



# WILDFIRE MITIGATION PLAN

August 4, 2021

## Executive Summary

Wildfires present a challenge to utilities that can impact many customers and create safety concerns. This risk is a growing concern for all utilities and there are many efforts to develop best practices throughout the industry to address and mitigate the risk of wildfires. Benton PUD's primary mission is to provide safe, reliable, and affordable electric service for our customers. To support achieving this goal Benton PUD is committed to an ongoing assessment of our electricity delivery infrastructure, our design and construction standards and our operating and maintenance practices to help minimize the risk of igniting wildfires.

Development of this Plan included a risk-based evaluation to improve operational practices, enhance existing preventative and response plans, and strengthen the coordination of responsibilities within the utility.

Benton PUD has developed a Wildfire Mitigation Map for our service territory designating our highest risk areas which are the Hanford and Horse Heaven locations.

There are three major areas the District has developed or enhanced to mitigate wildfire risk in the designated areas; Hardening of the Electric System, System Coordination and Technology, and Vegetation Management.

Hardening of the Electrical System includes modifying construction standards to include options for increased conductor phase spacing and additional wildlife cover, using Ductile Iron poles for transmission switches and more complex construction, and implementing additional line patrols using infrared equipment to detect hot spots on the line.

System Coordination and Technology includes replacing expulsion fuses with non-expulsion current-limiting fuses, disabling automatic reclose settings for the summer months on reclosers that serve these areas and setting the reclosers to non-reclose , adding additional protective reclosers and tripsavers in order to sectionalize more of the electrical system in the designated areas.

Vegetation Management includes systematic tree and brush pruning in a manner that covers the entire service territory over a three-year period and extending the pole sterilization around each pole in these areas. Additional line patrols will help verify the need for any extra trimming in the designated high risk areas.

The District continues our commitment to partner and work closely with Emergency Responders in preventing wildfires and assisting during these events.

While it is difficult to prevent all wildfires, the District is committed to continuing to explore utility best practices as they develop; and to improve processes and construction standards and implement new technologies to address this challenge.

## Purpose and Outline

The purpose of this Plan is to reduce the probability that Benton PUD's transmission and/or distribution system assets are the source of ignition or contribute to a wildfire, while continuing to provide safe, reliable, and affordable distribution services to our customers.

The Plan includes the following sections:

1. Contributors to Wildfires
2. Overview of Operational Practices and Preventive Strategies
3. Wildfire Mitigation Map
4. Hardening of the Electrical System
5. System Coordination and Technology
6. Vegetation Management
7. Emergency Response and Restoration
8. Customer Communication, Outreach and Engagement
9. Accountability and Monitoring
10. Summary

### 1. Contributors to Wildfires

Weather conditions that contribute to electrical power line faults also contribute to the rapid spread of wildfires. High wind is the most critical of these weather factors and is commonly accompanied by high temperatures, low fuel moistures, and low humidity.

Birds are a common hazard that create the need for special measures since they frequently use poles or towers as roosting and nesting places. Bird droppings build up on insulators causing the potential for a flashover between conductors and the crossarm on a pole or tower which can cause a line fault and the potential for burning debris to fall to the ground. Another example is when the wingspan of a bird is large enough that it can touch two conductors simultaneously or a conductor and grounded object creating a short circuit, causing burning debris to fall to the ground.

Other conditions that may lead to potential wildfire problems are damaged hardware, damaged insulators, blown lightning arrestors, loose hot line clamps, and broken conductor strands. Porcelain insulators will allow a flash-over if they are contaminated or have broken skirts. Loose hot line clamps and broken conductor strands can cause hot spots and allow conductors to fall to the ground. These situations, if not corrected, can create wildfire hazards.

### 2. Overview of Operational Practices and Preventative Strategies

Benton PUD has construction standards and specifications with regular review cycles to allow for best practice improvements including material and component specifications for construction and design. Benton PUD has focused on Prevention, Detection and Response to mitigate wildfires.

#### a. Prevention

Prevention attempts to minimize the possibility of a wildfire. Vegetation management, asset monitoring and hardening, steel pole conversion, right of way clearance and other such activities are part of the preventative programs.

#### b. Detection

Detection aims to limit the occurrence of a wildfire by identifying hazards before a failure occurs. Initiatives include increasing the frequency of patrols and implementing detection technologies such as infrared imagery.

### c. Response

Response aims to reduce the impact of a wildfire. Procedures developed include our emergency standby, steps to re-energized electrical assets, automated messaging, emergency preparedness tools, and use of weather data.

## 3. Wildfire Mitigation Map

District staff determined the highest wildfire risk areas in our service territory as the Hanford and Horse Heaven Hills area due to the expansive amount of native vegetation which provides fuel for wildfires. (See Appendix A: Wildfire Mitigation Map).

In these designated areas, District staff investigated utility best practices used to mitigate and prevent wildfires. This investigation led to the development of the three areas of prevention to focus on: Hardening of the Electrical System, System Coordination and Technology, and Vegetation Management.

## 4. Hardening of the Electrical System

Staff developed the following actions to harden the electrical system in the designated high-risk areas:

1. Modify construction standards with extended phase spacing and wildlife cover.
2. Add Wildfire Mitigation Upgrades to the annual Capital budget to bring existing lines in the designated high-risk areas up to the new standards.
3. Review lightning arrester application and bracket spacing and ground lead routing and termination, this will include training on recognition of proper installations.
4. Utilize Ductile Iron poles for transmission and distribution in complex construction areas
5. Install guy strain insulators on all transmission lines where required
6. Continue root cause analysis approach to investigate electrical equipment failures following an incident
7. Conduct additional line patrols in June and August utilizing the District's drone and infrared cameras
8. Identify and create work orders to eliminate unfused small conductors on the electrical system

## 5. System Coordination and Technology

Improvements to System Coordination and Technology in the designated high-risk areas include:

1. Replace expulsion fuses with non-expulsion current-limiting fuses
2. Disable automatic recloser settings for the summer months during fire season
3. Patrol and verify the integrity of the line prior to re-energizing
4. Add more reclosers and tripsavers to sectionalize the distribution system
5. Continue to use the AMI system to detect hot sockets in meter bases

## 6. Vegetation Management

1. Continue to complete systematic tree trimming and brush pruning that covers the District's service area every three years
2. Spot trim fast growing/cycle buster trees as identified with the additional line patrols
3. Increase vegetation sterilization around each pole in the designated high-risk areas

Benton PUD will continue the commitment to evaluate our vegetation management program, examine industry best practices, and identify any additional risk informed strategies that could advance the work to minimize wildfire risks.

## 7. Customer Communication, Outreach and Engagement

Benton PUD regularly communicates with our customers through SmartHub®, the District's website and social media platforms and the media on issues that impact their power. We also utilize community events to promote electrical safety and outage preparation to customers and the public.

Benton PUD will communicate with customers in the highest wildfire risk areas in our service territory on what to do in case of an emergency, so they are prepared for an outage for any reason. Proactive messaging prior to and during wildfire season will educate customers on our mitigation plans and encourage customers to monitor weather conditions, prepare their property, prepare a summer outage kit, and have an evacuation plan in place. In the event of an outage, Benton PUD will provide alerts to customers and direct them to the outage map on our website and in the SmartHub app for updates on the outage and restoration. Key Accounts will communicate with large customers based on outage duration and location.

Benton PUD will coordinate with Benton County Emergency Management, City and County officials and first responders within the applicable jurisdictions to communicate public safety messages as necessary.

## 8. Emergency Response and Restoration

Benton PUD interacts with Emergency Management agencies within our service territory. Emergency Responders notify our Dispatch Center when a fire is approaching either District infrastructure or a structure that requires disconnection of power for the safety of their personnel or the public. Rerouting power and securing impacted equipment have proved to help reduce the risk of contributing to wildfires by District equipment.

Benton PUD has two Emergency Standby Journeymen Linemen who carry separate cell phones that Emergency Services has direct access to, and these phones are monitored 24/7. The Standby Linemen are assigned a District truck that they take home that is equipped to respond to fires as soon as Emergency Services calls.

After fire officials have given clearance to enter the burn area, Benton PUD's work crews can proceed with the assessment and rebuilding effort. Steps are taken that include patrolling and verifying the integrity of the line prior to re-energizing.

## 9. Accountability and Monitoring

Benton PUD's Director of Engineering has overall accountability for this plan. As industry wildfire mitigation program standards and measures continue to develop, Benton PUD will identify relevant metrics to measure this Plan's effectiveness.

Every two years beginning from 2021, this Plan will be reviewed and modified as needed as knowledge, utility best practices, and technology improves. Benton PUD is committed to preparing for annual wildfire seasons in advance and utilizes this Plan for operational guidance.

## 10. Summary

Many of the challenges to prevent wildfires have been detailed in this Plan. The District's work to date and commitment to explore new methods to improve mitigating wildfires in the future serves our customers and community and preserves the District's assets. Evaluating new technologies and equipment improvements that offer options in wildfire prevention and detection is a continued focus for the District. Our dedication to developing and enhancing our positive working relationships with our local Emergency Responders has advanced our communication and response efforts. The District has prioritized wildfire mitigation efforts and has developed this plan to help achieve this goal.



DATE: 9/15/2021	DRAWN BY: smtht	MAP NO.:	SCALE: N.T.S.	SHT: 1 of 1	DRAWING NAME:
		<h2>Appendix A: Wildfire Mitigation Map</h2>			