The WMP has three core objectives:

1. Reducing wildfire risk for the safety of Idaho Power's customers and the communities in which it operates.

2. Ensuring the continued and reliable delivery of electricity to more than 600,000 retail customers in Southern Idaho and Eastern Oregon.

3. Furthering the company's good stewardship of the beautiful and natural lands within Idaho Power's service area and beyond.

Idaho Power released its inaugural WMP in January 2021. The company's WMP is a living document that will evolve over time. Idaho Power will seek to review, modify, and expand the WMP in the coming years to reflect shifts in industry best practices and to ensure the company is following procedures and requirements established by its regulators. Given that Idaho Power operates in both Oregon and Idaho, below is a description of recent wildfire-related regulatory activities by state.

Idaho

On January 22, 2021, Idaho Power proactively filed its first WMP with the Idaho Public Utilities Commission (IPUC). The company's application provided a narrative of Idaho Power's effort to develop the WMP, including discussion of risk analysis across its service area and evaluation of specific wildfire mitigation activities (e.g., enhanced vegetation management and system hardening) the company would undertake in the coming fire season. Idaho Power asked the IPUC for authority to defer the Idaho jurisdictional share of incremental operations and maintenance expenses and capital depreciation expenses related to implementing the measures in the WMP, as well as incremental insurance costs.

On June 17, 2021, the IPUC issued Order No. 35077, granting the company's application and allowing cost deferral of all incremental wildfire mitigation and insurance expenses identified in Idaho Power's application.

On October 20, 2022, the company filed an updated WMP and a new application for deferral of newly identified wildfire mitigation-related costs.

Oregon

In August 2020, the Public Utility Commission of Oregon (OPUC) opened an informal rulemaking related to mitigating wildfire risks to utilities, utility customers, and the public. The scope of this docket (AR 638) shifted following the 2020 wildfire season, splitting into two

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tracks—a temporary wildfire rulemaking to govern the 2021 wildfire season and a secondary track to establish replacement permanent rules for the 2022 fire season.

On July 19, 2021, Oregon Governor Kate Brown signed into law Senate Bill 762 (SB 762), a wildfire bill that, among other actions, established minimum requirements for utility wildfire protection (or mitigation) plans. The bill required that utilities file inaugural plans no later than December 31, 2021.

In response to the passage of SB 762, the OPUC halted the permanent wildfire rulemaking in AR 638 and opened docket AR 648 to develop interim permanent rules adhering to the requirements and timing of the new law. On September 8, 2022, the OPUC issued Order No. 22-335 in AR 638 finalizing requirements specific to requirements for utility WMPs.

Idaho Power added Appendix C to the WMP to provide Oregon-specific information related to wildfire requirements and recommendations.

1. INTRODUCTION

1.1. Background

In recent years, the Western United States has experienced an increase in the frequency and intensity of wildland fires (wildfires). A variety of factors have contributed in varying degrees to this trend including climate change, increased human encroachment in wildland areas, historical land management practices, and changes in wildland and forest health, among other factors.

While Idaho Power has not experienced catastrophic wildfires within its service area at the same level experienced in other western states, such as California and more recently certain areasin Oregon, millions of acres of rangeland and southern Idaho forests have burned in the last 30 years.[5] In that same time period, the wildfire season in Idaho has expanded by 70 days.[6] Idaho's wildfire season is defined by Idaho Code § 38-115 as extending from May 10 through October 20 each year, or as otherwise extended by the Director of the Idaho Bureau of Land Management (BLM). Oregon's wildfire season is designated by the State Forester each year pursuant to Oregon Revised Statute § 477.505 and typically begins in June. Idaho Power's operational practices account for the differences between Idaho and Oregon's wildfire seasons and requirements.

1.2. Idaho Power Profile and Service Area

Idaho Power is an investor-owned utility headquartered in Boise, Idaho, engaged in the generation, transmission, and distribution of electricity. Idaho Power is regulated by the Federal Energy Regulatory Commission (FERC) and the state regulatory commissions of Idaho and Oregon. Idaho Power serves approximately 600,000 retail customers throughout a 24,000 square mile area in southern Idaho and eastern Oregon (see Figure 6).

[5] Rocky Barker, *70% of S. Idaho's Forests Burned in the Last 30 Years. Think That Will Change? Think Again.*, Idaho Statesman, October 4, 2020.

[6] Ibid.

Figure 6
Idaho Power service area

Of Idaho Power's 24,000 square mile service area, approximately 4,745 square miles are located in Oregon and 19,255 in Idaho. Approximately 20,000 customers are served in Oregon and 580,000 in Idaho.

1.3. Asset Overview

Idaho Power delivers electricity to its customers via more than 310 substations, 4,800 miles of overhead transmission lines, and 19,300 miles of overhead distribution lines. Table 3 summarizes the overhead powerline asset information by state. Approximately 2,871 pole miles (12%) are in Oregon and 21,042 (87%) are in Idaho.

Table 3
Overhead transmission voltage level and approximate line mileage by state (Dec. 31, 2021)

ASSET	TOTAL	IDAHO		OREGON		MONTANA		NEVADA		WYOMING	
	Pole Miles	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%
46 kV Transmission Lines	383	383	100								
69 kV Transmission Lines	1,136	743	65	344	30	50	4				
115 kV Transmission Lines	3			3	100						
138 kV Transmission Lines	1,448	1,242	86	141	10			65	4		
161 kV Transmission Lines	84	84	100								
230 kV Transmission Lines	1,148	927	81	219	19						
345 kV Transmission Lines	473	364	77							110	23
500 kV Transmission Lines	103	53	51	50	49						
Total OH Transmission Lines	4,778	3,796	80	757	16	50	1	65	1	110	2
Total OH Distribution	19,297	17,183	89	2,114	11						
Total OH Pole Miles	24,075	20,979	87	2,871	12	50	0.21	65	0.27	110	0.46

1.4. Objectives of this Wildfire Mitigation Plan

The primary objectives of this WMP are to identify and implement strategies to accomplish the following:

1. Reduce wildfire risk associated with Idaho Power's transmission and distribution (T&D) facilities and associated field operations.

2. Improve the resiliency of Idaho Power's T&D system in a wildfire event, independent of the ignition source.

3. Comply with all wildfire mitigation requirements established by its regulators.[7]

Idaho Power's approach to achieving these objectives includes the following actions:

- Engage with government and industry entities and electric utility peers to ensure understanding and commonality of wildfire mitigation plans.

- Utilize a risk-based approach to quantify wildland fire risk that considers *wildfire probability* and *consequence* to identify areas of elevated wildfire risk within Idaho Power's service area. These identified areas are then incorporated in Idaho Power's geographic information system (GIS) mapping.

- Create specific and targeted operations and maintenance practices, system hardening programs, vegetation management, and field personnel practices to mitigate wildfire risk.

[7] The OPUC established docket AR 648, the interim permanent wildfire rulemaking, after the Oregon legislature passed Senate Bill 762. The bill created a requirement for public utilities in Oregon to submit "wildfire protection plans" to the OPUC by December 31, 2021.

- Incorporate information regarding current and forecasted weather and field conditions into operational practices to increase situational awareness.
- Employ public safety power shutoff (PSPS) protocols for Idaho Power's service area and transmission corridors.
- Evaluate the performance and effectiveness of strategies identified in this WMP through metrics and monitoring. The WMP and all its components will be reviewed prior to wildfire season each year.

2. GOVERNMENT, INDUSTRY, AND PEER UTILITY ENGAGEMENT

2.1. Objective

Idaho Power recognizes the importance of engaging with federal, Idaho and Oregon State governments, and local governments as an integral part of mitigating wildfire risk. Idaho Power also recognizes the importance of engagement and outreach with respect to potential future PSPS events to minimize customer impact.

Idaho Power's wildfire mitigation plan and outage preparedness strategy includes specific activities to engage with key stakeholders to share information, gain feedback, and incorporate lessons learned. Peer utility engagement is crucial to ensure the company's efforts are informed by the best practices of its peers in Idaho and Oregon.

2.2. Government Engagement

Much of Idaho Power's service area extends over land managed by the BLM and U.S. Forest Service. Idaho Power engages with both agencies to share information and identify areas and activities that are mutually beneficial. For example, Idaho Power allowed for an extended firebreak along Highway 93 in Jerome County, Idaho, on its property to help with BLM wildfire mitigation initiatives.

Idaho Power is also a member of the Idaho Fire Board, which was initiated by the U.S. Forest Service. Membership is voluntary and currently includes the Forest Service, BLM, Federal Emergency Management Agency (FEMA), Idaho State Lands Department, Idaho Department of Insurance, Idaho Military Division, City of Lewiston, Idaho Power, and The Nature Conservancy in Idaho.

Idaho Power is actively engaged with both the IPUC and the OPUC with respect to wildfire mitigation activities. Idaho Power filed its WMP with the IPUC in 2021 and again in 2022. In Oregon, the company is required to submit an updated WMP by the end of each calendar year. Idaho Power continues to participate in the OPUC's Oregon Wildfire and Electric Collaborative (OWEC) and ongoing rulemaking efforts.

2.3. Industry and Peer Utility Engagement

Although Idaho Power relied on plans developed by several California utilities in drafting its own WMP, modifications were made to account for Idaho Power's considerably different risk profile. Additionally, Idaho Power participated in multiple workshops with San Diego Gas and Electric, Southern California Edison, Pacific Gas and Electric, Sacramento Municipal Utility District, and PacifiCorp. The company continues to engage with these utilities to learn about California's evolving practices.

In the Pacific Northwest, many utilities work collaboratively to understand and ensure commonality of their various wildfire mitigation plans, while accounting for the variation in each

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utility's unique service area. These utilities include Idaho Power, Avista Utilities, Portland General Electric, Rocky Mountain Power, Pacific Power, Chelan County Public Utility District, Puget Sound Energy, NV Energy, Bonneville Power Administration (BPA), and Northwestern Energy.

Idaho Power is also a member of both the Edison Electric Institute (EEI) and the Western Electric Institute (WEI). The company participated in multiple workshops and conferences with both entities and member utilities to evaluate the strength and effectiveness of Idaho Power's WMP in comparison to other members' plans. Additionally, Idaho Power's CEO and President is an active member of the EEI Electricity Subsector Coordinating Council Wildfire Working Group. This working group has been partnering with the U.S. Department of Energy and other government agencies to collectively minimize wildfire threats and potential impacts.

These workshops continue to prove valuable for sharing wildfire mitigation best practices and discussing new and existing technology related to wildfire mitigation. For example, EEI and WEI workshops, as well as independent investigations, led Idaho Power to expand its use of Unmanned Aircraft Systems ([UAS] also known as drones) during line patrols, replace expulsion fuses with energy limiting fuses, and add mesh wraps to wood poles in wildfire risk zones. Idaho Power has also enlisted a team of employees to focus on wildfire mitigation technologies by identifying opportunities to incorporate new and innovative technologies into Idaho Power's wildfire mitigation efforts.

2022 Industry and Peer Utility Engagement

Idaho Power continues to engage with industry groups and peer utilities to gain knowledge of new mitigation activities, industry best practices, and employing technology to reduce wildfire risk. The following summarizes 2022 activities:

- Technology—Held meetings with over 30 vendors and manufacturers to identify new technology and innovations used to mitigate wildfire risk. The findings were used to develop a roadmap and led to the creation of pilot projects in 2022 and 2023.
- Electric Power Research Institute (EPRI)—Engaged with EPRI to learn more about new technology and the attributes of covered conductor, particularly the UV performance and reliability performance.
- Utility Wildfire Symposium—Attended a symposium hosted by EPRI and Portland General Electric focused on new technology, trends, and ways to mature risk modeling.
- NW Wildfire Group—Attended biennial meetings and shared details of Idaho Power's WMP and PSPS plan with attendees including how new technology and innovative materials are being incorporated.
- WEI—Provided a presentation and details of Idaho Power's documented processes and procedures used in PSPS execution and customer notifications.
- WEI Wildfire Planning and Mitigation Virtual Meeting—Attended a two-day conference to gain insight into mitigation activities and strategies other utilities are pursuing.
- International Wildfire Risk Mitigation Consortium—Held meetings throughout the year with program managers and participated in a risk reduction seminar focused on vegetation management.
- Oregon Wildfire Detection Camera Strategy Group—Became a member of a workgroup focused on the interoperability of different camera platforms to improve fire detection, suppression efficiency, and response time. This group has provided valuable information into the benefits that cameras hold for early fire detection and how partnerships can be utilized to expedite the installation.
- Wildfire Technology Webinar—Attended webinar focused on using artificial intelligence (AI) drones for grid inspections, aerial sensors, and cameras to gain situational awareness.
- National Forest Foundation (NFF)—Attended multiple meetings with the NFF and other agencies to learn more about the benefits of fuel treatments and shared stewardship programs and how utilities have participated in other locations. Lessons learned include details of the success achieved in the Upper Arkansas Forest Fund in the State of Colorado.
- British Standards Institute (BSI) —Attended a two-day course taught by BSI to gain knowledge of the International Organization for Standardization (ISO) 31000 risk management framework and how it can be applied to the company's WMP.

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3. QUANTIFYING WILDLAND FIRE RISK

3.1. Objective

Idaho Power's approach to quantifying wildland fire risk is to identify geographic areas of elevated wildfire risk if a wildfire ignites near a power line. Mitigation actions and programs are prioritized in those areas identified as elevated wildfire risk areas.

3.2. Identifying Areas of Elevated Wildfire Risk

Idaho Power hired an external consultant that specializes in assessing and quantifying the threat of wildfire through a risk-based methodology that leverages weather modeling, wildfire spread modeling, and Monte Carlo simulation. This methodology is not unique to Idaho Power's WMP. The California Public Utilities Commission (CPUC) used the same modeling approach (and in fact, the same consultant) in developing its CPUC Fire Threat Map. In addition, other utilities in Oregon, Idaho, Nevada, and Utah have utilized similar modeling to identify and quantify wildfire risk.

This methodology is consistent with conventional definitions of *risk*, which is usually taken as an event's *probability* multiplied by its potential negative *consequences* or impacts should that event occur. For Idaho Power's wildfire risk assessment, this formula is:

Wildfire Risk = Fire Probability x Consequence

The definition of each component is as follows:

Fire Probability. Fire volume (i.e., spatial integral of fire area and flame length) is used as Fire Probability because rapidly spreading fires are more likely to escape initial containment efforts and become extended fires than slowly developing fires. Data inputs used in the fire spread model to determine the fire volume (Fire Probability) include:

- Historical weather (temperature, wind speed/direction, relative humidity)
- Topography
- Fuel types present
- Fuel moisture content (both dead and live fuels)

Consequence. Number of structures (i.e., homes, businesses, other man-made structures) that may be impacted by a wildfire.

Wildfire Risk. Fire Probability multiplied by the Consequence. The highest Wildfire Risk areas are those where both the Fire Probability and Consequence are elevated. Conversely, combinations of low Fire Probability and elevated Consequence, or elevated Fire Probability and low Consequence typically indicate lower Wildfire Risk.

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3.2.1. Wildfire Risk Modeling Process

The wildfire risk modeling process incorporated the following major steps:

1. A 20-year (2000–2019) fire weather climatology was developed utilizing the Weather Research and Forecasting (WRF) model to recreate historical days of fire weather significance across Idaho Power's service area. This analysis generated high-resolution hourly gridded fields of relative humidity, temperature, dead fuel moisture, and wind speed/direction that was used as input to a Monte Carlo-based fire modeling analysis.

2. Estimates of seasonal variation in live fuel moisture across Idaho Power's service area were developed. This was accomplished by analyzing historical fuel measurements and/or weather station observations. This step was necessary because live fuel moisture data is needed for fire spread modeling, but the WRF weather model does not provide live fuel moistures.

3. The federal LANDFIRE program was utilized to provide high-resolution (approximately 100 feet) fuel rasters for use in fire spread modeling.[8]

4. The data developed above (WRF climatology, live fuel moisture, and LANDFIRE data) was used to drive a Monte Carlo[9] fire spread modeling analysis. This Monte Carlo simulation was accomplished by randomly selecting an ignition location and a randomly selected day from the fire weather climatology developed in step 1 above. Ignition locations were limited in the model to be within a two-kilometer buffer surrounding Idaho Power's overhead T&D lines (i.e., 1 kilometer on either side). The model used equal ignition probability for all overhead distribution and transmission asset types. Urbanized areas having underground circuitry were not included in the model due to a low probability of wildfire associated with underground electrical equipment. Note that transmission lines jointly owned by Idaho Power and PacifiCorp were included in the analysis. Furthermore, the proposed Boardman to Hemingway (B2H) 500 kilovolt (kV) line route was also included in this analysis. For each combination of ignition location and time of ignition, fire progression was then modeled for 6 hours. For each modeled fire, potential fire impacts to structures were quantified using structure data. This was repeated across Idaho Power's service area for millions of combinations of ignition location and time of ignition.

5. The Monte Carlo results were processed, and GIS based data depicting fine grained wildfire risk was developed. This risk was then visually depicted on GIS based wildfire risk maps.

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[8] Chris Lautenberger, Mapping areas at elevated risk of large-scale structure loss using Monte Carlo simulation and wildland fire modeling. IAFSS 12th Symposium 2017.

[9] Ibid.

2023 Risk Modeling Update

With the help of our consultant in 2023, Idaho Power will strive to improve risk modeling to better understand wildfire risk and estimations of wildfire consequences along electric lines and equipment. Ares of focus include:

- Incorporate structure density information using 2020 Census data
- Incorporate proposed building developments in or near wildfire risk zones
- Explore new available data to potentially incorporate into wildfire probability and consequence. Examples include:
  - Fire history
  - Land use changes

Additionally, Idaho Power's risk modeling update will include assessing feedback from customers and agencies received throughout the year. Enhancements made will provide more understanding and improved methods to better inform operational decision-making and risk treatments.

Idaho Power's broader risk framework is discussed in Section 4.

3.2.2. Wildfire Risk Areas

Based on the previously described modeling, draft risk tiers were generated algorithmically[10] by an automated process. Tiers were established which, if exceeded, would classify an area as Tier 2 (elevated risk) or Tier 3 (high risk). To aid in customer and public understanding, Idaho Power also color-coded the tiers to reflect relative risk—Yellow Risk Zones (YRZ) for Tier 2 and Red Risk Zones (RRZ) for Tier 3. This was accomplished by manually setting threshold values at naturally occurring breaks. Idaho Power held several public workshops wherein tiers were reviewed and adjusted based upon consideration of local and institutional knowledge and potential impacts to communities. This was a similar approach taken by the California Public Utilities Commission in developing a state wildfire risk map. Consequently, the resulting risk tiers reflect risk relative to Idaho Power's service area only and not absolute risk. As set forth later in this plan, Idaho Power's risk profile is significantly lower than utilities serving California.

An integral part of the consultant's mapping process involved reviewing the tiers and making necessary adjustments to account for unique aspects of certain areas, including factors that may increase or decrease risk, which would not be accounted for in the computer modeling. Several factors were considered, including the following:

[10] Ibid.

- Topography and resistance to fire control
- Means of ingress and egress
- Presence/absence of defensible space
- Vulnerable populations
- Cell phone coverage
- Non-burnable land cover such as built-up urban areas

This review helped define overall tier boundaries and, in some cases, expanded Tier 3 areas or moved certain Tier 2 areas into Tier 3. For example, the Charlotte fire was a human-caused fire that occurred in Pocatello in 2012 and burned more than 1,000 acres and destroyed 66 homes and 29 outbuildings. It was a difficult fire to control and highlighted the dangers of juniper trees intermixed within the wildland urban interface (WUI). Local knowledge of this event was used to expand outlying Tier 2 areas in the vicinity of the Charlotte fire into Tier 3. As part of integrating the ISO 31000 risk management processes into the WMP, Idaho Power plans to review tier levels and boundaries as part of continuous improvement and maturing our risk modeling methods.

Table 4 provides a breakdown of pole miles in risk zones on a system-wide basis and by state. Across Idaho Power's service area, 8% of pole miles exist in elevated risk zones (either RRZs or YRZs). In Idaho, 5% of pole miles exist in YRZs and 3% exist in RRZs. In Oregon, less than 1% of pole miles exist in YRZs. The company has no RRZs in Oregon.

Table 4
Idaho Power's transmission and distribution lines by risk zone in Idaho and Oregon*

Asset	Total Pole Miles	Total Pole Miles within Wildfire		Wildfire Risk Zone by State											
				Tier 2 - Idaho		Tier 3 - Idaho		Tier 2 - Oregon		Tier 3 - Oregon		Tier 2 - Nevada		Tier 3 - Nevada	
		Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%
Transmission Lines	4,778	517	11%	376	8%	110	2%	20	0.42%	0	0%	11	0.23%	0	0%
Distribution Lines	19,297	1,447	7%	837	4%	581	3%	29	0.15%	0	0%	0	0%	0	0%
Total Pole Miles	24,075	1,964	8%	1,213	5%	691	3%	49	0.20%	0	0%	11	0.05%	0	0%

*Geospatial analysis was performed in 2022 to reconfirm the pole miles in wildfire risk zones.

The final two-tier risk map reflecting relative increased risk in YRZs and RRZ is shown in Figure 7. The map is the foundation of Idaho Power's wildfire mitigation and risk reduction strategies. It is used to determine and prioritize targeted investments, inspection activities, and increase situational awareness for field personnel.

The risk zone map can be viewed in detail on Idaho Power's website. Individual addresses can be entered on the map to determine proximity to identified risk zones.

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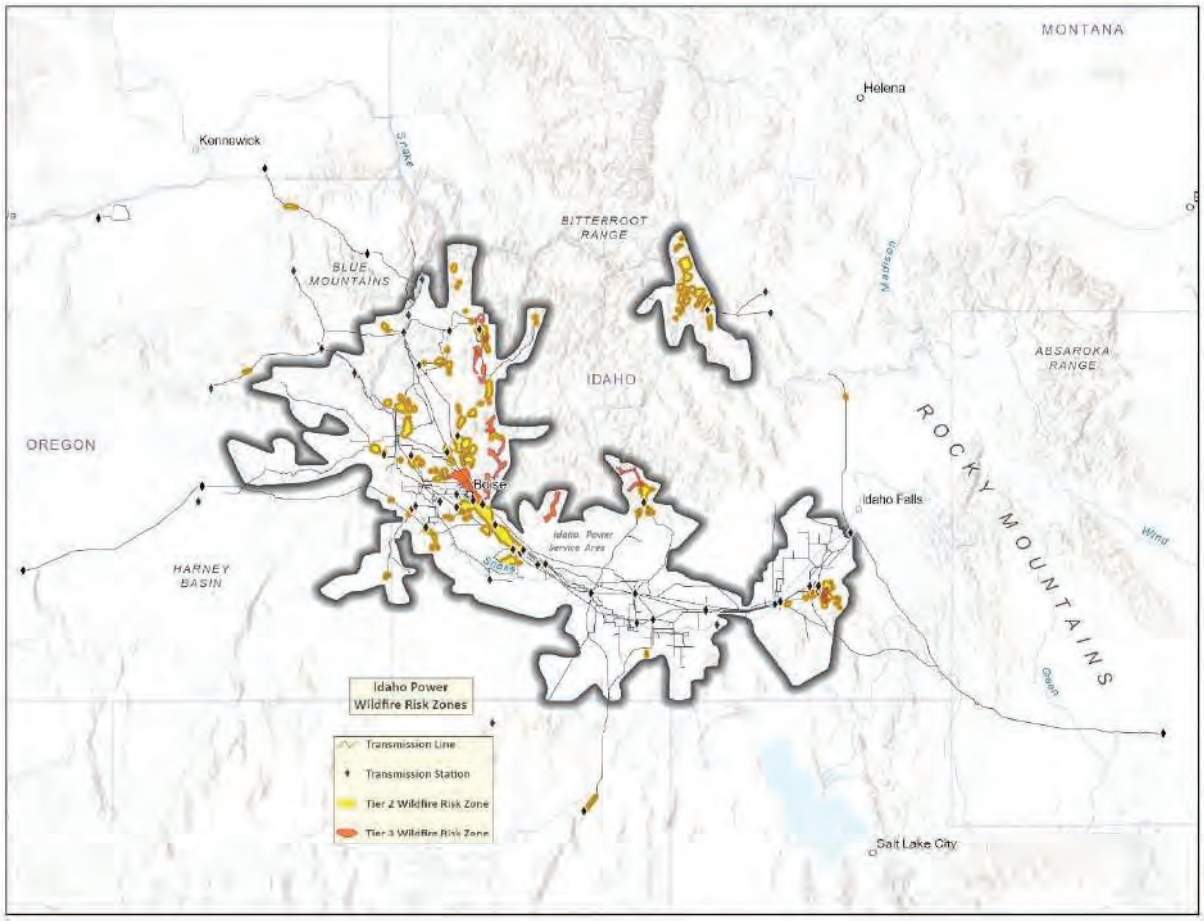

Figure 7
Wildfire Mitigation Plan—Risk Map

Additionally, Figures 8 through 11 delineate risk zones in Idaho and Oregon.

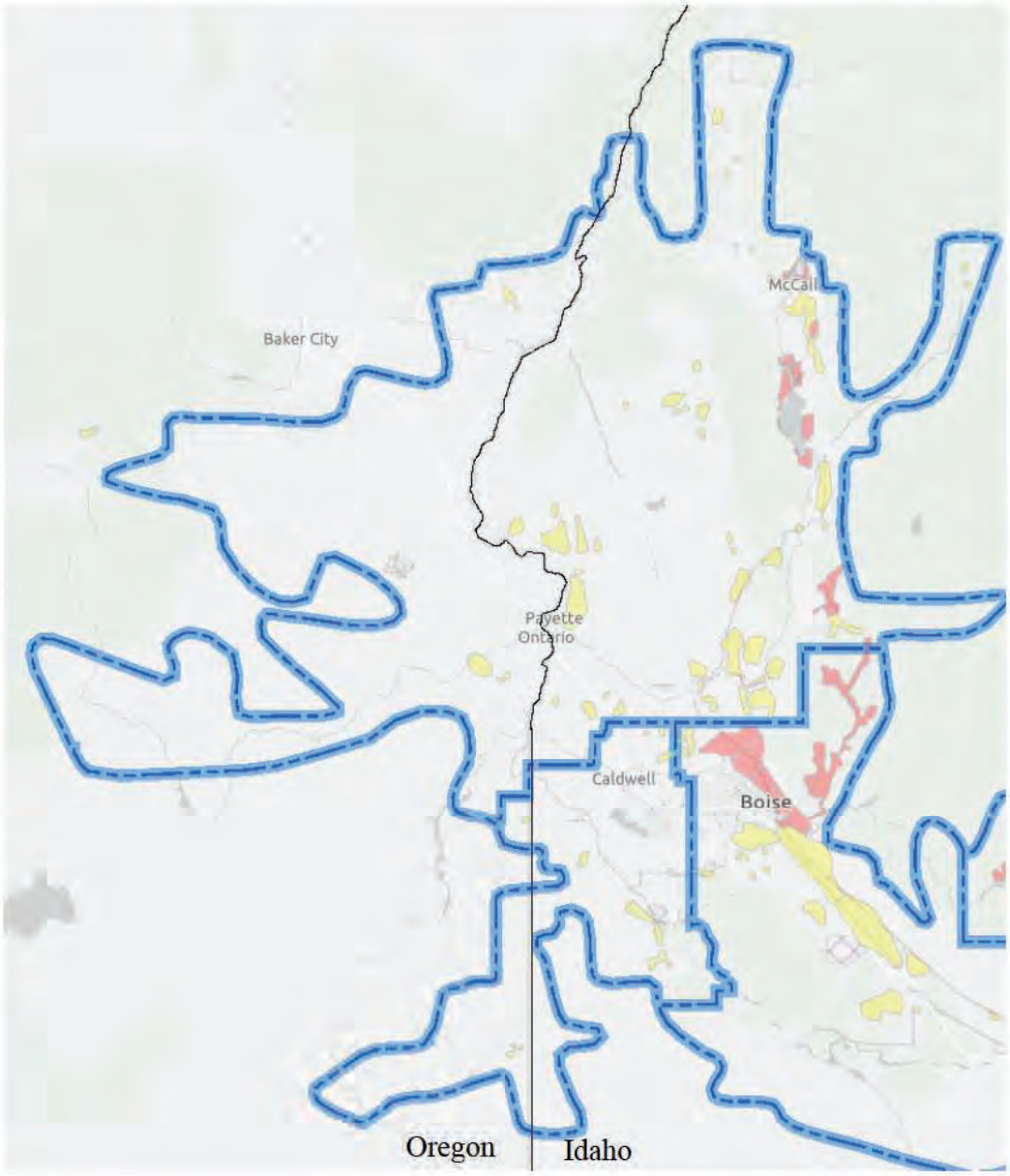

Figure 8
Wildfire Risk Map—western Idaho and eastern Oregon

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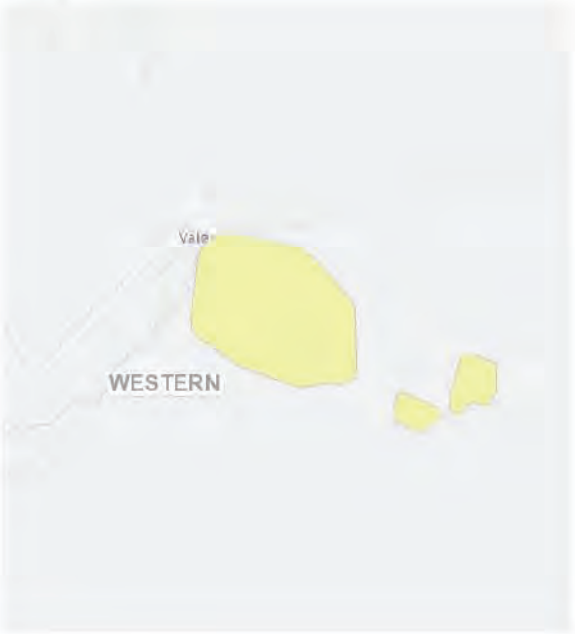
Halfway

Vale



Idaho-Oregon Boarder

Jordan Valley

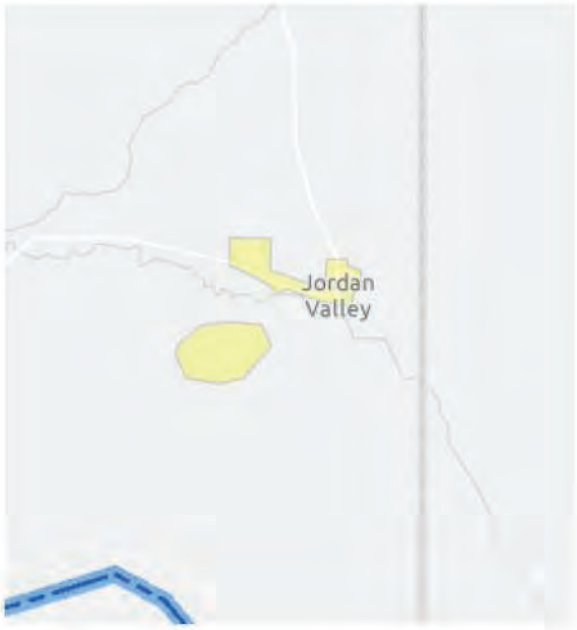


Figure 9
Oregon-specific zones

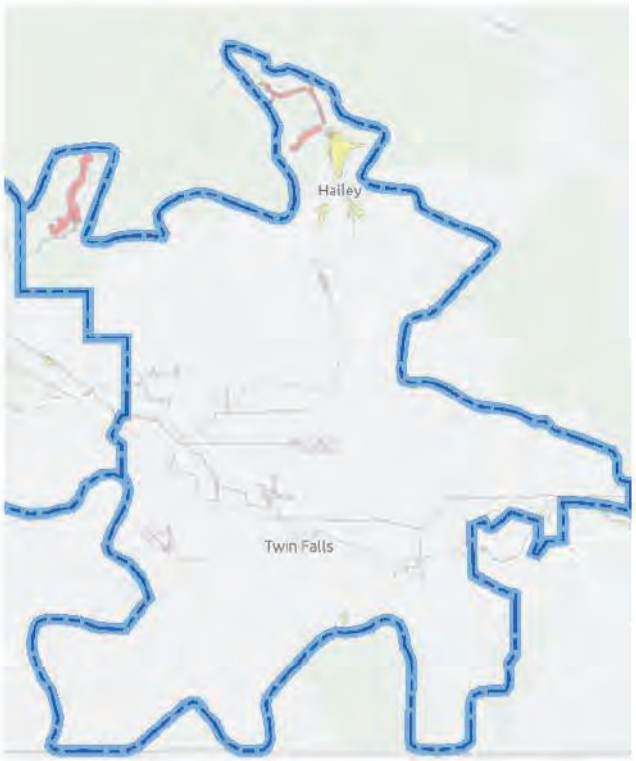


Figure 10
Wildfire Risk Map—southern Idaho

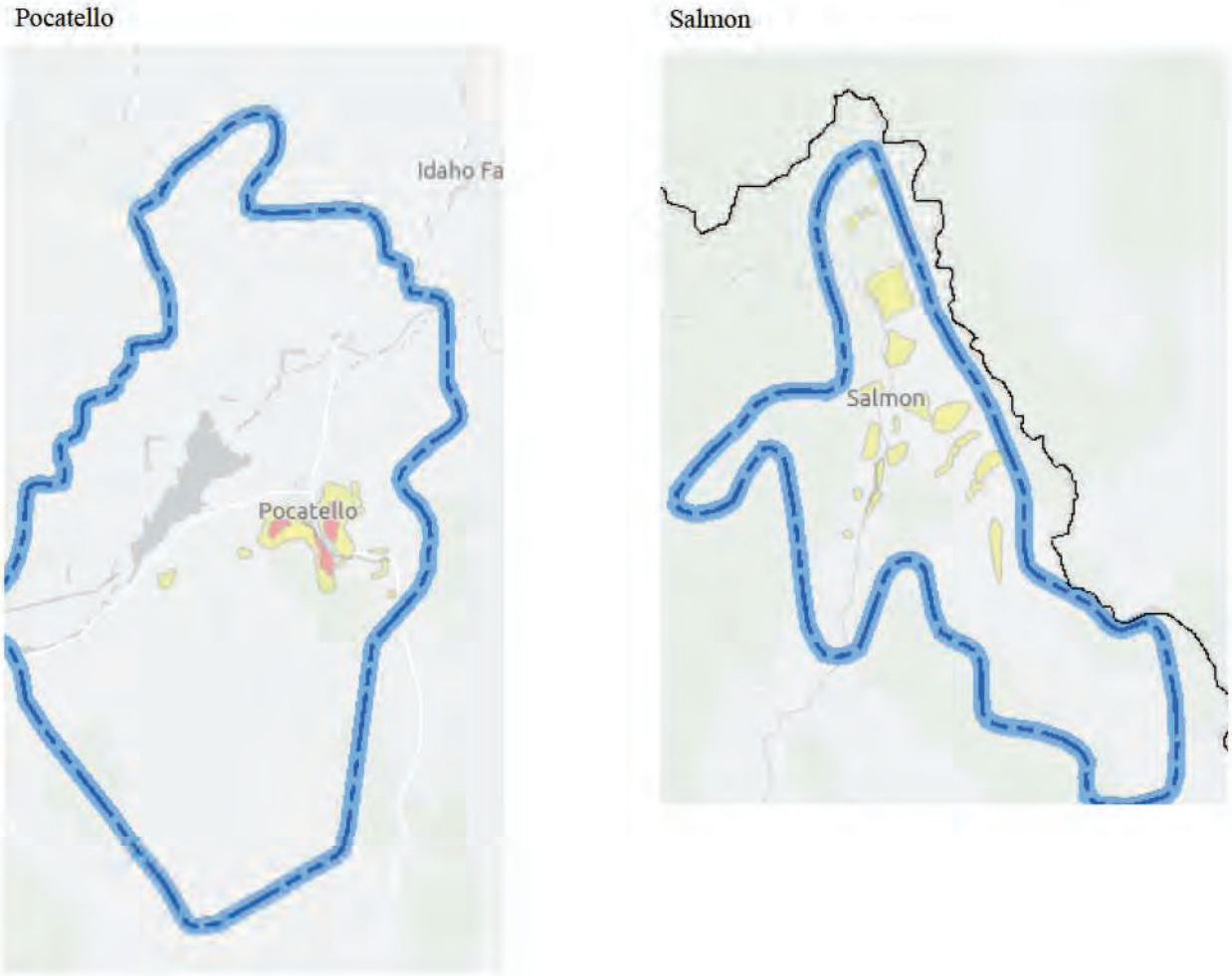


Figure 11
Wildfire Risk Map—eastern Idaho

3.2.2.1. Boardman to Hemingway Proposed Transmission Line

Idaho Power specifically considered the proposed route of the B2H 500 kV transmission line as part of the WMP. The proposed B2H route was included in the wildfire risk assessment and associated map analysis (see Figure 3). Two locations are identified along the route as having increased wildfire risk (YRZs), and there were no areas of higher risk (RRZs). Although the B2H transmission line has not been constructed as of the publication of this 2023 WMP, Idaho Power intends this WMP (as it will be reviewed annually) will apply to B2H. Additionally, Idaho Power will continue to update its fire risk mapping periodically and address the locations with elevated risk consistent with the mitigation strategy for transmission lines as described in sections 5–9 of this WMP.

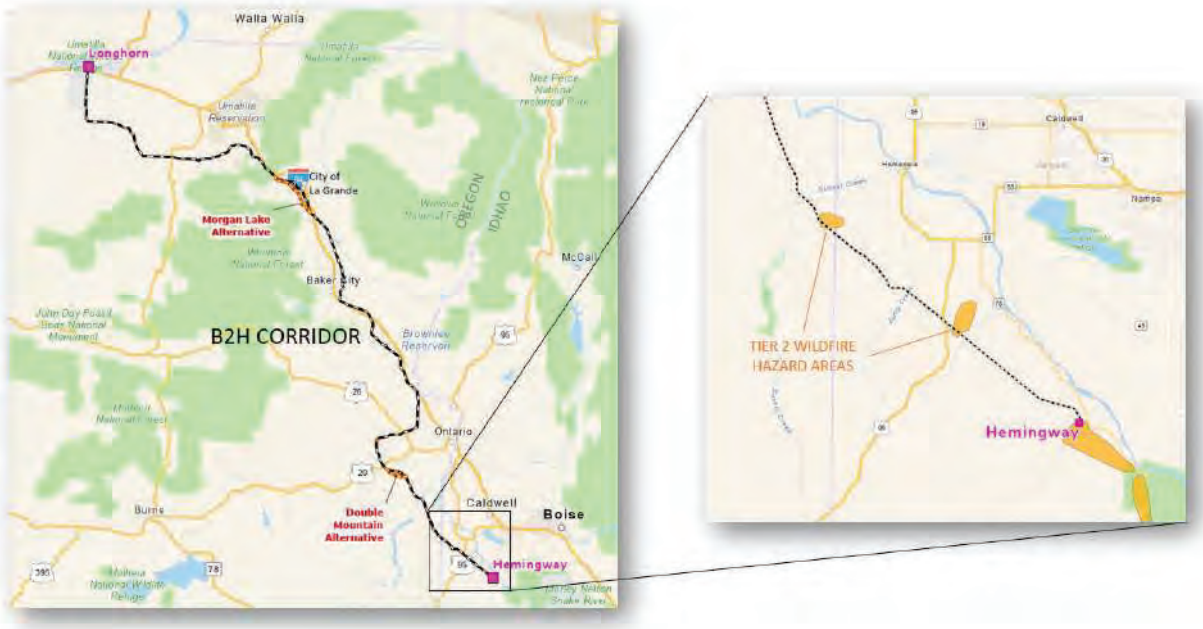


Figure 12
B2H proposed route risk zones

4. Costs and Benefits of Wildfire Mitigation

4.1. Objective

This section details Idaho Power's assessment of high-level risk with respect to undertaking wildfire mitigation activities. This assessment provides a framework for understanding the potential consequences of wildfire damage and the possibility of diminishing those consequences through targeted mitigation activities.

To that end, Section 4.3 identifies selected mitigation activities and the estimated costs of those activities on a system level. In Section 4.4, each mitigation activity is discussed in detail, with an assessment of why it was selected, what alternatives (if any) may be available, and any additional benefits (referred to as "co-benefits") the company believes may result from pursuing it.

4.2. Risk-Based Cost and Benefit Analysis of Wildfire Mitigation

In assessing the probability and consequence of wildfire risk, and to identify benefits of various wildfire mitigation efforts, Idaho Power engaged with its external consultant and considered several sources of empirical data on the costs of major wildfires—both in terms of fires that burn into Idaho Power's facilities or that originate from electric infrastructure. These costs can include replacement costs of the company's property; the cost of fire suppression and environmental damage; third-party claims for property damage; employee and public injuries and fatalities; and other economic losses.

Through its research, Idaho Power found that obtaining a precise calculation of the potential costs of future wildfires is not realistic. The damage that any fire may cause depends on factors such as wind and weather, vegetation, fire risk levels, location, and population and structure density.

Idaho Power's assessment of the potential costs of wildfires—used in developing the WMP and the scope of proposed updates to practices—involved a review of prior major fires in other states, as well as calculations by other western utilities. While this assessment did not yield a precise quantification of potential benefits specific to Idaho Power, it provides a helpful illustration of the potential costs of not taking actions aimed at reducing wildfire risk.

Idaho Power reviewed and considered calculations analyzing the potential reduction in probability of igniting wildfires based on risk-mitigating activities. For instance, in a June 2020 filing before the IPUC, Avista Corporation (Avista) stated that its "analysis indicates a 10-year inherent potential risk exposure of at least $8 billion dollars," though noted the figure should not

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be interpreted as a precise financial estimate.[11] Avista further noted that the actions it proposes in its own wildfire resiliency plan result in an average percentage of risk mitigation of 89% for the overall plan.[12]

In California, costs and damages associated with wildfires in recent years have exceeded $10 billion per year, with those associated with the 2020 fires alone potentially set to exceed $20 billion.[13] This increase[14] is consistent with the fact that, with few exceptions, the prevalence, intensity, and impact of wildfires continues to escalate year after year as evidenced by information compiled by the California Department of Forestry and Fire Protection (CAL FIRE) and detailed in Table 5.

Table 5
CAL FIRE wildfire data by year

Year	Estimated Acres Burned	No. of Wildfires	No. of Confirmed Fatalities	No. of Structures Damaged or Destroyed
2020	4,197,628	9,279	31	10,488
2019	259,823	7,860	3	732
2018	1,975,086	7,948	100	24,226
2017	1,548,429	9,270	47	10,280
2016	669,534	6,954	6	1,274

The data compiled by peer utilities, historic fire costs, and known damage from prior fires are instructive. Considering peer metrics and analyses on probability and magnitude, as well as Idaho Power's own empirical review of wildfire events such as those in California and Oregon—and the resulting loss of lives—it is reasonable to conclude that the potential human and capital costs and damage from wildfire events vastly exceed any incremental costs of wildfire mitigation efforts identified in this WMP.

[11] *In the Matter of Avista Corporation's Application for an Order Authorizing Accounting and Ratemaking Treatment of Costs Associated with the Company's Wildfire Resiliency Plan,* Case No. AVU-E-20-05, Application at 17.

[12] Ibid.

[13] Jill Cowan, *How Much Will the Wildfires Cost?*, The New York Times, Sept. 16, 2020, at https://www.nytimes.com/2020/09/16/us/california-fires-cost.html.

[14] Idaho Power believes that its system is in notably better condition than some utilities in California. Nevertheless, these figures illustrate the destruction that can occur from vegetation contact if vegetation is not actively managed.

2023 Wildfire Mitigation Analysis Framework

In 2022, Idaho Power reviewed the risk management process used in developing previous versions of the WMP. The review consisted of reexamining existing risk management practices, specifically how risk is analyzed, evaluated, treated, and continuous improvement is applied. We also benchmarked against other western utilities' risk management approaches and consulted with risk management professionals, both internal and external to Idaho Power.

A formalized risk management process will provide greater structure and consistency in decision making, continuous improvement, and maturing our analytical approach to balancing costs and mitigation benefits. As part of this work, the company determined that the international standard ISO 31000 is widely used by other utilities as a guide or foundation for their WMPs and was recommended to be incorporated by risk management professionals. The ISO 31000 is one of several guides to effective risk management and much of the processes used to create previous versions of the WMP align with the recommended practices found in the standard. However, the ISO 31000 provides a more comprehensive approach to risk management than what was being employed prior and will be integrated into the plan in 2023. This effort will start by performing the following:

- Engage Idaho Power stakeholders to participate in risk review processes and activities with the goal that all employees become managers of risk
- Develop a comprehensive picture of all risk management activities associated with the WMP and how they compare to the ISO 31000
- Determine how the ISO 31000 principles can be applied, achieved, measured, and tracked
- Develop a framework based on the ISO 31000 that provides a structured and effective approach to managing wildfire-related risk and includes a process of reviewing and maturing the methods used for risk identification, analysis, evaluation, and treatment

4.3. Wildfire Mitigation Cost Summary

From 2022–2025, Idaho Power estimates investing $46.8 million in incremental operations and maintenance (O&M) expenses to further wildfire mitigation measures. The following table summarizes the company's planned expenditures associated with executing its WMP through 2025. Estimated amounts reflect the company's best estimates and plans as of the 2022 WMP. These estimates will likely change in the future as the company reviews and refines its WMP and associated mitigation activities. For the 2022 WMP, each wildfire mitigation category—and associated estimated expenditures in Oregon and Idaho—is discussed in Section 4.4.

Table 6
Estimated system-wide incremental O&M expenses for wildfire mitigation, $000s (2023–2025)[15]

	2023	2024	2025	Idaho Power System Total 2023 - 2025
A. Quantifying Wildland Fire Risk				
Risk Map Updates	$ 67	$ -	$ 69	$ 136
B. Situational Awareness				
Weather Forecasting - System development and support	$ 47	$ 74	$ 74	$ 195
Weather Forecasting Personnel - Fire Potential Index (FPI) and Public Safety Power Shutoff (PSPS)	$ 178	$ 99	$ 102	$ 379
Weather Forecasting - Weather Station Maintenance	$ 19	$ 24	$ 30	$ 73
Pole Loading Modeling & Assessment (Contract service)	$ 75	$ 75	$ 75	$ 225
Cameras	$ 165	$ 220	$ 220	$ 605
C. Mitigation - Field Personnel Practices				
Tools/Equipment	$ 5	$ 5	$ 5	$ 15
Mobile Weather Kits for Field Observers	$ 10	$ -	$ -	$ 10
International Wildfire Risk Mitigation Consortium	$ 40	$ 40	$ 40	$ 120
D. Mitigation - Transmission & Distribution Programs				
O&M Component of Capital Work	$ 61	$ 60	$ 54	$ 175
Annual O&M T&D Patrol Maintenance Repairs	$ 50	$ 50	$ 50	$ 150
Environmental Management Practices	$ 25	$ 25	$ 25	$ 75
Transmission Thermography Inspection Mitigation - Red Risk Zon	$ 20	$ 20	$ 20	$ 60
Distribution Thermography Inspection Mitigation - Red Risk Zone	$ 30	$ 30	$ 30	$ 90
Thermography Technician Personnel	$ 160	$ 165	$ 170	$ 495
Transmission Wood Pole Fire Resistant Wraps - Red Risk Zone	$ 88	$ -	$ -	$ 88
Transmission Wood Pole Fire Resistant Wraps - Yellow Risk Zone	$ 163	$ 163	$ 163	$ 489
Wildfire Mitigation Program Manager	$ 191	$ 196	$ 202	$ 589
Covered Wire Evaluation - Pilot Program in PSPS Zones	$ 50	$ 50	$ -	$ 100
E. Vegetation Management				
Transition to/Maintain 3-year Vegetation Management Cycle	$ 11,196	$ 13,347	$ 12,172	$ 36,715
Enhanced Practices for Distribution Red & Yellow Risk Zones (Pre-Fire Season Patrols/Mitigation, Pole Clearing, Removals, Work QA)	$ 1,284	$ 1,349	$ 1,416	$ 4,049
Line Clearing Personnel	$ 159	$ 164	$ 169	$ 492
Fuel Reduction Program	$ 75	$ 75	$ 75	$ 225
Vegetation Mgmt Satellite and Aerial patrols	$ 150	$ 300	$ 300	$ 750
F. Communications				
Wildfire/Wildfire Mitigation Education/Communication - Advertisements, Bill Inserts, Meetings, Other	$ 100	$ 100	$ 100	$ 300
PSPS Customer Education/Communication - Advertisements, Bill Inserts, Other	$ 71	$ 71	$ 71	$ 213
G. Information Technology				
Communication/Alert Tool for PSPS Customer Alerts/Extended Use	$ 129	$ 129	$ 129	$ 387
Forecast Incremental O&M Expenditures Total	**$ 14,608**	**$ 16,831**	**$ 15,761**	**$ 47,200**

[15] As of December 29, 2022.

4.4. Mitigation Activities

Idaho Power selected individual wildfire risk mitigation activities based on a variety of factors, including assessment of industry best practices in wildfire mitigation; discussions with peer utilities; consultation with government entities and agencies; and with consideration of alternatives that could be pursued.

Below is a narrative of each mitigation activity, its purpose, estimated near-term cost, potential co-benefits of the activity to Idaho Power and its customers, and potential alternatives.

With respect to Idaho and Oregon cost estimates, the estimated costs identified below are grounded in cost assignment between the company's Idaho and Oregon service areas and further informed by anticipated work in the two service areas.

4.4.1. Quantifying Wildland Fire Risk

Idaho Power's assessment of wildland fire risk is discussed in Section 3 of this WMP.

The first step in developing Idaho Power's WMP was to conduct a comprehensive assessment of the company's service area and transmission corridors. The company worked with Reax Engineering, a consulting firm that specializes in wildfire risk modeling and fire science, to conduct Idaho Power's wildfire risk analysis. The company determined that hiring an external consultant was beneficial for two reasons: (1) an external consultant was more cost effective than hiring additional resources within Idaho Power to perform the modeling, and (2) an outside consultant helped ensure Idaho Power's risk analysis approach was similar to its peer utilities.

An additional co-benefit of hiring an external consultant is aligning risk analysis with other utilities' practices to create a basis for comparison of risk and also a standard terminology and methodology in discussing risk. Idaho Power deemed Reax Engineering a qualified consultant to perform wildfire risk analysis based on the work it performed for the CPUC in developing the CPUC Fire Threat Map. Other utilities in Oregon, Idaho, Nevada, and Utah have utilized similar modeling approaches to identify and quantify wildfire risk.

Cost Estimate for Quantifying Wildland Fire Risk (2023–2025)

Idaho Power intends to re-evaluate its risk analysis using an external consultant on two more occasions between 2023 and 2025. Idaho Power estimates system-wide expenditure for these services to be approximately is $136,000.

4.4.2. Situational Awareness—Weather Forecasting Activities and Personnel

Idaho Power discusses specific situational awareness practices in Section 5 of this WMP.

In developing the WMP, Idaho Power created a new Fire Potential Index (FPI) tool to support operational decision-making to reduce wildfire threats and risks. The tool takes data on weather,

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prevalence of fuel (i.e., trees, shrubs, grasses), and topography, and converts that data into an easily understood forecast of the short-term fire threat for different geographic regions in Idaho Power's service area. Additionally, Idaho Power plans to continue to enhance meteorological and weather forecasting capabilities to further improve FPI forecasting and help determine when a Public Safety Power Shutoff may be necessary in Idaho Power's service area.

The benefits of developing the FPI and enhancing the company's meteorological forecasting capabilities is greater situational awareness of Idaho Power's system during critical peak summer months. To continue to generate useful information and system benefits, Idaho Power's situational awareness activities will be evaluated and updated annually as necessary to support the company's wildfire preparedness.

The company considers the FPI and related efforts an essential part of reducing the risk of ignition from work activities. This provides Idaho Power field personnel would not have a tool to assess the fire potential on a consistent basis. Given the distinct benefits that result from the FPI and enhanced foresting capabilities, Idaho Power did not consider alternatives to the development of these critical tools.

Cost Estimate for Situational Awareness—Weather Forecasting Activities and Personnel (2023–2025)

The estimated expenditure for weather forecasting activities (weather forecasting tools, system development, weather station maintenance, and personnel) is $647,000 between 2023 and 2025.

4.4.3. Situational Awareness—Advanced Technologies

Beginning in 2022, Idaho Power created a Technology Strategy Initiative team aimed at determining how new technologies and innovative practices can be incorporated into the company's wildfire mitigation practices to further decrease wildfire risk. Technology-based practices being considered include—amongst others—strategic use of cameras, satellite, and aerial imagery to detect vegetation hazards, pole loading modeling (to assess the structural integrity of poles), as well as covered conductors. With regard to cameras, the company is evaluating a pilot to test placement of cameras in strategic, high-risk locations to enhance situational awareness. Additionally, the company is learning more about artificial intelligence and how it can be leveraged to detect wildfire ignitions. Multiple camera and analytics companies are being considered to determine potential cost-effective solution(s). The company is also working with local agencies to explore the possibility of partnering on the installation and ongoing use of cameras which may lead to reduced cost.

Cost Estimate for Situational Awareness—Pole Loading Modeling and Assessment (2023–2025)

The estimated system-wide expenditure to conduct pole loading modeling and assessment, which includes LIDAR assessment, is $225,000 for 2023 through 2025. Idaho Power plans to conduct the assessment in its highest risk zones, which are located exclusively in Idaho, as detailed in Table 4.

Cost Estimate for Situational Awareness—Cameras (2023–2025)

The estimated system-wide expenditure for the pilot evaluation installation of cameras in high-risk areas is $605,000 from 2023 through 2025. Idaho Power plans to prioritize the use of cameras in its highest risk zones, which are located exclusively in Idaho as detailed in Table 4.

4.4.4. Field Personnel Practices

Idaho Power discusses its field personnel practices in Section 6 of this WMP.

Idaho Power's wildfire mitigation strategy includes procedural measures to reduce potential ignition and spread of wildfires. Idaho Power developed a *Wildland Fire Preparedness and Prevention Plan* (included as Appendix A to this WMP) to provide guidance to Idaho Power employees and contractors. The plan includes information regarding fire season tools and equipment available on the job site; daily situational awareness relative to areas with heightened fire conditions; expected actions and mechanisms for reducing on-the-job wildfire risk as well as reporting requirements in the event of an ignition; and training and compliance requirements.

All Idaho Power crews, and certain field personnel and contractors performing work on or near Idaho Power's facilities are required to operate in accordance with the provisions of the *Wildland Fire Preparedness and Prevention Plan* and expected to conduct themselves in a fire-safe manner. They should be prepared for wildfire by carrying specific tools, including but not limited to, shovels, Pulaskis,[16] and water for initial suppression. Additionally, Idaho Power's PSPS program (included as Appendix B to this WMP) includes employees acting as Field Observers to report on site conditions as part of the de-energization process. Field Observers are equipped with mobile weather kits that include wind meters, compasses, and satellite communication devices to report real-time conditions.

The preparedness of Idaho Power crews and contractors is critical to comprehensive wildfire risk reduction practices. The incremental investment in field personnel equipment is focused on additional tools carried by employees working in elevated risk zones. Additionally, Idaho Power will join the International Wildfire Risk Mitigation Consortium (IWRMC), a group whose mission is to share lessons learned, best practices, and innovation in the area of wildfire mitigation. Many of Idaho Power's utility peers are part of the consortium. The company is not aware of any other effort or group that provides a similar level of access or insight into global thinking and advancements in wildfire mitigation as the IWRMC.

Cost Estimate for Field Personnel Equipment (2022–2025)

The estimated system-wide expenditure for field personnel equipment (tools, mobile weather kits, and participation in the IWRMC) is $145,000 between 2023 and 2025.

[16] A Pulaski is a hand tool specifically used for fighting fires that combines an axe and an adze atop a single handle. The tool is the invention of Edward Crockett Pulaski, a ranger with the U.S. Forest Service who was based in Wallace, Idaho, in the early 1900s.

4.4.5. Transmission and Distribution (T&D) Programs for Wildfire Mitigation

Idaho Power's T&D-related wildfire mitigation activities primarily involve expanded asset management programs and system hardening efforts, discussed in detail in Section 8.2 of this WMP. The narratives below provide insight into Idaho Power's consideration and selection of certain mitigation and hardening practices.

4.4.5.1. Annual T&D Patrol, Maintenance, and Repairs

Visual inspections are a critical component of T&D line-related wildfire mitigation efforts. On an annual basis, Idaho Power uses helicopters for visual aerial inspection of transmission lines that are Western Electricity Coordinating Council (WECC) path lines. Under the WMP, Idaho Power will continue to use this method of line inspection for all transmission lines located in Red Risk Zones. Idaho Power strives to complete these inspections prior to the start of the wildfire season; however, spring weather and snow levels may create access issues and delay the completion until June 15 in some areas.

Distribution lines that are located within RRZs are inspected on an annual basis to identify 'Priority 1' defects, or conditions that may result in an outage or potential ignition. The patrols will be completed by personnel that have been trained in distribution line inspection procedures and have experience in distribution line construction. Targeted defects may include cracked/broken crossarms, avian nesting hazards, damaged equipment and hardware, floating conductors, NESC violations, and other obvious defects that pose an immediate threat to the continued operation of the line. Similar to visual inspections for transmission lines, Idaho Power will strive to complete distribution inspections prior to the start of each wildfire season; however, access issues may delay the completion until June 15 in some areas.

Helicopters are not practical for carrying out all distribution patrols due to greater population, structural, and vegetation density, so unmanned aerial vehicles (UAV) with high-definition cameras are used to aid in these inspections in certain situations. These inspections allow personnel to look for potential line defects that may not be obvious from the ground. Priority 1 defects are immediately reported and repaired as soon as possible.

The company will continue to explore the expanded use of UAVs, as the detailed images and data collected through high-resolution aerial inspections can provide several co-benefits, including more granular data on vegetation growth and line and facility conditions.

Cost Estimate for Annual T&D Patrol, Maintenance, and Repairs (2023–2025)

The estimated system-wide incremental expenditure for annual T&D patrols, maintenance, and repairs is $150,000 from 2023 to 2025.

4.4.5.2. Thermography Inspections

While Idaho Power periodically conducts infrared thermography inspections as part of reliability and maintenance programs, the company is expanding these inspections in Red Risk Zones on an

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annual basis. These inspections are conducted using hand-held and drone-mounted cameras with thermal-sensing technology and can help identify defects associated with the overheating of equipment, connections, splices, or conductors.

As part of the thermography inspections, temperature gradients are analyzed to detect potential problems and issues found are prioritized based on their severity and repaired. Idaho Power recently created a new Thermography Technician position to carry out the inspections and coordinate repair activities, and additional resources may be added to perform this function across more of Idaho Power's service area if a single technician proves insufficient. To prioritize the use and information gained from this technology, it will initially be employed only in RRZs. 2022 is the test year to determine how many inspections can be performed, and the overall cost-benefit of the technology to help evaluate the possibility of expanding use and adding more resources.

Thermography inspections are uniquely valuable in that they are able to uncover problems undetectable to the naked eye. From the company's perspective, there is not a viable alternative to this practice. The technology enables more proactive identification of potential issues than would otherwise be possible.

Cost Estimate for Thermography Inspections (2023–2025)

The estimated expenditure for thermography inspections is $645,000 from 2023 to 2025. Idaho Power will prioritize the use of this mitigation practice in its highest risk zones, which are exclusively in Idaho, as detailed in Table 4.

4.4.5.3. Wood Pole Fire-Resistant Wraps

To help improve the resiliency of the company's wood transmission poles, Idaho Power now wraps them with a fire-resistant mesh in Red and Yellow Risk Zones. The mesh wrap helps protect the integrity of the pole if it is exposed to fire and improves the resiliency of Idaho Power's transmission system. An alternative to installing fire-proof mesh wrap is to replace wood poles with structures made of non-combustible material, such as steel. With 3,863 existing wood transmission poles in Idaho Power's Red and Yellow Risk Zones, the cost of replacing all wood poles is much higher than the cost of covering with a fire-resistant mesh.

Prior to developing the WMP, Idaho Power evaluated different products to determine the most cost-effective approach for protecting existing wood poles from fire. Several products were considered and trialed, including short-term spray-on and paint-on fire retardants, long-term retardants, and steel wraps. In 2020, the company evaluated a protective mesh wrap and compared the cost and performance to the alternatives. The evaluation found that the mesh wrap was approximately 53% less costly than the alternatives and offered the same level of risk reduction. The decision to use a mesh wrap product was not based solely on cost; other criteria were considered, including availability of the product, ease of installation, expected protective life span, and performance when exposed to fire. By all these measures, fire-resistant mesh was the best solution.

Cost Estimate for Wood Pole Fire-Resistant Wraps (2023–2025)

The estimated system-wide expenditure for applying fire-resistant mesh wraps to transmission poles in Red and Yellow Risk Zones is $577,000 between 2023 and 2025.

4.4.5.4. Covered Conductor Pilot

Idaho Power's Technology Strategy Initiative identified covered conductor as a potential mitigation measure to pilot. Benchmarking and feedback from other utilities highlighted the potential benefit of covered conductor as a mitigation measure. The company will conduct a pilot of covered conductor through 2024 to explore the benefits, tooling requirements for field personnel, and design parameters. While covered conductor may reduce the risk of wildfire, the company will analyze potential co-benefits, including improved reliability outside of wildfire season and reduced outage restoration costs.

Cost Estimate for the Covered Conductor Pilot (2023–2024)

The estimated cost of the pilot is $100,000 from 2023–2024. While this pilot will take place in Idaho, the lessons from it will extend across the company's service area.

4.4.6. Enhanced Vegetation Management

Idaho Power's enhanced vegetation management practices are discussed in detail in Section 8.3 of this WMP.

In the initial stage of developing its WMP, Idaho Power conducted an analysis to determine the most likely sources of ignition across the company's service area. Reliability data revealed vegetation contact as one of the most common causes of outages on Idaho Power's system. With the goal of eliminating potential ignition sources and to reduce risk, enhanced vegetation management was recognized as a critical aspect of Idaho Power's WMP.

To prioritize risk reduction from vegetation contact, Idaho Power determined it would move to a three-year pruning cycle and apply enhanced vegetation management practices in Red and Yellow Risk Zones. These enhanced practices include pre-fire season vegetation patrols, more targeted pole clearing and vegetation removal, and additional quality assurance for vegetation management practices.

The company considered other vegetation management alternatives, including shorter trimming cycles, longer trimming cycles, and strategies that evaluate each tree individually and only trim it once it has nearly grown back to the power line (known as "just-in-time trimming"). Each alternative presented challenges or resulted in negative impacts that undermined any potential benefits.

While shorter trimming cycles result in less vegetation being removed during each trimming cycle, this practice costs more due to the need for more resources and more frequent trimming of trees near the power lines. In contrast, longer cycles result in less frequent trimming of each tree but larger amounts of vegetation that must be removed to maintain larger clearance

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envelopes around the power lines to accommodate additional years of vegetative growth. Further, longer trimming cycles create logistical challenges that are exacerbated by tree biology. Some trees simply grow faster than a given trimming cycle and the longer the trimming cycle, the more pervasive this issue becomes. Longer cycles that call for heavy pruning also lead to hormonal imbalances between a tree's canopy and its root system. To correct this imbalance, the tree aggressively re-grows new sprouts to quickly replace its lost canopy. In this regard, heavier pruning results in a faster rate of tree regrowth than normal, making it even more difficult to consistently maintain longer trimming cycles. Finally, "just-in-time trimming" is primarily a reactive strategy that ultimately leads to challenges associated with securing qualified tree-trimming crews, as this ad hoc approach involves hiring crews on an as-needed basis rather than on a consistent schedule. After evaluating these alternative approaches, Idaho Power concluded that the goal of maintaining a consistent three-year trimming cycle is the most cost-effective and sustainable strategy to keep vegetation away from the power lines in a proactive manner.

Moving forward with a three-year cycle and performing the additional activities detailed above will involve a sizeable increase in incremental O&M expenditure. An alternative to enhancing Idaho Power's vegetation management program is to convert overhead distribution circuits to underground. While undergrounding is used in certain circumstances, undergrounding has generally not been determined to be a cost-effective expense relative to enhanced vegetation management. That said, the company continues to evaluate and implement underground solutions, as appropriate, as part of its WMP hardening efforts detailed below.

Although vegetation management is a sizeable increased wildfire mitigation expense, performing this work is expected to have notable co-benefits, including reduced vegetation-caused outages in Red and Yellow Risk Zones. Idaho Power plans to monitor performance and outage metrics to confirm the success of the enhanced program.

Decreasing vegetation outages was considered one of the most important, cost-effective measures Idaho Power could take to reduce the likelihood of an ignition event and protect utility infrastructure. Shifting vegetation management practices was deemed a prudent course of action based on the number of potential outages or ignition sources that may be eliminated. It is also the approach that has been adopted by many of Idaho Power's peer utilities.

Additionally, the company will participate in a regional fuel reduction program, in which Idaho Power will work in partnership with the Idaho Department of Lands, the National Forest Foundation, the U.S. Forest Service, and the U.S. Bureau of Land Management to remove hazard trees and other vegetation from utility rights-of-way. The partnership is designed to enhance forest resilience to wildfire, decrease hazardous fuel accumulations, increase powerline resiliency while minimizing the risk of ignitions, and improve forest conditions in the vicinity of Idaho Power infrastructure. This program is similar to what other western utilities have taken part in and is modeled after projects performed in Washington, California, Colorado, and Arizona. Participation in the effort is estimated to cost $225,000 through 2025.

The company also plans to deploy satellite and aerial patrols of vegetation in the company's wildfire risk zones. The technology used in these satellite and aerial patrols will help identify encroachment and clearance issues in areas that are growing faster than expected and hazard

trees that have the potential of falling into powerlines. Data collected through this technology may reshape the company's vegetation management strategy and shift from a systemwide cycle to a more targeted approach that identifies and focuses on high-growth vegetation areas. The company will conduct limited vegetation-focused satellite and aerial patrols in 2023 before expanding to a larger area in 2024 and 2025, pending outcomes from the pilot program years. The company estimates spending $750,000 on this technology through 2025.

Cost Estimate for Enhanced Vegetation Management (2023–2025)

The estimated system-wide expenditure for enhanced vegetation management is $41.3 million from 2023 to 2025.

4.4.7. Communications and Information Technology Customer Notification Enhancements

Idaho Power's efforts to communicate with customers and the public about wildfire and mitigation are discussed in detail in Section 10 of this WMP.

Idaho Power considers communication a vital part of its wildfire mitigation efforts. Customer and public awareness and education are a vital part of ensuring that the communities that Idaho Power serves are protected and safe from the threat of wildfire. New communication expenses related to customer and community educational outreach include advertisements, printed media, social media, and public meetings. The purpose of these communications is to keep customers aware of mitigation and fire-related activities before, during, and after fire season. Additionally, the company is building out communication systems to be able to alert customers more quickly and easily about wildfire events and outages, including potential PSPS events.

Cost Estimate for Communication and Customer Notification Enhancements (2023–2025)

The estimated system-wide expenditure for communication expenses is $513,000 and $387,000 for customer notification system enhancements, totaling $900,000 from 2023 to 2025.

4.4.8. Incremental Capital Investments

Idaho Power's wildfire mitigation efforts include capital investments in system hardening practices including approaches deployed after internal testing and analysis, many of which also provide co-benefits to the company.

Idaho Power's capital investments for wildfire mitigation are discussed in detail in Section 8.2 (T&D Asset Management Programs) of this WMP.

4.4.8.1. Circuit Hardening and Infrastructure Upgrades

Idaho Power estimates spending $5.1 million annually through 2025 on circuit hardening and infrastructure upgrades across its system.

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Idaho Power's WMP includes an overhead distribution hardening program for Red Risk Zones. The program includes systematic replacement of hardware, equipment, and materials to improve safety and reliability and reduce ignition risk. The first five years of the program are focused on circuits in Red Risk Zones, but it may be expanded to Yellow Risk Zones in the future. The company will review hardening outcome metrics annually to determine the benefit of the program and to determine whether to expand the program after 2025.

Prior to developing its WMP, Idaho Power successfully implemented many of the same hardening measures detailed below as part of the company's reliability program. Outage data and analytics showed that customer outages were reduced by approximately 38% in areas where hardening projects were carried out. With the success of reducing outages, some of these same activities to increase reliability were chosen to be part of the WMP to help reduce ignition potential in Red Risk Zones. Enhanced system hardening efforts include installation of fire safe fuses, Spark Prevention Units, and fiberglass crossarms.

All the hardening activities and equipment identified in this program were evaluated by patrolmen, troublemen, reliability engineers, and the company's Methods and Materials department to determine cost-effective solutions that balance overall costs with expected risk reduction.

As an alternative to conducting circuit hardening upgrades, the company considered converting overhead distribution circuits to underground. While underground conversions are used in certain circumstances, the cost is estimated to be 2–10 times higher than the cost of carrying out hardening work. In general, overhead hardening efforts provide the benefit of being able to impact a greater number of circuit miles and customers in a shorter time horizon with less investment than undergrounding. Idaho Power will continue to evaluate underground opportunities as part of overall system hardening efforts.

The following summarizes the incremental capital investments the company is making to harden its system and further reduce wildfire risk:

Wood Pole Replacement—The company will replace wood poles if field evaluations determine that significant deterioration or damage has occurred since the last inspection or treatment. Poles are inspected above the groundline to determine strength and climbability. Poles identified as "rejects" will be replaced. Furthermore, poles having wood stubs/structural reinforcements are changed out pursuant to current practices.

Fuse Replacements—Expulsion fuses located in Red Risk Zones will be changed out with energy-limiting and power fuses. Fuse applications include overhead transformers, line taps, risers, and capacitor banks. In 2018, Idaho Power began exploring different fusing technology to replace expulsion fuses with non-expulsion fuses. Three different fuse types were considered and subsequently piloted. The pilot was used to determine the performance of each fuse type, installation requirements, and coordination characteristics. Financial analysis included the cost of each fuse along with associated cutout and hardware and helped determine the most cost-effective option. This information was used to evaluate non-expulsion fuses. *Replacement of all expulsion fuses in Red Risk Zones is expected to take*