Public Utility District No. 1 of Grays Harbor County Wildland Fire Mitigation Plan (WMP)

October 21, 2024 Version 1.0

1.0 Executive Summary

When the Washington Legislature passed <u>House Bill 1032</u> in July 2023 it stated that, it is in the best interest 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 a list of elements to be included in electric utility wildfire mitigation plans. The Wildfire Mitigation Plan (WMP) format below 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.

The template and list of elements included were developed in conjunction with the Wildland Fire Prevention Advisory Committee, electric utilities, the state fire marshal, the Governor's Office of Indian Affairs, and the public. The WMP format is intended to function as a guide and provide utilities with suggested elements for their plan which are informed by best practices demonstrated to reduce the prevalence and intensity of wildfires and which reduce the risk of wildfire and the resulting damage and losses.

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

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

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2.0 Wildfire Mitigation Plan Overview

2.1 Purpose of the Wildfire Mitigation Plan

This Wildfire Mitigation Plan describes in detail the range of activities that Public Utility District No. 1 of Grays Harbor County (Grays Harbor PUD or District) is taking to mitigate the threat of utility involved wildfires, including various programs, policies, and procedures. This plan complies with the requirements of HB1032 (RCW 19.29A.170) for customer owned electric utilities (COU) to prepare a wildfire mitigation plan by October 31, 2024, and every three years thereafter.

2.2 Description of Where WMP Can be Found Online

The latest revision of this WMP can be found on Grays Harbor PUD's website at www.ghpud.org.

2.3 Best Practices Cross-Reference Table

Standard or Best Practice Name and Description	Document, page number, or citation
HB 1032 – By October 31, 2024, and every three years thereafter, each Investor-owner and Consumerowned Utility must review, if appropriate revise, and	Sec. 1.0, pp. i
adopt its wildfire mitigation plan	
National Electric Safety Code (NESC)	Sec. 4.1, pp. 4
	Sec. 6.2, pp. 10
	Sec. 7.2.1, pp. 10
American National Standard ANSI Z133.1	Sec. 7.3.1, pp. 10
American National Standard ANSI A300	Sec. 7.3.1, pp. 10
Integrated Vegetation Management for Electric Utility Rights-of-Way (EPA)	Sec. 7.3.1, pp. 10

3.0 Utility Overview

This section provides an overview of the Grays Harbor PUD system and service territory.

3.1 Utility Description and Context Setting Table

Grays Harbor PUD took ownership of the electric system from Grays Harbor Light and Rail in January of 1940. Today it serves over 45,000 customers with 1,500 miles of distribution and 200 miles of transmission lines throughout its 1,825 square mile territory. The District operates 36 substations with nearly 100 circuits necessary to provide reliable electric service throughout its rural service territory. The District's service territory extends throughout Grays Harbor County and into portions of Jefferson County, Pacific County, Mason County, and Thurston County; with the exception of the City of McCleary which is responsible for its own electric system. Table 1, below, provides further details about the District's service territory.

Table 1. Context-Setting Information Table

Table 1. Context-Setting Information Table					
Utility Name	Public Utility District No. 1 of Grays Harbor County				
Service Territory Size (sq miles)	1,825 sq miles				
Customers Served	45,223				
Service Territory Make-up (USGS 2021 National Land Cover Database)	1.17% Open Water 3.39% Developed, Open Space 1.71% Developed, Low Intensity 0.63% Developed, Medium Intensity 0.18% Developed, High Intensity 0.16% Barren Land 2.37% Deciduous Forest 68.63% Evergreen Forest 3.09% Mixed Forest 6.07% Shrub/Scrub 3.38% Grassland/Herbaceous 2.31% Pasture/Hay 0.24% Cultivated Crops 5.23% Woody Wetlands				
Service Territory Wildland Urban Interface (based on total area) (USGS 2022 Wildland-urban interface maps for the conterminous U.S. bases on 125 million building locations)	1.44% Emergent Herbaceous Wetlands 1.25% Wildland Urban Interface 6.59% Wildland Urban Intermix				

Account Demographic	87% Residential 0.5% Agricultural 11% Commercial/Industrial 1.5% Other (St lights, power supplies, etc.)
Utility Equipment Make-up (circuit miles) Distribution line miles are estimated using the District's GIS model. Transmission line miles are estimated using the District's CAD maps.	Overhead Dist.: 980 mi (12.47 and 20.8 kV) Overhead Trans.: 215 mi (69 and 115 kV) Underground Dist.: 529 mi (12.47, 20.8, and 35 kV) Underground Trans.: N/A
Has developed protocols to pre-emptively shut off electricity in response to elevated wildfire risks? ¹	Yes □ No ⊠
Has previously pre-emptively shut off electricity in response to elevated wildfire risk?	Yes □ No ⊠

4.0 Objectives of the Wildfire Mitigation Plan

The objective of this Wildfire Mitigation Plan is to document District policies and procedures specific to minimizing risks related to utility operations that have the ability to start or contribute to the spread of potential wildfire. Topics include industry standard practices, emergency management, communication, training, and opportunities for improvement. Priorities include safety of the public, District personnel, property, and protecting the environment.

4.1 Minimizing likelihood of ignition

The District works to minimize the likelihood of ignition through several strategies outlined below.

- 1. Vegetation Management The District maintains its utility rights-of-way with routine tree trimming cycles and removal of danger and hazard trees. Customers are encouraged to notify the District of vegetation growing into the lines and the District works quickly to remove the hazard. The Contract Construction Superintendent monitors vegetation growth within the District's service territory to target areas of fast growing vegetation and off cycle clearing needs.
- 2. Inspections The District crews perform routine line and equipment inspections to notify the Engineering Department of necessary improvements and clean up equipment before problems occur.
- 3. Construction Standards The District Engineering Department creates and updates construction standards to stay in line with industry practices, the National Electric Safety Code (NESC), and other applicable standards. Construction standards are also maintained to ensure proper clearance between equipment, adjacent structures, vegetation, fuel sources, etc.
- 4. Material Specifications The District's Engineering Department and District's Standards Committee meet quarterly to verify or propose new material for District use. The District, for example, utilizes polymer insulators and fiberglass dead-end arms instead of their glass and wood counterparts which were more susceptible to breaking under extreme conditions.
- 5. Underground Lines The District looks for opportunities to underground lines that are at high risk of tree exposure to minimize potential contacts.
- 6. Operational Procedures and Awareness The District Safety and Environmental Director and Operations Director look for ways to improve operational procedures to streamline communication and notification of problems found in the field. They similarly look to enforce practices related to operating equipment that can spark on dry days or in dry areas of the county.
- 7. SCADA The District has also integrated Supervisory Control and Data Acquisition (SCADA) into each of its substations and several distribution devices to provide more visibility to System Control. The Engineering Department continues to model and investigate opportunities to increase safety and resiliency within the power system. As a

recent example, a recloser was added on a District line with the ability to detect high impedance faults to de-energize the line when the wire is down but remains energized on the ground.

4.2 Resiliency of the electric grid

The District receives its power from the Bonneville Power Administration (BPA) through three main points of interconnection; South Elma, Aberdeen, and Cosmopolis. During normal operation, each of these sources are not tied together; however, there are transmission switches in the system that allow District crews to tie or reroute power from adjacent sources during major events.

Additionally, with the exception of a few end of line substations (Ocean Shores, Grayland, Quinault, Cedarville, and Satsop Park), the District has numerous ties within its distribution system which allow flexibility for picking up customers during events.

5.0 Roles and Responsibilities

5.1 Utility Roles and Responsibilities

The District roles and associated responsibilities as they relate to the District's wildfire response and WMP are outlined as follows:

- 1. Safety and Environmental Director District main point of contact when emergency management requires the Emergency Operation Center to be activated. Also responsible for ensuring District personnel follow all safety policies and procedures and environmental requirements are met.
- 2. Operations Director Responsible for directing and ensuring that all line crews, dispatchers, warehouse employees, etc. follow District policies and procedures including this WMP during an event.
 - a. Contract Construction Superintendent Responsible for scheduling, inspecting, and general oversight of contract tree trimming and in-house vegetation management crews; as well as ensuring District vegetation management policies and procedures are adhered to.
 - b. Line Superintendent Responsible for ensuring crews follow District policies and procedures.
 - District Crews Responsible for field operations including switching, construction per District specifications, communicating with onsite responders and System Control during events, etc.
 - c. System Control Responsible for contacting emergency services, remote switching, and communication between agencies and District personnel.
- 3. Engineering Director Responsible for creating and updating the Wildland Fire Mitigation Plan, ensuring construction specifications are updated and follow industry

practices, investigating emerging technologies related to wildfire mitigation, and overseeing personnel responsible for maintaining the District's Geographic Information System (GIS) and SCADA.

4. Communications and Government Relations Director – Responsible for notifying the public of outages and active events in the field, watching for upcoming weather related events, and communicating critical information internally and with external parties and agencies.

5.2 Coordination with local utility and infrastructure providers

The District works directly with 911 and other emergency management services during events to ensure communication is provided to all required agencies and infrastructure providers. Typically communication begins through the District's System Control and/or field personnel and 911. As first responders arrive, communication and response is coordinated in the field. While coordination is typically handled by emergency management, the District maintains contact information with other utility providers should those agencies need to be contacted directly.

5.3 Coordination with local Tribal entities

As above, during an event, communication with local Tribal entities is coordinated through 911 and emergency management.

5.4 Emergency Management / Incident Response Organization

As stated on their website, Grays Harbor County Emergency Management (Emergency Management) is responsible for developing and maintaining a countywide infrastructure for emergency/disaster preparedness, response, mitigation and recovery.

Emergency Management is responsible for maintaining the Emergency Operations Center (EOC) in a constant state of readiness. During a countywide disaster, the EOC becomes the hub of information gathering and dissemination, strategic decision making, resource allocation and incident coordination. Representatives from law enforcement, fire services, public health, environmental health, EMS, as well as other organizations from throughout the county, work together to coordinate the response.

Additionally, Emergency Management has developed a Comprehensive Emergency Management Plan (CEMP) which establishes roles, responsibilities, and structure of communication for emergency management system alerts.

6.0 Wildfire Risks and Drivers Associated with Design, Construction, Operation, and Maintenance

6.1 Risks and risk drivers associated with topographic and climatological risk factors

The District has utilized several resources to determine the overall wildfire risk within its service territory.

1. The District's service territory falls within the Very Low, Low, and Moderate Wildfire Hazard Potential Risk areas as shown in maps, below, published by the Forest Service.

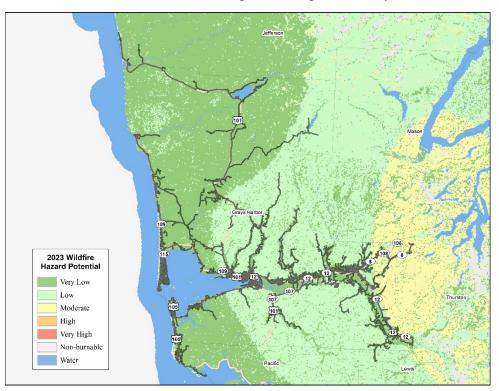


Figure 1. USDA Wildfire Hazard Potential, Version 2023 https://www.arcgis.com/home/item.html?id=7cea729c213e409aade5a2838293f09e

2. The FEMA National Risk Index for Wildfire within the District's service territory is Very Low to Relatively Low.

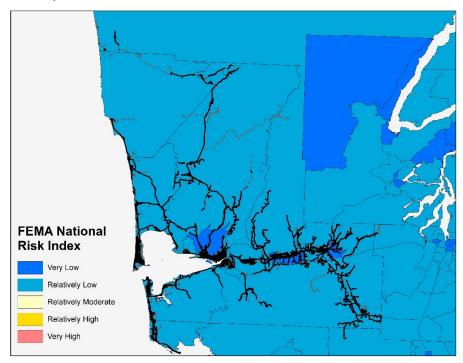


Figure 2. FEMA National Risk Index https://hazards.fema.gov/nri/map

3. The Wildfire Risk to Communities website classifies Grays Harbor County as low risk:

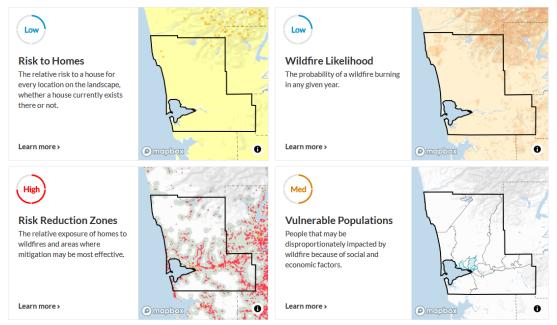


Figure 3. Wildfire Risk to Communities https://wildfirerisk.org/explore/

- 4. The District reviewed the Grays Harbor County Hazard Mitigation Plan, Confederated Tribes of the Chehalis Reservation Hazard Mitigation Plan, Shoalwater Bay Tribal Hazard Mitigation Plan and Quinault Indian Nation Hazard Mitigation Plan. The Shoalwater Bay Tribal Hazard Mitigation Plan considers the wildfire risk low while the remainder of the hazard mitigation plans classified the risk as medium.
- 5. The District further reviewed the National Weather Service Watch, Warning, and Advisories records going back to January 1, 2022. Since that time, there have been three Red Flag warning days, 13 heat advisories, two excessive heat watches (one of which became a warning), and one fire weather watch.

Given this information, the risk of wildfire in Grays Harbor County varies from low to moderate throughout the county. The District continues to monitor the changing environment and associated impacts to the District's infrastructure.

6.2 Enterprise-wide Safety Risks

The District identifies and evaluates enterprise-wide safety risks related to wildfire mitigation by routinely communicating interdepartmentally to ensure policies and procedures align with the District's objectives.

Operationally, risks are mitigated through use of technology to keep track of as much of the system as possible at all times. The District's SCADA system is connected to all 36 substations and several distribution reclosers to provide real time status to System Control. When problems occur, the District can send crews to investigate immediately. The District maintains a 24/7 System Control, which further minimizes delay in resolving issues that occur.

Procedurally, the District tracks weather and related data and notifies all personnel when there is higher risk of hazards due to storms, heat, dry conditions, etc. This allows all personnel to be on alert and mindful when in the field and receiving additional customer calls. Additionally, the District has a USFS approved Water Tank trailer that it can utilize or have on standby when working during high risk weather events and conditions.

Some of the risk drivers the District works to minimize include:

- 1. Contact from objects:
 - a. Animals The District utilizes bird diverters and has the ability to install animal guards in areas that are repeatedly impacted by animals.
 - b. Vegetation The District's Vegetation Management procedures are proactive and work to ensure proper clearance is maintained to lines and equipment. Low growing vegetation is promoted in place of large trees, and trimmed vegetation is mulched to decrease ignition due to readily available fuel.
 - c. Car vs. Pole Incidents The District endeavors to design and install its infrastructure such that it does not interfere with regular traffic pathways.
 Additionally, the District works with Washington State Department of Transportation (WSDOT) to relocate infrastructure out of WSDOT's clear zone to further minimize impacts.
- 2. Equipment Failure The District promotes and performs routine line, equipment, and pole inspections annually to find and correct potential hazards before they fail.

3. Wire to wire contacts – District standards and design principals have been developed to provide proper clearance between equipment and all wire. The District follows NESC-provided calculations for developing minimum vertical and horizontal conductor spacing to prevent wire contacts due to sag or wind during heat and storm events. As problems are found, crews work with the Engineering Department to reframe or increase tension in lines to prevent further issues.

7.0 Wildfire Preventative Strategies

7.1 Weather Monitoring

7.1.1 Current Strategy Overview

Local weather alerts are provided via e-mail and are monitored regularly by District personnel including System Control, Superintendents, and the Communications and Government Relations Director. Resources monitored include but are not limited to:

- United States National Weather Service
- United States Forest Service Wildland Fire Assessment System
- National Fire Danger Rating System
- National Oceanic and Atmospheric Administration
- Local weather channels

7.1.2 Planned Updates

The District has no planned updates to its weather monitoring procedures.

7.2 Design and Construction Standards

7.2.1 Current Strategy Overview

The District's strategy related to design and construction standards is to follow industry practices and, at minimum, meet the requirements of the National Electric Safety Code (NESC) as well as permitting requirements set by local jurisdictions. The District has been simplifying and reducing material options in its warehouse to minimize opportunities for installing incorrect material. This reduction in material options has resulted in poles designed with stronger materials than necessary resulting in a hardened power system, especially through rural parts of the system. The District balances use of 5 ft. crossarms to increase clearance to trees and other objects, 10 ft. crossarms to increase conductor spacing, varying pole spacing and conductor tension to control sag in the line, and many other factors to minimize potential hazards and negative impacts to the surroundings.

7.2.2 Planned Updates

The District is in the process of reviewing and updating the majority of its Construction and Design Standards since many have not received a significant update in over ten years. However, the standards are confirmed to meet applicable industry standards and industry practices.

7.3 Fuel & Vegetation Management

7.3.1 Current Strategy Overview

The District utilizes contractors for the majority of its tree trimming requirements. The Contract Construction Superintendent schedules and monitors their work daily. District rights-of-way are cleared no less than once every ten years. Areas with known fast growing vegetation are monitored and trimmed more regularly. The District has vegetation management standards which comply with ANSI Z133.1, ANSI A300, and the Integrated Vegetation Management for Electric Utility Rights-of-Way (EPA). The District also utilizes its own personnel to mow and mulch ground vegetation to reduce available fuel for potential wildfires.

7.3.2 Planned Updates

The District has no planned updates to its fuel and vegetation management procedures prior to the 2027 plan update.

7.4 Asset Inspections and Response

7.4.1 Current Strategy Overview

The District is currently transitioning from paper inspections to digital inspections. The current strategy entails inspecting all padmount equipment on a five year cycle, all switches on a three year cycle, all distribution lines on a ten year cycle, and all transmission lines on a three year cycle. As the inspection forms are digitized, data will be input into the District's enterprise software and GIS maps to track asset data over time. Additionally, each District Serviceman performs a complete visual safety patrol of their service area annually.

Pole inspections are performed by a contractor on an 8 year cycle (~4,000 poles/year). The data is provided to the District in a spreadsheet and GIS shapefile to be imported and better utilized to track inspection status and failure rates geospatially throughout the system.

7.4.2 Planned Updates

As discussed above, the District is transitioning toward internal inspections being performed digitally. The District is also investigating available resources for utilizing drones to more quickly and accurately perform line inspections.

7.5 Workforce training

7.5.1 Current Strategy Overview

PUD personnel are not trained to fight fires beyond a shovel, fire extinguisher, and hand pump water cans. Each truck is equipped with at least one fire extinguisher that can be used to prevent small fires from expanding. Fire extinguisher training is an annual training in the District's safety program. All employees and contractors are responsible for following Industrial Fire Precaution Level (IFPL) protocols.

7.5.2 Planned Updates

The District recently purchased a USFS approved Water Tank trailer. Procedures and training will be developed to ensure any District employee required to use the equipment is familiar with it and can respond when needed. The District has also identified USFS approved Fire Water Tank rental equipment that can be secured when needed.

7.6 Relay and Recloser Practices

7.6.1 Current Strategy Overview

The District utilizes circuit breakers, electronic reclosers, padmounted VFI switches, and various fuses to protect and de-energize the power system during events. These devices are coordinated using Aspen OneLiner modelling software to accurately estimate various fault current levels throughout the system. General District practice is to set relays and reclosers to open up to four times during an event.

Breakers are generally set such that the initial operation closes in after 0.2 seconds, while the second and third operations close after 15 seconds before the relay locks the breaker open, deenergizing the circuit.

Reclosers are generally set such that the initial operation closes in after 0.2 seconds, the second operation closes in after 2 seconds, the third operation closes after 5 seconds and if there is still a fault detected in the system during the fourth operation, the relay will lock open de-energizing the circuit.

Devices protecting underground lines are typically set to non-reclose since underground faults are rarely temporary.

The District's System Control has the ability to remotely operate breakers in each of the 36 District substations. This allows dispatchers to quickly de-energize portions of the system during potential wildfire or other similar events or misoperations of District equipment.

7.6.2 Planned Updates

The District Engineering Department will continue to evaluate the need to modify recloser settings during potential wildfire mitigation conditions and utilize high impedance fault settings to improve public safety.

7.7 De-energization / Public Safety Power Shutoff

7.7.1 Current Strategy Overview

The District has no current policy related to Public Safety Power Shutoffs (PSPS) or proactively de-energizing lines during potential events. Lines and equipment are de-energized for public and worker safety when requested by emergency services or for other utilities to repair their infrastructure when working near energized equipment. Additionally, the District receives its power from BPA. BPA's Wildfire Mitigation Plan does include PSPS conditions. Should BPA elect to active its PSPS plan, the District's System Control will communicate directly with BPA's System Control to de-energize the necessary components. Communication will be maintained throughout the event until the system can be safely restored.

7.7.2 Planned Updates

The District has no plans to develop or change policies or practices related to de-energization or PSPS before the 2027 plan update.

8.0 Community Outreach and Public Awareness

8.1 Current Community Outreach and Public Awareness Program

The District has no current plans for specific public awareness strategies beyond posting the plan on the District's website and providing opportunity for comment at the District's Board of Commissioners meeting where the Board will be asked to pass a resolution in support of the WMP. However, the District's Safety and Environmental Director communicates with Emergency Management to ensure information is up to date and passed efficiently between agencies during an emergency. Additionally, this initial WMP has been shared with all fire departments within the District's service territory for input.

8.2 Planned Updates

The District has no planned revisions prior to the 2027 plan update. As feedback is received, it will be recorded as appropriate for incorporation into the next revision.

9.0 Restoration of Service

After any outage, the District's restoration procedure requires crews to patrol the entirety of the effected system before re-energization. The crew may restore power incrementally as segments are found to be safe. During Red Flag warnings or following a PSPS initiated by BPA, the crew may patrol the line after energization to confirm everything has safely returned to normal.

10.0 Evaluating the Plan

This is the initial Wildland Fire Mitigation Plan for the District. The District will be investigating opportunities and criteria for evaluating the plan to be included in future revisions.

10.1 Metrics and Assumptions for Measuring Plan Performance

Due to this being the initial plan, metrics have not been established for evaluating the performance of the plan. Metrics under consideration include:

External Risk Metrics:

- Red Flag Warning days
- High Wind Warning days
- Increasing customers living in high-risk areas (as identified by the District)

Performance Metrics:

- Distribution Inspections (Inspection Type if Applicable)
 - a. Circuit Miles Inspected
 - b. Number of Poles Inspected
 - c. Count of Inspection Findings
- Transmission Inspections (Inspection Type if Applicable)
 - a. Circuit Miles Inspected
 - b. Count Inspection Findings
- Vegetation Inspections (Inspection Type if Applicable)

- a. Circuit Miles Inspected/Cleared
- b. Count Inspection Findings

Outage Metrics:

- Distribution:
 - a. Utility Identified Outage Case
- Transmission:
 - a. Utility Identified Outage Case

10.2 Identifying and Addressing Areas of Continued Improvement in the Plan

The District will continue to perform outreach and request feedback from the public, local emergency management agencies, and other electric utilities to help identify opportunities for improvement within the plan. Once metrics are established, they will be continually monitored to establish further improvement to the plan.

10.3 Monitoring the Performance of Inspections

Inspection performance is monitored by the Operations Director, Line Superintendent, System Operations Superintendent, Engineering Director, and Contract Construction Superintendent as they relate to their department responsibilities.

Line and equipment inspection forms are prepared by the Engineering Department in the District's enterprise software, NISC. The inspections are completed digitally by field personnel and automatically updated in the software. Engineering reviews the data for discrepancies and creates work orders to fix problems that are found. These inspection records are held within the District's GIS.

Substation inspections are conducted monthly by Substation crews digitally, and submitted to the Substation Crew Coordinator for review. Again, work orders are created based on the results of the inspections to correct errors and make improvements. These inspection records are maintained in Cascade, the District's substation management software.

Pole inspections are performed annually by contractors. The District's contractors inspect roughly 4,000 poles per year which results in an eight year inspection cycle. The Contract Construction Superintendent checks in with the contractor regularly to verify compliance with District standards while the Engineering department evaluates the data and creates work orders to correct issues that are found. The pole inspection records are received as a GIS shapefile and Excel spreadsheet.

The majority of vegetation management is performed by contractors, as well. The Contract Construction Superintendent meets regularly with the contractors to ensure compliance with District standards. The Contract Construction Superintendent provides the schedule and location for tree trimming to the contractor to maintain clearances to District lines. Line corridors are trimmed no less than once every ten years. Records for vegetation management are held in the form of paper maps, Excel spreadsheets, and invoices kept by the Contract Construction Superintendent