Oregon Public Utility Commission

e-FILING REPORT COVER SHEET

COMPANY NAME: Tillamook People's Utility District

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Select report type: ☒ RE (Electric) ☐ RG (Gas) ☐ RW (Water) ☐ RT (Telecommunications) ☐ RO (Other, for example, industry safety information)

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Tillamook, People's, Utility, District, PUD, Wildfire, Mitigation, Plan.

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Wildfire Mitigation Plan

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1) INTRODUCTION

1.1 Policy Statement

Tillamook People's Utility District (Tillamook PUD)'s overarching goal is to provide safe, reliable, and affordable electric service in Tillamook County and parts of Clatsop and Yamhill Counties. To meet this goal, Tillamook PUD constructs, operates, and maintains its electric facilities in a manner that minimizes wildfire risks.

1.2 Purpose

This Wildfire Mitigation Plan (Plan) describes the strategies and programs to mitigate the threat of wildfires ignited by electrical equipment in Tillamook PUD's service area. The guidelines and procedures outlined in this Plan are implemented and supported by Tillamook PUD personnel.

1.3 Objectives

The primary objectives of this Plan are to:

1. Mitigate the probability that Tillamook PUD's electrical equipment may be the source of ignition of a wildfire, while continuing to provide reliable and affordable electric service to our customers.
2. Implement a plan that prioritizes safety, situational awareness, and preventative methods.
3. Maintain a plan that aligns with prudent utility practices.

2) UTILITY PROFILE

2.1 Service Area

Tillamook County encompasses an area 53 miles, north to south, and 31 miles, east to west. The Tillamook PUD service territory extends across 1,333 square miles of terrain, providing electric service to 23,000 customers in Tillamook County and small sections of Clatsop and Yamhill Counties. Figure 1 shows a map of the service territory.

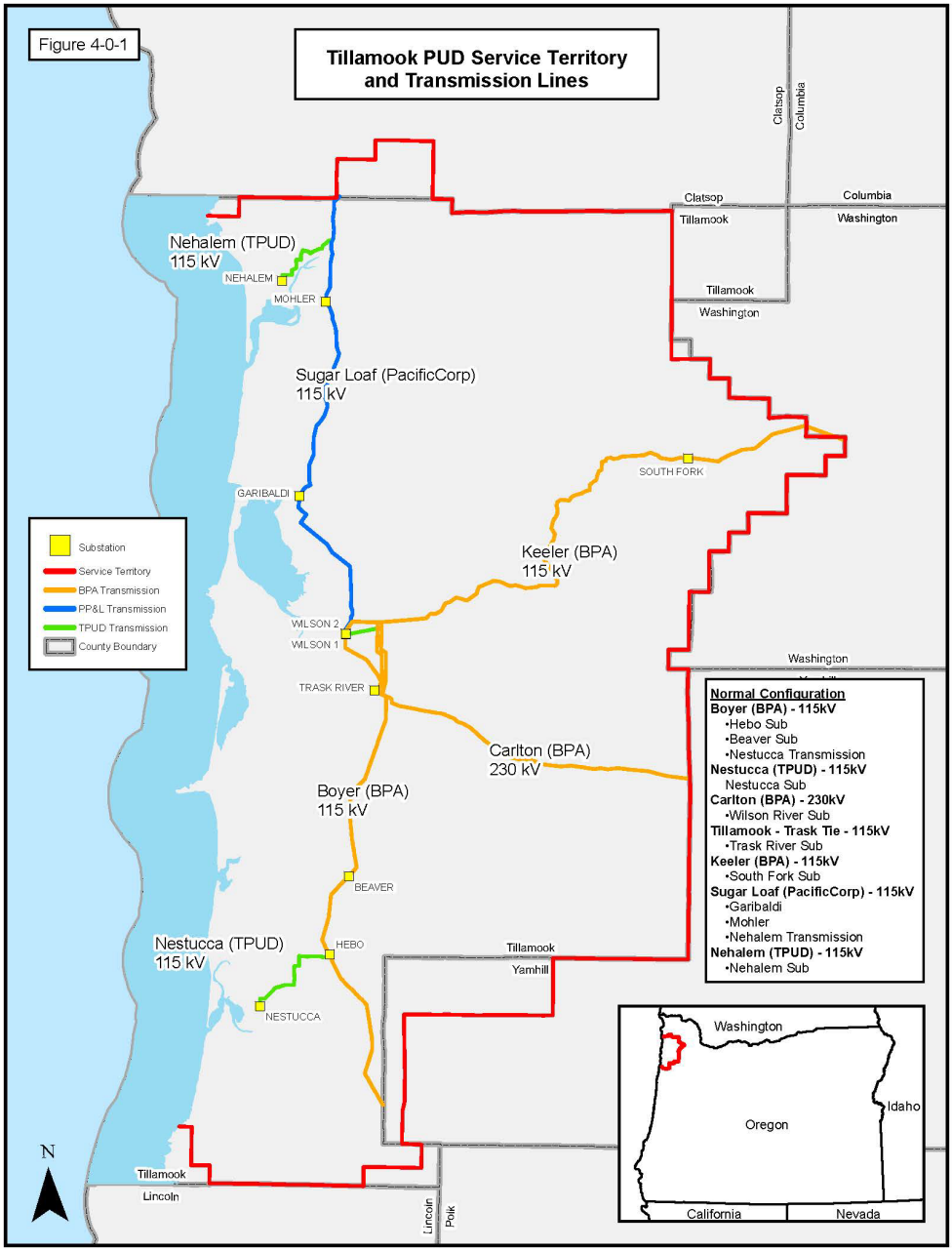


Figure 1 – *Tillamook PUD Service Territory*

2.2 Asset Overview

Within the service territory, Tillamook PUD provides electric service using both overhead and underground facilities. Tillamook PUD receives electric service from Bonneville Power Administration at their Tillamook 230kV/115kV substation and owns 12.1 miles of 115kV overhead transmission lines to connect six of nine substations in the central and south sections of Tillamook County. Three substations are connected to the Pacific Power 115kV transmission line located in the north part of the county. Thirty-two 26kV feeders distribute the electricity from the nine power substations through the community to customers.

Tillamook PUD owns and operates 778 miles of primary distribution lines (high voltage at 24.9kV, 20.8kV, and 12.4kV) and 440 miles of secondary (low voltage less than 600 volts) lines. These facilities are distributed throughout the service territory through 21,083 Tillamook PUD poles and 7,360 underground surface structures. Tillamook PUD has 236 miles of three-phase overhead primary lines and 345 miles of two and single-phase overhead primary lines. Tillamook PUD has 40 miles of three-phase and 157 miles of two and single-phase underground primary lines.

2.3 Fire Protection Zones

The Oregon Department of Forestry (ODF) defines the Regulated Use Zones in Oregon. The Tillamook PUD service territory is situated within the NW-1, NW-2, and NW-3 Regulated Use Zones as seen in Figure 2 below.

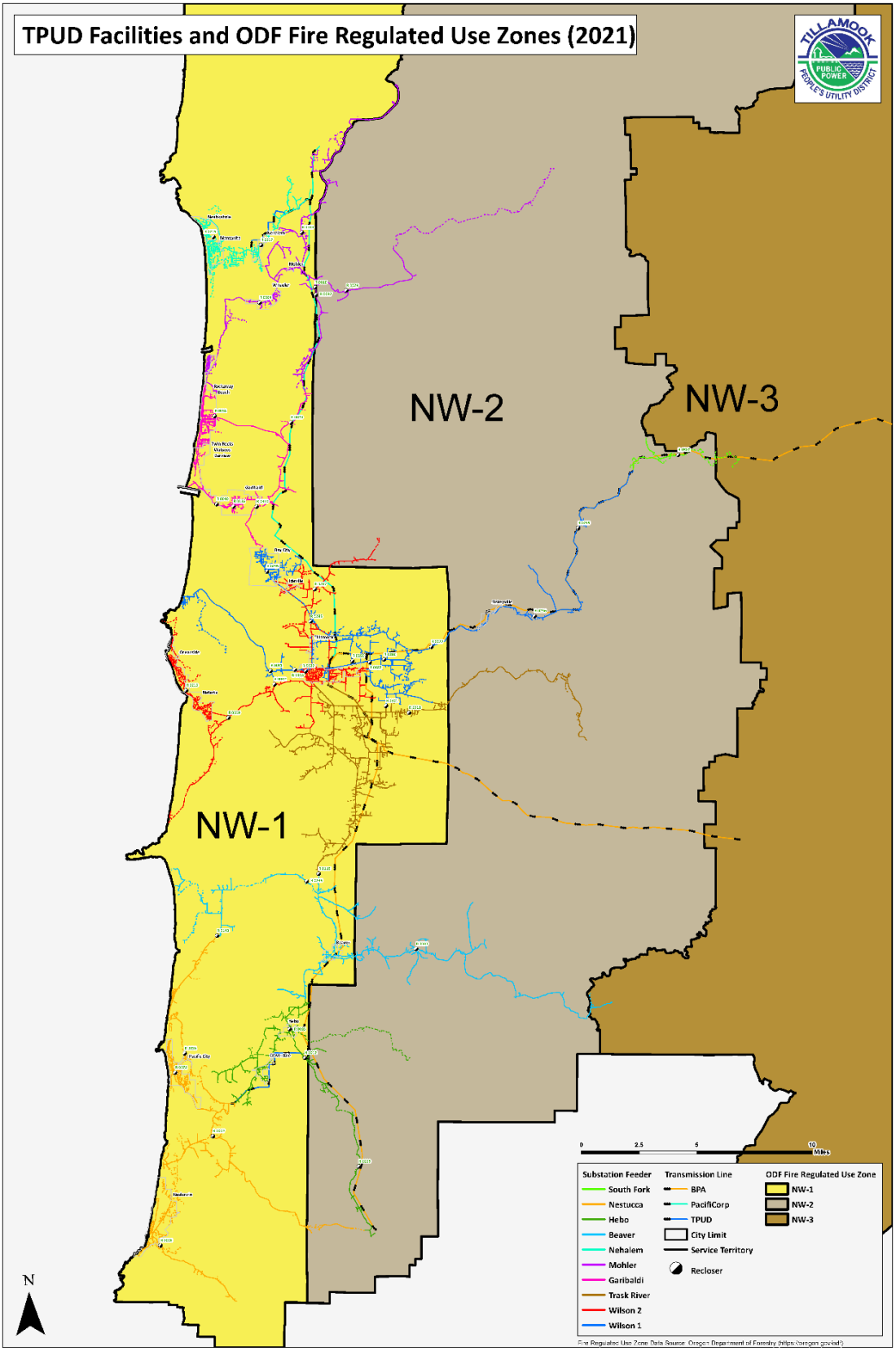


Figure 2 – *Tillamook PUD Service Territory within ODF Regulated Use Zones.*

3) RISK PROFILE

3.1 Risk Assessment

Fires from power lines may be caused when energized facilities contact combustible materials. This may include contact with vegetation or vehicles, wire to wire contact, fuse operation, and equipment failure. Tillamook PUD takes each of these possible events into consideration when planning, designing, and constructing the electric system.

3.1.1 Current Practices

Tillamook PUD tracks outages using NiSC's® outage management system. The outage data can be used to identify areas with higher than normal outage incidences and can help drive system improvements to mitigate risk. Figure 3 below overlays the PUD's electric grid and the Fire High Consequence Areas (FHCA) and shows fuses and reclosers that have had more than five operations in the past ten years. These areas are assessed to determine solutions for reducing outages, including additional tree trimming, replacement of fuses with automatic reclosers, relocating lines, and undergrounding.

Annual ground patrols are conducted and provide a visual inspection of the electric facilities. In addition, crews are patrolling facilities every day during the normal course of business. All issues noted during these patrols are evaluated and addressed. Infrared scans are conducted of the main Transmission and Distribution primary overhead and underground lines and all substations each year. These inspections help identify potential issues before an outage occurs.

The drone program supports facility access inspections with a primary focus on inspecting transmission structures on a five-year rotating cycle. Data logging includes photos, videos, and infrared imagery.

Where practical, lines are located in open areas and away from vegetation. Sufficient ground clearance is considered in the design as well as assessing easy access for ongoing operations and maintenance.

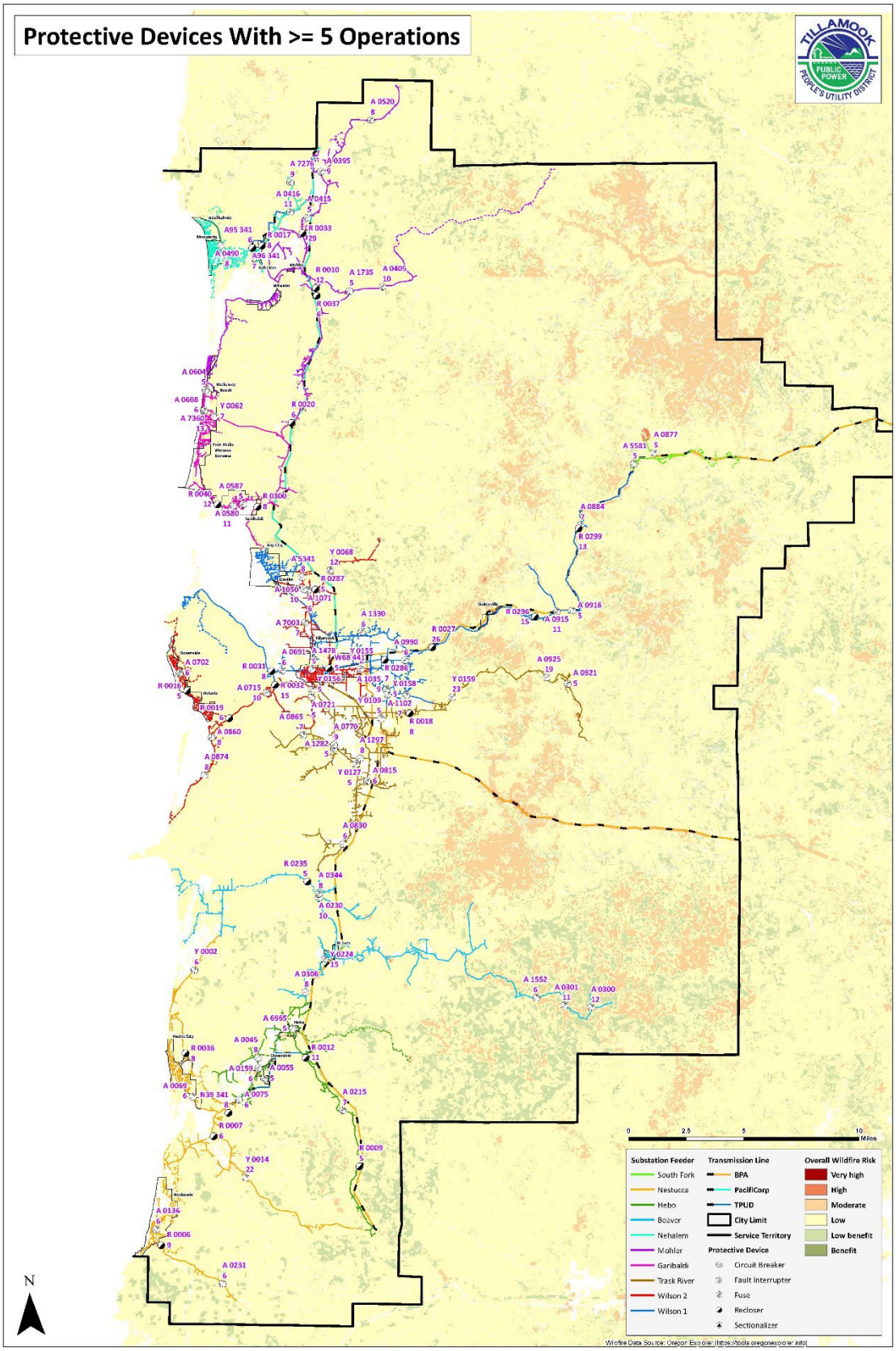


Figure 3 – *Protective devices with multiple operations.*

3.2 Fire High Consequence Areas (FHCA)

3.2.1 As seen in Figure 4, a map of the FHCAs has been overlayed with Tillamook PUD's primary electric facilities. The combination of these two data sets provides insight into higher-risk areas. In general, Tillamook PUD's service territory is predominantly in the low-risk category. However, some areas of the coastal range with PUD facilities are in the moderate-risk category.

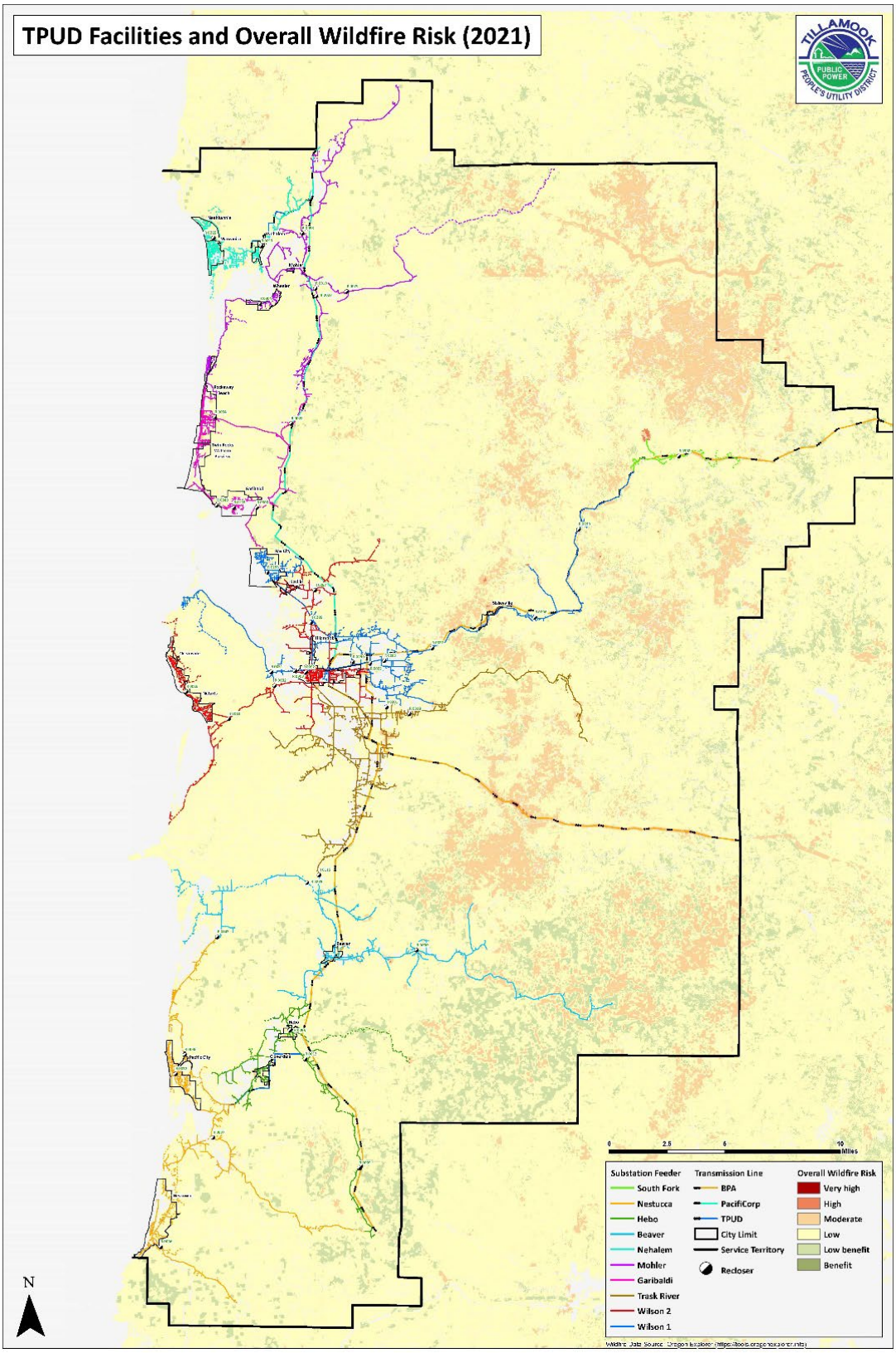


Figure 4 – *FHCA within the Tillamook PUD service territory.*

3.2.2 The tables below provide a summary of the transmission and distribution lines, facilities, substations, and feeders located within the Tillamook PUD service territory.

Transmission Lines Within Tillamook County		
Owner	**Voltage (kV)**	**Miles**
BPA	115	65.84
PacifiCorp	115	25.24
BPA	230	23.1
Tillamook PUD	115	12.13
		Total 126.3

Distribution Lines		
Primary Conductor	**Voltage**	**Line Miles**
Primary Overhead	14.4 / 24.9 kV	436.85
Primary Overhead	12.0 / 20.8 kV	142.73
Primary Overhead	7.2 / 12.5 kV	2.17
Primary Underground	14.4 / 24.9 kV	116.23
Primary Underground	12.0 / 20.8 kV	76.55
Primary Underground	7.2 / 12.5 kV	3.57
		Total 778.1

Power Poles with TPUD Facilities Attached	
Support Structure Count	**Support Structure Count**
Tillamook PUD	21,083
Customer-Owned	660
CenturyLink	482
BPA	262
Pacific Power	1
	Total 22,489

Substations and Feeders	
Substation	**Feeder Count**
Beaver	3
Garibaldi	2
Hebo	1
Mohler	3
Nehalem	3
Nestucca	3
South Fork	2
Trask	4
Wilson – Transformer T1 Transformer T2	5 6
Total 9	**Total 32**

3.3 Public Data

Tillamook PUD planning staff utilizes the Oregon Wildfire Risk Explorer Advanced Report to evaluate wildfire risk in the Tillamook PUD service territory, and for prevention and mitigation support resources. The report contains the following:

- Guidelines
- Concepts
- Land Ownership & Management
- Communities
- Fire History - Fire Ignitions
- Housing Density - Where People Live
- Overall Wildfire Risk
- Burn Probability
- Fire Intensity - Flame Lengths
- Overall Impact
- Hazard to Potential Structures
- Existing Vegetation Type
- Risk To Assets
- Probability of >4ft Flames

The report can be viewed in the following location:

https://tools.oregonexplorer.info/OE_HtmlViewer/Index.html?viewer=wildfireplanning

The report is reviewed by Tillamook PUD planning and prevention staff at least annually.

4) MITIGATION STRATEGIES

4.1 Vegetation Management

4.1.1 Fuel Reduction

Tillamook PUD has implemented a Vegetation Management Program focused on keeping Right-of-Ways (ROW) clear of fuel. The program consists of tree trimming and removal, mowing, and the safe application of herbicides. Herbicide management is utilized after the establishment of ROWs to reduce fuel sources.

Non-selective and pre-emergent herbicides are utilized in substations where no vegetation is acceptable. Selective herbicides are utilized in ROWs to control trees and brush.

Tillamook PUD's Vegetation Management Program mitigates wildfire risk while also reflecting a reasonable balance of mitigation costs.

A sample overview of the Vegetation Management Program objectives completed annually can be seen in Figure 5.

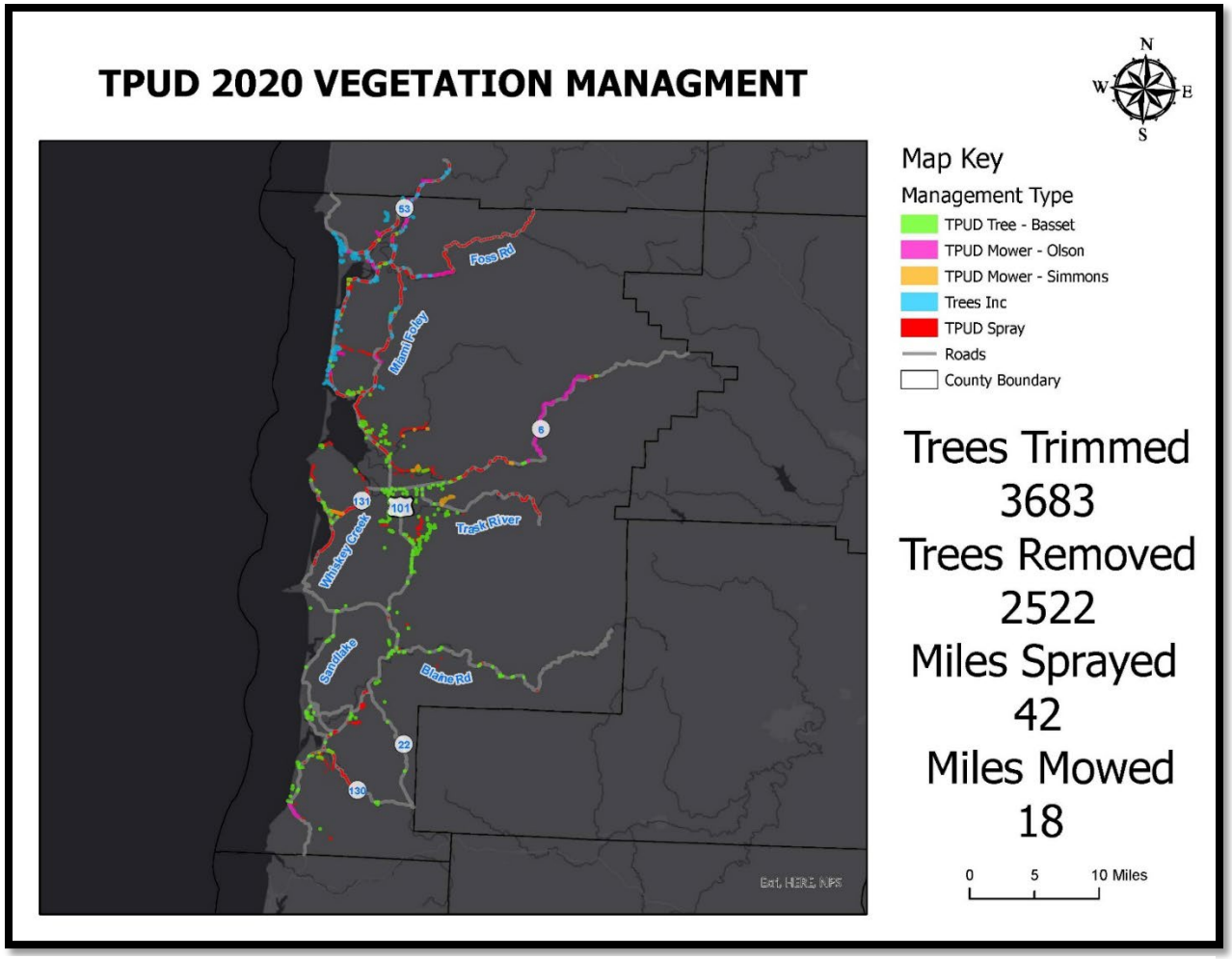


Figure 5 - *A sample of the vegetation management program initiatives.*

Tillamook PUD's Vegetation Management Program complies with all applicable state and federal clearance requirements, including OAR 860.024.0016/0017. Tree Trimming is systematically performed following a four-year cycle to maintain minimum clearances. Trees or branches are removed where imminent tree or branch failure would potentially damage electric lines or equipment. Fast-growing species located directly under the lines are removed.

When conducting routine maintenance of power lines and related equipment, Tillamook PUD makes efforts to identify and remove high-risk fuel sources as needed. Tillamook PUD crews also address vegetation concerns in response to service calls or identify at-risk vegetation while performing day-to-day operations.

4.2 System Inspection and Maintenance

Tillamook PUD has developed a rigorous testing program that performs the following system inspections and maintenance.

Pole Test and Treat

Tillamook PUD follows OAR 860-024-0011 and inspects, tests, and treats ten percent of its overhead facilities every year. This includes visual inspection, pole sounding, inspection hole drilling, and fumigant hole drilling accompanied with a chemical application to preserve the life of the pole. Such work occurs at the groundline and communication work zone levels.

Annual Detailed Inspection

Tillamook PUD performs a detailed field inspection of ten percent of its overhead and underground facilities every year in accordance with OAR 860-024-0011. The Tillamook PUD field inspector performs the detailed inspection on a per-facility basis documenting deficiencies, NESC code violations, and safety hazards.

Field reclosers are visually inspected and the batteries are tested each year.

Monthly Inspection

Operations staff perform monthly inspections of nine electrical substations. This inspection program requires testing and logging of systems within the substations.

Five and Ten Year Inspection

Reclosers are fully tested every five years along with the manual by-pass switches and the control device. The test data is logged and documented in the equipment database application.

Every ten years the entire substation is taken off-line, cleaned, inspected, and tested. This includes the power transformer, circuit switchers, metering, protective device equipment, alarms, and SCADA contact.

Public Safety Inspection

Routine safety inspections are performed annually to visually inspect 50 percent of Tillamook PUD's overhead facilities which meets the requirements of OAR 860-024-0011. Hazards and deficiencies are documented and corrective actions are completed.

4.3 System Hardening

Tillamook PUD's design and construction of system equipment aims to reduce the likelihood of ignition and improve electrical assets' survivability. System hardening investments are evaluated on a case-by-case basis. When practical, Tillamook PUD has utilized system hardening measures including:

- Stronger poles to address engineering standards that exceed code requirements.
- Larger spacing between energized conductors, reducing mid-span conductor contacts.
- Insulated secondary conductors including neutrals.
- Design for increased wind speeds, 100 mph versus 85 mph.
- Undergrounding areas that experience frequent outages.
- Right of Way management – clearing and width extensions.
- Over insulation of distribution circuits to improve resilience to salt corrosion and flash overs.
- Treated wood, galvanization, and stainless steel used to improve corrosion issues.

4.4 System Protection

Tillamook PUD staff have identified areas within the Tillamook PUD service territory where reclosers are necessary. Tillamook has adjusted the recloser settings as sensitive as is practical while still providing the proper coordination.

Tillamook PUD may selectively disable system reclosers in areas identified on the FHCA maps as Moderate risk areas as a preventative measure during wildfire season. Circuits have been assessed for risk based on length, the number of customers, history, access, system protection, and the location within FHCA zones. Based on the assessment, specific areas of the electric system have been identified where the recloser could be locked from automatically re-energizing the line.

Operations staff may set system reclosers to a non-reclose setting, preventing equipment from closing in on temporary faults. This decision will be made on a case-by-case basis based on the assessment of risk described above and the current level in the Key Response Strategy table as seen in Section 5.2.1.

These locations, shown below, correspond to the sections of Tillamook PUD overhead electric lines that are within the Moderate and Low Risk areas as identified on the FHCA maps.

Moderate Risk Areas (Non-Reclose)						
Feeder	**Facility ID**	**Station Number**	**Location**	**Company #**	**Operation**	**Type**
N97	R 0017	1 03 10 27 6700	N Fork Rd	190	Single Trip / Single Lock Out	NOVA1
N97	R 0017	1 03 10 27 6700	N Fork Rd	192	Single Trip / Single Lock Out	NOVA1
M91	M91 441	Mohler Sub	Mohler Sub - Line 91	193	Triple Trip / Triple Lock Out	NOVA 27
M91	R 0033	1 03 10 24 4403	Hwy 53	93	Single Trip / Single Lock Out	4E
M91	R 0033	1 03 10 24 4403	Hwy 53	94	Single Trip / Single Lock Out	4E
M92	M92 441	Mohler Sub	Mohler Sub - Line 92	165	Triple Trip / Triple Lock Out	NOVA 27
M92	R 0010	1 03 10 36 8102	Foss Rd	223	Triple Trip / Triple Lock Out	NOVA STS
M92	R 0029	1 02 09 05 3808	Mohler Sand & Gravel	110	Single Trip / Single Lock Out	4E
M92	R 0029	1 02 09 05 3808	Mohler Sand & Gravel	115	Single Trip / Single Lock Out	4E
G73	G73 441	Garibaldi Sub	Garibaldi Sub - Line 73	237	Triple Trip / Triple Lock Out	NOVA 27
W67	R 0287	2 01 09 07 1802	Kilchis River	224	Single Trip / Triple Lock Out	NOVA STS
W63	R 0027	2 01 09 24 2600	Wilson Rv @ Mills Bridge	226	Single Trip / Triple Lock Out	NOVA STS
W63	R 0296	2 01 08 10 8400	Wilson Rv Hwy @ Quonset Hut	209	Single Trip / Triple Lock Out	NOVA STS
W63	R 0299	1 01 08 25 6740	Wilson Riv @ Cedar Butte	210	Single Trip / Triple Lock Out	NOVA STS
A101	R 0302	1 01 07 03 8101	Above Lee's Camp	225	Single Trip / Triple Lock Out	NOVA STS
S42	R 0018	2 02 09 02 3700	Chance Road	202	Single Trip / Single Lock Out	TRI-S
S42	R 0018	2 02 09 02 3700	Chance Road	203	Single Trip / Single Lock Out	TRI-S
S42	R 0018	2 02 09 02 3700	Chance Road	241	Single Trip / Single Lock Out	NOVA
B27	B27 441	2 03 09 29 1212	Beaver Substation	250	Single Trip / Triple Lock Out	VIPER-S
B27	R 0030	2 03 09 26 6503	Blaine Rd @ Boulder Crk	219	Single Trip / Single Lock Out	NOVA STS
H32	R 0012	2 04 10 24 7706	Hebo - Hwy 22 @ Cedar Creek	217	Single Trip / Single Lock Out	NOVA STS
H32	R 0009	2 05 09 09 3103	HWY 22 @ Buck Creek	56	Single Trip / Single Lock Out	E

Moderate Risk Areas (Non-Reclose)						
Feeder	**Facility ID**	**Station Number**	**Location**	**Company #**	**Operation**	**Type**
N39	R 0007	2 05 10 05 7301	Little River	49	Single Trip / Single Lock Out	E
N39	R 0007	2 05 10 05 7301	Little River	59	Single Trip / Single Lock Out	E
N39	R 0006	2 05 11 36 5501	Old Hwy 101 Slab Creek	52	Single Trip / Single Lock Out	E
N39	R 0006	2 05 11 36 5501	Old Hwy 101 Slab Creek	58	Single Trip / Single Lock Out	E

Low Risk Areas (Normal Reclose)						
Feeder	**Facility ID**	**Station Number**	**Location**	**Company #**	**Operation**	**Type**
A101	F101 441	South Fork Sub	S Fork Sub- Lees Camp Line 101	230	Triple Trip / Triple Lock Out	NOVA 27
A102	F102 441	South Fork Sub	S Fork Sub - Line 102	156	Triple Trip / Triple Lock Out	NOVA 27
B25	R 0115	2 03 09 07 3708	Beaver / Trask Tie	151	Triple Trip / Triple Lock Out	VWVE
B25	R 0235	2 03 10 12 7406	Sandlake Road	246	Single Trip / Triple Lock Out	MVR
B28	B28 441	2 03 09 29 1231	Beaver Substation	252	Single Trip / Triple Lock Out	VIPER-S
G73	R 0020	1 02 10 35 8302	Miami Riv @ Prueitt's Mill	105	Single Trip / Single Lock Out	4E
G73	R 0020	1 02 10 35 8302	Miami Riv @ Prueitt's Mill	106	Single Trip / Single Lock Out	4E
G73	R 0020	1 02 10 35 8302	Miami Riv @ Prueitt's Mill	107	Single Trip / Single Lock Out	4E
G73	R 0034	1 02 10 32 6402	Rockaway - North 3rd	194	Single Trip / Triple Lock Out	NOVA STS

Low Risk Areas (Normal Reclose)						
Feeder	**Facility ID**	**Station Number**	**Location**	**Company #**	**Operation**	**Type**
G74	R 0135	1 01 10 21 5511	Garibaldi Boat Docks	168	Triple Trip / Triple Lock Out	NOVA
G74	R 0300	1 01 10 22 5501	Electric Crk Garibaldi	212	Single Trip / Triple Lock Out	NOVA STS
G74	R 0040	1 01 10 20 7502	Pirates Cove	238	Triple Trip / Triple Lock Out	NOVA
G74	G74 441	Garibaldi Sub	Garibaldi Sub - Line 74	239	Triple Trip / Triple Lock Out	NOVA 27
H32	R 0095	2 04 10 12 2102	Hwy 101 Hebo - Beaver tie	125	Triple Trip / Triple Lock Out	VWVE
H32	H32 341	Hebo Sub	Hebo Substation	247	Triple Trip / Triple Lock Out	NOVA 27
M	M532 441	Mohler Sub	Mohler BPA Sub	126	Triple Trip / Triple Lock Out	VWVE
M93	M93 441	Mohler Sub	Mohler Sub - Line 93	236	Triple Trip / Triple Lock Out	NOVA 27
M93	R 0304	1 02 10 03 5301	Wheeler	244	Triple Trip / Triple Lock Out	MVR
M94	M94 341	Mohler Sub	Mohler Sub - Line 94	196	Triple Trip / Triple Lock Out	NOVA 27
N34	R 0143	2 03 10 20 8110	Portable Sub	143	Triple Trip / Triple Lock Out	VWVE
N34	N34 341	Nestucca Sub	Nestucca Sub - Resort Dr	220	Triple Trip / Triple Lock Out	NOVA 27
N34	R 0036	2 04 10 19 5800	Old Woods Rd	248	Single Trip / Triple Lock Out	MVR
N35	R 0072	2 04 10 19 2120	River Ave PC	159	Triple Trip / Triple Lock Out	NOVA
N35	N35 341	Nestucca Sub	Nestucca Sub - Brooten Rd	221	Triple Trip / Triple Lock Out	NOVA 27

Low Risk Areas (Normal Reclose)						
Feeder	**Facility ID**	**Station Number**	**Location**	**Company #**	**Operation**	**Type**
N39	N39 341	Nestucca Sub	Nestucca Sub - Neskowin	222	Triple Trip / Triple Lock Out	NOVA 27
N95	R 0215	1 03 10 20 5125	Nehalem Rd Manz - University to Reed	195	Triple Trip / Triple Lock Out	NOVA
N95	A95 341	Nehalem Sub	Nehalem Sub - Line 95	227	Triple Trip / Triple Lock Out	NOVA 27
N96	A96 341	Nehalem Sub	Nehalem Sub - Line 96	228	Triple Trip / Triple Lock Out	NOVA 27
N97	A97 341	Nehalem Sub	Nehalem Sub - Line 97	229	Triple Trip / Triple Lock Out	NOVA 27
S	S00 441	Trask River Sub	Trask River Sub - Bus Tie	232	Triple Trip / Triple Lock Out	NOVA 27
S41	S41 441	Trask River Sub	Trask River Sub - Line 41	234	Triple Trip / Triple Lock Out	NOVA 27
S42	S42 441	Trask River Sub	Trask River Sub - Line 42	235	Triple Trip / Triple Lock Out	NOVA 27
S43	S43 441	Trask River Sub	Trask River Sub - Line 43	233	Triple Trip / Triple Lock Out	NOVA 27
S68	S68 441	Trask River Sub	Trask River Sub - Line 68	231	Triple Trip / Triple Lock Out	NOVA 27
W	W00 441	Wilson Sub	Wilson Substation Bus Tie	208	Triple Trip / Triple Lock Out	NOVA 27
W51	R 0019	2 02 10 04 4300	Whiskey Creek	112	Single Trip / Single Lock Out	4E
W51	R 0019	2 02 10 04 4300	Whiskey Creek	114	Single Trip / Single Lock Out	4E
W51	W51 441	Wilson Sub	Wilson River Sub BX Line 51	166	Triple Trip / Triple Lock Out	NOVA 27
W51	R 0016	2 01 10 31 5500	Oceanside Recloser	213	Single Trip / Single Lock Out	NOVA STS

Low Risk Areas (Normal Reclose)						
Feeder	**Facility ID**	**Station Number**	**Location**	**Company #**	**Operation**	**Type**
W51	R 0032	2 01 10 35 4700	Netarts Hwy @ Fraser Rd	216	Triple Trip / Triple Lock Out	NOVA STS
W60	W60 441	Wilson Sub	Wilson River Sub B Line 60	167	Triple Trip / Triple Lock Out	NOVA 27
W61	R 0031	2 01 10 26 2400	Bayocean Rd	76	Single Trip / Single Lock Out	4E
W61	R 0031	2 01 10 26 2400	Bayocean Rd	98	Single Trip / Single Lock Out	4E
W61	W61 441	Wilson Sub	Wilson River Sub F Line 61	175	Triple Trip / Triple Lock Out	NOVA 27
W61	R 0303	2 01 10 25 3503	3rd Street West	240	Single Trip / Triple Lock Out	MVR
W62	W62 441	Wilson Sub	Wilson River Sub Tillamook Lumber Line 62	176	Triple Trip / Triple Lock Out	NOVA 27
W63	R 0022	2 01 09 28 5802	Olsen Rd	155	Triple Trip / Triple Lock Out	NOVA 27
W63	W63 441	Wilson Sub	Wilson River Sub E Line 63	174	Triple Trip / Triple Lock Out	NOVA 27
W63	R 0290	2 01 09 29 7800	Wilson River Loop	211	Single Trip / Triple Lock Out	NOVA STS
W63	R 0301	2 01 09 34 2101	Long Prairie Road	249	Single Trip / Triple Lock Out	MVR
W64	W64 441	Wilson Sub	Wilson River Sub A Line 64	169	Triple Trip / Triple Lock Out	NOVA 27
W65	W65 441	Wilson Sub	Wilson River Sub H Line 65	177	Triple Trip / Triple Lock Out	NOVA 27
W65	R 0295	2 01 10 02 1640	Bay City	215	Triple Trip / Triple Lock Out	NOVA STS
W67	W67 441	Wilson Sub	Wilson River Sub G Line 67	171	Triple Trip / Triple Lock Out	NOVA 27

Low Risk Areas (Normal Reclose)						
Feeder	**Facility ID**	**Station Number**	**Location**	**Company #**	**Operation**	**Type**
W67	R 0285	2 01 10 13 8503	Suppress Rd & Hwy 101	198	Single Trip / Single Lock Out	TRI-S
W67	R 0285	2 01 10 13 8503	Suppress Rd & Hwy 101	199	Single Trip / Single Lock Out	TRI-S
W67	R 0285	2 01 10 13 8503	Suppress Rd & Hwy 101	200	Single Trip / Single Lock Out	TRI-S
W68	W68 441	Wilson Sub	Wilson River Sub TU Line 68	173	Triple Trip / Triple Lock Out	NOVA 27
W70	W70 441	Wilson Sub	Wilson River Sub CX Line 70	172	Triple Trip / Triple Lock Out	NOVA 27
	NONE	NONE	THS Football lights	183	Single Trip / Single Lock Out	NR

4.5 Operational Tools and Practices

4.5.1 Work Tools

Advanced Metering Infrastructure (AMI) and Outage Management System (OMS): Tillamook PUD utilizes both AMI and OMS to view and monitor equipment, identify outage locations, and monitor voltage at the meter level. OMS works in conjunction with AMI meters to consolidate outage events and alert operators to potential system issues.

Supervisory Control and Data Acquisition (SCADA): SCADA is utilized to monitor the Tillamook PUD system and identify equipment operational status.

In the Field: Each Tillamook PUD fleet vehicle is equipped with the appropriate fire suppression equipment given the use of the vehicle. The following table identifies the equipment in each type of TPUD fleet vehicle.

Fleet Vehicle Fire Suppression Equipment	
Fleet Vehicle Type	**Fire Suppression Equipment**
Operations Pick-up Trucks	Shovel, Fire Extinguisher, Pump Can.
Bucket Truck	Shovel, Fire Extinguisher, Water Container, Chainsaw equipped with a Spark Arrester.
Digger Truck	Shovel, Fire Extinguisher, Water Container, Chainsaw equipped with a Spark Arrester.
Other District Vehicles	Fire Extinguisher.

4.5.2 Work-Based Practices

During fire season inside or within one-eighth of one mile of a forest protection district, Tillamook PUD will comply with the fire watch requirements set forth in ORS 477.665 and OAR 629-043-0030. A fire watch will be on duty during any breaks (up to 3 hours), and for three hours, after the operator's power-driven machinery has been shut down for the day.

Weather conditions and fire levels are monitored by the Tillamook PUD Operations Department daily. Dispatch personnel monitor SCADA, weather, and operations during regular working hours. Emergency dispatchers are available during non-scheduled hours.

Tillamook PUD references and utilizes the ODF Best Management Practices for Forest Operations. During fire season, industrial fire restrictions and closures for NW-1, NW-2, and NW-3 zones are checked through the Oregon Department of Forestry at:

https://gisapps.odf.oregon.gov/firerestrictions/ifpl.html

4.5.3 Work-Based Training

Specific Fire Mitigation and Safety: The Tillamook PUD Operations staff receive a fire safety overview annually.

Incident Command System: All Tillamook PUD Staff receive ICS 100 training and participate in tabletop exercises annually.

Training and Seminars: Tillamook PUD staff regularly attend trainings, workshops, and forums related to wildfire mitigation operational practices and leading-edge technologies.

4.5.4 Industrial Fire Protection Level (IFPL) Precautions

IFPL restrictions are based on climatic conditions such as temperatures, wind speed, humidity, and the possibility of lightning. Local topography and fuel (vegetation) are also factors. The Oregon Department of Forestry determines the IFPL in each of the fire protection zones.

Each precaution level specifies those activities that are permitted and prohibited within the specified zones. Precaution levels are labeled as follows:

- IFPL 1- Fire Season
- IFPL 2- Limited Shutdown
- IFPL 3- Restricted Shutdown
- IFPL 4- Complete Shutdown

Tillamook PUD follows the stipulations and guidelines provided by the Oregon Department of Forestry as seen in the *Industrial Fire Precaution Levels (IFPLs) for Oregon Department of Forestry Protection West of the Cascades* and *Fire Season Requirements* documents located on the Oregon Department of Forestry website at: https://www.oregon.gov/odf/fire/Documents/industrial-fire-precaution-levels.pdf and https://www.oregon.gov/odf/fire/Documents/fire-season-requirements-for-industrial-operations.pdf

4.5.5 Industry Connections & Interagency Collaboration

- Tillamook PUD collaborates with a variety of state and local entities on the planning and coordination of strategies to be implemented in the event of a disaster. These entities include the Committee for Tillamook Agencies and Businesses group, Tillamook County Office of Emergency Management (through the Tillamook County Sheriff's Office), the Tillamook 911 Office, local fire departments, and the Oregon Department of Forestry.
- Tillamook PUD works in partnership with the Bonneville Power Administration (BPA) and Pacific Power to discuss and prepare for situations related to high-fire risk.
- Tillamook PUD works with the ODF on ROW management through the Wildfire Protection Plan. This plan is managed by ODF and assists in monitoring ROW tree removal and fuel reduction on ODF property.
- Tillamook PUD is a member/partner with several mutual assistance agreement groups. These include the following:
    - Western Regional Mutual Aid Group through the Western Energy Institute.
    - Oregon Rural Electric Cooperative Association.

- American Public Power Association Mutual Assistance Working Group (MAWG).
- BPA Reciprocal Operating and Emergency Repair Agreement.

- Tillamook PUD works in cooperation with a variety of local and regional entities. Contact information for these entities is as follows:

Oregon Department of Forestry
503-842-2545

Local Fire Departments
Central County
Tillamook Fire Department - 503-842-7587
Netarts/Oceanside Fire Rescue – 503-842-5900

South County
Nestucca Rural Fire District – 503-392-3313

North Tillamook County
Bay City Fire Department – 377-0233
Garibaldi Fire Department - 503-322-3635
Rockaway Beach Fire Department – 503-374-1752
Nehalem Fire Department – 503-368-7590

Neighboring Utilities
Portland General Electric – 800-542-8818
Pacific Power – 888-221-7070
Central Lincoln – 877-265-3211
BPA Monroe Switch Yard – 509-465-1826

5) RESPONSE STRATEGIES

RESPONSE STRATEGIES

5.1 Situational Awareness

5.1.1 Weather Monitoring

Operations staff monitor current and ten-day weather forecasts daily. Tillamook PUD Incident Command staff subscribe to Nixle red flag warning alerts.

5.1.2 GIS Tools

Tillamook PUD staff access real-time weather conditions in geographic locations via the Tillamook PUD intranet.

5.2 Operational Response

5.2.1 Operating Procedures During Red Flag Days

Tillamook PUD adjusts normal operating procedures based on the following:

Key Response Strategies	
Status	**Response**
Fire Watch	• Monitor forecasted conditions. • Raise situational awareness. • Monitor and adhere to IFPL.
Red Flag Warning Days	• Evaluate the situation for ICS activation and PSPS. • Assess the application of relay sensitivity settings. • Limit non-critical maintenance work. • Monitor and adhere to IFPL.
Extreme Risk Days	• Evaluate the situation for ICS activation and PSPS. • Activate relay sensitivity settings. • Monitor and adhere to IFPL. • Patrol lines 100 percent before re-energizing. • Cease non-emergency maintenance work. • Communicate with local emergency management organizations.
Fire Event	• Activate ICS. • Coordinate de-energizing/re-energizing sections of line with local emergency management. • Implement PSPS as necessary. • Make repairs and assess before re-energizing.

5.2.2 Internal Communication Regarding Fire Level Status

Current IFPL and forecasted conditions are monitored by the Operations Manager, Operations Supervisor, and Dispatcher daily. Updates on status levels, safety precautions, and procedures are communicated daily, prior to work beginning, in Foremen meetings, and crew tailboard meetings.

5.2.3 Incident Command System (ICS)

The Incident Command System (ICS) is activated in response to incidents such as natural disasters and during large-scale outage situations. When ICS is activated at Tillamook PUD, designated PUD staff fill the Command and General Staff roles as seen in Figure 6 below.

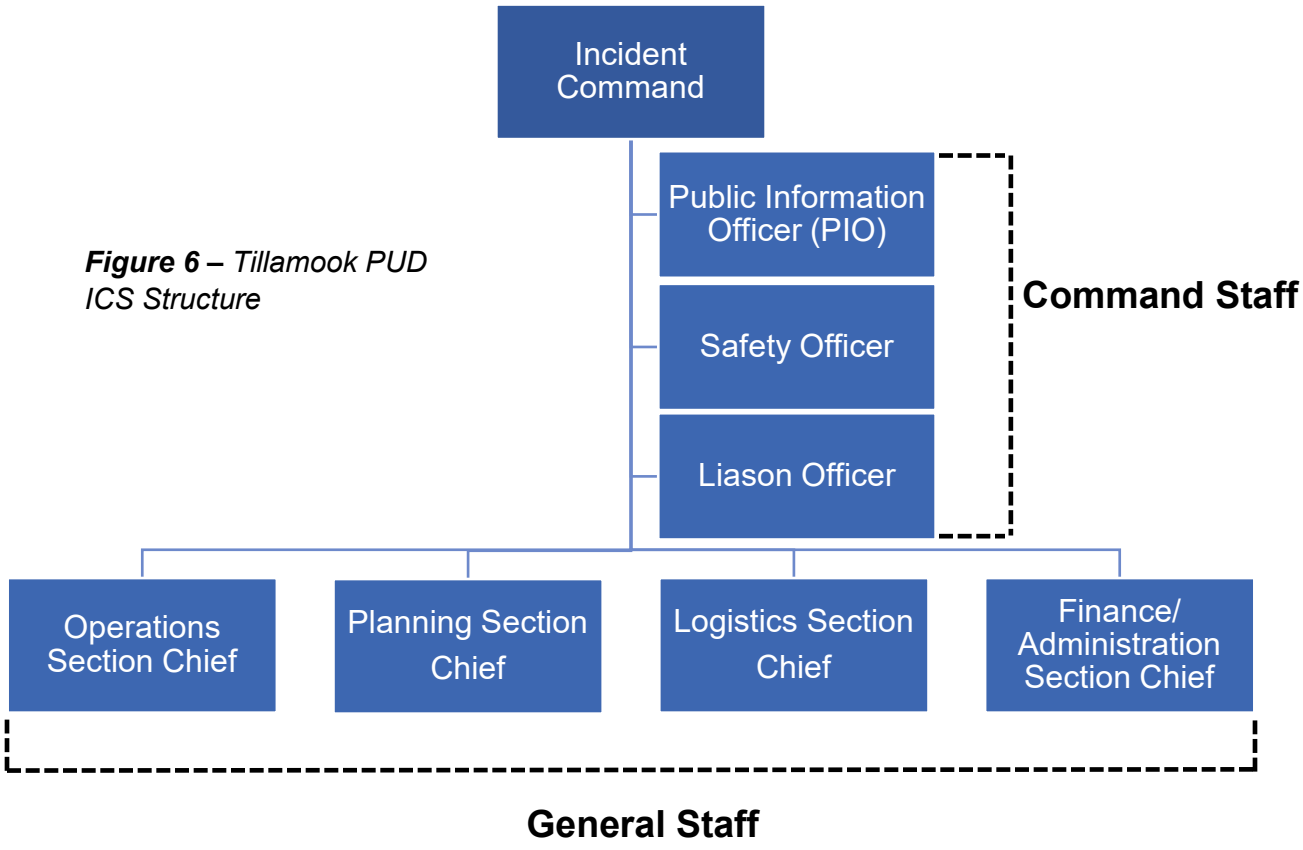


Figure 6 – *Tillamook PUD ICS Structure*

5.3.4 Public Safety Power Shutoff (PSPS)

A PSPS preemptively de-energizes power lines during high wind events combined with hot and dry weather conditions. Tillamook PUD utilizes PSPS as a last response in mitigation strategies during red flag warnings or extreme conditions.

The necessity, location, duration, and timeline of a PSPS activation will be determined by the Incident Commander and may be in consultation with interagency partners including, but not limited to, the Oregon Department of Forestry, Tillamook Office of Emergency Management, and local fire departments. The Incident Commander will evaluate conditions and will determine when it is safe for re-energization. Prior to re-energizing the system, full line patrols of the PSPS area will be performed by Operations field staff.

When considering a PSPS, Tillamook PUD examines external risks and potential consequences of a PSPS, including:

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

The risks and potential consequences of initiating a PSPS are significant and extremely complex. Based on the above considerations, Tillamook PUD reserves the option of implementing a PSPS when conditions dictate. While Tillamook PUD believes the risks of implementing a PSPS far outweigh the chances of its electric overhead distribution system igniting a catastrophic wildfire, the PSPS provides a last resort tool and another option in a crisis.

On a case-by-case basis, Tillamook PUD will consider de-energizing a portion of its system in response to a known public safety issue or a request from an outside emergency management/response agency.

The decision to implement a PSPS is based on multiple triggers accompanied with the unique understanding of the Tillamook PUD system. No single element is determinative. Potential factors include:

- Imminent fire danger
- Critically dry vegetation that could serve as fuel for a wildfire
- Low humidity levels
- Red flag warnings
- Temperatures over 100ºF

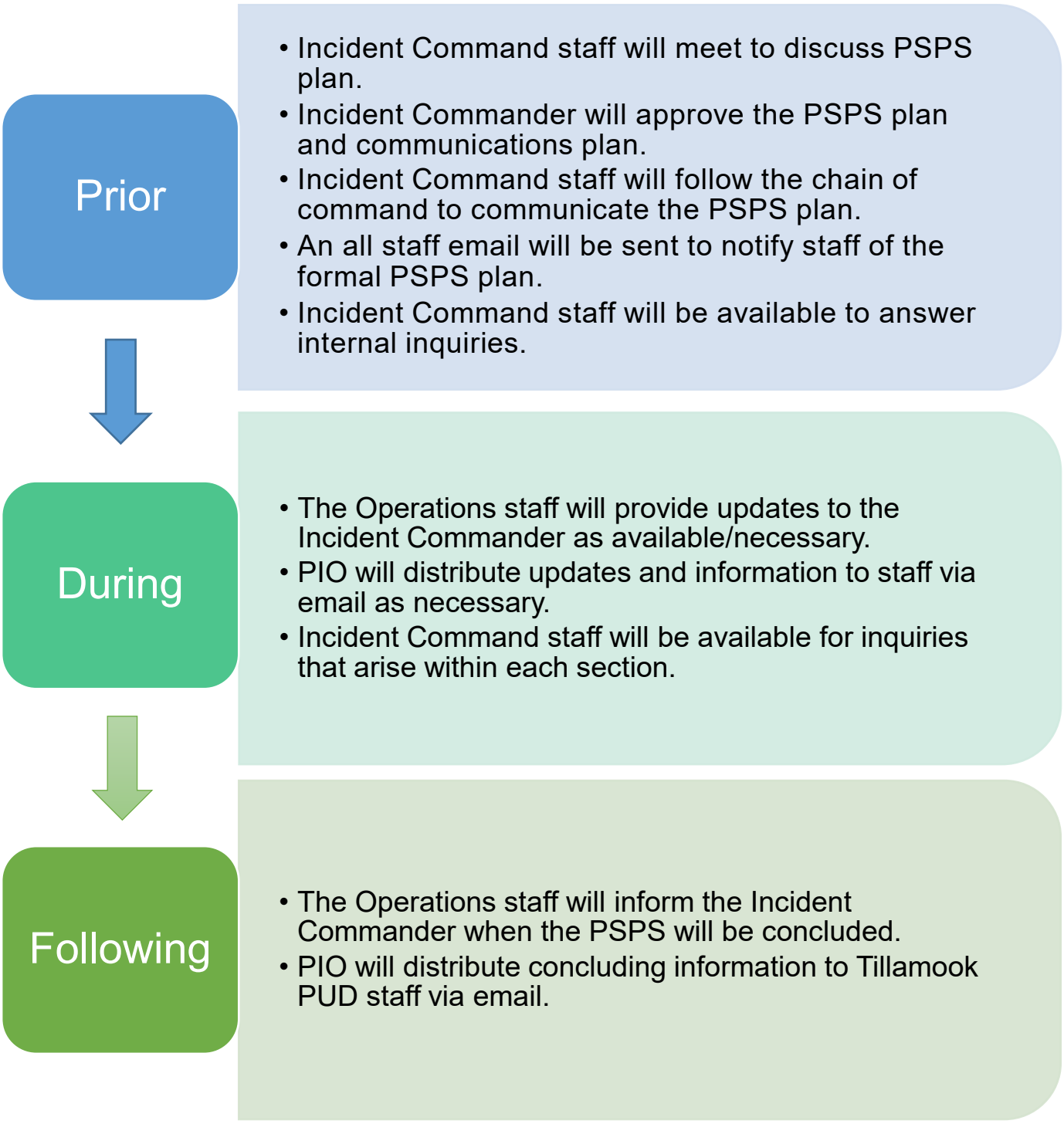
- Winds projected beyond 40 mph in high-risk areas
- Mandatory fire orders in effect
- On-the-ground observations from Tillamook PUD or other agency field staff
- Active wildfire in the service area
- Local topography

Tillamook PUD will monitor the evolution of PSPS implementation by other Oregon electric utilities to continue to refine its evaluation criteria and processes.

Communications

Internal and external communications are of the utmost importance before, during, and following a PSPS activation. The subsequent process flow charts depict the typical communication strategies executed should a PSPS activation need to occur.

Internal Communications Prior, During and Following a PSPS Activation



External Communications Prior, During and Following a PSPS Activation

Prior

- Incident Commander will approve the PSPS and communication plan.
- Incident Command staff will communicate/coordinate PSPS plans with Interagency Partners.
- Incident Command Staff will provide date(s), location(s), duration, and reasoning for PSPS to PIO.
- PIO will inform Interagency Partners of the PSPS plan that have not been notified already by the Incident Commander.
- The Liaison Officer will notify any Key Accounts Customers affected.
- PIO will distribute PSPS message to the public through Nixle, Tillamook PUD social media, print and digital media, radio, and the Tilamook PUD website.

During

- PIO and Communication Support staff will monitor social/digital media outlets and respond to inquiries.
- PIO will remain in close contact with Interagency Partners and provide updates as available.
- The Liaison Officer will remain in close contact with Key Account Customers and provide updates as available.
- PIO will provide additional updates and information, as approved by the Incident Commander, to the public as available and/or necessary.

Following

- PIO will communicate PSPS has ended via the same channels information was initially distributed externally.
- PIO/Operations staff will follow-up with Interagency Partners.
- The Liaison Officer will follow-up with Key Account Customers.

6) PLAN MAINTENANCE & IMPLEMENTATION

6.1 Plan Maintenance & Implementation

The Wildfire Mitigation Plan will follow regulations as outlined by state and local jurisdictions and will be reviewed annually and filed with the Oregon Public Utility Commission no later than the 15th of December each year.

The Wildfire Mitigation Plan is available on the Tillamook PUD website for members of the public to access and review. Before, during, and after wildfire season Tillamook PUD communicates information regarding the Wildfire Mitigation Plan through various media channels including print, social and digital.

The Wildfire Mitigation Plan is approved by the General Manager and adopted by the Board of Directors. The Incident Command Staff is responsible for implementing the Wildfire Mitigation Plan.