

2024-2027 WILDFIRE MITIGATION PLAN

Public Utility District #1 of Jefferson County (JPUD)

October 31, 2024



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1.0 EXECUTIVE SUMMARY

When the Washington Legislature passed House Bill 1032 in July 2023 (Sec. 1) it stated that:

It is in the best interests of the state, our citizens, and our natural resources to identify the sources of wildland fires; identify and implement best practices to reduce the prevalence and intensity of those wildland fires; put those practices in place; and by putting those practices in place, reduce the risk of wildland fires and damage and losses resulting from those fires.

The Legislature directed the Department of Natural Resources (DNR), in consultation with the Energy Resilience and Emergency Management Office of the Department of Commerce, to contract with an independent consultant with experience in developing electric utility wildfire mitigation plans to develop an electric utility wildfire mitigation plan format and list of elements to be included in electric utility wildfire mitigation plans. The Wildfire Mitigation Plan (WMP) format provided by DNR achieves the direction of the Legislature.

By October 31, 2024, and every three years thereafter, each consumer-owned utility and investor-owned utility must review, if appropriate revise, and adopt its wildfire mitigation plan. When reviewing or revising a wildfire mitigation plan, utilities must use the recommended format and elements contained in the WMP format. The plan must be submitted to the utility wildland fire prevention advisory committee created in RCW 76.04.780 to be posted on their website.

Wildfire mitigation is commonly defined as sustained actions taken to reduce or eliminate long-term risk to employees, customers, and property from wildfire caused by utility infrastructure. A wildfire mitigation plan states the aspirations and specific courses of action that Public Utility District #1 of Jefferson County (JPUD) intends to follow to reduce vulnerability and exposure to future events.

The intention of this Plan is to serve as a blueprint for coordination and implementing wildfire mitigation policies, programs, and projects. It provides a list of mitigation goals, objectives, and related actions that may assist JPUD in reducing risk and preventing loss from future events. The impacts of wildfire can be lessened and sometimes avoided altogether if appropriate actions are taken before hazardous events occur. By avoiding unnecessary exposure to known wildfire risks JPUD will minimize the social, economic, and environmental disruptions that commonly follow a wildfire event.

JPUD is committed to delivering safe, reliable, and cost-effective electric service to its customers. This plan details the recommended response to the increasing threat of wildfire and what actions are being taken to minimize risk. Though many elements of this plan focus attention on JPUD's infrastructure and the effort to reduce fire ignitions, the primary objective is safety; to protect lives and property by reducing the risk of utility involved wildfires.

2.0 WILDFIRE MITIGATION PLAN OVERVIEW

2.1 Description of where WMP information may be found on utility website.

To review JPUD Wildfire Mitigation Plan please go to <http://www.jeffpud.org> right click on the “Records/Data” drop down box. Scroll down to the “Policies and Agreements” link. The JPUD WMP is located within the “General” section.

2.2 Statutory Cross-Reference Table

Statutory Requirement	Section & Page Number
HB 1032 – By October 31, 2024, and every three years thereafter, each Investor-owner and consumer-owned utility must review and if appropriate revise, and adopt its wildfire mitigation plan	Section 1.0, Pages 1 Executive Summary
Context Setting Information Table	Section 3.1 Table 1, Page 4-5
Organizational Chart	Section 5.1 Figure 2 and 3, 1 Page 7
Enterprise-Wide Safety Risks	Section 6.3 Pages 13-14
Enterprise Safety and Wildfire Risk	Section 6.3.1 Figure 4, Page 15
Timeframes of Preventative Strategies and Programs	Section 7.1.2 Table 2, Pages 17-18
Planned Updates	Section 7.1.3 Table 3, Pages 19-20
Current Strategy Overview	Section 7.4.1 Table 4, Page 23
RUS bulletin 1728F-804 Specification and Drawings for 12.47/7.2kV Line Construction, 1724E-200 Design for High Voltage Transmission Lines, and RUS Bulletin 1728F-806 Specification and Drawings for Underground Electric Distribution.	Section 7.2.1 Page 20
American National Standards Institute (ANSI) A300 Tree Care Operations. (ANSI) Z133.1 Safety Standards.	Section 7.3.1 Page 22
NESC Rule 218	Section 7.3.1 Page 22
RUS Bulletin 1730-1	Section 7.4.1.3 Page 24
RUS Bulletin 1730B-121	Section 7.4.1.6 Page 26
Metrics and Assumptions for Measuring Plan Performance	Section 10.1 Table 5, Pages 31-32
Definitions	Appendix A Pages 34-36
Acronym Glossary	Appendix B Pages 37-38
Keeping Safe from Wildfire	Appendix C Pages 39-41
Vegetation Spacing Guidelines and Home Ignition Checklist	Appendix C Pages 41-42

3.0 UTILITY OVERVIEW

3.1 Utility Description and Context Table

JPUD is one of 28 not-for-profit, publicly owned electric utilities in Washington State. Founded in 1913, JPUD serves approximately 21,500 residential, commercial, industrial, and street lighting customers. JPUD strives to uphold a commitment to service excellence while delivering safe, reliable, and affordable, electricity to its customers. The PUD’s principle focus is further enhanced with innovative energy solutions and a deep-rooted involvement in the communities it serves.

As a Public Utility District, JPUD is governed by a three-member popularly elected Board of Commissioners that determines policy and appoints the GM who is responsible for JPUD’s overall management and operations. JPUD owns and operates its transmission and distribution system which are critical to maintaining electric service to its customers.

While JPUD’s Commissioners review and approve the Plan as needed, its implementation primarily resides with the General Manager (GM) who is ultimately responsible.

JPUD service territory contains approximately 260 square miles, and includes the communities of Quilcene, Port Ludlow, Chimacum, Port Hadlock, Gardiner, Nordland, and Port Townsend. The county’s electrical system includes a wide range of service demand intensities, from areas of wetlands with no demand to areas of high demand commercial customers.



Table 1 Context -Setting Information Table

Utility Name: Public Utility District #1 of Jefferson County (JPUD)	
Service Territory Size (sq miles) Approximately 300 sq. miles	
Service Territory Make-up. NO DATA AVAILABLE.	<input type="checkbox"/> %Urban <input type="checkbox"/> %Agriculture <input type="checkbox"/> %Barren/Other <input type="checkbox"/> %Conifer Forest <input type="checkbox"/> %Conifer Woodland <input type="checkbox"/> %Desert <input type="checkbox"/> %Hardwood Forest <input type="checkbox"/> %Hardwood Woodland <input type="checkbox"/> %Herbaceous <input type="checkbox"/> %Shrub <input type="checkbox"/> %Water
Service Territory Wildland Urban Interface (based on total area). NO DATA AVAILABLE.	<input type="checkbox"/> %Wildland Urban Interface <input type="checkbox"/> %Wildland Urban Intermix
Customers Served	Approximately 21,500
Account Demographic	89.359% Residential .005% Agricultural 10.632% Commercial/Industrial

<p>Utility Equipment Make-up (circuit miles) Calculated during the acquisition from PSE in 2013.</p>	<p>Overhead Dist.: 380 miles Overhead Trans.: 26.4 miles Underground Dist.: 360 miles Underground Trans.: 0 miles</p>
<p>Customers have ever been notified of a potential loss of service to due to a forecasted utility de-energization event?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
<p>Has developed protocols to pre-emptively shut off electricity in response to elevated wildfire risks?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, provide as an appendix the documentation developed by the utility</p>
<p>Has previously preemptively shut off electricity in response to elevated wildfire risk?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, then provide the following data for the three trailing calendar years: Number of shut-off events: [0] Customer Accounts that lost service for >10 minutes: [0] For prior response, average duration before service restored: [0]</p>

4.0 OBJECTIVES OF THE WILDFIRE MITIGATION PLAN

4.1 Minimizing likelihood of ignition.

This Wildfire Mitigation Plan (WMP) describes the range of activities that JPUD is taking or considering, to mitigate the threat of power-line ignited wildfires, including its various programs, policies, and procedures. This plan complies with the requirements of Washington State Legislature House Bill 1032 for publicly owned electric utilities. The Plan will be iterative, promote continuous improvement year-over-year, and represent best efforts to implement industry best practices in a prudent and reasonable manner. This Plan also establishes methods and procedures used to construct, maintain, and operate JPUD's electrical lines and equipment to minimize the risk of wildfire posed by its infrastructure.

4.2 Resiliency of the electric grid

JPUD's design and construction of its transmission/distribution system and equipment is intended to reduce the likelihood of ignition and improve electrical asset survivability. System hardening investments are evaluated on a case-by-case basis. When prudent, JPUD utilizes system hardening measures including:

- Stronger poles to address engineering standards that exceed code requirement.
- Shorter span length and larger spacing between energized conductors to reduce mid-span conductor contact.
- Relocate utility poles closer to the road to enhance access.
- More widespread use of covered conductor (tree wire).
- Strategic undergrounding in areas prone to repeated outages due to tree exposure.

5.0 ROLES AND RESPONSIBILITIES

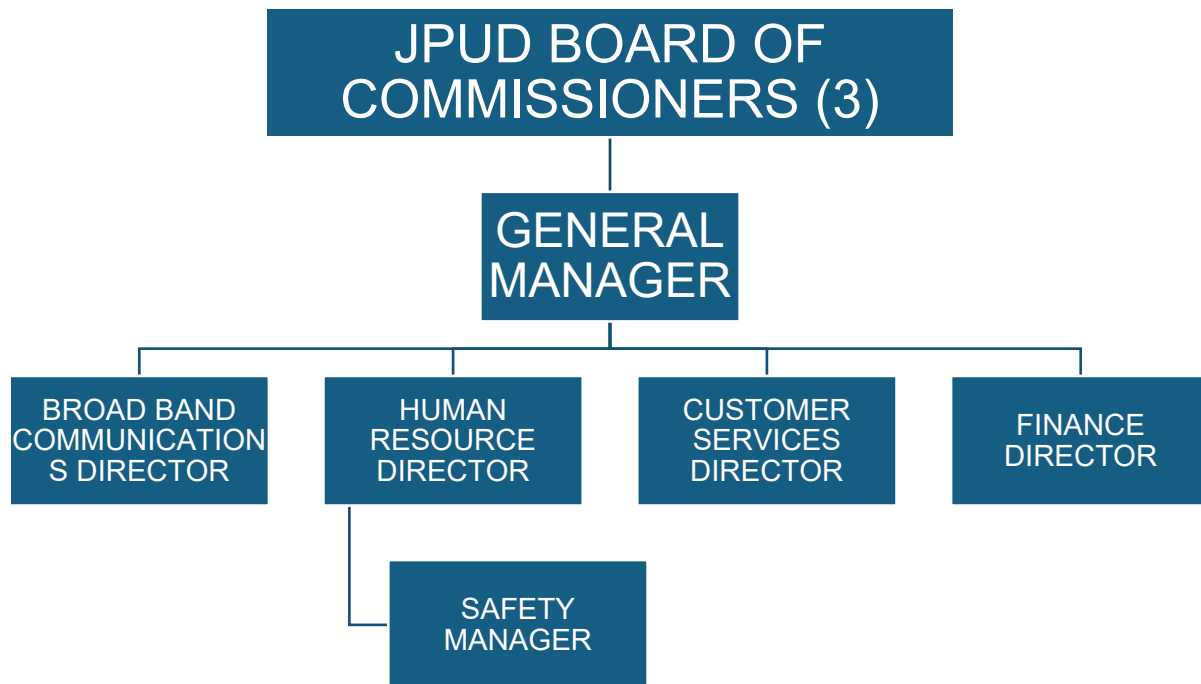
5.1 JPUD Roles

The General Manager is responsible for the content and execution of this Plan. In addition, the following roles for actions pursuant to the Plan are assigned as follows:

- The Engineering Supervisor and Electrical Line Superintendent are responsible for assisting the General Manager with actions to be taken through SCADA to change the mode of system operations as necessary, as well as other duties detailed herein.
- The General Manager is responsible for coordinating with the JPUD EOC Representative, and the JPUD Safety Manager is responsible for coordinating with local fire and emergency agencies, during a wildfire emergency.

- The CSR Director is responsible for notifications to be provided to customers during a wildfire emergency.
- The Digital Communications Specialist is responsible for providing pertinent information to news media and social media websites, during a wildfire emergency.
- JPUD Emergency Operations Center Representative is responsible for providing liaison with local public officials during a wildfire emergency.
- The General Manager is responsible for ensuring that each JPUD employee with assigned responsibilities under the Plan is aware of such responsibilities, and how and when to discharge them.
- General Manager, Directors, Electrical Line Superintendent, Engineering Department are responsible for annual review and updating of the Plan.

Figure 1 Organizational Chart



5.2 Responsibilities

The primary responsibility of JPUD is to operate its overhead electrical lines in a safe and reliable manner. All JPUD staff have the following responsibilities regarding fire prevention, response, and investigation.

- Conduct work in a manner that will minimize the risk of ignition for a catastrophic wildfire.

- Take all reasonable and practicable actions to mitigate the risk of wildfires resulting from electric facilities or work activities.
- Coordinate with federal, state, and local fire management agencies to ensure that appropriate preventative measures are in place.
- Immediately report fires to the Agency Having Jurisdiction (AHJ).
- Take corrective action when observing or having been notified of improperly installed or maintained fire protection measures.
- Maintain and administer adequate fire prevention training programs for all relevant employees and contractors.

5.3 Coordination with local Utilities/Departments

Strong partnership between the utility and local public safety, health, other utilities, and emergency management agencies are essential for effective coordination in any event that impacts the community. JPUD will serve as the initiating agency in the event of a Public Safety Power Shutoff and will coordinate with local agencies as appropriate. JPUD will take advantage of the expertise and recommendations offered by state and local emergency management agencies. Any non-outage related issues or incidents that arise during a public safety power shutoff will be handled by local emergency management and public safety.

JPUD emergency management staff will maintain regular outreach with local jurisdictions to include voice and email notification and communication at least daily during an event. Additionally, the JPUD designated representative will be assigned to the Jefferson County EOC and will provide a constant and direct conduit for information.

To help JPUD understand local sensitivities and concerns during an event, JPUD will typically discuss the critical infrastructure affected with the Jefferson County EOC personnel. This information adds to the situational awareness of JPUD's incident command before the events initiation.

JPUD will conduct outreach to adjacent utilities as appropriate based on the event's circumstance. Other utility contact information can be found within the mutual assistance directory and PUD "company directory".

Effective communication is essential in any incident that impacts the public. JPUD will coordinate local communication from the Jefferson County EOC. Event update meetings will be held as needed with an option to join remotely.

5.4 Coordination with local Tribal Entities

Currently, JPUD does not have any official ties to local tribes. JPUD will begin an outreach program to better communicate with tribal stakeholders and seek input when needed. JPUD's outreach program will be implemented on or before March 2025.

5.5 Emergency Management/Incident Response Organization

JPUD understands the importance of proactive planning and coordinating closely with local governments, agencies, and key accounts including critical infrastructure, emergency first responders, customers, and business groups.

In response to active emergencies, JPUD coordinates and collaborates with the local Jefferson County EOC and relevant state agencies. During such emergencies, JPUD provides a utility representative to the Jefferson County EOC to ensure effective communication and coordination. JPUD's primary coordination point is contacts the EOC and establishes themselves as the duty officer for coordination.

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

6.1 Topography and Climate

Within JPUD's service territory and the surrounding areas, the following are additional risk drivers for wildfire:

- Drought
- Vegetation Type
- High Winds
- Lightning
- Red Flag Warning Conditions
- Wildland Urban Interface
- Other Risks

6.1.1 Drought

Washington States Olympic Peninsula can experience abnormally dry conditions during late summer and fall, quickly exacerbating prolonged periods of drought. At this writing, large portions of the Olympic Peninsula, including JPUD's service territory, are categorized as having "None/Very Low" wildfire hazard potential.

6.1.2 Vegetation Type

Washington has an array of diverse forest regions, each with its unique characteristics shaped by climate, tree species, plant life and wildlife. The Olympic Peninsula (JPUD service territory) features mild temperatures, making it ideal for various tree species, including Douglas-fir, western hemlock, western red cedar, alder, and spruce.

6.1.3 High Winds

JPUD service territory can experience 30 to 40 mph winds throughout the year with sporadic higher- speed gusts. JPUD's infrastructure can withstand Category 2 winds, which may exceed 56 mph. However, these winds may cause tree branches to break free and contact an electric conductor or blow trees outside the right-of-way (ROW) into the power lines. High wind gusts may also blow objects such as tarps and lawn furniture into the conductors. Vegetation and foreign objects in the lines can result in faults, arcing, or downed lines, sometimes causing an ignition.

6.1.4 Lightning

Twenty million lightning strikes hit the ground in the U.S. every year. Many possible effects of a direct strike to power lines or structures include flashovers, ignition of the wood pole, melted and broken conductor, or ground wire damage. JPUD has taken steps to mitigate the damaging effects of lightning on its system by installing shield wire above most of the existing transmission lines. JPUD will continue to install lightning arrestors on the distribution systems.

6.1.5 Red Flag Warning Conditions

The National Weather Service issues different warnings at the onset or possible onset of critical weather and dry conditions, which could rapidly increase wildfire activity. A Red Flag Warning (RFW), the highest alert, is released when weather events may result in extreme fire behavior within 24 hours. A Fire Weather Watch, one level below an RFW, goes out when weather conditions over the next 12-72 hours put fire danger at a high level. During an RFW, JPUD crews limit activities in elevated fire risk areas. If critical work must happen in an elevated fire risk area, vegetation management and line crews have fire suppression equipment on-site, including shovels, and fire rakes. After crews leave a remote or high-risk area, designated staff remain behind on fire-watch for up to one hour to ensure no ignition occurs.

6.1.6 Wildland Urban Interface (WUI)

The wildland-urban interface defines an area where houses and other infrastructure are in or adjacent to areas of potential wildfire. JPUD's service area is comprised of WUI area as

designated by the Washington State Department of Natural Resources. Growth in WUI designated areas results in an increased chance of more wildfire ignitions since electrical powerlines must traverse these wildlands to reach customers. JPUD has made significant efforts to underground much of its distribution lines where feasible.

6.1.7 Other Risk Factors

Construction projects by non-JPUD crews are another possible cause of ignition.

Construction equipment, vehicles, and non-utility personnel working near power lines can contact conductors, causing a faulted condition. Excavation work performed without locating underground utilities is another hazard.

JPUD employs an appropriately trained and well-informed workforce. Crews regularly perform switching, construction, and maintenance activities. The tools and vehicles can be sources of sparks or ignition as well. For example, a vehicle driven over dry grass/brush can cause ignition when vegetation comes into contact with a hot surface of the vehicle's undercarriage. For these reasons, JPUD equips its vehicles with fire suppression equipment and trains its staff to respond to fires and properly use fire suppression equipment.

6.2 Wildfire Risk Drivers

JPUD staff evaluated other utilities' fire causes and applied their field experience to determine the critical potential risk drivers. Identified were six likely categories for causing powerline sparks and ignitions:

- Foreign Contact
- Equipment/Facility Failure
- Wire to Wire Contact/Contamination
- Vehicle Impact
- Expulsion Fuses
- Other

6.2.1 Foreign Contact

Utilities typically install bare wire conductors supported by insulators on overhead powerlines. The benefits include a much lighter and easier conductor to work with and a more cost-effective method to deliver energy than insulated/covered wire. However, bare

wire is more susceptible to contact from foreign objects such as wildlife, vegetation, and third-party equipment. Protection equipment helps isolate faults, but there are time delays associated with circuit breakers, reclosers, and fuses. These time delays are not fast enough, in many cases, to prevent all sparking before tripping. Ejected molten metal, sparks, or burnt foreign objects can potentially ignite any fuels in the vicinity of the fault. Any foreign objects, such as vehicles, animals, or debris that come in contact with conductors, poles, or guy wires, can create a faulted condition and potentially emit sparks.

6.2.2 Equipment Failure

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

6.2.3 Wire to Wire Contact/Contamination

High wind events are potential causes of wire-to-wire contact during fire season, referred to as contamination. Conductors can sway under these conditions, and if extreme, wire-to-wire contact can occur. When two or more energized conductors touch, they can emit sparks or cause fuses to open, emitting sparks and ejecting material. A vehicle impacting a pole, or livestock rubbing on guy wires, and re-energizing conductors can cause a "galloping" condition, resulting in contamination.

6.2.4 Standard Fuses

The utility industry typically installs expulsion fuses on the transformer and tap-lines to protect and isolate parts of the system that have experienced a faulted condition. Expulsion fuses utilize a tin or silver-link element in an arc-tube that vents gas and potentially molten metal to the atmosphere to extinguish an arc created by a faulted condition. The molten metal, however, can be a source of ignition for fire.

6.3 Enterprise-wide Safety Risks

To establish a baseline understanding of the risks and risk drivers involved, JPUD examined its exposure to all fire-related hazards. Although inherent risks exist in operating an electric utility, there are strategies and processes to better plan and manage them. Enterprise Risk

Management (ERM) is a tool to help anticipate and manage risks while also considering how multiple risks can pose even more significant challenges. The overall goal seeks to determine the residual risk level after applying all mitigation factors to the initial inherent risk.

The ERM process (Figure 2) is not a periodic “Risk Assessment” but an ongoing and forward- looking management discipline enabling JPUD to analyze risks continually and adapt to changing conditions. The key or critical risks affect the entire community and are interrelated. Therefore, they are managed holistically with a structured approach. Figure 3, on the next page, describes the objective of each step.

Figure 2. JPUD Enterprise Risk Management Process

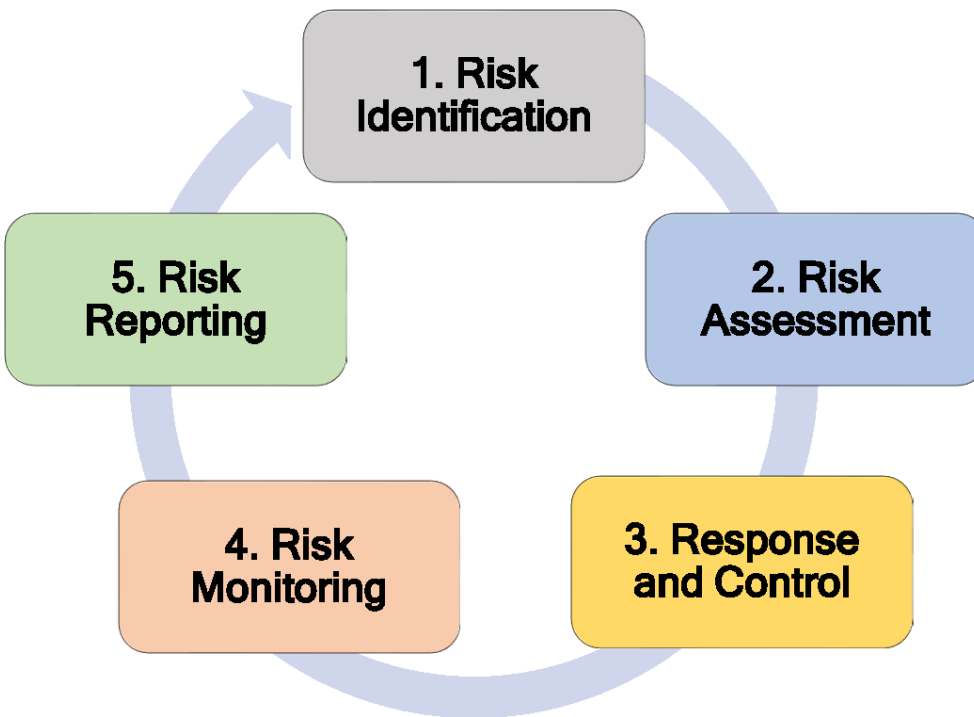
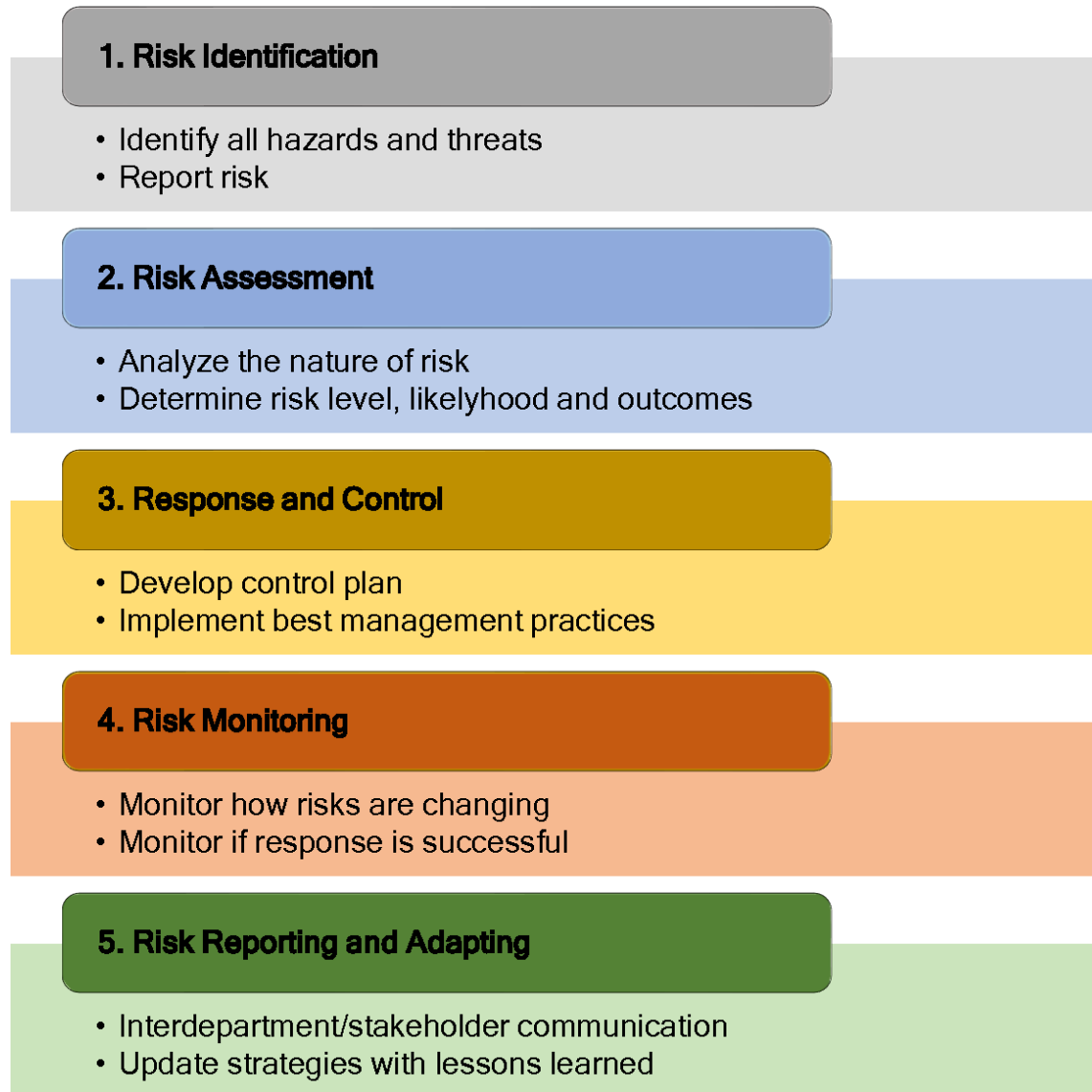


Figure 3. 5-Step Risk Assessment Process

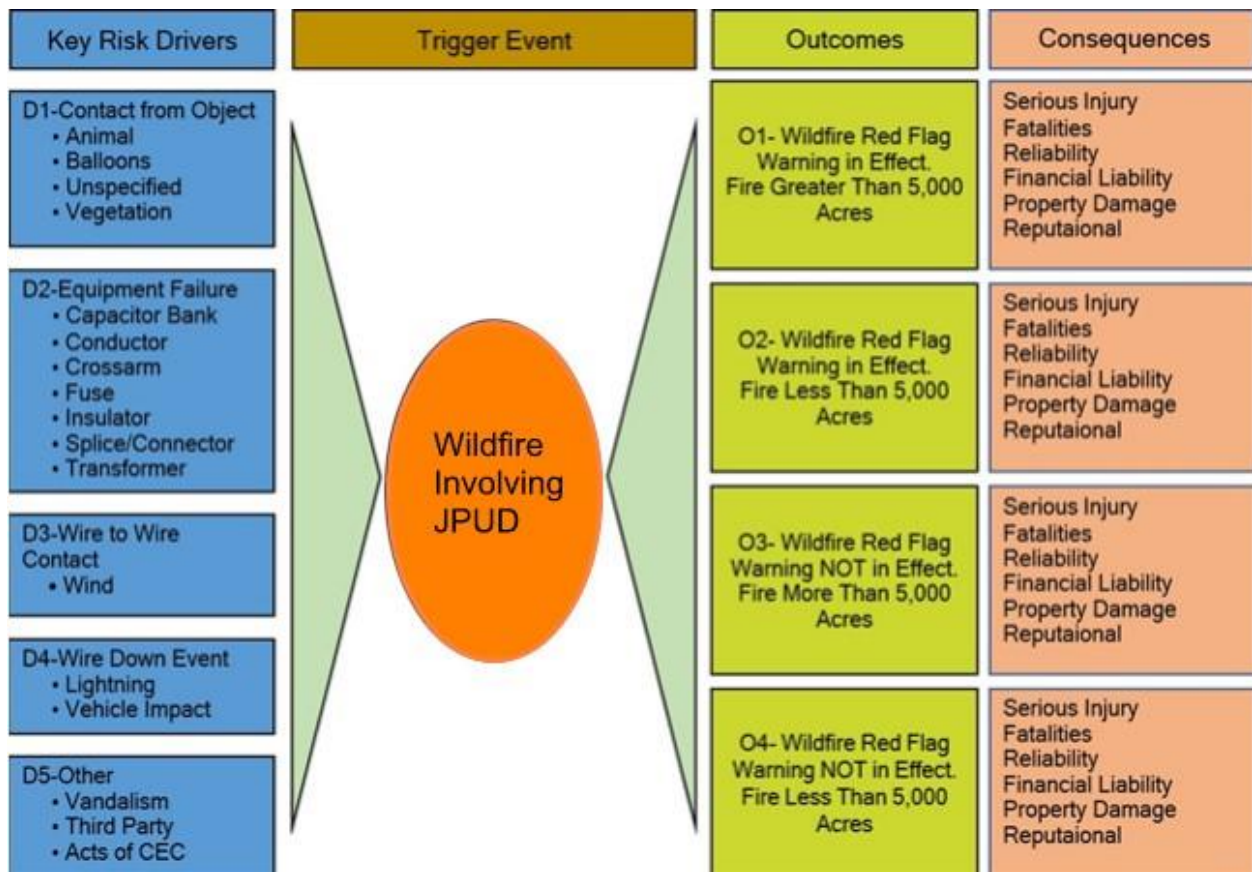


The Risk Assessment process begins with the General Manager and Engineering, key staff, and stakeholders working together to collect information on all potential and perceived risks. A root cause analysis, a commonly used risk assessment tool known as the bow-tie method framework, is used. This method provides a visual representation of the key risk drivers' causal relationships, trigger events, outcomes, and impacts on JPUD and its communities. The bow-tie framework considers the key effects on JPUD's employee safety, public safety, financial liability, operations, property damage, and reputation.

6.3.1 Enterprise Safety and Wildfire Risk

The following list included in the bowtie diagram below focuses on hypothetical causes of powerline ignition, which could potentially start a fire. The bowtie diagram below aims to identify the key root cause/risk drivers and exposure to wildfire impacts and identify the possible consequences. Figure 4 displays the risk bowtie analysis, which summarizes the assessment process.

Figure 4 Bowtie Analysis



7.0 WILDFIRE PREVENTATIVE STRATEGIES

7.1 Weather Monitoring

JPUD utilizes various operational and situational awareness tools to determine when de-energization or alternative operational practices are appropriate. They are listed below:

- Weather data such as wind speed, wind direction, air temperature, barometric pressure, and relative humidity.
- US Forest Service – Wildland Fire Assessment System.
- National Oceanic and Atmospheric Administration (NOAA), Red Flag Warning Map.
- National Weather Service. (NWS)
- NOAA, Fire Weather Outlook.

7.1.1 Strategy and Program Overview

Five main components comprise the proposed wildfire prevention strategies, which align with JPUD's best practices. Together, they create a comprehensive wildfire preparedness and response plan with a principal focus on stringent construction standards, fire prevention through system design, proactive operations and maintenance programs, specialized operating procedures, and staff training.

Design & Construction: JPUD's design and construction consist of system equipment, infrastructure design, and technical upgrades. These practices aim to improve system hardening to prevent contact between infrastructure and fuel sources to minimize JPUD's electrical system's risk of becoming an ignition source. Examples include wildlife guards and insulated equipment, and conductor spacing to reduce contacts.

Inspection & Maintenance: JPUD's inspection and maintenance strategies consist of diagnostic activities and various maintenance methods to ensure all equipment and infrastructure are in excellent working condition.

Operational Practices: Pro-active, day-to-day actions include safety training and involvement as a member of the Jefferson County Emergency Operations Center. Measures to mitigate wildfire risks are taken to ensure preparedness in high-risk situations, such as dry and windy climatological conditions.

Situational & Conditional Awareness: This component consists of methods to improve

system visualization and awareness of environmental conditions. The practices in this category aim to provide tools to strengthen the Plan’s other features. For example, JPUD monitors numerous websites, including the National Weather Service (NWS), United States National Weather Service (NWS), United States Forest Service Wildland Fire Assessment System. Also, JPUD relies on internal knowledge of local conditions for situational awareness.

Response & Recovery: This strategy consists of JPUD’s procedures in response to wildfire, de-energization, and other emergency events. This component aims to formalize protocols for these situations for thorough and efficient communications, emergency response, and recovery efforts. Table 2 summarizes JPUD’s programs and activities that support wildfire prevention and mitigation, along with a timeframe for implementation.

7.1.2 Timeframes of Preventative Strategies and Programs

The five components have several strategies and programs, most already implemented. The remaining are situational and not limited to any timetable, scheduled for completion over several years, under evaluation, or in the initial stages. Metrics and Assumptions for Measuring Plan Performance are in Chapter 10. The strategies and programs below fall into one or more of the five implementation timeframes:

- A: Currently implemented
- B: Implemented before the upcoming fire season
- C: Completed annually or on schedule
- D: In the evaluation stage
- E: Implemented on as-needed basis/protocols in place
- * Ongoing program with no defined completion date

Table 2. Mitigation Programs/Activities

DESIGN AND CONSTRUCTION	TIMEFRAME
Underground distribution lines	A*
Field recloser to vacuum-type breaker changeout program	D*
Increased phase spacing reduces wire to wire contact	D
New controls for breakers and update older relays in substations to modern relaying schemes and relays	D
Distribution Fault Anticipation technology	D
INSPECTION AND MAINTENANCE	

Infrared inspections of electrical equipment	D
Transmission line ground patrols	C
Transmission & Distribution (T&D) wood pole intrusive inspections	C
T&D vegetation right-of-way maintenance	C
Distribution system line patrols and detailed inspections	C
Drone inspection program	D
OPERATIONAL PRACTICES	TIMEFRAME
T&D system vegetation management program	C
Supervisory Control and Data Acquisition	A
Work procedures and training for persons working in locations with elevated fire risk conditions	B
Safety and physical security protection teams	B
Increased staff for line and vegetation management crews in preparation of wildfire	B
Existing relationship with local government and fire safety councils	A
Increased community outreach/wildfire safety awareness	B
Avian protection program	A*
SITUATIONAL AWARENESS	
Emergency Operations Center member	A
Contractor/staff safety training and orientation for T&D vegetation management work	A
Weather Monitoring (USFS-WFAS, NWS)	A
RESPONSE AND RECOVERY	
Public Safety Power protocols	E
Critical event communications process and procedures	A
Line patrols before re-energization	A
Crisis Communication Plan	A
Customer assistance programs for post-disaster recovery	A

7.1.3 Planned Updates

JPUD has proactively implemented many measures to address potential wildfire risks over the years. The WMP outlines existing fire mitigation efforts and identifies new processes JPUD may employ moving forward.

Generally, the WMP describes specific programs JPUD has embarked on to mitigate wildfire risks. Many of the programs, however, are multi-year and programmatic. While some have an immediate startup period, full implementation may occur when processes and methods mature. JPUD is currently looking into pilot programs, including an aerial patrol program utilizing a drone employing infrared (IR) technology and high-resolution photography and LiDAR scanning.

Several of JPUD’s current strategies and programs do not fall within any timeframe but remain situational based on certain real-world events. These conditions are predominantly weather and vegetative fuel-related and not associated with time periods (e.g., in 2020 or within five years). Similarly, JPUD’s emergency preparedness and response plans, post-incident recovery, restoration, and remediation activities and programs to support customers impacted by a wildfire are event-driven and are not timeframe-dependent. JPUD updates these practices as new information emerges and then adopts improved practices. Furthermore, all administrative-related programs such as risk analyses, performance metrics, and monitoring of this WMP occur at regular or annual intervals. The following Table 4 shows activities that will address key wildfire risk factors.

Table 3. Activities that Address Wildfire Risk Factors

RISK FACTOR	PROPOSED MITIGATION
Fuel Source	<ul style="list-style-type: none"> • Vegetation Management • Fuels Reduction • Line Inspections • ROW Maintenance • Enhanced inspection intervals in high-risk areas
Wire to Wire Contact	<ul style="list-style-type: none"> • National Weather Service monitoring • Increased inter-phase line spacing • Undergrounding of distribution lines

<p style="text-align: center;">Contact from Objects</p>	<ul style="list-style-type: none"> • Wildlife guards • Increased vegetation clearances • Avian protection program • Insulated equipment • Helicopter inspection of transmission lines
<p style="text-align: center;">Equipment Failure</p>	<ul style="list-style-type: none"> • Routine maintenance • Focused design and construction standards to reduce ignition sources. • Transmission and distribution line detailed inspections and bi-annual patrols • Intrusive pole testing • De-energizing of lines during certain conditions • SCADA monitoring of substation equipment • Infrared inspections of substation equipment • Pole replacement program • Helicopter and drone inspections of transmission lines.
<p style="text-align: center;">Field Work</p>	<ul style="list-style-type: none"> • JPUD worker/contractor education on fire ignition sources • Fire watch, up to 1 hour after work completed in high-risk areas. • Tailgate meetings before fieldwork. • Land agencies fire season requirements.

7.2 Design and Construction Standards

7.2.1 Strategy Overview

JPUD uses specifications from bulletin 1728F-804 from Rural Utilities Service (RUS) specification and drawings for 12.47/7.2kV line construction. The specifications and drawings of this bulletin have been published to set forth RUS requirements, specification, and standards for the construction of 12.47/7.2kV overhead electric distribution lines and associated equipment and construction assembly units that RUS electric borrowers install.

JPUD uses specifications from bulletin 1724E-200 for high voltage transmission lines. Publication 1724E-200 is a reference containing fundamental engineering guidelines and basic recommendations on structural and electrical aspects of transmission line design, as well as explanations and illustrations.

JPUD uses RUS bulletin 1728F-806 for specifications and drawing for underground electric distribution. The bulletin contains complete specifications settings that RUS requirements for constructing underground electric distribution systems using state-of- the-art materials, equipment, and construction methods.

7.2.2 Planned Updates

JPUD's electric facilities are designed, constructed, and maintained to meet or exceed the relevant federal, state or industry standards. JPUD monitors and follows as appropriate the National Electric Safety Code. In addition to standards, JPUD develops a 5-year capital improvement plan that is considering some or all the following:

- Addition of remote-controlled field reclosers possibly with arc detection technology.
- Poles with operating devices to be cleared of flammable vegetation around them with a radius of 10' feet. Perform this for every wood pole with operating devices in the system for resiliency.
- Provide or clear additional access paths along power line easements and to ensure access and ability to perform maintenance.
- Engineering- Revise construction standards to implement arc suppression components, raptor framing, squirrel guards, tree wire, lightening arrestors and arc suppression fusing.
- Create design standards for new equipment for remote controlled reclosers and implement them into the SCADA system.
- Strategically convert overhead lines to underground as feasible and economic.
- Replacement of overhead fuses with current limiting, non-arcing models in high threat areas.

7.3 FUEL & VEGETATION MANAGEMENT

7.3.1 Current Strategy and Overview

Trees that grow within or adjacent to powerline ROWs are a common cause of outages and damage to facilities, as well as a potential cause for wildfire. JPUD maintains about 380 miles of overhead distribution and about 26.4 miles of transmission right-of-way. To minimize interruptions of services and to provide a safe and reliable supply of electricity to its customers. This includes not only the maintenance of hardware, conductors, and poles but trees and other vegetation that threatens to fall onto or grow into the electrical conductors. To this end, JPUD has developed a vegetation management (VM) schedule intended to minimize the hazards of vegetation on the system.

JPUD has a vegetation management plan in place. A third-party contractor executes the vegetation clearing efforts under the direction of JPUD. The contractor's work is subject to frequent JPUD quality control checks. The goal of this plan is to proactively maintain vegetation, so it does not contact electrical

infrastructure, therefore preventing wildfires. JPUD created a vegetation management plan with wildfire prevention in mind. The program includes four components: cycle preventative vegetation management, cycle buster vegetation clearance, ground clearing right-of-way, and emergency vegetation clearance. Each of these components needs to adhere to specific specifications detailed below.

- **Cycle Preventative Vegetation Management:** This scope of work encompasses ensuring vegetation on JPUD overhead transmission and distribution lines adhere to clearance specification identified.
- **Cycle Buster Vegetation Clearance:** This scope of work includes completing corrective and emergent vegetation to fix clearance discrepancies that the contractor, JPUD, or customer discovers if an area is designated as high priority the PUD must prioritize that work and make the correction immediately.
- **Ground Clearing in Right of Way:** Electric utility Right-Of-Way (ROW) is a strip of land that an electric utility uses to construct, maintain, repair or replace overhead and underground powerlines. There are three main reasons to maintain right of way. Safety, Reliability, Affordability.
- **Emergency Vegetation Clearance:** This scope of work includes completing maintenance on an as needed basis for any major disaster or emergency events. For example, if a storm results in fallen trees and branches, the contractor must mobilize as soon as possible to clear the vegetation.

The goal at the time of tree trimming is to achieve ten (10) feet of clearance from the conductor on distribution lines and fifteen (15') feet from transmission lines. All lines are cleared fifteen (15') feet above and twelve (12') feet below. JPUD requires that the NESC Rule 218 be followed along with American National Standards Institute (ANSI) A300 Tree Care Operations standard practices relating to quality tree care, pruning, and integrated vegetation management be followed to the extent possible when planned maintenance is being performed in the vicinity of electric lines and equipment. Employees and contractors shall also adhere to (ANSI) Z133.1 Safety Standards.

7.3.2 Planned Updates

JPUD will continue to evaluate the vegetation management program and adjust as federal, state, county laws change. JPUD will audit vegetation management work plans to be sure they are executed correctly by contract tree trimming crews, continually improve customer notification when work is being performed along the right-of-way near their property and keep the work we do safe for our employees, and customers.

7.4 ASSET INSPECTIONS AND RESPONSES

7.4.1 Current Strategy Overview

JPUD performs multiple time-based inspections on its T&D facilities, which play an essential role in wildfire prevention. Recognizing the hazards of equipment that operate high voltage lines, JPUD maintains a formal inspection and maintenance program for distribution, transmission, and substation equipment. JPUD currently patrols its system regularly and is increasing the frequency of inspections in high-risk areas. The following sections outline inspection practices for JPUD assets. Table 4 summarizes the inspection schedule for all assets.

Table 4. Inspection Program Summary

ASSET CLASSIFICATION	INSPECTION TYPE	FREQUENCY
Overhead Transmission	Safety Patrol Inspection	Max. interval: Once per year
	Detailed Inspection	Max. interval: Once every 5 years
	Intrusive Pole Test	Every 5 years
Overhead Distribution	Safety Patrol Inspection	Max. interval: Once per year
	Detailed Inspection	Max. interval: Once every 5 years
	Intrusive Pole Test	Ten percent (10%) every year
Underground Distribution	Safety Patrol Inspection	Max. interval: Once every 2 years
	Detailed Inspection	Max. interval: Once every 5 years
Substations	Detailed Inspection	Every 30 days

7.4.1.1 Definition of Inspection Levels

1. **Safety Patrol Inspection:** A simple visual inspection of applicable utility equipment and structures designed to identify obvious structural problems and hazards. Patrol inspections may occur during other company activities.
2. **Detailed Inspection:** Individual pieces of equipment and structures receive a careful visual examination, and through the use of routine diagnostic testing, as appropriate,

and (if practical and if useful information gathered) opened and the condition of each rated and recorded.

3. **Intrusive Inspection:** Involving the movement of soil, boring holes in the pole above and below the ground line, checking for decay, and installing a fumigant.

7.4.1.2 Routine Safety Patrol Inspections

JPUD has a system patrol process complying with Rural Utility Service (RUS) requirements, including bi-annual patrol inspections for the system infrastructure. Manual checks include system and vegetation patrols. JPUD monitors vegetation during its system patrols and directs a contractor to conduct additional inspections and vegetation management. Any deficiencies are reported and corrected.

Electric utility operators must perform routine safety patrols of overhead electric supply lines and accessible facilities. The maximum interval between safety patrols is one year, with a recommended rate of 100% percent of lines and facilities per year. Inspection of substations must occur within a 30-day maximum schedule.

JPUD personnel look for visible signs of defects, structural damages, broken hardware, sagging lines, and vegetation clearance issues. Any anomalies found are addressed based on the severity of the defect. Patrol inspections happen every year on all transmission and distribution lines and equipment.

7.4.1.3 Detailed Transmission and Distribution Inspections (T&D)

Detailed inspections of the overhead transmission, overhead, and underground electric distribution system fall within a 5-year cycle to ensure all equipment's assessment on a regular schedule. Inspections and maintenance employ measures intended to protect the worker, the general public, and the system's reliability. The inspection cycles seek to ensure safety and reliability based on standards in the RUS Bulletin 1730-1.

Qualified personnel perform all inspections. System equipment found in need of maintenance or repair is categorized depending on the severity of the condition. Repairs are done in order of severity.

A record of the inspections and maintenance performed will be kept on file and maintained by the appropriate office personnel. The maximum interval between detailed inspections of overhead and underground facilities is five years, with a recommended inspection rate of 20% percent per year. During the fifth year of the inspection cycle, the operator must:

- Report to the General Manager that 100% percent or more of its total facilities inspections are complete.

- Report to the General Manager that less than 100% percent of its total facilities have been inspected pursuant to this rule. Provide a plan for General Manager approval to inspect the remaining percentage within the next five years.

7.4.1.4 Detailed Line Inspections

Detailed Line Inspections (DLI) consists of JPUD staff walking, driving or provide aerial drone inspection examining all JPUD poles, conductors, and equipment. Visual aids assist with evaluating and detecting potential damage to above-ground components.

Inspectors are looking for:

- Mechanical damage
- Loose hardware
- Guy wire and anchor condition
- Disconnects and fuse holder condition.
- Insulators and conductor condition
- Condition of transformers and reclosers
- Ground conductors and moldings.
- Pole ID signs and other minor hardware
- Raptor nests
- Fire damage.
- Third-party attachments

DLIs happen on a 5-year schedule on all overhead and underground distribution equipment.

7.4.1.5 GIS Mapping

An electric distribution utility uses a network of physical facilities to provide electric power and energy to customers connected to those facilities throughout a geographical area. Each component of the distribution system (i.e., asset) and each meter have an approximate physical location and associated data. To plan, construct, maintain, operate, and manage the electric distribution network, it is necessary to create, manage, and utilize this geospatial data. JPUD has integrated GIS mapping technology into its inspection and maintenance program and records and maps all inspections and service work to ensure all assets are inspected and repaired on the prescribed schedule.

7.4.1.6 Wood Pole Inspection, Test and Treatment

To maintain the JPUD's wood poles, a formal Wood Pole Assessment Plan was initiated with the goal to inspect 10% of the system each year. Wood pole decay will progress at generally predictable rates, and can be readily diagnosed in the field, except for in the very early stages. Early detection and treatment is by far the most important and successful step in extending pole service life. Circuits are identified,

mapped, and scheduled for inspection and testing using the latest industry standards and practices.

JPUD contracts pole inspection. Contractor test all wood poles on a 5-year cycle meeting the interval recommended in RUS Bulletin 1730B-121. Inspections are intended to determine whether the poles have degraded below National Electric Safety Code (NESC) design strength requirements with safety factors.

7.4.1.7 Outage Management System

JPUD tracks outages using NISC's Outage Management System (OMS). OMS records the outage location and cause and can also be used to record the exact location of contact by vegetation or other foreign object. The outage data can be used to identify areas with higher-than-normal outage incidents and can help inform system improvements and vegetation-Caused Outage Density, overlays the JPUD's electric grid with calculated outage density.

7.4.2 Planned Updates

JPUD plans to continue expansion of digital data collection into other facility inspections. For example, JPUD will be implementing mobile tracking of overhead transmission and distribution line inspections in the early part of 2025. As crew and contractors become more familiar with mobile data collection methods, JPUD data will become more complete and accurate enabling a clearer operation picture and better visualization of issues. JPUD will continue to refine data collection and analyses, using them to inform and refine future planning and management efforts and operation decisions.

7.5 WORKFORCE TRAINING

7.5.1 Current Strategy Overview

The key to an effective Wildfire Mitigation Plan is ensuring that each JPUD employee who is assigned a duty under this Plan fully understands what they are responsible for, how it fits into the overall Plan success and when they will be expected to act. The General Manager will manage an annual training schedule that will include all JPUD employees with responsibilities under the Plan and will ensure each employee is aware of their responsibility under the plan.

7.5.2 Planned Updates

JPUD will begin annual training for all employees having obligations for implementation of this Wildfire Mitigation Plan. Training on the wildfire plan will be held each spring prior to the start of the wildfire season. Training will include roles and responsibilities, identification of risks, and procedure associated with monitoring and response. JPUD goal is to begin this process in 2025.

7.6 RELAY AND RELCOSER PRACTICES

7.6.1 Current Strategy Overview

JPUD currently has no strategy for relay and recloser practices.

7.6.2 Planned Updates

JPUD will adopt procedures for the operation of relays and reclosers for the purposes of wildfire mitigation. JPUD will have written procedures on or before March 2025.

7.7 DE-ENERGIZATION/ PUBLIC SAFETY POWER SHUTOFF

7.7.1 Current Strategy Overview

De-Energization: Under normal operating conditions, operations supervisors have the authority to proactively de-energize sections of transmission and distribution lines to make safe for employee/contractor work, as well as during isolated emergency events when requested by local law enforcement or fire officials to ensure public safety. In most cases, the transmission and distribution line sections can be isolated and de-energized remotely through SCADA. In the event of a wildfire, operations supervisors are authorized to de-energize at the request of the Jefferson County Emergency Operations Center.

Public Safety Power Shutoff (PSPS): A PSPS preemptively de-energizes power lines during high wind events combined with hot and dry weather conditions. JPUD utilizes PSPS as a last response in mitigation strategies during red flag warnings or extreme conditions. The necessity, location, duration, and timeline of a PSPS activation will be determined by the General Manager and may be in consultation with interagency partners including, but not limited to, the Jefferson County Emergency Operations Center personnel, Washington State DNR, and local fire departments. The Incident Commander will evaluate conditions and will determine when it is safe for re-energization. Prior to re-energizing the system, full line patrols of the PSPS area will be performed by Operations field staff. When considering a PSPS, JPUD examines external risks and potential consequences of a PSPS, including:

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

- The inability to open garage doors or motorized gates during a wildfire event can lead to injuries and fatalities.

The risks and potential consequences of initiating a PSPS are significant and extremely complex. Based on the above considerations, JPUD reserves the option of implementing a PSPS when conditions dictate. While JPUD believes the risks of implementing a PSPS far outweigh the chances of its electric overhead distribution system igniting a catastrophic wildfire, the PSPS provides a last resort tool and another option in a crisis. On a case-by-case basis, JPUD will consider de-energizing a portion of its system in response to a known public safety issue or a request from an outside emergency management/response agency. The decision to implement a PSPS is based on multiple triggers accompanied by the unique understanding of the JPUD system. No single element is determinative. Potential factors include:

- Imminent fire danger
- Critically dry vegetation that could serve as fuel for a wildfire.
- Low humidity levels
- Red flag warnings
- Temperatures over 100°F
- Wind speeds projected beyond 40 mph in high-risk areas.
- Mandatory fire orders in effect
- On-the-ground observations from JPUD or other agency field staff
- Active wildfire in the service territory
- Local Topography

7.7.2 Planned Updates

In 2025, JPUD will incorporate community feedback into PSPS planning efforts, both from an operational and communications perspective. Additionally, systems tools, processes and materials for a PSPS scenario that JPUD does not currently have as part of our communications toolkit will be developed. These might include automated systems for proactive notification based on customer preferences, interactive online tools, and frequent updates about a potential or active PSPS and enable customers to take necessary preparedness actions to minimize the inconvenience and hazards of loss of energy service due to PSPS.

8.0 COMMUNITY OUTREACH AND PUBLIC AWARENESS

8.1 Current Community Outreach and Public Awareness

In the event of a wildfire related electrical event, JPUD will work to provide customers, community, and other public agencies with accurate and timely information. Communication will take place through channels and platforms commonly used in storms and other emergencies to leverage best practice and existing customer knowledge and preferences for how to access information from the utility. The objective will be to provide if known, the cause of the event, the nature of the event, such as whether the event is due to system damage or is precautionary, and estimated time of service restoration. The goal will be to

enable customers to take necessary actions to minimize the inconvenience and hazards of a loss of energy service. Communications strategies to customers during wildfire related events will use a variety of traditional and digital media to provide updates and information through the following:

- Local news media.
- Social media using existing JPUD platforms.
- Telephonic services through JPUD interactive voice response (IVR) platform.
- Updates and information on JPUD website

JPUD will leverage its relationships with the community partners and public agencies, as well as non-profit and community-based organizations to ensure they have current and correct information and enable amplification and distribution of timely information it will be a priority of JPUD to notify all possible customers within an impacted area. Prior to any specific wildfire threat, JPUD is focused on communication with customers about preparedness. This communication has two goals: raising awareness about JPUD wildfire preparedness and second, educating customers about how they can help prevent wildfires through information from the Department of Natural Resources.

8.2 Planned Updates

Updates listed below are selected on an as-needed basis for distribution through JPUD social media channels and the website main page. JPUD provides a colorized ALERT bar on jeffpud.org for use during large scale events (designated for use when an outage affects 1000 or more customers or when service interruptions are imminent). A standardized press release update will be provided to local and regional news organizations once a full situational assessment has been provided by partner organizations.

- Due to the extreme likelihood of tree-line contact and potential fire hazards, Jefferson PUD may require unplanned outages to protect our regional grid and the safety of our neighbors. A Red Flag Warning has been issued by [INSERT DETAILS] prompting a heightened notice for localized power shutoffs.
- In the event of a Red Flag Warning: A red flag warning has been issued due to high heat and high winds over the past [X hours]. Jefferson PUD asks customers to report any and all tree-line contacts immediately.
- *Service interruption:* Safety is our top priority, and we are taking the appropriate measures to protect our employees as they work to restore service as safely and as efficiently as possible.
- We would like to thank all customers for their patience and apologize for any inconvenience they are experiencing.
- We are evaluating the operability of our affected properties and will be taking immediate steps to re-establish safe and secure operations wherever possible.
- If the community sets up disaster relief efforts: Once operational, we will use our services to

- assist with community relief and recovery efforts.
- *No service interruption:* Jefferson PUD's system is not experiencing any service disruptions following the [EVENT] in the [LOCATION] area. Crews have been dispatched to carefully inspect all District facilities within the impacted area to ensure continued operability.
- *If appropriate:* To date, we know of [INSERT NUMBER] Jefferson PUD employees/customers affected by this situation.
- Currently, we are taking the following actions [INSERT SPECIFICS].
- Jefferson PUD is prepared for these types of situations. We have [INSERT DETAILS ABOUT PLANS, TRAININGS, LESSONS LEARNED FROM PREVIOUS DISASTERS, ETC.]
- Since [time/date], Jefferson PUD line workers, tree crews and contractors have made significant progress in restoring electricity as power outages decreased from [X customers to X].

9.0 RESTORATION OF SERVICE

JPUD may elect to de-energize segments of its system due to extreme weather or by request from emergency responders. Inaccessible equipment or distribution lines will remain de-energized until accessible. Poles and structures damaged in a wildfire are assessed and rebuilt as needed before re-energization. JPUD sends out member and media updates before de-energizing and will post update status reports when restoration efforts are underway and completed.

JPUD work crews take the following steps before restoring electrical service after a de-energization event. These measures are intended to protect the worker, customers, and the system's reliability.

- **Patrol:** If the de-energization was a PSPS, crews patrol every line to ensure no hazards have affected the system during the outage. If an outage is due to wildfire or other natural disasters, as soon as it is deemed safe by the appropriate officials, crews inspect lines and equipment for damage, foreign contacts and estimate equipment needed for repair and restoration. Lines located in remote and rugged terrain with limited access may require additional time for inspection. JPUD personnel assist in clearing downed trees and limbs as needed.
- **Isolate:** Isolate the outage and restore power to areas not affected.
- **Repair:** After the initial assessment, JPUD supervisors, managers, and engineers meet to plan the needed work. Rebuilding commences as soon as the affected areas become safe. Repair plans prioritize substations and transmission facilities, then distribution circuits serving the most critical infrastructure needs. While the goal to reenergize all areas is as soon as possible, emergency services, medical facilities, and utilities receive first consideration when resources are limited. Additional crew and equipment

are dispatched as necessary.

- **Restore:** Periodic customer and media updates of restoration status before full restoration are posted on social media platforms and JPUD’s website. After repairs are made, power is restored to homes and businesses as quickly as possible. Members, local news, and other agencies receive notification of restored electric service.

10.0 EVALUATING THE PLAN

10.1 Metrics and Assumptions for Measuring Plan Performance

JPUD outlines and schedules required work on an annual basis. Any incomplete work behind schedule is flagged for review or field verification. JPUD aims to complete 100% of the work within the initially scheduled time frame; however, emergencies or other unforeseen contingencies can occur, requiring material and labor resources to be otherwise assigned. When this happens, the delayed work receives prioritization for future time frames and then completed to allow for the electric system's safe and reliable operation following applicable requirements and industry standards. Table 4, on the following page, depicts the completion targets for various inspection and maintenance operations.

Table 5. Programmatic Metrics

PROGRAM	TARGET	METRIC DESCRIPTION
Distribution Line Inspections	95-100%	Perform detailed line inspections, complete within the specified time intervals set for each inspection type.
Distribution Wood Pole Intrusive Tests	95-100%	Perform all wood pole invasive tests scheduled for the year. JPUD’s goal is to perform wood pole tests every year testing 10% of all poles within service territory.

Distribution Annual Line Patrol	95-100%	Perform annual distribution line patrols using proper recording methods so status may be accurately tracked.
Transmission Structure Patrols	95-100%	Perform all scheduled patrols before the end of the year.
Distribution Vegetation Pruning/Clearing	95-100%	Complete scheduled respective tree trimming work each year.
Transmission Vegetation Pruning/Clearing	95-100%	Complete scheduled respective tree trimming work each year.

10.2 Monitoring and Auditing of the WMP

The GM and JPUD Operations Department monitor the WMP and report its effectiveness to the Board of Commissioners on a bi-annual basis. Annually, reports of the Plan's current progress and risk reduction impact are developed and circulated to appropriate utility staff to engender collaborative discussion to make changes to approved strategies. The GM, or their designee, updates the BOC with recommendations or proposed action in enhancing the Plan's objectives over time.

JPUD's WMP annual review aligns with the existing business planning process. This review includes a yearly assessment of the WMP programs and performance.

10.3 Monitoring the Performance of Inspections

JPUD's compliance with regulations ensures facilities are inspected and repaired per JPUD and NESC standards. Any issues found impacting safety and reliability are addressed as outlined in those regulations. In addition to the maintenance program, JPUD continuously evaluates its facilities while performing other activities such as outage patrols, new business planning, replacements, and related fieldwork.

Monitoring the effectiveness of inspection practices occurs through ongoing tracking and analysis of annual results. The Electrical Line Superintendent supervises the General Foreman and reviews concerns found during routine fieldwork and equipment and line inspections. JPUD uses this information as a method to assess the effectiveness of inspection procedures. The review process occurs annually, where reviews of inspection records, identification of deficiencies, and corrective actions are determined. An internal report

provides the utility's leadership in the deliberation of future strategies. Related strategies to mitigate wildfire risk are identified and proposed within the Plan's next iteration. Aggregating this data guides future decision-making on the direction of wildfire mitigation strategy with the intention that incidents will occur less frequently. JPUD shall document its operation procedures and processes to maintain consistent and thorough implementation at all levels. Processes are reviewed and updated as needed to maintain the most efficient, effective, beneficial, and safety-driven methods and protocols.

APPENDIX A: DEFINITIONS

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

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

Flashover: A type of fault or short circuit caused by a lightning strike to a live electrical system. Faults can occur anywhere along power lines- at transformers, poles, towers, and substations. Arcing from flashovers can cause extensive damage to electrical equipment, even more so than the lightning that caused them.

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

High Fire Threat Area (HFTA): The HFTA identifies areas of an elevated and high fire risk related to electric utility facilities:

Readily Climbable: Vegetation having both of the following characteristics

- a) Low limbs, accessible from the ground and sufficiently close together to climb by a child or average person without using a ladder or other special equipment; and
- b) A main stem or major branch that would support a child or average person either within arms' reach of an uninsulated energized electric line or within such proximity to the electric line that the climber could be injured by direct or indirect contact with line.

Recloser: Recloser is a device used in electric distribution systems to interrupt the circuit to clear faults. Automatic reclosers may have electronic controls and vacuum interrupters that automatically recloses to restore service if a fault is temporary. Several attempts may be made to clear and re-energize the circuit, and if the fault still exists, the recloser locks out. Reclosers are made in single-phase and three-phase versions and use oil or vacuum interrupters.

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

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

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

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

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

Transmission and Distribution (T&D): At JPUD, for line maintenance purposes, the transmission system is 115kV lines. The distribution system includes 7.2 kV and 12.47 kV lines.

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

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

Wildfire: “Also called wildland fire, uncontrolled fire in a forest, grassland, brushland or land sown to crops.” “Fire danger in a wildland setting varies with weather conditions: drought, heat,

and wind participate in drying out the timber or other fuel, making it easier to ignite. Once a fire is burning, drought, heat, and wind all increase its intensity. Topography also affects wildfire, which spreads quickly uphill and slowly downhill. Dried grass, leaves, and light branches are considered flash fuels. They ignite readily, and fire spreads quickly in them, often generating enough heat to ignite heavier fuels such as tree stumps, heavy limbs, and the forest floor's organic matter. Such fuels, ordinarily slow to kindle, are difficult to extinguish. Green fuels—growing vegetation—are not considered flammable, but an intense fire can dry out leaves and needles quickly enough to allow ready ignition. Green fuels sometimes carry a special danger: evergreens, such as pine, cedar, fir, and spruce, contain flammable oils that burst into flames when heated sufficiently by the searing drafts of a forest fire.”

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

Wildlands: forests, shrublands, grasslands, and other vegetation communities have not been significantly modified by agriculture or human development*. Fire managers follow the National Wildfire Coordinating Group (which coordinates programs of participating wildfire management agencies nationwide) more specific definition. It refers to an area in which development is nearly non-existent (except for roads, railroads, power lines, and similar transportation facilities); structures, if any, are widely scattered.

APPENDIX B: ACRONYM GLOSSARY

AHJ (Agency Having Jurisdiction)

ANSI (American National Standards Institute)

AQS (Audit and Quality Services)

BIA (Bureau of Indian Affairs)

BMP (Best management practices)

BPA (Bonneville Power Administration)

CSR (Customer Service Director)

DLI (Detailed Line Inspections)

DSO (Distribution System Operations)

EAM (Enterprise Asset Management)

EOC (Emergency Management Center)

ERM (Enterprise Risk Management)

EROC (Enterprise Risk Oversight Committee)

FAC (Facilities Design, Connections and Maintenance)

FRAP (Fire Resource and Assessment Program)

GHG (Greenhouse gas)

GIS (Geographic Information System)

GO (General Order)

HFTD (High Fire Threat Districts)

IR (Infrared)

IVM (Integrated Vegetation Management)

KV (Kilovolt)

KWH (Kilowatt Hours)

LIDAR (Light Detection and Ranging)

LRA (Local Responsible Area)

MED (Medical Equipment Discount)

MVCD (minimum vegetation clearance distance)

MW (Mega Watts)

NASA (National Aeronautics and Space Administration) O&M (Operations & Maintenance)

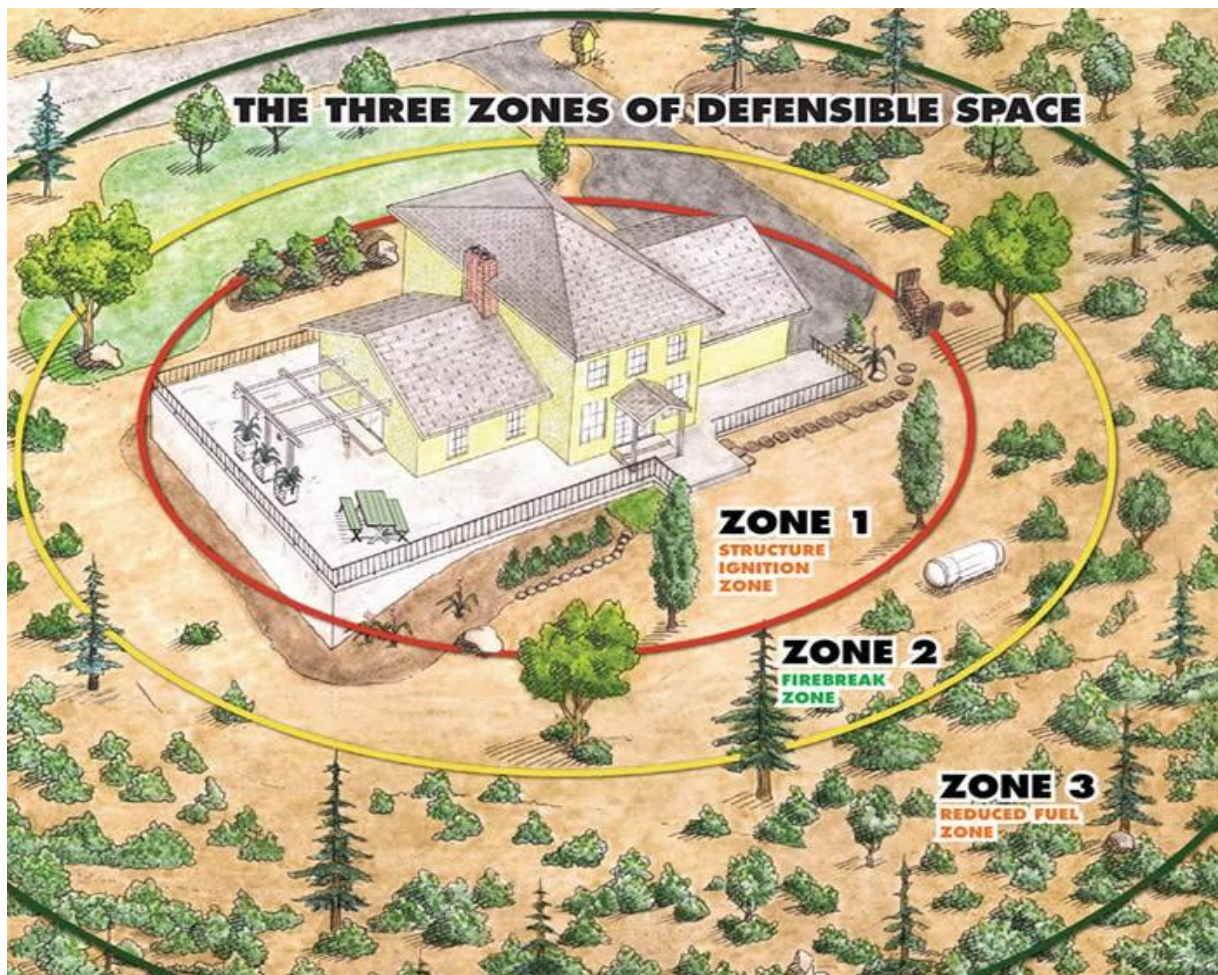
EOC (Emergency Operations Centers)

PCA (Pole Clearing Area)

QA (Quality Assurance)
QC (Quality Control)
RFW (Red Flag Warning) ROW (rights-of-way)
SB (Senate Bill)
SD (Strategic Direction)
SEMS (Standardized Emergency Management System)
SME (Subject Matter Expert)
SRA (State Responsibility Area)
T&D (Transmission and Distribution)
TTX (Tabletop Exercise)
UARP (Upper American River Project)
VM (Vegetation Management)
WAPUDA (Washington Public Utility District Association)
WMP (Wildfire Mitigation Plan)
WUI (Wildland-Urban Interface)

APPENDIX C: KEEPING SAFE FROM WILDFIRE

- Have a “Go Kit” for when evacuation is necessary.
- Prepare your home and property to survive wildfire.
- Below is a guide to assess your home ignition zone and how to limit the spread of wildfire around your home.



Immediate zone (zone 1)

- The home and area 0-5' from the home's furthest attached exterior point is defined as a non-combustible area. Science tells us this is the most important zone to take immediate action on, as it is the most vulnerable to embers. **START WITH THE HOUSE ITSELF**, then move into the landscaping section of the Immediate Zone.
- Clean roofs and gutters of dead leaves, debris, and pine needles that could catch embers.
- Replace or repair any loose or missing shingles or roof tiles to prevent ember penetration.
- Reduce embers that could pass through vents in the eaves by installing a 1/8-inch metal mesh screening.
- Clean debris from exterior attic vents and install 1/8-inch metal mesh screening to reduce embers.
- Keep under decks and eaves clear or screened to prevent the entry of fire embers.
- Repair or replace damaged or loose window screens and any broken windows. Screen or box-in areas below patios and decks with wire mesh to prevent debris and combustible materials from accumulating.
- Limit the number of trees directly in contact with the home. Limb branches up above the eave line of the house, especially for evergreen trees. Deciduous trees don't pose as great of a threat as evergreens, especially when well maintained.
- Move any flammable material away from wall exteriors – mulch, flammable plants, leaves and needles, firewood piles – anything that can burn. Remove anything stored underneath decks or porches. The national standard now is to keep mulch at least 5 feet from combustible construction (decks, siding, etc.) At a minimum, ensure mulch and bark does not come in direct contact with combustible construction.

Intermediate zone (zone 2)

- 5-30' from the furthest exterior point of the home. Landscaping/hardscaping-employing careful landscaping or creating breaks that can help influence and decrease fire behavior
- Clear vegetation from under large stationary propane tanks.
- Keep woodpiles at least 20 feet from structures.
- Create fuel breaks with driveways, walkways/paths, patios, and decks.
- Keep lawns and native grasses mowed to a height of four inches.
- Remove ladder fuels (vegetation under trees and branches) so a surface fire cannot reach the crowns. Prune trees up to six to ten feet from the ground; shorter trees should not exceed 1/3 of the overall tree height.
- Tree placement should be planned to ensure the mature canopy is no closer than ten feet to the edge of the structure.
- Tree and shrubs in this zone should be limited to small clusters of a few each to break up the vegetation's continuity across the landscape.

Extended zone (zone 3)

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

- Remove dead plant and tree material.
- Remove small trees growing between mature trees.
- Remove vegetation adjacent to storage sheds or other outbuildings within this area.

Considerations


- The greater the slope of the property, the greater the distances of the zones. If your property is very steep, you may look to increase zone 1 to 10 feet, zone 2 to 60 feet, and zone 3 to 200 feet.
- With a greater slope, the zones may not be equal on all sides of your home. Uphill sides of the house may be less than the downhill sides due to the speed at which fire spreads uphill versus downhill.
- So much of this is a case-by-case scenario for what is best for each home. Contact your local fire department for consultation.

Vegetation Spacing Guidelines


VERTICAL SPACING

Eliminate opportunities for a vertical “fire ladder” by:


- Remove branches beneath large trees for a 6 foot minimum clearance.
- Create proper vertical spacing between shrubs and the lowest branches of trees by using the formula shown.



6 FOOT MINIMUM CLEARANCE



3X HEIGHT OF SHRUB = MINIMUM VERTICAL CLEARANCE



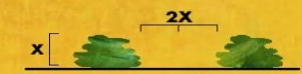
3X

HORIZONTAL SPACING

The spacing between grass, shrubs, and trees is crucial to reduce the spread of wildfire. The spacing needed is determined by the type and size of the shrubs and trees, as well as the slope of the land. For example, a property on a steep slope with larger plant life will require greater spacing between trees and shrubs than a level property that has small, sparse vegetation.

SHRUBS

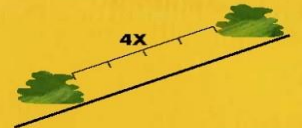
FLAT TO MILD SLOPE (LESS THAN 20%)



2X

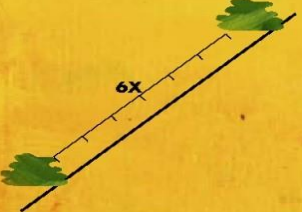
4X

MILD TO MODERATE SLOPE (20%–40%)




6X

MODERATE TO STEEP SLOPE (GREATER THAN 40%)



TREES


FLAT TO MILD SLOPE (LESS THAN 20%)



10 FEET


20 FEET

MILD TO MODERATE SLOPE (20%–40%)



30 FEET

MODERATE TO STEEP SLOPE (GREATER THAN 40%)



Fire-safe landscaping

Fire-safe landscaping isn't necessarily the same thing as a well-maintained yard. Fire-safe landscaping uses fire-resistant plants that are strategically planted to resist the spread of fire to your home.

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Home Ignition Zone Checklist

HOME IGNITION ZONE CHECKLIST

SIMPLE STEPS FROM ROOF TO FOUNDATION TO MAKE A HOME SAFER FROM EMBERS AND RADIANT HEAT

- Clean roofs and gutters of dead leaves, debris and pine needles that could catch embers
- Replace or repair any loose or missing shingles or roof tiles to prevent ember penetration
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- Clean debris from exterior attic vents and install 1/8 inch metal mesh screening to reduce embers
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- Screen or box-in areas below patios and decks with wire mesh to prevent debris and combustible materials from accumulating
- Move any flammable material away from wall exteriors - mulch, flammable plants, leaves and needles, firewood piles - anything that can burn
- Remove anything stored underneath decks or porches

VISIT [FIREWISE.ORG](https://www.firewise.org) FOR MORE DETAILS

Image by NFPA, with funding from USDA Forest Service