



2024 WILDFIRE MITIGATION PLAN

Effective October 30, 2024-2027

SEPTEMBER 27, 2024
SNOHOMISH COUNTY PUD #1

1.0 Executive Summary

Unusually large wildfires are on the rise in the Pacific Northwest, with an increase in fires in west-side conifer forests. As a result of this increased wildfire danger, an Electric Utilities Wildland Fire Prevention Task Force was convened (SSB 5305 and RCW 76.04) by the Washington Department of Natural Resources (WADNR) to address wildfire prevention and develop protocols in dealing with education, communication, vegetation management, and investigation thresholds, among other considerations.

From Washington Legislature passed House Bill 1032 in July 2023: *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 finds that electric utilities are partners with relevant state agencies, emergency responders, and public and private entities in identifying best practices to reduce the risk of and prevent wildland 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.*

Public Utility District No. 1 of Snohomish County (District) believes the development of a thorough Wildfire Mitigation Plan (WMP) is a prudent and responsible component of the overall preparation necessary to address the increased wildfire occurrence in Washington.

In its effort to identify locations in the service area that present increased wildfire risk, the District has contracted a vendor specializing in wildfire threat assessment to deliver specialized analytics and mapping services. The District's plan identifies Ignition Potential Index (IPI) areas of 94 and above as "High" risk areas. For more information, see Section 6.1.

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2.0 Wildfire Mitigation Plan Overview

2.1 Purpose of the Wildfire Mitigation Plan

Public safety has always been at the forefront of an electric utility’s operational practices. Reducing the risk of utility-caused wildfire is an essential part of achieving public safety. The District’s existing policies, programs and procedures are intended to directly or indirectly manage or reduce the risk of creating a wildfire.

The strategies, programs and activities described in this WMP, with associated goals and metrics, have been identified by the state as an effective approach to reducing fire-related risk for the District’s customers in the near-term.

The WMP describes vegetation management, asset inspection and maintenance, recloser and breaker setting protocols, communication plans, restoration of service processes, and community outreach efforts. Additionally, it identifies plan owners, measures effectiveness, and deficiency tracking.

As the District gains experience implementing the WMP’s mitigation programs, and as new information emerges, the District will assess, evaluate, enhance, and refine its practices. As part of this process, the District will review and, if appropriate, update the WMP at least once every three years.

2.2 Description of Where WMP Can be Found Online

The District’s WMP can be found on www.snopud.com in the “Outages & Safety” section of the site. For any questions or concerns regarding the WMP, please contact the System Planning & Protection Department (425-783-1000 or systemprotection@snopud.com).

2.3 Best Practices Cross-Reference Table

Standard or Best Practice Name/Description	Document, Page Number, or Citation
Revised Code of Washington (RCW)	64.12.035
NESC	Rule 281, NSB Handbook 81
ANSI	A300 Tree Care standards

Table 1. Best Practices Cross-Reference

3.0 Utility Overview

The District is a municipal corporation of the state of Washington, founded in 1936, and formed by a majority vote of the people for the purpose of providing electric and/or water utility service. There are 27 other PUDs in Washington, with the District being the largest. As of 2024, the District serves approximately 385,000 electrical customers throughout Snohomish County and Camano Island.

The District is governed by a three-member publicly elected Board of Commissioners. They are responsible for setting policy and appointing a General Manager (CEO). The General Manager (CEO) is responsible for the District's overall management and operations. The District owns and operates certain generation, transmission and distribution system assets which are critical to maintaining electric service to its customers.

The District transmits and distributes electricity within a 994 square mile service area that includes most of Snohomish County and Camano Island. The District operates out of its headquarters located in Everett, Washington, with branch offices in Arlington, Lynwood, Monroe, Snohomish, and Stanwood.

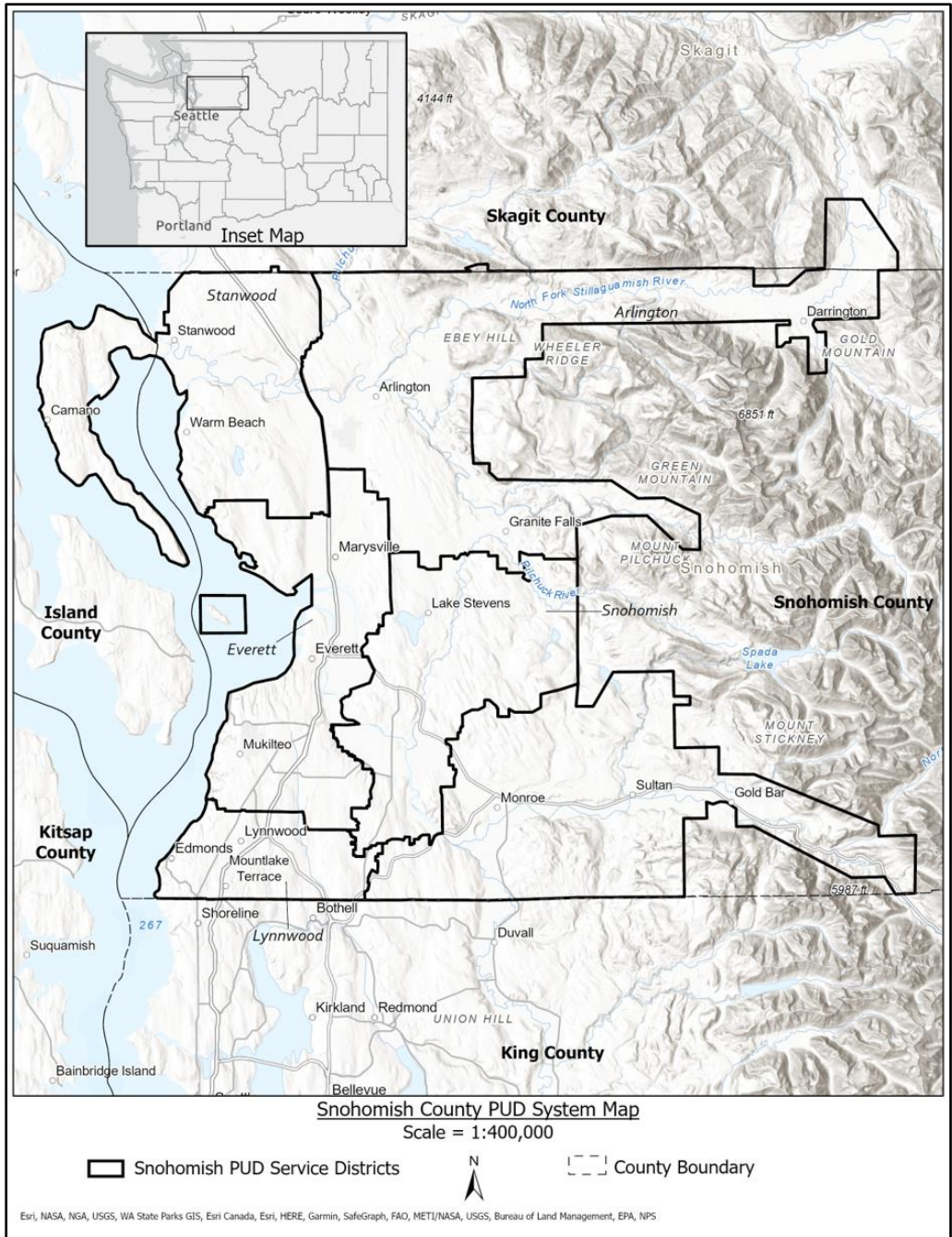


Figure 1. Snohomish PUD Service Area

3.1 Utility Description and Context Setting Table

Utility Name	Snohomish County PUD #1
Service Territory Size (sq miles) Note: With existing facilities/equipment	944
Service Territory Make-up	28.8% - Urban 10.2% - Agriculture 0.54% - Barren/Other 33.3% - Conifer Forest/Woodland 0.0% - Desert 18.0% - Hardwood Forest/Woodland 4.1% - Herbaceous 3.2% - Shrub 1.9% - Water
Service Territory Wildland Urban Interface Note: Based on service territory size above	8% - Wildland Urban Interface 46% - Wildland Urban Intermix
Customers Served	385,092
Account Demographic	93% - Residential 0% - Agricultural 7% - Commercial/Industrial
Utility Equipment Make-up (circuit miles) Note: If there were 3 different overhead conductors on three spans that were 300 feet apart the distance would be considered 300', not 900'.	Overhead Dist.: 3293.83 Overhead Trans.: 332.45 Underground Dist.: 3070.45 Underground Trans.: 0.15
Has developed protocols to pre-emptively shut off electricity in response to elevated wildfire risks?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Has previously pre-emptively shut off electricity in response to elevated wildfire risk?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Number of shut-off events: 0

Table 2. Utility Description and Context Setting

4.0 Objectives of the Wildfire Mitigation Plan

The following is a list of the primary objectives of the WMP and an explanation of how each objective supports a response and recovery system that is focused on public safety.

Safety and Prevention: Ensure safe operation, inspection, and maintenance of the system to mitigate wildfire risks.

Safety and Prevention is integral to a response and recovery system and consists of the capability to reduce the impact and consequences of an incident by developing operational plans that identify critical objectives. Plans should define an integrated view of the sequence and scope of the tasks to achieve the objectives. Operational plans should be executable within the stipulated timeline of the plan, using available resources.

1. **Proactive Risk Mitigation:** By ensuring safe operation and regular inspection of overhead facilities in areas with an IPI of 94 and above, potential hazards can be identified and addressed proactively, reducing the likelihood of wildfires. This proactive approach is crucial in public safety as it helps prevent incidents before they occur.
2. **System Maintenance:** Regular maintenance of the system ensures that all components are functioning optimally. This not only enhances the system's efficiency but also minimizes the risk of malfunctions that could lead to wildfires.
3. **Wildfire Risk Reduction:** Wildfires pose significant threats to public safety, causing loss of life, property, and natural resources. By focusing on mitigating wildfire risks, the objective directly contributes to safeguarding public safety.
4. **Emergency Preparedness:** In the event of a wildfire, a well-maintained and safely operated system can facilitate efficient response and recovery operations. This can include quicker detection of fires, faster communication, and more effective coordination of emergency response efforts.
5. **Community Assurance:** Ensuring safe operation and maintenance of the system provides reassurance to the community, fostering a sense of security. This psychological aspect of public safety is as important as the physical safety measures.

This objective supports a public safety-focused response and recovery system by emphasizing proactive prevention measures, maintaining system integrity, reducing wildfire risks, enhancing emergency preparedness, and providing community assurance.

Risk Reduction: Minimize the probability of the system causing wildfire ignition.

Risk Reduction plays a pivotal role in a response and recovery system that is centered on public safety by ensuring protection elements have and maintain risk assessment processes to identify and prioritize assets, systems, and functions.

1. **Proactive Approach:** This objective emphasizes minimizing the probability of wildfire ignition, which is a proactive approach to public safety. By focusing on risk reduction, potential threats can be identified and mitigated before they escalate into wildfires.

2. **System Safety:** By aiming to minimize the system’s potential to cause wildfire ignition, this objective ensures that the system operates within safe parameters. This reduces the likelihood of system-related incidents, thereby enhancing public safety.
3. **Wildfire Prevention:** Wildfires pose a significant risk to public safety, causing extensive damage to life, property, and the environment. By minimizing the probability of wildfire ignition, this objective directly contributes to the prevention of such disasters.
4. **Emergency Response Efficiency:** In the unfortunate event of a wildfire, a system that has been optimized for risk reduction can aid in efficient emergency response.
5. **Community Confidence:** A system that prioritizes risk reduction can instill confidence in the community. Knowing that measures are in place to minimize wildfire risks can foster a sense of security among the public.

This objective supports a public safety-focused response and recovery system by promoting a proactive approach, ensuring system safety, preventing wildfires, enhancing emergency response efficiency, and building community confidence.

Awareness: Raise awareness and education across District regarding wildfire preparation and mitigation.

Awareness increases understanding of wildfire risks and prevention measures; this is a crucial component of a response and recovery system that prioritizes public safety.

1. **Informed Decision-Making:** Awareness of wildfire risks and prevention measures empowers the District to make informed decisions. This can range from adhering to safety guidelines to making choices that reduce the risk of wildfires.
2. **Preventive Actions:** With increased awareness, the District can take proactive steps to prevent wildfires. This can include maintaining safe distances from flammable materials, adhering to burn bans, and promptly reporting suspicious activities or signs of fire.
3. **Effective Response:** In the event of a wildfire, awareness can significantly improve the effectiveness of the response. Individuals and workgroups who are aware of the risks and appropriate actions to take during a wildfire can respond more quickly and safely, reducing potential harm.
4. **Community Engagement:** Awareness initiatives foster a more informed workforce, encouraging individuals to participate in wildfire prevention and response efforts.
5. **Policy Development:** Increased awareness can inform plan development, leading to the implementation of more effective safety guidelines and strategies for wildfire prevention and response.

The objective of increasing awareness supports a public safety-focused response and recovery system by enabling informed decision-making, promoting preventive actions, enhancing response effectiveness, fostering enterprise-wide engagement, and informing plan development.

4.1 Minimizing likelihood of ignition

Minimizing the likelihood of ignition is the first defense in preventing wildfire. Section 7 discusses in detail efforts used to minimize the likelihood of ignition including during work, during extreme weather conditions, and measures utilized year-round.

4.2 Resiliency of the electric grid

Overhead electric infrastructure is likely to be impacted during a high energy wildfire. However, there are a variety of measures that can be deployed to minimize the impact to the grid from smaller brush fires or fires through low fuel areas. The High IPI areas designated in the WMP have two circuits of radially fed 12kV distribution. If a wildfire were to go through these areas, it is likely that it would still cause an outage for many of the customers served in the area.

The local transmission lines feeding one of the areas are owned and operated by Seattle City Light. If a wildfire were to impact their ability to serve the District's North Mountain substation, the electric service in the area would be impacted.

The District also has a storm response program that would go into effect in the case of a wildfire. The District's stock of poles and other materials would be utilized to repair the system as quickly as possible. The District would also reach out to other PUDs nearby to procure any additional materials needed to repair the system and restore service to the area.

5.0 Roles and Responsibilities

5.1 Utility Roles and Responsibilities

The District is governed by a three-member Board of Commissioners that reviews and adopts the WMP, and any subsequent revisions. The following organization chart summarizes the specific staff/positions and their roles and responsibilities regarding wildfire mitigation within the District.



Figure 2. Wildfire Mitigation Team Leads

5.2 Coordination with local utility and infrastructure providers

The District's Energy Control Center (ECC) and servicemen are trained to immediately call first responders during wildfire response and recovery.

The District's Emergency Management Department actively engages in local wildfire initiatives, collaborating with local emergency management organizations. This includes being a key contributor to the Community Wildfire Protection Plan maintained by the Snohomish County Department of Emergency Management (SCDEM) and other initiatives aimed at threat and hazard mitigation. Additionally, the District assists in the development of Snohomish County's Hazard Mitigation Plan.

Furthermore, the District's Emergency Management Department is an active participant in the SCDEM Duty Officer Coordination information sharing platform. This participation allows the District to share information about District operations to a broad audience, including elected officials and department leaders from government agencies and critical infrastructure providers in Snohomish County.

5.3 Coordination with local Tribal entities

The Sauk-Suiattle Tribe, north of Darrington, are located near a high IPI area and may be impacted or have emergency response needs in a wildfire scenario.

5.4 Emergency Management / Incident Response Organization

During an emergency that could potentially impact District facilities, the District would leverage processes that are often implemented during windstorms and other outage events. Multiple departments continually work together to assess the damage and plan for the resources required to carry out the restoration. Information is continually sent to the District's Corporate Communications and Customer Service agents to enable them to inform customers and news agencies of the progress of restoration.

Department of Emergency Management Communication and Coordination

The District, through its Department of Emergency Management Communication and Coordination (EMCC), coordinates with local emergency response agencies as well as other relevant local and state agencies. In response to all emergency events, the District collaborates with local Emergency Management organization(s) and provides an agency representative to the county and/or city Emergency Operations Centers (EOC), if applicable, to ensure effective communication and coordination. The District's primary coordination point is Snohomish County Department of Emergency Management.

During wildfire events, District EMCC staff contacts the local emergency management organization(s) and establishes themselves as the District representative for coordination.

Reporting Fires

Immediately after initial discovery of a fire or as soon as feasible, the District or its contractors will call 911.

When reporting a fire, District staff or contractors will provide, to the extent known by the reporting person, the following information:

- Their name
- Call back telephone number;
- Location, including descriptive location (reference point), intersection, GPS position etc.;
- Any suspected injuries/damages that occurred; and
- Fire information, including estimated acres, estimated rate of spread, fuel type, and wind conditions.

Red Flag Warning Operational Protocols

A Red Flag Warning (RFW) is issued by the National Weather Service (NWS) when critical fire weather conditions are forecast or met. The RFW is to call attention to weather conditions that may result in extreme burning conditions. The type of weather patterns that can cause an RFW include low relative humidity, strong winds, dry fuels, the possibility of dry lightning strikes, or any combination of the above. An RFW can be issued during an on-going event, or if the fire-weather forecaster has a high degree of confidence that Red Flag criteria will occur within 24 hours.

The District's Vegetation Management Superintendent is responsible for monitoring and notifying that an RFW has been issued. When issued, available representatives from the Wildfire Risk Team will meet to review the area identified in the RFW declaration and list out distribution feeders and transmission lines serving or passing through the impacted area(s).

The relays for Distribution device(s) and transmission line breaker(s) feeding the high-risk area where the RFW was issued will be put into alternative settings which is later described in Subsection 7.6.1.

Work in high-risk areas is performed only when the following conditions are met:

- For emergency work only and if not doing the work poses a higher risk for ignition.
- Activities are under the direct observation of the crew foreman or site lead.
- When the crew can maintain adequate communications with other District staff and operations centers.
- Crew has fire suppression equipment accessible in the immediate area of work that would facilitate an immediate response to an ignition.
- Crews will be on alert for fires while working or passing through high-risk areas and immediately report fires or signs of fire to 911 and the operations center as soon as feasible.

5.4.1 Planned Updates

The District's Crisis Communication Plan (CCP), currently being developed, is specific in outlining processes and responsibilities, pertaining to communications both internally and externally in an accurate and timely manner to all appropriate stakeholders. The CCP will establish guidelines to streamline communication and coordination for extensive emergency response activities. The purpose of the plan is to:

- Establish an organizational structure that provides centralized oversight of emergency response communications.
- Provide guidelines to support key functions, Management Team, Service Center, and Call Centers.
- Provide documentation for incident activities.
- Ensure communications with the public, customers, media, regulatory agencies, and federal, state, and local governments to operate effectively to exchange accurate and timely information.
- Identify guidelines for training, drills, and evaluations to continually refine procedures and improve emergency response effectiveness.

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

The District staff evaluated fire causes in the region and identified the following key potential risk drivers. Five-categories were identified as primary risks to the District’s ability to mitigate the likelihood and impact of a wildfire within its service territory:

Risk Factor	Mitigation Activity	Referenced Section
Fuel	Vegetation Management program	7.3.1
	Inspection of high IPI circuits	7.4.1
	Inspection of overhead power system	7.4.1
	Maintenance of the right-of-way (ROW) under or around the PUD’s power lines	7.3.1
	Utilizing Risk Associated with an Ignition Location (RAIL) method to assess the ignition source locations	6.1
Extreme Weather	Various resources to monitor evolving fire weather and climatological conditions	7.1.1
	Pre-wildfire season inspections on high IPI circuits	7.4.1
	Monitoring the status of Industrial Fire Precaution Level (IFPL) daily	7.1.1
	Red Flag Warning operational protocols	7.6.1
	Every year before dry season, members of the Wildfire Risk Team (WRT) will begin to meet regularly to plan when Fire Settings will be in effect for High IPI areas	7.6.1
	Public Safety Power Shutoff protocols	7.7.1
Contact from Objects	Overhead transformers and protective equipment with bushing guards	7.2.1
	Jumpers with narrow spacing are being installed with insulated covers	7.2.1
	Conductor spacers installed to mitigate conductor slap	7.2.1
	Proactive vegetation management	7.3.1
	Protection equipment and settings utilized to isolate faults	7.6.1
Equipment and Material Failure	Inspection of overhead facilities	7.4.1
	The transmission system is being built with ductile iron or steel poles. Fiberglass crossarms are also being installed on the system	7.2.1
	The High IPI circuits are visually inspected for damage every year at a time prior to the dry season	7.4.1
	Alternative Recloser settings	7.6.1
	Protective equipment inspections	7.4.1
Field Work	Field staff trainings	7.5.1
	Hot Line Hold setting during hot line work	7.6.1
	IFPL restrictions and precautions	7.1.1
	Firewatch services	7.1.1

Table 3. Potential Risk Factors

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

Fuel

Assessing wildfire threat requires a risk assessment formulation that assesses the source locations of damaging fires rather than where fire damage occurs. This type of assessment is sometimes called risk-source, risk transmission, or Risk Associated with an Ignition Location (RAIL). The District uses a specific methodology to assess wildfire threat across large landscapes and then prioritizes operational fire safety measures that mitigate the likelihood and impact of such fires.

The two primary components of the RAIL analysis are 1) ignition likelihood, assessed through the ignition potential index, and 2) ignition consequence or the conditional impact. Ignition likelihood is a function of wind speed, wind direction, and fuel dryness. Ignition consequence here is a combination of fire growth potential and the associated impacts to population (or housing units) and drinking water. To generate a wildfire liability threat map for operational fire safety applications, the District uses several quantitative indices based on the conceptual RAIL model. The wildfire threat assessment modeling framework, shown in Figure 3 below, considers the spatially varying influences of climate (wind speed, wind direction and dead fuel moisture content), fuel load (heat per unit area), and the conditional impact of wildfires (fire growth potential and impacts to housing units and surface drinking water). This assessment formulation assists in identifying the source location of damaging fires.

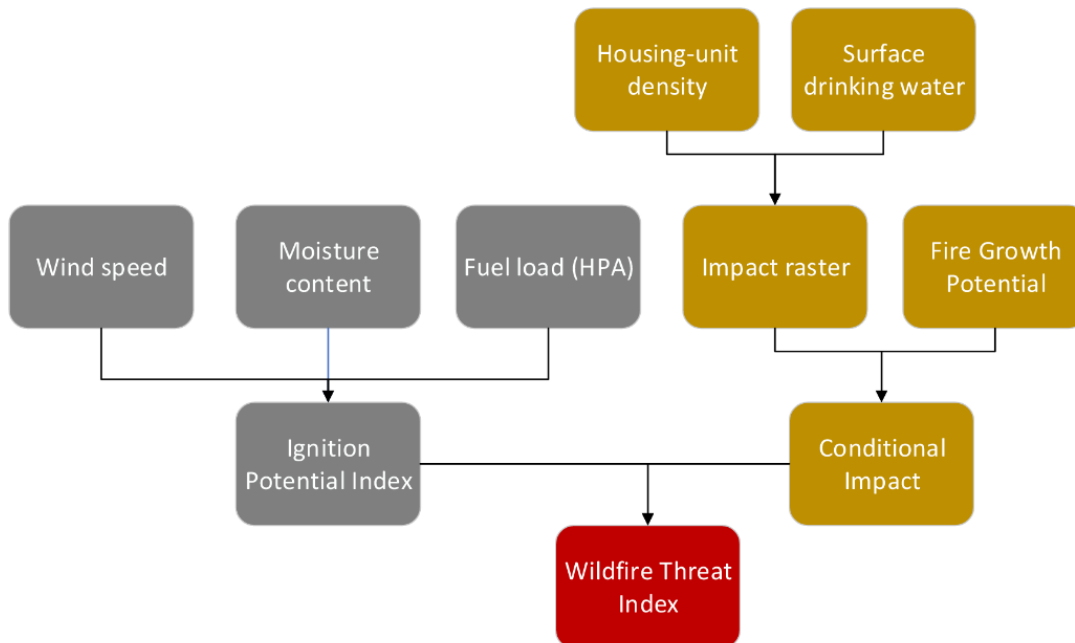


Figure 3. Wildfire Threat Assessment Modeling Framework

Three utility-wildfire threat indices were calculated, including:

- Ignition Potential Index (IPI): Ignition Potential Index raster representing the relative potential of the mapped parts of the landscape to produce an ignition that escapes initial suppression efforts as a function of climate (wind speed and direction and fuel dryness) and fuel load, or heat per unit area (HPA). The IPI raster is best used to prioritize the locations most capable of igniting a fire and producing fires resistant to initial suppression efforts due to higher HPA.
- Conditional Impact (CI): A relative index of the consequence of wildfire (to homes and surface drinking water) if one were to occur, estimated as a function of fire growth potential, estimated through spatial wildfire simulations, and the associated impacts to housing-unit density and surface drinking water source areas.
- Wildfire Threat Index (WTI): A relative index of the overall wildfire liability threat, including the potential for wildfire ignition (IPI) and the consequence if one were to occur (CI). WTI is the best product for evaluating the combination of ignition potential and potential for damaging wildfires.

The District prioritizes the IPI as the primary wildfire threat indicator because the IPI raster considers climate factors and fuel characteristics with a higher likelihood of igniting and sustaining fires, even after initial suppression efforts. This allows for a more detailed assessment of ignition risk.

The highest levels of ignition potential are mainly on the eastern side of the District's service area. The map below shows the different IPI severities throughout the District's territory. The District has designated areas with an IPI of 94 and above as "High" risk zones. The threshold of 94 aligns with the field locations identified as the point where fire hazard significantly increases due to the nature of the fuel prevalence and conditions, increasing wind speeds, and dryness. Currently there are two (2) electric circuits that contain facilities in IPI of 94 and above.

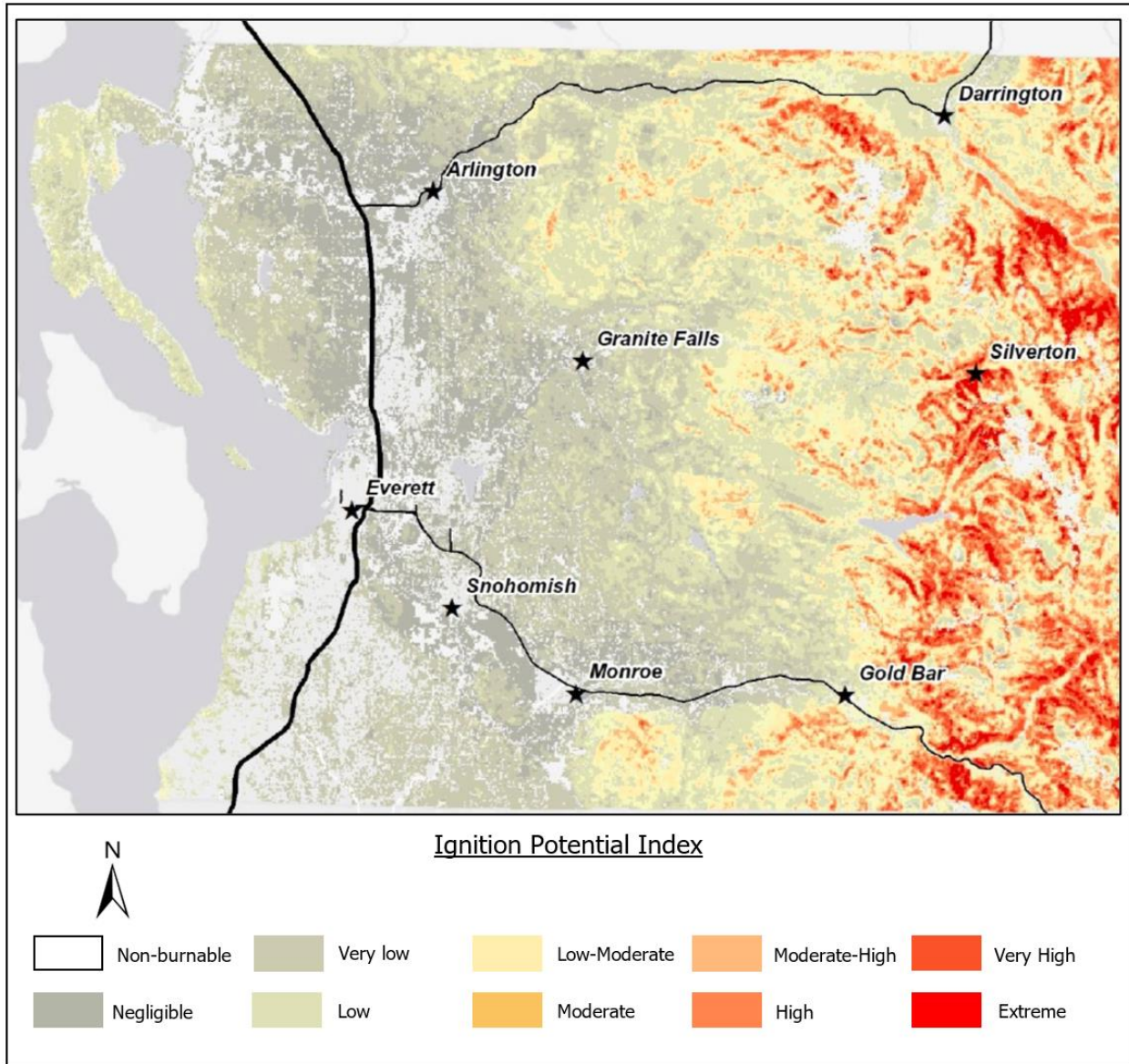


Figure 4. Ignition Potential Index

Extreme Weather

The District's service area can experience very dry weather during late summer and early fall with drought conditions developing quickly. In the late summer and early fall, strong, dry easterly winds, which sometimes last for days, can produce extreme fire conditions. The highest summer temperatures generally occur during these extended periods of high wind.

The U.S. Drought Monitor depicts the location and intensity of drought conditions across the landscape. The system uses five categories: Abnormally Dry (D0), showing areas that may be going into or are coming out of drought, and four levels of drought (D1–D4) as listed in the legend below. Records going back to 2000 show drought conditions for the Snohomish County area

range from “None” to “Extreme Drought” (Figure 5). D4-Exceptional Drought conditions did not occur in the sample date range.

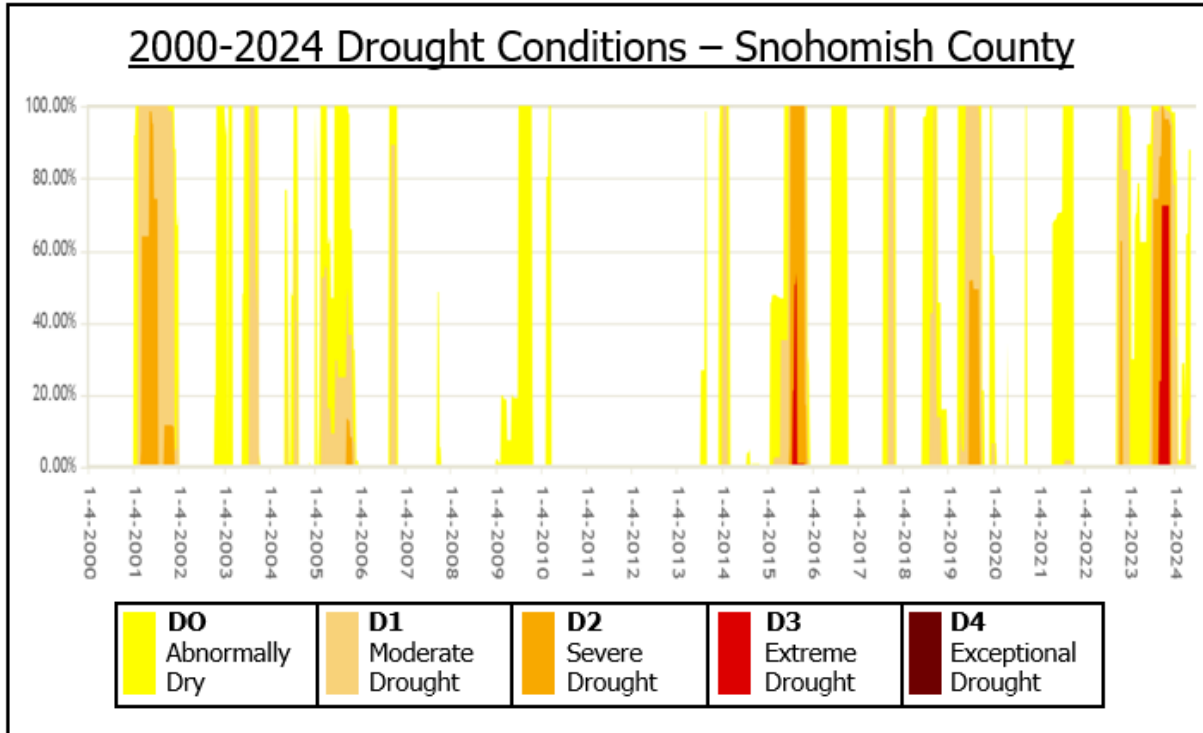


Figure 5. Historic Drought Conditions

Unlike droughts that can last for extended periods of time, RFWs are regional alerts to short-term weather conditions conducive to wildfire outbreak and spread. Figure 6 on the following page represents the historical occurrences of RFWs in the service area from 2014 through 2023 (years with no RFWs were omitted).

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	1								1				
2015	3						2	1					
2016	1								1				
2018	1								1				
2020	2								1	1			
2021	2						1		1				
2022	1									1			

Figure 6. Red Flag Warnings by Year/Month 2014-2023 (0 events for missing years)

High wind events and storms are common occurrences in the region. Electric conductors can sway under these conditions, and if extreme, phase-to-phase contact or cross-phasing can occur for very specific conductor spacing and span lengths. When two or more energized conductors encounter each other, there exists a potential to emit sparks.

6.2 Enterprise-Wide Safety Risks

Contact from Objects

Much of the distribution system is located in areas with trees, making it susceptible to tree-related incidents. The transmission system, even more critical to system reliability, is also located in tree corridors. Contact from objects such as tree branches or trees, can lead to power interruptions and damage to the system. Additionally, wildlife such as squirrels, birds, and other animals can come into contact with energized lines or equipment and may lead to outages. These also pose a fire risk as sparks from such contacts can ignite fuel sources.

Equipment and Material Failure

Equipment and material failures pose risks to the utility's infrastructure. Equipment failures can occur, potentially leading to faults that fail to interrupt or generate sparks, which may ignite fuel.

Field Work

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. Tools and vehicles can be sources of sparks or ignition as well. For example, driving a vehicle over dry grass can cause an ignition when vegetation contacts hot exhaust components.

7.0 Wildfire Preventative Strategies

The District has been proactively implementing measures to address potential wildfire risks for many years. The following outlines existing fire mitigation efforts and identifies planned updates to those efforts.

This WMP describes programs that the District will use to mitigate wildfire risks as quickly as possible. Many of the programs are multi-year and programmatic in nature (i.e., there is a startup period with limited initial implementation followed by full implementation that expands as processes and methods mature).

Some of the strategies and programs in use now are not limited to any timeframe, and are instead situational, and based on certain real-world events. These conditions are predominantly weather and vegetative fuel-related and not associated with time periods (e.g., in 2024, or within 5 years). Similarly, the District's, post-incident recovery, restoration and remediation activities and programs to support customers impacted by a wildfire are not timeframe dependent. These practices will be updated as the District gains new information and adopts improved practices.

7.1 Weather Monitoring

7.1.1 Current Strategy Overview

The District's System Operators use various resources to monitor evolving fire weather and climatological conditions that may contribute to fire events.

- **United States Forest Service (USFS)-Wildland Fire Assessment System (WFAS):** For immediate and short-term situational awareness, mapping tools from the USFS-WFAS help determine daily and short-term forecasted risk, with daily or weekly fire weather status maps produced as needed to assess PNW wildfire conditions. (<https://www.wfas.net/>)
- **The National Weather Service (NWS):** The NWS provide on-line predictive fire weather forecasting tools in the form of a current fire-weather outlook, 2-day, and a 3-8 day outlook. (https://www.spc.noaa.gov/products/fire_wx/)
- **The National Oceanic and Atmospheric Administration (NOAA) Weather and Hazards Data Viewer:** This on-line map provides historic or real-time surface observations including wind speed and direction, wind gust, dew point, relative humidity, and sea level pressure collected from remote automated weather stations (RAWS). Extreme-weather

alerts such as fire weather watch, high wind watch, and red flag warning are provided from this resource. (<https://www.wrh.noaa.gov/map/?wfo=psr>)

- **Industrial Fire Level Precaution Levels (IFPL):** Fire Season requirements become effective when Fire Season is declared in each Washington DNR Protection District (Areas 653, 656, 658). (<https://www.dnr.wa.gov/ifpl>)
- **District Weather Stations:** The District has installed its own weather stations at 18 substations throughout the service area. These stations are monitored remotely through the Supervisory Control and Data Acquisition (SCADA) system and provide temperature, wind speed, wind direction, barometric pressure, and relative humidity. Additionally, the Spada Lake Weather station positioned in the Spada Lake region reports similar information, as well as predictive wind alert notifications.

Industrial Fire Precaution Levels

When qualifying conditions of fire hazard exist, the State Forester will declare Fire Season to be in effect. The Industrial Fire Precaution Level (IFPL) system is intended to help prevent wildfires by regulating industrial and recreational activities on Washington Department of Natural Resources (WADNR), Forest Service or BLM forestlands. IFPL restrictions are issued at one of four levels that begin with Level One at the start of the “Closed Fire Season” and progress through Level Four as conditions warrant. Conditions will vary across the state, therefore each protection district will declare Fire Season separately. The declaration of Fire Season affects forestry and other commercial operations as well as the activities of the general public. Fire Season remains in effect until terminated by an additional declaration or the State Forester declares that conditions of fire hazard no longer exist.

During Fire Season, the District monitors the status of these precaution levels daily and issues instructions to its crew and contractors accordingly. In-house and contracted Vegetation Management (VM) crews have a fire tanker/trailer with at least 300 gallons, as well as fire tools on site when required by IFPL.

Firewatch Services

The purpose of a Firewatch is to stay after the day’s work is over and report any fire starts to the proper authorities. A Firewatcher is assigned by the crew Foreman and is required to be on duty after the last power-driven equipment used by the operator has been shut down for the day. The Firewatcher must be on duty a minimum of one hour. The Firewatcher must do the following:

- Visually observe all parts of the operation area on which industrial activity has been in progress.
- Be physically capable of fighting a fire and experienced in operating firefighting equipment.
- Have on-site communication (radio or cellular) to summon help in the event a fire breaks out.
- Have transportation available in case radio or phone communication does not work.

7.1.2 Planned Updates

There are no planned updates related to weather monitoring at this time.

7.2 Design and Construction Standards

7.2.1 Current Strategy Overview

The electric utility industry has provided solutions that can harden a system to prevent wildfires. These solutions also help prevent unplanned outages and provide protection for wildlife.

The District has been installing overhead transformers and protective equipment with bushing guards that prevent electrocution of squirrels and other small animals. Insulator covers on the Distribution system prevent large birds from becoming electrocuted phase to phase. New equipment installed that require jumpers with narrow spacing are being installed with insulated covers that protect wildlife and equipment from damage.

All new pole installations include a grounding wire to enhance sensitivity and speed of protective equipment for clearing faults, reducing the risk of damage to the system. Conductor spacer installation is requested in areas where conductor slap has been identified, ensuring future occurrences are reduced.

The transmission system is being built with ductile iron or steel poles that are both resistant to brush fires and don't allow fires from flashover to propagate down the pole as a wood pole would. Fiberglass crossarms are also being installed on the system and are more resistant to fire than wood crossarms, when energized by a conductor due to insulator or hardware failure.

7.2.2 Planned Updates

The District's SnoSMART project will deploy hundreds of wireless-communicating smart grid devices, recloser and regulator installations that will include antennas for future remote capabilities. The new infrastructure and systems will enhance not just the reliability and resiliency operations but also provide real-time data to enable improved outage communications and provide more visibility of the District's system.

The District is currently evaluating a change to flame resistant insulators on the 12kV system. The District has standardized on Hendrix composite insulators and has been using them since 2010. In 2024, Hendrix now sells a flame-resistant version to prevent ignition in the case of a failure.

7.3 Fuel & Vegetation Management

7.3.1 Current Strategy Overview

The District utilizes a comprehensive Vegetation Management (VM) program to ensure the safety and reliability of its electric facilities. The program aims to protect both the public and utility workers while also preventing fires and maintaining consistent service across the service area. The specifics of the VM Plan are outlined in District T&D Guideline 4-18-1.0. The VM Guidelines will be reviewed and updated as needed due to changes in regulations or conditions.

The District's vegetation management crews plan to inspect and trim trees on High IPI distribution circuits every year. The remainder of the distribution system is inspected and trimmed on a seven-year cycle. The transmission system is inspected and trimmed on a three-year cycle.

State and Federal Agencies require maintenance of the right-of-way (ROW) under or around the District's power lines. The District is authorized by RCW 64.12.035 to trim or remove any tree or vegetation that poses an imminent hazard to the general public or is a potential threat that could damage electric facilities.

The District has evaluated the vegetation characteristics and growth rates of the predominant species along the overhead lines to determine the years of growth until they contact the conductor. Contracted and in-house VM crews are responsible for trimming trees and vegetation around the District's energized power lines, utility poles, and pad-mount transformers to obtain the minimum required clearance with due regard to current and future tree health and symmetry.

During routine maintenance and preventative inspections, the District proactively addresses high-risk fuel sources by removing hazardous vegetation. Additionally, the District conducts inspections for vegetation-related concerns in response to service calls and whenever utility staff identify vegetation-to-conductor clearance issues during their daily operations.

Trees are trimmed or removed for safety, reliability, and compliance with the National Electric Safety Code (NESC). The District's tree trimming crews and contractors are governed by principles of modern arboriculture using the American National Standards Institute (ANSI) A300 Part 1 concepts and utility directional pruning, which supports proper pruning/tree health while achieving and maximizing the pruning cycle.

Tree clearance is determined by the growth rate of the species. Correct tree trimming should promote tree growth away from electrical conductors, provide longer periods of clearance, and reduce future work. Correct tree trimming techniques include collar cuts, directional pruning, and drop-crotch trimming.

7.3.2 Planned Updates

The District does not have any planned updates to the vegetation management program.

7.4 Asset Inspections and Response

7.4.1 Current Strategy Overview

The District separately inspects its overhead power system on a 10-year cycle. This inspection includes assessment of pole health, damage to the pole and attached materials, and signs of electrical failure of the insulators. Each pole is given a rating to guide the District in their pole replacement program with human and animal caused damage accelerating the pole's replacement. The equipment and materials in High IPI circuits are visually inspected for damage every year at a time prior to the dry season.

District protective equipment is inspected periodically to identify any damage and confirm proper operation. Steel and ductile iron poles are also inspected for accelerated wear and damage.

7.4.2 Planned Updates

The District does not have any planned updates to the asset inspection and response program.

7.5 Workforce Training

7.5.1 Current Strategy Overview

The District has developed rules and complementary annual training programs for its workforce to reduce the likelihood of an ignition. Field staff will be:

- Trained in proper use and storage of fire extinguishers and fire suppression equipment.
- Required to conduct tailgate meetings to discuss the potential(s) for ignition, environmental conditions (current and forecasted weather that coincides with the duration of work for the day).
- Required to identify the closest fire extinguisher and other fire abatement tools.
- Required to report all ignition events to management for follow-up.
- Encouraged to identify possible changes to the WMP and bring such information to management.

7.5.2 Planned Updates

Incorporate discussion of the District's WMP at employee safety meetings including engineering, line construction, and vegetation management with an emphasize on their roles in preventing ignition and the spread of wildfire.

7.6 Relay and Recloser Practices

7.6.1 Current Strategy Overview

The District's System Protection and Relay groups have developed and tested two types of settings for use on District transmission, distribution feeder, and recloser relays for wildfire mitigation. These are briefly described below. The different types of settings can be selected via SCADA by the System Operator for transmission or feeder relays, or in the field by pushbutton controls for feeder and recloser relays.

Fire Settings

Fire Settings use a single time trip to lockout. Coordination with downstream devices is maintained, but with no automatic reclose.

Hot Line Hold

Hot Line Hold is used when crews are performing work near energized distribution conductors as outlined in the District's Switching and Clearance manual or for breakers/reclosers in an area

where a RFW day has been issued. Hot Line Hold uses a single instantaneous trip (no intentional delay) to lockout. Because the instantaneous trip happens in six cycles or less (0.1 seconds), the feeder breaker/recloser usually opens to de-energize the circuit before any downstream protective devices operate, so coordination is sacrificed for speed.

Fire Settings Schedule and Additional Triggers

Every year starting in May, members of the Wildfire Risk Team (WRT) will begin to meet regularly to plan when Fire Settings will be in effect for distribution feeder breakers and reclosers on the feeder in or passing through High IPI areas. Additionally, after Fire Settings are enabled, the WRT will continue to regularly meet to monitor and document current weather conditions and anything that may need to be addressed. In September, the same group will begin to monitor when feeders will be returned to Normal Settings to close the year's wildfire season. Generally, Fire Settings will be considered between July 1st and October 1st.

Wildfire Risk Team

Manager System Planning & Protection
ECC Superintendent
ECC General Foreman
Vegetation Management Superintendent
Manager Security & Emergency Management

If the Industrial Fire Protection Level (IFPL), published by the Washington State Department of Natural Resources, reaches Level III (Partial Shutdown), Fire Settings will be in effect for feeder breakers and reclosers on the feeder in or passing through High IPI areas. When the IFPL has dropped to Level I, Closed Fire Season, and remained there for two weeks, feeders will be returned to Normal Settings.

Red Flag Warning (RFW)

When a red flag warning (RFW) day is declared by the National Weather Service, members of the WRT will meet to review the area identified in the red flag warning declaration and list out distribution feeders and transmission lines serving or passing through that area.

The Distribution devices(s) feeding the area where the RFW was issued will be put in Hot Line Hold.

- This may be circuit breaker(s) (Hot Line Hold applied by the System Operator) and/or recloser(s) (Hot Line Hold applied by a serviceman if the recloser is not DA-capable).
- Hot Line Hold will be enabled as close as practical to the time the red flag warning is declared and will be disabled as soon as the red flag warning declaration is ended.
- Hot Line Hold will be applied only for very critical and specific needs.

Any devices put in Hot Line Hold will be returned to the state they started from unless the IFPL has changed to Level III in the meantime.

The Transmission line breaker(s) feeding or passing through the area where the RFW was issued will have reclosing disabled.

- Reclosing disabled will be selected on transmission line terminals as close as practical to the time the RFW is declared, and reclosing will be re-enabled as soon as the Red Flag warning declaration is ended.
- Reclosing disabled will be applied only for very critical and specific needs.
- Auto-sectionalizing schemes will be disabled on lines where reclosing schemes are disabled, as the two schemes are designed to operate in conjunction with each other.

7.6.2 Planned Updates

The District plans to test Schweitzer Engineering Laboratories' (SEL) Arc Sense Technology (AST) on feeder and recloser relays to detect high-impedance faults on distribution systems. Additionally, the District plans to replace lateral fuses connecting to the feeder with single phase reclosers in High IPI areas and enable Hot Line Hold on those devices during elevated fire risk.

7.7 De-energization / Public Safety Power Shutoff (PSPS)

7.7.1 Current Strategy Overview

The District will only order a PSPS when the most extreme fire danger conditions are forecasted. The PSPS is used as a tool of last resort to reduce the likelihood of an ignition from the electric system and to keep customers and communities safe. In determining whether to order a PSPS, the District will consider several factors, including:

- Issuance of a RFW by the National Weather Service, meaning that the National Fire Danger Rating System is high to extreme and certain weather parameters are expected to occur within 24 hours:
 - Average wind speed 15 mph or higher.
 - Relative Humidity 25% or lower.
- Low humidity levels: The District considers 20 percent and below as low humidity.
- Forecasted sustained winds above 25 miles per hour (mph) and wind gusts exceeding 45 mph.
- Site-specific conditions such as temperature, terrain, and local climate.
- On-the-ground, real-time wildfire related information from the ECC, and field observations from District field crews.
- Neighboring utilities are considering or are actively in PSPS for portions of their system adjacent to the District's system.
- Urgent hazards in the field reported from field personnel: wire down, high wind, flying debris, or other hazards.

The Chief Operations Officer makes the final call on the PSPS considering the above factors and recommendations from the WRT, incident commanders, and reports from field personnel.

7.7.2 Planned Updates

The District will continuously refine and enhance its response protocols by conducting tabletop exercises and incorporating lessons from potential events when PSPS factors are identified.

8.0 Community Outreach and Public Awareness

8.1 Current Community Outreach and Public Awareness Program

The District has made it a priority to engage with customers and communities on wildfire prevention and mitigation. Through its website, social media channels, customer communications and agency interactions, the District educates the public on several topics related to activities under the utility's Wildfire Mitigation Plan, including:

- Targeted proactive tree trimming in wildfire vulnerable areas.
- Regular equipment inspections and upgrades.
- Utility fire setting precautions.
- Grid hardening projects.
- Crew safety when working in high-ignition areas.

Further, the District regularly communicates how customers can take proactive measures to safeguard from wildfires. It educates customers on what they can do to mitigate wildfire risk and be prepared for wildfire season through information released on its website, through social media and in media reports. This information includes:

- Approved tree planting practices near power lines.
- Home emergency planning.
- National Weather Service heat index alerts.
- Safety at District recreation sites.

8.2 Planned Updates

As the wildfire threat continues to increase, the District will increase communication and awareness of its Wildfire Mitigation Plan. This will include a webpage dedicated to information on wildfire mitigation and threat response and community engagement in communities with high-ignition probabilities.

As the possibility of a PSPS increases, the District will activate a PSPS-specific webpage, develop communication protocols and coordinate communication strategies with peer utilities.

District staff plan to engage with elected officials in cities and regional governments and commercial and industrial customers in impacted areas.

9.0 Restoration of Service

When conditions fall below the PSPS determination factors from Subsection 7.7.1 and weather patterns do not forecast any dangerous conditions, field personnel will visually inspect the deenergized lines for potential weather-related hazards and damage to the lines, poles, and equipment. Where equipment damage is found, crews will isolate the damaged area from the rest of the system and perform any repairs as needed prior to reenergizing the PSPS area. Once repairs are complete and lines are energized, customers are notified that power has been restored. Patrols and restoration efforts may be prioritized by customer criticality and impacts, with consideration given to circuit configuration and resources available.

10.0 Evaluating the Plan

10.1 Metrics and Assumptions for Measuring Plan Effectiveness

The District has various processes and procedures in place that are used to measure the effectiveness of the WMP.

Metric	Responsible Party	Indicator
Fire Settings for IFPL Level III	WRT, Energy Control Center	Weekly meetings beginning in May through October to discuss weather conditions and consider enabling/disabling fire settings on High IPI circuits, Red Flag Warning days predicted, possibility of PSPS and especially during times of changing IFPL numbers.
Industry Best Practices	System Planning and Protection, Standards	Stay abreast with industry best practices, including monitoring, sensing, and materials available to prevent ignition and fire risk.
Vegetation Management for High IPI Circuits	Vegetation Management	Annually assess and spot trim High IPI circuits.
Recloser Construction	Distribution Engineering Services	Install industry standard wildlife guards and insulated tap wires on all newly installed reclosers.
SCADA Functionality on High IPI Circuits	Distribution Engineering Services	Add SCADA functionality to protective equipment installed on all High IPI circuits.
WMP Training	Distribution Engineering Services	Conduct annual safety meetings to provide training for all employees, with a specific focus on those in engineering, line construction, and vegetation management. Emphasize their roles and responsibilities in preventing ignition and the spread of wildfires. Ensure attendance is documented and the training is added to each employee’s training profile.

Table 4. Metrics and Assumptions

10.2 Identifying and Addressing Areas of Continued Improvement in the Plan

This section describes adjustments, improvements, or additions to the plan derived from established metrics including lessons learned, or any other processes contributing to continuous improvement efforts.

The WMP should evolve as lessons are learned, new information and insights are gained, and priorities are updated. The WMP will be reviewed and revised as appropriate every three years.

Any individual desiring to add to, subtract from, or introduce a new methodology into the WMP is required to submit their suggested change to System Planning and Protection. Once the request has been submitted, the Manager of System Planning and Protection and the Wildfire Risk Team will review the change and consider the revision. If the suggested change is not implemented, an explanation will be provided to the submitter.

Any major or significant WMP changes will be considered an update, and the summary of changes page should reflect this revision.

The Manager of System Planning and Protection will ensure any updated version of the WMP is distributed to the Wildfire Mitigation Team leads and other appropriate individuals, departments, and/or workgroups for review and implementation.

10.3 Monitoring the Effectiveness of Inspections

District management will audit vegetation management and visual inspections of High IPI circuits annually to ensure they are completed.

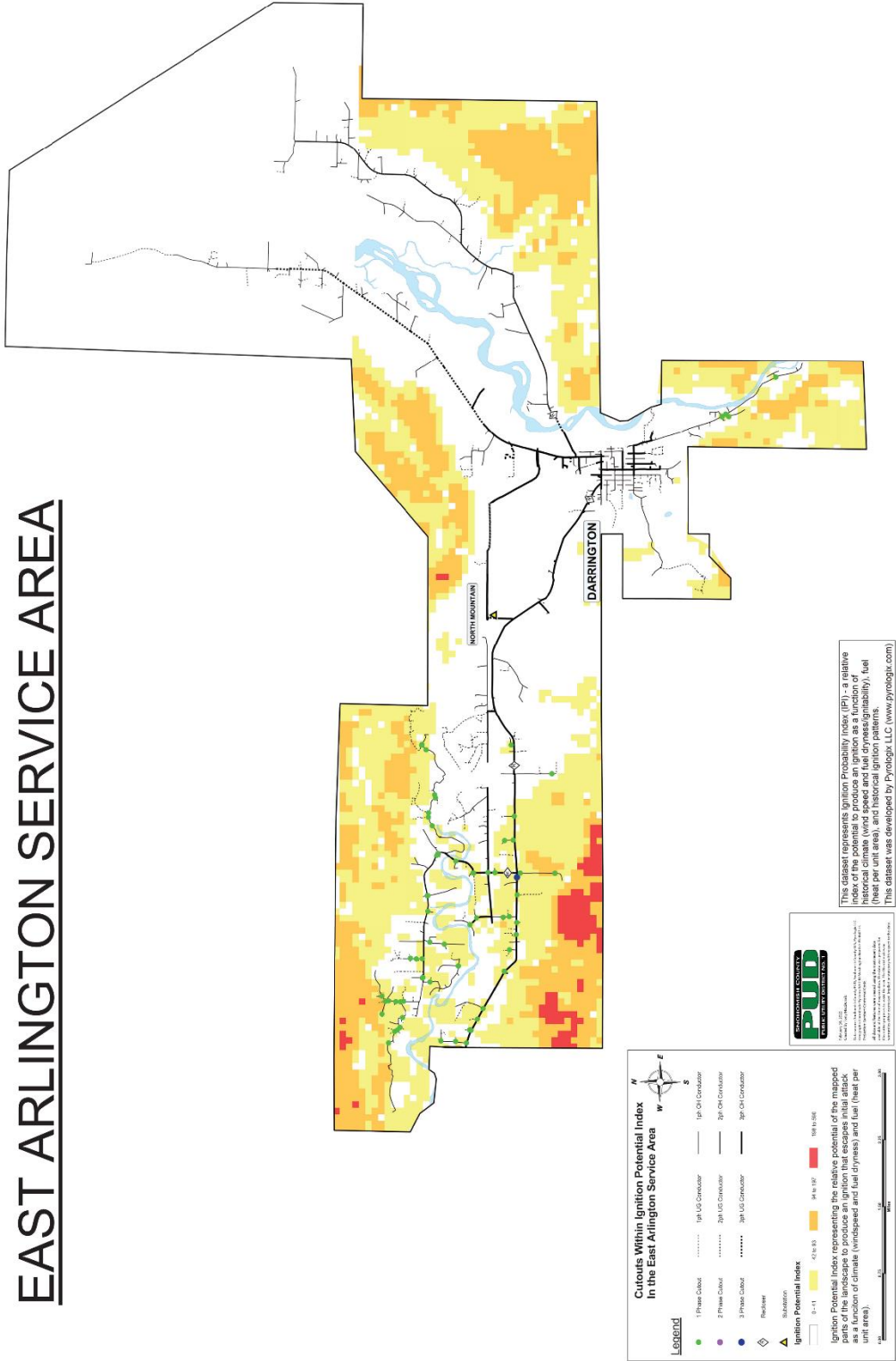
11.0 Summary of Changes

Publish Date	Summary of Changes
09/27/2024	Initial conversion to Washington Electric Utility Wildfire Mitigation Plan Template. This conversion included the addition of information regarding preventative strategies and emergency management and coordination plans.

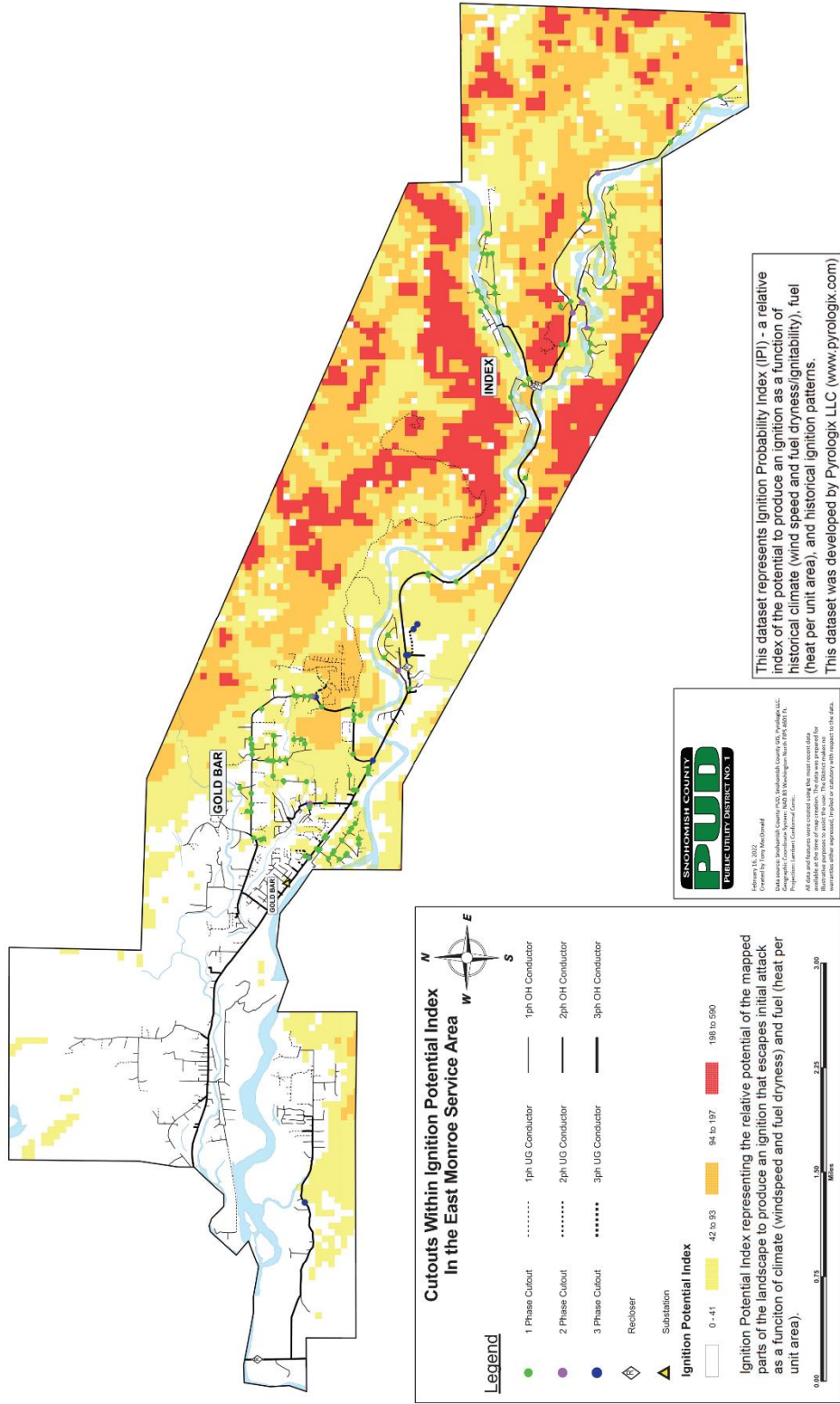
Appendix A

A-1 High IPI Maps

EAST ARLINGTON SERVICE AREA



EAST MONROE SERVICE AREA





Scope

This standard covers the District’s requirements for tree to conductor clearance for existing and new transmission and distribution construction.

Line Clearance

The term “Line Clearance” is intended to encompass tree, brush and vegetation pruning, removal, disposal and control on right-of-ways utilized by the District.

Required Clearances

Transmission and Transmission w/Distribution Underbuild Clearances — See Figure 1.

Distribution Clearances — See Figure 2.

Note: Minimum clearances or greater are achieved on the day of trimming.

Trees that cannot be removed and which are within the clearing zones specified in Figures 1 and 2 shall have all limbs removed that are on the conductor side from the ground up to a point 15 feet above the uppermost distribution conductor. All limbs overhanging transmission conductor should be removed. All dead branches overhanging primary conductors at any height should be removed. Also, any branches that overhang the conductor at a sharp angle or threaten to touch the conductor because of ice and snow loading shall also be removed.

Any tree shall be removed if proper pruning to required clearances results in a reduction of 50% or greater in live crown area.

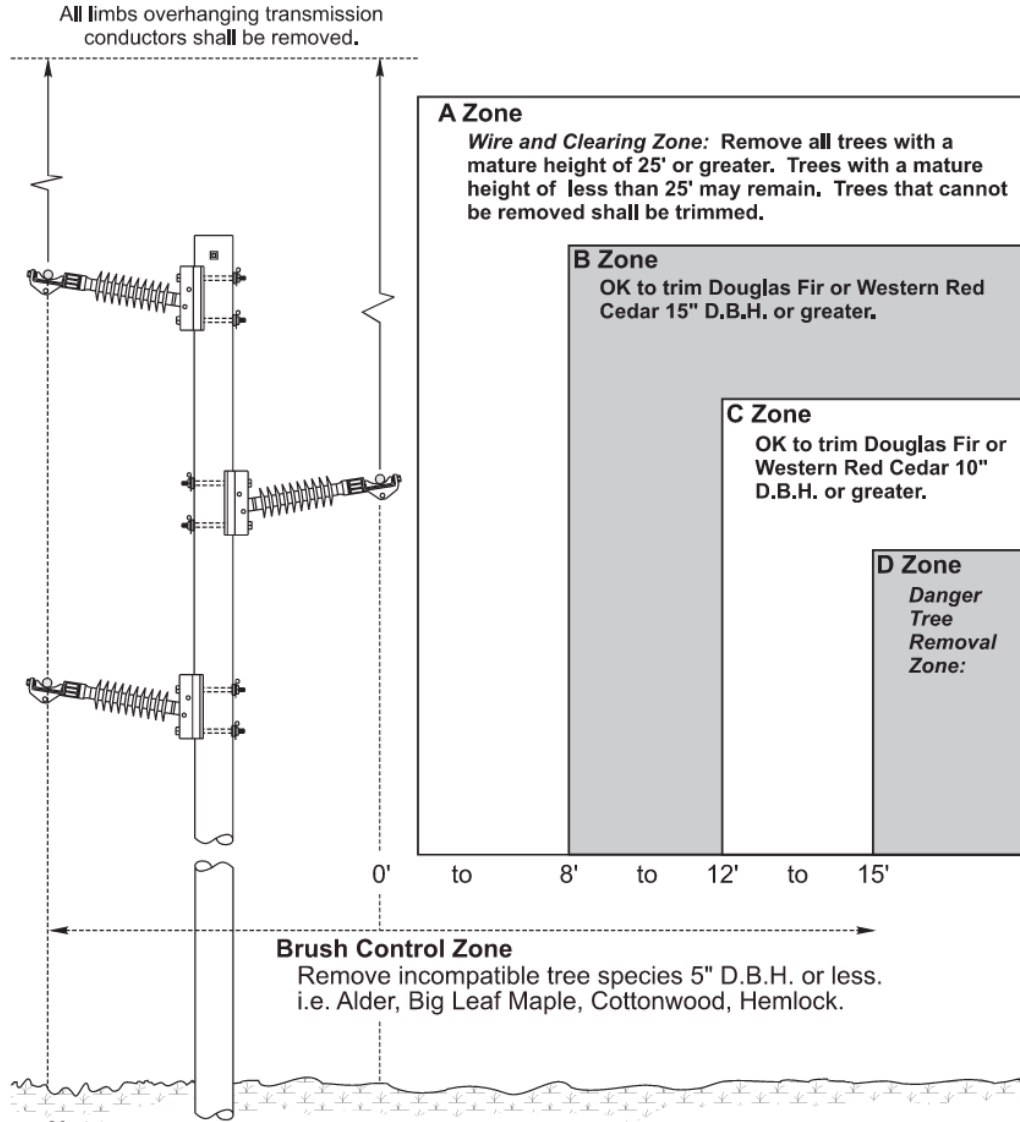
Removing trees and brush shall mean cutting as close to the ground as possible and, in no case, higher than 6” above ground.

High Risk/Critical Trees

Trees that are determined by the District to be a potential threat to the continued operation of the line (danger trees) shall be cut leaving a stump as close to the ground as possible.

High Risk/Critical Trees may include:

- Forked trees.
- Dead or rotten trees.
- Trees weakened by decay, disease or erosion.
- Trees visibly leaning toward the line.
- Trees or parts of trees which may contact the line under snow, ice or wind loads.
- Trees originating from fallen decaying logs, old growth stumps or other unstable rooting positions.
- Troublesome trees such as alder, big leaf maple and hemlock.



Notes:

- All zones are measured from the outermost wire regardless of construction type.
- Transmission clearances apply if distribution underbuild is present.
- D.B.H. — (Diameter at Breast Height), diameter measured 4-1/2' above ground.

Figure 1
Minimum Transmission Trimming Clearances

Tree Pruning Specifications

Snohomish County PUD #1 specifies providing 12 feet of clearance to the side, 15 feet of clearance above, and 2 ft. of clearance below the lowest communication lines at pole attachment height for distribution conductors. For transmission lines (115kV) PUD specifies 15 feet of clearance to the side and below the conductors, with no overhang permitted. If we are unable to provide these clearances we will prune as close to our specs as possible, with a minimum clearance of no vegetation within 4 feet of our distribution conductors and 8 feet of our transmission conductors.

General Pruning Guidelines

- Line clearance cuts must be made in a manner to direct future growth away from conductors. This principle, termed natural or directional pruning, is accomplished by pruning undesirable branches back to lateral branches or parent stems that are growing away from utility hardware. This guides the growth of the tree away from the wires. Where practical, cuts should be restricted to large diameter branches and made well within the crown. Shaping through the use of many cuts of smaller branches should be avoided. In no cases shall the limbs be stubbed off at the edge of the clearing limits.
- To minimize sucker growth and minimize stress to the tree, as well as for the sake of appearance, it is best not to remove more than one-fourth of the crown.
- Precautions shall be taken to avoid stripping or tearing of bark when cutting large diameter limbs.
- All severed limbs must be removed and shall not be allowed to remain entangled in the tree.
- Climbing irons or "hooks" should not be used on high value trees on residential sites, except in cases involving tree removal work. Ornamental trees planted for aesthetic purposes or trees which would be damaged by the hooks are considered high value trees.
- When trimming remove dead branches at any height above the wires since they could easily break off and cause a power interruption.

Pruning Methods

Utility Line Clearance pruning methods are divided into four general types: Trim to Spec, Crown Reduction, Side Trim and Side Trim to Spec.

Trim to Spec (TTS)

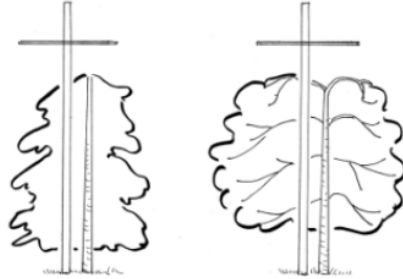
Trim to provide required clearance around conductors. Taper above and below. If less than one-third of the foliage remains, the limb shall be cut to the main stem. Overhanging branches are permitted above distribution lines only. No overhang allowed on 115 kV. Tops or main leaders more than 5 inches diameter at cut height will not be trimmed or removed. Tops or main leaders less than 5 inches in diameter at cut height within the clearance zone will be trimmed or removed to provide 2 ft. of clearance below the lowest communication lines at pole attachment height.



Trim to Spec — Shorten or remove side limbs to provide conductor clearance.

Crown Reduction (CR)

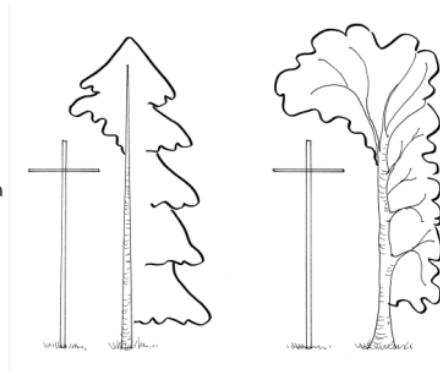
Crown Reduction can be specified when the tree stands directly beneath the conductor. Crown of tree will be reduced and entire tree shaped. Use drop-crotch pruning with proper pruning cuts to direct growth away from the conductor. Prune for two feet of clearance below the lowest communication lines at pole attachment height.



Crown Reduction — Prune 2 ft. below the lowest communication lines at the point of attachment on the pole.

Side Trim (ST)

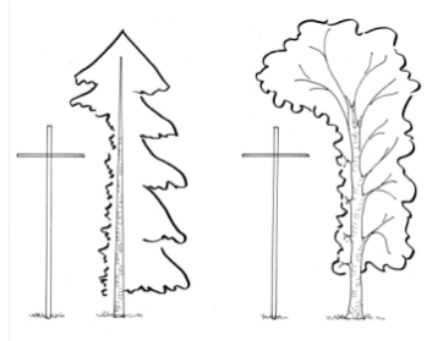
Remove limbs that project toward conductors to the trunk at the branch collar and down to the ground on the side of the tree adjacent to utility lines. Tops or main leaders at any diameter will not be removed. Limbs above a side trim may be partly shortened to a lateral branch to reduce a notched effect and improve conductor clearance provided no less than one-third of the leaf/needle bearing portion of any limb will remain after proper pruning. Overhanging branches are permitted above distribution lines only.



Side Trim — Trim flush to the trunk and down to the ground.

Side Trim To Spec (STT)

Prune limbs to provide required clearance straight to ground at and below the conductor, NO taper below: Taper above. Trees may be side trimmed by pruning the limbs provided no less than one-third of the leaf/needle bearing portion of any limb will remain after proper pruning. Otherwise the limb shall be cut to the main stem. No overhang allowed on 115 kV.



Side Trim to Spec — Provide clearance to the ground below the conductor; No taper below.

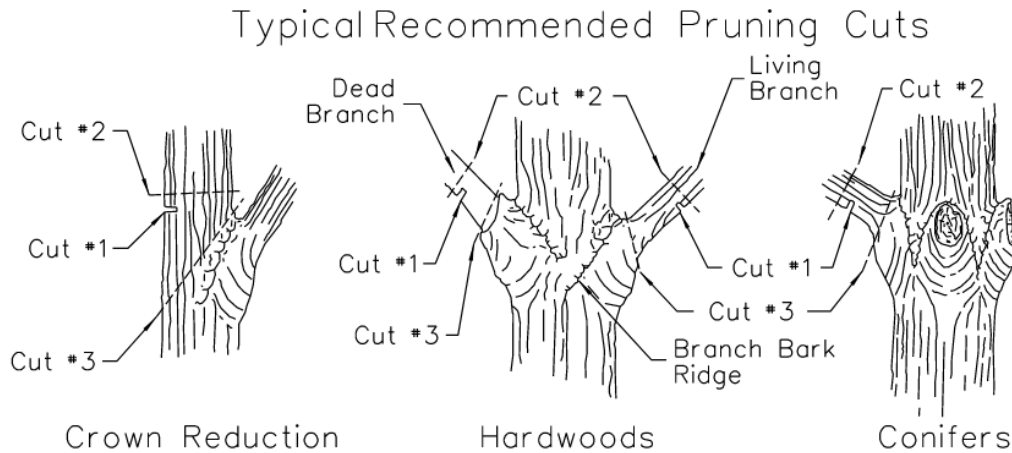


Figure 6

Herbicide Use

All herbicides shall be transported, handled and applied in accordance with all applicable local, state and Federal laws and regulations as well as District Vegetation Management Policy.

Unless otherwise specified by the District, all cut stumps shall be treated with an approved cut surface treatment immediately following cutting according to the herbicide manufacturer's instructions. No more than 30 minutes shall elapse between the time the stump is cut and the herbicide is applied. All stumps shall be cut horizontally to avoid runoff. Herbicides for stump treatment shall include a dye to aid control and application verification.

No herbicide applications shall be made in environmentally sensitive areas such as wetlands, swales and watersheds.

No herbicide applications shall be made within 3 feet of the fence line of active pastures.

Slash Disposal

All cut material, including tops and stem wood, less than 5 inches in diameter shall be chipped. When brush machines are used, all cut material including stem wood shall be mulched to a size no larger than 2 inches in diameter and no longer than 2-1/2 feet in length. This reduces tree brush to low-profile pieces in contact with the ground and no higher than 12 inches from the ground.

All wood 5 to 24 inches in diameter shall be cut in lengths not to exceed 4 feet. All wood over 24 inches in diameter shall be cut in lengths not to exceed 2 feet.

Site Preservation

Care shall be taken to preserve the natural ground covers where possible. Rivers, lakes, streams, natural drainage areas, ponds, etc. shall not be disturbed. All local, state and federal laws and regulations must be followed when performing work around salmon spawning streams.



District Tree Pruning and Tree Removal Authorization Forms

Forms to use for authorization and/or notification of property owners are listed below:

Form No.	Description of Use
1426	Leave contact information if customer is not at home.
1615	Authorization to secure owner permission prior to any tree pruning or tree removal on public or private land.
2095	In response to customer reported tree condition if customer is not at home and problem is not the District's.
2260	Notice that customer's tree condition poses a hazard and will be trimmed or removed.