Attachment 1: Draft First Amended Site Certificate (red-line)

ENERGY FACILITY SITING COUNCIL

OF THE

STATE OF OREGON

First Amended Site Certificate for Boardman to Hemingway Transmission Line

Issuance Dates:

Site Certificate September 27, 2022

First Amended Site Certificate TBD

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Acronyms and Abbreviations

ASC	Application for Site Certificate
C-12	Heavy Industrial
Certificate Holder	Idaho Power Company
Council	Oregon Energy Facility Siting Council
CWNWMP	Compensatory Wetland and Non-Wetland Mitigation Plan
Department	Oregon Department of Energy
DOGAMI	Oregon Department of Geology and Mineral Industries
DSL	Oregon Department of State Lands
EFU	Exclusive Farm Use
email	electronic submission
ERU	Exclusive Range Use
ESCP	Erosion Sediment Control Plan
FAA	Federal Aviation Administration
facility	Boardman to Hemingway Transmission Line Project
Final Order on the ASC	Final Order on the Application for Site Certificate for the Boardman to Hemingway Transmission Line ~~Project~~
Final Order on RFA1	Final Order on Request for Amendment 1 of the Site Certificate for the Boardman to Hemingway Transmission Line
FP	Fish Passage
Ft	feet
FW	Fish and Wildlife Habitat
GEN	general condition
HC	Historic, Cultural, and Archeological Resources
HMP	Habitat Mitigation Plan
HPMP	Historic Properties Management Plan
HQT	Habitat Quantification Tool
JPA	Joint Permit Application
LU	Land Use
MCZO	Morrow County zoning ordinances
MG	General Industrial
MUAs	Multi-use areas
NC	Noise Control Regulations
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NSR	Noise Sensitive Receptor
NWSTF	Naval Weapons Systems Training Facility
O&M	Operations and Maintenance
OAR	Oregon Administrative Rule

ODA	Oregon Department of Aviation
ODFW	Oregon Department of Fish and Wildlife
OE	Organizational Expertise
ORS	Oregon Revised Statute
PA	Protected Area
parent company	IDACORP, Inc.
PS	Public Services
RC	Recreation
RF	Removal Fill Law
RT	Retirement and Financial Assurance
SHPO	State Historic Preservation Office
SP	Soil Protection
SPCC Plan	Spill Prevention Control and Countermeasures Plan
SR	Scenic Resources
SS	Structural Standard
State	State of Oregon
TE	Threatened and Endangered species
TL	Siting Standards for Transmission Lines
TMIP	Transmission Maintenance and Inspection Plan
WAGS	Washington ground squirrel
WM	Waste Minimization
WMP	Wildfire Mitigation Plan

1.0 Introduction and Site Certification

This site certificate is a binding agreement between the State of Oregon (State), acting through the Energy Facility Siting Council (Council), and Idaho Power Company (certificate holder), which is a wholly owned subsidiary of IDACORP, Inc. (parent company). As authorized under Oregon Revised Statute (ORS) Chapter 469, the Council issues this site certificate authorizing the certificate holder to construct, operate and retire the Boardman to Hemingway Transmission Line ~~Project~~ (facility) within ~~the~~ one of the below described approved corridors within Morrow, Umatilla, Union, Baker and Malheur counties subject to the conditions set forth herein.

Both the State and certificate holder must abide by local ordinances, state law and the rules of the Council in effect on the date ~~this~~ the site certificate is executed. However, upon a clear showing of a significant threat to public health, safety, or the environment that requires application of later-adopted laws or rules, the Council may require compliance with such later-adopted laws or rules (ORS 469.401(2)).

The findings of fact, reasoning and conclusions of law underlying the terms and conditions of this site certificate are set forth in the following documents, incorporated herein by this reference: (a) the *Final Order on Request for Amendment 1 of the Boardman to Hemingway Transmission Line Site Certificate* issued on [TBD] (hereafter, Final Order on RFA1); and (~~a~~b) the *Final Order on the Application for Site Certificate for the Boardman to Hemingway Transmission Line Project* issued on September 27, 2022 (hereafter, *Final Order on the ASC*). Any ambiguity will be clarified by reference to the following, in order of priority: (1) *Final Order on RFA1* (2) the record of the proceedings that led to the *Final Order on RFA1* (~~1~~3) ~~the~~ *Final Order on the ASC*, and (~~2~~4) the record of the proceedings that led to the *Final Order on the ASC.* This site certificate binds the State and all counties, cities and political subdivisions in Oregon as to the approval of the site and the construction, operation, and retirement of the facility as to matters that are addressed in and governed by this site certificate (ORS 469.401(3)). This site certificate does not address, and is not binding with respect to, matters that are not included in and governed by this site certificate, and such matters include, but are not limited to: employee health and safety; building code compliance; wage and hour or other labor regulations; local government fees and charges; other design or operational issues that do not relate to siting the facility (ORS 469.401(4)); and permits issued under statutes and rules for which the decision on compliance has been delegated by the federal government to a state agency other than the Council (ORS 469.503(3)).

Each affected state agency, county, city, and political subdivision in Oregon with authority to issue a permit, license, or other approval addressed in or governed by this site certificate, shall upon submission of the proper application and payment of the proper fees, but without hearings or other proceedings, issue such permit, license or other approval subject only to conditions set forth in this site certificate. In addition, each state agency or

local government agency that issues a permit, license or other approval for this facility shall continue to exercise enforcement authority over such permit, license or other approval (ORS 469.401(3)). For those permits, licenses, or other approvals addressed in and governed by this site certificate, the certificate holder shall comply with applicable state and federal laws adopted in the future to the extent that such compliance is required under the respective state agency statutes and rules (ORS 469.401(2)).

The certificate holder must construct, operate and retire the facility in accordance with all applicable rules as provided for in Oregon Administrative Rule (OAR) Chapter 345, Division 26. After issuance of this site certificate, the Council shall have continuing authority over the site and may inspect, or direct the Oregon Department of Energy (Department) to inspect, or request another state agency or local government to inspect, the site at any time in order to ensure that the facility is being operated consistently with the terms and conditions of this site certificate (ORS 469.430).

The obligation of the certificate holder to report information to the Department or the Council under the conditions listed in this site certificate is subject to the provisions of ORS 192.502 *et seq.* and ORS 469.560. To the extent permitted by law, the Department and the Council will not publicly disclose information that may be exempt from public disclosure if the certificate holder has clearly labeled such information and stated the basis for the exemption at the time of submitting the information to the Department or the Council. If the Council or the Department receives a request for the disclosure of the information, the Council or the Department, as appropriate, will make a reasonable attempt to notify the certificate holder and will refer the matter to the Attorney General for a determination of whether the exemption is applicable, pursuant to ORS 192.450.

The Council recognizes that many specific tasks related to the design, construction, operation and retirement of the facility will be undertaken by the certificate holder's agents or contractors. Nevertheless, the certificate holder is responsible for ensuring compliance with all provisions of the site certificate.

The duration of this site certificate shall be the life of the facility, subject to termination pursuant to OAR 345-027-0110 or the rules in effect on the date that termination is sought, or revocation under ORS 469.440 and OAR 345-029-0100 or the statutes and rules in effect on the date that revocation is ordered. The Council shall not change the conditions of this site certificate except as provided for in OAR Chapter 345, Division 27.

The definitions in ORS 469.300 and OAR 345-001-0010 apply to the terms used in this site certificate, except where otherwise stated, or where the context clearly indicates otherwise.

2.0 Facility Location, Site Boundary and Micrositing Transmission Line Corridors

The facility traverses five counties in Oregon including Morrow, Umatilla, Union, Baker and Malheur; and two cities including North Powder and Huntington, as presented in the mapsets included in Attachment A.

The approved site boundary contains approximately ~~23,041~~24,000 acres. For the 500-kV transmission line, the site boundary is a 500-foot-wide area[1] within which the transmission line, all transmission structures, and communication stations are approved to be located.[2] The site boundary for the remaining facility features varies, based on the type of feature and use. The site boundary for the approved Longhorn Station is approximately 190 acres. The site boundary for access roads is either 100 or 200-feet in width, depending on the nature of the road.

The site boundary is equivalent to a micrositing transmission line corridor. A micrositing/transmission line corridor is a continuous area of land not to exceed 0.5-mile in width within which construction of facility components may occur, subject to site certificate conditions.[3] The Council permits final siting flexibility within the approved micrositing transmission corridor because the certificate holder has demonstrated that requirements of all applicable standards have been satisfied by adequately evaluating the entire corridor and location of facility components anywhere within the corridor/site boundary.

3.0 Facility Description

The facility includes approximately 300 miles of electric transmission line, with approximately 272.8 miles located in Oregon and 23.8 miles in Idaho. The facility is approved to construct, operate and retire the following major components:

- Transmission Lines: The approved route consists of an approximately 270.8-mile-long single-circuit 500-kV electric transmission line, removal of 12 miles of existing 69-kV transmission line, rebuilding of 0.9 mile of a 230-kV transmission line, and rebuilding of 1.1 miles of an existing 138-kV transmission line into a new ROW. ~~Four~~ Seven approved alternative routes represent approximately 42.1 ~~33.3~~ miles of transmission line.

- Longhorn Station: A 20-acre switching station, the Longhorn Station, is approved to be located near the Port of Morrow, Oregon. The switching station provides a combination of switching, protection, and control equipment arranged to provide circuit protection and system switching flexibility for the transfer of electric power; it does not

[1] The width of the site boundary for the True Blue Gulch alternative route ranges from 500 to 1,800 feet wide (see RFA1 Figure 4-1 Map 2).
[2] B2HAPPDoc3-3 ASC 02a_Exhibit_B_Project Description_ASC 2018-09-28. Section 3.2.2.3 and 3.5.2.
[3] OAR 345-001-0010(7) and (32)

incorporate step-down or step-up voltage equipment. The station connects the transmission line to other 500-kV transmission lines and the Pacific Northwest power market.

- Communication Stations: Ten communication station sites (and two alternative communication stations sites) each consisting of a communication shelter and related facilities. Each communication station site is less than 1/4-acre in size.

- Access Roads: The facility includes permanent access roads for the approved route, including 217.1 ~~206.3~~ miles of new roads and 233.3 ~~223.2~~ miles of existing roads requiring substantial modification. The approved alternative routes includes 32.0 ~~30.2~~ miles of new roads and 20.5 ~~22.7~~ miles of existing roads requiring substantial modification.

- Temporary Features used during Construction: The transmission line includes 30 temporary multi-use areas and 299 temporary pulling and tensioning sites, four of which have light-duty fly yards within the pulling and tensioning sites.

3.1 Facility Component Requirements

The design of the facility, including related or supporting facilities, shall be substantially similar to the data presented in Table 1, including length of components, number of components and disturbance area limits. Transmission line structures for the approved route and approved alternatives routes shall be substantially similar to the structure type, number, height and disturbance areas presented in Tables 2~~1~~ and 3~~2~~ below. Transmission structure foundations shall be substantially similar to the depth and diameter presented in Table 4~~3~~ below.

~~Limits of temporary and permanent disturbance by facility components are established in Table 10 below.~~

Table 1: Approved Facility Routes, Component, Site Boundary Dimensions and Disturbance Area

Component	Length or Count	Site Boundary[1]	Construction Disturbance	Operations Disturbance
Transmission Lines				
Single-Circuit 500-kV	270.8 miles (Approved ASC Route)/ 33.3 miles (~~Approved~~ ASC Alternatives) 8.8 miles (RFA1 Alternatives)	500 feet (width)	–[2]	–[2]
Single-Circuit 230-kV	0.9 mile (Approved ASC Route)	500 feet (width)	–[2]	–[2]
Single-Circuit 138-kV	1.1 miles (Approved ASC Route)	500 feet (width)	–[2]	–[2]

Table 1: Approved Facility Routes, Component, Site Boundary Dimensions and Disturbance Area

Component	Length or Count	Site Boundary[1]	Construction Disturbance	Operations Disturbance
Transmission Structures				
500-kV Lattice	1,085 (Approved ASC Route)/ 118 (~~Approved~~ ASC Alternatives) 28 (RFA1 Alternatives)	–[3]	250 x 250 feet (1.4 acres)	50 x 50 feet (0.06 acre)
500-kV H-Frame (NWSTF area)	73 (Approved ASC Route)/ 34 (~~Approved~~ ASC Alternative)	–[3]	250 x 90 feet (0.5 acres) on NWSTF / 250 x 150 feet (0.9 acres) off NWSTF	10 x 40 feet (0.001 acre)
500-kV H-Frame (Birch Creek area)	6 (Approved ASC Route)	–[3]	250 x 250 feet (1.4 acre)	10 x 40 feet (0.001 acre)
500-kV Y-Frame	8 (~~Approved~~ ASC Alternative)	–[3]	Varies (0.4 acres)	8 x 8 feet (0.001 acre)
500-kV 3-Pole Dead- end (NWSTF area)	1 (Approved ASC Route)/ 2 (~~Approved~~ ASC Alternative)	–[3]	250 x 90 feet (0.5 acre)	10 x 90 feet (0.02 acre)
500-kV 3-Pole Dead- end (Birch Creek area)	3 (Approved ASC Route)	–[3]	250 x 250 feet (1.4 acre)	10 x 90 feet (0.02 acre)
500-kV H-Frame Dead-end (NWSTF area)	3 (~~Approved~~ASC Alternative)	–[3]	250 x 90 feet (0.5 acre)	10 x 50 feet (0.01 acre)
230-kV H-Frame	5 (Approved ASC Route)	–[3]	250 x 100 feet (0.6 acre)	25 x 5 feet (0.01 acre)
230-kV H-Frame (Removal)	9 (Approved ASC Route)	–[3]	150 x 100 feet (0.3 acre)	–[4]
230-kV 3-Pole Dead- end	4 (Approved ASC Route)	–[3]	250 x 150 feet (0.6 acre)	40 x 130 feet (0.1 acre)
138-kV H-Frame	8 (Approved ASC Route)	–[3]	150 x 250 feet (0.9 acre)	16.5 x 5 feet (0.001 acre)
138-kV H-Frame (Removal)	10 (Approved ASC Route)	–[3]	100 x 100 feet (0.2 acre)	–[4]
138-kV 3-Pole Dead- end	3 (Approved ASC Route)	–[3]	250 x 150 feet (0.9 acre)	30 x 130 feet (0.09 acre)
69-kV H-Frame (Removal)	94 (Approved ASC Route)	–[3]	90 x 90 feet (0.2 acre)	–[4]
Stations				
Longhorn Station	1	188.9	24.4 acres	19.6 acres
Access Roads[5]				

Table 1: Approved Facility Routes, Component, Site Boundary Dimensions and Disturbance Area

Component	Length or Count	Site Boundary[1]	Construction Disturbance	Operations Disturbance
Existing Road, Moderate Improvements (21-70%)	156.3~~148.8~~ miles (Approved ASC Route)/ 13.2 miles (~~Approved~~ ASC Alternatives) 1.0 mile (RFA1 Alternatives)	100 feet (width)	16 feet (width)	14 feet (width)
Existing Road, Extensive Improvements (71-100%)	77.0 ~~73.4~~ miles (Approved ASC Route)/ 6.3 miles (~~Approved~~ ASC Alternative)	100 feet (width)	30 feet (width)	14 feet (width)
New, Bladed	99.0~~88.8~~ miles (Approved ASC Route)/ 12.8 miles (ASC ~~Approved~~ Alternative) 6.1 miles (RFA1 Alternatives)	200 feet (width)	35 feet (width)	14 feet (width)
New, Primitive	118.1 ~~117.5~~ miles (Approved ASC Route)/ 12.8 miles (ASC ~~Approved~~ Alternatives) 0.3 miles (RFA1 Alternatives)	200 feet (width)	16 feet (width)	10 feet (width)
Permanent Facilities				
Communication Station	10 (Approved ASC Route)/ 2 (ASC ~~Approved~~ Alternative)	–[2]	100 x 100 feet (0.2 acre)	75 x 75 feet (0.1 acre)
Distribution Power Lines to Communication Station[7]	7 (Approved ASC Route)/ 2 (ASC ~~Approved~~ Alternative)	50 feet (width)	25 feet (width)	14 feet (width)
Temporary Facilities				
Multi-use Areas	30 (Approved ASC Route)/ 4 (ASC ~~Approved~~ Alternative)	Discrete site boundary; discontiguous from	23 acres	–
Light Duty Fly Yards	4 (Approved ASC Route)	Discrete site boundary; adjacent to transmissio	5 acres	–

Table 1: Approved Facility Routes, Component, Site Boundary Dimensions and Disturbance Area

Component	Length or Count	Site Boundary[1]	Construction Disturbance	Operations Disturbance
Pulling and Tensioning Sites	299 (Approved ASC Route)/ 32 (ASC ~~Approved~~ Alternative) 10 (RFA1 Alternatives)	Discrete site boundary; adjacent to transmissio	4 acres	–

[1] Site Boundary size may be less than indicated in specific areas to avoid impacts to protected areas or for other reasons.
[2] No temporary or permanent disturbance expected along centerline, other than for specific facility features indicated below.
[3] Component will be sited entirely within the site boundary.
[4] No permanent disturbance expected once existing towers are removed.
[5] See the Road Classification Guide and Access Control Plan (Exhibit B, Attachment B-5) for more information about road types.
[6] Existing roads with no substantial improvements are defined as existing roads that require improvements along 20 percent or less of the entire road segment. These roads have minimal to no temporary or permanent disturbance impacts beyond their existing road surface/profile, are not included in site boundary.
[7] Certificate holder will construct distribution lines to communication stations within their service territory.

Energy Facility Component Details

Additional descriptions and specifications for energy facility and related or supporting facility components are described in the tables below.

Table 2: Approved Route Structure Characteristics

Structure Type	Number of Structures	Height (ft)	Distance Between Structures (ft)	Construction Disturbance Area per Structure (ft)	Operational Disturbance Area per Structure (ft)
500-kV Single-Circuit Lattice Steel Structure	1,076	109-200	1,200-1,800	250 x 250	50 x 50
500-kV Single-Circuit Tubular Steel Pole H-Frame Structure (NWSTF Boardman area)	70	65-105	350-950	90 x 250 on NWSTF and 150 x 250 off NWSTF	40 x 10
Rebuild Single-Circuit 138-kV Wood H-Frame Structure	9	51-61	500-750	250 x 150	16.5 x 5
500-kV Single-Circuit Tubular Steel Pole H-Frame	6	65-105	450-900	250 x 250	40 x 10
Rebuild Single Circuit 230-kV Steel H-Frame Structure	5	57-75	400-1,200	250 x 100	25 x 5
500-kV Single-Circuit H-Frame	5	85-145	950-1650	250 x 250	40 x 10
230-kV Single-Circuit Tubular Steel 3-Pole Dead-end	4	61-66	NA	250 x 150	130 x 4
500-kV Single-Circuit Tubular Steel 3-Pole Dead-end	4	115	NA	250 x 250	90 x 10
500-kV Single Circuit Tubular Steel 3-Pole Dead-end (NWSTF Boardman area)	3	115	NA	90 x 250	90 x 10
500-kV Single-Circuit Tubular Steel 3-Pole Dead-end	3	75-90	NA	250 x 250	90 x 10
138-kV Single-Circuit 3-Pole Dead-end	3	51.5	NA	250 x 150	130 x 30

Table 3: Approved Alternative Route Structure Characteristics

Structure Type	Number of Structures	Height (ft)	Distance Between Structures (ft)	Construction Disturbance Area per Structure (ft)	Operational Disturbance Area per Structure (ft)
500-kV Single-Circuit Lattice Steel Structure (ASC/RFA1)	114/32	109-200	1,200-1,800	250 x 250	50 x 50
500-kV Single-Circuit Tubular Steel Pole H-Frame (NWSTF Boardman area)	33	90-100	550-1100	90 x 250 on NWSTF and 150 x 250 off NWSTF	40 x 10
500-kV Single-Circuit Tubular Steel Pole Y-Frame (NWSTF Boardman area)	8	85-95	575-980	Varies (0.4 acre)	8 x 8
500-kV Single-Circuit, H-Frame Dead-end (NWSTF Boardman area)	2	95-100	NA	90 x 250	50 x 10
500-kV Single-Circuit, 3-Pole Dead-end (NWSTF Boardman Area)	2	115	NA	90 x 250	90 x 10

Table 4: Foundation Excavation Dimensions

Structure Type	Number of Holes per Structure	Depth (feet)	Diameter (feet)	Concrete (cubic yards)
500-kV Single-Circuit 3-Pole Dead-end	3	30	9	212
500-kV Single-Circuit H-Frame	2	25	8	93
500-kV Single-Circuit Lattice, Heavy Dead-end	4	30	6	126
500-kV Single-Circuit Lattice, Heavy Tangent	4	16	4	30
500-kV Single-Circuit Lattice, Light Tangent	4	16	4	30
500-kV Single-Circuit Lattice, Medium Dead-end	4	22	6	93
500-kV Single-Circuit Lattice, Small Angle	4	16	6	68
500-kV Single Circuit Y-Frame, Tangent	1	43	8	80
500-kV Single-Circuit H-Frame, Tangent	2	25	8	93
230-kV Single-Circuit 3-Pole Dead-end, Guyed	3	12	4	NA
230-kV Single-Circuit H-Frame, Tangent	2	12	4	NA
138-kV Single-Circuit 3-Pole Dead-end	3	9	4	NA
138-kV Single-Circuit H-Frame, Tangent	2	9	4	NA

Longhorn Switching Station

The Longhorn Switching Station is approved to include the following components:

- 500-kV circuit breakers
- high-voltage switches, bus supports
- 125-135' transmission line termination structures
- 500-kV series capacitor bank, and 500-kV shunt reactor
- a control house for communications, control equipment, and a restroom facility
- a new all-weather access road
- fire protection systems with:
  - Automatic suppression systems such as fire sprinklers, foam, gaseous, explosion suppression, or other specialized extinguishing systems and appropriate alarms.
  - Adequate water supply, storage, and distribution systems for water-based extinguishing systems.

- Automatic fire detection, occupant warning, manual fire alarm, and fire alarm reporting systems combined with properly equipped and adequately trained fire departments.
- Fire barrier systems or combinations of physical separation and barriers for outdoor locations.

Communication Systems and Stations

Optical Ground Wire

Each 500-kV structure will have two lightning protection shield wires installed on the structure peaks.

Communication Station Sites

Each communication station site is approved to be 100' by 100' with a fenced area of 75' by 75'. Each communication station site is approved to include:

- a prefabricated concrete communications structure with dimensions of approximately 11.5 feet by 32 feet by 12 feet tall on each site
- a standby generator with a liquefied propane gas tank
- Two separate conduit (underground) or aerial cable routes with two-inch-diameter polyvinyl chloride buried three feet below the surface
- smoke detectors

Communication Station Distribution Lines

Distribution lines are approved to serve communication stations BA-02, and MA-01, MA-02, MA-03, as well as alternative a communication station in Malheur County.[4]

Related or Supporting Facilities (Permanent and Temporary)

Access Roads

Temporary, permanent and substantially modified access road classification and limits of disturbance are presented in the table below.

[4] B2HAPPDoc3-3 ASC 02a_Exhibit_B_Project Description_ASC 2018-09-28, Section 3.3.4.

Table 5: Summary of Access Road Classifications

Access Road Classification		Site Boundary	Construction Disturbance	Operations Disturbance	Road Prism or Profile Changes	Extent of Work
New Roads	Primitive	200 feet	16 feet	10 feet	Yes	Clearing of vegetation or obstructions. Create roads by direct vehicle travel.
	Bladed	200 feet	16–35 feet	14 feet	Yes	Clearing of vegetation or obstructions. Create roads by cutting/filling existing terrain.
Existing Roads - Substantial Modification	Substantial Modification, 21-70% Improved	100 feet	16 feet	14 feet	Yes	Reconstruct portions of existing road to improve road function. Possible road prism widening, profile adjustments, horizontal curve adjustments, or material placement.
	Substantial Modification, 71-100% Improved	100 feet	16–30 feet	14 feet	Yes	Reconstruct portions of existing road to improve road function. Possible road prism widening, profile adjustments, horizontal curve adjustments, or material placement.
Existing Roads – No Substantial Modification	No Substantial Modification, 0-20% Improved	NA[1]	NA[1]	NA[1]	No	Repair of existing road to maintain original road function. No betterment of existing road function or design.

[1] Existing roads with no substantial modifications are not included in the Site Boundary and do not have an operation or construction disturbance width assigned to them.
Source: B2HAPPDoc3-3 ASC 02a_Exhibit_B_Project Description_ASC 2018-09-28, Table B-12.

Temporary Multi-Use Areas

The facility is approved to construct temporary multi-use areas approximately every 15 miles along the ROW. The multi-use areas (MUAs) are temporary construction areas to serve as field offices; reporting locations for workers; parking space for vehicles and equipment; and sites for material delivery and storage, fabrication assembly of towers, cross arms and other hardware, concrete batch plants, and stations for equipment maintenance. Each MUA is approved to be approximately 30 acres in size. After construction is complete, MUAs shall be restored to pre-construction conditions in accordance with Condition OPR-GS-03 (General Standard of Review Condition 9), as discussed in applicable sections of this order.

Helicopter operations are approved at some multi-use areas. Helicopters will be used for delivery of construction laborers, equipment, and materials to structure sites; transmission structure placement; hardware installation; and wire stringing operations. Helicopters may also be used to support the construction and administration and management (either the certificate holder or the construction contractor or both).

Gasoline, diesel fuel, crankcase oil, lubricants, and cleaning solvents will be stored at MUAs. Diesel fuel tanks must be stored within secondary containment and each station must be equipped with a spill kit.

Temporary Pulling and Tensioning Sites and Light-Duty Fly Yards

The facility is approved to include up to 299 temporary pulling and tensioning sites, approximately every 1.5 to two miles along the ROW and at angle points greater than 30 degrees. Temporary pulling and tensioning sites are approved to be located on approximately five acres at each end of the wire section to accommodate required equipment.[5] Equipment at pulling and tensioning sites is approved to include tractors and trailers with spooled reels that hold the conductors and trucks with the tensioning equipment.

Four pulling and tensioning sites are approved to include light-duty fly yards (within Umatilla, Baker and Malheur counties). All of the equipment and activities approved to occur at a multi-use area could also occur at a light-duty fly yard, except that oil, gas and explosive storage would not occur and no batch plants would be located at the light-duty fly yards within the pulling and tensioning sites. The light-duty fly yards are approved to be approximately five-acre sites spaced approximately 15 miles apart.

After construction is complete, the certificate holder shall restore temporary pulling and tensioning sites to pre-construction conditions in accordance with Condition OPR-GS-03 (General Standard of Review Condition 9).

3.2 Facility Routes and Components by County/City

[5] B2HAPPDoc3-3 ASC 02a_Exhibit_B_Project Description_ASC 2018-09-28, Section 3.3.3.

Morrow County

The approved transmission line route crosses approximately 47.5 miles in Morrow County beginning at the Longhorn Station and includes various other facility components~~, as presented in Table 5, *Approved Route Features – Morrow County* below.~~.

~~Table 5: Approved Route Features – Morrow County~~

~~Project Features~~	~~Number of Sites*~~
~~Towers – Single Circuit 500-kV Lattice~~	~~147~~
~~Towers – Single Circuit 500-kV H-Frame~~	~~73~~
~~Towers – Single Circuit 500-kV 3-Pole Dead-end~~	~~1~~
~~Communication Station(s)~~	~~1~~
~~Light Duty Fly Yards~~	~~0~~
~~Multi-Use Areas~~	~~5~~
~~Pulling and Tensioning Sites~~	~~39~~
~~Station~~	~~1~~
~~Access Roads~~	~~Total Miles*~~
~~Existing, 21-70% Improved~~	~~19.4~~
~~Existing, 71-100% Improved~~	~~10.8~~
~~New, Bladed~~	~~1.4~~
~~New, Primitive~~	~~10.6~~
~~Crossings by Approved Route~~	~~Number of Crossings*~~
~~High-Voltage Transmission Line Crossings[1]~~	~~1~~
~~Existing Road Crossings[2]~~	~~3~~
~~Existing Railroad Crossings[3]~~	~~1~~

~~[1] Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69 kV.~~
~~[2] Source: Esri (2013); includes Interstate, federal, and state highways.~~
~~[3] Source: Oregon Department of Transportation (2013).~~
~~* Approximate.~~

The facility is approved to include construction and operation of the Longhorn Station, located at the northern terminus of the transmission line in Morrow County.

The facility includes two approved alternative transmission routes in Morrow County.

Umatilla County

The approved transmission line route crosses approximately 40.8 miles in Umatilla County~~, as presented in Table 6, *Approved Route Features – Umatilla County* below.~~.

Table 6: Approved Route Features – Umatilla County

Project Features	Number of Sites*
Towers – Single Circuit 500-kV Lattice	161
Communication Station(s)	2
Light Duty Fly Yards	1
Multi-Use Areas	7
Pulling and Tensioning Sites	41
Station	0
Access Roads	**Total Miles***
Existing, 21-70% Improved	15.6
Existing, 71-100% Improved	21.2
New, Bladed	5.1
New, Primitive	7.4
Crossings by Approved Route	**Number of Crossings***
High-Voltage Transmission Line Crossings[1]	0
Existing Road Crossings[2]	1
Existing Railroad Crossings[3]	0

[1] Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69 kV.
[2] Source: Esri (2013); includes Interstate, federal, and state highways.
[3] Source: Oregon Department of Transportation (2013).
* Approximate.
Source: B2HAPPDoc3-9 ASC 03_Exhibit C_Project_Location_ASC 2018-09-28, Table C-3.

Union County

The approved transmission line route crosses approximately 39.9 miles of land in Union County and includes various other facility components, as presented in Table 7, *Approved Route Features – Union County* below. .

Table 7: Approved Route Features – Union County

Project Features	Number of Sites*
Towers – Single Circuit 500-kV Lattice	169
Communication Station(s)	2
Light Duty Fly Yards	0
Multi-Use Areas	3
Pulling and Tensioning Sites	43
Station	0
Access Roads	**Total Miles***
Existing, 21-70% Improved	31.1

Table 7: Approved Route Features – Union County

Project Features	Number of Sites*
Existing, 71-100% Improved	6.4
New, Bladed	7.2
New, Primitive	0.4
Crossings by Approved Route	**Number of Crossings***
High-Voltage Transmission Line Crossings[1]	3
Existing Road Crossings[2]	4
Existing Railroad Crossings[3]	3

[1] Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69 kV.
[2] Source: Esri (2013); includes Interstate, federal, and state highways.
[3] Source: Oregon Department of Transportation (2013).
* Approximate.
Source: B2HAPPDoc3-9 ASC 03_Exhibit C_Project_Location_ASC 2018-09-28, Table C-4.

The Morgan Lake alternative is the only alternative route in Union County and was developed based on input from landowners. The Morgan Lake alternative is approved to include one alternative communication station in Union County.

Baker County

The approved transmission line route crosses approximately 68.4 miles of land in Baker County and includes various other facility components, as presented in Table 8, *Approved Route Features – Baker County* below..

Table 8: Approved Route Features – Baker County

Project Features	Number of Sites*
Towers – Single Circuit 500-kV Lattice	281
Towers – Single Circuit 230-kV H-Frame	5
Towers – Single Circuit 230-kV 3-Pole Dead-end	4
Communication Station(s)	2
Light Duty Fly Yards	1
Multi-Use Areas	6
Pulling and Tensioning Sites	61
Station	0
Access Roads	**Total Miles**
Existing, 21-70% Improved	41.0
Existing, 71-100% Improved	22.2
New, Bladed	22.2

Table 8: Approved Route Features – Baker County

Project Features	Number of Sites*
New, Primitive	6.0
Crossings by Approved Route	**Number of Crossings***
High-Voltage Transmission Line Crossings[1]	9
Existing Road Crossings[2]	3
Existing Railroad Crossings[3]	1
[1] Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69 kV. [2] Source: Esri (2013); includes Interstate, federal, and state highways. [3] Source: Oregon Department of Transportation (2013). * Approximate. Source: B2HAPPDoc3-9 ASC 03_Exhibit C_Project_Location_ASC 2018-09-28, Table C-5.	

The facility includes two approved alternative transmission routes in Baker County.

Malheur County

The approved transmission line route crosses approximately 74.1 miles of land in Malheur County and includes various other facility components, as presented in Table 9, *Approved Route Features – Malheur County* below..

Table 9: Approved Route Features – Malheur County

Project Features	Number of Sites*
Towers – Single Circuit 500-kV Lattice	327
Towers – Single Circuit 500-kV H-Frame	6
Towers – Single Circuit 500-kV 3-Pole Dead-end	3
Towers – Single Circuit 138-kV H-Frame	8
Towers – Single Circuit 138-kV 3-Pole Dead-end	3
Communication Station(s)	3
Light Duty Fly Yards	2
Multi-Use Areas	9
Pulling and Tensioning Sites	83
Station	0
Access Roads	**Total Miles***
Existing, 21-70% Improved	41.7
Existing, 71-100% Improved	12.8
New, Bladed	53.1

~~Table 9: Approved Route Features – Malheur County~~

~~Project Features~~	~~Number of Sites*~~
~~New, Primitive~~	~~13.8~~
~~Crossings by Approved Route~~	~~Number of Crossings*~~
~~High Voltage Transmission Line Crossings[1]~~	~~4~~
~~Existing Road Crossings[2]~~	~~2~~
~~Existing Railroad Crossings[3]~~	~~1~~

~~[1] Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69 kV.~~
~~[2] Source: Esri (2013); includes Interstate, federal, and state highways.~~
~~[3] Source: Oregon Department of Transportation (2013).~~
~~* Approximate.~~
~~Source: B2HAPPDoc3-9 ASC 03_Exhibit C_Project_Location_ASC 2018-09-28, Table C-6.~~

The facility includes one approved alternative route in Malheur County, the Double Mountain alternative.

City of North Powder

Facility components approved within City of North Powder include an approximately 27.2-acre portion of a multi-use area.

City of Huntington

Facility components approved within City of Huntington include one multi-use area.

4.0 Facility Development

4.1 Construction

This site certificate authorizes a 4-year construction duration. Construction will generally occur between 7 a.m. and 7 p.m., Monday through Saturday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities.

Construction activities could occur simultaneously across the entirety of the 300-mile transmission line route. Construction activities will generally include the following phases:

Phase I - Civil construction
- Activities along the transmission line will involve clearing the corridor and constructing access roads and, if applicable, harvestable timber will be cleared then hauled off.

Phase II – Foundation Construction
- Foundations will be constructed at each structure site to support the steel towers. Track mounted drills and excavators will be mobilized to each structure site to excavate the

site and concrete trucks will then deliver concrete to the sites to construct the foundations.

Phase III – Structure Erection

- Steel lattice towers will be assembled at each site and erected on the foundations. Material will be delivered via flatbed trucks to each structure site and unloaded with forklifts and cranes where it will be assembled in pieces in the work area around the foundations.

Phase IV – Conductor Pulling/Tensioning

- Conductor will be pulled along the corridor and through the structures via helicopters while large man lift trucks provide work crews access to each structure.[6]

Construction will include approximately 437 workers and crews for the following activities: substation construction, ROW clearing, roads/pad grading, foundations, tower lacing, tower setting, wire stringing, restoration, blasting, materials management, mechanic & equipment management, refueling, dust control, construction inspection, materials testing, environmental compliance, and surveyors.

Construction will include the following vehicular trips:

- Up to 486 one-way worker trips per day
- Up to 620 one-way light construction trips per day
- Up to 188 one-way heavy construction trips per day

4.2 Operations and Maintenance

Operations and maintenance (O&M) activities shall include routine inspection and maintenance of the transmission line, in compliance with the Transmission Maintenance and Inspection Plan (TMIP) (see Condition OPR-OE-01).

In accordance with the TMIP, three types of line maintenance patrols will be conducted: routine line patrols/inspections, unscheduled emergency line patrols, and aerial vegetation patrols. The routine line patrols shall include a detailed visual inspection of the entire line conducted at least once per year.

Emergency line patrols shall be performed in response to any unexplained system outage or interruption, or whenever requested by a dispatcher, to identify major structural failures or issues.

Aerial vegetation patrols shall be conducted by a transmission utility arborist to identify and manage vegetation encroachments that threaten the transmission lines.

Transmission Patrolmen shall patrol and inspect the transmission lines at a minimum once a

[6] B2HAPPDoc13 DPO IPC Responses to Select DPO Comments Rec'd by 2019-11-07; B2HAPP DPO IPC Responses - City of La Grande comments 2019-10-09.

year to identify any transmission defects and any vegetation hazards that may develop between vegetation clearing cycles.

The TMIP requires that the certificate holder complete comprehensive 10-year maintenance inspection at least every 10-years.

O&M activities will also include short- and long-term monitoring and minimization measures for noxious weeds, restoration/reclamation, revegetation and habitat enhancement, as required by site certificate conditions provided in Section 5.0 of this site certificate.

4.3 Retirement/Decommissioning

The certificate holder shall retire or decommission the facility based on a retirement to be approved by the Council in accordance with the requirement of OAR 345-027-0110 and applicable conditions provided in Section 5.6 of this site certificate.

5.0 Site Certificate Conditions

5.1 Condition Format

The conditions in Sections 5.2 through 5.6 of this Site Certificate are organized and coded to indicate the phase of implementation, the standard the condition is required to satisfy, and an identification number (1, 2, 3, etc.).[7] The table below presents a "key" for phase of implementation:

Key	Type of Conditions/Phase of Implementation
GEN	General Conditions: Design, Construction and Operation
PRE	Pre-Construction Conditions
CON	Construction Conditions
OPR	Operational Conditions
RET	Retirement Conditions

The standards are presented using an acronym; for example, the General Standard of Review is represented in the condition numbering as "GS"; the Soil Protection standard is represented in the condition numbering as "SP" and so forth.

For example, the coding of Condition GEN-GS-01 represents that the condition is a general

[7] The identification number is not representative of an order that conditions must be implemented; it is intended only to represent a numerical value for identifying the condition.

condition (GEN) to be implemented during multiple phases including design, preconstruction, construction and/or operation of the facility, is required to satisfy the Council's General Standard of Review, and is condition number 1. The condition language also includes in brackets [ ] for the name of the condition as imposed in the Final Order on the Application (i.e. General Standard of Review Condition 1).

5.2 General Conditions: Design, Construction and Operation

Condition Number	(Site certificate conditions for all standards and phases)
STANDARD: GENERAL STANDARD OF REVIEW (GS) [OAR 345-022-0000]	
GEN-GS-01	a. **Construction Commencement Deadline:** The certificate holder shall begin construction of the facility within four years after the effective date of the site certificate. Under OAR 345-015-0085(8), the site certificate is effective upon execution by the Council chair and the certificate holder. Prior to beginning construction as defined in OAR 345-001-0010(12), the certificate holder shall provide the Department written verification of the date that it will begin construction, acknowledge the commencement of the construction completion timeline, and confirm the construction completion deadline as stated in General Standard of Review Condition 1(b). b. **Construction Completion Deadline:** The certificate holder shall complete construction of the facility within four years after the construction commencement date outlined in General Standard of Review Condition 1(a). Within 90 days of construction completion, the certificate holder shall provide the Department written notification of the anticipated date of construction completion. c. Authorization to construct and operate facility components, including alternative transmission line routes, expires if not constructed by the construction completion deadline established in General Standard of Review Condition 1(b). [General Standard of Review Condition 1, Mandatory Condition OAR 345-025-0006(4); Final Order on ASC]
GEN-GS-02	a. At least 180 days prior to beginning construction (unless otherwise agreed to by the Department), the certificate holder shall submit to the Department a construction plan outlining construction phasing or segments, activities and schedules for completing construction of the facility consistent with the site certificate. Submission of pre-construction surveys or plans shall be conducted in accordance to site certificate conditions and may occur consistent with the phase or segment of the facility that is being constructed. b. Upon Department verification of compliance with applicable pre-construction requirements in the site certificate for any phase or segment of the facility, the Department shall notify the certificate holder in writing that pre-construction requirements have been met and they may commence construction for that phase or segment. [General Standard of Review Condition 2; Final Order on ASC]
GEN-GS-03	The certificate holder shall design, construct, operate, and retire the facility: a. Substantially as described in the Final Order on the ASC and the site certificate; b. In compliance with the requirements of ORS Chapter 469, applicable Council rules, and applicable state and local laws, rules and ordinances in effect at the

	time the site certificate is issued; and c. In compliance with all applicable permit requirements of other state agencies. [General Standard of Review Condition 6; Mandatory Condition OAR 345-025-0006(3); Final Order on ASC]
GEN-GS-04	If the certificate holder becomes aware of a significant environmental change or impact attributable to the facility, the certificate holder shall, as soon as possible, submit a written report to the Department describing the impact on the facility and any affected site certificate conditions. [General Standard of Review Condition 8; Mandatory Condition OAR 345-025-0006(6); Final Order on ASC]
GEN-GS-05	Before any transfer of ownership of the facility or ownership of the site certificate holder, the certificate holder shall inform the Department of the proposed new owners. The requirements of OAR 345-027-0400 apply to any transfer of ownership that requires a transfer of the site certificate. [General Standard of Review Condition 10; Mandatory Condition OAR 345-025-0006(15); Final Order on ASC]
GEN-GS-06	Subject to conditions of the site certificate, the certificate holder may construct the facility anywhere within the site boundary (approved corridor(s)), and as described in ASC (Exhibit B and represented in ~~ASC~~ Exhibit C Attachment C-2 and C-3 mapsets) and RFA1 Figure 4-1. The approved corridors include: a. The transmission line route extending approximately 273-miles through Morrow, Umatilla, Union, Baker, and Malheur counties; b. West of Bombing Range Road alternative 1 and the west of Bombing Range Road alternative 2 in Morrow County; c. Morgan Lake alternative in Union County; d. Double Mountain alternative in Malheur County; e. Little Juniper Canyon alternative in Morrow County; f. True Blue Gulch alternative in Baker County; and ~~d.~~g. Durbin Quarry alternative in Baker County [General Standard of Review Condition 11, Site-Specific Condition OAR 345-025-0010(5); Final Order on ASC, AMD1]
STANDARD: ORGANIZATIONAL EXPERTISE (OE) [OAR 345-022-0010]	
GEN-OE-01	The certificate holder shall: a. Prior to construction, notify the Department and affected counties of the identity and qualifications of the major design, engineering, and construction contractor(s) for the facility. The certificate holder shall select contractors that have substantial experience in the design, engineering, and construction of similar facilities. b. During construction, report to the Department in its semi-annual construction progress report required pursuant to OAR 345-026-0080(1)(a) the identity and qualifications of any new or changes to its design, engineering and construction contractors. [Organizational Expertise Condition 2; Final Order on ASC]

GEN-OE-02	The certificate holder shall be responsible for any matter of non-compliance under the site certificate. Any notice of violation (NOV) issued under the site certificate will be issued to the certificate holder. Any civil penalties under the site certificate will be levied on the certificate holder. [Organizational Expertise Condition 5; Final Order on ASC]
GEN-OE-03	Within 72 hours after discovery of incidents or circumstances that violate the terms or conditions of the site certificate, the certificate holder must report the conditions or circumstances to the Department, in addition to the requirements of OAR 345-026-0170. [Organizational Expertise Condition 6; Final Order on ASC]
STANDARD: STRUCTURAL STANDARD (SS) [OAR 345-022-0020]	
GEN-SS-01	The certificate holder shall design, engineer, and construct the transmission lines, Longhorn Station, and communication stations in accordance with the International Building Code, Oregon Structural Specialty Code, and local building codes that are most current at the time that final engineering of each of these components is completed and in a manner that does not conflict with National Electrical Safety Code identified in Siting Standards for Transmission Lines Condition 3. [Structural Standard Condition 2; Final Order on ASC]
GEN-SS-02	The certificate holder shall design, engineer and construct the facility to avoid dangers to human safety and the environment presented by seismic hazards affecting the site that are expected to result from all maximum probable seismic events. As used in this rule "seismic hazard" includes ground shaking, ground failure, landslide, liquefaction triggering and consequences (including flow failure, settlement buoyancy, and lateral spreading), cyclic softening of clays and silts, fault rupture, directivity effects and soil-structure interaction. [Structural Standard Condition 3; Mandatory Condition OAR 345-025-0006(12); Final Order on ASC]
GEN-SS-03	The certificate holder shall notify the Department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if site investigations or trenching reveal that conditions in the foundation rocks differ significantly from those described in the application for a site certificate. After the Department receives the notice, the Council may require the certificate holder to consult with the Department of Geology and Mineral Industries and the Building Codes Division to propose and implement corrective or mitigation actions. [Structural Standard Condition 4; Mandatory Condition OAR 345-025-0006(13); Final Order on ASC]
GEN-SS-04	The certificate holder shall notify the Department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if shear zones, artesian aquifers, deformations or clastic dikes are found at or in the vicinity of the site. After the Department receives notice, the Council may require the certificate holder to consult with the Department of Geology and Mineral Industries and the Building Codes Division to propose and implement corrective or mitigation actions. [Structural Standard Condition 5; Mandatory Condition OAR 345-025-0006(14); Final

	Order on ASC]
STANDARD: SOIL PROTECTION (SP) [OAR 345-022-0022]	
GEN-SP-01	The certificate holder shall: a. Prior to construction of the facility, submit to the Department a ~~final copy of an~~ ODEQ-issued NPDES 1200-C General Construction Permit and ~~, including the final~~ Erosion Sediment Control Plan (ESCP). ~~The protective measures described in the 1200-C Permit Application and ESCP as provided in Attachment I-3 of the Final Order on the ASC, shall be included in the final ESCP.~~ b. During construction of the facility, the certificate holder shall conduct all work in compliance with the NPDES 1200-C General Construction Permit, ESCP or revised ESCP if applicable ~~and ESCP~~. The ESCP shall be revised if determined necessary by the certificate holder, certificate holder's contractor(s) or the Department. Any Department-required ESCP revisions shall be implemented within 14-days, unless otherwise agreed to by the Department based on a good faith effort to address erosion issues. [Soil Protection Condition 1; Final Order on ASC, AMD1]
GEN-SP-02	The certificate holder shall: a. Prior to construction of the facility, submit to the Department a final copy of a Construction ~~Spill Prevention Control and Countermeasures Plan (SPCC Plan).~~ Hazardous Waste Management and Spill Response Plan (HWMSRP). The protective measures described in the draft Construction HWMSRP~~SPCC Plan~~, as provided in Attachment G-4 of the Final Order on the RFA1 ~~ASC~~, shall be included in the final ~~SPCC~~ HWMSRP~~Plan~~, unless otherwise approved by the Department. b. During construction of the facility, the certificate holder shall conduct all work in compliance with the final Construction ~~SPCC~~ HWMSRP~~Plan~~. [Soil Protection Condition 2; Final Order on ASC, AMD1]
GEN-SP-03	Prior to operation, if the certificate holder is required by DEQ statutes or rules to implement a SPCC Plan for operation of the facility, the certificate holder shall submit to the Department an ~~copy of a DEQ-approved~~ operation-related SPCC Plan. The certificate holder shall maintain compliance with the operation-related SPCC Plan during operations at the Longhorn Station. [Soil Protection Condition 3; Final Order on ASC, AMD1]
GEN-SP-04	a. Prior to construction-related blasting, ~~in accordance with the OAR 345-025-0016 agency consultation process outlined in the draft Framework Blasting Plan (attachment G-5 of the Final Order on the ASC)~~ the certificate holder shall finalize, and submit to the Department ~~for approval~~, a final Blasting Plan inclusive of all measures included in the draft Framework Blasting Plan (Final Order on RFA1 Attachment G-5). The final Blasting Plan shall meet all applicable federal, state and local requirements related to the transportation, storage, and use of explosives. b. Prior to construction-related blasting, the certificate holder will consult with landowners regarding right-of-way acquisition, and during these consultations, the certificate holder will discuss with the landowner any blasting that the

	certificate holder plans to conduct on the landowner's property. If the landowner identifies a natural spring or well on the property, the certificate holder will notify the landowner that at the landowner's request, the certificate holder shall conduct pre-blasting baseline flow and water quality measurements for turbidity. The certificate holder shall compensate the landowner for adequate repair or replacement if damages to the flow or quality of the natural spring are caused by blasting. c. During construction-related blasting, the certificate holder shall conduct all work in compliance with the final Blasting Plan approved by the Department. [Soil Protection Condition 4; Final Order on ASC, AMD1]
STANDARD: LAND USE (LU) [OAR 345-022-0030]	
GEN-LU-01	For facility components in Morrow County, the certificate holder shall: a. Prior to construction of any phase or segment of the facility, provide to the Department a copy of the following Morrow County approved permits, if such permits are required by Morrow County zoning ordinances: i. Zoning permit for facility components to be located in General Industrial (MG) and Port Industrial Zones. ii. Flood plain development permit, for work in the Flood Plain Overlay Zone; iii. Utility crossing permit; iv. Access approach site permit; and v. Construction permit to build on right-of-way. b. Prior to construction of a stream crossing at, or substantial road modification adjacent to, a Goal 5 stream including Sand Hollow Creek, Little Butter Creek, Butter Creek, and Matlock Creek, consult with ODFW on construction methods, measures to minimize riparian impacts, and measures to evaluate and monitor riparian impacts in order to demonstrate maintenance of 75 percent of vegetation layers or strata within the defined riparian zone will be implemented. Consultation with DEQ and Morrow County Soil Conservation Services shall be completed if determined by the certificate holder, the Department, or ODFW to be necessary based on extent of potential water and erosion impacts. (MCZO Section 3.200(D)). c. During construction, the certificate holder shall comply with the conditions of permits and consultation requirements listed in (a) and (b), and if applicable, (d). d. During construction, if the certificate holder determines additional County-approved permits are required, the certificate holder shall provide to the Department a copy of those additional permits. e. Prior to construction of any phase or segment of the facility, the certificate holder shall provide to the Morrow County Weed Supervisor a list of the suppliers that will be supplying the aggregate used in construction in Morrow County. The certificate holder shall ensure that said suppliers provide the Morrow County Weed Supervisor reasonable access to the aggregate sites for inspection for weeds. [Land Use Condition 1; Final Order on ASC]

GEN-LU-02	For facility components in Morrow County, the certificate holder shall design the facility to comply with the following setback distances and other requirements: Significant Resource Overlay Zone (MCZO Section 3.200(D)(3)(b)) a. Buildings and the fixed bases of the transmission line towers shall be setback at least 100 feet from the high-water mark of all Goal 5 streams (i.e. Sand Hollow Creek, Little Butter Creek, Butter Creek and Matlock Canyon Creek) and Little Juniper Creek. Sand Hollow and Little Juniper Flood Pain Overlay Zones (MCZO Section 3.100(5.1-1) b. Buildings and structures ~~located within the multi-use area~~ shall not be located within ~~the Sand Hollow~~ Flood Plain Overlay Zone ~~(see ASC Exhibit K Figure K-21)~~ unless anchored to prevent flotation, collapse or lateral movement of the structure. In the EFU Zone (Based solely on certificate holder representations in the ASC) c. Buildings and the fixed bases of the transmission line towers shall be setback as follows: i. Front yards shall be set back at least 20 feet from minor collector road rights-of-way, 30 feet from major collector road rights-of-way, 80 feet from arterial road rights-of-way, and 100 feet from intensive agricultural uses; ii. Side yards shall be set back at least 20 feet from the property line, 30 feet for corner lots, and 100 feet from intensive agricultural uses; and iii. Rear yards shall be set back at least 25 feet from the property line, and 100 feet from intensive agricultural uses. d. Buildings and the fixed bases of the transmission line towers shall be set back at least 100 feet from the high-water mark of all streams and lakes. In the General Industrial Zone (MCZO Section 3.070(D)) e. Buildings and the fixed bases of the transmission line towers shall be set back at least 50 feet from arterial road rights-of-way, 30 feet from collector road rights of-way, and 20 feet from lower-class road rights-of-way. In the Port Industrial Zone (MCZO Section 3.073(D)) f. Buildings associated with the Longhorn Station and multi-use area, and the fixed bases of the transmission line towers shall be setback as follows: i. Front yards shall be set back at least 30 feet from the property line; buildings and structures shall be setback at least 90 feet from the centerline of any public, county, or state road; ii. Rear and side yards shall be set back at least 10 feet from the property line. [Land Use Condition 2; Final Order on ASC, AMD1]
GEN-LU-03	For facility components in Umatilla County, the certificate holder shall: a. Prior to construction of any phase or segment of the facility, provide to the Department a copy of the following Umatilla-County issued permits: i. Zoning Permit for each tax lot crossed by facility components evaluated as a Utility Facility Necessary for Public Service (UCDC 152.059) including transmission line, new roads, substantially modified roads, multi-use areas

	(including batch plant and helipads), and communication stations in EFU-zoned land. ii. Installation of Utilities on County and Public Roads Permit. b. Road Approach and Crossing Permits as determined necessary by County Public Works Department. If after construction commencement the certificate holder determines additional County-approved permits are required, the certificate holder shall provide to the Department a copy of those additional permits. c. Prior to construction of any phase or segment of the facility, provide to the Department and Umatilla County a copy of the ODEQ issued Air Contaminant Discharge or General Permit for the mobile batch plant. d. During construction, the certificate holder shall comply with all condition requirements of permits identified under (a), (b), and (c) of this condition. [Land Use Condition 3; Final Order on ASC]
GEN-LU-04	For facility components located in Umatilla County, the certificate holder shall design the facility to comply with the following setback distances and other requirements: In All Zones: a. Buildings, the fixed bases of transmission line towers, and new access roads shall be set back from Class I streams at least 25-feet or one-half the stream width, whichever is greater. b. Permanent vegetation removal within the riparian zone of all Class I streams shall retain 75% of all layers or strata of vegetation. c. Within the transmission line right-of-way, a maximum of 25% of existing natural vegetation along streams, lakes, and wetlands may be removed, unless removal of a greater quantity of vegetation is necessary for reliability purposes. d. The certificate holder shall coordinate with the Oregon Department of Fish and Wildlife and Soil and Water Conservation District on minor drainage improvements necessary to ensure effective drainage on surrounding agricultural lands. Existing drainage ditches may be cleared to original specifications without review. e. Access points to multi-use areas and communication stations shall be limited to one every 200 feet. f. New roads that enter onto a public or county road or state or federal highway shall be constructed of at least similar if not the same material as the public or county road or state or federal highway, and the material shall extend at least 25 feet back from the edge of the existing travel lane surface. In the EFU Zone (Based solely on certificate holder representations in the ASC): g. Buildings shall be setback as follows: (i) at least 30 feet from the property line or private road easement boundary; or (ii) at least 60 feet from the center line of the road, highway, or private road easement, whichever is greater. h. Buildings and the fixed bases of the transmission line towers shall be set back at least 100 feet from the high-water mark of all streams, lakes, and wetlands. i. Parking lots shall be designed and operated as follows:

	i. areas used for standing and maneuvering of vehicles at the multi-use areas will have paved surfaces maintained adequately for all weather use and will be drained as to avoid flow of water across public sidewalks; ii. parking spaces along the outer boundaries of any multi-use area parking lot will be contained by a curb at least four inches high and set back a minimum of four and one-half feet from the property line, or by a bumper rail; and iii. artificial lighting, if provided, will not create or reflect glare in a residential zone or on any adjacent dwelling. <u>In the LI zone:</u> j. The temporary multi-use area shall include visibility-obscuring fencing or shall setback the fence or limit areas of activity a minimum of 500 feet from adjacent public roads. k. The temporary multi-use area shall be designed to comply with front, side, and rear yard setbacks of 20 feet. <u>In the RTC Zone:</u> l. The temporary multi-use area shall include a visibility-obscuring fencing as necessary to limit views of the area by travelling public and from surrounding properties. [Land Use Condition 5; Final Order on ASC]
GEN-LU-05	For facility components in Union County, the certificate holder shall: a. Prior to construction of any phase or segment of the facility, provide to the Department a copy of the following Union County-approved permits, if such permits are required by Union County zoning ordinances: 1. Flood plain development permit; 2. Road approach permit; and 3. Work in county right-of-way permit. b. During construction, the certificate holder shall comply with conditions of permits listed in (a) and (c). c. During construction, if the certificate holder determines additional County-approved permits are required, the certificate holder shall provide to the Department a copy of those additional permits. [Land Use Condition 6; Final Order on ASC]
GEN-LU-06	During construction of any phase or segment of the facility in Union County, the certificate holder shall construct the facility to comply with the following setback distances and other requirements: <u>In All Zones:</u> a. Buildings, the fixed bases of transmission line towers, and new access roads shall be set back from Class I streams at least 25-feet or one-half the stream width, whichever is greater. b. Permanent vegetation removal within the riparian zone of all Class I streams shall retain 75% of all layers or strata of vegetation. <u>In the EFU Zone (Based solely on certificate holder representations in the ASC):</u>

	c. Buildings shall be setback as follows: (i) front yards shall be set back at least 20 feet from property lines and road rights-of-way; (ii) and rear yards shall be set back at least 10 feet from property lines and road rights-of-way. d. A clear-vision area shall be maintained on the corners of all multi-use area properties at the intersection of two or more streets or a street and a railroad as follows: (i) the clear-vision area shall consist of a triangular area with the two lot lines measuring a distance of 30 feet or at an intersection involving an alley of 10 feet; and (ii) the clear-vision area shall not contain any planting, fence, wall, structure, or temporary or permanent obstruction exceeding 2.5 feet in height, except for trees with branches removed to a height of 8 feet. e. Concrete batch plants shall not be located within 2 miles of a vineyard totaling at least 40 acres and which was planted as of February 27, 2013. In the Agricultural Grazing Zone: f. Buildings shall be setback as follows: (i) front yards shall be set back at least 20 feet from property lines and road rights-of-way; and (ii) rear yards shall be set back at least 10 feet from property lines and road rights-of-way. g. All signage shall comply with the provisions of UCZPSO 3.~~08~~17. In the Timber-Grazing Zone: h. Buildings shall be setback as follows: (i) front and rear yards shall be set back at least 20 feet from property lines and road rights-of-way; (ii) and side yards shall be set back at least 10 feet from property lines and road rights-of-way. i. All signage shall comply with the provision of UCZPSO 5.08. [Land Use Condition 7; Final Order on ASC, AMD1]
GEN-LU-07	For facility components in Baker County, the certificate holder shall: a. Prior to construction in Baker County, the certificate holder shall provide to the department a copy of the following Baker County-approved permits, if such permits are required by Baker County ordinances: i. Flood plain development permit; ii. Road approach permit; and iii. Work in county right-of-way permit. b. If after commencement of construction the certificate holder determines additional County-approved permits are required, the certificate holder shall provide to the department a copy of those additional permits. *c.* During construction, the certificate holder shall comply with conditions of permits listed in (a) and (b). [Land Use Condition 9; Final Order on ASC]
GEN-LU-08	For facility components in Malheur County, prior to construction of any phase or segment of facility components, the certificate holder shall: a. Obtain one zoning permit for development of facility components in both the EFU and ERU zone, and one zoning permit for development of facility components in the Heavy Industrial (C-12) zone; copies of zoning permits shall be provided to the Department. b. Provide to the Department a copy of Malheur County-approved Flood plain development permits for each location where development would occur

	within a regulatory floodplain. c. If after construction commencement, the certificate holder determines additional County-approved permits are required, the certificate holder shall provide a copy of those permits to the Department. [Land Use Condition 11; Final Order on ASC]
GEN-LU-09	For facility components in Malheur County, the certificate holder shall design the facility to comply with the following setback distances and other requirements: In the EFU and ERU Zones (Based solely on certificate holder representations in the ASC): a. Buildings shall be setback as follows: i. at least 40 feet from a street or road right-of-way; and ii. at least 15 feet from any other property line. b. No sight obscuring fence exceeding three feet in height shall be placed within the 40-foot street setback, also within this setback shrubbery other than trees shall be maintained at heights not exceeding three feet. [Land Use Condition 12; Final Order on ASC]
GEN-LU-10	For the multi-use area in City of North Powder, the certificate holder shall design the site to comply with the following setback distance and other requirements: In the Commercial Interchange Zone a. All signs shall comply with NPZO 4.04(B) development standards (ASC Exhibit K p. K-275) b. Based solely on certificate holder representations in ASC, buildings shall not exceed 45 feet in height and shall be setback per NPZO Section 4.03 (ASC Exhibit K p. K-277): i. Front yards shall be set back at least 30 feet from property lines; ii. Side yards shall be setback at least 20 feet from a Residential Zone, street, or corner lot; and iii. Rear yards shall be set back at least 20 feet from a Residential Zone. [Land Use Condition 13; Final Order on ASC]
GEN-LU-11	The certificate holder shall: a. Prior to construction of any phase or segment of the facility, in accordance with the OAR 345-025-0016 agency consultation process outlined in the draft Agriculture Assessment and Mitigation Plan (Attachment K-1 of the Final Order on the ASC), submit to the Department a final Agricultural Assessment and Mitigation Plan. b. During construction and operation of any phase or segment of the facility, implement the Agriculture Mitigation Plan as finalized per sub(a) of this condition. c. During operation, implement a post-construction monitoring plan to identify any remaining soil and agricultural impacts associated with construction that require additional restoration or mitigation, in accordance with Section 7.0 of the Agricultural Mitigation Plan, Attachment K-1 of the Final Order on the ASC. [Land Use Condition 14; Final Order on ASC]
GEN-LU-12	The certificate holder shall limit its transmission line right-of-way in Goal 4 forest

	lands to no wider than 300 feet. a. During construction, the certificate holder shall limit its use of the portion of the transmission line right-of-way located beyond the center 100 feet to vegetation maintenance activities. b. During operation, the certificate holder shall limit its use of the portion of the transmission line right-of-way located beyond the center 100 feet to vegetation maintenance activities. [Land Use Condition 15; Final Order on ASC]
GEN-LU-13	The certificate holder shall: a. Prior to construction of any phase or segment of the facility, in accordance with the OAR 345-025-0016 agency consultation process outlined in the draft Right-of-Way Clearing Assessment (Attachment K-2 of the Final Order on the ASC), submit to the Department for its approval, a final Right-of-Way Clearing Assessment. The protective measures described in the draft Right-of-Way Clearing Assessment in Attachment K-2 of the Final Order on ASC shall be included and implemented as part of the final Right-of-Way Clearing Assessment, unless otherwise approved by the Department. b. During construction, the certificate holder shall conduct all work in compliance with the final Right-of-Way Clearing Assessment. [Land Use Condition 16; Final Order on ASC]
STANDARD: PROTECTED AREA (PA) [OAR 345-022-0040]	
GEN-PA-01	During design and construction of the facility, the certificate holder must: a. Coordinate construction activities in Ladd Marsh Wildlife Area with the Wildlife Area manager. b. Provide evidence to ODFW of a determination of eligibility and findings of effect pursuant to Section 106 NRHP compliance for the facility and the final HPMP for the portion of the facility that would cross Ladd Marsh Wildlife Area subject to confidential material submission materials. [Protected Areas Condition 1; Final Order on ASC]
GEN-PA-02	During design and construction of the facility, if the Morgan Lake alternative route is selected, the certificate holder shall ensure that facility components are not sited within the boundary of the Ladd Marsh Wildlife Area. The certificate holder shall provide to the Department a final design map for Union County demonstrating that the site boundary and facility components are located outside of the protected area boundary. [Protected Areas Condition 2; Final Order on ASC]
STANDARD: RETIREMENT AND FINANCIAL ASSURANCE (RT) [OAR 345-022-0050]	
GEN-RT-01	The certificate holder must prevent the development of any conditions on the site that would preclude restoration of the site to a useful, non-hazardous condition to the extent that prevention of such site conditions is within the control of the certificate holder. [Retirement and Financial Assurance Condition 1, Mandatory Condition OAR 345-025-0006(7); Final Order on ASC]

STANDARD: FISH AND WILDLIFE HABITAT (FW) [OAR 345-022-0060]	
GEN-FW-01	The certificate holder shall: a. Prior to construction of a phase or segment of the facility, finalize, in accordance with the OAR 345-025-0016 agency consultation process outlined in the draft Reclamation and Revegetation Plan (Attachment P1-3 of the Final Order on the ASC), and submit to the Department for its approval a final Reclamation and Revegetation Plan for that phase or segment of the facility to be constructed. The protective measures described in the draft Reclamation and Revegetation Plan in Attachment P1-3 of the Final Order on the ASC shall be included and implemented as part of the final Reclamation and Revegetation Plan, unless otherwise approved by the Department. If the certificate holder does not mitigate for temporal loss of temporary habitat impacts as presented in HMP Table 10, c~~C~~omponents of the plan to be finalized are as follows. All components can be specific to the phase or segment of the facility to be constructed: i. Habitat (type/subtype) and disturbance impact (acres) assessment based on final facility design and layout and preconstruction field verification of disturbance areas. ii. Identification and mapping of reclamation treatment and control monitoring sites per habitat type. iii. Identification and mapping of transect size and quantity, based on size of disturbance areas, to be paired with treatment and control monitoring sites per habitat type. iv. Collection of preconstruction qualitative and quantitative data at treatment and control monitoring sites. v. Development of site-specific data analysis protocol for photographs and a standardized data-recording form. vi. Identification, and confirmation of availability, of appropriate seed mixes per impacted habitat type b. Post-construction of a phase or segment of the facility, the certificate holder shall conduct all work in compliance with the final Reclamation and Revegetation Plan referenced in sub(a) of this condition. [Fish and Wildlife Condition 1; Final Order on ASC, AMD1]
GEN-FW-02	During facility operations and maintenance, t~~T~~he certificate holder shall~~:~~ ~~a. Prior to construction of a phase or segment of the facility, in accordance with the OAR 345-025-0016 agency consultation process outlined in the draft Vegetation Management Plan (Attachment P1-4 of the Final Order on the ASC), finalize and submit to the Department for its approval, in consultation with ODFW, a final Vegetation Management Plan. The protective measures described in the draft Vegetation Management Plan in Attachment P1-4 of the Final Order on the ASC, shall be included and implemented as part of the final Vegetation Management Plan, unless otherwise approved by the Department.~~

	~~During construction, the certificate holder shall~~ conduct all work in compliance with ~~the final~~ Vegetation Management Plan ~~referenced in sub(a) of this condition.~~, substantially as presented in Final Order on ASC Attachment P1-4. ~~b. During operation, the certificate holder shall conduct all work in compliance with the final Vegetation Management Plan referenced in sub(a) of this condition.~~ [Fish and Wildlife Condition 2; Final Order on ASC, AMD1]
GEN-FW-03	The certificate holder shall: a. Prior to construction of a phase or segment of the facility, in accordance with the OAR 345-025-0016 agency consultation process outlined in the draft Noxious Weed Plan(s) (Attachment P1-5 of the Final Order on the ASC), finalize, and submit to the Department for its approval, a final Noxious Weed Plan. The protective measures as described in the draft Noxious Weed Plan provided as Attachment P1-5 to the Final Order on the ASC, shall be included and implemented as part of the final Noxious Weed Plan, unless otherwise approved by the Department. b. During operation, the certificate holder shall conduct all work in compliance with the final Noxious Weed Plan referenced in sub(a) of the condition. [Fish and Wildlife Condition 3; Final Order on ASC]
GEN-FW-04	The certificate holder shall: a. Prior to construction of any phase or segment of the facility, finalize, and submit to the Department for its approval, a final Fish and Wildlife Habitat Mitigation Plan, based on the plan provided as Attachment P-6 of the Final Order on the ASC. The final Fish and Wildlife Habitat Mitigation Plan shall include the following, unless otherwise approved by the Department: Information To Be Included in Final Habitat Mitigation Plan, based on the phase or segment of the facility to be constructed: i. The areas that were surveyed for biological resources; ii. The location of all facility components and related and supporting facilities; iii. The areas that will be permanently and temporarily disturbed during construction; iv. The protective measures described in the draft Fish and Wildlife Habitat Mitigation Plan in Attachment P-6 of the Final Order on the ASC; and v. The results of the biological surveys referenced in Fish and Wildlife Conditions 15 and 16. Final Habitat Mitigation Plan Shall Address the Following: The final Fish and Wildlife Habitat Mitigation Plan shall address the potential habitat impacts through mitigation banking, an in-lieu fee program, development of mitigation projects by the certificate holder, or a combination of the same. i. To the extent the certificate holder shall develop its own mitigation projects, the final Habitat Mitigation Plan shall: 1. Identify the location of each mitigation site, including a map of the same; 2. Identify the number of credit-acres that each mitigation site will

	provide for the certificate holder; 3. Include a site-specific mitigation management plan for each mitigation site that provides for: A. A baseline ecological assessment; B. Conservation actions to be implemented at the site; C. An implementation schedule for the baseline ecological assessment and conservation actions; D. Performance measures; E. A reporting plan; and F. A monitoring plan. ii. To the extent the certificate holder shall utilize a mitigation bank or in-lieu fee program, the final Habitat Mitigation Plan shall: 1. Describe the nature, extent, and history of the mitigation bank or in-lieu fee program; and 2. Identify the number of credit-acres that each mitigation site will provide for the certificate holder. iii. Oregon's Elk Mitigation Framework shall be used to calculate the amount of elk habitat compensatory mitigation required for the facility. iv. The final Fish and Wildlife Habitat Mitigation Plan may be amended from time to time by agreement of the certificate holder and the Department. Such amendments may be made without amendment to the site certificate. The Council authorizes the Department to agree to amendments of the plan and to mitigation actions that may be required under the plan; however, the Council retains the authority to approve, reject, or modify any amendment of the plan agreed to by the Department. b. During construction, the certificate holder shall commence implementation of the conservation actions set forth in the final Fish and Wildlife Habitat Mitigation Plan referenced in sub(a) of this condition. [Fish and Wildlife Condition 4; Final Order on ASC]
GEN-FW-05	Prior to construction of any phase or segment of the facility, the certificate holder shall train all construction personnel on the protection of cultural, paleontological, ecological, and other natural resources such as (a) federal and state laws regarding antiquities, paleontological resources, and plants and wildlife, including collection and removal; (b) the importance of these resources; (c) the purpose and necessity of protecting them; and (d) reporting and procedures for stop work. Prior to the training, the certificate holder must provide the Department with a copy of training materials that will be used such as Power Point slides, information hand-outs, maps, and other materials. [Fish and Wildlife Condition 6; Final Order on ASC]
GEN-FW-06	Prior to and during construction, the certificate holder shall flag the following environmentally sensitive areas as restricted work zones: a. State protected plant species; b. Wetlands and waterways that are not authorized for construction impacts;

	c. Areas with active spatial and seasonal restrictions; and d. Category 1 habitat. Prior to construction of a phase or segment of the facility, the certificate holder shall submit a mapset showing the location of environmentally sensitive areas and restricted work zones to the department for its approval. The certificate holder shall make the mapset available to all construction personnel. [Fish and Wildlife Condition 7; Final Order on ASC]
GEN-FW-07	During construction and operation, the certificate holder shall employ a speed limit of 25 miles per hour or less on private facility access roads. [Fish and Wildlife Condition 8; Final Order on ASC]
GEN-FW-08	The certificate holder shall construct the transmission line to avian-safe design standards, consistent with the certificate holder's Avian Protection Plan (Idaho Power 2015) as provided in Attachment P1-9 of the Final Order on the ASC. Within 30 days of identification of an avian fatality within the site boundary, where predicted causal factor is electrocution or collision, the certificate holder shall report the species name and location identified (Milepost) and shall consult with ODFW and the Department on retrofit technologies or other adaptive management strategy to minimize fatality risk. [Fish and Wildlife Condition 10; Final Order on ASC]
STANDARD: SCENIC RESOURCES (SR) [OAR 345-022-0080]	
GEN-SR-01	The certificate holder shall use dull-galvanized steel for lattice towers and non-specular conductors. [Scenic Resources Condition 1; Final Order on ASC]
GEN-SR-02	If, at final facility design, the transmission line route crosses Ladd Marsh Wildlife Management Area in Union County, the certificate holder shall select transmission structures to be constructed between approximately Milepost 108 and Milepost 113 with design modifications including Lattice-frames with a ~~Natina~~ patina finish. [Scenic Resources Condition 2; Final Order on ASC, AMD1]
GEN-SR-03	At final facility design, the certificate holder shall select transmission structures, to be constructed in the vicinity of the National Historic Oregon Trail Interpretive Center between approximately Milepost 145.1 and Milepost 146.6, with the following design modifications: a. H-frames; b. Tower height no greater than 130 feet; and c. Weathered steel (or an equivalent coating). Additionally, the certificate holder shall construct the facility using tower structures that meet the following criteria between approximately Milepost 146.6 and Milepost 146.7: a. H-frames; b. Tower height no greater than 154 feet; and c. Weathered steel (or an equivalent coating). [Scenic Resources Condition 3; Final Order on ASC]
GEN-SR-04	At final facility design, the certificate holder shall select transmission structures, to

	be constructed in the vicinity of Birch Creek Area of Critical Environmental Concern between approximately Milepost 197.9 and Milepost 199.1, with design modifications including H-frame, with structure height not to exceed 100 feet. [Scenic Resources Condition 4; Final Order on ASC]
STANDARD: HISTORIC, CULTURAL, AND ARCHEOLOGICAL RESOURCES (HC) [OAR 345-022-0090]	
GEN-HC-01	During final design and construction of the facility, the certificate holder shall design and locate facility components to avoid direct impacts to Oregon Trail/National Historic Trail resources consistent Attachment S-9 Historic Properties Management Plan (HPMP) of the Final Order on the ASC. [Historic, Cultural and Archeological Resources Condition 1; Final Order on ASC]
GEN-HC-02	Prior to construction of a phase or segment of the facility, subject to confidential material submission procedures, and based on 1) new survey data from previously unsurveyed areas and 2) the final design of the facility, the certificate holder shall submit to the Department, the State Historic Preservation Office (SHPO), and applicable Tribal Governments, for review and Department approval a final Historic Properties Management Plan (HPMP) (Final Order on ~~ASC~~ RFA1 Attachment S-9). The Department may engage its consultant to assist in review of the HPMP. The certificate holder shall conduct all construction activities in compliance with the final Department-approved HPMP. [Historic, Cultural and Archeological Resources Condition 2; Final Order on ASC, AMD1]
STANDARD: RECREATION (RC) [OAR 345-022-0100]	
GEN-RC-01	If the Morgan Lake alternative facility route is selected, the certificate holder shall construct the facility using tower structures that meet the following criteria for the transmission line that would be visible from Morgan Lake Park, specifically between milepost (MP) 5.0 to MP 8.0 of the Morgan Lake alternative, as shown on ASC Exhibit C, Attachment C-3, Map 8. a. H-frames; b. Tower height no greater than 130 feet; and c. Weathered steel (or an equivalent coating). [Recreation Condition 1; Final Order on ASC]
STANDARD: PUBLIC SERVICES (PS) [OAR 345-022-0110]	
GEN-PS-01	At least 90 days prior to use of a helicopter(s) during construction, unless otherwise agreed to by the Department, the certificate holder shall submit to the Department and each affected County Planning Department a proposed Helicopter Use Plan. The plan must be approved by the Department, in consultation with each county where helicopter use is proposed, prior to use of a helicopter during construction. The certificate holder shall conduct all work in compliance with the approved Helicopter Use Plan. The Helicopter Use Plan shall identify or provide: a. The type of helicopters to be used (all helicopters must be compliant with the noise certification and noise level limits set forth in 14 CFR § 36.11); b. The duration of helicopter use; c. Approximate helicopter routes to be used;

	d. Protected areas and recreation areas within two miles of the approximate helicopter routes; e. Roads or residences over which external loads will be carried; f. Multi-use areas and light-duty fly yards containing helipads shall be located: (i) in areas free from tall agricultural crops and livestock; (ii) at least 500 feet from organic agricultural operations; and (iii) at least 500 feet from existing dwellings on adjacent properties; g. Flights shall occur only between sunrise and sunset; ~~h. At least 30 days P~~ At least 3 days prior to initiating helicopter operations at any multi-use area or light-duty fly yard, the certificate holder shall contact adjacent property owners within 1,000 feet of the relevant multi-use area or light-duty fly yard; ~~i.~~h. ~~At least 30 days prior to initiating~~ Prior to helicopter operations, the certificate holder shall consult with the Oregon Department of Aviation regarding the preparation and posting of notices to airmen regarding the location and nature of work being performed. The notice will be posted at each of the public airports in the vicinity of the facility to alert other aviators of the location and timing of facility-related helicopter construction activities; and ~~j.~~i. The certificate holder shall maintain a customer service telephone line to address, among other things, complaints regarding helicopter operations. [Public Services Condition 3; Final Order on ASC, AMD1]
GEN-PS-02	Prior to construction of a facility phase or segment, in accordance with the OAR 345-025-0016 agency consultation process outlined in the plan (Attachment U-3 of the Final Order on the ASC), the certificate holder shall submit final Fire Prevention and Suppression Plan(s) to the Department for approval. The plan finalization process shall consider (a)(i) and (a)(ii) unless otherwise identified by a land management agency or other participating review agency: a. The protective measures as described in the draft Fire Prevention and Suppression Plan as provided in Attachment U-3 of the Final Order on the ASC and: i. ~~Wildfire~~ Fire training for onsite workers and facility personnel be conducted by individuals that are National Wildfire Coordination Group and Federal Emergency Management Agency certified. ii. Specific seasonal work restrictions, onsite fire-fighting equipment and necessary fire protection resources based on: 1) documented evaluation of reasonably available sources related to wildfire risk and sensitive seasonal conditions such as high temperatures, drought and high winds; and 2) update Table PS-9 of the Final Order on the ASC based on information obtained from the LGRFPD on the number of full-time and volunteer employees, number and type of equipment/vehicles, and response times to the facility. Response time must consider LGRFPD crew mobilization time and access limitations

	(e.g., road condition, level of service and impact of multi-users from Morgan Lake Park, residents and emergency services. b. A description of the fire districts and rural fire protection districts that will provide emergency response services during construction and copies of any agreements between the certificate holder and the districts related to that coverage. During construction and operation of the facility, as applicable, a~~A~~ll work must be conducted in compliance with the approved plan ~~during construction and operation, as applicable, of the facility~~. [Public Services Condition 6; Final Order on ASC, AMD1]
GEN-PS-03	~~The certificate holder shall:~~ ~~a. Prior to operation, provide a copy of its Wildfire Mitigation Plan to the Department and each affected county which provides a wildfire risk assessment and establishes action and preventative measures based on the assessed operational risk from and of wildfire in each county affected by the facility.~~ ~~b. During operation, the certificate holder shall update the Wildfire Mitigation Plan on an annual basis, or frequency determined acceptable by the Department in consultation with the Oregon Public Utilities Commission.~~ ~~c. During operation, for the service territories the facility would be located within, the certificate holder shall provide to each of the fire districts and rural fire protection a contact phone number to call in the event a district needs to request an outage as part of a fire response.~~ ~~d. Any Wildfire Mitigation Plan required by the Oregon Public Utilities Commission shall be considered by EFSC as meeting the requirements of this condition.~~ [DELETED] [Public Services Condition 7; Final Order on ASC; AMD1]
STANDARD: WILDFIRE PREVENTION AND RISK MITIGATION (WMP) [OAR 345-022-0115]	
GEN-WMP-01	a. Prior to and during operation, the OPUC-approved Wildfire Mitigation Plan (WMP) shall: i. Evaluate fire-related risks for the entire facility in all five counties in Oregon, regardless of certificate holder service territory or ownership of the facility. ii. Require procedures and mitigation measures, including the applicable measures in the Public Safety Power Shutoff (PSPS) Plan, to apply to the entire facility in all five counties in Oregon, regardless of certificate holder service territory or ownership of the facility. b. Prior to operation, certificate holder shall provide a copy of the most recent OPUC-approved Wildfire Mitigation Plan that applies to the facility to the Department and each affected county. [Wildfire Prevention and Risk Mitigation Condition 1; Final Order on AMD1]
STANDARD: WASTE MINIMIZATION (WM) [OAR 345-022-0120]	
GEN-WM-01	a. At least 90 days prior to construction of a facility phase or segment, unless

otherwise agreed to by the Department, the certificate holder shall submit to the Department a Construction Waste Management Plan. The Department must review and approve the plan prior to construction of a facility phase or segment. The site certificate holder shall conduct all work in compliance with the approved Plan. The Plan must address, at a minimum:

i. The number and types of waste containers to be maintained at multi-use areas and pulling and tensioning sites;
ii. Waste segregation methods for recycling or disposal;
iii. Names and locations of appropriate recycling and waste disposal facilities, collection requirements, and hauling requirements to be used during construction;
iv. Recycling steel and other metal scrap;
v. Recycling wood waste;
vi. Recycling packaging wastes such as paper and cardboard;
vii. Collecting non-recyclable waste for transport to a local landfill by a licensed waste hauler or by using facility equipment and personnel to haul the waste;
viii. Segregating all hazardous and universal wastes such as used oil, oily rags and oil- absorbent materials, mercury-containing lights and lead-acid and nickel cadmium batteries for disposal by a licensed firm specializing in the proper recycling or disposal of hazardous and universal wastes;
ix. When possible, discharging concrete truck rinse-out within foundation holes, completing truck wash-down off-site, and burying other concrete waste as fill on-site whenever possible; and
x. For waste hauling and disposal within Morrow County, the certificate holder shall ensure its personal or third party contractors adhere to the applicable requirements in the Morrow County Solid Waste Management Ordinance Section 5.000 Public Responsibilities, 5.010 Transportation of Solid Waste and 5.030 Responsibility for Propose Disposal of Hazardous Waste which requires that all loads be covered and secured and that operators be responsible for hazardous waste disposal in accordance with applicable regulatory requirements.
xi. If required by county ordinance, solid waste transported on public roads must be covered and secured during transporting, including:
    - Loads which are totally contained within an enclosed vehicle or container;
    - Loads of solid waste contained in garbage cans with tightly fitting lids, tied plastic bags or similar totally enclosed individual containers that are completely contained within the walls of a vehicle or container, such that no solid waste can reasonably be expected to escape during hauling;
    - Loads of brush, building materials and similar bulky materials which are secured in or on the hauling vehicle or completely

	contained within the walls of a vehicle or container, such that none can reasonably be expected to escape during hauling; or • Loads consisting entirely of rock, concrete, asphalt paving, stumps and similar materials that are completely contained within the walls of a vehicle or container, such that none can reasonably be expected to escape during hauling. b. During construction, in the six month construction report required pursuant to OAR 345-026-0080(1)(a), provide information demonstrating compliance with the requirements of sub(a) of the condition. ~~A requirement that the certificate holder report to the Department on the implementation of the Plan during construction must be included.~~ [Waste Minimization Condition 1; Final Order on ASC, AMD1]
STANDARD: SITING STANDARDS FOR TRANSMISSION LINES (TL) [DIVISION 24]	
GEN-TL-01	To reduce or manage human exposure to electromagnetic fields, the certificate holder shall design and construct: a. All aboveground 500-kV transmission lines with a minimum clearance of 34.5 feet from the ground under all operating conditions; b. All aboveground 230-kV transmission lines with a minimum clearance of 20 feet from the ground under all operating conditions; and c. All aboveground 138-kV transmission lines with a minimum clearance of 20 feet from the ground under all operating conditions. d. In areas where an aboveground transmission line will cross an existing transmission line, the certificate holder shall construct the transmission line at a height and separation that would ensure that alternating current electric fields do not exceed 9-kV per meter at one meter above the ground surface. e. The Department may authorize a lower conductor clearance in areas determined to not be accessible to the public or otherwise demonstrated by the applicant to be compliant with the standard. [Siting Standards for Transmission Lines Condition 1; Final Order on ASC]
GEN-TL-02	a. The certificate holder shall design, construct, and operate the transmission lines, Longhorn Station, and communication stations in accordance with the requirements of the version of the National Electrical Safety Code that is most current at the time that final engineering of each of these components is completed; and b. The certificate holder shall develop and implement a program that provides reasonable assurance that all fences, gates, cattle guards, trailers, or other objects or structures of a permanent nature in place at the time of construction and within the right-of-way, that could become inadvertently charged with electricity are grounded or bonded throughout the life of the line. The certificate holder shall be responsible for costs associated with grounding or bonding of permanent infrastructure in place at the time of construction. [Siting Standards for Transmission Lines Condition 3, Site-Specific Condition OAR 345-

	025-0010(4) ; Final Order on ASC]
STANDARD: NOISE CONTROL REGULATIONS (NC) [OAR 340-035-0035]	
GEN-NC-01	Prior to construction, the certificate holder will initiate discussions with the 41 NSR property owners at which it has estimated exceedances of the ambient antidegradation standard may occur identified in Attachment X-4 and/or X-5 of the Final Order on the ASC (NSR: 8, 9, 10, 11, 5002, 69, 70, 5004, 46, 118, 125, 5010, 5011, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 518, 111, 112, 132, 133, 5008, 5009, 113, and 115) to develop mutually agreed upon Noise Exceedance Mitigation Plans, specific to each NSR location. The site-specific Noise Exceedance Mitigation Plans will include agreed upon measures that would be implemented at the NSR location to minimize or mitigate the ambient antidegradation standard noise exceedance. Prior to and during construction, the certificate holder will initiate (a) – (c), below, to be finalized prior to operations. a. If the certificate holder and the NSR property owner agree upon a specific Noise Mitigation Plan, the certificate holder will submit a signed acknowledgement from the property owner to the Department for its records. b. If an agreement between certificate holder and NSR property owner is not obtained, the certificate holder shall concurrently notify the Department and NSR property owner of the dispute and of Council review of the dispute to occur at the next regularly scheduled Council meeting, to the extent possible, from the date of the certificate holder's notice. The notice shall explain that the NSR property owner will be given an opportunity to provide comments to the Council on the dispute, unless the Council Chair defers the dispute review to the Department. Review of the dispute will be based on the information per sub(i) below, and any other relevant facts provided by the NSR property owner and will result in a determination of the appropriate mitigation measure(s), proportional to the facility operational noise levels in excess of the ambient degradation standard, as determined to occur at the NSR property. The Council or Department's determination of appropriate mitigation is not binding on the NSR property owner or certificate holder if the NSR property owner opts not to accept the mitigation. i. At the time of issuance of the notice per (b) above, certificate holder will submit to the Department: (1) the mitigation measures it offered the NSR property owner, the mitigation measures that the NSR property owner requested and an explanation of the dispute; (2) a list of the dates that the certificate holder communicated with, or attempted to communicate with, the NSR property owners; and (3) the names, addresses, and phone numbers of the NSR owners. c. In working with NSR property owners under this condition, certificate holder will propose corona-noise mitigation of installation of sound- attenuating windows for residential structures as follows:

	i. For NSRs where an 11 to 14 dBA sound level increase above ambient noise levels are expected, certificate holder will purchase and install sound attenuating windows with an STC rating of 25-40. ii. For NSRs where a 15 dBA or greater sound level increase is expected, certificate holder will purchase and install sound attenuating windows with an STC rating of above 40. iii. If an owner of an NSR where an 11 dBA or greater sound level increase is expected provides a letter from a heath care provider indicating that health care provider's belief that the owner has a health condition that is exacerbated by increased sound levels, upon request, certificate holder will purchase and install sound attenuating windows with an STC rating of over 40 and would work with the NSR property owner to consider other mitigation options, as appropriate. During landowner consultations required under this condition, the certificate holder will specifically ask each landowner whether that landowner has a health condition that the landowner believes is exacerbated by elevated sound levels. iv. At the request of an NSR property owner, certificate holder will offer alternative mitigation proposals, including but not limited to performing air-sealing of the NSR residence, planting trees, or installing insulation. d. Prior to operation, the certificate holder will implement the mitigation measures agreed upon with the NSR property owners and/or as determined by EFSC or the Department to be the appropriate mitigation measures. [Noise Control Condition 1; Final Order on ASC, AMD1]
GEN-NC-02	a. After the Site Certificate has been issued and before landowner consultations contemplated in Condition 1, the certificate holder will prepare a new version of Attachment X-7, which will update landowner information and correct any errors (Updated Attachment X-7). The certificate holder will send notices to all landowners listed in Updated Attachment X-7, which notice shall: (a) inform the recipient that the recipient is the owner of an NSR; (b) provide the requirements and condition language of Noise Control Conditions 1 and 2 as adopted by the Council; and (c) provide a plain language summary of the steps designated in Noise Control Conditions 1 and 2. In addition, prior to construction, the certificate holder shall develop and submit to the Department an operational noise complaint response plan as well as distribute a simplified operational noise complaint response plan to the landowners listed in Updated Attachment X-7. b. The plan shall specify that it is intended to address complaints filed by persons falling into one of the following categories: (1) the owner of an NSR property identified in Noise Control Condition 1, and for whom has received mitigation under Noise Control Condition 1, but who believes that exceedances (as measured at their NSR property) are occurring in a manner not otherwise allowed under Noise Control Condition 4 or Noise Control Condition 5; or (2) An owner of an NSR property within one mile of the site boundary who was not identified under Noise Control Condition 1 and who has not received mitigation

from the certificate holder, but who nevertheless believes that exceedances above the ambient degradation standard have occurred at their NSR property.

c. The plan shall include the following: Scope of the complaint response plan, including process for complaint filing, receipt, review and response. The scope shall clearly describe how affected persons will be provided necessary information for filing a complaint and receiving a response, and will specify the information that the complainant must include in its complaint, including the date the certificate holder received the complaint, the nature of the complaint, weather conditions of the date for which the complaint is based (such as wind speed, temperature, relative humidity, and precipitation), duration of perceived noise issue, the complainant's contact information, and the location of the affected property.

d. The plan shall require that the certificate holder notify the Department within three working days of receiving a noise complaint related to the facility. The notification shall include the date the certificate holder received the complaint, the nature of the complaint, weather conditions of the date for which the complaint is based (such as wind speed, temperature, relative humidity, and precipitation) as described by the complainant, duration of perceived noise issue, the complainant's contact information, the location of the affected property, and a schedule of any actions taken or planned to be taken by the certificate holder (including inspection and maintenance actions, or actions taken or planned to be taken pursuant to the processes described in subsection (e) of this condition).

e. The plan shall identify the following process if a noise complaint is received:
   i. The certificate holder shall assess possible causes of the corona noise. If the complaint is received within the first 12 months of operation, the certificate holder will assess whether the corona noise is typical of noise that occurs during the transmission line "burn in period" (the first 12 months of operation) and ensure that it already has taken appropriate measures near that NSR to minimize corona noise that may occur during the burn in period (e.g., use conductors with a nonspecular finish/sandblasting of conductors to make them less reflective and clean them of manufacturing oils, protect the conductors to minimize scratching and nicking during construction). If the exceedance occurs during the burn-in period, and if the certificate holder complies with the requirements of this condition, the certificate holder will not be found to be in violation of its site certificate because of the exceedance.
   ii. If it is determined the corona noise is not typical "burn in period" noise, the certificate holder will assess whether the noise exceeds the ambient antidegradation standard in a manner not otherwise allowed under Noise Control Condition 4 or Noise Control Condition 5. If the complainant's noise sensitive property or properties are included in Attachment X-5 of the Final Order on the ASC, the modeled sound level increases as presented in Attachment X-4 of the Final Order on the ASC may be relied upon to

determine whether the corona noise exceeds the ambient antidegradation standard, unless the complainant voluntarily provides alternative noise data.

iii. If the complainant's NSR property or properties are not included in Attachment X-5 of the Final Order on the ASC, the certificate holder shall model the sound level increases using the methods set forth in ASC Exhibit X, unless the complainant voluntarily provides alternative noise data.

iv. If the complainant voluntarily provides alternative noise data and the data suggests an exceedance that had not previously been identified and mitigated, and/or an exceedance not otherwise allowed under Noise Control Condition 4 or Noise Control Condition 5, the complaint shall be verified through site specific sound monitoring conducted by an Oregon registered Professional Engineer, Board Certified by the Institute of Noise Control Engineering noise specialist, employed or contracted by the certificate holder, in accordance with NPCS-1 unless otherwise approved by the Department. If site specific sound monitoring is not authorized by the complainant, the certificate holder's modeling results may be relied upon to determine compliance.

v. In the event of a dispute regarding complainant's noise data and the certificate holder's data from site specific sound monitoring, certificate holder shall request that EFSC, in consultation with the Department's noise consultant, if necessary, make the final determination regarding which data will be used to determine whether corona noise exceeds the ambient antidegradation standard and/or in a manner not allowed under Noise Control Condition 4 or Noise Control Condition 5. The EFSC Chair may direct the Department to make this determination.

f. The plan shall specify that if it is determined pursuant to the process described in subsection (e) of this condition that corona noise at the complainant's NSR property exceeds the ambient antidegradation standard in a manner not allowed under Noise Control Condition 4 or Noise Control Condition 5, and/or exceeds the ambient antidegradation standard at an NSR property that had not previously been predicted to experience exceedances under Noise Control Condition 1, the certificate holder shall work with the NSR property owner to develop a mutually agreed upon mitigation plan to include agreed upon measures that would be implemented at the NSR location to minimize or mitigate the ambient antidegradation standard noise exceedance. To be clear, the fact that the certificate holder has received an exception or variance under Noise Control Conditions 4 and 5 does not excuse the certificate holder from providing mitigation under this condition.

i. If the NSR property was identified in Noise Control Condition 1 and has previously received mitigation by the certificate holder, and if it has been determined that the NSR property experiences exceedances not allowed under Noise Control Condition 4 or Noise Control Condition 5, the certificate holder will work with the complainant to identify supplemental mitigation measures,

	which may include any of the measures discussed in Noise Control Condition 1 or the ASC, or other measures requested by the complainant. ii. If the NSR property was not identified in Noise Control Condition 1 and has not been provided with mitigation by the certificate holder, certificate holder will work with the NSR property owner to identify appropriate mitigation measures, which may include any of the measures discussed in Noise Control Condition 1 or the ASC, or other measures requested by the landowner. iii. If, through the efforts described above, the certificate holder executes an agreement with the NSR property owner, the certificate holder will submit a signed acknowledgement from the property owner to the Department for its records. If an agreement between certificate holder and NSR property owner is not obtained, the certificate holder shall concurrently notify the Department and NSR property owner of the dispute and of Council review of the dispute to occur at the next regularly scheduled Council meeting, to the extent possible, from the date of the certificate holder's notice. The notice shall explain that the NSR property owner will be given an opportunity to provide comments to the Council on the dispute, unless the Council defers the dispute review to the Department. Review of the dispute will be based on the information per (iv) below, and any other relevant facts provided by the NSR property owner and will result in a determination of the appropriate mitigation measure(s), proportional to the facility operational noise levels in excess of the ambient degradation standard, as determined to occur at the NSR property. The Council or Department's determination of appropriate mitigation is not binding on the NSR property owner or certificate holder if NSR property owner opts not to accept the mitigation. iv. At the time of issuance of the notice per (iii) above, certificate holder will submit to the Department: (1) the mitigation measures it offered the NSR property owner, the mitigation measures that the NSR property owner requested and an explanation of the dispute; (2) a list of the dates that the certificate holder communicated with, or attempted to communicate with, the NSR property owners; and (3) the names, addresses, and phone numbers of the NSR owners. g. The certificate holder shall provide necessary information to the complainant to support understanding of corona noise, corona noise levels and effects, and of the process to verify actual noise levels of events resulting in complaints. If the complainant opts not to authorize the certificate holder to conduct monitoring, and it is otherwise determined pursuant to the process described in subsection (e) of this condition that corona noise does not exceed the ambient antidegradation standard, the noise complaint shall be considered fully resolved and no mitigation shall be required. [Noise Control Condition 2; Final Order on ASC]
STANDARD: REMOVAL FILL LAW (RF) [OAR 141-085-0500 through -0785]	
GEN-RF-01	The certificate holder shall:

	a. Prior to construction of a phase or segment of the facility, as applicable, the certificate holder shall submit to the Department and Oregon Department of State Lands (DSL) a final Site Rehabilitation Plan (Plan), consistent with the draft Plan provided in Attachment J-2 of the Final Order on the ASC. The Department shall provide written verification of its review of the final Plan, confirming that the Plan is consistent with the draft Site Rehabilitation Plan. b. Following construction and during operation of a phase or segment of the facility, as applicable, the certificate holder shall ensure that temporary impacts to wetlands and non-wetland waters of the state are restored in accordance with the final plan. c. The Department will provide updates to Council on the certificate holder's implementation of the final Plan and of any Plan revisions at Council meetings, following submittal of the certificate holder's six-month construction progress report per General Standard of Review Condition 3 or annual report per General Standard of Review Condition 4. [Removal Fill Condition 2]
GEN-RF-02	The certificate holder shall: a. Prior to construction of a phase or segment of the facility, as applicable, submit an updated ~~final~~ Compensatory Wetland and Non-Wetland Mitigation Plan (CWNWMP ~~-), consistent with the draft CWNWMP (~~Attachment J-1 to the Final Order on the ASC) ~~, for review and approval by the Department, in consultation with Department of State Lands (DSL). The Department shall provide written verification of its review and approval of the final CWNWMP.~~ Updates to the CWNWMP include the final amount of wetland mitigation credit required which shall be based on the final design configuration of the phase or segment of the facility, as applicable, and the estimated acres of wetlands and non-wetland waters of the state that would be permanently impacted, unless otherwise agreed to by the Department. b. Following construction and during operation of a phase or segment of the facility, the certificate holder shall implement the actions described in the final CWNWMP. c. The Department will provide updates to Council on the certificate holder's implementation of the final CWNWMP and of any Plan revisions at Council meetings, following submittal of the certificate holder's six-month construction progress report per General Standard of Review Condition 3 or annual report per General Standard of Review Condition 4. d. The final CWNWMP version approved when the facility begins operation may be revised or updated from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council. Such revisions or updates may be made without amendment of the site certificate. The Council authorizes the Department to agree to revisions or updates to this plan, in consultation with DSL. The Department shall notify the Council of all revisions or updates, and the Council retains the authority to approve, reject, or modify any revisions or updates of the plan agreed to by the Department.

	[Removal Fill Condition 3; Final Order on ASC, AMD1]
GEN-RF-03	~~Prior to construction of a phase or segment of the facility and during operation, the certificate holder shall maintain compliance with the General and Special Conditions set forth in the removal-fill permit (Attachment J-3 to the Final Order on the ASC).~~ [DELETED] [Removal Fill Condition 5; Final Order on ASC; AMD1]
GEN-RF-04	The certificate holder shall: a. Prior to construction of a phase or segment of the facility~~:~~~~,~~ i. Maintain compliance with the General and Special Conditions set forth in the removal-fill permit (Attachment J-3 to the Final Order on the ASC);~~comply with procedures in all Removal-Fill Conditions, and~~ ii. R~~r~~eceive an updated removal-fill permit (Attachment J-3 to the Final Order on the ASC) reviewed and approved by the Department in consultation with the Oregon Department of State Lands. iii. ~~Prior to construction of a phase or segment of the facility, s~~Submit a final copy of the updated removal-fill permit issued by the Oregon Department of State Lands. b. Following construction and during operation of a phase or segment of the facility, the certificate holder shall implement the actions ~~described in the removal-fill permit~~ and maintain compliance with the General and Special Conditions set forth in the removal-fill permit (Final Order on ASC Attachment J-3). c. The Department will provide updates to Council on the certificate holder's implementation of the removal-fill permit and of any permit revisions at Council meetings, following submittal of the certificate holder's six-month construction progress report per General Standard of Review Condition 3 or annual report per General Standard of Review Condition 4. d. The removal-fill permit version approved when the facility begins operation may be revised or updated from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council ("Council"). Such revisions or updates may be made without amendment of the site certificate. The Council authorizes the Department to agree to revisions or updates to this permit. The Department shall notify the Council of all revisions or updates, and the Council retains the authority to approve, reject, or modify any revisions or updates of the permit agreed to by the Department. [Removal Fill Condition 6; Final Order on ASC; AMD1]
STANDARD: FISH PASSAGE [OAR 635-412-0035	
GEN-FP-01	a. Prior to construction within crossings triggering fish passage, the certificate holder shall finalize, and submit to the Department for its approval in consultation with ODFW, a final Fish Passage Plan. As part of finalizing the Fish Passage Plan, the certificate holder shall request from ODFW any new information ODFW may have on the status of the streams within the site boundary and shall address the information in the final Fish Passage Plan. In

addition, the certificate holder shall seek concurrence from ODFW on the fish-presence determinations for non-fish bearing streams within the Ladd Creek watershed, as presented in ASC Exhibit P1-7B Table 3. If the certificate holder in consultation with ODFW, determines any of the previously identified non-fish bearing streams within the Ladd Creek Watershed to be fish-bearing, the certificate holder shall complete a crossing risk evaluation and obtain concurrence from ODFW on applicability of fish passage requirements. If fish passage requirements apply, certificate holder shall seek approval from the Energy Facility Siting Council of a site certificate amendment to incorporate ODFW approval of new crossings and fish passage design/plans and conditions. The protective measures described in the draft Fish Passage Plan in Attachment BB-2 to the Final Order on the ASC, shall be included as part of the final Fish Passage Plan, unless otherwise approved by the Department.

b. The certificate holder shall maintain compliance with the measures outlined in the final Fish Passage Plan approved by the Department in consultation with ODFW.

c. The certificate holder shall comply with the following operational provisions, as required per ODFW's fish passage approval (December 30, 2015), per Attachment BB-2 Appendix A of the Final Order on the ASC:
   1. All in water work shall occur during the ODFW in-water work windows for each waterbody.
   2. Temporary water management and fish rescue, salvage, and recovery, is required (as prescribed in OAR 635-412-0035(10)) prior to all in-water work activities (defined as all work at or below the ordinary high water elevation) associated with the project. Fish salvage activities require the certificate holder to obtain State of Oregon Scientific Take Permits from ODFW.
   3. Wildlife rescue, salvage, and recovery activities associated with the facility require the applicant to obtain State of Oregon Wildlife Rescue Salvage Permits from ODFW.
   4. Fish passage design standards, as defined in OAR 635-412-0035(1) and (3), shall be implemented for all fish passage components of these projects.
   5. The certificate holder shall be responsible for all maintenance required such that projects provide adequate passage for native migratory fish. If monitoring by the certificate holder or ODFW indicates that fish passage is not being provided, the certificate holder in consultation with ODFW, shall determine the cause and, during a work period approved by ODFW, shall modify the structure as appropriate to rectify problems as necessary. Failure to maintain fish passage for the duration of these approvals shall constitute a violation of these approvals and applicable fish passage laws (ORS 509.610).
   6. After construction completion, the certificate holder or its designee, shall maintain, monitor, evaluate and report on the effectiveness of fish passage as required under ORS 509.610, and shall provide written status reports to ODFW's Fish Passage Program annually for the first three (3) years and then a final report at Year 5, or as determined by ODFW. Reports shall include

	photographs from established photo-points as part of the fish-passage evaluation and monitoring. Monitoring, evaluation, and reporting shall be conducted annually unless problems are observed that may require additional analysis. Fish passage reports shall consist of visual observations, photographs, as-built plan reviews, and future site visits with regards to fish passage at and through the project sites. Reports shall be submitted to the State Fish Passage Coordinator and the La Grande and Malheur Watershed District Fish Biologists. Electronic or hard copy submissions are acceptable. 7. Failure to maintain fish passage at these locations shall constitute a violation of these approvals and applicable fish passage laws (ORS 509.585 and 509.610). 8. ODFW shall be allowed to inspect the crossing sites at reasonable times for the duration of the approval. Unless prompted by emergency or other exigent circumstances, inspection shall be limited to regular and usual business hours, including weekends. 9. The appropriate ODFW District Fish Biologist shall be contacted 2-weeks in advance and prior to implementation of fish passage projects. 10. These fish passage approvals in no way authorize a take of a federally listed species. [Fish Passage Condition 1; Final Order on ASC, AMD1]

5.3 Pre-Construction Conditions

STANDARD: ORGANIZATIONAL EXPERTISE (OE) [OAR 345-022-0010]	
PRE-OE-01	Prior to construction, the certificate holder shall notify the Department of the identity and qualifications of any construction managers, including the on-site construction manager(s), to demonstrate that the construction manager is qualified in managing facility construction and has the capability to ensure compliance with all site certificate conditions. [Organizational Expertise Condition 3; Final Order on ASC]
PRE-OE-02	Prior to construction, the certificate holder shall contractually require all construction contractors and subcontractors involved in the construction of the facility to comply with all applicable laws and regulations and with the terms and conditions of the site certificate. The certificate holder shall provide to the Department a copy of the executed contract terms requiring legal/site certificate compliance. Copies of the relevant contract terms may redact business confidential information. The contractors, on behalf of the certificate holder, may perform the requirements set forth in these site certificate conditions. However, such performance and such contractual provisions shall not relieve the site certificate holder of responsibility under the site certificate. [Organizational Expertise Condition 4; Final Order on ASC]
PRE-OE-03	Prior to construction of a phase or segment of the facility, as applicable, the certificate holder shall: a. Submit to the Department and affected counties a list of third-party permits to be obtained or that have been obtained by Umatilla Electric Co-Op, Pacific Power and Oregon Trail Electric Cooperation for the communication station distribution lines. b. Prior to distribution line construction or track interconnection at communication stations, as applicable, sSubmit to the Department copies of all obtained third party permits, as identified in (a) of this condition. [Organizational Expertise Condition 7; Final Order on ASC]
STANDARD: STRUCTURAL STANDARD (SS) [OAR 345-022-0020]	
PRE-SS-01	At least 90 days prior to construction of a phase or segment of the facility, unless otherwise approved by the Department: a. The certificate holder shall submit an investigation plan(s), prepared by a professional engineer or geologist licensed in Oregon, for the pre-construction site-specific geologic and geotechnical investigation to the Department for review in consultation with DOGAMI. The investigation plan shall specify the investigation methods to be used to evaluate site-specific seismic and non-seismic hazards identified in (b) of this condition and should, at a minimum, be consistent with the Oregon State Board of Geologist Examiners Guideline for Preparing Engineering Geologic Reports and include methods for literature review, geotechnical field exploration program, laboratory testing, mapping and detailed site reconnaissance.

b. The certificate holder shall submit to the Department and DOGAMI ~~a~~ pre-construction site-specific geological and geotechnical investigation reports (reports), prepared by a professional engineer or geologist licensed in Oregon, for review, demonstrating that the facility site has been adequately characterized and the facility and temporary construction activities~~, such as blasting,~~ have been designed and located to avoid seismic, soil and geologic hazards.
   i. The reports may be submitted in phases, based upon completion of the geotechnical investigation, and shall at a minimum include information derived from the geological and geotechnical investigations regarding:
      1. Subsurface soil and geologic conditions within the site boundary;
      2. Site-specific geotechnical design criteria and data for the facility components informed by a Probabilistic Seismic Hazard Assessment and based on, at a minimum, identified fault sources, ground motion, site class for ground motion, and response spectra;
      3. Potentially active faults that may affect the facility and their potential risk to the facility;
      4. Potential slope instability and landslide hazards based on boring locations spaced approximately 1 mile along the alignment at dead-end structures; any corners or changes in alignment heading (angles); crossings of highways, major roads, rivers, railroads, and utilities as power transmission lines, natural gas pipelines, and canals; locations where blasting may occur; and, locations necessary to verify lithologic changes and/or geologic hazards such as landslides, steep slopes, or soft soil area.
      5. Potential liquefaction hazards;
      6. Potential soil expansion hazards;
      7. Groundwater detections and any related potential risk to the facility;
      8. Corrosive soils detections and any related potential risk to the facility; and
      9. Facility components within the 100-year flood zone and any related potential risk to the facility
      10. Define and delineate geological and geotechnical hazards to the facility, and identify means to mitigate the identified hazards.
      11. The report shall identify the applicable codes (i.e. Oregon Building Code, Oregon Structural Specialty Code), including name and reference number, that the facility components will be designed to satisfy.
   ~~ii. In the electronic (email) submission of the report to the Department, as required under (b) of this condition, the certificate holder shall identify whether blasting is recommended. For any recommended blasting locations, in table and map format, specify the transmission line structure number, milepost and county; and, either submit with the report the draft Framework Blasting Plan (Soil Protection Condition 4, Attachment G-5 of this order), following the pre-construction agency review process or provide the schedule for initiation of the established agency review process, as provided in the draft Blasting Framework Plan.~~

[Structural Standard Condition 1; Final Order on ASC, AMD1]

STANDARD: LAND USE (LU) [OAR 345-022-0030]	
PRE-LU-01	Prior to construction of any phase or segment of facility components in Umatilla County, the certificate holder shall work with the Public Works Department on building standards for the road improvements and construction, and for any roads constructed in forest lands in Umatilla County, the certificate holder will ensure road construction is consistent with the Oregon Forest Practices Act. [Land Use Condition 4; Final Order on ASC]
PRE-LU-02	Prior to construction of any phase or segment of the facility in Baker County, the certificate holder shall provide to the Baker County Planning Department a list of the suppliers that will be supplying the aggregate used in construction in Baker County along with a copy of the suppliers' land use permits. [Land Use Condition 8; Final Order on ASC]
STANDARD: RETIREMENT AND FINANCIAL ASSURANCE (RT) [OAR 345-022-0050]	
PRE-RT-01	~~**Retirement and Financial Assurance Condition 4:**~~ Consistent with Mandatory Condition OAR 345-025-0006(8), before beginning construction of the facility or phase or segment of the facility, the certificate holder shall submit to the State of Oregon, through the Council, a bond or letter of credit naming the State of Oregon, acting by and through the Council, as beneficiary or payee. During the construction phase (defined as the period of time from the beginning of construction as defined in ORS 469.300(6) to the date when the facility is placed in service), the certificate holder shall adjust the amount of the bond or letter of credit on a quarterly basis, as follows: a. The amount of the bond or letter of credit will be increased on a quarterly basis to correspond with the progress of the construction of the facility at the beginning of each quarter. The amount of the bond or letter of credit at the beginning of any such quarterly period will be equal to the product of (i) the estimated total decommissioning cost for the facility, adjusted for inflation, as specified in section (c) of this condition; and (ii) a fraction, the numerator of which is the number of quarters that have passed since commencement of construction, and the denominator of which will be the number of quarters during which the certificate holder must complete the construction phase; provided that in all cases the number resulting from the calculation shall not exceed 1.0. b. The certificate holder and the Department shall assume a four-year construction phase comprising sixteen quarterly periods. Therefore, for the first quarter of the construction phase, the bond or letter of credit will be maintained in an amount equal to one-sixteenth (1/16) of the total estimated decommissioning cost specified in section (c) of this condition. At the end of the first year of construction—i.e., four quarters—the amount of the bond or letter of credit will be equal to four-sixteenths (4/16) of the total estimated decommissioning costs. c. The estimated total decommissioning cost for the facility is $140,779,000 (3rd Quarter 2016 dollars), to be adjusted to the date of issuance of the bond or letter of credit, and on a quarterly basis thereafter during the construction

	phase. For the purposes of calculating the bond or letter of credit amount required by section (a) of this condition, the certificate holder shall adjust the estimated total decommissioning cost using the following calculation: ii. Adjust the estimated decommissioning cost to correspond with the progress of the construction of the facility at the beginning of each quarter, based on the unit costs and assumptions identified in the Final Order on the ASC, Attachment W-1. iii. Adjust the estimated total decommissioning cost (expressed in Q3 2016 dollars) to present value, using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency and using the third quarter 2016 index value and the quarterly index value for the date of issuance of the new bond or letter of credit. If at any time the index is no longer published, the Council shall select a comparable calculation to adjust third quarter 2016 dollars to present value. iv. Round the result total to the nearest $1,000 to determine the inflation-adjusted estimated total decommissioning cost. d. The certificate holder shall use an issuer of the bond or letter of credit approved by the Council. e. The certificate holder shall use a form of bond or letter of credit approved by the Council. The certificate holder shall describe the status of the bond or letter of credit in the annual report submitted to the Council under OAR 345-026-0080(1)(b). The bond or letter of credit shall not be subject to revocation or reduction before the facility has been placed in service, at which time the certificate holder must provide the bond or letter of credit specified in Retirement and Financial Assurance Condition 5. f. The amount of the bond or letter of credit may be amended from time to time by agreement of the certificate holder and the Department to account for adjustments in the construction schedule. Subject to Department approval, the certificate holder may request an adjustment of the bond or letter of credit amount based on final design configuration of the facility by applying the unit costs and assumptions presented in the Final Order on the ASC, Attachment W-1. Such adjustments may be made without amendment to the site certificate. The Council authorizes the Department to agree to these adjustments in accordance with this condition. [Retirement and Financial Assurance Condition 4; Final Order on ASC]
STANDARD: FISH AND WILDLIFE HABITAT (FW) [OAR 345-022-0060]	
PRE-FW-01	Prior to construction of a phase or segment of the facility, the certificate holder shall conduct, as applicable, the following biological surveys on those portions of the site boundary that have not been surveyed at the time of issuance of the site certificate, based on the survey protocols included in ASC Exhibit P Attachment P1-2 Revised Final Biological Survey Work Plan, unless otherwise approved by the Department in consultation with ODFW:

	a. Northern Goshawk; b. American Three-Toed Woodpecker; c. Great Gray Owl; d. Flammulated Owl; e. Terrestrial Visual Encounter Surveys; f. Wetlands; and g. Fish Presence and Crossing Assessment Surveys. [Fish and Wildlife Condition 15; Final Order on ASC]
PRE-FW-02	Prior to construction of a phase or segment of the facility, the certificate holder shall conduct, as applicable, the following biological surveys on all portions of the site boundary, regardless of whether those portions have been surveyed at the time of issuance of the site certificate, based on the survey protocols included in ASC Exhibit P Attachment P1-2 Revised Final Biological Survey Work Plan, unless otherwise approved by the Department in consultation with ODFW: a. Washington ground squirrels; b. Raptor nests; c. Pygmy rabbits; d. State-listed Threatened and Endangered plants e. Greater sage-grouse, as necessary for the State of Oregon to calculate the amount of sage-grouse habitat compensatory mitigation required for the facility using Oregon's Sage-Grouse Habitat Quantification Tool. [Fish and Wildlife Condition 16; Final Order on ASC]
PRE-FW-03	At least 90 days prior to construction of a facility phase or component in sage-grouse habitat as mapped by ~~The~~ the Oregon Department of Fish and Wildlife (ODFW) at that time, unless otherwise agreed to by the Department, the certificate holder shall finalize, and submit to the Department for its approval, in consultation with ODFW, a final Sage-Grouse Habitat Mitigation Plan for the phase or segment to be constructed. a. The certificate holder shall provide to the Department the information necessary for the State of Oregon to calculate the amount of sage-grouse habitat compensatory mitigation required for the facility using Oregon's Sage-Grouse Habitat Quantification Tool (HQT). b. The final Sage-Grouse Habitat Mitigation Plan shall address the potential sage-grouse habitat impacts through mitigation banking, an in-lieu fee program, development of mitigation projects by the certificate holder, or a combination of the same. i. To the extent the certificate holder develops its own mitigation projects, the final Sage-Grouse Habitat Mitigation Plan shall: 1. Identify the location of each mitigation site, including a map of the same; 2. Identify the number of credit-acres that each mitigation site will provide for the certificate holder, including results of the HQT results for the site and mitigation actions; 3. Include a site-specific mitigation management plan for each mitigation

site that provides for:

A. A baseline ecological assessment;
B. Conservation actions to be implemented at the site;
C. An implementation schedule for the baseline ecological assessment and conservation actions;
D. Performance measures and success criteria for mitigation actions;
E. Adaptive management considerations for changes in habitat conditions or a results of catastrophic fire;
F. Weed management plan;
G. A reporting plan;
H. A monitoring plan; and;
I. A description of how the durability of the mitigation site will be achieved, including but not limited to, any long-term stewardship plans and financial assurances.

ii. To the extent the site certificate utilizes a mitigation bank or in-lieu fee program, the final Sage-Grouse Habitat Mitigation Plan shall:
1. Describe the nature, extent, and history of the mitigation bank or in-lieu fee program;
2. Identify the number of credit-acres that each mitigation site will provide for the certificate holder, and;
3. Demonstrate that ODFW has approved the program to fulfill sage-grouse habitat mitigation requirements.

iii. The final Sage-Grouse Habitat Mitigation Plan shall include compensatory mitigation sufficient to address impacts from, at a minimum, all facility components except indirect impacts from existing access roads substantially modified for the facility (related or supporting facilities). For calculation purposes, new facility roads with access control will be assigned a “no-traffic” designation, and new roads without access control will be assigned a “low-traffic” designation. As referenced in Fish and Wildlife Condition 19, the certificate holder shall demonstrate during or about the third year of operation that sage-grouse habitat mitigation shall be commensurate with the final compensatory mitigation calculations, either by showing the already-implemented mitigation is sufficient to cover all facility component impacts, or by proposing additional mitigation to address any impacts incremental to the initial calculation. The final compensatory mitigation calculations must be based on the as-constructed facility as well as the pre- and post- construction traffic studies, and must include the addition of indirect impacts from substantially modified existing access roads.

c. Oregon’s Sage-Grouse Habitat Quantification Tool shall be used to calculate the amount of sage-grouse habitat compensatory mitigation required for the facility and the number of credit-acres that each mitigation site will provide for the certificate holder.

d. Prior to construction of a phase or segment in sage-grouse habitat as mapped by

	the Oregon Department of Fish and Wildlife (ODFW) at that time and based on final facility design, Oregon's Sage-Grouse Development Registry shall be used to calculate and verify compliance with the metering and disturbance thresholds established at OAR 660-023-0115(16) and (17). Evidence of compliance must be provided to the Department prior to construction. e. The Sage-Grouse Habitat Mitigation Plan may be amended from time to time by agreement of the certificate holder and the department. Such amendments may be made without amendment to the site certificate. The Council authorizes the Department to agree to amendments of the plan and to mitigation actions that may be required under the plan; however, the Council retains the authority to approve, reject, or modify any amendment of the plan agreed to by the Department. [Fish and Wildlife Condition 17; Final Order on ASC]
PRE-FW-04	Prior to construction of a phase or segment of the facility, the certificate holder shall conduct a one-year traffic study in elk habitat (elk summer range and elk winter range, based on the most recent ODFW maps available at the time) and sage-grouse habitat (areas of high population richness, core area habitat, low density habitat, and general habitat, based on most recent ODFW maps available at the time). The certificate holder shall submit the traffic study to the Department for its review and approval in consultation with ODFW. [Fish and Wildlife Condition 21; Final Order on ASC]
STANDARD: PUBLIC SERVICES (PS) [OAR 345-022-0110]	
PRE-PS-01	Prior to construction within Malheur County, a. The certificate holder shall consult with the Owyhee Irrigation District on the segment between Milepost 255 and 258. Consultation shall present results of the geotechnical studies within this segment area, evaluate structure interference with irrigation structures, and confirm adequate clearance to minimize impacts to irrigation canal structures. b. The certificate holder shall develop mitigation for any agreed upon impacts from construction and operation of the facility to the South Canal of the Owyhee Project and any other impacted irrigation pipelines or equipment as determined appropriate by the certificate holder and Owyhee Irrigation District. A copy of any finalized agreement shall be submitted to the Department. [Public Services Condition 1; Final Order on ASC]
PRE-PS-02	At least 90 days prior to construction of a facility phase or segment in each affected county and jurisdiction, unless otherwise approved by the Department, the certificate holder shall complete the following to address traffic impacts and transportation coordination in each county and jurisdiction: a. The certificate holder shall, in accordance with the OAR 345-~~026~~025-0016 agency consultation process outlined in the draft Transportation and Traffic Plan (Attachment U-2 of the Final Order on the ASC) submit to the Department for review and approval, a final county-specific Transportation and Traffic Plan associated with the phase or segment of the facility to be

	constructed. The protective measures described in the draft Transportation and Traffic Plan, Attachment U-2 to the Final Order on the ASC, shall be included and implemented as part of the final county-specific Plan, unless otherwise approved by the Department, in consultation with the county or jurisdiction; b. The final county-specific Transportation and Traffic Plan submitted to the Department, county, and jurisdiction shall include: i. The identification of the final material/equipment transportation, access, and haul routes and documentation of the existing condition of the routes/roads; ii. Attachment B-5 Road Classification Guide and Access Control Plan attached to the Final Order on the ASC updated to reflect the final design of the facility. Include applicable road segment maps with road names for existing public roads, road names in Appendix A: Access Road Segment Attribute Table, road improvements designations, and final access control device description and locations; 1. If, at final facility design, substantial modification of existing roads not identified as related or supporting facilities in Attachment B-5 (maps) of the Final Order on the ASC is necessary, the certificate holder must submit an Amendment Determination Request (OAR 345-027-0357), or submit a site certificate amendment request to the Department, prior to the modification to determine whether the road modifications are related or supporting facilities. Substantial modification of existing roads shall be as defined in Attachment B-5, which includes repairs to more than 20 percent of road surface, defined by the road prism width and longitudinal distance over a defined road segment. iii. List any road use permits, encroachment permits, oversize/overweight permits, or road use or other legal agreements obtained by the construction contractor or ~~applicant~~certificate holder. c. The final Transportation and Traffic Plan for a phase or segment of the facility must be approved by the Department, in consultation with each county or jurisdiction, prior to construction. d. Prior to construction or road modification in any area designated as a geologic hazard zone by Oregon Department of Geology and Mineral Industries (DOGAMI) data and maps (e.g., as landslide or debris flow fan), or by relevant local zoning ordinances and maps, the site certificate holder and/or its construction contractors will consult with a licensed civil engineer to assess the proposed construction or road design in relation to potential geologic hazards. [Public Services Condition 2; Final Order on ASC]
PRE-PS-03	Prior to construction of any phase or segment of the facility, the certificate holder shall submit to the Federal Aviation Administration (FAA) and the Oregon

	Department of Aviation (ODA) a FAA Form 7460-1 Notice of Proposed Construction or Alteration for transmission structures within 5-miles of a public airport (La Grande /Union County Airport and Baker City Airport) and cranes exceeding 200 feet in height. The certificate holder shall submit to the Department a copy of the FAA and ODA hazard determinations. [Public Services Condition 4; Final Order on ASC]
PRE-PS-04	At least 90 days prior to construction of a facility phase or segment, unless otherwise agreed to by the Department, the certificate holder shall submit to the Department a proposed Environmental and Safety Training Plan, for review and approval by the Department, in consultation with each county and the medical response entities identified in the plan. The plan must include at a minimum, the following elements: a. Measures for securing multi-use areas and work sites when not in use; b. Drug/alcohol/firearm policies with clear consequences for violations; and c. An emergency and medical response plan including: i) Contact information for federal, state, and county emergency management services; ii) Emergency response procedures for helicopter emergency response, spill reporting, hospitals closest to the transmission line route, and any other emergency response procedures; iii) Landing locations for medical emergency life-flights. d. Requirements for training workers on the contents of the plan. e. The certificate holder shall maintain copies of the Environmental and Safety Training Plan onsite and conduct all work in compliance with the plan during construction and operation of the facility. [Public Services Condition 5; Final Order on ASC]
STANDARD: SITING STANDARDS FOR TRANSMISSION LINES (TL) [DIVISION 24]	
PRE-TL-01	Prior to construction, the certificate holder shall schedule a time to brief the Public Utility Commission Safety, Reliability, and Security Division (Safety) Staff as to how it will comply with OAR Chapter 860, Division 024 during design, construction, operations, and maintenance of the facilities. The certificate holder shall notify the Department how and when it briefed the Public Utility Commission staff. [Siting Standards for Transmission Lines Condition 4; Final Order on ASC]
STANDARD: REMOVAL FILL LAW (RF) [OAR 141-085-0500 through -0785]	
PRE-RF-01	The certificate holder shall: a. Prior to construction of a phase or segment of the facility, as applicable, submit updated electronic wetland delineation report(s) to the Department and to the Oregon Department of State Lands. All wetland delineation report(s) submitted to the Oregon Department of State Lands shall follow its submission and review procedures. b. Prior to construction of a phase or segment of the facility, as applicable, the Department must receive a Letter of Concurrence issued by the Oregon Department of State Lands referencing the applicable wetland delineation for the phase or segment of the facility.

	[Removal Fill Condition 1; Final Order on ASC]
PRE-RF-02	Prior to construction of a phase or segment of the facility, the certificate holder shall provide an electronic copy of the updated Joint Permit Application (JPA) to the Department. [Removal Fill Condition 4; Final Order on ASC]

5.4 Constructions Conditions

Condition Number	(Site certificate conditions for all standards and phases)
STANDARD: GENERAL STANDARD OF REVIEW (GS) [OAR 345-022-0000]	
CON-GS-01	Within six months after the Construction Commencement Deadline in General Standard of Review Condition 1, and every six months thereafter during construction of the facility and related or supporting facilities, the certificate holder shall submit a semiannual construction progress report to the Department consistent with OAR 345-026-0080(1)(a). To the extent that information required by this rule is contained in reports the certificate holder submits to other state, federal or local agencies, the certificate holder may submit excerpts from such other reports to satisfy this rule, unless otherwise required by a site certificate condition. [General Standard of Review Condition 3; Final Order on ASC]
CON-GS-02	The certificate holder may begin construction, as defined in OAR 345-001-0010(12), or create a clearing on a part of the site if the certificate holder has construction rights on that part of the site and the certificate holder would construct and operate part of the facility on that part of the site even if a change in the planned route of transmission line occurs during the certificate holder's negotiations to acquire construction rights on another part of the site. [General Standard of Review Condition 7; Mandatory Condition OAR 345-025-0006(5); Final Order on ASC]
STANDARD: LAND USE (LU) [OAR 345-022-0030]	
CON-LU-01	During construction in Baker County, the certificate holder shall construct the facility to comply with the following setback distances and other requirements: <u>In the EFU Zone (Based solely on certificate holder representations in the ASC)</u>: a. Buildings shall be setback as follows: front yards shall be set back at least 20 feet from property lines and road rights-of-way. b. Buildings and the fixed bases of transmission line towers shall be set back at least 60 feet from the center line of a road or street or 30 feet from any right-of-way in excess of 60 feet. c. Buildings and the fixed bases of transmission line towers shall be set back at least 10 feet from property lines.

	d. Buildings and the fixed bases of the transmission line towers shall be set back at least 50 feet from the high-water mark of naturally-occurring riparian area, bog, marsh, or waterway. [Land Use Condition 10; Final Order on ASC]
CON-LU-02	Within 90-days of construction within Union County, if the Morgan Lake alternative route segment is selected at final facility design, the certificate holder shall provide the Department a copy of the Memorandum of Agreement, if executed, between the City of La Grande and certificate holder for improvements at Morgan Lake Park. [Land Use Condition 17; Final Order on ASC]
STANDARD: FISH AND WILDLIFE HABITAT (FW) [OAR 345-022-0060]	
CON-FW-01	During construction, the certificate holder shall not conduct ground-disturbing activities within elk or mule deer winter range between December 1 to March 31. Upon request by the certificate holder, the Department in consultation with ODFW may provide exceptions to this restriction. The certificate holder's request must include a justification for the request, including any actions the certificate holder will take to avoid, minimize, or mitigate impacts to elk and mule deer in the relevant area. [Fish and Wildlife Condition 11; Final Order on ASC]
CON-FW-02	During construction, if active pygmy rabbit colonies or the roost of a State Sensitive bat species is observed during the biological surveys set forth in Fish and Wildlife Conditions 15 and 16, the certificate holder shall submit to the Department for its approval a notification addressing the following: a. Identification of the State Sensitive bat species observed; b. Location of pygmy rabbit colony or bat roost; and c. Any actions the certificate holder will take to avoid, minimize, or mitigate impacts to pygmy rabbit colony or bat roost. d. The Department in consultation with the Oregon Department of Fish and Wildlife (ODFW) will review and approve the proposed avoidance, minimization, or mitigation measures prior to the action by the certificate holder to impact State Sensitive bat species roosts or hibernacula. [Fish and Wildlife Condition 12; Final Order on ASC]
CON-FW-03	During construction, if the certificate holder will be conducting ground-disturbing activities during the migratory bird nesting season between April 1 and July 15, the certificate holder shall conduct, as applicable, biological surveys for native, non-raptor bird species nests on all portions of the site boundary a maximum of 7 days prior to ground-disturbing activities, regardless of whether those portions have been previously surveyed. If the certificate holder identifies a native, non-raptor bird species nest, the certificate holder shall submit to the Department for its approval a notification addressing the following: a. Identification of the native, non-raptor species observed; b. Location of the nest; and c. Any actions the certificate holder will take to avoid, minimize, or mitigate impacts to the nest.

<table>
<tr><td></td><td>[Fish and Wildlife Condition 13; Final Order on ASC]</td></tr>
<tr><td>CON-FW-04</td><td>During construction, the certificate holder shall not conduct ground-disturbing activities within the following timeframes and spatial buffers surrounding occupied nests of certain raptor species. Upon request by the certificate holder, the Department in consultation with ODFW may provide exceptions to this restriction. The certificate holder's request must include a justification for the request, including any actions the certificate holder will take to avoid, minimize, or mitigate impacts to the raptor and its nest.
<table>
<tr><th colspan="3">Raptor Nest Buffers</th></tr>
<tr><th>Nesting Species</th><th>Spatial Buffers (radius around nest site):</th><th>Temporal Restrictions</th></tr>
<tr><td>Bald eagle</td><td>0.5 mile</td><td>January 1 to August 15</td></tr>
<tr><td>Golden eagle</td><td>0.5 mile</td><td>February 1 to August 15</td></tr>
<tr><td>Ferruginous hawk</td><td>0.50 mile</td><td>March 15 to August 15</td></tr>
<tr><td>Flammulated owl</td><td>0.25 mile</td><td>March 1 to August 15</td></tr>
<tr><td>Great gray owl</td><td>0.25 mile</td><td>March 1 to August 15</td></tr>
<tr><td>Northern goshawk</td><td>0.5 mile</td><td>May 1 to August 15</td></tr>
<tr><td>Peregrine falcon</td><td>0.25 mile</td><td>January 1 to July 1</td></tr>
<tr><td>Prairie falcon</td><td>0.25 mile</td><td>March 15 to July 1</td></tr>
<tr><td>Red-tailed hawk</td><td>300 to 500 feet</td><td>March 1 to August 15</td></tr>
<tr><td>Swainson's hawk</td><td>0.25 mile</td><td>April 1 to August 15</td></tr>
<tr><td>Western burrowing owl</td><td>0.25 mile</td><td>April 1 to August 15</td></tr>
</table>
[Fish and Wildlife Condition 14; Final Order on ASC]</td></tr>
<tr><td>CON-FW-05</td><td>During construction of a facility phase or component in sage-grouse habitat as mapped by the Oregon Department of Fish and Wildlife (ODFW) at that time, the certificate holder shall implement the conservation actions set forth in the final Sage-Grouse Habitat Mitigation Plan referenced in Fish and Wildlife Condition 17 within six months of the impact actions.
[Fish and Wildlife Condition 18; Final Order on ASC]</td></tr>
<tr><td>CON-FW-06</td><td>During construction, the certificate holder shall not conduct ground-disturbing activities within sage-grouse areas of high population richness, core area habitat, low density habitat, or general habitat between March 1 to June 30. Upon request by the certificate holder, the Department in consultation with ODFW may provide exceptions to this restriction. The certificate holder's request must include a justification for the exception, including any actions the certificate holder will take to avoid, minimize, or mitigate impacts to sage-grouse in the relevant area.
[Fish and Wildlife Condition 20; Final Order on ASC]</td></tr>
<tr><td colspan="2">STANDARD: THREATENED AND ENDANGERED SPECIES (TE) [OAR 345-022-0070]</td></tr>
<tr><td>CON-TE-01</td><td>During construction, the certificate holder shall not conduct ground-disturbing activities within Category 1 Washington ground squirrel (WAGS) habitat, subject to the following:</td></tr>
</table>

	a. The identification and categorization of WAGS habitat shall be based on the surveys referenced in Fish and Wildlife Condition 16 and the results of the surveys shall apply for up to three years. b. The certificate holder may span Category 1 WAGS habitat and may work within Category 1 WAGS habitat, provided such work does not cause any ground disturbance. c. The results of the surveys completed per Fish and Wildlife Condition 16 shall remain valid for 3 years. If, during construction and within three years of the protocol survey, an occupied WAGS colony is encountered, the habitat category identified during the protocol survey shall remain valid (i.e. habitat not considered Category 1); the certificate holder shall submit to the Department for its approval, in consultation with ODFW, a notification addressing the following: i. Location of the burrow or colony; and ii. Any actions the certificate holder will take to avoid, minimize, or mitigate impacts to the colony. [Threatened and Endangered Species Condition 1; Final Order on ASC]
CON-TE-02	During construction, the certificate holder shall not conduct ground-disturbing activities within a 33-foot buffer around threatened or endangered plant species, based on pre-construction field surveys required per site certificate condition Fish and Wildlife Habitat 16, subject to the following: a. If complete avoidance is not possible (for example, if the threatened or endangered plant species is located within 33 feet of an existing road where upgrades are authorized), the certificate holder shall install temporary construction mats over soils where the threatened or endangered plant species have been observed and where construction vehicles will be operated; and b. If herbicides are used to control weeds, the certificate holder shall follow agency guidelines including guidelines recommended by the herbicide manufacturer, in establishing buffer areas around confirmed populations of threatened or endangered plant species and refrain from using herbicides within those buffers. [Threatened and Endangered Species Condition 2; Final Order on ASC]
STANDARD: NOISE CONTROL REGULATIONS (NC) [OAR 340-035-0035]	
CON-NC-01	During construction, the certificate holder shall implement the following design measures and construction techniques to minimize potential corona noise during operations: a. For 500 kV transmission lines, use a triple bundled conductor configuration. b. Maintain tension on all insulator assemblies to ensure positive contact between insulators. c. Protect conductor surface to minimize scratching or nicking. [Noise Control Condition 3; Final Order on ASC]

5.5 Operational Conditions

Condition Number	(Site certificate conditions for all standards and phases)
STANDARD: GENERAL STANDARD OF REVIEW (GS) [OAR 345-022-0000]	
OPR-GS-01	After January 1 but no later than April 30 of each year after beginning operation of the facility, unless otherwise agreed upon by the certificate holder and the Council Secretary, the certificate holder shall submit an annual report to the Department addressing the subjects listed in OAR 345-026-0080(1)(b). To the extent that information required by this rule is contained in reports the certificate holder submits to other state, federal or local agencies, the certificate holder may submit excerpts from such other reports to satisfy this rule, unless otherwise required by a site certificate condition. [General Standard of Review Condition 4; Final Order on ASC]
OPR-GS-02	The certificate holder shall submit a legal description of the site to the Department, Malheur County Planning Department, Baker County Planning Department, Union County Planning Department, Umatilla County Planning Department, and Morrow County Planning Department within 90 days after beginning operation of the facility. The legal description required by this rule means a description of metes and bounds or a description of the site by reference to a map and geographic data that clearly and specifically identify the outer boundaries that contain all parts of the facility. [General Standard of Review Condition 5; Mandatory Condition OAR 345-025-0006(2); Final Order on ASC]
OPR-GS-03	Upon completion of construction, the certificate holder shall restore vegetation to the extent practicable and shall landscape all areas disturbed by construction in a manner compatible with the surroundings and proposed use. Upon completion of construction, the certificate holder shall remove all temporary structures not required for facility operation and dispose of all timber, brush, refuse and flammable or combustible material resulting from clearing of land and construction of the facility. ~~In the annual report, the certificate holder shall report to the Department restoration activities, and applicable sections of the Reclamation and Revegetation Plan provided as Attachment P1-3 of the Final Order on the ASC, by county and area of temporary disturbance (i.e. multi-use areas, light duty fly yards, pulling and tensioning sites).~~ [General Standard of Review Condition 9; Mandatory Condition OAR 345-025-0006(11); Final Order on ASC]
STANDARD: ORGANIZATIONAL EXPERTISE (OE) [OAR 345-022-0010]	
OPR-OE-01	During operations, the certificate holder shall provide documentation of inspection, including date inspection(s) occurred, issues identified, and any corrective actions taken, within the annual report submitted to the Department pursuant to OAR 345-026-0080(1)(b), for the following:

	a. Transmission line(s): Routine line patrols/inspections, unscheduled emergency line patrols, aerial vegetation patrols, and comprehensive 10-year maintenance inspection conducted in accordance with its Transmission Maintenance and Inspection Plan and Transmission Vegetation Management Program. b. Longhorn Station: Monthly inspections including visual inspections of buildings, fencing, and electrical equipment; monitoring of all protective relays, gauges, counters, meters, and communication devices; and, annual infrared assessment of bus and operating equipment carrying capacity in accordance with the Station Maintenance Program. [Organizational Expertise Condition 1; Final Order on ASC]
STANDARD: SOIL PROTECTION (SP) [OAR 345-022-0022]	
OPR-SP-01	During operation, the certificate holder shall inspect the facility components for soil erosion impacts as part of the certificate holder's regular transmission line inspection process and shall implement corrective action and mitigation measures, if necessary. [Soil Protection Condition 5; Final Order on ASC]
STANDARD: RETIREMENT AND FINANCIAL ASSURANCE (RT) [OAR 345-022-0050]	
OPR-RT-01	Consistent with Mandatory Condition OAR 345-025-0006(8), no later than the date the facility is placed in service (the In-Service Date), the certificate holder shall submit to the State of Oregon, through the Council, a bond or letter of credit naming the State of Oregon, acting by and through the Council, as beneficiary or payee. The certificate holder shall maintain a bond or letter of credit as follows: a. Notwithstanding subsections (b) – (g) of this condition, the Council retains the authority to require the certificate holder to submit a bond or letter of credit, in a timeframe identified by Council, and in an amount equal to the estimated total decommissioning cost for the facility ($140,779,000 in 3rd Quarter 2016 dollars adjusted to present day value), or another amount deemed by the Council to be satisfactory to decommission the facility and restore the site to a useful, nonhazardous condition. b. From the In-Service Date until In-Service Year 51, the amount of bond or letter of credit shall be $1.00. c. On the 50th anniversary of the In-Service Date, the certificate holder shall begin maintaining a bond or letter of credit in an amount that will increase on an annual basis for the next 50 years. In year 51, the amount of the bond or letter of credit will be set at one-fiftieth (1/50) of the total estimated decommissioning costs, adjusted for inflation, as specified in section (e) of this condition. Each year, through the 100th year of service, the bond or letter of credit shall be increased by one-fiftieth (1/50) of the estimated decommissioning costs. Once the bond or letter of credit is in an amount equal to 100 percent of decommissioning costs, it will remain at that level for the life of the facility. d. On the fifth anniversary of the In-Service Date, and on each subsequent quinquennial thereafter, or any year if requested by Council, the certificate holder shall notify the Department 60 days prior and report to the Council in writing or in-person on the following subjects for the prior 5-year reporting

period: (i) the physical condition of the facility; (ii) any evolving transmission or electrical technologies that could impact the continued viability of the facility; (iii) the facility's performance in the context of the larger power grid; and (iv) the certificate holder's general financial condition, including the certificate holder's credit rating and current financial statements for that 5-year reporting period. The Department shall review the 5-year report and may engage its consultant in the review of the 5-year report. The Department may also include other information in its evaluation of the 5 year-report, including but not limited to: expertise of other reviewing agencies and internal Department staff, consultation with industry experts, or other consulting parties. The certificate holder shall be responsible for all costs associated with review of the 5-year report, in accordance with applicable rules and statutes. Based on the information provided in the 5-year report, and the Department's review and recommendations, the Council will consider whether the certificate holder should be required to post a bond or letter of credit that varies from the financial assurance requirements set forth in sections (b) and (c) of this condition. The certificate holder shall be subject to Council's determination. The Council's determination may include extending the date on which the certificate holder would be required to begin posting the financial assurances set forth in section (c) of this condition.

e. The estimated total decommissioning cost for the facility is $140,779,000 (3rd Quarter 2016 dollars), to be adjusted to the date of issuance of the bond or letter of credit in In-Service Year 51, and on an annual basis thereafter. Subject to Department approval, the certificate holder may request an adjustment of the bond or letter of credit amount based on final design configuration of the facility by applying the unit costs and assumptions presented in the Final Order on the ASC, Attachment W-1. Such adjustments may be made without amendment to the site certificate. The Council authorizes the Department to agree to these adjustments in accordance with this condition. The certificate holder shall adjust the decommissioning cost for inflation using the following calculation:
    i. Adjust the estimated total decommissioning cost (expressed in Q3 2016 dollars) to present value, using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency and using the third quarter 2016 index value and the quarterly index value for the date of issuance of the new bond or letter of credit. If at any time the index is no longer published, the Council shall select a comparable calculation to adjust third quarter 2016 dollars to present value.
    ii. Round the result total to the nearest $1,000 to determine the inflation-adjusted estimated total decommissioning cost.
f. The certificate holder shall use an issuer of the bond or letter of credit approved by the Council.

	g. The certificate holder shall use a form of bond or letter of credit approved by the Council. The certificate holder shall describe the status of the bond or letter of credit in the annual report submitted to the Council under OAR 345-026-0080(1)(b). The certificate holder shall maintain a bond or letter of credit in effect at all times as described in this condition and Retirement and Financial Assurance Condition 4 until the facility has been retired. [Retirement and Financial Assurance Condition 5; Final Order on ASC]
STANDARD: FISH AND WILDLIFE HABITAT (FW) [OAR 345-022-0060]	
OPR-FW-01	During the third year of operation, the certificate holder shall provide to the Department a report demonstrating that fish and wildlife habitat mitigation is commensurate with the final compensatory mitigation calculations. a. The final calculations shall be based on the as-constructed facility. b. Oregon's Elk Mitigation Framework shall be used to calculate the amount of elk habitat compensatory mitigation required for the facility, and the information from the pre- and post-construction traffic studies, as required by Fish and Wildlife Conditions 21 and 22, shall be used in the calculation. [Fish and Wildlife Condition 5; Final Order on ASC]
OPR-FW-02	During operation, the certificate holder shall employ access control on facility access roads within elk habitat (elk summer range and elk winter range) and sage-grouse habitat (areas of high population richness, core area habitat, low density habitat, or general habitat), subject to approval by the applicable land-management agency or landowner. [Fish and Wildlife Condition 9; Final Order on ASC]
OPR-FW-03	During the third year of operation, the certificate holder shall provide to the Department and ODFW the data from the traffic studies in Fish and Wildlife Conditions 21 and 22 for ODFW to calculate the final amount of indirect impact from facility roads that are considered related or supporting facilities to sage-grouse habitat and corresponding compensatory mitigation required using Oregon's Sage-Grouse Habitat Quantification Tool. After receiving the calculations from the State, the certificate holder shall provide to the Department a report demonstrating that sage-grouse habitat mitigation shall be commensurate with the final compensatory mitigation calculations. a. The final calculations shall be based on the as-constructed facility. b. Oregon's Sage-Grouse Habitat Quantification Tool shall be used to calculate the amount of sage-grouse habitat compensatory mitigation required for the facility, and the information from the pre- and post-construction traffic studies shall be used in the calculation. [Fish and Wildlife Condition 19; Final Order on ASC]
OPR-FW-04	During the second year of facility operation, the certificate holder shall conduct a one-year traffic study in elk habitat (elk summer range and elk winter range, based on the same maps used for the pre-construction traffic study) and sage-grouse habitat (areas of high population richness, core area habitat, low density habitat, general habitat, based on the same maps used for the pre-construction traffic study).

	[Fish and Wildlife Condition 22; Final Order on ASC]
STANDARD: HISTORIC, CULTURAL, AND ARCHEOLOGICAL RESOURCES (HC) [OAR 345-022-0090]	
OPS-HC-01	Within three year after construction is completed, the certificate holder shall finalize, and submit to the Department for its approval, a final Cultural Resources Technical Report. a. The results of all cultural resource monitoring required by the Historic Properties Management Plan (HPMP) referenced in Historic, Cultural, and Archaeological Resources Condition 2; and b. The results of all cultural resources testing or data recovery conducted as a result of unanticipated discoveries as required by the Inadvertent Discovery Plan in the Historic Properties Management Plan referenced in Historic, Cultural, and Archaeological Resources Condition 2. [Historic, Cultural and Archeological Resources Condition 3; Final Order on ASC]
STANDARD: WILDFIRE PREVENTION AND RISK MITIGATION (WMP) [OAR 345-022-0115]	
OPR-WMP-01	During operation, on an annual basis consistent with the annual report under General Standard of Review Condition 4, submit the most recent OPUC approved WMP and a copy of OPUC approval. [Wildfire Prevention and Risk Mitigation Condition 2; AMD1]
STANDARD: SITING STANDARDS FOR TRANSMISSION LINES (TL) [DIVISION 24]	
OPR-TL-01	Prior to placing the facility in service, the certificate holder shall take the following steps to reduce the risk of induced current and nuisance shocks: a. Provide to landowners a map of overhead transmission lines on their property and advise landowners of possible health and safety risks from induced currents caused by electric and magnetic fields. b. Implement a safety protocol to ensure adherence to National Electric Safety Code grounding requirements. [Siting Standards for Transmission Lines Condition 2; Final Order on ASC]
OPR-TL-02	During operation, the certificate holder shall: a. Annually update the Public Utility Commission Safety Staff as to how the operator will comply with OAR Chapter 860, Division 024 considering future operations, maintenance, emergency response, and alterations until project retirement. b. File information with the Commission before January 2 of each even-numbered year, as required by ORS 758.013: i. The name and contact information of the person that is responsible for the operation and maintenance of the electric power line, and for ensuring that the electric power line is safe; and ii. The name and contact information of the person who is responsible for responding to conditions that present an imminent threat to the safety of employees, customers and the public. iii. In the event that the contact information described above in Siting Standards for Transmission Lines Condition 5(b) changes or that ownership of the electric power line changes, the person who engages in the operation of the

	electric power line must notify the commission of the change as soon as practicable, but no later than within 90 days. c. Provide Public Utility Commission Safety Staff with: i. Maps and drawings of routes and installation of electrical supply lines showing: 11. Transmission lines and structures (over 50,000 Volts) 12. Distribution lines and structures - differentiating underground and overhead lines (over 600 Volts to 50,000 Volts) 13. Substations, station, roads and highways ii. Plan and profile drawings of the transmission lines (and name and contact information of responsible professional engineer). d. Document compliance with the above provisions in its annual report to the Department as provided in General Standard Condition 4. [Siting Standards for Transmission Lines Condition 5; Final Order on ASC]
STANDARD: NOISE CONTROL REGULATIONS (NC) [OAR 340-035-0035]	
OPR-NC-01	During operation: a. Pursuant to OAR 340-035-0010, an exception to compliance with the ambient antidegradation standard at OAR 340-035-0035(1)(b)(B) (which prohibits an increase of more than 10 dBA above ambient sound pressure levels) is granted during facility operation when there is foul weather (a rain rate of 0.8 to 5 millimeters per hour), which Council finds constitutes an infrequent event under OAR 345-035-0035(6)(a). b. The ambient antidegradation standard at OAR 340-035-0035(1)(b)(B) may be exceeded by the transmission line at any time of day or night during foul weather events (defined as a rain rate of 0.8 to 5 millimeters per hour). [OAR 340-035-0010(2)] c. The quantity and quality of noise generated in exceedance of the ambient antidegradation standard OAR 340-035-0035(1)(b)(B), during foul weather events (defined as a rain rate of 0.8 to 5 millimeters per hour), shall not be more than 10 dBA (or ambient plus 20 dBA). [OAR 340-035-0010(2)] [Noise Control Condition 4; Final Order on ASC]
OPR-NC-02	During operation: a. A variance to compliance with the ambient antidegradation standard at OAR 340-035-0035(1)(b)(B) (which prohibits an increase of more than 10 dBA above ambient sound pressure levels~~i.e. an increase of 10 dBA above ambient sound pressure levels~~) is granted pursuant to OAR 345-035-0100(1) for the transmission line at any time of day or night during foul weather events (defined as a rain rate of 0.8 to 5 millimeters per hour). b. The quantity and quality of noise generated in exceedance of the ambient antidegradation standard shall not be more than 10 dBA (i.e., ambient plus 20 dBA), as measured at any NSR location. ~~The ambient antidegradation standard at OAR 340-035-0035(1)(b)(B) may be exceeded by the transmission line at any time of day or night. [OAR 340-035-0100]~~

	[Noise Control Condition 5; Final Order on ASC, AMD1]

5.6 Retirement Conditions

STANDARD: RETIREMENT AND FINANCIAL ASSURANCE (RT) [OAR 345-022-0050]	
RET-RT-01	The certificate holder must retire the facility in accordance with a retirement plan approved by the Council if the certificate holder permanently ceases construction or operation of the facility. The retirement plan must describe the activities necessary to restore the site to a useful, nonhazardous condition, as described in OAR 345-027-0110(5). After Council approval of the plan, the certificate holder must obtain the necessary authorization from the appropriate regulatory agencies to proceed with restoration of the site. [Retirement and Financial Assurance Condition 2; Mandatory Condition OAR 345-025-0006(9); Final Order on ASC]
RET-RT-02	The certificate holder is obligated to retire the facility upon permanent cessation of construction or operation. If the Council finds that the certificate holder has permanently ceased construction or operation of the facility without retiring the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110, the Council must notify the certificate holder and request that the certificate holder submit a proposed final retirement plan to the Department within a reasonable time not to exceed 90 days. If the certificate holder does not submit a proposed final retirement plan by the specified date, the Council may direct the Department to prepare a proposed final retirement plan for the Council's approval. Upon the Council's approval of the final retirement plan, the Council may draw on the bond or letter of credit described in OAR 345-025-0006(8) to restore the site to a useful, nonhazardous condition according to the final retirement plan, in addition to any penalties the Council may impose under OAR Chapter 345, Division 29. If the amount of the bond or letter of credit is insufficient to pay the actual cost of retirement, the certificate holder must pay any additional cost necessary to restore the site to a useful, nonhazardous condition. After completion of site restoration, the Council must issue an order to terminate the site certificate if the Council finds that the facility has been retired according to the approved final retirement plan. [[Retirement and Financial Assurance Condition 3; Mandatory Condition OAR 345-025-0006(16); Final Order on ASC]

6.0 Successors and Assigns

To transfer this site certificate or any portion thereof or to assign or dispose of it in any other manner, directly or indirectly, the certificate holder shall comply with OAR 345-027-0400.

7.0 Severability and Construction

If any provision of this agreement and certificate is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and conditions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the agreement and certificate did not contain the particular provision held to be invalid.

8.0 Execution

This site certificate may be executed in counterparts and will become effective upon signature by the Chair of the Energy Facility Siting Council and the authorized representative of the certificate holder.

IN WITNESS THEREOF, this site certificate has been executed by the State of Oregon, acting by and through the Energy Facility Siting Council and Idaho Power Company (certificate holder).

ENERGY FACILITY SITING COUNCIL

By: _____

Kent Howe, Vice Chair

Date: _____

Idaho Power Company

By: _____

Authorized Representative

Date:_____

By: _____

Date:_____

Attachment A

Facility Location Mapsets ~~(ASC Exhibit C)~~

Attachment 2: DPO Comments

Audio Recordings for the July 17 and 18, 2023 Public Hearings on the Draft Proposed Order for Request for Amendment 1 for the Boardman to Hemingway Transmission Line:

All recordings are available on the EFSC Meetings Webpage:

https://www.oregon.gov/energy/facilities-safety/facilities/Pages/Council-Meetings.aspx

Link to YouTube Recording for July 17 DPO Hearing in Baker City, OR:

https://www.youtube.com/watch?v=LrDosesgHtI

Link to You Tube Recording for the July 18 DPO Hearing in Pendleton, OR:

https://www.youtube.com/watch?v=RNimpNzDY_E

ESTERSON Sarah * ODOE

From: Sarah.ESTERSON@energy.oregon.gov
Subject: Comment on RFA 1 DPO
Attachments: Geer RFA 1 comment.docx

From: Susan Geer <susanmgeer@gmail.com>
Sent: Tuesday, July 18, 2023 6:35 PM
To: TARDAEWETHER Kellen * ODOE <kellen.tardaewether@energy.oregon.gov>
Subject: Comment on RFA 1 DPO

Please find attached my public comment on RFA 1

thank you,
Susan Geer

July 18, 2023

To: Energy Facility Siting Council

Re: Comment on RFA 1, Boardman to Hemingway Transmission Line

To Whom it may Concern:

Page 12 of Draft Proposed Order, "Description of Newly Identified Protected Areas in RFA1 Analysis Area" contains the following description of Glass Hill State Natural Area:

> The Glass Hill Preserve/SNHA consists of approximately 1,230 acres located southwest of the City of La Grande in Union County, Oregon. The Preserve/SNHA is located in the Blue Mountains ecoregion and is dominated by a peak that is 5,390 feet in elevation. The Preserve/SNHA was established in 2020 and is part of a privately owned nature reserve/conservation easement managed by the Blue Mountain Land Trust. Conservation easement may allow public hunting and fishing by permission. The public is likely excluded from this area.

Footnote 119 says: "Communication between Kristen Gulick, Tetra Tech, and Lindsey Wise, Oregon State University, Institute for Natural Resources, July 13, 2022, and Meghan Ballard, Blue Mountains Conservancy, July 23, 2022, Attachment 7- 2. B2HAMD1 RFA1 2023-06-08. Section 7.1.4"

The description mischaracterizes the Glass Hill SNA. To my knowledge Meghan Ballard has not been involved in our attempts to get an additional conservation easement, and so would have no knowledge of public use. The SNA is not advertised, but it certainly is not closed to the public. The SNA is open to research and education as spelled out in the Natural Areas agreement, as well as non-motorized nature-oriented activities such as hiking, birding, botanizing, and mountain biking on existing trails. For many years the X-Terra mountain bike race was held on the property annually, and those trails are locally popular. Furthermore, the property owner hosts Native American ghost dance ceremonies as part of addiction recovery programs.

Glass Hill SNA has a conservation easement with Rocky Mountain Elk Foundation dating from 2001 on 800 plus acres and the remainder of the acres we have been attempting for the past 5 years to get protected with an additional conservation easement from Blue Mountain Land Trust.

Glass Hill SNA contains the following elemental occurrences (List 1 rare species identified by Oregon Biodiversity information Center): Douglas clover (Trifolium douglasii), white headed woodpecker, Columbia spotted frog, and Gentianella tennella ssp. tennella. The SNA contains several priority 1 plant associations for the state of Oregon, according to the Natural Areas Plan. Additionally, a new moth species has been discovered on the SNA (Dr. Karen Antell), and there was an unconfirmed siting of a

fischer in November 2020. The area has been closed to grazing, logging and development for over 20 years. It contains a series of wet meadows including an especially pristine wet meadow, Winn Meadow, where the Douglas clover is found. Further details on the importance of the SNA itself and its significance as part of the "Miracle Mile" connecting Ladd Marsh Wildlife Area Glass Hill unit with Rebarrow Forest (EOU) may be found in files submitted on behalf of Glass Hill SNA in the EFSC and OPUC contested cases.

Table 15 of the DPO for RFA 1 shows Protected Areas within the Analysis Area, including Glass Hill SNA. The table shows that 1.6 miles of additional access roads are proposed with RFA 1. Footnote "4" shows that Glass Hill SNA states "Potential impacts from approved routes in Final Order on ASC not evaluated for protected area".

Approval of the Morgan Lake route signals a tragedy for state Protected Areas of Oregon, downgrading their ecological integrity and putting special status species further at risk. Allowing a route through the middle of an established conservation easement signals a huge loss for the conservation community even if they do not yet realize it. Allowing a route through the area with the most forested acres of any route, is a huge loss too. Conservation easements are represented as the most and best protection for ecologically significant lands. Proposing different conservation easements in other places as a mitigation is a poor substitute.

The addition of another 1.6 miles of access roads is only further exacerbating a terrible mistake by the EFSC that should never have been considered.

Respectfully submitted,

Susan Geer, Botanist/Ecologist

Representing Glass Hill State Natural Area

ESTERSON Sarah * ODOE

From: Sarah.ESTERSON@energy.oregon.gov
Subject: FW: J Williams_DPO comment on RFA1 and request for contested case
Attachments: J.Williams_DPO Comment-Request for Contested Case-RFA1.pdf; john b2h comment.docx

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From: fuji@stopb2h.org <fuji@stopb2h.org>
Sent: Tuesday, July 18, 2023 7:53 PM
To: TARDAEWETHER Kellen * ODOE <Kellen.TARDAEWETHER@energy.oregon.gov>
Cc: 'jkreider' <jkreider@campblackdog.org>
Subject: J Williams_DPO comment on RFA1 and request for contested case

Kellen,

This is a transcribed attachment for John Williams's verbal testimony. Also, the photo of his hand-written comments for verification. I could not file it into the portal.
Below is a screen shot which doesn't allow John's comments because he does not have email. I suppose I could have put mine in there but don't really want to. Please advise if in the future we can do this differently for him. He has NO email.

Regards,
Fuji Kreider on behalf of John Williams

Siting Public Comment

*** Required Field**

The form could not be submitted for the following reasons:

Email Address must be a valid email address.

Contact Information

Organization Name

Organization Type
General Public

First Name *
John

Last Name *
Williams

Email Address *
none

Phone Number
541-962-4527

July 18, 2023

To: Energy Facilities Siting Council

From: John Williams, impacted landowner

Re: RFA1 for the Boardman to Hemingway Project, DPO Comment and Request for Contested Case

I am John Williams, at: P.O. Box 1384, La Grande, Oregon 97850. I own land west of Morgan Lake, parcel 03S37E01300.

I have given permission for several pre-construction surveys done by contractors for IPC to take place on this property. I also, in my data requests[1], asked for IPC to share data gathered and all reports the contractors had or will submit. IPC responded that no reports were generated, but shared some notes taken. Missing in these notes are those pertaining to Woodpecker/Goshawk, Raptor, Land, and geo-technical drilling or access. The last of which haven't been started.

Of concern to me, and what I wish to contest are the siting of 3 towers and the disregard of SHPO guidance in regard to a buffer between any construction around archaeological sites.

One of the contested tower siting, as near as I can tell from the map provided me by ODOE, ML 5/4, is sited only a few feet from the Peach Canyon Fault, considered a major fault by a Geological map conducted in conformance with ORS 516.030 funded by OR Dept of Geology & Mineral Industries under contract with US Dept of Energy DE-FC07-79ET27220, Geology by Warren Barrach, John D Kaufman and John G Bond, 1980.

Again, the geotechnical drilling or access survey has not begun.

Another tower ML 6/3 is sited in a wetland west of Twin Lake, which should involve more or better investigation.

The 3rd tower, ML 62a is sited, it appears on a pre-contact Cultural Resource Polygon, 8B2H-DM-52. As with a cultural resource point it is located within a Direct Analysis Area, 8B2H-DM-47, SHPO guidance strongly recommends a 30-meter buffer between any construction and an archaeologic site.

Also, I contend the amendment and project are not in compliance with OAR 345-021-0010(1)(5). Therefore, I would like to have contested case.

[11] OPUC's docket PCN5 #1.

I am John Williams [illegible] Box 1324 La Grande OR 97850. I own land W of Morgan Lake, parcel 03537 & 01300.

I have given permission for several surveys done by contractors for LPC to take place on this prop. I also, in my Data Request, asked for LPC to share data gathered & all reports the contractors had or will submit. LPC responded that no reports were generated, but shared some notes taken. Missing in these notes are those pertaining to Hoodpecker/Goshawk, Raptor & Land. & Geotechnical drilling or access. The last of which haven't been started.

Of concern to me, & which I wish to contest are the siting of 3 towers and the disregard of SHPO guidance in regard to a buffer between any construction around archaeological sites.

One of the contested towers siting, as near as I can tell from maps provided me by ODOT, ML 5/4, is sited only a few feet from major fault line, The Beach Canyon Fault, considered a major fault by a Geologic Map conducted in conformance w ORS 516.030 funded by OR Dept of Geology & Mineral Industries under contract w US Dept of Energy DE-FC07-79ET27220, Geology by Warren Barrash, John D Kaufman & John A Bond 1980.

~~Another Tower ML 6/3 is sited on wetlands~~

Again, The geotechnical drilling or access survey has not begun.

Another tower ~~6/3~~ ML 6/3 is sited in a wet land W of Tureen Lake, which ~~I assume~~

~~is unsuitable~~. should involve more or better investigation.

The 3rd tower ML62a is sited, it appears on a previous Cultural Resource Polygon, #B2H-DM-52. As with ~~at least one other~~ a cultural resource point it is located within a Direct Analysis Area, #B2H-DM-47, SHPO guidance strongly recommends a 30 meter buffer between any construction & an archaeologic site.

Also the Amendment & project are not in compliance w OAR 345-021-0010 (1)(s) Therefor I would like to contend ~~have~~ contested case

ESTERSON Sarah * ODOE

From: Sarah.ESTERSON@energy.oregon.gov
Subject: Stop B2H Coalition_DPO Comment on RFA1 & request for contested case
Attachments: STOP-DPO Comments-RFA1.pdf; STOP-DPO commentRFA1_Attachment1_Kate Brown statement regarding private forest Accord.pdf; STOP-DPO commentRFA1_Attachment2 _final forest practices act rule revisions.pdf

---

From: fkreider@campblackdog.org <fkreider@campblackdog.org>
Sent: Tuesday, July 18, 2023 6:23 PM
To: TARDAEWETHER Kellen * ODOE <Kellen.TARDAEWETHER@energy.oregon.gov>
Cc: 'Irene Gilbert' <ott.irene@frontier.com>; 'jkreider' <jkreider@campblackdog.org>; loisbarry31@gmail.com; Matt Cooper <mcooperpiano@gmail.com>; Charlie Gillis <charlie@gillis-law.com>; 'Fuji Kreider' <fuji@stopb2h.org>
Subject: Stop B2H Coalition_DPO Comment on RFA1 & request for contested case

Kellen,

I will attempt to also file this in the docket portal. But, in case I mess up, I do not want to miss the deadline. They will be identical filings—FYI.

Please accept the Attached PDF of STOP's Comments and two additional attachments.

Thank you for your consideration,

Fuji Kreider
Secretary-Treasurer
Stop B2H Coalition
fuji@stopb2h.org
541-406-0921

July 18, 2023

To: **Energy Facility Siting Council Members**

From: **Stop B2H Coalition**

RE: **Public Comment on the Draft Proposed Order (DPO) for the Request for Amendment 1 (RFA1) for the Boardman to Hemingway Project Site Certificate and Request for Contested Case**

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Introduction

Please accept the following public comments from the Stop B2H Coalition (STOP), addressing the Draft Proposed Order (DPO) for Idaho Power's (IPC)[1] Request for Amendment I (RFA1) for the Boardman to Hemingway Transmission Project (B2H). **It is also our Request for a Contested Case.**

The Oregon Department of Energy (ODOE) references OAR 345-027-0375(2)(a) stating the amendment review is limited to the area added to the original site certificate; yet, Request for Amendment I (RFA1) also requests changes to the original Site Certificate Condition language. Because this amendment involves both increases to the site boundary as well as requests for changes in the original Site Certificate Conditions, OAR 345-027-375(2)(c)&(d) also apply:

[1] Idaho Power Company (IPC) may be referenced as: the developer, the applicant, and the certificate holder.

(c) For any other requests for amendment not described above, the facility, with the proposed change, complies with the applicable laws or Council standards that protect a resource or interest that could be affected by the proposed change; and

(d) For all requests for amendment, the amount of the bond or letter of credit required under OAR 345-022-0050 (Retirement and Financial Assurance) is adequate.

These sub-sections require a review of the bond amount, as well as, a review of all impacts for the entire site when there is a change in a Site Certificate Condition. Changes in the requirements regarding what must be provided and approved, timelines for when it must be approved and by whom, that were not included in the original Site Certificate can have a significant impact on whether or not council[2] standards are met.

Oregon Statute ORS 569.401 indicates that an amendment to a site certificate must require the development to comply with the laws effective the date the certificate is issued. It is troublesome to STOP that the public may have been misled or confused about the parameters of their comments, due to the announcement stating that comments were limited to the area being added to the site certificate.

Therefore, our comments are inclusive of Site Conditions which have been changed and STOP believes the Council should remand back to staff, because they lack compliance with Council Standards and/or there is a lack of sufficient detail for STOP, impacted landowners, and the public, to be able to evaluate and make a determination of compliance. The latter is specific to the necessary maps and we will further elaborate below.

Access Roads and Piecemeal Review

The majority of RFA1 relates to new or changed access roads for the facility. During the initial B2H Application process and contested case, multiple members of the public objected to the fact that there were roads that would be used--which would require substantial changes and other access roads that were not being included--in the original Application for Site Certificate (ASC) according to the definition of a "facility" in the EFSC rules. ODOE responded that based upon the council interpretation in the Wheatridge contested case, the developer was responsible for defining the facility for purposes of the Site Certificate based upon what they chose to include in their application.

Council is now being asked to ignore the impacts of the development as it was proposed by Idaho Power and consider the additional 1,000 acres of land including 45.9 miles of changed and new roads: impacts to wetlands, rivers, wildlife, and property owners, as if this change *would not* have had any impact on how the council considered their standards with the increased size, location, and impacts, that comprise this new "facility."

Even before a decision is made on this RFA, which essentially changes the facility boundaries and support facilities, the developer has submitted another amendment (RFA2) to add yet another facility component and more access road changes. This time they include a midline capacitor station which is

[2] Council = Energy facility Siting Council referred herein as "council;" or "EFSC."

required to boost the power to its destination at the substation in Boardman or Hemingway. We know that the IPC engineers are smart and technically competent people. They had to have known from the onset that this midline capacitor would be required, but they chose to exclude it from their definition or description of the facility they intended to build. RFA2 (which we plan to comment when the DPO is released) will also add 40.2 miles of 500KV transmission lines, and 135 miles of new or modified roads. Together, these two amendments will add over 5,000 acres to the originally claimed 23,000-acre site -- over a 20% increase.

Again, IPC will be asking the council to pretend that the only impacts that matter in their decisions will be the ones from this isolated piece of the newly expanded roads in RFA1. Making this manipulation even more outrageous is the fact that Idaho Power convinced the Oregon Public Utility Commission to rely upon the findings of EFSC (i.e.: land use, environmental, historical/cultural, and more) in making decisions which allow Idaho Power to condemn private property for this transmission line without ever admitting to the true size, impacts, or costs, of the development. Furthermore, obvious from these RFA's and from the knowledge and observations of our landowner members, IPC has not finished the required pre-construction surveys. Hence, STOP believes that there will be constant barrage of RFA's--a piecemeal approach--which we expect the Council will object too.

IPC took advantage of the Council decision in the Wheatridge Contested Case to minimize the actual impacts and size of this development for the initial application for a Site Certificate. Now they are attempting to disclose the actual site but avoid having the council or the public actually address the significance of the unmitigated damages it will cause. The Wheatridge Decision provided that the developer was not required to include the entire development in the Site Certificate review, however, they did have to identify the area and components that they chose to include under the "facility" definition/description for the Site Certificate.

The development that will result from an approval of these amendments, as well as any future ones pertaining to the transmission line and all of its component parts, has not been evaluated by EFSC. It should be reviewed as a new application due to the substantially increased impacts it will have on all council standards.

Maps: Creating an Inability to Review the RFA1 with Specific Specificity

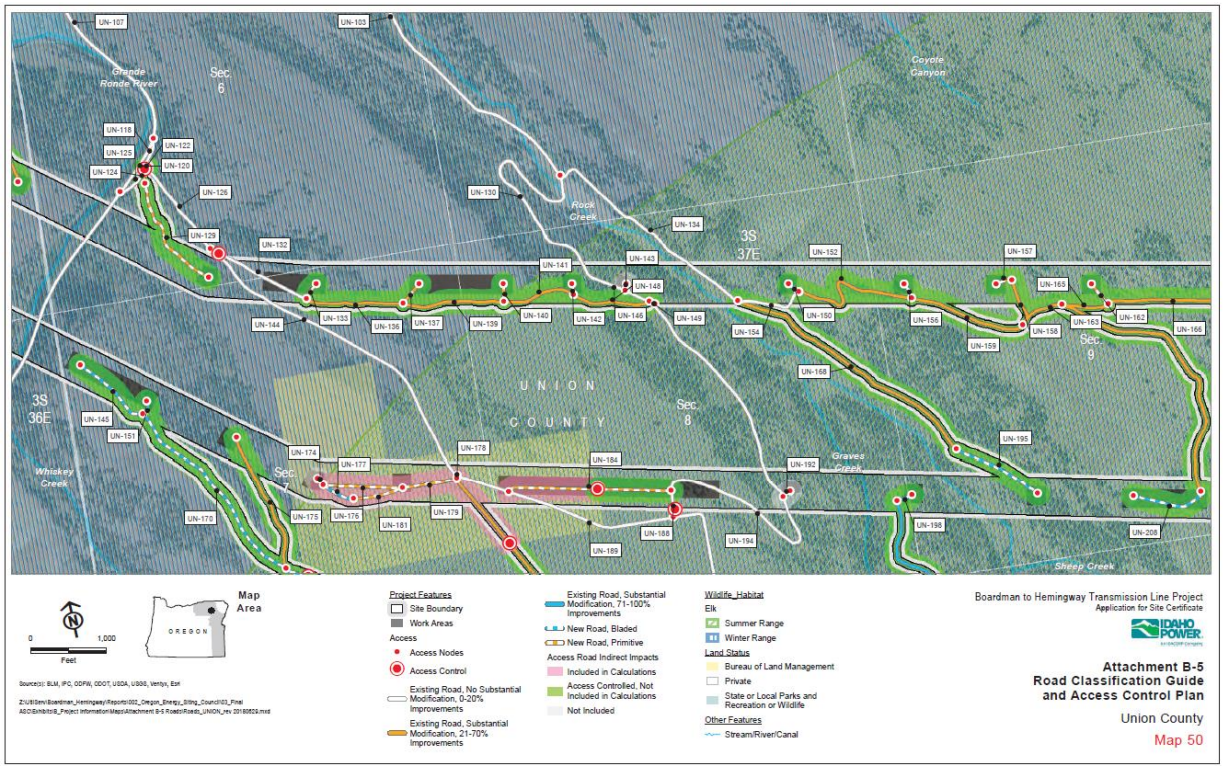
The map sets in amendment 1 do not comply with (OAR) 345-021-0010 (1)(c).

OAR 345-021-0010(1)(c): Exhibit C: Information about the location of the proposed facility, including: (A) A map or maps showing the proposed locations of the energy facility site, all related or supporting facility sites and all areas that might be temporarily disturbed during construction of the facility in relation to major roads, water bodies, cities and towns, important landmarks and topographic features, using a scale of 1 inch = 2000 feet or smaller when

necessary to show detail.

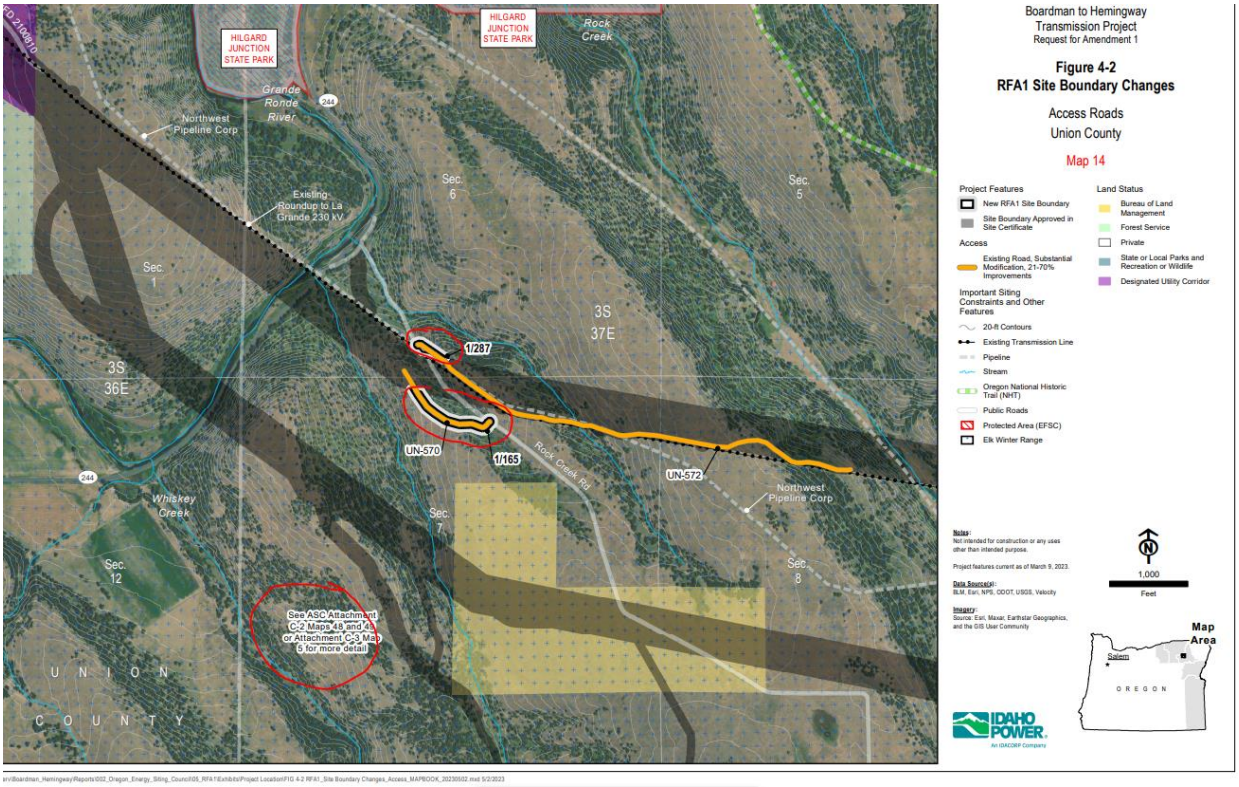
Using the existing maps to look for some specific information is not possible. An example.

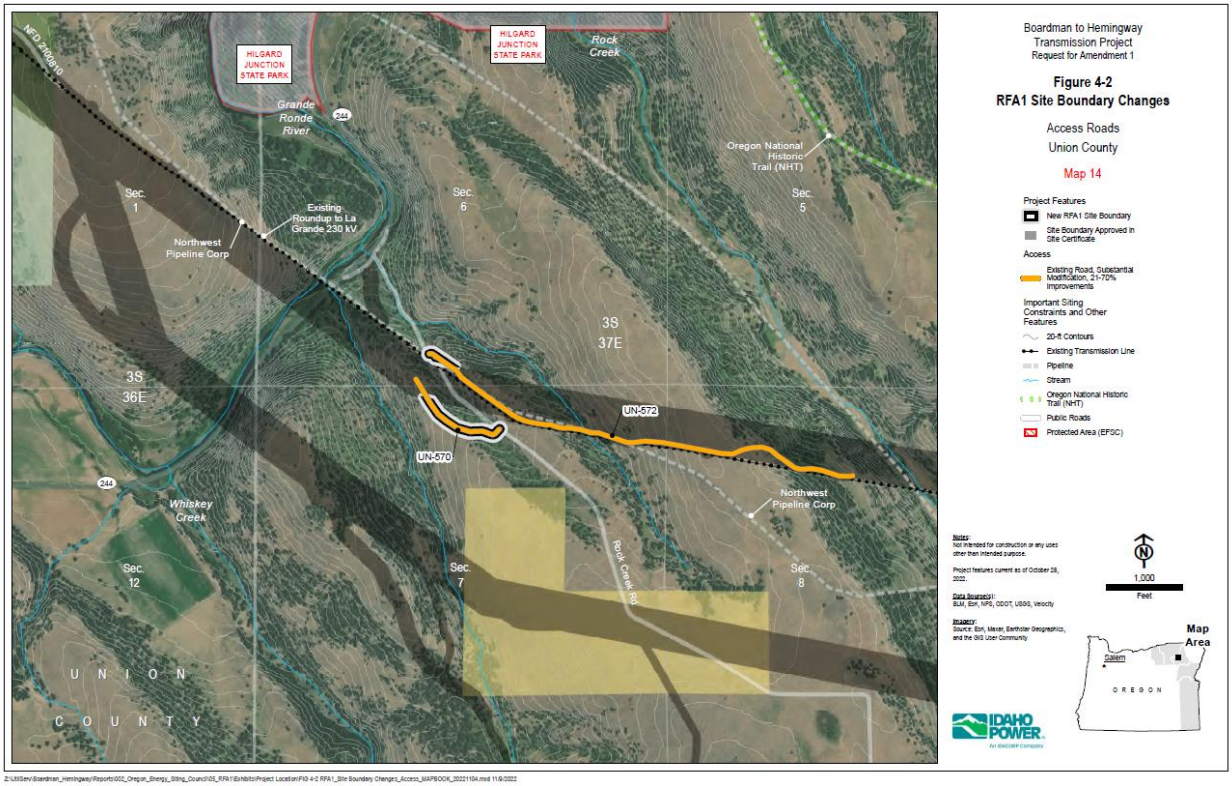
In trying to figure out the road changes in some Union County sections. I go to **Attachment B-5**: Road Classification Guide and Access Control Plan(Maps Only) to get the final order maps. In this case map 50 below.



I then go to what looks like to same map in Figure 4-2 RFA 1 Site Boundary changes, map 14, that Kellen Tardaewether helped me find. I found another identical map but it was not the most current map. Confusing.

First below is the map Kellen provided with red circles. The second is the one I found. How is one to tell the difference?


HILGARD JUNCTION STATE PARK
Rock Creek
Grande Ronde River
Northwest Pipeline Corp
Existing Roundup to La Grande 230 kV
Sec. 6
Sec. 5
Sec. 1
3S 37E
3S 36E
1/287
UN-570
1/165
UN-572
Rock Creek Rd
Whiskey Creek
Sec. 7
Sec. 8
Sec. 12
See ASC Attachment C-2 Maps 4B and 4C or Attachment C-3 Map 5 for more detail
U N I O N
C O U N T Y
Boardman to Hemingway Transmission Project
Request for Amendment 1
Figure 4-2
RFA1 Site Boundary Changes
Access Roads
Union County
Map 14
Project Features
New RFA1 Site Boundary
Site Boundary Approved in Site Certificate
Access
Existing Road, Substantial Modification, 21-70% Improvements
Important Siting Constraints and Other Features
20-ft Contours
Existing Transmission Line
Pipeline
Stream
Oregon National Historic Trail (NHT)
Public Roads
Protected Area (EFSC)
Elk Winter Range
Land Status
Bureau of Land Management
Forest Service
Private
State or Local Parks and Recreation or Wildlife
Designated Utility Corridor
Notes:
Not intended for construction or any uses other than intended purpose.
Project features current as of March 9, 2023.
Data Source(s):
BLM, Esri, NPS, ODOT, USGS, Velocity
Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
1,000
Feet
Map Area
Salem
OREGON
IDAHO POWER
An IDACORP Company


HILGARD JUNCTION STATE PARK
Rock Creek
Grande Ronde River
Oregon National Historic Trail (NHT)
Sec. 1
Sec. 6
Sec. 5
Existing Roundup to La Grande 230 kV
Northwest Pipeline Corp
3S 37E
3S 36E
UN-572
UN-570
Whiskey Creek
Rock Creek Rd
Sec. 12
Sec. 7
Sec. 8
U N I O N
C O U N T Y
Boardman to Hemingway Transmission Project
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RFA1 Site Boundary Changes
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Union County
Map 14
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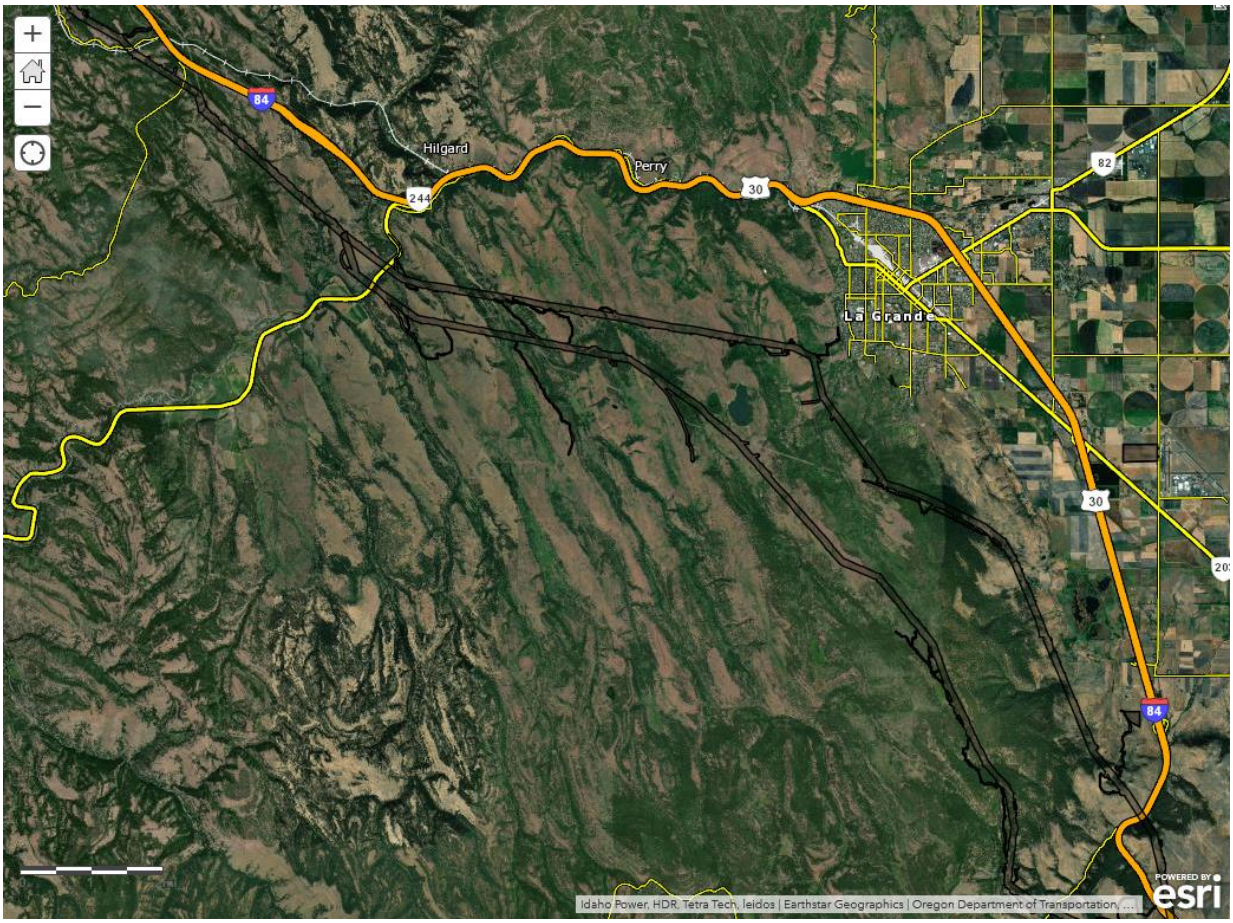
New RFA1 Site Boundary
Site Boundary Approved in Site Certificate
Access
Existing Road, Substantial Modification, 21-70% Improvements
Important Siting Constraints and Other Features
20-ft Contours
Existing Transmission Line
Pipeline
Stream
Oregon National Historic Trail (NHT)
Public Roads
Protected Area (EFSC)
Notes:
Not intended for construction or any uses other than intended purpose.
Project features current as of October 28, 2022.
Data Source(s):
BLM, Esri, NPS, ODOT, USGS, Velocity
Imagery:
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
1,000
Feet
Map Area
Salem
OREGON
IDAHO POWER
An IDACORP Company

Then as I try to overlay map 50, to map 14 I cannot tell where the new road sections on top of the base map.

I then try to look up the road segments to understand what is happening I cannot find them all. We cannot find UN-570 or UN-572.

Upon review of the ODOE on line maps I find even less information on the area[3].



Therefore, landowners and other interested parties cannot find all the information they need to property comment on RFA 1 and therefore there needs to be a new map set developed and an extension of time so all parties can get their bearing and comment effectively.

Changes to the Wildfire Plan: Non-Compliant

STOP B2H Coalition does not agree with the ODOE staff recommendation dated June 14, 2023 by Kellen Tardaewether, Senior Siting Analyst[4]. The recommendation states:

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3 https://geo.maps.arcgis.com/home/webmap/viewer.html?webmap=17c081fcb7fa43da87c13f8dca310e89&find=Boardman%20to%20Hemingway%20Transmission%20Line%20%28Proposed%29&mapOnly=true

4 https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2023-06-14-B2H-AMD1-Draft-Proposed-Order.pdf

> The Oregon Department of Energy (Department) recommends that the Energy Facility Siting Council (EFSC or Council) find that Idaho Power Company (certificate holder) has demonstrated that the preponderance of evidence on the record supports the conclusion that the proposed RFA1 site boundary additions comply with all laws and Council standards applicable to an original site certificate application.

In Request for Amendment #1 Boardman to Hemingway Transmission Line Project Section 7.1.10, pdf p 123-4 the applicant states:

> IPC has prepared a Wildfire Mitigation Plan (Attachment 7-16) that has been filed with the Public Utility Commission of Oregon in compliance with OAR chapter 860, division 300. This plan would apply to the entire Project, including the proposed changes in RFA 1. Therefore, the Council may conclude that the Proposed Site Boundary Additions comply with **OAR 345-022-0115**(2) as they are subject to a wildfire protection plan approved by the Public Utility Commission.

The OPUC inserted conditions in the 2023 Wildfire Mitigation Plan after the issues raised by STOP were not corrected from the 2022 Wildfire Plan. The problems in the 2022 and 2023 Wildfire Prevention and Risk Management Plans will affect areas in Union County that are being modified in RFA 1. It will also impact roads already approved. These new road additions are in Figure 4-2 RFA 1 Site Boundary Changes maps 13, 14 and 15. The high-risk areas these roads travel through have been identified by: 1) the state of Oregon, 2) Union County Community Wildfire Protection Plan, and 3) the Oregon Trail Electrical Co-op (OTEC). The applicant failed to identify these areas in their 2022and 2023 Wildfire Prevention and Risk Management Plans. STOP pointed these errors out in detail in the OPUC Wildfire docket UM 2209[5] in 2022[6] and 2023[7].

In OPUC's 2023 Idaho Power Wildfire Prevention and Risk Management Plan, Order 23-222[8] in UM 2209 the OPUC said,

> In addition, we specifically note stakeholder comments by Jim Krieder of StopB2H on a lack of clarity as to why Idaho Power's designation of high fire risk areas differs from designations by other agencies and entities. We also note Staff Recommendation 3, which we believe seeks clarity on this issue in the context of adjoining or overlapping utilities. In fulfilling Staffs recommendations, Idaho Power should consider the larger communications challenge of ensuring that residents in its service territory are aware of why it has designated certain areas as high fire risk zones and not others, and that they better understand why entities may use different methodologies, have different goals for designation, or have different inputs to the modeling. It should then work to close that information gap.

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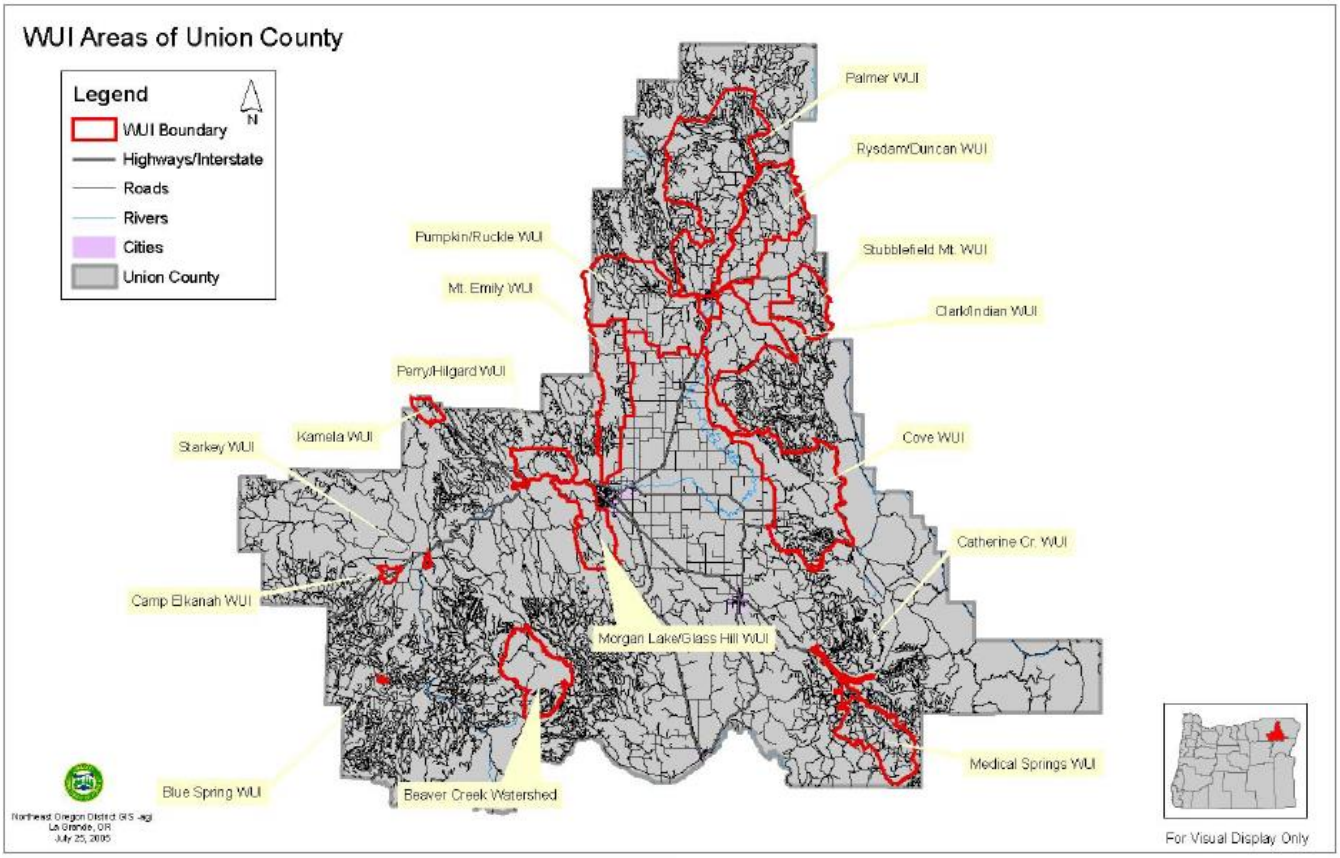
5 https://apps.puc.state.or.us/edockets/DocketNoLayout.asp?DocketID=23112&Child=action

6 February 25, 2022: https://edocs.puc.state.or.us/efdocs/HAC/um2209hac163939.pdf; April 18, 2022: https://edocs.puc.state.or.us/efdocs/HAC/um2209hac82111.pdf

7 https://edocs.puc.state.or.us/efdocs/HAC/um2209hac165058.pdf

8 https://apps.puc.state.or.us/orders/2023ords/23-222.pdf

The Union County Community Wildfire Protection Plan identifies the Morgan Lake/Glass Hill,



Perry/Hilgard, and Kamela areas as wildland-urban interface areas or WUI's. They are in the B2H's site boundary. However, IPC has refused to show their fire risk calculations that they were asked to show in 2022 to determine how 3 other agencies' analyses identifies high risk fire areas in the route of the B2H but IPC does not get the same results. Therefore, we do not know why 3 other entities, in the Wildfire mapping community, see these as high-risk wildfire zones and IPC does not. Which brings into question all of IPC's wildfire work and the Site Certificate Conditions regarding wildfire risk and public services.

OAR 345-022-0115(2)- Wildfire Prevention and Risk Mitigation states that:

(2) The Council may issue a site certificate without making the findings under section (1) if it finds that the facility is subject to a Wildfire Protection Plan that has been approved in compliance with OAR chapter 860, division 300.

STOP reads OPUC Order 23-222 to be conditional due to lack of clarity and the additional work the applicant has been told to complete. OPUC staff has 37 recommendations to work through with Idaho Power before Idaho Power's Wildfire Plan for Oregon is considered compete.

Furthermore, these recommendations from the OPUC that IPC needs to address are not only limited to Union County. Morrow County landowners were also involved in the OPUC wildfire mitigation planning

processes. For the record and specificity, we would like to incorporate the comments of Jim Kreider, Stop B2H Coalition, Wendy King, and Sam Myers in the OPUC docket UM2209.[9]

Re-evaluation of the Required Bond is Necessary

STOP contends that the bond amount and flexibility currently included in the Site Certificate fails to provide for the protection of landowners, residents, ratepayers, and public agencies, from the liability that will occur in the developer abandons the transmission line or declares bankruptcy without restoring the site.

The Oregon Department of Energy publication entitled, "Siting of Energy Developments in Oregon, EFSC standards in Administrative Rule" states that the Council recognizes the risk that a development could stop before it is completed or that the developer could shut down the development without restoring the site.

OAR 345-027-0375 requires EFSC to complete a full review of the issue of whether the bond amount complies with the requirement under OAR 345-022-0050 including determining the costs of restoring the site and requiring a bond of an amount, "satisfactory to the Council to restore the site."

This rule contains the requirement that the Council find that the bond is adequate to "restore the site." Council determined that the cost to restore the site of the Transmission line and supporting structures would be $140,779,000 (First Amended Site Certificate OPR-RT-01, Page 65.) EFSC must require IPC to provide a bond that is "adequate to restore the site."

While we question that this rule provides for flexibility on the part of the Council, the following information documents the fact that the current ownership of this transmission line by Idaho Power and PacifiCorp inserts a significant risk that the transmission line may be abandoned or there could be a bankruptcy due to the litigation that is ongoing resulting in millions and potentially billions of dollars owed by PacifiCorp due to their role in the creation of wildfires.

PacifiCorp is the majority financer and owner of the project per Contract No. 22TX17207, Page 24 and 26. These document the fact that the project will be jointly owned as tenants in common between PacifiCorp and Idaho Power. The contract outlines the shared responsibilities for the construction, ownership, costs and use of the B2H line and establishes that PacifiCorp will share responsibility for the B2H line.

OAR 345-022-0050(2) states, "The applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council **to restore the site to a useful, non-hazardous condition."**

Recent actions and costs associated with wildfires occurring along both Idaho Power's and PacifiCorp's transmission lines leave the companies in the position of having to pay millions and perhaps billions of dollars in damages. PacifiCorp stated in the document referenced below that the judgements could place the company in financial jeopardy.

"Pacific Power may want customers to pay fire liability"

by: Jashayla Pettigrew

[9] https://apps.puc.state.or.us/edockets/DocketNoLayout.asp?DocketID=23112

Posted: Jun 17, 2023 / 03:46 PM PDT

Updated: Jun 17, 2023 / 08:23 PM PDT

PacifiCorp ordered to pay damages related to 2020 wildfires

Recent jury decisions established PacifiCorp as liable for multiple fires which opens the door to multiple additional awards of damages makes their financial stability questionable and creates a serious risk that the company could declare bankruptcy or abandon the B2H transmission line project.

This risk is magnified by the fact that PacifiCorp obtained an order allowing them to assume an additional $3 billion dollars in debt added to their current debt placing even more pressure on the financial stability of the company. (Oregon Public Utilities Order No. 20-393, Docket No, UF 4118) [10]

PacifiCorp estimated the punitive damages from potentially thousands of Oregonians could reach into the billions of dollars. (Pacific Power potentially wants its customers to pay $90 million in wildfire liability, Ryan Haas, June 16, 2023). The order regarding the $90 million in fire liability for the 2020 fires also states that the company is liable for damages in the potentially thousands of additional damage cases that may occur.

Rather than directing their resources toward tree trimming, burying power lines and sometimes turning off power, Idaho Power and PacifiCorp are focused on cashing in on the guaranteed profits of building large transmission lines. They are currently proposing at least one additional 500 KV line which will add to their financial instability. The costs of these lines support a finding that there is a need to require the full bond amount identified by the council as required to restore the site for the life of the development.

Idaho Power's fiscal situation is also deteriorating as noted by the fact that they agreed to pay $1.5 million dollars to the U.S Forest Service for fires. The current decision also must include costs and liability for Idaho Power based upon new documentation provided in this hearing. (Aug. 25, the US Dept of Justice issued "Idaho Power to Pay $1.5 million in civil Settlement for Powerline and Lime Hill Fires.") (Williams v. Invenergy, LLC, 2016 /qk 1725990 at 18 (USDC, Oregon, Portland)

Additional news coverage of costs that can increase the potential for financial instability.[11]

Review of the numbers and costs of the wildfire events and judgements, it is clear that they pose a credible threat that the developers of this transmission line may face financial issues that require them to abandon the project.

Any bond amount of less than the amount the council found would be required to restore the site represents a cost and risk that is being placed on the public rather than the developer of the project. A bond that is at

10 (ORDER No. 23-225 Page 8, Item (b) and page 14.) PacifiCorp will be responsible for 54.55% of the project costs and joint ownership of the transmission line with Idaho Power. (Contract No 22TX-1720, Page 24 and Page 26 document ownership percentages.

11 "US Attorney's Office Dist of Or., Pacificorp to pay $3.4 Million in Civil Settlement for Ramsey Canyon Fire (June 9, 2020).

"Electric Utility PacifiCorp sued, accused of causing deadly Mckinney Fire in Siskiyou County"

times as low as $1.00 fails to pass the sniff test in terms of providing the necessary protection for citizens and the state for site restoration should it be required.

STOP encourages the Council to follow past practices and require the developers of the B2H Transmission line to maintain a bond that equals the costs the council determined was necessary to restore the site of this development.

Noncompliance with Oregon's Forest Practices Act

The treatment of land in mixed timber/grazing zones have been a source of concern for many of our members due to it failing to provide necessary protections for landowners and forest resources. The Forest Practices Act addresses many of the issues that caused concern.

The Oregon legislature and Governor Kate Brown have stated clearly that these requirements resulting from negotiations between multiple stakeholders will be implemented. (Office of Governor Kate Brown memo regarding Private Forest Accord implementation—Attachment 1.)

The rule language was adopted on October 26, 2022 to implement Senate Bills 1501, 1502, House Bill 4055 and the Private Forest Accord Report dated February 2, 2022. The changes were promulgated in rule on October 26, 2022 with staggered effective dates, the last having an effective date of January 1, 2024 (See Attachment 2.)

Many requirements in the rules apply to this Amendment and also apply to all other site certificates involving the cutting of trees to develop the site. It **provides specific requirements for all forest activities involving the removal of timber.**

Definitions and Requirements are clearly laid out in the statutes and rules and include:

> OAR 629-600-0100
>
> --"forestland" as land which is used for the growing and harvesting of forest tree species, regardless of how the land is zoned or taxed or how any state or local statutes, ordinances, rules or regulations are applied.
>
> --Any forestland capable of annual wood production of at least 20 cubic feet per acre is subject to the reforestation rules.

These new rules (promulgated before this RFA was submitted) also requires a written plan for:

(a) forest operations occurring within 100 feet of a stream determined by the State Forester to be used by fish or for domestic use or a significant wetland.

(b) Areas at risk from road generated materials entering the waters, roads constructed in riparian areas, constructing or reconstructing any water crossing or roads constructed in critical locations including those within 50 feet of stream channels or lakes, or within significant wetlands.

(c) All road construction in critical locations.

(d) Conflicts with sensitive wildlife species also require written plan.

OAR 629-625-0300 states that drainage must be implemented per Forest Practices Technical Guidance regarding road drainage rule compliance.

Intent to obtain, or the issuance of approval of an Alternate Practice does not exempt the developer from complying with the FPA through the removal of the existing timber. The Alternate Practice only addresses the ability of the developer to avoid the reforestation requirements.

Rules are organized to cover topics including:

OAR 629-635-0000 through OAR 629-600-0060 are the Water Protection Rules

OAR 629-643-0135 rules address Vegetation Retention for Seeps and Springs, Side channels, and Stream Associated Wetlands

WILDLIFE PROTECTION

--Forest Practices Act protections apply to wildlife listed as threatened and endangered by ODFW or federally listed. FPA provides protection for:

--Sensitive bird nesting, roosting, watering sites are identified in the FPA;

--Significant wetlands: OAR 629-625-0800;

--Critical wildlife or aquatic habitat sites listed in "Cooperative Agreement between Board of Forestry and Fish and Wildlife Commission

--Protected species include northern spotted owl bald eagle, osprey, great-blue heron, golden eagle, marbled murrelet band-tailed pigeon. Specific requirements for protection include:

--Spotted Owl requires 70 acres of suitable owl habitat (which is defined in the rule) and in most cases does not allow timber harvesting. March 1 to Sept. 30 identified as timeframe when disturbance is least tolerated, OAR 629-665-0210.

--Bald eagle protected area is 330 feet from the nest site. Do not disturb area 600 feet and 1,000 feet for use of aircraft. Operations restricted from Jan 1 to Aug. 31, OAR 629-665-0100 and 0130.

--Osprey -- Forest operations not allowed within 600 feet of active nest tree between Mar. 1 and Sept. 15, OAR 629-665-0100 and 0110.

--Great blue heron forest operations not allowed within one-quarter mile of active nest trees Feb. 15 to July 31. A 300-foot area around the outermost nest trees is required.

For many of these (above) there are restrictions that do not allow removal of the nesting tree and/or others in the areas around the nesting tree even if nest is not active. The act provides clear definitions of terms such as "nest tree" "nesting territory", "Resource site", "Riparian Management area", types of streams, etc.

--County Land Use Rules cannot preclude the role of the Oregon Department of Forestry and Forest Practices Act requirements.

--Road construction and maintenance rules shall apply to all forest practices regions unless otherwise indicated.

As we are sure you noticed, Conditions in the Site Certificate conflict with and effectively waive requirements of the Forest Practices Act in effect as of July 1, 2023 and those with implementation date of January 1, 2024 for any roads constructed after January 1, 2024.

Additional Concerns:

1. As discussed above under our Maps section, it is virtually impossible to identify specific locations where setbacks from water resources are not being complied with due to the scale of the maps and lack of map layers. With current technology, it seems that the developer would be able to provide maps that allow the public to zoom-in and see what the location and surrounding area is composed of and to be able to compare with the original site certificate and conditions.

What is clear is that there are roads and developments such as multiple use areas that appear to be right up against streams and wetlands. And the current site certificate fails to require setbacks consistent with the FPA. Following are some examples: Union County condition GEN-LU-06 (a) and (b) allowing roads within 25 feet or one-half the steam width. Baker County and Malheur County contain no setback distances being required from streams and wetlands.

2. The Site Certificate references are limited to the requirements of the Oregon Department of Fish and Wildlife is misleading and often conflicts with the FPA requirements due to the fact that the FPA provides clear definitions of requirements while ODFW requirements are often subjective. The FPA requirements cannot be superseded by other rules.
3. The final Right of Way Clearing Assessment referenced in GEN-LU-13 must include requirements of the Forest Practices Act and be approved by the Oregon Department of Forestry to establish compliance with the FPA.
4. Roads and associated Structures, access and construction areas had not been completed and as such was not available to analyze in the Final EIS.
5. Detailed analysis of impacts to waters of the US was not conducted during the final EIS due to lack of availability of micro-siting information for tower pads, laydown Yards, tensioning sites and other sub facilities.
6. The restricted area of the site boundary being required for identification of wetlands and other water resources fails to include the areas around nesting sites and water resources that must be protected under FPA rules.

Changes to Helicopter Use Requirements in GEN-PS-01

The changes to this condition will create public safety issues not allowed under council rules or ORS 345-022-0110 and may increase the expenses to the County due to Citizen Complaints being directed to local agencies.

The Department of Energy should not be allowed to shorten the timeframe for requiring the developer to submit its Helicopter Use Plan to the Department and the Counties. The process for review of these

plans which involves County input will require a minimum of a month. Shortening the time period will jeopardize requirements for timely notice to impacted citizens and locations which are included in the final plan and increase the risk of safety and health impacts resulting from helicopter use. Items in the plan will include such thing as the type of mitigation that will be required to minimize the impacts to hospitals, medical clinics, schools and churches from noise and other negative events. Mitigation will likely include specific notice requirements for these areas. The counties involved in the development of these plans must be able to require notices to reduce and mitigate the negative impacts and safety issues that will be inherent in the helicopters traveling over these kinds of areas. For example, in Union County, there are multiple noise sensitive properties in the area including a hospital and clinic, several schools and churches. In particular, the hospital and schools require mitigation to protect them from helicopter noise and disruption of the educational processes.

As has been commented on previously, the roof of the Grande Ronde Hospital contains the helipad from which Life Flight helicopters may be departing any time of the day or night. Construction helicopters pose a significant threat to these emergency vehicles absent requirements to provide mitigation that will assure they do not impede the movement of these helicopters or create midair collisions. The development of a Helicopter Use Plan that provides for public safety will involve the operators of this service to assure they receive timely notification regarding specific routes and timeframes for construction helicopter use in routes that the Life Flight helicopters travel over.

There will be an increased risk to citizens in all areas that these helicopters traverse, not only to other air traffic, but also to those on the ground as noted in the Fox News Report regarding the July 26, 2022 crash of a medical helicopter (Medical Helicopter Crashes Responding to Fatal Car Crash in Butler County *Updated: Jul. 26, 2022 at 2:52 PM PDT)*

The condition fails to require identification of noise sensitive properties including hospitals and schools or identify unique hazardous locations.

Elimination of the 30-day notice requirement for providing notice to adjacent property owners will add an additional negative impact on residents who will already be exposed to significant noise, dust, traffic and other impacts from these areas. A 30-day notice will allow citizens the opportunity to take actions such as leaving their residences in the event that they find the impacts of the helicopter activities on top of the ongoing impacts intolerable.

The Site Certificate should retain the 30-day notice requirement to the Oregon Department of Aviation (ODA) unless the ODA approves a shorter timeframe in writing.

Removal and Fill Requirements

ORS 469.401 requires the Site Certificate to contain conditions requiring compliance with EFSC rules. The Proposed Site Certificate for Amendment 1 allows the developer to avoid compliance with state laws and council rules effective the date the amended site certificate is issued in the following:

Condition GEN-SP-01(b), Page 5 of First Amended Site Certificate. The condition is required to comply with Council Requirements to mitigate for impacts addressed by the Removal-Fill Permit and the Erosion Sediment Control Plan (ESCP) to protect land from the impacts of erosion. The inclusion of the words “unless otherwise agreed to by the Department” allows the Oregon Department of Energy to allow the developer to avoid compliance with the Council Standard addressed by the NPDES 1200-C and ESCP

contained in the Site Certificate. This change does not comply with either ORS 469.401 or OAR 345-022-0022, because the department does not have the expertise to determine compliance. It circumvents the procedure in the Site Certificate requiring the agency consultation process be followed for changes in the Soil Protection Standard and plan. If the department will make any changes, they need to get consultation and sign-off from the issuing agency(s), such as: ODOT, Dept of Lands, Dept of Ag.[12]

The NPDES 1200-C is the method used to address requirements of agencies such as The Department of Agriculture rules in **603-095-0340 which require control of erosion to avoid serious depletion of the productive capacity of farmlands.**

Significant changes in the requirements regarding the Blasting Plan

Condition GEN-SP-04(a) Page 25 of First Amended Site Certificate: Makes significant changes in the requirements regarding the Blasting Plan which should not be implemented including:

Adding the word "related blasting" to the first line of Item (a) would result in no longer requiring the developer to determine whether there will be a need for blasting prior to the start of construction. The changes to this site certificate condition results in a failure of the Site Certificate to provide for the safety of property owners impacted by the development. It also places at risk the requirement that the developer identify wells and springs that may be impacted by blasting that is required as a monitoring condition. Impacts to wells and springs can pose a health hazard to citizens as well as cause significant economic damages in the event the developer fails to provide mitigation for the impacts. The change fails to assure compliance with council standards including providing for the health and safety of citizens, provide mitigation for impacts to resources, and the requirement that the developer assume the costs of monitoring.

To comply with the above standards the developer must obtain information regarding wells and springs that could be impacted by blasting, inform the landowner that he or she can request that the developer perform pre- and post- blasting water evaluation regarding the flow, and quality of the water at the sources. Note: the testing for *quality* must not be limited to "turbidity" as the greater threat is that blasting could result in hazardous materials entering the water such as arsenic, animal waste, chemicals from fertilizer and other ground contaminants.

Eliminating the requirement for department approval of the blasting plan in (a), line 4, Page 25 means there will be no oversight or review to assure that the Blasting Plan actually complies with the council standards as required or that it is being followed as required by

ORS 469.507 Monitoring environmental and ecological effects of construction and operation of energy facilit ies. (1) The site certificate holder shall establish programs for monitoring the environmental and ecological effects of the construction and operation of facilities subject to site certificate s to assure continued compliance.

The article "Blasting Safety in Daily Mining Operations by Michal Wozniakowski-Zehenter, April 13, 2023 identifies blasting as one of the most hazardous activities in mining operations which are already highly hazardous. The impacts can involve vibration, flying rocks, hazardous dust, impacts to the water table and

[12] Control of erosion managed by requirements of these plans addresses the impacts of erosion on land and water resources and is addressed in the "Oregon Department of Transportation Document "Erosion and Sediment" Geo-Environmental Report."

wells and a host of other risks. Due to the significance of the hazards, it is not prudent to remove any currently required oversight, monitoring or approval required in the current site certificate language.

Failing to require the developer to address blasting impacts prior to the start of construction will create the risk that property owners will not be asked to provide and be provided information regarding the monitoring requirements of the Site Certificate and that pre-blasting water quality measurements may not occur.

STOP recommends that the following changes should be incorporated in Gen-SP-01 to comply with ORS 469.401(2):

a. Require the developer to ask the landowner to identify natural springs or wells on their property. As the condition now reads, it would be the responsibility of the landowner to recognize the need to identify these resources as noted in the statement on Page 26, line 1 "If the landowner identifies."

b. The water quality measurements should not be limited to assessing "turbidity." Potential impacts to wells and springs as a result of blasting are multiple due to the potential for rocks surrounding the blast site to be fractured or damages to containers of hazardous substances normally contained such as underground oil drums, septic tanks, etc., or the creation of inter-aquifer leakage. Ground Water contaminants that typically move slowly thereby reducing the impact of contaminants can move rapidly through fractures in rocks caused by Blasting.[13]

c. To provide for the safety of the public and employees, a site certificate condition should be added requiring the blaster to meet the qualifications required by Chapter XII 1926.901 Blaster Qualifications.

Landowner Notification

Notice has not been provided per ORS 183.415.
This statute requires specific actions when "actions taken by state agencies" affects the public. The statute requires:

3. A notice sent to all people affected by agency actions served

"personally or by registered or certified mail."

4. The above notice must include:

a. The right to a hearing

b. What authority and jurisdiction the hearing will be held

under

[13] "Rock Blasting and Water Quality Measures That Can be Taken to Protect Water Quality and mitigate Impacts/ 2010 Brandon Kernen DES Drinking Water Source Protection Program") ("Getting Up to Speed" for section C "Groundwater Contamination" adapted from US EPA Seminar Publication Wellhead Protection A Guide for Small Communities Chapter 3 EPA/625/R-93/002)

c. The actual sections of the statutes and rules involved.

d. A short and plain statement about what you plan to

change.

e. What would allow a default against the person to be

entered and

f. Accommodations that will be made for Active Duty Servicemen.

No such information was provided to the impacted people in person, by registered or certified mail even th ough every residence within at least one half mile of the transmission line will be affected by the noise exemption and variance that EFSC has approved as well as the fact that ODOE and EFSC were provided comment during the original Site Certificate process regarding the failure of the agency to meet the Public Notice Requirements of Oregon Statutes when their actions may impact a landowner.

STATE OF OREGON
Office of the Governor
KATE BROWN

Private Forest Accord
SB 1501, SB 1502, and HB 4055

FOR ADDITIONAL INFORMATION: Jenn Baker, Legislative Director,
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Morgan Gratz-Weiser, Deputy Natural Resources Policy Advisor
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Senate Bill 1602, from the First Special Session of 2020, commissioned a multi-year negotiation between environmental advocates and forest industry representatives facilitated by representatives of Governor Brown's office. Those negotiations have led to three bills, for consideration during the 2022 legislative session, that update the Forest Practices Act, create a small woodland owners tax credit and, through Rep. Nathanson's HB 4055, update the forest harvest tax. The updates to the Forest Practices Act are anticipated to gain approval of a Habitat Conservation Plan by the federal wildlife services and a subsequent Incidental Take Permit under the Endangered Species Act, thereby providing greater ongoing certainty for Oregon's forest laws.

Private Forest Accord Policy – SB 1501

This bill (SB 1501) updates multiple aspects of the Forest Practices Act, which governs logging activity on private forestlands.

Key Sections

- Stream buffers: Updated stream buffers are 10% to 100% larger based on stream type and geography. Includes new protections for non-fish bearing streams.
- Forest roads: New standards for road design, inventory, maintenance, management, and culvert design. Funding for culvert replacement for qualifying small forestland owners.
- Unstable slopes: Retains trees in key areas to reduce landslide risk, and help protect streams and aquatic habitat from sediment.
- Aquatic resource habitat protected: Expanded riparian buffers provide additional habitat for a variety of riparian-dependent species, including salmon, steelhead, bull trout, and the amphibians that were the focus of the negotiations. Includes additional reporting requirements for managing beaver activity.
- Compliance monitoring: Expands monitoring programs to evaluate whether the new rules are implemented as intended.

- Mitigation costs: Requires state and private investment in mitigating otherwise unavoidable impacts of compliant logging practices, including a new committee under the Oregon Department of Fish & Wildlife to manage these investments.
- Adaptive Management Program: Creates a new stakeholder committee that will work with an Independent Research and Science Team to advise the Board of Forestry on recommendations for ongoing rule changes to ensure the goals of the Habitat Conservation Plan are met.
- Implementation costs: Includes general fund appropriation for agencies to conduct rulemaking, update maps and databases, and monitor new forest practices.
- Expedited rule-making: Allows for efficient implementation of the Private Forest Accord.

Small Forestland Owners Tax Credit (SB 1502)

- Small forestland owners own many productive riparian forests bordering important salmon, steelhead, and bull trout streams. Their participation in the Private Forest Accord is critical, but the economic and management factors they confront are different from larger forest companies.
- To accommodate the participation of small forestland owners in the Accord, SB 1502 creates a tax credit to compensate small forestland owners (those with less than 5,000 acres and less than 2 million board-feet produced annually, calculated on a rolling average over the last three years) who will have reduced harvest under this policy in exchange for a 50-year deed restriction on harvest of trees in the retention area. This is a personal or corporate excise tax credit.
- The value of this credit is the value of timber left on the landscape above the minimum option, minus the logging cost. If a small forestland owner participates in the tax credit program, the benefits of retaining those trees are protected by a 50-year restriction on harvesting. This habitat protection is the benefit to the state and public resources garnered from the tax credit.
- This tax credit is important to support the protection of public values while respecting the importance of small forestland owners and a diversity of the size of ownerships across Oregon.

Harvest Tax (HB 4055)

Led by Rep. Nathanson, HB 4055 continues the current structure of the harvest tax and sets the stage for more robust discussion in the future. The bill:

- Establishes rates for the remainder of the biennium commensurate with the structure from the 2019-21 rate.
- Directs the Legislative Revenue Office to prepare a report on the process and structure of the tax, for review in 2023.
- Creates a new component of the tax, to align with the Accord, for the Mitigation Fund, with rates calculated per the agreement. The Mitigation Fund is created to enable investment in habitat improvements for aquatic species. Mitigation funds are often part of Habitat Conservation Plans and complement land management prescriptions with additional funding to improve habitat conditions. Funding is provided through both the state General Fund and through this change to the harvest tax.

The Private Forest Accord has been presented to all tribal chairs of Oregon's federally recognized Tribes, and consultation will continue as requested.

PFA signed by:

Forest Industry Coalition:

Campbell Global

Greenwood Resources

Hampton Lumber

Lone Rock Resources

Manulife Timberland & Agriculture (formerly Hancock)

Oregon Small Woodlands Association

Port Blakely

Rayonier

Roseburg Forest Products

Seneca Sawmill Co

Starker Forests

Weyerhaeuser

Environmental / Fish Coalition:

Audubon Society

Beyond Toxics

Cascadia Wildlands

Klamath Siskiyou Wildlands Center

Northwest Guides and Anglers

Oregon League of Conservation Voters

Oregon Stream Protection Coalition

Oregon Wild

Pacific Coast Fed of Fishermen's Associations

Rogue Riverkeepers

Trout Unlimited

Umpqua Watersheds

Wild Salmon Center

Forest Practices Act Rule Revisions

As an outcome of Senate Bills 1501 and 1502 and House Bill 4055 and the Private Forest Accord Report dated February 2, 2022, the Board of Forestry adopted the following administrative rules on October 26, 2022.

November 15, 2022, Effective Date
ADOPT: OAR 629-603-0000, 629-603-0100, 629-603-0130, 629-603-0160, 629-603-0200, 629-603-0300, 629-603-0400, 629-603-0450, 629-603-0500, 629-603-0600
AMEND: OAR 629-610-0100
REPEAL: OAR 629-635-0110

July 1, 2023, Effective Date
ADOPT: OAR 629-630-0915, 629-643-0100, 629-643-0120, 629-670-0225, 629-670-0228
AMEND: OAR 629-605-0170, 629-670-0000, 629-670-0010, 629-670-0100, 629-670-0200, 629-670-0210, 629-670-0214, 629-670-0350, 629-672-0100, 629-672-0200

January 1, 2024, Effective Date
ADOPT: OAR 629-607-0000, 629-607-0100 , 629-607-0200, 629-607-0250, 629-607-0300, 629-607-0400, 629-607-0450, 629-607-0500, 629-607-0600, 629-607-0700, 629-607-0750, 629-607-0800, 629-625-0800, 629-625-0900, 629-625-0910, 629-625-0920, 629-630-0900, 629-630-0905, 629-630-0910, ~~,~~629-630-0920, 629-630-0925, 629-643-0000, 629-643-0105, 629-643-0125, 629-643-0130, 629-643-0135, 629-643-0140, 629-643-0141, 629-643-0142, 629-643-0143, 629-643-0145, 629-643-0150, 629-643-0200, 629-643-0300, 629-643-0400, 629-643-0500, 629-678-0000, 629-678-0100, 629-678-0110, 629-678-0200
AMEND: OAR 629-600-0100, 629-605-0150, 629-625-0000, 629-625-0100, 629-625-0200, 629-625-0300, 629-625-0310, 629-625-0320, 629-625-0330, 629-625-0410, 629-625-0440, 629-625-0600, 629-625-0650, 629-625-0700, 629-630-0000, 629-630-0150, 629-630-0300, 629-630-0500, 629-630-0600, 629-630-0700, 629-630-0800, 629-635-0100, 629-635-0200, 629-635-0210, 629-635-0220, 629-635-0300, 629-635-0310, 629-655-0000
REPEAL: OAR 629-625-0340, 629-625-0420, 629-625-0430, 629-642-0000, 629-642-0100, 629-642-0105, 629-642-0110, 629-642-0200, 629-642-0300, 629-642-0400, 629-642-0500, 629-642-0600, 629-642-0700, 629-642-0800

Division 600
DEFINITIONS

629-600-0100
Definitions
As used in OAR chapter 629, divisions 603 through 669 and divisions 680 through 699, unless otherwise required by context:

(1) **"Abandoned resource site"** means a resource site that the State Forester determines is not active.

(2) **"Abandoned roads"** are defined as roads that were constructed prior to 1972 and do not meet the criteria of active, inactive, or vacated roads. This does not include skid trails.

(3) **"Active channel width"** means the stream width between the ordinary high-water lines, or at the channel bankfull elevation if the ordinary high-water lines are indeterminate.

(4) **"Active resource site"** means a resource site that the State Forester determines has been used in the recent past by a listed species. 'Recent past' shall be identified for each species in administrative rule. Resource sites that are lost or rendered not viable by natural causes are not considered active.

(5) **"Active roads"** are roads currently being used or maintained for the purpose of removing commercial forest products.

(6) **"Adaptive management program committee**" (AMPC) means the adaptive management program committee described in OAR 629-603-0300.

(7) **"Aquatic area"** means the wetted area of streams, lakes, and wetlands up to the high water level. Oxbows and side channels are included if they are part of the flow channel or contain freshwater ponds.

(8) **"Aquatic resource"** as defined in section 40(1), chapter 33, Oregon Laws 2022 means:
- (a) A species addressed in the Private Forest Accord Report dated February 2, 2022, and published by the State Forestry Department on February 7, 2022, and the resources on which the species relies; or
- (b) If a habitat conservation plan consistent with the Private Forest Accord Report has been approved, a species addressed in the habitat conservation plan and the resources on which the species relies.

(9) **"Area of inquiry"** means an area along a Type N stream beginning at the confluence with a Type F or Type SSBT stream and extending:
- (a) During Phase 1, to the first 250 feet encountered without a flow feature.
- (b) After Phase 1, to the longer of the modeled end plus 250 feet, or beyond the modeled end to the end of the first 250 feet encountered without a flow feature.

(10) **"Artificial reforestation"** means restocking a site by planting trees or through the manual or mechanical distribution of seeds.

(11) **"Bankfull elevation"** means the point on a stream bank at which overflow into a floodplain begins.

(12) **"Basal area"** means the area of the cross-section of a tree stem derived from DBH.

(13) **"Basal area credit"** means the credit given towards meeting the live tree requirements within riparian management areas for placing material such as logs, rocks or rootwads in a stream, or conducting other enhancement activities such as side channel creation or grazing enclosures.

(14) **"Beaver"** means a member of the species *Castor canadensis*.

(15) **"Best available science"** means the standards developed pursuant to OAR 629-603-0400(4).

(16) **"Biological goals and objectives"** means the biological goals and objectives as set by the department for an approved habitat conservation plan.

(17) **"Bog"** means a wetland that is characterized by the formation of peat soils and that supports specialized plant communities. A bog is a hydrologically closed system without flowing water. It is usually saturated, relatively acidic, and dominated by ground mosses, especially sphagnum. A bog may be forested or non-forested and is distinguished from a swamp and a marsh by the dominance of mosses and the presence of extensive peat deposits.

(18) **"Bull Trout"** means fish species *Salvelinus confluentus*.

(19) **"Certified steep slopes training"** means the State Forester has certified that a trainee has completed training and demonstrated sufficient knowledge to determine the field delineation of the final boundaries for slope retention areas.

(20) **"Channel"** is a distinct bed or banks scoured by water which serves to confine water and that periodically or continually contains flowing water.

(21) **"Channel migration zone"** (CMZ) means the area where the active channel of a stream is prone to move and this results in a potential near-term loss of riparian function and associated habitat adjacent to the stream, except as modified by a permanent levee, dike, railroad lines, or any public transportation infrastructure. For this purpose, near term means the time scale required to grow a mature forest.

(22) **"Chemicals"** means and includes all classes of pesticides, such as herbicides, insecticides, rodenticides, fungicides, plant defoliants, plant desiccants, and plant regulators, as defined in ORS 634.006(8); fertilizers, as defined in ORS 633.311; petroleum products used as carriers; and chemical application adjuvants, such as surfactants, drift control additives, anti-foam agents, wetting agents, and spreading agents.

(23) **"Commercial"** means of or pertaining to the exchange or buying and selling of commodities or services. This includes any activity undertaken with the intent of generating income or profit; any activity in which a landowner, operator, or timber owner receives payment from a purchaser of forest products; any activity in which an operator or timber owner receives payment or barter from a landowner for services that require notification under OAR 629-605-0140; or any activity in which the landowner, operator, or timber owner barters or exchanges forest products for goods or services. This does not include firewood cutting or timber milling for personal use.

(24) **"Common ownership"** means direct ownership by one or more individuals or ownership by a corporation, partnership, association, or other entity in which an individual owns a significant interest, as defined in section 16(1), chapter 33, Oregon Laws 2022.

(25) **"Completion of the operation"** means harvest activities have been completed to the extent that the operation area will not be further disturbed by those activities.

(26) **"Conflict"** means resource site abandonment or reduced resource site productivity that the State Forester determines is a result of forest practices.

(27) **"Covered species"** means species for which incidental take under the federal Endangered Species Act is authorized in an incidental take permit and covered under a habitat conservation plan.

(28) **"Culvert with imminent risk of failure"** is defined as a culvert in all waters of the state that:

- (a) Is actively diverting streams or ditchline runoff;
- (b) Is actively eroding the road prism or stream channel in a manner that has the potential to undermine the integrity of the culvert;
- (c) Is completely blocked, plugged, crushed, or buried;
- (d) Has partially or completely failed fill; or
- (e) Has high plugging potential as determined by the Stream Blocking Index or other comparable methodology, high magnitude of fill at risk, and high diversion potential in one or both directions.

(29) **"Culvert with minimal risks to public resources"** is defined as a culvert in all waters of the state that:
  (a) Minimizes delivery of sediment to waters of the state;
  (b) Has not diverted streams or ditchline runoff and does not have the potential to divert streams or ditchline runoff; and
  (c) For Type F and Type SSBT streams:
    (A) Provides passage for all species of adult and juvenile fish; and
    (B) Provides passage of expected bed load and associated large woody material likely to be transported during flood events.

(30) **"Debris flow"** means a rapidly moving slurry of rock, soil, wood, and water, which is most often initiated by a landslide that delivers to and travels through steep, confined stream channels.

(31) **"Debris flow traversal area sub-basins"** means catchments within U.S. Geological Survey Hydrologic Unit Code 4th field basins that contain debris flow traversal areas that have a probability of traversal in the upper 20 percent.

(32) **"Debris torrent-prone streams"** are designated by the State Forester to include channels and confining slopes that drain watersheds containing high landslide hazard locations that are of sufficient confinement and channel gradient to allow shallow, rapid landslide movement.

(33) **"Designated debris flow traversal areas"** mean areas that the slopes model identifies as most likely to deliver debris flows to Type F or Type SSBT streams. These have a probability of traversal in the upper 50 percent, calculated consistent with the methods described in slopes model. The length of designated debris flow traversal area, as determined by the slopes model, is either:
  (a) The entire length of the designated debris flow traversal area that has a probability of traversal in the upper 20 percent; or
  (b) A maximum of 1,000 feet upstream of a Type F or Type SSBT stream confluence for a designated debris flow traversal area that has a probability of traversal between 20 percent and 50 percent alone or in combination with a designated debris flow traversal area that has a probability of traversal in the upper 20 percent.

(34) **"Designated sediment source areas"** means areas that the slopes model identifies as most likely to experience landslides that initiate debris flows that will likely deliver to Type F or Type SSBT streams. These areas, as identified by the slopes model, may or may not contain trigger sources. The slope model identifies the hillslope areas greater than ¼ acre in size within debris flow traversal area sub-basins that provide the top 33 percent of the landslide-derived sediment to Type F or Type SSBT streams.

(35) **"Department"** means the Oregon Department of Forestry.

(36) **"Department reporting and notification system"** means a forest activity electronic reporting and notice system operated by the State Forestry Department, used for a notification of operation and a permit to use fire or power-driven machinery, also known as the "E-Notification system" or "FERNS."

(37) **"Diameter breast height"** (DBH) means the diameter of a tree inclusive of the bark measured four and one-half feet above the ground on the uphill side of the tree.

(38) **"Domestic water use"** means the use of water for human consumption and other household human use.

(39) **"Dry channel area"** means that area between the inside edge of the small forestland owner minimum option and the edge of the dry stream channel that:
  (a) Is within a surveyed dry channel portion of a small Type Np stream in Western Oregon that under the small forestland owner minimum option is a required no-harvest buffer;
  (b) Does not flow water year-round; and
  (c) Is 100 feet or more in length.

(40) **"Dying or recently dead tree"** means a tree with less than ten percent live crown or a standing tree which is dead, but has a sound root system and has not lost its small limbs. Needles or leaves may still be attached to the tree.

(41) **"Eastern Oregon"** means the region described in OAR 629-635-0220.

(42) **"ELZ"** means an equipment limitation zone in which disturbance from equipment activity shall be minimized.

(43) **"Estuary"** means a body of water semi-enclosed by land and connected with the open ocean within which saltwater is usually diluted by freshwater derived from the land. "Estuary" includes all estuarine waters, tidelands, tidal marshes, and submerged lands extending upstream to the head of tidewater. However, the Columbia River Estuary extends to the western edge of Puget Island.

(44) **"Exposure categories"** are used to designate the likelihood of persons being present in structures or on public roads during periods when shallow, rapidly moving landslides may occur.

(45) **"Filling"** means the deposit by artificial means of any materials, organic or inorganic.

(46) **"Fish use"** means inhabited at any time of the year by anadromous or game fish species or fish that are listed as threatened or endangered species under the federal or state Endangered Species Act.

(47) **"Fledging tree"** means a tree or trees close to the nest which the State Forester determines are regularly used by young birds to develop flying skills.

(48) **"Flowing water"** means continuous visibly flowing surface water within a channel.

(49) **"Flow feature"** means flowing water for 25 feet or more.

(50) **"Forage"** means the plant species or other source of food that will be provided to substantially contribute, either directly or indirectly to nutrition of the target wildlife species or guild.

(51) **"Ford"** means a type of stream crossing where the vehicle travels on the streambed or other installed structure with the wheels of the vehicle in the water if present.

(52) **"Forest conservation area"** means the riparian forestland area that is not harvested that may be eligible for a forest conservation tax credit. The width of the eligible area is the difference between the outermost edge of the width of the riparian management area for the standard practice and the outermost edge of the width of the riparian management area for the small forestland owner minimum option. The length of the eligible area is the length of frontage that follows the same lengths as the standard practice.

(53) **"Forest conservation tax credit"** means a tax credit available to small forest landowners who choose to follow the standard practice used by large forest landowners and claim a tax credit for some of the value committed to conservation.

(54) **"Forestland"** means land which is used for the growing and harvesting of forest tree species, regardless of how the land is zoned or taxed or how any state or local statutes, ordinances, rules or regulations are applied.

(55) **"Forest practice"** means any operation conducted on or pertaining to forestland, including but not limited to:
(a) Reforestation of forestland;
(b) Road construction and maintenance;
(c) Harvesting of forest tree species;
(d) Application of chemicals;
(e) Disposal of slash; and
(f) Removal of woody biomass.

(56) **"Forest Practices Technical Guidance"** means advisory guidance, developed by the State Forester through a stakeholder process, to assist landowners and resource professionals to implement the Oregon Forest Practices Act and forest practices rules.

(57) **"Forest road inventory and assessment"** (FRIA) means the road inventory, project planning, and reporting process required of forestland owners that do not qualify to manage forestlands under the small forestland owner minimum option.

(58) **"Forest tree species**" means any tree species capable of producing logs, fiber or other wood materials suitable for the production of lumber, sheeting, pulp, firewood or other commercial forest products except trees grown to be Christmas trees as defined in ORS 571.505 on land used solely for the production of Christmas trees.

(59) **"Free to grow"** means the State Forester's determination that a tree or a stand of well distributed trees, of acceptable species and good form, has a high probability of remaining or becoming vigorous, healthy, and dominant over undesired competing vegetation. For the purpose of this definition, trees are considered well distributed if 80 percent or more of the portion of the operation area subject to the reforestation requirements of the rules contains at least the minimum per acre tree stocking required by the rules for the site and not more than ten percent contains less than one-half of the minimum per acre tree stocking required by the rules for the site.

(60) **"Fully functioning culvert in Type F or Type SSBT streams**" is defined as a culvert that is located in a Type F or Type SSBT stream, at the time of FRIA inspection, that meets the requirements of the Forest Practice Rules as of January 1, 2022, and as described in the Forest Practices Technical Guidance for culverts existing prior to January 1, 2024.

(61) **"Fully functioning culvert in Type N or D streams"** is defined as a culvert that is located in a Type N or Type D stream, and that, at the time of FRIA inspection, meets all requirements of the Forest Practice Rules as of January 1, 2022.

(62) **"Further review area"** means an area of land that may be subject to rapidly moving landslides as mapped by the State Department of Geology and Mineral Industries or as otherwise determined by the State Forester.

(63) **"Geographic region**" means large areas where similar combinations of climate, geomorphology, and potential natural vegetation occur, established for the purposes of implementing the water protection rules.

(64) **"Habitat conservation plan"** (HCP) means the federal agencies' planning document designed to accommodate economic development to the extent possible by authorizing the limited and unintentional take of listed species when it occurs incidental to otherwise lawful activities. The plan is designed not only to help landowners and communities but also to provide long-term benefits to species requirements as identified in the Endangered Species Act.

(65) **"Harvest type 1"** means an operation that requires reforestation but does not require wildlife leave trees. A harvest type 1 is an operation that leaves a combined stocking level of free to grow seedlings, saplings, poles and larger trees that is less than the stocking level established by rule of the board that represents adequate utilization of the productivity of the site.

(66) **"Harvest type 2"** means an operation that requires wildlife leave trees but does not require reforestation. A harvest type 2 does not require reforestation because it has an adequate combined stocking of free to grow seedlings, saplings, poles and larger trees, but leaves:

(a) On Cubic Foot Site Class I, II or III, fewer than 50 11-inch DBH trees or less than an equivalent basal area in larger trees, per acre;

(b) On Cubic Foot Site Class IV or V, fewer than 30 11-inch DBH trees or less than an equivalent basal area in larger trees, per acre; or

(c) On Cubic Foot Site Class VI, fewer than 15 11-inch DBH trees or less than an equivalent basal area in larger trees, per acre.

(67) **"Harvest type 3"** means an operation that requires reforestation and requires wildlife leave trees. This represents a level of stocking below which the size of operations is limited under ORS 527.740 and 527.750.

(68) **"Harvest type 4"** means an operation that commercially thins or spaces residual trees that does not require reforestation or retention of wildlife leave trees.

(69) **"Headwall"** means steep, concave slopes that can concentrate subsurface water, which can lead to increased landslide susceptibility. Headwalls are typically located at the head of stream channels, draws, or swales. Headwalls have slope gradients of 65 percent or greater in the Tyee Core Area and 70 percent or greater in the rest of the state, as measured in the axis of the headwall. Landslides that occur in headwalls are more likely to initiate channelized debris flows that can travel down streams (also known as debris torrents) than landslides that occur in other areas of the slope.

(70) **"High landslide hazard location"** means a specific site that is subject to initiation of a shallow, rapidly moving landslide. The following criteria shall be used to identify high landslide hazard locations:

(a) The presence, as measured on site, of any slope in Western Oregon (excluding competent rock outcrops) steeper than 80 percent, except in the Tyee Core Area, where it is any slope steeper than 75 percent;

(b) The presence, as measured on site, of any headwall or draw in Western Oregon steeper than 70 percent, except in the Tyee Core Area, where it is any headwall or draw steeper than 65 percent; or

(c) Notwithstanding the slopes specified in (a) or (b) above, field identification of atypical conditions by a geotechnical specialist may be used to develop site specific slope steepness thresholds for any part of the state where the hazard is equivalent to (a) or (b) above. The final determination of equivalent hazard shall be made by the State Forester.

(71) **"High water level"** means the stage reached during the average annual high flow. The "high water level" often corresponds with the edge of streamside terraces, a change in vegetation, or a change in soil or litter characteristics.

(72) **"Hydrologic disconnection" means** the removal of direct routes of drainage or overland flow of road runoff to waters of the state.

(73) **"Hydrologic function"** means soil, stream, wetland and riparian area properties related to the storage, timing, distribution, and circulation of water.

(74) **"Important springs"** are springs in arid parts of Eastern Oregon that have established wetland vegetation, flow year-round in most years, are used by a concentration of diverse animal species, and, by reason of sparse occurrence, have a major influence on the distribution and abundance of upland species.

(75) **"Inactive roads"** are roads used for forest management purposes exclusive of removing commercial forest products.

(76) **"Independent research and science team"** (IRST) means the independent research and science team described in OAR 629-603-0400.

(77) **"IRST housing agency"** means a public body that houses and supports the Independent Research and Science Team as described in OAR 629-603-0450.

(78) **"Key components"** means the attributes which are essential to maintain the use and productivity of a resource site over time. The key components vary by species and resource site. Examples include fledging trees or perching trees.

(79) **"Lake"** means a body of year-round standing open water.

(a) For the purposes of the forest practice rules, lakes include:

(A) The water itself, including any vegetation, aquatic life, or habitats therein; and

(B) Beds, banks or wetlands below the high water level which may contain water, whether or not water is actually present.

(b) "Lakes" do not include water developments as defined in section (157) of this rule.

(80) **"Lamprey"** means a member of the fish genera *Entosphenus* or *Lampetra*.

(81) **"Landowner"** means any individual, combination of individuals, partnership, corporation, or association of whatever nature that holds an ownership interest in forestland, including the state and any political subdivision thereof.

(82) **"Landslide mitigation"** means actions taken to reduce potential landslide velocity or re-direct shallow, rapidly moving landslides near structures and roads so risk to persons is reduced.

(83) **"Large lake"** means a lake greater than eight acres in size.

(84) **"Large wood key piece"** means a portion of a bole of a tree, with or without the rootwad attached, that is wholly or partially within the stream, that meets the length and diameter standards appropriate to stream size and high water volumes established in the "Guide to Placement of Wood, Boulders and Gravel for Habitat Restoration," developed by the Oregon Department of Forestry, Oregon Department of Fish and Wildlife, Oregon Department of State Lands, and Oregon Watershed Enhancement Board, January 2010.

(85) **"Lateral Type Np stream"** means any Type Np stream that is not a Terminal Type Np stream.

(86) **"Live tree"** means a tree that has 10 percent or greater live crown.

(87) "Local population" means the number of birds that live within a geographical area that is identified by the State Forester. For example: the area may be defined by physical boundaries, such as a drainage or subbasin.

(88) **"Main channel"** means a channel that has flowing water when average flows occur.

(89) **"Modeled end"** means the upper-most point of perenniality on a perennial stream shown on department maps and the department's reporting and notification system as described

OAR 629-635-0200(18). The modeled end may change over time in different phases or as updated by Oregon Department of Fish and Wildlife pursuant to the methods for field surveys as described in OAR 629-635-0200(11).

(90) **"Natural barrier to fish use"** is a natural feature such as a waterfall, increase in stream gradient, channel constriction, or other natural channel blockage that prevents upstream fish passage.

(91) **"Natural reforestation"** means restocking a site with self-grown trees resulting from self-seeding or vegetative means.

(92) **"Nest tree"** means the tree, snag, or other structure that contains a bird nest.

(93) **"Nesting territory"** means an area identified by the State Forester that contains, or historically contained, one or more nests of a mated pair of birds.

(94) **"Operation"** means any commercial activity relating to the establishment, management or harvest of forest tree species except as provided by the following:

- (a) The establishment, management or harvest of Christmas trees, as defined in ORS 571.505, on land used solely for the production of Christmas trees.
- (b) The establishment, management or harvest of hardwood timber, including but not limited to hybrid cottonwood that is:
  - (A) Grown on land that has been prepared by intensive cultivation methods and that is cleared of competing vegetation for at least three years after tree planting;
  - (B) Of a species marketable as fiber for inclusion in the furnish for manufacturing paper products;
  - (C) Harvested on a rotation cycle that is 12 or fewer years after planting; and
  - (D) Subject to intensive agricultural practices such as fertilization, cultivation, irrigation, insect control and disease control.
- (c) The establishment, management or harvest of trees actively farmed or cultured for the production of agricultural tree crops, including nuts, fruits, seeds and nursery stock.
- (d) The establishment, management or harvest of ornamental, street or park trees within an urbanized area, as that term is defined in ORS 221.010.
- (e) The management or harvest of juniper species conducted in a unit of less than 120 contiguous acres within a single ownership.
- (f) The establishment or management of trees intended to mitigate the effects of agricultural practices on the environment or fish and wildlife resources, such as trees that are established or managed for windbreaks, riparian filters or shade strips immediately adjacent to actively farmed lands.
- (g) The development of an approved land use change after timber harvest activities have been completed and land use conversion activities have commenced.

(95) **"Operator**" means any person, including a landowner or timber owner, who conducts an operation.

(96) **"Ordinary high-water line"** means the line on the bank or shore to which the high-water ordinarily rises annually in season, as defined in ORS 274.005.

(97) **"Other wetland"** means a wetland that is not a significant wetland or stream-associated wetland.

(98) **"Parcel"** means a contiguous single ownership recorded at the register of deeds within the county or counties where the property is located, including any parcel(s) touching

along a boundary, but a railroad, road, stream, or utility-right-of-way may intersect the parcel. Single ownership is defined in ORS 527.620(14).

(99) **"Perch tree"** means a tree identified by the State Forester which is used by a bird for resting, marking its territory, or as an approach to its nest.

(100) **"Plan for an Alternate Practice**" means a document prepared by the landowner, operator or timber owner, submitted to the State Forester for written approval describing practices different than those prescribed in statute or administrative rule.

(101) **"Pre-existing culvert"** is defined as a culvert with minimal risks to public resources that is also:

(a) A fully functioning culvert in a Type F or Type SSBT stream; or

(b) A fully functioning culvert in a Type N or Type D stream.

(102) **"R-ELZ"** means an equipment limitation zone in which disturbance from equipment activity shall be minimized and all trees less than six inches DBH and shrub species are retained where possible.

(103) **"RH Max"** means the maximum distance described for any particular small Type Np Stream.

(104) **"Relief culvert"** means a structure to relieve surface runoff from roadside ditches to prevent excessive buildup in volume and velocity.

(105) **"Removal"** means the taking or movement of any amount of rock, gravel, sand, silt, or other inorganic substances.

(106) **"Repeat Violator"** means an operator, timber owner, or landowner for which a finding has been made by the State Forester under section 46(6), chapter 33, Oregon Laws 2022.

(107) **"Replacement tree"** means a tree or snag within the nesting territory of a bird that is identified by the State Forester as being suitable to replace the nest tree or perch tree when these trees become unusable.

(108) **"Research agenda"** means the plan developed by the AMPC pursuant to OAR 629-603-0200(5)(a).

(109) **"Resource site"** is defined for the purposes of protection and for the purposes of requesting a hearing.

(a) For the purposes of protection:

(A) For threatened and endangered bird species, "resource site" is the nest tree and all identified key components.

(B) For sensitive bird nesting, roosting and watering sites, "resource site" is the nest tree, roost tree or mineral watering place, and all identified key components.

(C) For significant wetlands "resource site" is the wetland and the riparian management area as identified by the State Forester.

(b) For the purposes of requesting a hearing under ORS 527.670(4) and 527.700(3), "resource site" is defined in OAR 629-680-0020.

(110) **"Riparian area"** means the ground along a water of the state where the vegetation and microclimate are influenced by year-round or seasonal water, associated high water tables, and soils which exhibit some wetness characteristics.

(111) **"Riparian management area"** means an area along each side of specified waters of the state within which vegetation retention and special management practices are required for the protection of water quality, hydrologic functions, and fish and wildlife habitat.

(112) **"Road management blocks"** means geographically distinct ownership blocks for which a landowner is encouraged to conduct a Forest Road Inventory and Assessment.
(113) **"Road prism"** means the area of the ground containing the road surface, cut slope, and fill slope.
(114) **"Salmon"** means any of the five salmon species that exist in Oregon. These species are:
  (a) Chinook salmon (*Oncorhynchus tshawwytscha*);
  (b) Coho salmon (*Oncorhynchus kisutch*);
  (c) Chum salmon (*Oncorhynchus keta*);
  (d) Sockeye salmon (*Oncorhynchus nerka*); and
  (e) Pink salmon (*Oncorhynchus gorbuscha*).
(115) **"Saplings and poles"** means live trees of acceptable species, of good form and vigor, with a DBH of one to 10 inches.
(116) **"Seedlings"** means live trees of acceptable species of good form and vigor less than one inch in DBH.
(117) **"Seeps"** means features similar to springs, except without a well-defined point or points of groundwater surface discharge and usually very low flow.
(118) **"Shallow, rapidly moving landslide"** means any detached mass of soil, rock, or debris that begins as a relatively small landslide on steep slopes and grows to a sufficient size to cause damage as it moves down a slope or a stream channel at a velocity difficult for people to outrun or escape.
(119) **"Side channel"** means a channel other than a main channel of a stream that only has flowing water when high water level occurs.
(120) **"Significant violation"** as defined in section 40(15), chapter 33, Oregon Laws 2022:
  (a) "Significant violation" means:
    (A) Violation of ORS 527.670(6) by engaging in an operation without filing the requisite notification;
    (B) Continued operation in contravention of an order issued by the State Forester under ORS 527.680(2)(a), (3), or (5); or
    (C) A violation resulting in major damage to a resource described in ORS 527.710(2) for which restoration is expected to take more than 10 years.
  (b) "Significant violation" does not include:
    (A) Unintentional operation in an area outside an operating area of an operation for which sufficient notification was filed pursuant to ORS 527.670(6);
    (B) Continued operation in contravention of an order issued by the State Forester under ORS 527.680 (2)(a), (3), or (5), where an operator demonstrates that it did not receive the order; or
    (C) Failure to timely notify the State Forester of an intent to continue an operation into the next calendar year.
(121) **"Significant wetlands"** means those wetland types listed in OAR 629-680-0310, that require site specific protection, as follows:
  (a) Wetlands that are larger than eight acres;
  (b) Estuaries;
  (c) Bogs; and
  (d) Important springs in Eastern Oregon.

(122) **"Slope retention areas"** means the 50 percent, at a minimum, of designated sediment source areas in each harvest unit that will be left unharvested.

(123) **"Slopes model"** means the department's computer-generated model to identify designated debris flow traversal areas, designated sediment source areas, and trigger sources.

(124) **"Small forestland"** means forestland that has an owner that owns or holds common ownership interest in less than 5,000 acres of forestland in this state, regulated under section 5(1)(b), chapter 33, Oregon Laws 2022.

(125) **"Small forestland owner"** pursuant to section (16), chapter 33, Oregon Laws 2022 and section 2, chapter 34, Oregon Laws 2022, means a landowner who:

(a) Owns or holds in common ownership interest in less than 5,000 acres of forestland in this state;

(b) Has harvested no more than an average yearly volume of two million board feet of merchantable forest products from the landowner's forestlands in this state, when averaged over the three years prior to:

(A) The date the department receives a harvest notification from the landowner; or

(B) If applying for a Small Forestland Investment in Stream Habitat Program grant, the date the landowner submits a grant application; and

(c) Affirms that they do not expect to exceed an average yearly volume of two million board feet of merchantable forest products to be harvested from the landowner's forestlands in this state for 10 years after the department receives the harvest notification or grant application; or

(d) Emergency exception: Any landowner who exceeds the two million board feet average harvest threshold from their land in the three years prior to submitting a harvest notification or grant application to the department, or who expects to exceed the threshold during any of the following 10 years, shall still be deemed a "small forestland owner" if the landowner establishes to the department's reasonable satisfaction that the harvest limits were, or will be, exceeded to raise funds to pay estate taxes or for a compelling and unexpected obligation, such as for a court-ordered judgment or for extraordinary medical expenses.

(126) **"Small forestland owner minimum option"** means the option to harvest timber allowed to a small forestland owner under rules adopted under the Oregon Forest Practices Act.

(127) **"Snag"** means a tree which is dead but still standing, and that has lost its leaves or needles and its small limbs.

(128) **"Sound snag"** means a snag that retains some intact bark or limb stubs.

(129) **"Springs"** means features where groundwater discharges to land surface or a surface water body at a well-defined point or points. Spring volumes range from small, intermittent trickles to millions of gallons per day, depending on the groundwater source and hydraulic head.

(130) **"SSBT use"** means a stream with salmon, steelhead, or bull trout present or otherwise used by salmon, steelhead, or bull trout at any time of the year as determined by the State Forester.

(131) **"State Forester"** means the State Forester or the duly authorized representative of the State Forester.

(132) **"Steelhead"** means the anadromous life history variant of *Oncorhynchus mykiss*.

(133) **"Stream"** means a channel, such as a river or creek, which carries flowing surface water during some portion of the year.
  (a) For the purposes of the forest practice rules, streams include:
    (A) The water itself, including any vegetation, aquatic life, or habitats therein;
    (B) Beds and banks below the high water level which may contain water, whether or not water is actually present;
    (C) The area between the high water level of connected side channels;
    (D) Beaver ponds, oxbows, and side channels if they are connected by surface flow to the stream during a portion of the year; and
    (E) Stream-associated wetlands.
  (b) "Streams" do not include:
    (A) Ephemeral overland flow (such flow does not have a channel); or
    (B) Road drainage systems or water developments as defined in section (157) of this rule.

(134) **"Stream adjacent failures"** means all slopes greater than 70 percent immediately adjacent to Type F or Type SSBT streams that are either:
  (a) Actively failing and delivering sediment, where erodible material and exposed soils are present and prone to continued shallow-rapid slope instability, with active features such as tension cracks, scarps, ground surface shearing, and oversteepened toes; or
  (b) Unstable due to the toe interacting directly with erosive forces of a stream, such that there is likely a slope failure extending beyond the standard width of the riparian management area.

(135) **"Stream-associated wetland"** means a wetland that is not classified as significant and that is next to a stream.

(136) **"Structural exception"** means the State Forester determines that no actions are required to protect the resource site. The entire resource site may be eliminated.

(137) **"Structural protection"** means the State Forester determines that actions are required to protect the resource site. Examples include retaining the nest tree or perch tree.

(138) **"Stumpage value"** means the value of standing timber based on the value that would be received for the timber if harvested and delivered to a mill, minus the cost of harvest and delivery to the mill.

(139) **"Target wildlife"** means a wildlife species or wildlife guild expected to benefit from the installation of a wildlife food plot.

(140) **"Temporal exception"** means the State Forester determines that no actions are required to prevent disturbance to birds during the critical period of use.

(141) **"Temporal protection"** means the State Forester determines that actions are required to prevent disturbance to birds during the critical period of use.

(142) **"Terminal Type Np stream"** means the largest Type Np stream by basin size that is immediately upstream of the end of a Type F or Type SSBT stream.

(143) **"Timber owner"** means any individual, combination of individuals, partnership, corporation or association of whatever nature, other than a landowner, that holds an ownership interest in any forest tree species on forestland.

(144) **"Tree leaning over the channel"** means a tree within a riparian management area if a portion of its bole crosses the vertical projection of the high water level of a stream.

(145) **"Trigger sources"** means areas within designated sediment source areas that the slopes model identifies as most likely to trigger a high-volume debris flow. These areas have the top 20 percent probability of triggering a top 33 percent high-volume debris flow.
(146) **"Tyee Core Area"** means a location with geologic conditions including thick sandstone beds with few fractures. These sandstones weather rapidly and concentrate water in shallow soils creating a higher shallow, rapidly moving landslide hazard. The Tyee Core area is located within coastal watersheds from the Siuslaw watershed south to and including the Coquille watershed, and that portion of the Umpqua watershed north of Highway 42 and west of Interstate 5. Within these boundaries, locations where bedrock is highly fractured or not of sedimentary origin as determined in the field by a geotechnical specialist are not subject to the Tyee Core area slope steepness thresholds.
(147) **"Type D stream"** means a stream that has domestic water use, but no fish use.
(148) **"Type F stream"** means a stream with fish use, or both fish use and domestic water use.
(149) **"Type N stream"** means a stream that meets the criteria of a Type Np or Ns stream.
(150) **"Type Np stream"** means all perennial streams that are not Type SSBT or Type F.
(151) **"Type Ns stream"** means all seasonal stream reaches that are not Type SSBT, Type F or Type Np streams.
(152) **"Type SSBT stream"** means a small or medium stream that is classified as a Type F stream and that has SSBT use. Stream sizes are determined by the State Forester as described in OAR 629-635-0200(15).
(153) **"Unit"** means an operation area submitted on a notification of operation that is identified on a map and that has a single continuous boundary. Unit is used to determine compliance with ORS 527.676 (down log, snag and green live tree retention), 527.740 and 527.750 (harvest type 3 size limitation), and other forest practice rules.
(154) **"Vacated roads"** are roads that have been made impassable and are no longer to be used for forest management purposes or commercial forest harvesting activities.
(155) **"Verified end"** means the upper-most point of perenniality established pursuant to field verification as required by 629-635-0200(18)(c).
(156) **"Water bar"** means a diversion ditch and/or hump in a trail or road for the purpose of carrying surface water runoff into the vegetation and duff so that it does not gain the volume and velocity which causes soil movement or erosion.
(157) **"Water development"** means water bodies developed for human purposes that are not part of a stream such as waste treatment lagoons, reservoirs for industrial use, drainage ditches, irrigation ditches, farm ponds, stock ponds, settling ponds, gravel ponds, cooling ponds, log ponds, pump chances, or heli-ponds that are maintained for the intended use by human activity.
(158) **"Waters of the state"** include lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.
(159) **"Western Oregon"** means the region described in OAR 629-635-0220.
(160) **"Wetland"** means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do

support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include marshes, swamps, bogs, and similar areas. Wetlands do not include water developments as defined in section (157) of this rule.

(161) **"Wildlife food plot"** means a small forestland area that, instead of being used for growing and harvesting of a forest tree species, is planted in vegetation or has vegetation capable of substantially contributing to wildlife nutrition.

(162) **"Wildlife guild"** means a grouping of wildlife that has similar characteristics and fulfills similar ecological roles in the environment.

(163) **"Wildlife leave trees"** means trees or snags required to be retained as described in ORS 527.676(1).

(164) **"Written plan"** means a document prepared by an operator, timber owner or landowner that describes how the operation is planned to be conducted.

Division 603
ADAPTIVE MANAGEMENT PROGRAM

629-603-0000
Adaptive Management Program Purpose

(1) The purpose of the adaptive management program rules is to provide science-based recommendations and technical information to assist the Board of Forestry in determining when it is necessary or advisable to adjust rules, guidance, and training programs to achieve the biological goals and objectives.

(2) OAR 629-603-0000 through 629-603-0600 shall be known as the adaptive management program rules.

(3) It is the policy of the State of Oregon that regulation of forest practices for the protection of aquatic species shall, in addition to other statutory requirements, be subject to a process of adaptive management, whereby forest practice rules are:
  (a) Monitored for effectiveness relative to the biological goals and objectives; and
  (b) Modified if necessary to achieve the biological goals and objectives.

(4) The adaptive management program is established to implement the policy stated in section (3) of this rule.

(5) The purpose of the adaptive management program is to:
  (a) Ensure timely and effective change as needed to meet biological goals and objectives.
  (b) Provide predictability and stability of the process of changing regulation so landowners, regulators, and interested members of the public can understand and anticipate change.
  (c) Apply best available science to decision-making.
  (d) Effectively meet biological goals and objectives with less operationally expensive prescriptions when feasible.

(6) For the purposes of this rule division, the following definitions apply:
  (a) "Adaptive management program committee" (AMPC) means the adaptive management program committee described in OAR 629-603-0300.
  (b) "Best available science" means the standards developed pursuant to OAR 629-603-0400(4).
  (c) "Biological goals and objectives" means the biological goals and objectives as set by the department for an approved habitat conservation plan.
  (d) "Independent research and science team" (IRST) means the independent research and science team described in OAR 629-603-0400.
  (e) "IRST housing agency" means a public body that houses and supports the Independent Research and Science Team as described in OAR 629-603-0450.
  (f) "Research agenda" means the prioritized research proposals and associated budget developed by the AMPC pursuant to OAR 629-603-0200(5)(a).

629-603-0100
Adaptive Management Program Overview

(1) The adaptive management program must:
  (a) Conduct effectiveness monitoring by assessing the degree to which the rules facilitating particular forest conditions and ecological processes achieve the

biological goals and objectives. This assessment may include evaluation of cumulative effects.

(b) Conduct research inquiry and validation monitoring on the following:

(A) Evaluating if the biological goals and objectives are being met to achieve overall program goals;

(B) Assessing whether additional scientific inquiry is needed to fill in knowledge gaps to inform if biological goals and objectives are being met to achieve overall program goals; and

(C) Testing and improving models and methodologies used to design and implement forest practices rules.

(2) The adaptive management program participants include:

(a) The Adaptive Management Program Committee (AMPC) described in OAR 629-603-0300 and its composition specified in section 36, chapter 33, Oregon Laws 2022;

(b) The Independent Research and Science Team (IRST) described in OAR 629-603-0400 and its composition specified in section 38, chapter 33, Oregon Laws 2022; and

(c) The Adaptive Management Program Coordinator described in OAR 629-603-0500.

(3) The Board of Forestry and the department shall encourage access to land for the purpose of conducting studies and monitoring contemplated by Division 603 rules. The AMPC and the IRST may each prepare a report to the board describing instances where access to land has been insufficient to achieve the purposes of this rule division. If presented with such a report, the board shall consider whether to initiate rulemaking or other measures to address any research and monitoring problems arising from lack of access to land.

(4) The State Forester shall report to the board annually about the status of adaptive management program efforts.

(5) The board intends that the process of continuous improvement be applied to the adaptive management program. The department shall conduct performance audits once every six years per Generally Accepted Government Auditing Standards. The first audit must be completed by January 1, 2029. The performance audits will evaluate whether the program achieved the purposes outlined in OAR 629-603-0000(5).

(6) Adaptive management program studies will focus on issues related to the biological goals and objectives. However, studies may address issues that are not related to the biological goals and objectives only if the studies do not impair research and monitoring on issues related to the biological goals and objectives.

(7) Adaptive management program research may test whether:

(a) Operationally less expensive prescriptions can effectively meet biological goals and objectives; and,

(b) More risk averse prescriptions are necessary to meet biological goals and objectives.

(8) The following topics shall be prioritized in the initial phase of the adaptive management program:

(a) Literature review for eastern Oregon steep slopes;

(b) Requirements of baseline and trend monitoring of road rules; and

(c) Amphibians.

(9) The AMPC may determine when section (8) of this rule is satisfied and therefore those topics are no longer priorities. In the event the AMPC makes these findings, the department shall present the AMPC findings to the board.

629-603-0130
Adaptive Management Program Budget

(1) It is the intent of the Board of Forestry that the State Forester and its cooperators place a high priority on the adaptive management program, which requires securing adequate resources to conduct the necessary work of the AMPC, the IRST, the Adaptive Management Program Coordinator, and other entities as needed. The State Forester shall work with its cooperators and the legislature to secure the necessary resources, funding, and coordination for an effective adaptive management program.

(2) The board shall determine the budget for:
  (a) The IRST Housing Agency described in OAR 629-603-0450;
  (b) Participation grants for the AMPC and the IRST per OAR 629-603-0160;
  (c) IRST research projects;
  (d) Analyses per OAR 629-603-0100(7) as provided by OAR 629-603-0200(5)(e); and
  (e) Other aspects of the adaptive management program that may arise, notwithstanding the process described in section (3) of this rule.

(3) The AMPC shall create a detailed, preliminary budget of the funds from section (2)(c) of this rule for the research agenda per OAR 629-603-0200(5)(a), for a subsequent board vote per OAR 629-603-0200(5)(d).

629-603-0160
Adaptive Management Participation Grants

(1) Organizations on the AMPC and the IRST are eligible for participation grants to compensate the organization for organizational resources the organization dedicated to support the AMPC or the IRST. The Department of Forestry, Department of Fish and Wildlife, Department of Environmental Quality, and federal agencies on the AMPC are not eligible for participation grants.

(2) The Board of Forestry shall determine the budget available for participation grants every biennium pursuant to OAR 629-603-0130(2)(b). The budgeted funds shall be equally divided by the number of members from eligible organizations who apply for the grants.

(3) The board shall award individual participation grants to eligible organizations who request these grants.

(4) If an eligible organization on the IRST has more than one member on the IRST, each eligible organization shall receive individual participation grants for each of their members.

(5) Notwithstanding section (2) of this rule, the board may choose to award some members higher grant amounts if the members have significantly higher workloads than other AMPC or IRST members.

629-603-0200
Adaptive Management Program Process Steps

(1) This rule specifies communications between the Board of Forestry, the AMPC, and the IRST to implement the adaptive management program. To the extent there needs to be communications not identified in this rule for adaptive management program success, the Adaptive Management Program Coordinator will facilitate these communications.

(2) By August 1, 2023:

(a) The AMPC shall:

(A) Complete their charter per OAR 629-603-0300(2); and

(B) Develop the initial list of research topics including the priorities in OAR 629-603-0100(8). Following completion of this list, the AMPC shall integrate the list into a Research Agenda developed via sections (3) through (5) of this rule.

(b) The IRST shall complete their charter per OAR 629-603-0400(2) and determine best available science per OAR 629-603-0400(4).

(3) Step 1: The AMPC shall develop preliminary research question(s).

(a) The AMPC shall succinctly specify preliminary research questions that include the following:

(A) The type of research and monitoring per OAR 629-603-0100(1)(a) or (b);

(B) The rule, biological goals and objectives, or other issue being studied;

(C) The objective of the research;

(D) A brief description of the context of the research question; and

(E) Other information the AMPC deems necessary for the IRST's work per section (4) of this rule.

(b) The board may direct the AMPC to develop additional preliminary research questions.

(c) The AMPC shall send the preliminary research questions to the IRST annually on a date specified in the AMPC charter developed pursuant to OAR 629-603-0300(2).

(4) Step 2: The IRST shall prepare a proposal for each preliminary research question.

(a) Within 45 days of receiving a preliminary research question from the AMPC per subsection (3)(c) of this rule, the IRST shall inform the AMPC of the timeframe to complete a research proposal described in subsection (4)(c) of this rule.

(b) The IRST shall hone each preliminary research question into a final research question. The IRST shall communicate with the AMPC via the Adaptive Management Program Coordinator to allow the AMPC an opportunity to provide input to ensure that the AMPC's original intent is maintained in the final research question. Following this communication, the IRST shall finalize the research question.

(c) The IRST shall develop, or direct through a third party the development of, a research proposal for each finalized research question. Each research proposal shall include:

(A) A literature review that specifies the need for or the type of monitoring, research, commissioned studies, or other means of scientific inquiry necessary to answer the finalized research question described in subsection (4)(b) of this rule;

(B) A preliminary estimate of the budget for each year of the research, and a timeline to complete the research project with specific deliverables; and,

(C) A preliminary description of research project requirements, scope of work including an estimate of the timeline and key milestones, and an estimate of the degree to which knowledge may be improved if the research proposal is implemented.

(d) The IRST may develop multiple research proposals to address each research question. Each proposal must include all the elements of subsection (4)(c) of this rule. If multiple research proposals are developed, the IRST shall compare their costs versus the knowledge benefits of the research proposals.

(e) The IRST shall send proposal(s) from subsections (4)(c) and (4)(d) of this rule to the AMPC within the timeframe communicated from the IRST to the AMPC pursuant to subsection (4)(a) of this rule.

(5) Step 3: The AMPC shall develop a research agenda.

(a) The AMPC shall develop a multi-year research agenda that includes:

(A) Prioritized research projects;

(B) Key milestones for each research project;

(C) A timeline for progress on research projects; and,

(D) A comprehensive IRST budget, including annual budget for each year of each project.

(b) In prioritizing the research projects, the AMPC shall consider:

(A) Biennial appropriations from the legislature;

(B) Priorities outlined in OAR 629-603-0100(8);

(C) Research proposals received from the IRST per subsection (4)(e) of this rule;

(D) Board direction;

(E) Requirements for continuity of research projects under agreement or out for RFP review; and,

(F) Other information as appropriate.

(c) The AMPC shall send the research agenda to the board no later than July 15 of odd-numbered years.

(d) The department shall present the budget in the research agenda developed pursuant to subsection (5)(a) of this rule to the board for a vote at the September board meeting of odd-numbered years.

(e) The AMPC may request the department to hire a third party to complete analyses per OAR 629-603-0100(7).

(6) Step 4: The IRST shall implement the research agenda approved by the board pursuant to subsection (5)(d) of this rule.

(a) No later than November 1 of odd-numbered years, the IRST shall develop an annual work plan to implement the research agenda approved by the board in subsection (5)(d) of this rule.

(b) The IRST shall develop request for proposals (RFP) in an open, competitive process for research projects in the research agenda. The RFP shall include:

(A) Research project objectives, deliverables, and deadlines;

(B) A statement of work;

(C) The level of rigor needed for successful research project completion;

(D) The required expertise and capacity of proposers;

(E) The data as a deliverable;

(F) The expectations for a detailed final report;
(G) An after-action review meeting between the IRST and the contractor and other cooperators; and,
(H) Other RFP elements required by the IRST Housing Agency agreed to perform work specified in OAR 629-603-0450.

(c) RFPs may include requirements for:
(A) Contractor and other cooperator presentations to the AMPC, the board, or other entities as appropriate.
(B) A summary report. If the contractor and other cooperators are required to produce a summary report for the agreement, it must contain the elements listed in section (6)(g) of this rule.

(d) The RFP announcement and award process shall follow procedures of the IRST Housing Agency, with the IRST selecting the RFP successful proposer.

(e) If an IRST member applies for an RFP, the IRST shall ensure RFP selections follow conflict of interest standards as established by the Oregon Government Ethics Commission.

(f) The IRST shall develop and manage agreements for RFP successful proposer.

(g) If the agreement in subsection (6)(f) of this rule did not require development of a summary report, the IRST shall complete the summary report within 90 days of receiving the contractor and other cooperator's detailed final report in paragraph (6)(b)(F) of this rule. The summary report shall be written for a lay audience and include:
(A) Methods sufficient to allow others to understand what was done and to evaluate the results and conclusions;
(B) A detailed description of the results; and
(C) Discussion and conclusions about:
(i) Effectiveness: In studies examining alternative prescriptions, the likely effectiveness of each prescription shall be reported.
(ii) Causal links: An assessment of how the results of relevant new research findings developed by the IRST or through outside research clarify or support causal links between forest practices and aquatic resources, and implications regarding how well forest practices rules or rule sets are likely to address these linkages.
(iii) Magnitude of impact: An assessment of the magnitude of impact on covered species or biological goals and objectives on a sliding scale.
(iv) Timescale of effects observed, and the immediacy of likely changes in the environment.
(v) Scope of inference.
(vi) Scientific uncertainty versus confidence: An assessment of the scientific uncertainty and confidence in the results.

(7) Step 5: Within 30 days of completion of the last of the reports described in paragraphs (6)(b)(F) and (6)(c)(B) and subsection (6)(g) of this rule, the IRST shall send both reports to the AMPC and the board.

(8) Step 6: The AMPC and the board shall assess the IRST reports described in section (7) of this rule and determine next steps per the following process.

(a) The AMPC shall consider reports described in paragraphs (6)(b)(F) and (6)(c)(B) and subsection (6)(g) of this rule from the IRST. Within 90 days of receipt of these reports from the IRST, the AMPC shall send its report to the board. This AMPC report shall include:
  (A) Alternative actions, including a no action alternative, to address research findings identified in the IRST reports.
  (B) The AMPC may recommend one or more of the alternatives. Recommendations shall include:
    (i) Reasoning for the recommendation.
    (ii) If a recommendation for a rule change, a clear description of the proposed rule change.
    (iii) If a recommendation for additional scientific inquiry, a clear description of the preliminary research question.
    (iv) If a recommendation for any other policy action, including rule guidance and training, a clear description of the proposed policy action.
  (C) Minority reports may be included in reports to the board.

(b) By the second regular meeting after receipt of the AMPC report, the AMPC shall present their recommendations to the board for a vote.

629-603-0300
Adaptive Management Program Committee

(1) The purpose of the Adaptive Management Program Committee (AMPC) is to complete work described in division 603 of OAR chapter 629 and section 36(7), chapter 33, Oregon Laws 2022.

(2) The AMPC shall develop its operating procedures through a charter approved by the AMPC. The charter shall include:
  (a) A values statement on the purpose of the AMPC, including the need for ongoing good relationships.
  (b) Ground rules for AMPC member interactions.
  (c) Determination of what constitutes a substantial decision per section 36(8), chapter 33, Oregon Laws 2022.
  (d) Process for selecting chairperson(s). The chairperson shall have the usual duties and powers of a presiding officer.
  (e) Roles, expectations, and representation on subcommittees.
  (f) Regular deadlines including the deadline specified in OAR 629-603-0200(3)(c).
  (g) Measures to maintain and improve the long-term effectiveness of AMPC, including:
    (A) Succession management procedures;
    (B) Onboarding of new AMPC members; and
    (C) Regular review and updating of the AMPC charter.

(3) After the Board of Forestry appoints the first AMPC members pursuant to sections 36(5)(a) and 37, chapter 33, Oregon Laws 2022, members' terms may be renewed by a vote by the board. If an AMPC member's term is not renewed by the board or there is any other vacancy of a voting member on the AMPC, then the entity described in sections

36(3), 36(4), 36(5)(a) chapter 33, Oregon Laws 2022 shall propose two new candidates for a vote from the board for AMPC appointment.

(4) The AMPC shall conduct their meetings per the AMPC charter, and all AMPC meetings shall be conducted as public meetings consistent with Oregon Public Meetings Law. The AMPC will provide for public testimony at meetings unless the chairperson determines that doing so would be detrimental to the conduct of the AMPC's business.

(5) An organization on the AMPC may designate someone to serve as an interim member in place of their current member for up to 90 days. The interim member will have all the rights and responsibilities of that organization's voting status per Section 36, Chapter 33, Oregon Laws 2022. The organization must submit in writing to the adaptive management program coordinator:
   (a) The name of the interim member; and,
   (b) The duration of their interim status.

629-603-0400
Independent Research and Science Team

(1) The purpose of the Independent Research and Science Team (IRST) is to complete work described in division 603 of OAR chapter 629 and section 38(8), chapter 33, Oregon Laws 2022.

(2) The IRST shall develop its operating procedures through a charter approved by the IRST. The charter shall include:
   (a) A values statement on the purpose of the IRST, including the need for ongoing good relationships;
   (b) Ground rules for IRST member interactions;
   (c) Measures to obtain research expertise or review from outside the IRST;
   (d) Determination of what constitutes a substantial decision per section 38(9)(b), chapter 33, Oregon Laws 2022;
   (e) Process for selecting chairperson(s). The chairperson shall have the usual duties and powers of a presiding officer;
   (f) Process for nominating new members to fill vacancies and add new disciplinary expertise pursuant to section 38(6), chapter 33, Oregon Laws 2022;
   (g) Role, expectations, and representation on subcommittees; and
   (h) Measures to maintain and improve the long-term effectiveness of the IRST, including:
      (A) Succession management procedures;
      (B) Onboarding of new IRST members; and
      (C) Regular review and updating of the IRST charter.

(3) An IRST member's term may be renewed upon a two-thirds vote of the rest of the IRST and then ratification by the board. A two-thirds vote of the other IRST members, or a majority vote of the board, may remove an IRST member before the end of their term.

(4) The IRST shall develop standards for best available science for the adaptive management program that include:
   (a) Types of sources of best available science;
   (b) Process for determining what is best available science based on criteria set by the IRST, including an assessment of study quality and relevance;
   (c) Testable hypotheses as a crucial element for successful research;

(d) A peer review process that is transparent and addresses both study designs and study reports. The IRST shall not grant anonymity to authors, handling editors, or peer-reviewers before January 1, 2028. After January 1, 2028, the IRST may modify the anonymity requirements to peer reviewers by a substantial decision of the IRST; and

(e) Other elements the IRST determines are necessary.

(5) The IRST may update the best available science standards developed pursuant to section (4) of this rule.

(6) The IRST shall conduct their meetings per the IRST charter, and all IRST meetings shall be conducted as public meetings consistent with Oregon Public Meetings Law. The IRST will provide for public testimony at meetings unless the chairperson determines that doing so would be detrimental to the conduct of the IRST's business.

(7) The IRST may pursue scientific inquiry via various avenues, including:

(a) Literature review;

(b) Field monitoring;

(c) Original research;

(d) Commissioned studies; and,

(e) Other means of scientific inquiry.

629-603-0450

Housing Agency for IRST

(1) The department shall have an agreement with Oregon State University-Institute for Natural Resources to house the Independent Research and Science Team with an initial six-year agreement. At the end of the initial term, and for all periods thereafter, the department shall develop an agreement with a public body every six years to house and support the work of the IRST. The agreement shall align with Division 603 rules. As used in this rule, the term "public body" has the meaning provided in ORS 174.109.

(2) Every six years, the Board of Forestry shall consider the location of the IRST Housing Agency in alignment with performance audits per OAR 629-603-0100(5). As part of this review, the AMPC must submit a report to the board evaluating performance of the IRST Housing Agency. The AMPC report shall reflect all the views of the AMPC members and does not require a vote of the AMPC.

(3) The IRST will oversee the IRST Housing Agency's work to:

(a) Help refine research questions and associated proposals per OAR 603-629-0200(4);

(b) Draft requests for proposals to address research projects per OAR 603-629-0200(6);

(c) Post requests for proposals using standard public bidding processes per OAR 603-629-0200(6);

(d) Develop agreements for successful proposers of request for proposals per OAR 603-629-0200(6);

(e) Administer agreements mentioned in subsection (3)(d) of this rule per standard agreement processes for the Housing Agency per OAR 603-629-0200(6);

(f) As requested by the IRST, draft reports summarizing the results of funded research, per OAR 603-629-0200(6)(g);

(g) Provide administrative functions for the IRST including:

(A) Coordinate and host IRST meetings and ensure they adhere to Oregon Public Meetings Law;
(B) Draft and maintain the IRST charter per OAR 603-629-0400(2); and
(C) Provide other administrative functions as needed.

(h) Provide other support duties as needed.

629-603-0500
Adaptive Management Program Coordinator

The State Forester will appoint an Adaptive Management Program Coordinator to serve as the program administrator. The Adaptive Management Program Coordinator will be a neutral facilitator whose primary function is to assist the program by:

(1) Facilitating communication between, and coordinating the work of, adaptive management program participants listed in OAR 629-603-0100(2);
(2) Reporting to the Board of Forestry on annual progress of adaptive management program pursuant to OAR 629-603-0100(4), in addition to appearances as needed to present AMPC reports and other adaptive management program work;
(3) Managing budgets for participation grants described in OAR 629-603-0160 for the AMPC and the IRST;
(4) Coordinating agreements for regular performance audits of the adaptive management program per OAR 629-603-0100(5); and
(5) Performing other duties as needed.

629-603-0600
Rulemaking Topics

In addition to requirements specified in section 39, chapter 33, Oregon Laws 2022 and other law, the Board of Forestry may use the adaptive management program rulemaking process for rules that are not intended to achieve the biological goals and objectives.

(1) The board shall ensure that the use of the adaptive management process for issues unrelated to the biological goals and objectives does not impair the ability of the adaptive management program to address issues related to the biological goals and objectives.
(2) If the board directs the AMPC and the IRST to address issues unrelated to the biological goals and objectives, the IRST shall consult with experts in that non-aquatic research discipline to support IRST projects and reports.

Division 605
PLANNING FOREST OPERATIONS

629-605-0150
Notification to the State Forester – When, Where and How

(1) The operator, landowner or timber owner shall notify the State Forester as required by ORS 527.670(6), at least 15 days before starting an operation.
(2) The State Forester may waive the 15-day waiting period required in section (1) of this rule, except as prohibited in ORS 527.670(9) for aerial applications of chemicals and 527.670(10) for operations requiring a written plan under 527.670(3)(a), (b) and (c). Waivers may be granted when the State Forester has already previewed the operation site

or has otherwise determined the operation to have only minor potential for resource damage. Waivers shall be made in writing, and on an individual notification basis.

(3) Once an operation is actually started following proper notification of the State Forester, the operation may continue into the following calendar year without further notification under 527.670(6), provided:
   (a) There are no changes to the information required on the notification;
   (b) The operator gives written notice to the State Forester of their intent to continue the operation within the first two months of the following calendar year; and
   (c) The operation actively continues within the first six months of the following calendar year.

(4) No notification is valid after the second calendar year, unless:
   (a) The landowner or operator submits a written request to extend the notification before the end of the second calendar year;
   (b) There are no changes to the information submitted on the original notification; and
   (c) The State Forester approves the request.

(5) Notwithstanding sections (3) and (4) of this rule, nothing in this rule relieves an operator, landowner or timber owner of the responsibility to comply with ORS 477.625, requiring a permit to use fire or power-driven machinery; or ORS 321.550, requiring notification of intent to harvest provided to the Department of Revenue through the department for tax collection purposes.

(6) For the purposes of ORS 527.670 a notification will be considered received only when the information required by the State Forester is complete and the necessary forms are on file at the department district or unit office responsible for the area in which the operation will take place. Notifications not properly completed shall be promptly returned to the party submitting them. Properly completed notifications submitted to an incorrect department office will be forwarded to the correct office.

(7) Notifications required by ORS 527.670(6) shall be completed in detail, on forms provided by the State Forester. The notification shall include a map to scale, or aerial photograph that is corrected for distortion, on which the boundary of the operation unit is clearly marked. When more than one type of operation activity or more than one unit is submitted on a single notification, each operation unit shall be identifiable as to the type of operation activity, by legal subdivision, and drawn on a map to scale, aerial photograph corrected for distortion, or other appropriate means. Operations involving harvesting in more than one county may not be combined on the same notification because of tax collection requirements.

(8) When operations include the application of chemicals, properly completed notifications shall include the common name of the chemicals to be used; the brand name, if known at the time of notification; the application method; and, for fertilizers, the intended application rate per acre. Public information on allowable application rates of commonly applied forest chemicals will be maintained at department field offices. Additional information on chemical applications shall be collected and recorded by operators at the time of application, and made available upon request to the State Forester, pursuant to OAR 629-620-0600.

(9) The operator, landowner or timber owner, whichever filed the original notification, shall contact the State Forester and report any subsequent change to information contained in

the notification. Additions to the geographic location, however, shall require a separate notification.

(10) The operator who filed a notification pursuant to ORS 527.670(6), shall inform the State Forester of the completion of each activity identified in the notification of operation under the following conditions:

(a) When there is an active operation, inform the State Forester of the completion of the activity by the end of the calendar year of the notification; or

(b) If the original notification is continued into the following calendar year, the requirement in section (10)(a) does not apply until end of the calendar year of the continued notification.

629-605-0170
Written Plans

(1) Definition of "Directly Affect" and "Physical Components" For the purpose of section (4) of this rule:

(a) "Physical components" means materials such as, but not limited to, vegetation, snags, rocks and soil; and

(b) "Directly affect" means that physical components will be moved, disturbed, or otherwise altered by the operation.

(2) Statutory Written Plans for Operations near Type F, Type SSBT and Type D Streams. An operator must submit to the State Forester a written plan as required by ORS 527.670(3) before conducting an operation that requires notification under OAR 629-605-0140, and that is within 100 feet of a Type F, Type SSBT or Type D stream.

(3) Statutory Written Plans for Operations near Wetlands larger than Eight Acres, Bogs or Important Springs in Eastern Oregon. An operator must submit to the State Forester a written plan as required by ORS 527.670(3) before conducting an operation that requires notification under OAR 629-605-0140, and that is within 100 feet of a significant wetland that is a wetland larger than eight acres (not an estuary), a bog, or an important spring in Eastern Oregon as identified in 629-645-0000 (Riparian Management Areas and Protection Measures for Significant Wetlands).

(4) Waiver of Statutory Written Plans. The State Forester may waive, in writing, the requirement for a written plan described in sections (2) and (3) unless the operation activity will directly affect the physical components of the riparian management area for Type F, Type SSBT, Type D streams or significant wetlands. The department shall publish Forest Practices Technical Guidance to explain how to implement this rule. Note: OAR 629-605-0170(4) applies to operations with fish streams, except operations on small forestlands, for which a notification is filed under ORS 527.670(6) on or after July 1, 2023. This rule applies to all operations for which a notification is filed on or after January 1, 2024, or a notification filed prior to January 1, 2024, if the operation is not completed on or before December 31, 2023.

(5) Statutory Written Plans for Operations near Wildlife Sites and Estuaries. An operator must submit to the State Forester a written plan as required by ORS 527.670(3) before conducting an operation that requires notification under OAR 629-605-0140, and that is within 300 feet of any:

(a) Specific site involving threatened or endangered wildlife species, or sensitive bird nesting, roosting, or watering sites; as listed by approximate legal description, in a

document published by the Department of Forestry titled "Cooperative Agreement Between the Board of Forestry and the Fish and Wildlife Commission, March 28, 1984."

(b) Resource site identified in OAR 629-665-0100 (Species Using Sensitive Bird Nesting, Roosting and Watering Sites), 629-665-0200 (Resource Sites Used By Threatened and Endangered Species).

(c) Significant wetland that is classified as an estuary identified in OAR 629-645-0000 (Riparian Management Areas and Protection Measures for Significant Wetlands).

(d) Nesting or roosting site of threatened or endangered species listed by the U.S. Fish and Wildlife Service or by the Oregon Fish and Wildlife Commission by administrative rule.

(6) Statutory Written Plans and Stewardship Agreements. The written plan requirements in section (2), (3) and (5) of this rule do not apply to operations that will be conducted pursuant to a stewardship agreement entered into under ORS 541.423.

(7) Statutory Written Plan Requirements and Notification of Protected Resource Sites. The State Forester shall notify the operator of the presence of any site listed in section (2), (3) or (5) of this rule at any time the State Forester determines the presence of those sites.

(8) The State Forester shall notify the operator that a written plan is required if:

(a) The operation will be within 100 feet of any sites listed in sections (2) or (3) of this rule and the operation will directly affect the physical components of a riparian management area associated with any of those sites; or

(b) The operation will be within 300 feet of any site listed in section (5) of this rule.

(9) Statutory Written Plan Hearing Provisions. Written plans required under sections (2), (3) or (5) of this rule shall be subject to the hearings provisions of ORS 527.700 (Appeals from orders of State Forester hearings procedure; stay of operation); and shall be subject to the provisions of 527.670(8) through (12) (Commencement of operations; when notice and written plan required; appeal of plan) prescribing certain waiting periods and procedures.

(10) Non-Statutory Written Plans.

(a) An operator must submit a written plan as required by ORS 527.670(2) and the rules listed below unless the State Forester waives the written plan requirement. Written plans required by the rules listed below are not subject to the provisions of ORS 527.700(3) or ORS 527.670(10), (11) and (12).

(A) 629-605-0190(1) — Operating near or within sites that are listed in the "Cooperative Agreement Between the Board of Forestry and the Fish and Wildlife Commission, March 28, 1984" or sites designated by the State Forester;

(B) 629-605-0190(2) — Operating near or within habitat sites of any wildlife or aquatic species classified by the Department of Fish and Wildlife as threatened or endangered;

(C) 629-623-0700(1) — Conducting timber harvesting or road construction operations with intermediate or substantial downslope public safety risk;

(D) 629-623-0700(2) — Constructing a stream crossing fill over a debris torrent-prone stream with intermediate or substantial downslope public safety risk;

(E) 629-623-0700(3) — Locating a waste-fill area within a drainage containing debris torrent-prone streams with intermediate or substantial downslope public safety risk;
(F) 629-630-0700(3)(d) Cable yarding across streams classified as medium or large Type Np;
(G) 629-630-0700(3)(f) — Cable yarding across small Type Np or Type Ns streams located within designated debris flow traversal areas as described in, OAR 629-630-0905, or designated sediment source areas, as described in OAR 629-630-0910;
(H) 629-630-0915(2) Harvesting timber where yarding will occur within stream adjacent failures identified upslope of the Type F or Type SSBT stream riparian management area.
Note: OAR 629-605-0170(10)(a)(H) applies to operations, except operations on small forestlands, for which a notification is filed under ORS 527.670(6) on or after July 1, 2023. This paragraph applies to all operations for which a notification is filed on or after January 1, 2024, or a notification filed prior to January 1, 2024, if the operation is not completed on or before December 31, 2023.
(I) 629-630-0920(8) Harvesting timber where yarding will occur within stream adjacent failures identified upslope of the Type F or Type SSBT stream riparian management area.
(J) 629-650-0005 — Operating within 100 feet of a large lake;
(K) 629-665-0020(2) — Operating near a resource site requiring special protection; and
(L) 629-665-0210(1) — Operating near a Northern Spotted Owl resource site.

(b) An operator must submit a written plan as required by ORS 527.670(2) and the rules listed below and the State Forester shall not waive the written plan requirement. Written plans required by the rules listed below are not subject to the provisions of ORS 527.700(3) or ORS 527.670(10), (11) and (12).
(A) 629-625-0100(2)(a) — Activities creating risks identified in 629-625-0100(2)(a) outside of 100 feet of Type F, Type SSBT, Type D streams and Significant Wetlands or creating risks identified in 629-625-0100(2)(a) to other Waters of the State;
(B) 629-625-0100(2) — Conducting machine activity in Type N streams or lakes;
(C) 629-625-0100(2)(c) — Constructing roads in RMA of Type N streams or lakes;
(D) 629-625-0100(2)(d) — Constructing or reconstructing any crossings of Waters of the State excluding Type F, Type SSBT, or Type D streams or Significant Wetlands;
(E) 629-625-0100(2)(e) — Activities in a critical location outside of 100 feet of Type F, Type SSBT, Type D streams, or Significant Wetlands;
(F) 629-625-0100(4) — Placing woody debris or boulders in Type N stream channels for stream enhancement;
(G) 629-625-0320(1)(b)(B) — Constructing or reconstructing any water crossing with fill over 15 feet deep in any Type N stream, wetland that

does not meet the definition of significant wetland, lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, or canals;

(H) 629-625-0410(5) — Temporary placement of fill within the RMA of any Type N stream, wetland that does not meet the definition of Significant Wetland, lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, or canals;

(I) 629-630-0905(4) — Harvesting timber in a unit that contains designated debris flow traversal areas;

(J) 629-630-0910(6) — Harvesting timber in a unit that contains designated sediment source areas and slope retention areas; and

(K) 629-630-0920(4) — Harvesting timber in a unit that contains designated debris flow traversal areas.

(11) If an operator, timber owner or landowner is required to submit a written plan to the State Forester under subsection (10) of this section:

(a) The State Forester shall review the written plan and may provide comments to the person who submitted the written plan;

(b) Provided that notice has been given as required by ORS 527.670 and OAR 629-605-0150, the operation may commence on the date the State Forester provides comments. If no comments are provided the operation may commence at any time after 14 calendar days following the date the written plan was received;

(c) Comments provided by the State Forester under paragraph (a) of this subsection, to the person who submitted the written plan are for the sole purpose of providing advice to the operator, timber owner or landowner regarding whether the operation described in the written plan is likely to comply with ORS 527.610 to 527.770 and rules adopted thereunder. Comments provided by the State Forester do not constitute an approval of the written plan or operation;

(d) If the State Forester does not comment on a written plan, the failure to comment does not mean an operation carried out in conformance with the written plan complies with ORS 527.610 to 527.770 or rules adopted thereunder nor does the failure to comment constitute a rejection of the written plan or operation;

(e) In the event that the State Forester determines that an enforcement action may be appropriate concerning the compliance of a particular operation with ORS 527.610 to 527.770 or rules adopted thereunder, the State Forester shall consider, but is not bound by, comments that the State Forester provided under this section.

(12) Written Plan Content. Written plans required under OAR 629-605-0170 must contain a description of how the operation is planned to be conducted in sufficient detail to allow the State Forester to evaluate and comment on the likelihood that the operation will comply with the Forest Practices Act or administrative rules.

(13) Written plans required under OAR 629-605-0170 will be considered received when complete with the following information:

(a) A map showing protected resource(s) and the harvest area; and

(b) The specific resource(s) that require protection; and

(c) The practices that may affect the protected resource(s) such as road and landing location, disposal of waste materials, felling and bucking and post operation stabilization measures; and

(d) The specific techniques and methods employed for resource protection such as road and landing design, road construction techniques, drainage systems, buffer strips, yarding system and layout; and

(e) Additional written plan content required in individual rules.

(14) In addition to the other requirements in this rule, written plans for operations within 100 feet of domestic water use portions of Type F, Type SSBT or Type D streams must contain a description of the practices and methods that will be used to prevent sediment from entering waters of the state.

(15) Modification of a written plan shall be required when, based on information that was not available or was unknown at the time the original written plan was reviewed, the State Forester determines the written plan no longer addresses compliance with applicable forest practice rules. Written plans with modifications required under this section shall not be subject to the provisions of ORS 527.670(10) and (11) relating to waiting periods for written plans.

Division 607
SMALL FORESTLAND OWNER

629-607-0000
Purpose and Goals

(1) OAR 629-607-0000 through 629-607-0800 shall be known as the small forestland owner rules.

(2) Small forestland owners play a vital and distinct role from industrial forestland owners to manage and conserve Oregon's private forests. Small forestland owners often differ from large owners as to management goals and financial resources, and they also own a disproportionate share of lowland fish and wildlife habitat**.**

(3) Goals for this division include helping small forestland owners:
- (a) Comply with the Forest Practices Act and rules;
- (b) Meet the biological goals and objectives for aquatic resources;
- (c) Practice standard harvest and road management rules;
- (d) Implement minimum options;
- (e) Use the forest conservation tax credit;
- (f) Seek funding under the Small Forestland Investment in Stream Habitat program;
- (g) Minimize the number of land-use conversions of timberlands to other uses; and
- (h) Receive financial and educational support to encourage small forestland owners to follow the standard harvest and road management rules.

(4) The State Forester shall create a Small Forestland Owner Assistance Office, pursuant to section 19, chapter 33, Oregon Laws 2022. This office shall:
- (a) Provide supporting services, including but not limited to:
  - (A) Verify landowner eligibility;
  - (B) Education, training, and outreach;
  - (C) Help small forestland owners with road condition assessments in OAR 629-625-0920 and written plans under ORS 527.670(10) and OAR 629-605-0170;
  - (D) Tracking, recording, reporting, and monitoring; and
  - (E) Regulatory and technical assistance.
- (b) Manage the Small Forestland Investment in Stream Habitat Program Fund;
- (c) Manage the forest conservation tax credit as described in OAR 629-607-0400 through OAR 629-607-0800;
- (d) Manage fifth-field watershed calculations, and communicate status, limits, and availability over a one-year planning period (OAR 629-643-0140(4)); and
- (e) Coordinate outreach efforts with agencies and partner organizations, including the Partnership for Forestry Education, to inform small forestland owners on the Small Forestland Investment in Stream Habitat Program, road condition assessments, the forest conservation tax credit, and other programs administered by the Small Forestland Owner Assistance Office.

(5) In some rare circumstances, a small forestland ownership may become highly encumbered by Forest Practice Administrative Rules. This high encumbrance is most likely to be true in ownerships with a dense concentration of streams when the encumbrances affect an owner of modest means who is highly dependent on revenue from encumbered locations. For these extraordinary cases, the department will work to

develop a process prior to July 1, 2023, to address the significantly disproportionate impacts on small forestland owners of modest means who are highly dependent on revenue from locations with highly dense concentrations of streams by the Forest Practice Administrative Rules.

629-607-0100
Prescriptive Alternatives

(1) Forest Practice Administrative Rules apply to small forestland owners, as they would to any other non-federal landowner, unless addressed directly or by reference in the small forestland owner rules.

(2) Resource protection standards may have a disproportionate economic or operational impact on small forestland owner parcels or highly encumber harvest operations. The State Forester shall provide the following minimum options:
   (a) Along riparian management areas as described in OAR 629-643-0141, 629-643-0142, 629-643-0143, and 629-643-0145;
   (b) Harvest along fish streams with stream adjacent failures as described in in OAR 629-630-0920;
   (c) Harvest near seeps or springs as described in in OAR 629-643-0145;
   (d) Harvest type 1, 2, or 3 on steep slopes with designated debris flow traversal areas as described in in OAR 629-630-0912;
   (e) On forest roads as described in in OAR 629-625-0920; or
   (f) Plans for alternate practice for (a) through (e), and as otherwise allowed under OAR 629-605-0173.

629-607-0200
Program Participation

(1) Small forestland owners intending to implement minimum options as defined in OAR 629-607-0100, exclusively available to small forestland owners, shall do the following:
   (a) Notify the State Forester of intent by submitting a notification of operations and certify that they meet the definition of a small forestland owner in OAR 629-600-0100.
   (b) Provide, at the request of the State Forester, additional information including but not limited to:
      (A) Documentation of full land ownership or partial ownership, which affirms total ownership of forestland of less than 5,000 acres in Oregon;
      (B) Records of harvests of board feet of merchantable forest products harvested from the Oregon owned forestlands removed in the last three years; and
      (C) A statement of affirmation that the landowner does not expect to exceed an average yearly volume of 2 million board feet of merchantable forest products from the Oregon owned lands for the next 10 years, following the time of notification.
   (c) At the discretion of the State Forester, the department may deem a landowner to qualify as a small forestland owner and allow that landowner access to options and incentives of the program even if they have an exceedance of harvest

volumes in (1)(b)(C), if the small forest landowner provides documentation of a need for the funds to:
(A) Pay estate taxes;
(B) Pay for a court ordered judgment;
(C) Pay extraordinary medical expenses; or
(D) For a compelling or unexpected obligation.

(2) Small forestland owners wishing to access the incentives or minimum management options specifically afforded to them may register as a small forestland owner or complete a road condition assessment (OAR 629-625-0920) at any time prior to conducting a forest operation and may do so through the notification process or through other means as provided by the department.

(3) If a small forestland owner indicates intent to exercise a standard practice in lieu of the small forestland owner minimum option, they must receive notice from the department within the 15-day waiting period if the tax credit is not available in the current tax year.

(4) Small forestland owners that implement provisions specifically afforded to them as minimum management options or participate in an incentive program administered by the Small Forestland Owner Assistance Office, shall allow access to the department, or extension of the department, for project implementation inspections, rule compliance, and effectiveness monitoring.

629-607-0250
Notification Requirements

(1) Small forestland owners as defined in OAR 629-607-0200 shall submit:
(a) A notification of operation not less than 15 days prior to the expected start date of the operation; and
(b) Include other required information not less than 15 days prior to the expected start date of the operation as otherwise required in OAR 629-605-0150.

(2) If the State Forester requests additional documentation, the small forestland owner shall provide the requested information for review before the notification will be considered complete.

(3) At the time of notification, small forestland owners conducting operations around or adjacent to protected streams and associated riparian management areas shall indicate their intention of implementing:
(a) The standard practice;
(b) The small forestland owner minimum option; or
(c) The forest conservation tax credit option.

(4) Small forestland owners exercising a small forestland owner minimum option shall submit a written plan with the notification consistent with the requirements in OAR 629-605-0170, and which also includes the following information:
(a) Classification of the applicable stream;
(b) Accounts for the horizontal lineal feet of riparian area adjacent to, or inside the operation area; and
(c) Specifies as to whether the riparian measurements given are for one or both sides of the riparian management area.

(5) Small forestland owners shall submit a road condition assessment when filing a notification, in lieu of the forest road inventory and assessment (OAR 629-625-0920), for

operations that result in using a road to haul timber. The road condition assessment shall include all roads in the parcel, defined in OAR 629-600-0100, where the harvest is planned. Notifications for operations not resulting in timber hauling do not require a road condition assessment to be completed.

(6) The State Forester must review the small forestland owner notification during the 15-day waiting period. The department will provide notice to the small forestland owner if:
  (a) Additional information is required from the small forestland owner;
  (b) The small forestland owner preferred minimum option is not available; or
  (c) There are protected resources present or other considerations to ensure compliance.

(7) Upon completion of an operation, a small forestland owner shall provide notice and reportable details consistent with requirements in OAR 629-605-0150. Notification to State Forester - When, Where and How; OAR 629-605-0170 Statutory Written Plans; OAR 629-605-0140 Notification to the State Forester - Types of Operation. If a small forest landowner conducts a timber harvest under the provisions of OAR 629-643-0140(4) Small Forestland Owner Minimum Option Vegetation Retention Prescription Requirements, they must report to the State Forester within 90 days.

629-607-0300
Small Forestland Investment in Stream Habitat Program

(1) The department shall establish the Small Forestland Investment in Stream Habitat (SFISH) Program Fund as a grant program to fund projects on small forestland owner lands. The Small Forestland Owner Assistance Office shall manage the SFISH Program in consultation with the Department of Fish and Wildlife.

(2) The SFISH Program shall make funding available to qualified small forestland owners for the purposes of improving fish habitat on their forestlands for the following projects:
  (a) Replace fish stream water crossing structures, not bridges, mostly culverts that are no longer functioning, or still functioning but not designed consistent with requirements of OAR 629-625-0320;
  (b) Repair abandoned roads; or
  (c) Reconstruct, vacate, or relocate roads with a perched fill that present a significant hazard to fish-bearing streams. Not more that 10 percent of available SFISH funds may be used for perched fill remediation projects in any year.

(3) To be eligible for the SFISH Program, in addition to a landowner meeting the definition of a small forestland owner in OAR 629-600-0100, the small forestland owner must provide the following information:
  (a) Documentation showing that no more than an average yearly volume of two million board feet of merchantable forest products has been harvested from the landowner's forestland in the state of Oregon when averaged over a three-year period prior to the date the Small Forestland Owner Assistance Office receives the grant application;
  (b) A statement of affirmation to the Small Forestland Owner Assistance Office that the landowner does not expect to exceed an average yearly volume of two million board feet of merchantable forest products to be harvested from the landowner's forestland in Oregon during the 10 years following the date the Small Forestland Owner Assistance Office awards grant-funds, and

(c) A road condition assessment containing the information detailed in OAR 629-625-0920, that includes an assessment of all roads, abandoned roads, culverts, and fish passage barriers located on the parcel of land, as defined in OAR 629-600-0100, on which a grant-funded SFISH project may occur.

(4) The SFISH Program shall optimize state funding by prioritizing funding for site locations determined to have a high conservation value. Examples of high conservation value sites will include but are not limited to:
(a) Areas of known chronic sedimentation;
(b) Fish passage barriers;
(c) Stream diversions, or sites with a high diversion potential;
(d) Areas of known hydrologic connectivity; or
(e) Roads with a perched fill posing a significant hazard to fish-bearing streams.

(5) The SFISH Program will consider the greatest resource benefit, and prioritize funding projects which best address the following:
(a) Removal of fish passage barriers consistent with Department of Fish and Wildlife requirements under ORS 509.585 and OAR 635-412-0015, as implemented through the Forest Practice Administrative Rules;
(b) Minimize the potential for sediment delivery to waters of the state;
(c) Minimize stream diversions at water crossings;
(d) Minimize hydrologic connectivity between roads and waters of the state;
(e) Remove perched fill that presents a significant hazard to fish-bearing streams through reconstruction, relocation, or vacating; or
(f) Length of time that the grant has been submitted and under consideration for funding; or
(g) Meet high-value conservation objectives as determined by the department in consultation with other state and federal agencies.

(6) The Small Forestland Owner Assistance Office in coordination with the Department of Fish and Wildlife, will prioritize funding for the following projects on high conservation value sites:
(a) Water crossing structure, not bridge, mostly culvert replacements on fish streams;
(b) Repair of abandoned roads; and
(c) Perched fills that present a significant hazard to fish-bearing streams.

(7) The small forestland owner will collaborate with the Small Forestland Owner Assistance Office on projects approved for SFISH funding to determine project details, which include but are not limited to specifications, timing, efficiencies, involvement, and other factors as necessary. The small forestland owner and the Small Forestland Owner Assistance Office will work together and mutually agree on the most efficient and effective way to complete projects.

629-607-0400
Forest Conservation Tax Credit – Process for Determining Eligibility

(1) To be eligible to apply for a forest conservation tax credit, a small forestland owner shall:
(a) Certify that they meet the definition and criteria of a small forestland owner as described in OAR 629-600-0100 and the criteria for this tax credit under chapter 34, section (2), Oregon Laws 2022. The State Forester may require additional information for program participation as outlined in OAR 629-607-0200(1)(b).

(b) Submit a notification of operation for a timber harvest type 1, type 2, or type 3 to the State Forester as required by ORS 527.670(6) to harvest timber adjacent to riparian areas, as described in OAR 629-643-0100 through 629-643-0135. The harvest area must be greater than or equal to the portion of area the small forestland owner elects not to harvest.

(c) Elect to follow the standard practice vegetation retention requirements as described in OAR 629-643-0100 through 629-643-0135.

(d) Indicate at the time of submitting the notification of operation the intent to apply for a forest conservation tax credit.

(2) After filing the notification of operation, but no later than three months after completing the timber harvest, the small forestland owner shall submit documentation of the stumpage values and costs of appraisal to the Small Forestland Owner Assistance Office.

(3) After receiving the notification of operation, documentation of stumpage values and costs associated with appraisal, and filing a deed restriction from the small forestland owner, the Small Forestland Owner Assistance Office shall evaluate and approve the stumpage value or request additional documentation as needed. Once stumpage values are approved, the office shall issue a certificate of eligibility to both the small forestland owner and the Department of Revenue.

(4) After receiving certification, a small forestland owner shall sign and record the deed, in the county where the eligible forest conservation area is located, the deed restriction prohibits the owner and the owner's successors in interest from conducting a harvest or otherwise removing trees within the forest conservation area.

(5) If the small forestland owner is taxed as a trust, partnership, or S corporation, the entity can distribute the forest conservation tax credit to owners or beneficiaries, as appropriate.

(6) A nonresident small forestland owner shall follow the same process as a resident of this state for obtaining eligibility for the forest conservation tax credit.

(7) Type 4 harvests are not eligible to claim a forest conservation tax credit.

(8) In addition to all other requirements of administrative rule promulgated under the Forest Practices Act, small forestland owners shall comply with the requirements under chapter 34, Oregon Laws 2022.

(9) If a future legislature cancels the forest conservation tax credit, the State Forester will remove all restrictions on using the small forestland owner minimum option within a fifth field watershed for riparian areas where a credit has not been issued, though the department will continue to track the frequency of harvests under the small forestland owner minimum option. If a future legislature reinstates the forest conservation tax credit, the State Forester will renew the system.

629-607-0450

Forest Conservation Tax Credit Area

(1) The width of the forest conservation area is the difference between the outermost edge of the standard practice width as described in OAR 629-643-0100 through 629-643-0135 and the outermost edge of the small forestland owner minimum option width as described in OAR 629-643-0141 through 629-643-0142. The length of the forest conservation tax credit area is the length of frontage that follows the same lengths as the standard practice option requirements as defined in OAR 629-643-0100 through 629-643-0135.

(2) A small forestland owner may apply for a forest conservation tax credit for an amount that is one half of the stumpage value left between the inside edge of the small forestland owner minimum option and the edge of dry stream channel areas required to be retained for Small Type Np tributaries to Type F or Type SSBT streams as described in OAR 629-643-0105, 629-643-0125, and 629-643-0130. To be eligible for the forest conservation tax credit, the small forestland owner shall field survey the stream and have 100 feet or more of surveyed dry channel between two flow features downstream of the RH max.

(3) Once a forest conservation tax credit has been issued for a riparian management area, the small forestland owner and any future owners must adopt the standard practice in that riparian management area for a period of 50 years from the date the notification of operation was filed.

(4) Landowners shall not remove trees within a forest conservation area except for incidental tree removal, personal use (e.g., provision of firewood), and public safety purposes consistent with the purposes for which the tax credit has been granted under chapter 34, Oregon Laws 2022. Small forestland owners should consult with the Small Forestland Owner Assistance Office prior to removing trees from the forest conservation area.

629-607-0500

Forest Conservation Tax Credit – Stumpage Value Certification

(1) For the purposes of this rule only, "professional forester" means a person that is engaged in the business of appraising or valuing timber or forestland as described in ORS 674.100.

(2) To determine the value of the tax credit, the small forestland owner shall use one of the following methods using standard measuring techniques of professional foresters:
  (a) Conversion return method;
  (b) Actual comparison method; or,
  (c) Cash flow modeling method.

(3) Small forestland owners shall submit documentation for the conversion method or actual comparison method to the Small Forestland Owners Assistance Office to be eligible for the forest conservation tax credit that includes all the following:
  (a) The cruising measurements of merchantable volume of timber by:
    (A) Tree species; and,
    (B) Log grades (based on size and log quality).
  (b) The value of logs, by species and grade, delivered to a milling operation, shown by:
    (A) A statement from a milling operation with their current payout for delivered logs by species and grade;
    (B) Log value summaries prepared by professional organizations; or,
    (C) Other commonly accepted methods of determining log values.
  (c) The costs of delivery, determined by either:
    (A) Estimated cost of all activities required to harvest trees and deliver them to a milling operation. Costs may include activities such as timber falling, yarding, and transportation to a mill, and other miscellaneous costs such as a harvest tax; or,
    (B) Actual costs per MBF associated with adjacent harvested area when the timber in the forest conservation area is similar to the timber harvested.

(d) Stumpage values equal to the total delivered log values less than the costs associated with delivery.
(e) Verification of any appraisal costs to determine stumpage value.
(f) Other documentation as requested by the Small Forestland Owner Assistance Office to verify calculations and values.

(4) Small forestland owners shall submit documentation for the cash flow modeling method to the Small Forestland Owners Assistance Office to be eligible for the forest conservation tax credit to include the following:
(a) For pre-merchantable stands: age of stand, site index, species, trees per acre, harvest rotation age, estimated harvest costs, and a timber appraisal which includes cruise information and sampling methodology, growth and yield value used; log pond values, and value determination methodology;
(b) For merchantable stands:
(A) Merchantable volume of timber by grade, sort, and species; and,
(B) Log Pond values, by species and grade, delivered to a milling operation, as shown by:
(i) A statement from a milling operation with their current payout for delivered logs by species and grade;
(ii) Log value summaries (mill pond value queries) prepared by professional organizations; or,
(iii) Other commonly accepted methods of determining log values.
(C) Estimated harvest costs.
(c) Verification of any appraisal costs to determine cash flow modeling values; and,
(d) Other documentation as requested by the Small Forestland Owner Assistance Office to verify calculations and values.

(5) After receiving the documentation of stumpage values, the Small Forestland Owner Assistance Office shall review and request additional information, if necessary.

(6) The Small Forestland Owner Assistance Office shall certify the amount of the forest conservation tax credit and provide the small forestland owner with an eligibility certificate.

629-607-0600
Forest Conservation Tax Credit - Transfer to Heirs

(1) Upon the death of a small forestland owner who has been granted a forest conservation tax credit and where there is a credit balance remaining, the executor of the small forestland owner's estate shall provide notarized written notice to the Small Forest Owner Assistance Office informing the office that the remaining forest conservation tax credit shall be transferred to heirs or devisees of the small forestland owner. At a minimum, the written notice must include all the following:
(a) Full legal name of the small forestland owner to which the certificate of the forest conservation tax credit was originally issued;
(b) Full legal name of heir(s) and or devisee(s) eligible to receive the remaining forest conservation tax credit;
(c) Percentage(s) amount of forest conservation tax credit remaining to be divided amongst each listed heir and or devisee;

(d) An attestation that no harvesting has occurred within the original certified forest conservation area.

(2) The executor of the small forestland owner's estate shall provide additional documentation to the Department of Revenue (e.g., a probate judgement or additional tax identification information), for verification and forest conservation tax credit tracking.

(3) After receiving and reviewing documentation provided by the executor of the estate, the Small Forestland Owner Assistance Office shall provide heirs of the estate an amended certification. Heirs must provide the amended certificate to the Department of Revenue to maintain the forest conservation tax credit.

(4) If the small forestland owner, or the owner's estate heir or devisees, elects to conduct a timber harvest in the forest conservation area, or if the State Forester determines a harvest has occurred in violation of the deed restriction, the Small Forestland Owner Assistance Office shall revoke the certification and notify the Department of Revenue in a manner consistent with ORS 315.061.

629-607-0700

Forest Conservation Tax Credit – Deed Restriction

(1) The Small Forestland Owner Assistance Office shall provide the small forestland owner with the appropriate deed restriction document for recording with the county where the eligible forest conservation area is located.

(2) After filing the deed restriction, the small forestland owner shall submit documentation of the recording to the Small Forestland Owner Assistance Office.

629-607-0750

Forest Conservation Tax Credit – Deed Restriction Removal

(1) If the small forestland owner, or their estate heirs or devisees, elect to conduct a timber harvest in the forest conservation area for which the forest conservation tax credit has been claimed or otherwise elects to remove the harvest restriction:

(a) The small forestland owner shall notify the Small Forestland Owner Assistance Office in writing that they elect to have the forest conservation tax credit removed.

(b) The small forestland owner shall repay the Department of Revenue any tax credit that has been deducted from their tax liability with interest from the due date of the original return(s) where the tax credit was taken and shall forfeit any unused tax credit. The interest rate shall be the underpayment rate. The repayment amount can be paid directly to the Department of Revenue or be added to the taxpayer's income tax liability.

(c) The Small Forestland Owner Assistance Office shall provide the small forestland owner with form(s) to repay the tax credit and remove the deed restriction from the county records.

(d) The small forestland owner shall notify the Small Forestland Owner Assistance Office in writing and provide documentation that repayment to the Department of Revenue is complete.

(e) The Small Forestland Owner Assistance Office shall verify the original forest conservation area has not been harvested. After verification, the Small Forestland Assistance Office shall modify their records to reflect that there is no longer a

restriction on that riparian management area and shall provide the small forestland owner with appropriate documentation to have the deed removed.

(f) The small forestland owner shall be responsible for providing the county with documentation to have the deed restriction removed and for any county recording fees.

(2) If a subsequent small forestland owner wishes to conduct a timber harvest in the forest conservation area for which the forest conservation tax credit has been claimed or otherwise elects to remove the harvest restriction:

(a) The subsequent small forestland owner shall notify the Small Forestland Owner Assistance Office in writing that they elect to have the forest conservation tax credit removed.

(b) The subsequent small forestland owner shall repay the Department of Revenue the original amount of the tax credit received by the previous owner with interest from the date of transfer of the title to the successor owner. The interest rate shall be the underpayment rate. The repayment amount can be paid directly to the Department of Revenue or be added to the taxpayer's income tax liability.

(c) The Small Forestland Owner Assistance Office shall provide the small forestland owner with forms to repay the tax credit and remove the deed restriction from the county records.

(d) The small forestland owner shall notify the Small Forestland Owner Assistance Office in writing and provide sufficient documentation that the repayment to the Department of Revenue has been satisfied.

(e) The Small Forestland Assistance Office shall verify the original forest conservation area has not been harvested. After verification, the Small Forestland Assistance Office shall modify their records to reflect that there is no longer a restriction on that riparian management area and provide the small forestland owner with the appropriate documentation to have the deed removed.

(f) The small forestland owner shall be responsible for providing the county with documentation to have the deed restriction removed and for any county recording fees.

629-607-0800

Forest Conservation Tax Credit – Appeal Rights

A small forestland owner who wishes to appeal a decision made by the State Forester regarding the forest conservation tax credit shall use the following procedure:

(1) A small forestland owner shall notify the State Forester in writing that they disagree with the decision and explain why they disagree; and

(2) If there is an impasse with the State Forester, the person may write the Small Forestland Owner Assistance Office, within 30 days of the State Forester's determination, requesting an appeal to the Board of Forestry stating the basis for the appeal. The appeal is filed when it is received in the Small Forestland Owner Assistance Office in accordance with ORS 527.700.

Division 610
FOREST PRACTICES REFORESTATION RULES

629-610-0100
Exemption from Reforestation for Wildlife Food Plots

(1) For the purposes of this rule only, "small forestland" means forestland as defined in ORS 527.620 that:
  (a) Has an owner that owns or holds common ownership interest in at least 10 acres of Oregon forestland but less than 5,000 acres of Oregon forestland; and
  (b) Constitutes all forestland within a single tax lot and all forestland within contiguous parcels owned or held in common ownership by the owner.

(2) A landowner may utilize a portion of their property for the establishment of one or more wildlife food plots. The establishment of wildlife food plots in lieu of reforestation is an allowable forest operation under ORS 527.678. The purpose of this rule is to allow landowners to establish or increase the area of food or forage available to wildlife, and to exempt a percentage of their property from reforestation requirements following timber harvest.

(3) Wildlife food plots are considered forestland as defined in ORS 527.620. Wildlife food plots provide an intended benefit to the landowner, and additional benefits to the State through providing or enhancing food resources for wildlife.

(4) A landowner is eligible to utilize wildlife food plots as a management choice on their property if:
  (a) The ownership size in Oregon is greater than 10 acres but less than 5,000 acres;
  (b) The area to be used for a wildlife food plot must currently be in a forest use; and
  (c) The wildlife food plot area would otherwise be subject to the reforestation rules described in OAR 629-610-0000 through 629-610-0100.

(5) Based on the area of small forestland ownership, the combined size of wildlife food plots shall not exceed:
  (a) 2.5 percent of the small forestland, if the small forestland is 500 acres or less in size (combined size of wildlife food plots equals 0.25 to 12.5 acres);
  (b) 2.0 percent of the small forestland, if the small forestland is more than 500 acres but not more than 1,000 acres in size (combined size of wildlife food plots equals 10 to 20 acres); or
  (c) 1.0 percent of the small forestland, if the small forestland is over 1,000 acres but less than 5,000 acres in size (combined size of wildlife food plots equals 10 to 50 acres).

(6) To establish and maintain a wildlife food plot in lieu of reforestation, a landowner shall:
  (a) Provide notification to the State Forester per OAR 629-605-0140 through 0150.
  (b) Create a plan for alternate practice that includes the following:
    (A) Landowner contact information;
    (B) The acreage of the small forestland where the wildlife food plot is desired;
    (C) A map showing location and acreage of proposed and existing wildlife food plots;
    (D) A narrative that describes the target wildlife, the forage expected to substantially contribute to the nutritional requirements of the target wildlife species or guild, the activities required to maintain the wildlife

food plot, and a timeline of planned establishment and maintenance activities; and

(E) A strategy for the monitoring and management of plant and animal species that may prevent the establishment of the target forage species.

(c) Provide the plan for alternate practice to the State Forester for approval, and as a mechanism for tracking compliance with the wildlife food plot rules. The State Forester shall provide feedback on the plan, and may consult with the Oregon Department of Fish and Wildlife or other agencies as appropriate.

(d) Establish the wildlife food plot in a manner consistent with the desired outcomes for the plot, as described in the plan for alternate practice. Establishment activities must include the creation of forage for the target wildlife species or guild. In addition, wildlife food plot establishment may also incorporate cover, nesting habitat, or resting habitat for the target wildlife species or guild.

(e) Establish the wildlife food plot through the use of habitat manipulation, planting of forage, or a combination of techniques for the target wildlife species or guild. Habitat manipulation and planting of forage includes, but is not limited to, complete or partial removal of trees and other vegetation, tillage of soil, planting or seeding of forage vegetation of sufficient nutrition for the target wildlife species or guild, or other practices needed for maintenance of the plot to promote a specific seral stage of vegetation.

(f) Make reasonable progress towards establishing the wildlife food plot, as determined by the State Forester, within 12 months of completion of the harvest operation that requires reforestation.

(g) Fully establish the wildlife food plot within 24 months of completion of the harvest operation that requires reforestation.

(h) Ensure the forage vegetation chosen is supported by the environment in which it is being established. Not all vegetation is suitable to be used in the variety of forest soils and land types that occur in Oregon. Designation of specific seed mixes or plant species is beyond the scope of these rules. However, the landowner shall:

(A) Source plants and seed to avoid introduction of invasive species to forestlands. This includes, but is not limited to, the introduction of invasive plant, insect, or disease species through the movement of live plant material, seed, or soil.

(B) Ensure vegetation chosen for establishment is not on the Oregon Department of Agriculture's noxious weed list.

(i) Maintain the wildlife food plot in accordance with the plan for alternate practice.

(j) Provide documentation to the State Forester of activities conducted to establish and maintain the wildlife food plot. This documentation shall be provided upon full establishment of the wildlife food plot, and upon request by the State Forester thereafter. Documentation may include, but is not limited to, receipts for work completed and photographs of the wildlife food plot showing that it is in the intended state per the plan for alternate practice. The landowner may also request the State Forester conduct an inspection of the wildlife food plot.

(7) If the State Forester determines that the landowner has not maintained the wildlife food plot in its intended state per the plan for alternate practice, the reforestation rules as

otherwise required in OAR 629, division 610, become applicable and the landowner shall be required to reforest the wildlife food plot.

(8) To end the use of a wildlife food plot, a landowner shall:

(a) Provide notification to the State Forester per OAR 629-605-0140 through 0150.

(b) Reforest the wildlife food plot in accordance with the reforestation rules, as described in OAR 629, division 610.

(9) The landowner shall follow the requirements as outlined in sections (6) and (8) of this rule in order to relocate the wildlife food plot, modify the wildlife food plot size, change the target wildlife species or guild, or end the use of a wildlife food plot.

Division 625
FOREST ROAD CONSTRUCTION AND MAINTENANCE

629-625-0000
Purpose

(1) Forest roads are essential to forest management and contribute to providing jobs, products, tax base, and other social and economic benefits.

(2) OAR 629-625-0000 through 629-625-0920 shall be known as the road construction and maintenance rules.

(3) The purpose of the road construction and maintenance rules is to establish standards for locating, designing, constructing, and maintaining efficient and beneficial forest roads; locating and operating rock pits and quarries; identifying active and inactive roads that have fish passage barriers or contribute sediment to waters of the state, to correct conditions; and to vacate roads, rock pits, and quarries that are no longer needed in manners that provide the maximum practical protection to maintain forest productivity, water quality, and fish and wildlife habitat.

(4) To achieve the goals of the division, all roads will be designed, constructed, improved, maintained, or vacated to:
  (a) Prevent or minimize sediment delivery to waters of the state;
  (b) Ensure passage for covered species during all mobile life-history stages;
  (c) Prevent or minimize drainage or unstable sidecast in areas where mass wasting could deliver sediment to public resources or threaten public safety;
  (d) Prevent or minimize hydrologic alterations of the channel;
  (e) Prevent or minimize impacts to stream bank stability, existing stream channel, and riparian vegetation;
  (f) To the maximum extent practicable, hydrologically disconnect forest roads and landings from waters of the state; and
  (g) Avoid, minimize, and mitigate loss of wetland function.

(5) The road construction and maintenance rules shall apply to all forest practices regions unless otherwise indicated.

629-625-0100
Written Plans for Road Construction

(1) A properly located, designed, and constructed road greatly reduces potential impacts to water quality, forest productivity, fish, and wildlife habitat. To prevent improperly located, designed, or constructed roads, a written plan is required in the sections listed below.

(2) In addition to the requirements of the water protection rules, operators must submit a written plan to the State Forester before:
  (a) Constructing a road where there is an apparent risk of road-generated materials entering waters of the state from direct placement, rolling, falling, blasting, landslide, or debris flow;
  (b) Conducting machine activity in Type F, Type SSBT, Type D streams, Type N streams, lakes, or significant wetlands;
  (c) Constructing roads in riparian management areas;

(d) Constructing or reconstructing any water crossing, in all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals, as described in OAR 629-625-0320 Water Crossing Structures; or

(e) Constructing roads in critical locations, as described in OAR 629-625-0200(3): Road Location.

(3) Operators shall submit a written plan to the State Forester before constructing roads on high landslide hazard locations. Operators and the State Forester shall share responsibility to identify high landslide hazard locations and to determine if there is public safety exposure from shallow, rapidly moving landslides using methods described in OAR 629-623-0000 through 0300. If there is public safety exposure, then the practices described in OAR 629-623-0400 through 0800 shall also apply.

(4) In addition to the requirements of the water protection rules, operators shall submit a written plan to the State Forester before placing woody debris or boulders in stream channels for stream enhancement.

(5) In addition to the written plan requirements of OAR 629-605-0170(12) and (13), the operator shall include an assessment of the following factors in their written plan for all water crossings as described by OAR 629-625-0320:

(a) Operator transportation needs, road location, road management objectives, and land ownership;

(b) The specific resources that may be impacted by construction or reconstruction of the water crossing, including aquatic species, habitats, and conditions; floodplain values, terrestrial species, and water uses;

(c) The specific risk factors at the watershed-scale, including geologic or geomorphic hazards, event history, past and projected land management, crossing maintenance history, regional channel stability, and projected watershed conditions over the life of the crossing structure;

(d) The specific risk factors at the site scale, including channel stability, potential for blockage by debris, floodplain constriction, large elevation changes across infrastructure, channel sensitivity to change, consequences of site failure to resources, and potential stream geomorphic changes over the life of the crossing structure;

(e) The specific techniques and methods employed for resource protection; and

(f) Additional information relevant to the proposed crossing structure as determined by the State Forester.

(6) Regarding water crossing structures for fills over 15 feet, if the conditions outlined in OAR 629-625-0320(1)(b)(B) are met operators shall submit a written plan to the State Forester.

(7) In addition to the written plan requirements in OAR 629-605-0170(12) and (13), written plans for Type F and Type SSBT fish streams shall include the following:

(a) Stream name;

(b) Stream size;

(c) Stream type;

(d) Stream basin;

(e) Watershed tributary area;

(f) Calculated 100-year peak flow, developed consistent with Forest Practices Technical Guidance under OAR 629-625-0300(3)(a);
(g) Measured stream gradient;
(h) Bankfull channel width;
(i) Structure location;
(j) Structure type;
(k) Structure size, including but not limited to culvert diameter, rise, span, length, and bridge width;
(l) Planned culvert grade or elevation change;
(m) Planned culvert embedment depth range;
(n) Planned culvert embedment material;
(o) Calculated structure flow capacity;
(p) Bridge freeboard, as applicable;
(q) Road name or number;
(r) Road surface type;
(s) Drainage plan;
(t) Installation time frame;
(u) Equipment access;
(v) Stream isolation method, including but not limited to stream diversions, bypasses, pumping; and
(w) Expected riparian management area tree removal.

629-625-0200
Road Location

(1) The purpose of this rule is to ensure roads are located where potential impacts to waters of the state are minimized and hydrologic connectivity between roads and waters of the state is reduced to the maximum extent practicable.
(2) When locating roads, operators shall designate road locations which minimize the risk of materials entering waters of the state and minimize disturbance to channels, lakes, wetlands, and floodplains.
(3) Critical Locations**.** Operators shall avoid locating roads in critical locations. When alternate routes that avoid critical locations are not legally feasible due to ownership boundaries or other legal impediments, physically feasible due to safety considerations, or would have a greater environmental risk, operators may locate roads in critical locations, consistent with sections (4) and (5) of this rule. Critical locations include:
    (a) High landslide hazard locations. If there is public safety exposure, then the practices described in OAR 629-623-0400 through 0800 shall also apply.
    (b) Slopes over 60 percent with decomposed granite-type soils.
    (c) Within 50 feet of stream channels or lakes, excluding crossings and approaches to crossings.
    (d) Within significant wetlands as described in OAR 629-600-0100, stream-associated wetlands as described in OAR 629-600-0100, or other wetlands greater than 0.25 acres in size.
    (e) Any active stream channel, exclusive of stream crossings in compliance with OAR 629-625-0320.

(f) Locations parallel to, and within a riparian management area for a distance exceeding a cumulative 500 feet of road length measured from the first point of entry into the riparian management area to the last point of exit from the riparian management area, exclusive of stream crossings in compliance with OAR 629-625-0320.

(g) High landslide hazard locations where rock is likely to be highly sheared or otherwise unstable so that it is not possible to excavate a stable cutslope. If such a cutslope failure may divert road surface drainage to a high landslide hazard location and could trigger a debris flow below the road with potential for delivery to a stream, that road shall not be constructed unless the operator demonstrates that the cutslope can be stabilized by buttressing or other means.

(h) Locations cutting through the toe of active or recently active deep-seated landslide deposits and where a reactivated landslide would likely enter waters of the state.

(i) Highly dissected, steep slopes where it is not possible to fit the road to the topography with full bench end haul construction.

(4) Critical Locations Written Plan. All written plans for road construction in critical locations shall be reviewed on site and reviewed by the State Forester with consultation from a qualified professional as appropriate for the site, including, but not limited to, the department, Department of Environmental Quality, and Department of Fish and Wildlife. Onsite review and consultation must occur within 14 days from the date the written plan was received, otherwise the operator may continue with operations, consistent with the written plan and consistent with written plan review timelines in ORS 527.670(10) and OAR 629-605-0170(10) and (11).

(5) Operators must outline all road construction in critical locations in a written plan. The written plan shall include a narrative describing why alternative routes are not feasible or would have greater environmental risk.

(6) Operators shall minimize the number of stream crossings.

(7) To reduce the duplication of road systems and associated ground disturbance, operators shall make use of existing stable and functioning roads where practical. Where roads traverse land in another ownership and will adequately serve the operation, operators shall investigate options for using those roads before constructing new roads. Operators who submit notifications that include new road construction shall affirm that options, if they exist, were investigated.

629-625-0300
Road Design

(1) The purpose of OAR 629-625-0300 through 629-625-0330 is to provide design specifications for forest roads that protect water quality.

(2) Operators shall design and construct roads to limit the alteration of natural slopes and drainage patterns to that which will safely accommodate the anticipated use of the road and will also protect waters of the state.

(3) The department shall publish Forest Practices Technical Guidance that explains how to avoid and prevent potential impacts to fish, wildlife, habitat resources, and waters of the state, in support of the following rules:

(a) OAR 629-625-0320(3)(a) to explain how to implement the rule for the 100-year peak flow, at a minimum, every 10 years to incorporate the most recent peak flow data.
(b) OAR 629-625-0200(5) to explain and describe the content of written plans for road construction in critical locations.
(c) OAR 629-625-0320(10) to explain how to implement rules for the construction and reconstruction for all water crossings updated every 10 years, at a minimum.
(d) OAR 629-625-0320(10)(c) to explain how to develop a chemical spill prevention and response plan.
(e) OAR 629-625-0320(10)(d) to explain how to implement rules for in-water work, worksite isolation, and dewatering updated every ten years, at a minimum.
(f) OAR 629-625-0320(10)(d)(A)(ii) to explain how to implement rules for replacing stream crossing structures outside normal in-water work periods.
(g) OAR 629-625-0330(1) to explain how to implement rules to hydrologically disconnect forest roads and landings from waters of the state.
(h) OAR 629-625-0910(6) to explain how to identify abandoned roads and bring them into compliance with the Forest Practice Administrative Rules.
(i) OAR 629-625-0800(1) to explain how to avoid or minimize and mitigate for all road and landing construction near or within a significant wetland, stream-associated wetland, or wetlands greater than 0.25 acres in size when impacts are unavoidable.

629-625-0310
Road Prism

(1) Operators shall use variable grades and alignments to avoid less suitable terrain so the road prism is the least disturbing to protected resources, avoids steep sidehill areas, wet areas, and potentially unstable areas as safe, effective vehicle use requirements allow.
(2) Operators shall end-haul excess material from steep slopes or high landslide hazard locations where needed to prevent landslides.
(3) Operators shall design roads no wider than necessary to accommodate the anticipated use and minimize environmental impacts to waters of the state and covered species from new road construction. The running surface width shall average not more than 32 feet for double lane roads and 20 feet for single lane roads, exclusive of ditches plus any additional width necessary for safe operations for fill widening or on curves, turnouts, and landings.
(4) Operators shall design cut and fill slopes to minimize the risk of landslides.
(5) Operators shall stabilize road fills as needed to prevent fill failure and subsequent damage to waters of the state using compaction, buttressing, subsurface drainage, rock facing, or other effective means.
(6) Operators shall utilize end-haul construction and not place fill within the riparian management area of a stream or within 75 feet of a stream channel where a riparian management area is not required, excluding crossings and approaches to crossings.

629-625-0320
Water Crossing Structures

(1) Operators shall design and construct all water crossing structures in all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals to:

(a) Minimize excavation of side slopes near the channel.

(b) Minimize the volume of material in the fill.

(A) Operators shall minimize fill material by restricting the width and height of the fill to the amount needed for safe use of the road by vehicles, and by providing adequate cover over the culvert or other drainage structure.

(B) Fills over 15 feet deep contain a large volume of material that can be a considerable risk to downstream beneficial uses if the material moves downstream by water. Consequently, for any fill over 15 feet deep operators shall submit to the State Forester a written plan that describes the fill and drainage structure design. Written plans shall include a design that minimizes the likelihood of:

(i) Surface erosion;

(ii) Embankment failure; and

(iii) Downstream movement of fill material.

(C) The operator shall armor fills against erosion where large fills over 15 feet deep are determined to be necessary by the State Forester.

(c) Prevent erosion of the fill and channel.

(d) Minimize hydrologic connectivity for adjacent roadway.

(e) Avoid or minimize alterations or disturbances to stream channel, bed, bank, or bank vegetation to that which is necessary to construct the water crossing structure. Operators shall limit the alteration or disturbance of stream bed, bank, or bank vegetation to that which is necessary to construct the project.

(f) Plant disturbed stream banks with native woody species or stabilize with other erosion control techniques.

(g) Ensure that streamflow is not likely to be diverted out of its channel if the crossing fails.

(h) Preserve water quality and unobstructed flow.

(i) Route and deposit temporarily turbid water from crossing projects to the forest floor in an upland area, or above the 100-year flood level if present, to allow removal of fine sediment and other contaminants prior to discharge to waters of the state.

(j) When the State Forester determines that installing a water crossing in a flowing stream will cause excessive sedimentation and turbidity, and sedimentation and turbidity would be reduced if stream flow were diverted, operators shall divert stream flow using a bypass flume or culvert, or by pumping the stream flow around the work area. In this situation, operators may install culverts within 0.25 miles of a Type F or Type SSBT stream or within two miles of a hatchery intake.

(k) For water crossing structures on Type F and Type SSBT streams, operators shall, consistent with the rules in this section:

(A) Avoid or minimize impacts to fish and their spawning and rearing habitat;

(B) Minimize the loss of fish life during the project; and

(C) Ensure free and unimpeded fish passage at all flows when fish are expected to move through the life of the structure.

(2) In selecting a crossing design strategy, operators constructing or reconstructing crossings in all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals shall first consider vacating the water crossings. For water crossings in all Type F and Type SSBT fish streams where vacating the water crossing is not feasible or desired by the landowner, permanent channel-spanning structures shall be prioritized before other crossing strategies. This section does not require the landowner to utilize any specific crossing design strategy.

(3) Operators shall design and construct permanent water crossings to:

(a) Convey, at a minimum, the 100-year peak flow in Type N and D non-fish streams and in Type F and Type SSBT fish streams. When determining the size of the culvert needed to convey a flow corresponding to the 100-year return interval, operators shall select a size adequate to preclude the ponding of water higher than the top of the culvert.

(b) Operators shall design permanent water crossing culverts in Type F and Type SSBT fish streams using the stream simulation approach. Water crossing design in Type F and Type SSBT fish streams shall consider and incorporate the stream's geomorphic processes and anticipated changes over the life of the structure. Operators shall design water crossings in Type F and Type SSBT fish streams to allow for the movement of water, wood, sediment, and organisms to the maximum extent feasible and minimize obstacles to stream processes. The design of the water crossings in Type F and Type SSBT fish streams shall avoid fragmentation of aquatic habitats by replicating the natural conditions of the stream being crossed. Where the operator determines it is not possible to achieve stream simulation, operators may propose alternatives if the alternative can accommodate a 100-year peak flow and does not obstruct fish passage.

(c) The State Forester may require a larger crossing design if division staff determines, in consultation with department specialists, that the structure size designed to pass the 100-year peak flow is inadequate to:

(A) Avoid delivery of sediment to the water being crossed;

(B) Avoid stream diversion potential; and

(C) Provide opportunity for the passage of expected bed load and associated large woody debris during flood events.

(4) Permanent Channel-Spanning Structures. For permanent channel-spanning structures, including long and short-span bridges, and open-bottom culverts, that span the entire bankfull width of the stream, operators shall design and construct the structure to conform with all the following:

(a) Permanent channel-spanning structures have at least three feet of clearance between the bottom of the bridge structure and the water surface at the 100-year peak flow, unless engineering justification shows a lower clearance will allow the free passage of anticipated sediment and large wood.

(b) Place the bridge structure or stringers in a manner to minimize damage to the stream bed.

(c) Tie or firmly anchor one end of each new, or reconstructed, permanent log or wood bridge if any of the bridge structure is within 10 vertical feet of the 100-year flood level.

(d) When earthen materials are used for bridge surfacing, install only clean sorted gravel, a geotextile lining or equivalent barrier, and install curbs of sufficient size to a height above the surface material to prevent surface material from falling into the stream bed.

(e) Place wood removed from the upstream end of bridges at the downstream end of bridges in such a way as to minimize obstruction of fish passage to the extent practical, while avoiding significant disturbance of sediment in connection with maintenance activities.

(f) Abutments, piers, piling, sills, and approach fills shall not constrict the flow so as to cause any appreciable increase (not to exceed 0.2 feet) in backwater elevation (calculated at the 100-year flood level) or channel wide scour and shall be aligned to cause the least effect on the hydraulics of the watercourse.

(g) Excavation for and placement of the foundation and superstructure is outside the ordinary high-water line unless the construction site is separated from the stream by an approved dike, cofferdam, or similar structure.

(h) Cure wood or other materials treated with preservatives sufficiently to minimize leaching into the water or bed. The use of creosote or pentachlorophenol is not allowed. Cure structures containing concrete sufficiently prior to contact with water to avoid leaching.

(i) Design permanent channel-spanning structures in Type F and Type SSBT fish streams using stream simulation and comply with the following:

(A) Channel-spanning structures shall not constrict clearly defined channels; and

(B) Channel-spanning structures shall establish a low-flow channel that will allow for fish movement during low-flow periods.

(5) Permanent Water Crossing Culverts. For permanent water crossing culverts in all streams, operators shall design and construct culverts to conform with all the following:

(a) Design and install culverts so they will not cause scouring of the stream bed and erosion of the banks in the vicinity of the project.

(b) Design the culvert to avoid stream diversion potential.

(c) The culvert and its associated embankments and fills must have sufficient erosion protection to withstand the 100-year peak flow. Erosion protection may include armored overflows or the use of clean coarse fill material.

(d) Place wood removed from the upstream end of culverts at the downstream end of culverts in such a way as to minimize obstruction of aquatic organism passage to the extent practical, while avoiding significant disturbance of sediment in connection with maintenance activities.

(e) Limit disturbance of the bed and banks to what is necessary to place the culvert and any required channel modification associated with it. Revegetate, or stabilize with other erosion control techniques, affected bed and bank areas outside the culvert and associated fill with native woody species. Maintain native woody species for one growing season.

(f) Do not install permanent water crossing culverts that are less than 18 inches in diameter.

(6) Permanent Water Crossing Culverts in Fish Streams. For permanent water crossing culverts in Type F and Type SSBT fish streams, operators shall conform to (5)(a) through (f) and design and construct culverts using a stream simulation as follows:

(a) For no slope culverts and those up to one percent gradient, the minimum culvert diameter or span is at least equivalent to the active channel width. For other culvert installations, the minimum culvert diameter or span is at least 1.2 times the active channel width, plus 2 feet.

(b) Alignment and slope. The alignment and slope of the culvert shall mimic the natural flow of the stream when possible. The slope of the reconstructed streambed within the culvert shall approximate the average slope of the adjacent stream from approximately ten channel widths upstream and downstream of the site in which it is being placed, or in a stream reach that represents natural conditions outside the zone of the road crossing influence.

(c) Embedment. If a culvert is used, bury the bottom of the culvert into the streambed not less than 30 percent and not more than 50 percent of the culvert height for round culverts and for pipe arch culverts not less than 15 percent and no more than 30 percent For bottomless culverts, design the footings or foundation for the deepest anticipated scour depth.

(d) Maximum length. If the design for a new crossing on a new road would require a culvert longer than 150 feet, utilize a channel spanning structure unless the site-specific design constraints preclude the use of a channel spanning structure.

(e) Culvert bed materials. Culvert bed materials shall have a similar composition to natural bed materials that form the natural stream channels adjacent to the road crossing in the reference reach. Design the culvert to allow sufficient transported bed material to maintain the integrity of the streambed over time.

(A) New water crossings in Type F and SSBT fish streams shall require manual placement of culvert bed materials during bed construction.

(B) Operators may select natural accumulation for reconstruction of water crossings where feasible. Operators that select natural accumulation of culvert bed materials shall document in the written plan the site conditions and design elements that will facilitate natural accumulation in sufficient detail to allow the State Forester to evaluate and comment on the likelihood that the operation will comply with the requirements under (1)(k) and the requirements of (3) and (6) of this rule.

(i) The threshold to determine that natural accumulation has occurred shall be when the culvert meets the embedment standard under subsection (6)(c) of this rule.

(ii) The operator shall provide the following information in the notification for an extension of a natural accumulation project to the State Forester:

(I) An assessment of current culvert bed material accumulation within the culvert; and

(II) An assessment of the material available for transport and accumulation within the culvert.

(iii) If the culvert does not meet the natural accumulation threshold under (i) after the second winter season following the installation

of the crossing and no later than July 1, the operator shall submit a new notification to the State Forester detailing how the operator will mechanically place culvert bed materials in order to achieve (6)(c) before September 30 of the same year. The department shall visually inspect the culvert by December 30 of that year to confirm the crossing meets (6)(c).

(f) Water velocity. The maximum velocity in the culvert shall not exceed the maximum velocity in the narrowest channel cross-sections.

(7) Fords. For fords, operators shall design and construct those structures to meet all the following criteria:

(a) The entry and exit points of a new ford must not be within 100 feet upstream or downstream of another ford within a property ownership.

(b) Use fords only during periods of no or low stream flow (whether dry or frozen) to minimize the delivery of sediment to the stream.

(c) Install fords only in a dry streambed or when a site is de-watered. The written plan shall describe sediment control and flow routing plans and the project, as implemented, must meet the criteria outlined in the written plan.

(d) Approaches to the structure shall not dam the floodplain where substantial overbank flow occurs.

(e) The ford shall cross as near to perpendicular to the channel to minimize the disturbance area and reduce post-installation maintenance.

(f) The ford shall minimize the acceleration of flow through the ford.

(g) For Type F and Type SSBT fish streams, any ford structure shall:

(A) Be no wider than 16 feet;

(B) Installed and maintained to ensure scour has not created a barrier to fish passage; and

(C) Installed and maintained to ensure free and unimpeded fish passage at all flows when fish are expected to move through the structure.

(8) Temporary Water Crossings. For temporary water crossings, operators shall design and construct those structures to conform with the following:

(a) Design temporary water crossings in Type N and Type D non-fish streams to pass at minimum the flows expected during crossing use with a minimum culvert diameter of 18 inches.

(b) Use temporary water crossings in Type F and Type SSBT fish streams only during the in-water work period defined by the Department of Fish and Wildlife, or when the department in consultation with the Department of Fish and Wildlife and applicant can agree to specific dates of installation and removal, and the extended dates result in equivalent levels of resource protection.

(c) Identify temporary water crossings on the forest practices notification and written plan as required in OAR 629-625-0100(2)(d), along with a vacating date.

(d) Only use temporary water crossings on Type N and Type D non-fish streams:

(A) In Western Oregon if installed after June 1 and removed no later than September 30 of the same year;

(B) In Eastern Oregon if installed after July 1 and removed no later than October 15 of the same year; or

(C) When the department and applicant agree to specific dates of installation and removal, and the extended dates result in equivalent levels of resource protection. The department may consult with Department of Fish and Wildlife before extending the dates.

(e) Install temporary water crossings in the dry streambed or in isolation from stream flow by the installation of a bypass flume or culvert, or by pumping the stream flow around the work area. The State Forester may grant an exception to the operator if siltation or turbidity is reduced by placing the culvert in the flowing stream as an alternative to dewatering.

(f) Limit the bypass reach to the minimum distance necessary to complete the project.

(g) Vacate temporary water crossings to the specifications outlined in OAR 629-625-0650.

(h) The State Forester may waive removal of the water crossing if the operator secures an amended written plan, and the structure and its approaches meet the requirements of a permanent water crossing structure as outlined in Sections (4) to (7) of this rule.

(i) Limit the disturbance of the bed and banks to that which is necessary to place the temporary water crossing and any required channel modification associated with it.

(9) Other Design Strategies. The operator shall submit their design strategies to the State Forester for approval:

(a) Submit any alternative water crossing strategy that does not conform with sections (4) to (8) of this rule to the State Forester as a plan for alternative practice. The State Forester may approve the plan for alternate practice in consultation with Department of Fish and Wildlife.

(b) The State Forester may consider other designs if they can meet or exceed the standards in sections (4) to (8) of this rule.

(10) Construction of Water Crossings. In the construction of water crossings, operators shall do the following:

(a) Comply with all relevant forest road construction and maintenance rules in the construction or reconstruction of all water crossings. Nothing in this section affects existing requirements of Department of Fish and Wildlife.

(b) Runoff, Erosion and Sediment. Operators shall control runoff, erosion, and sediment through the following actions:

(A) Include a site-specific erosion and sediment control plan as part of a written plan prior to beginning work. This plan must include, but is not limited to:

(i) A site plan with a description of the methods of erosion or sediment control;

(ii) Methods for confining, removing, and disposing of excess construction materials; and

(iii) Measures to disconnect road surface and ditch water from all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals.

(B) Treat areas of bare soil that could deliver sediment to all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals. Treatments must include, but are not limited to:

(i) Prior to project construction, establish effective drainage; before September 30 in Western Oregon and October 15 in Eastern Oregon. Effective drainage may be established at other times when the department and applicant can agree to specific dates of installation and removal, and the extended dates result in equivalent levels of resource protection;

(ii) Before the start of the rainy season and no later than September 30 in Western Oregon and October 15 in Eastern Oregon, mulch or seed areas of bare soil, or any combination thereof to reduce surface erosion; and

(iii) Upon completion of construction, apply native seed, invasive species-free mulch, or any combination thereof to sites with the potential for sediment delivery to all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals. Operators must apply invasive species-free mulch to stay in place.

(c) Pollution Control. To control pollution, operators shall do the following:

(A) The operator shall maintain a spill prevention and response plan on site during construction.

(B) The operator shall not allow uncured concrete or concrete by-products to enter waters of the state during construction. The operator shall seal all forms for concrete to prevent uncured concrete from entering waters of the state.

(C) The operator shall take measures to ensure that all materials and equipment used for construction, monitoring, and fish salvage are free of aquatic invasive species.

(D) The operator shall not use wood treated with creosote or pentachlorophenol for parts of the structure in or over the active channel, including pilings, beams, structural supports, and decking.

(E) The operator shall not allow chemicals or any other toxic or harmful materials to enter into waters of the state.

(d) In-Water Work, Worksite Isolation, and Dewatering. To address in-water work, worksite isolation and dewatering needs of water crossing projects, operators shall do the following:

(A) Develop an in-water work plan for water crossings in all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals in their written plan. The plan may include, but is not limited to, fish salvage, worksite isolation, and dewatering. The written plan shall address in detail all in-channel construction activities and how the activities will adhere to all relevant Forest Practice Administrative Rules forest road requirements. For all streams, the written plan shall describe:

(i) Activities during the in-water work period defined by the Department of Fish and Wildlife; or

(ii) Activities outside the in-water work period when the department, in consultation with Department of Fish and Wildlife, and applicant can agree to specific dates of installation and removal, and the extended dates result in equivalent levels of resource protection.

(B) Construct water crossings in compliance with Department of Fish and Wildlife fish passage and in-water work period requirements.

(C) For all water crossings in Type F and Type SSBT fish streams, operators shall do the following:

(i) Worksite isolation:

(I) Operators must isolate any work area within the width of the bankfull channel from water in the active channel at times when fish are reasonably certain to be present in a Type F or Type SSBT stream.

(II) When constructing water crossings in Type F and Type SSBT fish streams with any stream bypass, operators shall have an exclusion and recovery plan to ensure safe capture and relocation of fish trapped in the work zone when stream flow has been diverted.

(III) Prior to construction site dewatering, operators shall capture and relocate fish to avoid direct mortality to the maximum extent practicable.

(IV) Operators shall salvage fish to the maximum extent practicable at any in-water construction site where dewatering and resulting isolation of fish may occur.

(V) Operators shall remove all isolation features after construction is complete and submit a written salvage report to the department.

(ii) Dewatering:

(I) Operators shall not dewater areas known to be occupied by lamprey, unless the operator submits a lamprey salvage plan to the State Forester in consultation with the Department of Fish and Wildlife.

(II) Operators shall conduct dewatering of the isolated area in a manner that prevents sediment-laden water from reentering the stream.

(III) Operators shall limit dewatering to the shortest linear extent of the stream as practicable.

(IV) Operators shall conduct dewatering over a sufficient period to allow species to naturally migrate out of the work area.

(11) Monitoring. Landowners shall develop and implement a monitoring program for periodic inspections of all Type F and Type SSBT stream crossings that includes:

(a) Visual inspection to confirm that the crossing is functional; and

(b) Monitoring occurs at least once every 5 years.

629-625-0330
Drainage

(1) All active, inactive, and vacated forest roads and landings shall be hydrologically disconnected to the maximum extent practicable from waters of the state to minimize sediment delivery from road runoff and reduce the potential for hydrological changes that alter the magnitude and frequency of runoff. Operators shall locate drainage structures based on the priority listed below. When there is a conflict between the requirements of sections (2) through (7) of this rule, the lowest numbered section takes precedence and the operator shall not implement the later numbered and conflicting section.

(2) Operator shall not install cross-drains and ditch-relief culverts in a way that causes stream diversion.

(3) Operators shall not concentrate road drainage water into headwalls, slide areas, high landslide hazard locations, or steep erodible fillslopes.

(4) Operators shall not divert water from stream channels into roadside ditches.

(5) Operators shall install drainage structures at approaches to stream crossings to divert road runoff from entering the stream. If placement of a single drainage structure cannot be placed in a location where it can effectively limit sediment from entering the stream, then additional drainage structures, road surfacing, controlling haul, or other site-specific measures shall be employed so that the drainage structure immediately prior to the crossing will effectively limit sediment from entering the stream. Operators may also use best management practices to manage sediment at the outflow of the drainage structure nearest to the crossing.

(6) Operators shall provide drainage when roads cross or expose springs, seeps, or wet areas.

(7) Operators shall provide a drainage system that minimizes the development of gully erosion of the road prism or slopes below the road using grade reversals, surface sloping, ditches, culverts, waterbars, or any combination thereof. For new road construction, operators shall use outsloping to the maximum extent practicable when site-specific conditions allow for its safe and effective use.

(8) The department shall publish Forest Practices Technical Guidance to assist operators with road drainage rule compliance and to explain how to avoid and prevent potential impacts to fish, wildlife, habitat resources, and waters of the state.

629-625-0410
Disposal of Waste Materials

(1) Operators shall place debris, sidecast, waste, and other excess materials associated with constructing, maintaining, or vacating roads in stable locations outside of the riparian management area where these materials may not enter all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals or otherwise degrade aquatic resources after construction.

(2) Operators shall select stable areas for the disposal of end-haul materials and shall prevent overloading areas which may become unstable from additional material loading.

(3) If other alternatives present are unstable or there is a higher potential for delivery of waste materials to all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals, operators may place waste materials within the riparian management area but no closer than 75 feet

from all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals. To place waste materials within the riparian management area but no closer than 75 feet from a water of the state, operators must submit written plan that describes site-specific measures that prevent or minimize the entry of these materials to all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals.

(4) If the protections of a riparian management area are not required, operators shall place waste materials at a minimum of 75 feet from all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals.

(5) Operators shall develop a written plan for temporary placement of waste materials within the riparian management area that is necessary for constructing or vacating roads and crossings that describes site-specific measures that prevent or minimize the entry of these materials to waters of the state and the timeframe for removal of those waste materials.

(6) Woody debris, rocks, or other materials placed for erosion control or for habitat restoration are exempt from this rule.

629-625-0440
Stabilization

(1) Operators shall establish effective drainage and stabilize exposed material, which is potentially unstable or erodible to avoid potential delivery of sediment to waters of the state, by use of seeding, mulching, riprapping, leaving light slash, pull-back, or other effective means, as soon as practicable after completing operations or prior to the start of the rainy season. These areas include, but are not limited to, unsurfaced road grades, cut slopes, fill slopes, ditchlines, waste disposal sites, rock pits, and other areas with the potential for sediment delivery to waters of the state.

(2) During wet periods operators shall construct roads in a manner which prevents sediment from entering waters of the state.

(3) Operators shall not incorporate slash, logs, or other large quantities of organic material into road fills.

629-625-0600
Road Maintenance

(1) The purpose of this rule is to protect water quality and ensure hydrologic disconnection of roads from waters of the state to the maximum extent practicable by timely maintenance of all active and inactive roads. Road surface must be maintained as necessary to:
   (a) Minimize erosion of the surface and the subgrade;
   (b) Minimize direct delivery of surface water to waters of the state;
   (c) Minimize sediment entry to waters of the state;
   (d) Direct any groundwater that is captured by the road surface onto stable portions of the forest floor;
   (e) Ensure properly functioning and durable drainage features; and
   (f) For existing roads with inboard ditch, avoid overcleaning of ditchlines.

(2) Operators shall inspect and maintain culvert inlets and outlets, drainage structures, and ditches before and during the rainy season as necessary to minimize the likelihood of impeding flow and the possibility of structure failure.
(3) Operators shall provide effective road surface drainage, such as water barring, surface crowning, constructing sediment barriers, or outsloping prior to the rainy and runoff seasons.
(4) When applying road oil or other surface stabilizing materials, operators shall plan and conduct the operation in a manner as to prevent entry of these materials into waters of the state.
(5) Operators shall maintain, and repair active and inactive roads as needed to minimize damage to waters of the state. This may include maintenance and repair of all portions of the road prism during and after intense winter storms, as safety, weather, soil moisture, and other considerations permit.
(6) Operators shall place material removed from ditches in a stable location.
(7) Operators shall install drainage structures on ditches that capture groundwater.
(8) In order to maintain fish passage through water crossing structures, operators shall:
    (a) Maintain conditions at the structures so that passage of adult and juvenile fish is not impaired during periods when fish movement normally occurs;
    (b) As reasonably practicable, keep structures cleared of woody debris and deposits of sediment that would impair fish passage;
    (c) Where needed to protect water quality, as directed by the State Forester, operators shall place additional cross drainage structures on existing active roads within their ownership prior to hauling to meet the requirements of OAR 629-625-0330; and
    (d) Adhere to other fish passage requirements under the authority of ORS 509.580 through 509.910 and OAR 635-412-0005 through 635-412-0040 administered by other state agencies that may be applicable to water crossing structures.

629-625-0650
Vacating Forest Roads and Water Crossings
(1) The purpose of this rule is to ensure that when landowners choose to vacate roads under their control, the roads are left in a condition where road-related damage to waters of the state is unlikely.
(2) To vacate a forest road, landowners shall effectively block the road to prevent continued use by vehicular traffic and shall take all reasonable actions to leave the road in a condition where road-related damage to waters of the state is unlikely.
(3) To vacate a water crossing, landowners shall completely and permanently remove all water crossing structures, including bridges, culverts, fords, and associated fills. Vacating water crossings must re-establish the natural drainage with no additional maintenance required.
(4) To vacate a road, a forest landowner must complete procedures of (a) through (c) of this subsection:
    (a) Outslope, water bar, or storm-proof roads or otherwise leave roads in a condition suitable to control erosion and maintain water movement within wetlands and natural drainages.
    (b) Leave ditches in a suitable condition to reduce erosion.

(c) Remove water crossing structures and fills on waters of the state unless the department determines other measures would adequately protect public resources.

(5) To vacate a water crossing, a forest landowner must complete procedures (a) through (g) of this subsection:

(a) Re-establish channel connectivity.

(b) Meet the Department of Fish and Wildlife fish passage definition in OAR 635-412-0005 and comply with Department of Fish and Wildlife in-water work period requirements.

(c) Ensure that vacating does not result in an artificial fish passage barrier at the time of project completion.

(d) Remove all water crossing structures and all imported road fill material.

(e) Restore the channel, banks, and side slopes to:

(A) Establish the natural streambed and banks as close to the original location as possible to restore or enhance stream conditions and processes to an equivalent width, depth, gradient, and substrate composition as the channel segments upstream and downstream from the crossing;

(B) Ensure stable side slopes that do not exceed a 2 horizontal to 1 vertical ratio, unless matching the natural stream bank or valley walls;

(C) Incorporate large wood, if appropriate, to expedite restoration of the channel and fish habitat;

(D) Require erosion control to address sediment delivery from exposed slopes;

(E) Place all excavated material in stable locations and outside of the floodplain;

(F) Ensure zero or near-zero road related hydrologic connectivity at the entire site; and

(G) Plant exposed stream banks or valley walls with native trees or shrubs to help expedite development of a functioning riparian condition.

(f) The landowner shall notify the State Forester that a road or crossing is vacated. The State Forester has 30 days to determine whether the road or crossing has been vacated and to notify the landowner in writing. If the State Forester does not respond within 30 days, the road is presumed to be vacated.

(g) Roads and crossings are exempt from maintenance under this section only after sections (4) and (5) of this section is completed.

(h) The department shall publish Forest Practices Technical Guidance to assist operators with rule compliance and to explain how to avoid and prevent potential impacts to fish, wildlife, habitat resources, and waters of the state.

629-625-0700

Wet Weather Road Use

(1) The purpose of this rule is to reduce delivery of fine sediment to streams caused by the use of forest roads during wet periods that may adversely affect downstream water quality in Type F, Type SSBT or Type D streams.

(2) Operators shall use durable surfacing or other effective measures that resist deep rutting or development of a layer of mud on top of the road surface on road segments that drain directly to streams on active roads that will be used for log hauling during wet periods.

(3) Operators shall cease active road use where the surface is deeply rutted or covered by a layer of mud and where runoff from that road segment is causing a visible increase in the turbidity of Type F, Type SSBT or Type D streams as measured above and below the effects of the road.
(4) The department shall publish Forest Practices Technical Guidance to explain how wet weather road use can avoid and prevent potential impacts to fish, wildlife, habitat resources, and waters of the state.

629-625-0800
Construction in Wetlands
Avoid or minimize all road and landing construction near or within significant wetlands as described in OAR 629-680-0310, stream-associated wetlands, or wetlands greater than 0.25 acres in size. Where impacts are unavoidable, operators must first minimize impacts and then mitigate for them in the following priority order options (1) through (4) of this rule:
(1) Operators shall avoid impacts to significant wetlands, stream-associated wetlands, and other wetlands greater than 0.25 acres in size by selecting the least environmentally damaging landing location, road location and road length. Operators must attempt to minimize road length when avoiding wetlands.
(2) When road or landing construction in a significant wetland, stream-associated wetland, or other wetlands greater than 0.25 acres in size cannot be avoided, the operator shall build a temporary road or landing that:
    (a) Minimizes impacts by reducing the subgrade width, fill acreage, and spoil areas; and
    (b) Removes temporary fills or road sections upon the completion of the project.
(3) Permanent road construction in a significant wetland, stream-associated wetland, or other wetlands greater than 0.25 acres in size, operators must mitigate impacts by:
    (a) Reducing or eliminating impacts over time by preserving or maintaining areas; or
    (b) Replacing affected areas by creating new wetlands or enhancing existing wetlands.
(4) Filling or draining more than 0.25 acres of a significant wetland, any stream-associated wetland, or other wetlands greater than 0.25 acres in size requires the operator to replace by substitution or enhance the road or landing construction site for the lost wetland functions and values. The objective of successful replacement by substitution of lost wetland area is approximately on a two-for-one basis and of the same type and in the same general location. The objective of enhancing wetland function is to provide for an equivalent amount of function and values to replace that which is lost.
(5) The department shall publish Forest Practices Technical Guidance to assist operators with rule compliance and to explain how to avoid and prevent potential impacts to fish, wildlife, habitat resources, and waters of the state.

629-625-0900
Forest Road Inventory and Assessment
(1) The purpose of the Forest Road Inventory and Assessment (FRIA) is to reduce chronic and catastrophic sediment entry to waters of the state and to ensure passage for covered species during all mobile life-history stages by identifying existing roads not meeting the

Forest Practices Rules and bring those roads into compliance with the Forest Practice Administrative Rules.

(2) OAR 629-625-0900 does not apply to small forestland owners, as defined in OAR 629-600-0100. Small forestland owners shall submit a road condition assessment when they submit a notification of operation for a timber harvest that will use a road to haul timber, as described in OAR 629-625-0920.

(3) The department shall publish Forest Practices Technical Guidance for compliance with the Forest Road Inventory and Assessment process to avoid and prevent potential impacts to fish, wildlife, habitat resources, and waters of the state.

(4) The Forest Road Inventory and Assessment rules apply to segments of roads located on a large forest landowners' property, excluding roads that are owned or controlled by a government entity, including, but not limited to, the United States, and federally recognized Indian Tribes. For the purposes of this section, both ownership and control mean any right, interest, or agreement that precludes the large forest landowner from being able to conduct road work without prior authorization.

(5) Pre-inventory. Landowners shall submit a pre-inventory of high conservation value sites on each road management block to the State Forester no later than January 1, 2025.

(a) Landowners shall include high conservation value sites in the pre-inventory that address the following sites:

(A) Areas of known chronic sedimentation. Consideration will be given to areas where log hauling will occur during the 5-year inventory phase.

(B) Fish passage barriers known to be of significant concern. Priorities will be based on locations where fish passage would provide the greatest benefit to native migratory fish consistent with OAR 635-412-0015 and other criteria as determined by the Department of Fish and Wildlife in consultation with the department and consistent with the Oregon Fish Passage Barrier Data Standard developed by the ODFW Fish Screening and Passage Program.

(C) Ongoing stream diversions at stream crossings and areas with stream diversion potential.

(D) Areas of known hydrologic connectivity.

(b) From the list of high conservation value sites identified, landowners shall prioritize projects on high conservation value sites within the pre-inventory submission that:

(A) Remove fish passage barriers consistent with Department of Fish and Wildlife requirements;

(B) Minimize the potential for sediment delivery to waters of the state;

(C) Minimize stream diversions at water crossings;

(D) Minimize hydrologic connectivity between roads and waters of the state; and

(E) Meet other relevant criteria as determined by the department in consultation with other state and federal agencies.

(c) Landowners shall meet with the department and Department of Fish and Wildlife to review the pre-inventory list no later than January 1, 2026.

(A) The department shall meet with the Department of Fish and Wildlife to review the list and coordinate to ensure that high conservation value sites

are prioritized based on habitat values, road conditions, sediment delivery to waters of the state, hydrologic connectivity, and fish passage in alignment with the barrier assessment and inventory prioritization under the ODFW Fish Passage Program.

(B) The department and the Department of Fish and Wildlife may propose additional projects to the pre-inventory list if they believe that high conservation value sites have not been addressed.

(C) The department shall coordinate with the Department of Fish and Wildlife to ensure that information collected in the pre-inventory process is standardized and is in a format consistent with the Oregon Fish Passage Barrier Data Standard.

(d) Landowners shall address prioritized pre-inventory projects after review from the department and Department of Fish and Wildlife beginning no sooner than January 1, 2026, and no later than January 1, 2029.

(e) Landowners shall report annually to the department and Department of Fish and Wildlife on the status and completion of pre-inventory projects through January 1, 2029.

(6) Landowners shall submit an initial inventory of all active, inactive, and known vacated or abandoned roads no later than January 1, 2029.

(a) The initial inventory shall include three documents:

(A) Paper or electronic maps showing the roads within each road management block;

(B) A work matrix documenting actions necessary to bring all roads into compliance with the Forest Practice Rules. The document shall include prioritization of work; and

(C) A Forest Road Inventory and Assessment initial inventory plan describing how the landowner intends to bring the road network into compliance no later than January 1, 2044. The plan shall include:

(i) Actions likely to be addressed in the upcoming year;

(ii) A general description of how work will occur during the Forest Roads Inventory and Assessment period; and

(iii) A description of how the landowner is prioritizing work with the goal of optimizing environmental benefits.

(D) At minimum, the FRIA initial inventory plan submission shall include:

(i) The location and length of active roads, inactive roads, and vacated roads within each road management block.

(ii) The location of streams within the road management block, classified as:

(I) Fish;

(II) Non-fish;

(III) SSBT;

(IV) Fish presence unknown; or

(V) Streams that are 303(d) listed shall be depicted as such in addition to fish use designation.

(iii) Known or potential road-related fish passage barriers. Data collected shall be consistent with the Oregon Fish Passage Barrier

Data Standard in consultation with Department of Fish and Wildlife.

(iv) Prioritization of known or potential road related fish passage barriers. Prioritization of fish passage barriers shall be done in a manner consistent with the ODFW Fish Passage Program.

(v) The location and status of all water crossing culverts including:

(I) Date of installation, if known; and

(II) Assessment of culvert material used.

(vi) Each water crossing culvert shall be classified as one of the following:

(I) A fully functioning culvert in a Type F or Type SSBT stream;

(II) A fully functioning culvert in a Type N or Type D stream;

(III) A culvert with imminent risk of failure;

(IV) A culvert with minimum risks to public resources; or

(V) Undetermined status. Culverts with undetermined status must be prioritized for improvement. The status may be changed as more detailed information is gathered.

(b) The FRIA Initial Inventory Plan submission shall identify each road segment as:

(A) Meeting the Forest Practices Rules;

(B) Not meeting the Forest Practices Rules;

(C) Vacated in compliance with OAR 629-625-0650; or

(D) Abandoned.

(7) In the year following submitting the initial inventory but no later than January 1, 2029, landowners shall submit annual inventory reports and plans until January 1, 2044, which shall include:

(a) Updates to the maps required by OAR 629-625-0900(6)(a)(A) reflecting:

(A) Work accomplished during the prior year;

(B) Additional information discovered; and

(C) Potential changes in prioritizations.

(b) Update to the work matrix required by OAR 629-625-0900(6)(a)(B) showing:

(A) Improvements completed;

(B) Work to be completed;

(C) Additional information discovered; and

(D) Changes in prioritization.

(c) Update to the annual plan required by OAR 629-625-0900(6)(a)(C) reflecting:

(A) Work conducted in the prior year;

(B) Work likely to be completed in the upcoming year; and

(C) General plan to complete all necessary work no later than the January 1, 2044.

(8) The documents required by OAR 629-625-0900(7) must contain all the following:

(a) Total length of forest roads improved, including as a subset, length improved by compliance with OAR 629-625-0330(1) Drainage.

(b) Total length of forest roads still requiring improvement.

(c) Total length of forest roads planned for improvement in the upcoming year.

(d) Total length of forest roads vacated.

(e) Total length of forest roads planned to be vacated in the upcoming year.
(f) Number of fish barriers brought into compliance with OAR 629-625-0320 Water Crossing Structures.
(g) Number of fish barriers to be improved in the upcoming year.
(h) Certification by the landowner that they remain on track for completing required improvements no later than January 1, 2044.

(9) Landowners shall improve all road segments identified in the initial inventory as not meeting the Forest Practice Administrative Rules so that those segments either meet the Forest Practice Administrative Rules or are vacated no later than January 1, 2044.

(10) For culverts that meet the definition of pre-existing culverts, landowners shall:
(a) Inspect them every five years when the installation date is not known; and
(b) Maintain them to end of service life or until they no longer meet the definition of pre-existing culverts.

(11) For culverts that do not meet the definition of pre-existing culverts, landowners shall:
(a) Prioritize them for improvement during the initial inventory;
(b) Bring them into compliance with Forest Practice Rules no later than January 1, 2044; or
(c) For culverts not meeting the definition of pre-existing, consult with the Department of Fish and Wildlife to assign them a status of low priority and maintain them to the end of their service life when they meet the following criteria:
(A) The culvert is partially functioning to provide fish passage and the cost of repair or replacement is disproportionate to the benefits of the repair or replacement; or
(B) The culvert provides valuable wetland or pond habitat.

(12) For culverts meeting the definition of having imminent risk of failure, landowners shall repair or replace the culvert as soon as practicable but no later than two years after having been identified.

629-625-0910
State-led Abandoned Roads Inventory

(1) The department in consultation with the U.S. Environmental Protection Agency shall lead a cooperative effort to identify abandoned roads. The purpose of this effort is to identify abandoned roads and bring them into compliance with the Forest Practice Administrative Rules to reduce the potential of abandoned roads to produce chronic sediment and increase the risks of mass wasting and stream diversions.

(2) After identifying abandoned roads, the department and cooperators shall identify abandoned roads with a high level of risk to waters of the state or infrastructure. The State Forester shall provide the results of the inventory to landowners no later than January 1, 2026. The department shall use the following criteria listed in order of importance to identify risk levels:
(a) Ongoing stream diversion at stream crossings.
(b) Diversion potential at stream crossings.
(c) Likelihood of hydrologic connectivity.
(d) Comparative risk of chronic sediment produced.
(e) Risk of contribution to mass wasting.

(f) Other criteria as determined by the department in consultation with other state and federal agencies.

(3) Following the identification of high-risk abandoned road segments, the department in coordination with landowners shall identify high-priority abandoned road segments from the list of high-risk locations. Considerations for designating a segment as high priority shall include:
(a) Importance of the HUC-6 watershed to recovering salmonids;
(b) Number of stream crossings based on full-densified stream network;
(c) Cost of improvements in comparison to the benefits; and
(d) Other criteria as determined by the department in consultation with other state and federal agencies.

(4) Landowners shall complete a field verification of all high priority abandoned road segments identified in section (3).
(a) The department, Department of Environmental Quality, and Department of Fish and Wildlife shall, when necessary, review landowner verifications of high priority sites and improvement plans.
(b) Landowners shall include the following information in their field verification of high priority abandoned road segments:
(A) Confirmation that the high-priority site is on an abandoned road.
(B) Determination whether the segment is diverting the stream or has diversion potential.
(C) Determination regarding whether the segment is actively contributing sediment or has a high risk of contributing significant quantities of sediment to waters of the state. Indicators of risk of contributing significant quantities of sediment may include:
(i) A sediment deposit reaching the high-water line of a defined channel of a flood prone area;
(ii) A channel that extends from a road drainage structure outlet to the high-water line of a defined channel or a flood-prone area;
(iii) Evidence of surface flow between the drainage structure outlet and a defined channel or a flood-prone area;
(iv) Turbid water reaching all typed waters, lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals during runoff events;
(v) Evidence of direct sediment entry into a watercourse or a flood-prone area from road surfaces or drainage structures and facilities (e.g., ponded sediment, sediment deposits, delivery of turbid runoff from drainage structures during rainfall events);
(vi) Gullies or other evidence of erosion on road surfaces or below the outlets of road drainage facilities or structures, including ditch drain (relief) culverts, with transport or a high likelihood of transport to a watercourse;
(vii) Native-surfaced roads exhibiting erosion;
(viii) Native-surfaced roads composed of erodible soil types (e.g., granitic soils);
(ix) Rilled, gullied, or rutted road approaches to crossings;

(x) Existing ditch drain (relief) culverts or other road drainage structures with decreased capacity due to damage or impairment (e.g., crushed or bent inlets, flattened dips due to road grading);

(xi) Decreased structural integrity of ditch drain (relief) culverts, waterbreaks, or other road drainage structures (e.g., excessive pipe corrosion, breached water-breaks, or rutted road segments); or

(xii) Ditch scour or downcutting resulting from excessively long undrained ditches with infrequent ditch drain (relief) culverts or other outlet structures or facilities. This condition can also result from design inadequacies (e.g., spacing not altered for steep ditch gradient), inadequate erosion prevention practices (e.g., lack of armoring), or ditches in areas of erodible soils.

(D) Analysis of net benefit for waters of the state to improve the abandoned road segment.

(E) Determination regarding practicability of alternatives to improve the abandoned road segment and address the following risks:

(i) Ongoing stream diversions at stream crossings;

(ii) Diversion potential at stream crossings;

(iii) Likelihood of hydrologic connectivity;

(iv) Comparative risk of chronic sediment produced; and

(v) Risk of contribution to mass wasting.

(F) The alternatives may include vacating the segment, no action, and any other reasonable alternative. Landowners shall propose the most practicable alternative as part of the annual report.

(5) Landowners shall add the verified high-priority abandoned road segments to the Forest Roads Inventory and Assessment initial inventory.

(6) Landowners shall improve the abandoned road segment as part of the Forest Roads Inventory and Assessment process when, in consultation with the department, the following criteria are met:

(a) The high-priority location is an abandoned road;

(b) The high-priority location is actively contributing or has high risk of contributing significant quantities of sediment to waters of the state;

(c) The improvements would be a net benefit to waters of the state; and

(d) Improvements are practicable.

629-625-0920

Road Condition Assessment

(1) The purpose of this rule is to ensure that roads used for harvest and owned by small forestland owners, as defined by OAR 629-600-0100, comply with the standards of the Forest Practices Rules.

(2) The requirements of the forest road inventory assessment program described in OAR 629-625-0900 do not apply to small forestland owners.

(3) When a small forestland owner submits a notification including the harvest of timber using the department's reporting and notification system, they shall complete the department road condition assessment. Notifications for activities other than timber harvest shall not require completion of a road condition assessment. The small forestland

owner is encouraged to complete the road condition assessment for all roads in their parcel without a planned timber harvest.

(4) The road condition assessment shall include all roads in the parcel owned by the small forestland owner where the harvest will take place, including the following descriptions:
  (a) The road condition that contributes to active or potential delivery of sediment to waters of the state;
  (b) Water crossing's locations and the status of compliance with the forest practice rules;
  (c) Potential fish passage barriers on Type F and Type SSBT streams;
  (d) Abandoned roads; and
  (e) Roads with a perched fill that present a significant hazard to fish-bearing streams.

(5) The department, in consultation with the Department of Fish and Wildlife, shall review eligibility for state grants to improve the road conditions described in section (4)(c), (d), and (e) of this rule.

(6) The small forestland owners are not required to undertake the following road improvements projects, without funding by the State of Oregon:
  (a) Replacement of culverts for Type F and Type SSBT streams;
  (b) Repair of abandoned roads; or
  (c) Reconstructing, vacating, or relocating roads with a perched fill that present a significant hazard to fish-bearing streams.

(7) If the State of Oregon, under the small forestland investment in stream habitat program described in OAR 629-607-0300, fails to fund an eligible and approved road improvement project for a small forestland owner, the non-implementation of those projects shall not prevent the small forestland owner from using the road for any purpose, except for the following conditions:
  (a) The road is actively delivering sediment to waters of the state; or
  (b) The road has one or more culverts with an imminent risk of failure, as defined in OAR 629-600-0100.

(8) If the road condition assessment identifies necessary road repairs, other than the road conditions in section (7)(a) and (b) of this rule, there shall be no time limit in which the small forestland owner must complete those repairs, though the obligation to improve roads when used for harvest remains.

Division 630
HARVESTING

629-630-0000
Purpose

(1) OAR 629-630-0000 through 629-630-0925 shall be known as the harvesting rules.
(2) Harvesting of forest tree species is an integral part of forest management by which wood for human use is obtained and by which forests are established and tended.
(3) Harvesting operations result in a temporary disturbance to the forest environment.
(4) The purpose of the harvesting rules is to establish standards for forest practices that will maintain the productivity of forestland, minimize soil and debris entering waters of the state, and protect wildlife and fish habitat.
(5) The harvesting rules are intended to reduce the potential for sediment delivery to waters of the state from ground disturbance and drainage alterations that may be caused by harvesting.
(6) The purpose of the timber harvesting on steep slopes rules, as identified in OAR 629-630-0900 through 629-630-0925, is to retain trees in designated areas to provide the beneficial elements of landslides while mitigating the potential negative effects of forest management activities on unstable slopes.
(7) The harvesting rules shall apply to all forest practices regions unless otherwise indicated.
(8) OAR 629-630-0900 through 629-630-0925, do not replace or modify OAR 629-623-0000 through 629-623-0800 Shallow, Rapidly Moving Landslides and Public Safety rules.

629-630-0150
Ground-Based Harvesting On Steep Or Erosion-Prone Slopes

(1) Slopes over 60 percent are subject to the requirements of Sections (4) through (8) of this rule.
(2) Slopes over 40 percent where soils consist of decomposed granite-type materials, or other highly erodible materials as determined by the State Forester, are considered erosion-prone and subject to the requirements of Sections (4) through (8) of this rule.
(3) Methods that avoid development of compacted or excavated trails are the preferred alternative for operating on steep or erosion-prone slopes. If the operation will result in excavated or compacted skid trails, operators shall apply sections (5) through (8) of this rule.
(4) If skid trails are located on steep or erosion-prone slopes, operators shall locate them at least 100 feet from any stream channels.
(5) Operators shall locate skid trails where water can drain off the skid trail and onto undisturbed soils.
(6) Skid trails shall not be located straight up and down steep or erosion prone slopes for a distance exceeding 100 feet unless effective drainage and sediment filtration can be achieved.
(7) Operators shall install effective cross ditches on all skid roads located on steep or erosion-prone slopes.
(8) Operators shall limit the amount of ground with disturbed soils on steep or erosion-prone slopes as described in Sections (2) and (3) of this rule to no more than ten percent of the steep or erosion-prone slopes within the operation area.

629-630-0300
Drainage Systems

(1) Operators shall construct dips, grade reversals or other effective water diversions in skid trails and fire trails as necessary to minimize soil displacement and to ensure runoff water is filtered before entering waters of the state.
(2) Operators shall drain skid trails by water barring or other effective means immediately following completion of the operation and at all times during the operation when runoff is likely.
(3) Operators shall establish effective drainage on landings during and after use.

629-630-0500
Harvesting On High Landslide Hazard Locations

(1) Operators and the State Forester shall share responsibility to identify high landslide hazard locations for timber harvesting and road construction to protect natural resources and public safety.
(2) For operations with potential downslope risk to public safety from shallow, rapidly moving landslides, the shared responsibility includes identifying and evaluating the risk using methods described in OAR 629-623-0100 through 0300. For intermediate and substantial levels of risk, the practices described in OAR 629-623-0400 through 0800 shall also apply. The department shall publish Forest Practices Technical Guidance to explain how to implement this rule.
(3) Operators shall not construct skid roads on high landslide hazard locations.
(4) Operators shall not operate ground-based equipment on high landslide hazard locations.
(5) Operators shall prevent deep or extensive ground disturbance on high landslide hazard locations during log felling and yarding operations.
(6) Operators concerned about the application of these standards to a specific operation may consult with the State Forester to obtain an evaluation of their harvesting plan and its likelihood of compliance with the standards.

629-630-0600
Felling; Removal of Slash

(1) Operators shall fell, buck, and limb trees in ways that minimize disturbance to channels, soils and retained vegetation in riparian management areas, streams, lakes and all wetlands greater than one-quarter acre, and that minimize slash accumulations in channels, significant wetlands and lakes.
(2) During felling operations operators shall:
    (a) Whenever possible, fell all conifer trees away from riparian management areas, streams, lakes and significant wetlands, except for trees felled for stream improvement projects.
    (b) On steep slopes, use felling practices such as jacking, line pulling, high stumps, whole tree yarding, or stage-cutting as necessary and feasible to prevent damage to vegetation retained in riparian management areas, soils, streams, lakes and significant wetlands.
    (c) When hardwoods must be felled into or across streams, lakes or significant wetlands, operators shall:

(A) Buck and yard the trees to minimize damage to beds, banks and retained vegetation.
(B) When it can be done consistently with protecting beds and banks, yard hardwood trees or logs away from the water before limbing.

(3) Operators shall minimize the effects of slash that may enter waters of the state during felling, bucking, limbing or yarding by:
(a) Removing slash from Type F, Type SSBT, Type D streams, large or medium Type Np streams, small Type Np streams within the RH Max, lakes and significant wetlands as an ongoing process (removal within 24 hours of the material entering the stream) during the harvest operation.
(b) Not allowing slash to accumulate in Type Ns streams and small Type Np streams upstream of the RH Max, lakes or wetlands in quantities that threaten water quality or increase the potential for mass debris movement.
(c) Placing any slash that is removed from streams, lakes, or wetlands above high water levels where it will not enter waters of the state.

629-630-0700
Yarding; Cable Equipment Near Waters of the State

(1) Operators shall maintain the purposes and functions of vegetation required to be retained in riparian management areas and minimize disturbance to beds and banks of streams, lakes, all wetlands larger than one-quarter acre, and retained vegetation during cable yarding operations.
(2) Operators shall minimize the yarding of logs across streams, lakes, significant wetlands, and other wetlands greater than one-quarter acre whenever harvesting can be accomplished using existing roads or other practical alternatives.
(3) Operators may use cable yarding corridors through retained trees if the numbers and widths of yarding corridors are minimized. Operators shall submit a written plan to the State Forester when yarding across any of the waters listed in subsections (a) through (g) of this section:
(a) Type F streams;
(b) Type SSBT streams;
(c) Type D streams;
(d) Large or medium Np streams;
(e) Small Type Np or Type Ns streams located within designated debris flow traversal areas, as described in OAR 629-630-0905;
(f) Lakes; or
(g) Significant wetlands.
(4) When cable yarding across any of the waters listed in subsections (a) through (f) of this section is necessary, it shall be done by swinging the yarded material free of the ground in the aquatic areas and riparian areas.
(a) Type F streams;
(b) Type SSBT streams;
(c) Type D streams;
(d) Large or medium Type Np streams;
(e) Lakes; or
(f) Significant wetlands.

(5) Cable yarding across streams classified as Type Ns, small Type Np stream-associated wetlands, designated debris flow traversal areas, seeps, and springs, or other wetlands greater than one-quarter acre shall be done in ways that minimize disturbances to the stream channel or wetland and minimize disturbances of retained streamside vegetation, including one-end log suspension where feasible.

(6) Operators shall minimize disturbance from cable yarding near streams to maintain soil function, retain understory vegetation, and protect habitat for fish, amphibians, and other wildlife.

(a) The following equipment limitation zones shall be applied to streams and associated riparian management areas as described in division 643 Water Protection Rules Vegetation Retention Along Streams rules.

(A) An "R-ELZ" means an equipment limitation zone in which disturbance from equipment activity shall be minimized and all trees less than 6 inches DBH and shrub species are retained where possible.

(i) In Western Oregon, the R-ELZ is 35 feet.

(ii) In Eastern Oregon, the R-ELZ is 30 feet.

(B) An "ELZ" means an equipment limitation zone in which disturbance from equipment activity shall be minimized.

(i) In Western Oregon, the ELZ is 35 feet.

(ii) In Eastern Oregon, the ELZ is 30 feet.

(b) Operators shall take corrective action(s) when soil disturbance from cabled logs exceeds 20 percent of the total area within any R-ELZ or ELZ within an operation unit. Corrective action(s) shall be designed to replace the equivalent of lost functions in consultation with the State Forester. Examples include, but are not limited to, water bars, grass seeding, logging slash, mulching, downed log placement in accordance with ORS 527.676(1), with a preference for utilizing on-site materials.

(c) The department shall publish technical guidance, developed in consultation with Department of Fish and Wildlife to assist operators with selecting appropriate corrective measures.

629-630-0800

Yarding; Ground-based Equipment Near Waters of the State

(1) Operators shall maintain the purposes and functions of vegetation required to be retained in riparian management areas, and minimize disturbances to beds and banks of streams, lakes, all wetlands larger than one-quarter acre, and retained vegetation during ground-based yarding operations.

(2) Operators shall not operate ground-based equipment within any stream channel except as allowed in the rules for temporary stream crossings.

(3) Operators shall minimize the number of stream crossings.

(4) For crossing streams that have water during the periods of the operations, operators shall:

(a) Construct temporary stream crossing structures such as log crossings, culvert installations, or fords that are adequate to pass stream flows that are likely to occur during the periods of use. Structures shall be designed to withstand erosion by the streams and minimize sedimentation.

(b) Choose locations for temporary stream crossing structures which minimize cuts and fills or other disturbances to the stream banks.

(c) Minimize the volume of material in any fills constructed at a stream crossing. Fills over eight feet deep contain such a large volume of material that they can be a considerable risk to downstream beneficial uses should the material move downstream by water. For any fill for a temporary crossing that is over eight feet deep, operators shall submit to the State Forester a written plan that includes a description of how the fills would be constructed, passage of water, and the length of time the fills would be in the stream.

(d) Design temporary structures so that fish movement is not impaired on Type F or Type SSBT streams.

(e) Remove all temporary stream crossing structures immediately after completion of operations or prior to seasonal runoff that exceeds the water carrying capacity of the structures, whichever comes first. When removing temporary structures, operators shall place fill material where it will not enter waters of the state.

(5) For stream crossings where the channels do not contain water during the periods of the operations, operators are not required to construct temporary crossings as long as disturbances are no greater than what would occur if structures were constructed. Soil that enters the channels during the yarding operations must be removed after completion of the operation or prior to stream flow, whichever comes first. When removing such materials from the channels, operators shall place the materials in locations where they will not enter waters of the state.

(6) Operators shall construct effective sediment barriers such as water bars, dips, or other water diversion on stream crossing approaches after completion of operations, or prior to rainy season runoff, whichever comes first.

(7) Machine activity near (generally within 100 feet) streams, lakes, and other wetlands greater than one-quarter acre shall be conducted to minimize the risk of sediment entering waters of the state and preventing changes to stream channels. Operators shall only locate, construct, and maintain skid trails in riparian management areas consistent with the harvesting rules.

(8) Operators shall minimize ground-based equipment and subsequent disturbance near streams to maintain soil function, retain understory vegetation, and protect habitat for fish, amphibians, and other wildlife.

(a) The following equipment limitation zones shall be applied to streams and associated riparian management areas as described in division 643 Water Protection Rules Vegetation Retention Along Streams rules:

(A) An “R-ELZ” means an equipment limitation zone in which disturbance from equipment activity shall be minimized and all trees less than 6 inches DBH and shrub species are retained where possible.

(i) In Western Oregon, the R-ELZ is 35 feet.

(ii) In Eastern Oregon, the R-ELZ is 30 feet.

(B) An “ELZ” means an equipment limitation zone in which disturbance from equipment activity shall be minimized.

(i) In Western Oregon, the ELZ is 35 feet.

(ii) In Eastern Oregon, the ELZ is 30 feet.

(b) Operators shall take corrective action(s) when soil disturbance from ground-based equipment exceeds 10 percent of the total area within any R-ELZ or ELZ within an operation unit. Corrective action(s) shall be designed to replace the equivalent of lost functions in consultation with the State Forester. Examples include but are not limited to water bars, grass seeding, logging slash, mulching, downed log placement in accordance with 527.676(1), with a preference for utilizing on-site materials.

(c) The department shall publish Forest Practices Technical Guidance, developed in consultation with Department of Fish and Wildlife, to assist operators with selecting appropriate corrective measures.

(9) Operators shall locate and construct skid trails so that when high stream flow occurs water from the stream will not flow onto the skid trail.

(10) Operators shall minimize the amount of exposed soils due to skid trails within riparian management areas. Except at stream crossings, operators shall not locate skid trails within 35 feet of Type F, Type SSBT or Type D streams. Operators shall provide adequate distances between all skid trails and waters of the state to filter sediment from runoff water.

629-630-0900

Western Oregon Harvests; Slopes Model

(1) For the purpose of OAR 629-630-0905 through 629-630-0925, designated debris flow traversal areas and designated sediment source areas are determined by the slopes model and displayed on department maps and the department's reporting and notification system. The slopes model also identifies which designated sediment source areas contain trigger sources, which help prioritize designated sediment source areas for selection as slope retention areas. Department maps and the department's reporting and notification system display designated sediment source areas and distinguishes those with trigger sources. The slopes model designations can be viewed at the time of submitting a notification of operation to the State Forester.

(2) Definitions in section (1) of this rule are defined in OAR 629-600-0100.

(3) All trees retained, as required for OAR 629-630-0905 through 629-630-0925, that otherwise meet the requirements for leave trees may count toward requirements for wildlife leave trees within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676. Operators are encouraged to leave trees that meet the requirements for wildlife leave trees within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676, immediately adjacent to seeps and springs, as described in OAR 629-655-0000.

629-630-0905

Western Oregon Harvesting; Standard Practice; Designated Debris Flow Traversal Areas

(1) For Western Oregon, operators shall not harvest timber located in designated debris flow traversal areas.

(2) Operators shall retain all trees within 25 feet slope distance from either side of the active channel, or center of the draw if no channel is present for areas identified by the slopes model as designated debris flow traversal areas.

(3) Changes in stream classification for a stream, based on field surveys for fish-use consistent with OAR 629-635-0200, shall not change the department's maps used for notifications of operations that identify designated debris flow traversal areas.
(4) Operators shall submit a written plan, described in OAR 629-630-0925, for timber harvest units containing designated debris flow traversal areas.
(5) Cable yarding, which may require cutting, but not removal, of trees, is permitted through designated debris flow traversal areas, but the number, size, and location of yarding corridors shall be designed to minimize impacts to the integrity of designated debris flow traversal areas. The operator shall not remove trees cut for yarding corridors unless these are deemed safety hazards.

629-630-0910
Western Oregon Harvesting; Standard Practice; Designated Sediment Source Areas and Slope Retention Areas

(1) Slope retention areas encompass field identified headwalls. The department shall publish Forest Practices Technical Guidance to explain how to implement this rule.
(2) Changes in stream classification for a stream, based on field surveys for fish-use consistent with OAR 629-635-0200, shall not change the department's maps used for notifications of operations that identify designated sediment source areas.
(3) Landowner representatives shall identify at least 50 percent of the designated sediment source areas as slope retention areas for timber harvesting in Western Oregon as follows:
  (a) If the number of designated sediment source areas is an odd number, the landowner representative shall round up to the next even number and identify half of the number as slope retention areas.
  (b) Prioritize designated sediment source areas for selection of slope retention areas as follows:
    (A) Designated sediment source areas with trigger sources; and
    (B) Larger designated sediment source areas.
(4) The landowner representative may adjust the distribution and location of slope retention areas, notwithstanding section (3) of this rule, if the selected slope retention areas:
  (a) Reduce worker safety, as described in OAR chapter 437, division 7, Forest Activities; or
  (b) Eligible concerns that may warrant selection of non-priority areas to satisfy the minimum 50 percent designated sediment source area requirement are the priority areas that would:
    (A) Clearly reduce worker safety; or
    (B) Cause more resource impact, such as additional road or landing construction, excessive sidehill yarding, or other yarding practices that clearly increase ecological impacts**.**
(5) The landowner representative shall have received certified steep slopes training to determine the field delineation of the final boundaries for slope retention areas. The department shall develop and provide certification training opportunities to landowner representatives when the slopes model has been added to the department's reporting and notification system.
(6) After clearly marking in the field the boundaries of the slope retention areas, the landowner representative shall submit a written plan, described in OAR 629-630-0925,

for timber harvest units containing designated sediment source areas and slope retention areas.

(7) Operators shall not harvest timber located in the slope retention areas.

(8) Cable yarding, which may require cutting, but not removal, of trees, is permitted only through slope retention areas that do not contain trigger sources, but the number, size, and location of yarding corridors shall be designed to minimize soil and vegetation disruptions that may increase slope instability. The operator shall not remove trees cut for yarding corridors unless these are deemed safety hazards.

(9) Operators shall not construct skid roads or operate ground-based equipment in slope retention areas.

629-630-0915

Statewide Harvesting; Standard Practice; Stream Adjacent Failures

Note: OAR 629-630-0915 applies to operations, except operations on small forestlands, for which a notification is filed under ORS 527.670(6) on or after July 1, 2023. This rule applies to all operations for which a notification is filed on or after January 1, 2024, or a notification filed prior to January 1, 2024, if the operation is not completed on or before December 31, 2023.

(1) Operators shall extend the riparian management areas, described in OAR 629-643-0100 and OAR 629-643-0120, on all identified stream adjacent failures, as defined in OAR 629-600-0100. The riparian management area shall encompass the perimeter of the stream adjacent failure, defined in OAR 629-600-0100, however, the width of the riparian management area shall only extend to the lessor of:
   (a) The distance of 170 feet from the edge of a Type F or Type SSBT channel; or
   (b) The distance to the slope break, defined as 20 percent or greater reduction in slope gradient.

(2) The landowner representative shall submit a written plan, described in OAR 629-605-0170(13), for timber harvest units where yarding is planned to occur within stream adjacent failures.

(3) The landowner shall submit a written plan that describes how the number, size, and location of yarding corridors were selected to minimize impacts to the integrity of stream adjacent failures.

(4) Cable yarding, which may require cutting, but not removal, of trees, is permitted through stream adjacent failures, but the number, size, and location of yarding corridors shall minimize impact to the integrity of the feature. The operator shall not remove trees cut for yarding corridors unless these are deemed safety hazards.

(5) The operator shall make all riparian management area width measurements using the slope distance and shall measure them from the edge of the active channel or channel migration zone.

(6) The department shall publish Forest Practices Technical Guidance to assist operators in identifying channel migration zones.

629-630-0920

Small Forestland Owner Minimum Option; Harvesting on Features Identified in the Slopes Model and Stream Adjacent Failures

(1) Western Oregon, Designated Debris Flow Traversal Areas for harvest type 1, harvest type 2 or harvest type 3 operations. For forestlands in Western Oregon that are managed

under the small forestland owner minimum option, operators shall not harvest timber within 50 percent of the length of the designated debris flow traversal area for each harvest type 1, harvest type 2, or harvest type 3 unit. The State Forester will:

(a) Assist small forestland owners in determining designated debris flow traversal areas in a planned harvest unit, prioritizing vegetation retention requirements for Type SSBT streams over Type F streams.

(b) Exempt small forestland owners from the designated debris flow traversal areas requirements for harvest type 4 units.

(2) Operators shall retain all trees within 25 feet slope distance on either side of the active channel identified in OAR 629-630-0920(1), or center of the draw if no channel is present for areas identified by the slopes model as designated debris flow traversal areas.

(3) Changes in stream classification for a stream, based on field surveys for fish-use consistent with OAR 629-635-0200, shall not change the department's maps used for notifications of operations that identify designed debris flow traversal areas.

(4) Operators shall submit a written plan, described in OAR 629-630-0925, for timber harvest units containing designated debris flow traversal areas, except for harvest type 4 units.

(5) Cable yarding, which may require cutting, but not removal, of trees, is permitted through designated debris flow traversal areas, but the number, size, and location of yarding corridors shall be designed to minimize impacts to the integrity of designated debris flow traversal areas. The operator shall not remove trees cut for yarding corridors unless these are deemed safety hazards.

(6) Western Oregon, Designated Sediment Source Areas. For forestlands in Western Oregon that are managed under the small forestland owner minimum option, landowners are exempt from the rule requirements for timber harvesting in designated sediment source areas and slope retention areas.

(7) Statewide, Stream Adjacent Failures. Operators shall extend the riparian management areas, described in OAR 629-643-0100 and OAR 629-643-0120, on all identified stream adjacent failures, as defined in OAR 629-600-0100. The riparian management area shall encompass the perimeter of the stream adjacent failure, defined in OAR 629-600-0100, however, the width of the riparian management area shall only extend to the lessor of:

(a) The distance of 30 feet from the outer edge of the small forestland owner minimum option; or

(b) The distance to the slope break, defined as 20 percent or greater reduction in slope gradient.

(8) The landowner representative shall submit a written plan, described in OAR 629-605-0170(13), for timber harvest units where yarding is planned to occur within stream adjacent failures.

(9) The landowner shall submit a written plan that describes how the number, size, and location of yarding corridors were selected to minimize impacts to the integrity of stream adjacent failures.

(10) Cable yarding, which may require cutting, but not removal, of trees, is permitted through stream adjacent failures, but the number, size, and location of yarding corridors shall minimize impact to the integrity of the feature. The operator shall not remove trees cut for yarding corridors unless these are deemed safety hazards.

(11) The operator shall make all riparian management area width measurements using the slope distance and shall measure them from the edge of the active channel or channel migration zone.
(12) The department shall publish Forest Practices Technical Guidance to assist operators in identifying channel migration zones.

629-630-0925
Written Plans to Evaluate Harvesting on Features Identified in the Slopes Model
To evaluate timber harvesting on features identified by the slopes model, operators shall submit a written plan that describes how the operation is planned to be conducted in sufficient detail to allow the State Forester to evaluate and comment on the likelihood that the operation will comply with the Forest Practices Act or administrative rules. The written plan shall include at a minimum:
(1) A unit map including, where applicable:
  (a) Locations of slopes model designated debris flow traversal areas;
  (b) Locations of slope model designated sediment source areas and those selected as slope retention areas; and
  (c) Identification of approximate yarding corridors relative to (1)(a) and (b).
(2) Description of the rationale and appropriate documentation for the following that apply:
  (a) Selection of the 50 percent designated debris flow traversal areas for Western Oregon forestlands that are managed under the small forestland owner minimum option;
  (b) Selection of slope retention areas, including justification for choosing areas to satisfy the minimum 50 percent designated sediment source area requirement, as described in OAR 629-630-0910(3) and (4);
  (c) How the number, size, and location of yarding corridors were designed to minimize impacts to the designated debris flow traversal areas; and
  (d) How the number, size, and location of yarding corridors were designed to minimize soil and vegetation disruptions that may increase slope instability in slope retention areas.
(3) Additional administrative information related to the operation as required by individual rules or as requested by the State Forester.

Division 635
WATER PROTECTION RULES: PURPOSE, GOALS, CLASSIFICATION AND RIPARIAN MANAGEMENT AREAS

629-635-0100
Purpose and Goals
(1) The leading use on private forestland is the growing and harvesting of trees, consistent with sound management of soil, air, water, fish and wildlife resources. There is a unique concentration of public resource values in and near waters of the state because these areas are critical for the overall maintenance of fish and wildlife and for maintaining water quality. Consequently, the policies of the Forest Practices Act, including encouraging economically efficient forest practices, are best achieved by focusing protection measures

in riparian management areas, where the emphasis is on providing water quality and fish and wildlife habitat.

(2) OAR 629-635-0000 through 629-660-0060 are known as the water protection rules.

(3) The purpose of the water protection rules is to protect, maintain and, where appropriate, improve the functions and values of streams, lakes, wetlands, and riparian management areas. These functions and values include water quality, hydrologic functions, the growing and harvesting of trees, and fish and wildlife resources.

(4) Plans for alternate practices may be used to alter vegetation retention requirements in the water protection rules based on local site conditions. The plans may include but are not limited to site specific vegetation retention prescriptions as described in OAR 629-643-0400 (for streams) and 629-645-0020 (for wetlands). The operator may:
   (a) Evaluate site specific conditions in waters and riparian management areas; and
   (b) Develop plans for alternate practices that will:
      (A) Enhance, maintain, or restore when degraded conditions exist, riparian functions in streams, wetlands, and lakes; or
      (B) Meet the purposes and goals of the water protection rules while providing opportunities to complete ecological, restoration, or operational objectives for various riparian area site conditions.

(5) The overall goal of the water protection rules is to provide resource protection during operations adjacent to and within streams, lakes, wetlands and riparian management areas so that, while continuing to grow and harvest trees, the protection goals for fish, amphibians, other wildlife, and water quality are met.
   (a) The protection goal for water quality (as prescribed in ORS 527.765) is to ensure through the described forest practices that, to the maximum extent practicable, non-point source discharges of pollutants resulting from forest operations do not impair the achievement and maintenance of the water quality standards.
   (b) The protection goal for fish is to establish and retain vegetation consistent with the vegetation retention objectives described in OAR 629-643-0000 (streams), 629-645-0000 (significant wetlands), and 629-650-0000 (lakes) that will maintain, enhance, or restore water quality and provide aquatic habitat components and functions such as shade, large wood, and nutrients.
   (c) The protection goal for wildlife is to establish and retain vegetation consistent with the vegetation retention objectives described in OAR 629-643-0000 (streams), 629-645-0000 (significant wetlands), and 629-650-0000 (lakes) that will maintain, enhance, or restore water quality and habitat components such as live trees of various species and size classes, shade, snags, downed wood, and food within riparian management areas. For wildlife species not necessarily reliant upon riparian areas, habitat in riparian management areas is also emphasized in order to capitalize on the multiple benefits of vegetation retained along waters for a variety of purposes.

629-635-0200
Water Classification

(1) The purpose of this water classification system is to match the physical characteristics and beneficial uses of a water body to a set of appropriate protection measures.

(2) For the purposes of applying appropriate protection measures, the State Forester shall classify waters of the state as streams, wetlands, or lakes as described in this rule.

(3) The State Forester shall further classify streams according to their beneficial uses and size. The department shall incorporate the Department of Fish and Wildlife findings regarding fish use and perenniality into the department's reporting and notification system consistent with sections (11) and (18) of this rule. The department shall work with the Department of Fish and Wildlife to establish procedures for incorporating such findings into the department's reporting and notification system no later than December 31, 2023. The State Forester shall classify domestic water use streams using information from the Water Resources Department. For an operator to apply streamside protection, the State Forester shall make this information publicly available in the department's reporting and notification system.

(4) To maintain a statewide data layer describing fish distribution and perenniality, the State Forester shall provide Department of Fish and Wildlife information regarding a water body's size and beneficial use.

(5) For purposes of protection, the State Forester shall further classify streams into one of the following five beneficial use categories, as defined in OAR 629-600-0100:
  (a) Type F;
  (b) Type SSBT;
  (c) Type D;
  (d) Type Np; or
  (e) Type Ns.

(6) For purposes of classification, a stream is considered to have domestic water use only if a water use permit has been issued by the Oregon Water Resources Department.

(7) A channel is considered to have domestic water use upstream of an intake for the distances indicated below:
  (a) For domestic water use that is a community water system (as defined under OAR 333-061-0020), Type D classification shall initially apply to the length of stream that was designated as Class I under the classification system that was in effect on April 22, 1994, which is that shown on district water classification maps at the time of adoption of this rule.
  (b) For domestic water use that is not a community water system, Type D classification shall be initially applied for the shortest of the following distances:
    (A) The distance upstream of the intake to the farthest upstream point of summer surface flow;
    (B) Half the distance from the intake to the drainage boundary; or
    (C) 3,000 feet upstream of the intake.
  (c) Type D classification shall apply to tributaries off the main channel as long as the conditions of subsections (7)(a) and (b) of this rule apply.
  (d) A representative of a community water system or other domestic use water permit holder may request that the State Forester designate additional lengths of channels upstream of a domestic water intake or reservoir as Type D. The representative or permit holder must present evidence that the additional stream protection is needed. The State Forester will decide whether or not to extend Type D classification to these other channels based on evidence presented by the requesting party showing that protection measures associated with Type N

classification would be insufficient to prevent adverse detrimental temperature increases, turbidity increases, or other adverse water quality changes at the domestic water use intake or reservoir.

(e) The process and criteria described in subsection (7)(a), and the criteria under section (7) of this rule will be used to evaluate the extent of Type D classification for new community water systems.

(f) The State Forester will decide whether or not to extend the length of Type D classification within 30 days of the presentation of evidence.

(8) The domestic water use classification may be waived by the State Forester at the request of a landowner who is the sole domestic water use permit holder for an intake and who owns all the land along upstream channels that would be affected by the classification related to that intake. This waiver shall not affect the classification related to downstream domestic water use intakes.

(9) A stream or lake will be considered to have fish use if inhabited at any time of the year by anadromous or game fish species or fish that are listed as threatened or endangered species under the federal or state endangered species acts.

(10) The fish use classification does not apply to waters where fish were introduced through a fish stocking permit that includes documentation that the stream had no fish prior to stocking.

(11) For the purposes of classifying streams for fish use, the State Forester shall use the procedures in this section:

(a) As of July 1, 2023, the State Forester shall classify streams for fish use according to the fish distribution model developed by using the Fransen (Brian R. Fransen, Steven D. Duke, L. Guy McWethy, Jason K. Walter & Robert E. Bilby. 2006. A Logistic Regression Model for Predicting the Upstream Extent of Fish Occurrence Based on Geographical Information Systems Data, North American Journal of Fisheries Management, 26:4, 960-975) or Penaluna (2022, in publication) models if reviewed by the Department of Fish and Wildlife and is approved based on findings that the model is equal or better than Franson 2006 upon publication. The State Forester shall make the results of the fish use distribution model publicly available in the department's reporting and notification system.

(b) If the State Forester has not incorporated Penaluna (2022, in publication) by July 1, 2023, then the State Forester shall incorporate the fish use layer developed pursuant to Penaluna (2022, in publication) after July 1, 2023, upon publication provided the Department of Fish and Wildlife makes the findings required in (a) and requests the modification. Otherwise, the State Forester shall replace the model in (a) with an alternate fish use distribution model if developed pursuant to the adaptive management process described in OAR 629-603-0000 through 629-603-0600, provided that any such model is first reviewed and approved by the Department of Fish and Wildlife.

(c) The State Forester shall use field surveys to correct the modeled fish distribution under the following conditions:

(A) A field survey conducted prior to May 1, 2023, and accepted by the department for purposes of informing compliance with the forest practice rules shall be incorporated into the department's reporting and notification system, provided that either:

(i) The survey is submitted to the Department of Fish and Wildlife prior to January 1, 2023, and not disqualified by May 1, 2023, for failure to meet the criteria in the Private Forest Accord Report (February 2, 2022); or

(ii) The survey is submitted by the landowner or the department to the Department of Fish and Wildlife after January 1, 2023, but no later than January 1, 2028, and not disapproved by the Department of Fish and Wildlife within ninety days following submission for failure to meet the criteria in the Private Forest Accord Report (February 2, 2022).

(B) A field survey conducted prior to January 1, 2023 not yet accepted by the department for purposes of informing compliance with the forest practice rules shall be incorporated into the department's reporting and notification system, provided that either:

(i) The survey is submitted to the Department of Fish and Wildlife prior to January 1, 2023 and not disqualified by May 1, 2023 for failure to meet the requirements of the survey protocol in effect as of the date of the survey; or

(ii) The survey is submitted by the landowner or the department to the Department of Fish and Wildlife after January 1, 2023, but no later than January 1, 2028, and not disapproved by the Department of Fish and Wildlife within ninety days following submission for failure to meet the requirements of the survey protocol in effect as of the date of the survey.

(C) A field survey conducted after May 1, 2023 shall be incorporated into the department's reporting and notification system, provided that either:

(i) The survey is submitted to the Department of Fish and Wildlife and not disqualified within 21 days following submission for failure to satisfy the Department of Fish and Wildlife's protocols for fish use field surveys; or,

(ii) The survey is otherwise reviewed and approved by the Department of Fish and Wildlife.

(D) A field survey submitted to the Department of Fish and Wildlife pursuant to (11)(c)(A)(i) or (11)(c)(B)(i) above, but disapproved after May 1, 2023 for failure to satisfy the relevant criteria shall be removed from the department's reporting and notification system, provided that an operator who submitted a notification in reliance on the survey prior to its removal shall be allowed to continue to rely on such survey for purposes of such notified forest operations.

(E) If the Department of Fish and Wildlife does not approve a field survey submitted pursuant to (11)(c)(C)(i) within twenty-one days for failure to meet the requirements of the survey protocol in effect as of the date of the survey, the survey shall be removed from the department's reporting and notification system. An operator who submitted a notification in reliance on the survey prior to its removal shall be allowed to continue to rely on such survey for purposes of such notified forest operations. Where surveys

conflict, the department will use the survey deemed to have the higher level of confidence by the Department of Fish and Wildlife. The selected survey shall control for purposes of the department's reporting and notification system.

(d) For streams that were initially classified as fish use based on the model, an operator may request that the State Forester conduct a fish presence survey 12 to 24 months before an operation's scheduled start date to verify the designation of fish use in stream segments associated with the operation.

(A) The State Forester shall make a good faith effort to conduct the requested surveys and shall prioritize requests from landowners who do not have the financial or technical resources to conduct the surveys themselves.

(B) As an option, the landowner may conduct the fish presence survey as specified in (e).

(C) If neither the landowner nor the State Forester can conduct the survey before the operation begins, the fish use classification based on the model shall apply.

(D) If a field survey is conducted by the State Forester, the Department of Fish and Wildlife shall have a 21-day period to review and approve or object to the field survey. If no objection occurs, the survey shall be accepted and the fish use designation will be updated in the department's notification and reporting system.

(e) To be used for stream classification under this section, field surveys for fish use must be conducted according to the protocol in "Surveying Forest Streams for Fish Use," published by the Department of Forestry and the Department of Fish and Wildlife.

(f) If approved by the Department of Fish and Wildlife, the State Forester may use other information to determine the upstream extent of fish use.

(g) An operator may request an exception to Type F stream classification above an artificial obstruction to fish passage that is documented by field survey as the end of fish use. The State Forester, in consultation with the Department of Fish and Wildlife, shall grant the request after determining that the artificial obstruction is likely to continue to prevent fish passage for a period of time exceeding that needed to regrow trees to a size that would provide key pieces of large wood.

(h) When an exception to Type F stream classification is made above an artificial obstruction to fish passage in accordance with (g), the State Forester shall classify the stream as either Type D or Type N as appropriate and operators must apply the corresponding vegetation retention requirements described in OAR 629-643-0100 through 629-643-0500.

(i) For the purposes of ORS 215.730(1)(b)(C), Type N streams are equivalent to "Class II streams."

(12) For the purposes of stream classification, the State Forester, in consultation with Department of Fish and Wildlife shall use the procedures in this section to determine if a stream has fish use or both fish use and SSBT use.

(a) Streams where the upstream extent of fish use is determined using field methods that also observe SSBT use where those stream segments have not previously been identified as having SSBT use, will be added to the Type SSBT

classification in accordance with the Data Standard and Update Protocol referenced in OAR 629-635-0200(13).

(b) For streams where SSBT use is based on observations or habitat, and where that use exists farther upstream than the upstream extent of fish use identified by field methods, the State Forester shall use the farthest upstream segment with SSBT use to reclassify the end of fish use.

(c) For streams where SSBT use is based on observations or habitat, and where that use exists farther upstream than the upstream extent of fish use identified by non-field methods, the State Forester shall use the farthest upstream segment with SSBT use to reclassify the end of fish use.

(d) For streams where SSBT use is based on concurrence of professional opinion, and where that use exists farther upstream than the upstream extent of fish use identified by field methods, the State Forester shall use the farthest upstream segment with fish use to reclassify the end of SSBT use.

(e) For streams where SSBT use is based on concurrence of professional opinion, and where that use exists farther upstream than the upstream extent of fish use identified by non-field methods, the State Forester shall use the farthest upstream segment with SSBT use to reclassify the end of fish use. The State Forester shall re-survey, using field methods, for the upstream extent of fish use upon written request from a landowner whose land immediately adjoins a Type SSBT stream segment described in this subsection.

(f) A landowner may provide evidence to the State Forester that clearly identifies a waterfall or chute type of natural barrier to SSBT use based on field methods described in (11). The State Forester shall evaluate that evidence and make a determination on whether or not to adjust the extent of SSBT use within 30 days of presentation of evidence.

(13) The State Forester will use the standards and procedures in this section to determine if a stream is Type SSBT.

(a) The State Forester will initially classify SSBT use stream segments based on the Fish Habitat Distribution Database on July 1, 2017, excluding historical use stream segments and stream segments identified using habitat evaluation based on modeling according to the Oregon Fish Habitat Distribution Data Standard, Version 3.0, February 2015 (Data Standard) and Oregon Department of Fish and Wildlife Fish Habitat Distribution Data Update Protocol, September 2005 (Update Protocol).

(b) When advised by the Department of Fish and Wildlife that new or higher quality data are available on the distribution of SSBT use, the State Forester will evaluate the need to reclassify SSBT use stream segments. Otherwise, evaluation of new or higher quality data and subsequent reclassification of SSBT use stream segments will occur at least every four years.

(c) As needed, the State Forester will reclassify SSBT use stream segments, except for stream segments added based on concurrence of professional opinion as defined in the Data Standard.

(d) The State Forester will apply SSBT use stream segments to operations described in notifications submitted after the date the stream segments are classified as Type SSBT.

(e) If the Data Standard or Stewardship Plan is revised substantively in any way, the State Forester and the Board of Forestry will evaluate if changes to this rule are required.

(f) Until the State Forester and the Board of Forestry have reviewed and approved revisions to the Data Standard or Stewardship Plan per subsection (13)(e), the State Forester will not reclassify SSBT use stream segments based on information from the new portions of the Department of Fish and Wildlife Data Standard or Update Protocol.

(14) In Eastern Oregon, the State Forester shall determine the classification of a Type Np stream as lateral type Np stream or terminal type Np stream, as defined in OAR 629-600-0100. The department's reporting and notification system will identify small Type Np streams. Where the location of the modeled end changes based on a valid field survey, as described in (18), then the State Forester shall promptly reclassify upstream segments as lateral or terminal type Np streams.

(15) For each of the five beneficial use categories listed in (4), streams shall be categorized further according to three size categories: large, medium, and small. The size categories are based on average annual flow.

(a) Small streams have an average annual flow of two cubic feet per second or less.

(b) Medium streams have an average annual flow greater than two and less than 10 cubic feet per second.

(c) Large streams have an average annual flow of 10 cubic feet per second or greater.

(16) The assignment of size categories to streams on forestland will be done by the State Forester as follows:

(a) The State Forester will index average annual flow to the upstream drainage area and average annual precipitation. The methodology is described in Forest Practices Technical Guidance. The State Forester shall calculate average annual flow for streams and publish the appropriate size classes in stream classification maps within the department's reporting and notification system.

(b) Actual measurements of average annual flow may substitute for the calculated flows described in the Forest Practices Technical Guidance.

(c) Any stream with a drainage area less than 200 acres shall be assigned to the small stream category regardless of the flow index calculated in (15)(a).

(17) Wetlands shall be classified further as indicated below:

(a) Significant wetlands, which are:

(A) Wetlands larger than 8 acres;

(B) Estuaries;

(C) Bogs; and

(D) Important springs in Eastern Oregon.

(b) Stream-associated wetlands that are less than 8 acres are classified according to the stream with which they are connected.

(c) All other wetlands, including seeps and springs are classified according to their size as either "other wetlands greater than one-quarter acre" or "other wetlands less than one-quarter acre."

(18) By July 1, 2023, the State Forester shall update all published maps and the department's reporting and notification system to include flow duration for streams in Western Oregon

and Eastern Oregon. The State Forester shall maintain in the department's reporting and notification system a map of perennial flow utilizing the following:

(a) Phase 1 Initial Mapping. The State Forester shall initially map perennial flow of Type N Streams using U.S. Geological Survey NHD high resolution data. The NHD stream layer may assist operational field surveys as described in OAR 629-643-0130 or 629-643-0143 but shall not provide for a modeled end. During this phase landowners shall apply the riparian management area prescriptions to all small Type N streams as described in OAR 629-643-0130 and OAR 629-643-0143, whether or not a stream is mapped as perennial. This requirement ends once the State Forester implements the Phase 2 model.

(b) Phase 2 Model. When advised by Department of Fish and Wildlife that an approved flow duration model sufficient for regulatory purposes is available, the State Forester shall promptly publish the information, including the modeled end, in all maps and the department's reporting and notification system, and in no event later than July 1, 2025.

(c) Field Verification. The operator may conduct field surveys for verification of the modeled end in accordance with Department of Fish and Wildlife field protocols for model verification. Once the verified end is approved by the Department of Fish and Wildlife, the State Forester shall substitute the verified end for the modeled end in all maps and the department's reporting and notification system.

629-635-0210

Designation of Waters; Notice to Landowners; Reconsideration

(1) The State Forester shall maintain a map showing the classification of waters of the state to assist operators who complete a notice of operations as required by ORS 527.670(6). The State Forester shall include in the map streams, lakes and significant wetlands of known classification and shall make the map publicly available. For streams, the State Forester shall ensure the maps indicate the size class and, when known, flow duration as perennial or seasonal; extent of fish use; extent of SSBT use; and domestic water use classification.

(2) Once a water of the state has been classified according to OAR 629-635-0200, the State Forester shall not change the classification without written notice to the landowners immediately adjoining the portion(s) of water to be reclassified. Notice to landowners shall include the reason for the change of classification and applicable rules.

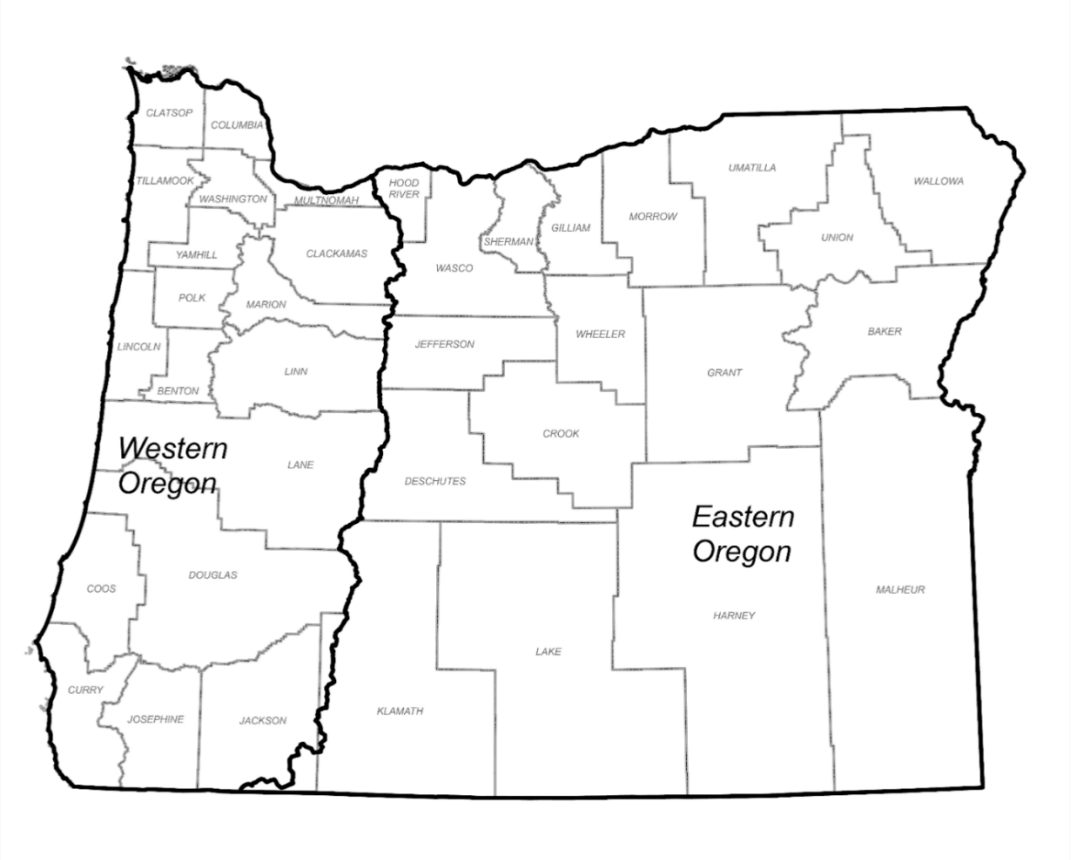
(3) Any landowner whose land immediately adjoins the water to be reclassified, any landowner who has received a water right or was granted an easement affecting the water classification, or any state resource agency may request reconsideration of classifications of waters of the state by the State Forester. Such a request shall be in writing and shall identify on a map the portion of the stream or water of the state which should be reconsidered. The request shall present evidence that the current classification is not consistent with OAR 629-635-0200.

(4) The State Forester, in consultation with Department of Fish and Wildlife and Water Resources Department, shall have up to 14 days to provide a final decision on a request for reconsideration of water classification. Until such a decision is provided, operators shall conduct any operation based upon the most protective potential water classification.

629-635-0220
Geographic Regions
For the purposes of assigning protection measures to waters of the state, the State Forester has defined two geographic regions west and east of the Cascade Crest in Oregon, depicted as Western Oregon and Eastern Oregon, respectively. The boundaries and names of the geographic regions are displayed in Figure 1. Geographic regions are not "forest regions" established pursuant to ORS 527.640.

[Insert Figure 1: Western Oregon and Eastern Oregon Geographic Regions]

Figure 1: Western Oregon and Eastern Oregon Geographic Regions



629-635-0300
Riparian Management Areas and Water Quality Protection Measures
(1) Riparian management area widths are designated to provide adequate areas along streams, lakes, and significant wetlands to retain the physical components and maintain the functions necessary to accomplish the purposes and to meet the protection objectives and goals for water quality, fish, and wildlife set forth in OAR 629-635-0100.
(2) Specified protection measures, such as for site preparation, yarding and stream channel changes, are required for operations near waters of the state and within riparian management areas to maintain water quality.

(3) Operators shall apply the specified water quality protection measures and protect riparian management areas along each side of streams and around other waters of the state as described in OAR 629-635-0310 through 629-660-0060.

(4) Operators may vary the width of the riparian management area above or below the average specified width depending upon topography, operational requirements, vegetation, fish and wildlife resources and water quality protection as long as vegetation retention and protection standards are met. However, the average width of the entire riparian management area within an operation must equal or exceed the required width.

629-635-0310

Riparian Management Area Measurements for Streams and Wetlands

(1) The riparian management area measurement widths for streams in each geographic region for both the standard practice prescriptions and small forest owner minimum option prescriptions are provided for each stream type and size classification in OAR 629-643-0100 through 629-643-0500. The measurement widths apply to each side of the stream.

(a) Except as indicated in section (2), the operator shall measure the riparian management area width using the slope distance. The operator shall measure the riparian management area from the edge of the active channel, or channel migration zone if a channel migration zone is present, as defined in OAR 629-600-0100, and consistent with this rule.

(b) Notwithstanding the distances designated in subsection (1)(a), where wetlands or side channels extend beyond the designated riparian management area widths, the operator shall expand the riparian management area as necessary to entirely include any stream-associated wetland or side channel plus at least 25 additional feet.

(2) In situations where the slope immediately adjacent to the stream channel is steep exposed soil, a rock bluff or talus slope, operators shall measure the riparian management area as a horizontal distance until the top of the exposed bank, bluff or talus slope is reached. From that point, the remaining portion of the riparian management area shall be measured as a slope distance.

Division 643
WATER PROTECTION RULES: VEGETATION ALONG STREAMS

629-643-0000
Vegetation Retention Goals for Streams; Desired Future Conditions

(1) The purpose of this rule is to describe the vegetation retention measures for streams, the measures' purposes, and how the measures shall be implemented. The vegetation retention requirements for streams, as described in OAR 629-643-0100 through 629-643-0500, are designed to produce desired future conditions for the wide range of stand types, channel conditions, and disturbance regimes that exist in Oregon's forestlands.

(2) Sections (3) through (6) of this rule, including tables in OAR 629-643-0300, are effective until replaced by the Board of Forestry as part of the post-disturbance harvest rulemaking directed by section 6(2)(a), chapter 33, Oregon Laws 2022 that is to occur no later than November 30, 2025.

(3) The desired future condition for streamside areas that require forested buffers is to grow and retain vegetation so that, over time, average conditions across the landscape become similar to the conditions of mature streamside stands. Oregon has a tremendous diversity of forest tree species and stand density along waters of the state. The age of mature streamside stands varies by tree species. Mature stands generally occur between 80 and 200 years of stand age. Hardwood stands and some conifer stands may become mature at an earlier age. Mature forests provide ample shade over the channel, an abundance of large wood in the channel, channel-influencing root masses along the edge of the high-water level, and regular inputs of nutrients through litter fall. Mature forests are generally composed of multi-aged trees of appropriate and varied density, native tree species well suited to the site, a mature understory, snags, and downed wood.

(4) For the forests specified in (2) above, the rule standards for desired future conditions and located in Western Oregon or the inner zone in Eastern Oregon can be developed by using normal conifer yield tables for the average upland stand consistent with the geographic region to estimate the conifer basal area for average unmanaged mature streamside stands (at age 120). For alternative vegetative prescription basal area targets for catastrophic events, see the tables in OAR 629-643-0300. For site specific vegetation retention prescriptions basal area targets, see the table in OAR 629-643-0400. These rule standards provide guidance for operators to implement site specific alternate plans, described in OAR 629-643-0300, and to develop site specific vegetation prescriptions, described in OAR 629-643-0400.

(5) The desired future condition for streamside areas that do not require tree retention areas, as defined in OAR 642-643-0130, is to have sufficient streamside vegetation to support the functions and processes important to downstream fish use waters and domestic water use, and to provide habitat for amphibians and other wildlife across the landscape. Such functions and processes include but are not limited to:

- (a) Maintaining downstream cool water temperature and other water quality parameters;
- (b) Influencing sediment production;
- (c) Stabilizing banks; and
- (d) Contributing nutrients and organic matter.

(6) In many cases, the operator may achieve the desired future condition for streams by applying the standard vegetation retention and small forestland owner minimum option prescriptions as described in OAR 629-643-0100, 629-643-0105, 629-643-0120, 629-643-0125, 629-643-0130, 629-643-0135, 629-643-0141, 629-643-0142, 629-643-0143, and 629-643-0145. In other cases, the existing streamside vegetation may not be able to develop into the desired future condition in a timely manner. In these cases, the operator may apply an alternative vegetation retention prescription as described in OAR 629-643-0300 or develop a site-specific vegetation retention prescription as described in OAR 629-643-0400. For the purposes of these water protection rules, "in a timely manner" means that the trees within the riparian management area will substantially move towards the desired future condition more quickly than if the trees are left untreated.

629-643-0100
Western Oregon; Standard Practice Vegetation Retention Prescription for Type F and Type SSBT Streams

Note: OAR 629-643-0100 applies to operations, except operations on small forestlands, for which a notification is filed under ORS 527.670(6) on or after July 1, 2023. This rule applies to all operations for which a notification is filed on or after January 1, 2024, or a notification filed prior to January 1, 2024, if the operation is not completed on or before December 31, 2023.

(1) The purpose of this rule is to provide the standard practice vegetation retention prescription for Western Oregon Type F and Type SSBT streams, as shown in Table 1. The riparian management area distances described in Table 1 are listed for each stream size category, as defined in OAR 629-635-0200. The operator shall apply the vegetation retention requirements described in this rule. Small forestland owners, as defined in OAR 629-600-0100, may follow the alternative vegetation retention option described in OAR 629-643-0141.

[Insert Table 1. Western Oregon Standard Practice Vegetation Retention Riparian Management Area Distances]

Table 1. Western Oregon Standard Practice Vegetation Retention Riparian Management Area Distances

Stream Type	Large	Medium	Small	Upstream distance
Type F or Type SSBT	**110 feet**	**110 feet**	**100 feet**	**N/A**
Type N	**75 feet**	**75 feet**	**See Type Np**	**N/A**
Type Np, into Type SSBT			**75 & 50**	**75 feet for 500 feet, then 50 feet for 650 feet. RH Max = 1,150 feet**
Type Np, into Type F			**75 feet**	**RH Max = 600 feet**
Type D	**75 feet**	**75 feet**	**75 or 20 feet[1]**	**See OAR 629-643-0150**

[1] 20 feet outside of Type Np vegetation retention requirements

(2) Within an operation, the operator shall not combine or average together the vegetation retention requirements for stream segments of streams that are in different size categories.
(3) The operator shall retain:
  (a) All trees and vegetation within the distances from the edge of the active channel or the channel migration zone, as described in Table 1; and
  (b) All trees leaning over the channel.
(4) Within riparian management areas the operator shall retain all downed wood and snags that are not safety or fire hazards. The operator shall leave snags felled for safety or fire hazard reasons where they are felled unless used for stream improvement projects.
(5) The operator may fall, move, or harvest vegetation, snags, and trees within the distances described in Table 1 as allowed in other rules for road construction and temporary stream crossings (OAR 629-625-0000 through 629-625-0920), yarding corridors (OAR 629-630-0000 through 629-630-0925), or for stream improvement (OAR 629-643-0200).
(6) The operator may conduct pre-commercial thinning and other release activities to maintain the growth and survival of reforestation or to promote fire resiliency within riparian management areas if the operator conforms to the following:
  (a) The operator shall ensure these activities contribute to and are consistent with enhancing the stand's ability to meet the desired future condition; and
  (b) The operator shall submit to the State Forester a written plan that describes how the operator will meet these requirements and the goals of the desired future condition.
(7) The operator may count retained trees within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676, as follows:
  (a) For all medium and large Type F and Type SSBT streams, the operator may count retained trees within the outer 20 feet of the distances described in Table 1 when those retained trees otherwise meet the wildlife leave trees requirements within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676.
  (b) For all small Type F and Type SSBT streams, the operator may count retained trees within the distances described in Table 1 that otherwise meet the wildlife leave trees requirements within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676.
(8) If the vegetation retention requirements span a road and a safety hazard presents a risk to road users, the operator may request that the State Forester approve a plan to remove trees upslope of the road. The State Forester shall authorize tree removal within the designated tree retention area only under the following conditions:
  (a) Within the tree retention area, the width of the area where trees may be harvested from the upslope edge of the road shall be less than 15 feet.
  (b) An equivalent basal area is retained elsewhere within the harvest unit adjacent to the tree retention area or designated debris flow traversal areas.

629-643-0105
Western Oregon Standard Practice Vegetation Retention Prescription for Type N Streams
(1) The purpose of this rule is to provide the standard practice vegetation retention prescription for Western Oregon Type N streams, as shown in Table 1. The riparian management area distances described in Table 1 are listed for each stream size category,

as defined in OAR 629-635-0200. The operator shall apply the vegetation retention requirements described in this rule. Small forestland owners, as defined in OAR 629-600-0100, may follow the alternative vegetation retention option described in OAR 629-643-0141.

[Insert Table 1. Western Oregon Standard Practice Vegetation Retention Riparian Management Area Distances]

Table 1. Western Oregon Standard Practice Vegetation Retention Riparian Management Area Distances

Stream Type	Large	Medium	Small	Upstream distance
Type F or Type SSBT	**110 feet**	**110 feet**	**100 feet**	**N/A**
Type N	**75 feet**	**75 feet**	**See Type Np**	**N/A**
Type Np, into Type SSBT			**75 & 50**	**75 feet for 500 feet, then 50 feet for 650 feet. RH Max = 1,150 feet**
Type Np, into Type F			**75 feet**	**RH Max = 600 feet**
Type D	**75 feet**	**75 feet**	**75 or 20 feet[1]**	**See OAR 629-643-0150**

[1] 20 feet outside of Type Np vegetation retention requirements

(2) The standard practice prescriptions and riparian management widths apply to Type N streams, depending on whether the stream classification is perennial (Np) or seasonal (Ns). The State Forester shall classify a Type N stream as Np or Ns following the process described in OAR 629-635-0200(18)(b) and (c).

(3) For large and medium Type N streams, the operator shall:
  (a) Retain all trees and vegetation within 75 feet from the edge of the active channel or channel migration zone.
  (b) Retain all trees leaning over the channel.

(4) For small Type Np streams flowing into a Type SSBT stream, the operator shall retain all trees within:
  (a) 75 feet from the edge of the active channel for a maximum distance of 500 feet upstream of the confluence of the Type SSBT stream; and
  (b) 50 feet from the edge of the active channel for a maximum additional distance of 650 feet upstream beyond the distance required by (a);
    (A) The operator shall determine the total distance of the tree retention area upstream of the confluence, as described in (a) and (b), according to the process in OAR 629-643-0130
    (B) This distance may extend to the RH max of 1,150 feet.
  (c) For locations upstream of the tree retention requirements in this rule, the operator shall apply an R-ELZ or ELZ as required in OAR 629-643-0130 and as further defined in OAR 629-630-0700(6) and 629-630-0800(8).

(5) For small Type Np streams flowing into a Type F stream, the operator shall retain all trees within 75 feet from the edge of the active channel for a distance not to exceed RH max of 600 feet upstream of the confluence with the Type F stream.

(a) The operator shall determine the total distance of the tree retention area according to the process in OAR 629-643-0130.

(b) For locations upstream of the tree retention requirements in this rule, the operator shall apply an R-ELZ or ELZ as required in OAR 629-643-0130 and as further defined in OAR 629-630-0700(6) and 629-630-0800(8).

(6) Within riparian management areas, the operator shall retain all downed wood and snags that are not safety or fire hazards. The operator shall leave all snags felled for safety or fire hazard reasons where they are felled unless used for stream improvement projects.

(7) The operator may fall, move, or harvest vegetation, snags, and trees within the distances described in Table 1 as allowed in other rules for road construction and temporary stream crossings (OAR 629-625-0000 through 629-625-0920), yarding corridors (OAR 629-630-0000 through 629-630-0925), or for stream improvement (OAR 629-643-0200).

(8) The operator may conduct pre-commercial thinning and other release activities to maintain the growth and survival of reforestation or to promote fire resiliency within riparian management areas if the operator conforms to the following:

(a) The operator shall ensure that such activities contribute to and are consistent with enhancing the stand's ability to meet the desired future condition.

(b) The operator shall submit to the State Forester a written plan that describes how the operator will meet these requirements and the goals of the desired future condition.

(9) For all Type Np or Type Ns streams, the operator may count all retained trees within the distances described in Table 1 that otherwise meet the wildlife leave trees requirements within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676.

(10) If the vegetation retention requirements span a road and a safety hazard presents a risk to road users, the operator may request that the State Forester approve a plan to remove trees upslope of the road. The State Forester shall authorize tree removal within the designated tree retention area only under the following conditions:

(a) Within the tree retention area, the width of the area where trees may be harvested from the upslope edge of the road shall be less than 15 feet.

(b) An equivalent basal area shall be retained elsewhere within the harvest unit adjacent to the tree retention area or designated debris flow traversal areas.

(11) For a Type Ns streams, the operator shall apply a 35-foot ELZ to each side of the channel as required in OAR 629-630-0700 and 629-630-0800.

629-643-0120

Eastern Oregon; Standard Practice Vegetation Retention Prescription for Type F and Type SSBT Streams

Note: OAR 629-643-0120 applies to operations, except operations on small forestlands, for which a notification is filed under ORS 527.670(6) on or after July 1, 2023. This rule applies to all operations for which a notification is filed on or after January 1, 2024, or a notification filed prior to January 1, 2024, if the operation is not completed on or before December 31, 2023.

(1) The purpose of this rule is to provide the standard practice vegetation retention prescription for Eastern Oregon Type F and Type SSBT streams, as shown in Table 2. The riparian management area distances described in Table 2 are listed for each stream size category, as defined in OAR 629-635-0200. The operator shall apply the vegetation retention requirements described in this rule. Small forestland owners, as defined in OAR

629-600-0100, may follow the alternative vegetation retention option described in OAR 629-643-0142.

[Table 2: Eastern Oregon Standard Practice Vegetation Retention Riparian Management Area Distances]

Table 2: Eastern Oregon Standard Practice Vegetation Retention Riparian Management Area Distances

Stream Type	Large		Medium		Small		Upstream distance[1]
	Inner	Outer[2]	Inner	Outer[2]	Inner	Outer[2]	
Type F or Type SSBT	30	70	30	70	30	45	-
Type N	30	45	30	45	-	-	-
Type Np, Terminal					30	30	RH Max = 500 feet
Type Np, Lateral					30	N/A	RH Max = 250 feet
Type D	30	-	30	-	30 or 20 feet[3]	-	See OAR 629-643-0150

[1] Upstream distance from either Type F or Type SSBT
[2] Outer Zone shall retain 60 square feet of basal area per acre; apply OAR 629-643-0120
[3] 20 feet outside of Type Np vegetation retention requirements

(2) Within an operation, the operator shall not combine or average together the vegetation retention requirements for stream segments of streams that are in different size categories.
(3) The operator shall retain:
  (a) All trees and vegetation within the inner zone, as described in Table 2, from the edge of the active channel or channel migration zone;
  (b) All trees leaning over the channel; and
  (c) A minimum of 60 square feet of basal area per acre within the outer zone and:
    (A) The outer zone distances for each stream size, as described in Table 2, for the outer zone, as measured from the edge of the inner zone. To meet the basal area target requirement, the operator shall retain 27 trees from the largest diameter class per acre.
    (B) The remainder of the trees shall consist of trees greater than eight inches DBH.
    (C) When present, retained species shall consist of ponderosa pine, Douglas-fir, Western larch, hardwoods, and other species that are considered fire-resilient.
    (D) Retained trees shall be well distributed within the outer zone, limited by existing site or stand condition
    (E) Notwithstanding (A) through (D) above, the distribution, species, and size of retained trees shall be left on site in a way that promotes fire resiliency and overall stand health.

(F) The operator shall submit to the State Forester a written plan that describes how the operator will meet these requirements and the goals of the desired future condition.

(4) The operator shall adhere to an ELZ in the outer zone, as required in OAR 629-643-0130 and as further defined in OAR 629-630-0700(6) and 629-630-0800(8).

(5) The operator may fall, move, or harvest vegetation, snags, and trees within the distances described in Table 2 and as allowed in other rules for road construction and temporary stream crossings (OAR 629-625-0000 through 629-625-0920), yarding corridors (OAR 629-630-0000 through 629-630-0925), or for stream improvement (OAR 629-643-0200).

(6) The operator may conduct pre-commercial thinning and other release activities to maintain the growth and survival of reforestation or to promote fire resiliency within riparian management areas if the operator conforms to the following:

(a) The operator shall ensure that such activities contribute to and are consistent with enhancing the stand's ability to meet the desired future condition.

(b) The operator shall submit to the State Forester a written plan that describes how the operator will meet these requirements and the goals of the desired future condition.

(7) The operator may count all retained trees in the outer zone that otherwise meet the wildlife leave trees requirements within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676.

(8) If the vegetation requirements span a road and a safety hazard presents a risk to road users, the operator may request that the State Forester approve a plan to remove trees upslope of the road. The State Forester shall authorize tree removal within the designated tree retention area only under the following conditions:

(a) Within the tree retention area, the width of the area where trees may be harvested from the upslope edge of the road shall be less than 15 feet.

(b) The operator retains an equivalent basal area elsewhere within the harvest unit adjacent to the tree retention area.

629-643-0125

Eastern Oregon; Standard Practice Vegetation Retention Prescription for Type N Streams

(1) The purpose of this rule is to provide the standard practice vegetation retention prescription for Eastern Oregon Type N streams, as shown in Table 2. The riparian management area distances described in Table 2 are listed for each stream size category, as defined in OAR 629-635-0200. The operator shall apply the vegetation retention requirements described in this rule. Small forestland owners, as defined in OAR 629-600-0100, may follow the alternative vegetation retention option described in OAR 629-643-0142.

[Table 2: Eastern Oregon Standard Practice Vegetation Retention Riparian Management Area Distances]

Table 2: Eastern Oregon Standard Practice Vegetation Retention Riparian Management Area Distances

Stream Type	Large	Medium	Small	Upstream distance[1]

	Inner	Outer[2]	Inner	Outer[2]	Inner	Outer[2]	
Type F or Type SSBT	**30**	**70**	**30**	**70**	**30**	**45**	**-**
Type N	**30**	**45**	**30**	**45**	**-**	**-**	**-**
Type Np, Terminal					**30**	**30**	**RH Max = 500 feet**
Type Np, Lateral					**30**	**N/A**	**RH Max = 250 feet**
Type D	**30**	**-**	**30**	**-**	**30 or 20 feet[3]**	**-**	**See OAR 629-643-0150**

[1] Upstream distance from either Type F or Type SSBT
[2] Outer zone shall retain 60 square feet of basal area per acre; apply OAR 629-643-0120
[3] 20 feet outside of Type Np vegetation retention requirements

(2) The standard practice prescriptions and riparian management widths apply to Type N streams, depending on whether the stream classification is perennial (Np) or seasonal (Ns). The State Forester shall determine the classification of a Type N stream as Np or Ns following the process described in OAR 629-635-0200(18).
  (a) To apply the appropriate vegetation requirements as described in Table 2, a small Type Np stream shall be classified as either terminal or lateral.
  (b) The State Forester shall provide maps that show the stream class.

(3) For large and medium Type Np streams, the operator shall:
  (a) Retain all trees and vegetation within the inner zone.
  (b) Retain all trees leaning over the channel.
    (A) For the outer zone, a minimum of 60 square feet of basal area per acre beyond the 30-foot inner zone, using the distances shown for the stream size described in Table 2. The operator shall measure the outer zone starting from the edge of the inner zone. To meet the basal area target requirement, the operator shall retain 27 trees from the largest diameter class per acre.
    (B) The remainder of the trees shall consist of trees greater than eight inches DBH.
    (C) When present, retained species shall consist of ponderosa pine, Douglas-fir, Western larch, hardwoods, and other species that are considered fire-resilient.
    (D) Retained trees shall be well distributed within the outer zone unless limited by existing site or stand conditions.
    (E) Notwithstanding (A) through (D) above, the distribution, species, and size of retained trees shall be left on site in such a way that promotes fire resiliency and overall stand health and shall be described in the written plan.
    (F) The operator shall submit to the State Forester a written plan that describes how the operator will meet these requirements and the goals of the desired future condition.
  (c) Adhere to an ELZ in the outer zone, for 30 feet extending from the outer edge of the inner zone.

(d) For locations upstream from the tree retention requirements in this rule, the operator shall apply an R-ELZ or ELZ as required in OAR 629-643-0130 and as further defined in OAR 629-630-0700(6) and 629-630-0800(8).

(4) For a small terminal Type Np stream flowing into a Type F or Type SSBT stream, the operator shall retain all trees within:

(a) 30 feet from the edge of the active channel, for a maximum distance of 500 feet upstream of the confluence with the Type F or Type SSBT stream. The operator shall determine the total distance of the tree retention area above the confluence according to the requirements in OAR 629-643-0130. This distance may extend to the RX max of 500 feet.

(b) Outside of 30 feet and extending to 60 feet from the active channel, the outer zone retention requirements shall apply upstream for the same distance required in (a) as follows:

(A) A minimum of 60 square feet of basal area per acre.

(B) To meet the basal area target requirement, the operator shall retain 27 trees from the largest diameter class per acre.

(C) The remainder of the trees shall consist of trees greater than eight inches DBH.

(D) When present, retained species shall consist of ponderosa pine, Douglas-fir, Western larch, hardwoods, and other species that are considered fire-resilient.

(E) Retained trees shall be well distributed within the outer zone limited by existing site or stand conditions.

(F) Notwithstanding (A) through (E) above, the distribution, species, and size of retained trees shall be left on site in such a way that promotes fire resiliency and overall stand health.

(G) The operator shall submit to the State Forester a written plan that describes how the operator shall meet these requirements and the desired future condition for the outer zone.

(c) The operator shall adhere to an ELZ in the outer zone for 30 feet, extending from the outer edge of the inner zone.

(d) For locations upstream from the tree retention requirements in this rule, the operator shall apply an R-ELZ or ELZ as required in OAR 629-643-0130 and as further defined in OAR 629-630-0700(6) and 629-630-0800(8).

(5) For small lateral Type Np streams flowing into a Type F or Type SSBT stream, the operator shall retain all trees within 30 feet from the edge of the active channel for a maximum distance of 250 feet upstream of the confluence with the Type F or Type SSBT stream.

(a) The operator shall determine the total distance of the tree retention area above the confluence according to the process in OAR 629-643-0130.

(b) The operator shall adhere to an ELZ in the inner zone for 30 feet, extending from the edge of the active channel.

(c) For locations upstream of the tree retention requirements in this rule, the operator shall apply an R-ELZ or ELZ as required in OAR 629-643-0130 and as further defined in OAR 629-630-0700(6) and 629-630-0800(8).

(6) For small Type Ns streams flowing into Type F or Type SSBT stream within 30 feet of the active channel, the operator shall:
  (a) Adhere to an R-ELZ for 750 feet extending the from the confluence and retain all shrubs and trees under six inches DBH to the extent that is practical due to site conditions.
  (b) Adhere to an ELZ upstream of the R-ELZ and for the remainder of the Type Ns channel.

(7) The operator may conduct pre-commercial thinning and other release activities to maintain the growth and survival of reforestation or to promote fire resiliency within riparian management areas if the operator conforms to the following:
  (a) The operator shall ensure that such activities contribute to and are consistent with enhancing the stand's ability to meet the desired future condition.
  (b) The operator shall submit to the State Forester a written plan that describes how the operator will meet these requirements and the goals of the desired future condition.

(8) If the vegetation retention requirements span a road and a safety hazard presents a risk to road users, the operator may request that the State Forester approve a plan to remove trees upslope of the road. The State Forester shall authorize tree removal within the designated tree retention area only under the following conditions:
  (a) Within the tree retention area, the width of the area where trees may be harvested from the upslope edge of the road shall be less than 15 feet.
  (b) An equivalent basal area is retained elsewhere within the harvest unit adjacent to the tree retention area.

(9) For all Type N streams, the operator may count all retained trees in the outer zone that otherwise meet the wildlife leave trees requirements within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676.

629-643-0130
Standard Practice Requirements for Small Type N Streams

(1) For purposes of determining the vegetation retention area and streamside retention requirements for a small Type Np stream that flows into a Type F or Type SSBT stream, the operator must, depending on the circumstance, retain trees based on distances relative to:
  (a) A verified end as described in OAR 629-635-0200(18)(c);
  (b) A modeled end as described in OAR 629-635-0200(18)(b); or
  (c) A location established pursuant to an operational field survey according to (6) in this rule.

(2) The operator shall apply the tree retention requirements based on the stream's location (Western Oregon or Eastern Oregon) and fish use classification (Type F or Type SSBT) immediately downstream from the small Type Np stream, as shown in Tables 1 through 4 for small Type Np streams.

[Table 1. Western Oregon Standard Practice Vegetation Retention Riparian Management Area Distances]

Table 1. Western Oregon Standard Practice Vegetation Retention Riparian Management Area Distances

Stream Type	Large	Medium	Small	Upstream distance
Type F or SSBT	**110 feet**	**110 feet**	**100 feet**	**N/A**
Type N	**75 feet**	**75 feet**	**See Type Np**	**N/A**
Type Np, into Type SSBT			**75 & 50**	**75 feet for 500, then 50 feet for 650 feet. RH Max = 1,150 feet**
Type Np, into Type F			**75 feet**	**RH Max = 600 feet**
Type D	**75 feet**	**75 feet**	**75 or 20 feet[1]**	**See OAR 629-643-0150**

[1] 20 feet outside of Type Np vegetation retention requirements

[Table 2: Eastern Oregon Standard Practice Vegetation Retention Riparian Management Area Distances]

Table 2: Eastern Oregon Standard Practice Vegetation Retention Riparian Management Area Distances

	Large		Medium		Small		Upstream distance[1]
	Inner	**Outer [2]**	**Inner**	**Outer [2]**	**Inner**	**Outer[2]**	
Type F or SSBT	**30**	**70**	**30**	**70**	**30**	**45**	**-**
Type N	**30**	**45**	**30**	**45**	**-**	**-**	**-**
Type Np, Terminal					**30**	**30**	**RH Max = 500 feet**
Type Np, Lateral					**30**	**N/A**	**RH Max = 250 feet**
Type D	**30**	**-**	**30**	**-**	**30 or 20 feet[3]**	**-**	**See OAR 629-643-0150**

[1] Upstream distance from either Type F or Type SSBT
[2] Outer Zone shall retain 60 square feet of basal area per acre; apply OAR 629-643-0120
[3] 20 feet outside of Type Np vegetation retention requirements

[Table 3: Western Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances]

Table 3: Western Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances

	Large	Medium	Small	Upstream distance[1]
Type SSBT	**100 feet**	**80 feet**	**60 feet**	**N/A**
Type F	**100 feet**	**70 feet**	**50 feet**	**N/A**
Type N	**70 feet**	**50 feet**	**See Type Np**	
Type Np, into Type SSBT			**35**	**RH Max = 1,150 feet**
Type Np, into Type F			**35**	**RH Max = 600 feet**
Type D	**75**	**75**	**35 or 20 feet[2]**	**See OAR 629-643-0150**

[1] Upstream distance from either Type F or Type SSBT
[2] 20 feet outside of Type Np vegetation retention requirements

[Table 4: Eastern Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances]

Table 4: Eastern Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances

	Large		Medium		Small		Upstream distance[1]
	Inner	**Outer**	**Inner**	**Outer**	**Inner**	**Outer[2]**	
Type F or Type SSBT	**30**	**70**	**30**	**50**	**30**	**30**	**N/A**
Type N	**30**	**45**	**30**	**30**	**-**	**-**	
Type Np, Terminal	**-**	**-**	**-**	**-**	**20**	**20**	**RH Max = 500 feet**
Type Np, Lateral	**-**	**-**	**-**	**-**	**20**	**N/A**	**250 feet**
Type D	**30**		**30**		**20**		**See OAR 629-643-0150**

[1] Upstream distance from either Type F or Type SSBT
[2] Outer Zone shall retain 60 square feet of basal area per acre; apply OAR 629-643-0120

(3) If the operator uses the standard practice, the operator shall use small Type Np tree retention area distances for width and the RH max as described in Tables 1 and 2. If a small forestland owner uses the small forestland owner minimum option, the small forestland owner shall use the small Type Np tree retention area distances for width and RH max described in Tables 3 and 4. The following requirements are considered the standard practice for small Type Np streams. For small forestland owners, operational field survey and tree retention requirements are available in OAR in 629-643-0143.

(4) If the Department of Fish and Wildlife has established a verified end pursuant to a model verification field survey, then:
  (a) The applicable tree retention area for small Type Np streams shall begin at the confluence of the fish use stream and extend upstream to the shorter of:
    (A) The verified end, in which case the operator shall extend the tree retention area using a radius equal to the width of the retention area; or
    (B) The RH max, in which case the end of the tree retention area shall be perpendicular to the stream channel.
  (b) An R-ELZ shall extend between the RH max and the verified end, when the verified end is upstream of the RH max.
  (c) An ELZ shall extend upstream to the remainder of the Type N channel.

(5) If the Department of Fish and Wildlife has not established a verified end pursuant to field survey, then the operator shall determine the extent of vegetation retained relative to either a modeled end, or pursuant to an operational field survey.
  (a) If the operator uses a modeled end:
    (A) The applicable tree retention area for small Type Np streams shall begin at the confluence of the fish use stream and extend upstream to the shorter of:
      (i) The modeled end, in which case the operator shall extend the tree retention area using a radius equal to the width of the retention area; or
      (ii) The RH max, in which case the end of the tree retention area shall be perpendicular to the stream channel.
    (B) An R-ELZ shall extend between the RH max and the modeled end, when the modeled end is upstream of the RH max.
    (C) An ELZ shall extend upstream to the remainder of the Type N channel.
  (b) If the operator uses an operational field survey, as described in this rule and OAR 629-635-0200(18):
    (A) The applicable tree retention area for small Type Np streams shall begin at the confluence of the fish use stream and extend upstream to the shorter of:
      (i) The upstream end of the most upstream flow feature within the area of inquiry, in which case the operator shall extend the tree retention area using a radius equal to the width of the retention area; or
      (ii) The RH max, in which case the upstream end of the tree retention area shall be perpendicular to the stream channel.
    (B) An R-ELZ shall extend from the RH Max to the most upstream flow feature within the area of inquiry, when such flow feature is upstream of the RH max.
    (C) If flowing water too short to be considered a flow feature is encountered upstream of the most upstream flow feature, and both are within the area of inquiry but downstream of the RH max, the operator shall:
      (i) Retain all trees within 50 feet of the flowing water; and

(ii) Extend an R-ELZ from the upstream end of the most upstream flow feature within the area of inquiry to the downstream end of the tree retention area described in Section 5(b)(C)(i).

(D) Notwithstanding any other requirement, the operator shall extend an ELZ upstream of the tree retention area or the R-ELZ, if any, for the remainder of the Type N channel as described in this rule.

(6) All operational field surveys conducted pursuant to Section 5(b) above and 7 below must comply with the following:

(a) During Phase 1, as described in OAR 629-635-0200(18)(a), an operator may conduct an operational field survey without advance notification to the Department of Fish and Wildlife, and the department shall allow a lower level of map precision for surveyed points, provided that any survey that uses a lower level of map precision will not be included in the department's reporting and notification system as described in (6)(d) below.

(b) Unless the survey is submitted pursuant to (6)(a) above, an operator must notify the Department of Fish and Wildlife in advance of conducting an operational field survey. The operator may notify the Department of Fish and Wildlife at any time prior to conducting the survey, including immediately prior, but no more than two years in advance. Once an operator has notified the Department of Fish and Wildlife of its intent to conduct a survey pursuant to this subsection (6)(b), any notification of operation submitted to the department's reporting and notification system for the surveyed area must include either:

(A) The completed survey, or

(B) A certification that the landowner did not initiate the survey.

(c) The State Forester, in consultation with Department of Fish and Wildlife, shall review all operational field surveys submitted pursuant to (6)(a) and (6)(b) above. Unless disapproved by the Department of Fish and Wildlife within 21 days following submission to the department, the field survey will define the relevant attributes of the layout described in Section 5(b) above and 7 below.

(d) Unless disapproved by the Department of Fish and Wildlife or submitted pursuant to (6)(a), the State Forester shall add the location and extent of the most upstream flow feature from an operational field survey to the department's reporting and notification system. Operators may rely upon and operate pursuant to prior operational field surveys recorded in the department's reporting and notification system.

(e) In coordination with Department of Fish and Wildlife, the State Forester shall provide an expeditious process for resolution of disapproved surveys.

(f) Once phase 2 flow modeling is complete, as described in 629-635-0200(18)(b), operational field surveys as described in 5(b) above or 7 below to determine the applicable tree retention area for small Type Np streams shall be constrained as follows:

(A) When an operator completes a survey during a drought year, as defined by the Department of Fish and Wildlife for the purpose of operational field surveys, the most upstream flow feature within the area of inquiry shall be the longer of:

(i) The modeled end, or

(ii) The uppermost flow feature within the area of inquiry.

(B) When an operator conducts a survey during an abnormally wet year, as defined by the Department of Fish and Wildlife for the purpose of operational field surveys, the area of inquiry shall stop at the modeled end.

(g) All operational field surveys must adhere to Department of Fish and Wildlife protocols for operational field surveys.

(h) The department shall publish Forest Practices Technical Guidance to assist operators with layout pursuant to operational field surveys.

(7) If an operator does not have the legal right to survey an entire area of inquiry due to the location of one or more property boundaries, the operator may conduct an operational field survey to determine small Type Np stream vegetation retention requirements as follows:

(a) If access to the neighboring property is available to the operator, the operator may complete a survey of the entire area of inquiry and complete layout as described in Section (5)(b).

(b) If the operation will take place on property downstream of the ownership boundary and the area of inquiry crosses the property boundary, the operator shall survey the portion of the area of inquiry legally accessible to the operator, and the extent of vegetation retention requirements shall adhere to the following:

(A) Where the department's reporting and notification system evidences a flow feature on the neighboring property upstream but still within the area of inquiry, then the tree retention area will begin at the confluence with a fish use stream and extend to the shorter of:

(i) The RH max, in which case the upstream end of the retention area shall be perpendicular to the stream channel; or

(ii) The property line.

(B) Where the department's reporting and notification evidences no flow feature upstream on the neighboring property upstream but still within the area of inquiry, then the applicable tree retention area for small Type Np streams shall begin at the confluence of the fish use stream and extend upstream to the shorter of:

(i) The RH max, in which case the upstream end of the retention area shall be perpendicular to the stream channel; or

(ii) The most upstream flow feature within the area surveyed by the operator, in which case the operator shall extend the tree retention area using a radius equal to the width of the retention area.

(C) An R-ELZ shall extend from the end of the tree retention area identified in (A) and (B) to the property boundary.

(D) If flowing water that is too short to be considered a flow feature is encountered within the area surveyed and upstream of the most upstream flow feature but downstream of the RH max the operator shall retain all trees within 50 feet of the flowing water.

(c) If the operation will take place on property upstream of an ownership boundary bisecting an area of inquiry, the operator shall presume that a flow feature ends immediately downstream of the ownership boundary, shall use map distances to determine the distance between the confluence and the property boundary, and the

remainder of the vegetation retention requirements for the small Type Np stream shall be laid out in in accordance with Section 5(b) above. In Phase 1, the area of inquiry for such an operation shall begin at the property ownership boundary.

629-643-0135
Standard Practice Vegetation Retention for Seeps and Springs, Side Channels, and Stream Associated Wetlands

(1) In Western Oregon, for seeps and springs located within the distances described in Table 1, the operator:
   (a) Shall retain all trees within 35 feet of the seeps and springs. Shall extend the designated riparian management area widths in Table 1, if necessary, to retain all trees beyond the seep or spring up to a maximum of 35 feet No additional tree retention area shall be required if the 35 feet of tree retention already exists within the retention area described in Table 1. The operator shall limit the length of additional tree retention area along the stream to the seep and spring feature length.
   (b) Is encouraged to retain trees that meet the wildlife leave trees requirements within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676, that are immediately adjacent to seeps and springs, as described in OAR 629-655-0000.

[Table 1. Western Oregon Standard Practice Vegetation Retention Riparian Management Area Distances]

Table 1. Western Oregon Standard Practice Vegetation Retention Riparian Management Area Distances

Stream Type	Large	Medium	Small	Upstream distance
Type F or Type SSBT	**110 feet**	**110 feet**	**100 feet**	**N/A**
Type N	**75 feet**	**75 feet**	**See Type Np**	**N/A**
Type Np, into Type SSBT			**75 & 50**	**75 feet for 500, then 50 feet for 650 feet. RH Max = 1,150 feet**
Type Np, into Type F			**75 feet**	**RH Max = 600 feet**
Type D	**75 feet**	**75 feet**	**75 or 20 feet[1]**	**See OAR 629-643-0150**

[1] 20 feet outside of Type Np vegetation retention requirements

(2) In Eastern Oregon, for seeps and springs located within the inner zone distances described in Table 2, the operator:
   (a) Shall retain all trees within 35 feet of seeps and springs by extending the riparian management area inner zone widths designated in Table 2, as needed. No additional tree retention area shall be required if the 35 feet of tree retention already exists within the retention area within inner zone described in Table 2. The operator shall limit the length of additional tree retention area along the stream to the seep and spring feature length. These rules do not apply to seeps and

springs that are identified as important springs, as described in OAR 629-645-0000.

(b) Is encouraged to retain trees that meet the wildlife leave trees requirements within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676, that are immediately adjacent to seeps and springs as described in OAR 629-655-0000.

[Table 2: Eastern Oregon Standard Practice Vegetation Retention Riparian Management Area Distances]

Table 2: Eastern Oregon Standard Practice Vegetation Retention Riparian Management Area Distances

Stream Type	Large		Medium		Small		Upstream distance[1]
	Inner	Outer[2]	Inner	Outer[2]	Inner	Outer[2]	
Type F or Type SSBT	30	70	30	70	30	45	-
Type N	30	45	30	45	-	-	-
Type Np, Terminal					30	30	RH Max = 500 feet
Type Np, Lateral					30	N/A	RH Max = 250 feet
Type D	30	-	30	-	30 or 20 feet[3]	-	See OAR 629-643-0150

[1] Upstream distance from either Type F or Type SSBT

[2] Outer Zone shall retain 60 square feet of basal area per acre; apply OAR 629-643-0120

[3] 20 feet outside of Type Np vegetation retention requirements

(3) In both Western Oregon and Eastern Oregon, for side channels and wetlands that extend beyond riparian management areas described in Tables 1 and 2, the operator shall expand the tree retention area to entirely include any stream associated wetland plus at least 25 additional feet.

629-643-0140
Small Forestland Owner Minimum Option Vegetation Retention Prescription Requirements

(1) The goals of the small forestland owner minimum option vegetation retention requirements are to recognize the inherent differences in the needs and requirements of these owners while meeting the overall objectives of the Private Forest Accord Report, including but not limited to:

(a) Minimizing the conversion of timberlands to other uses while recognizing conversion to other land uses may occur;

(b) Minimizing the conversion of timberlands through a system of incentives, education, and regulatory stability for the small forestland owner; and

(c) Providing a landowner who may face disproportionate economic impact from revised riparian vegetation retention rules with an optional prescription while

providing for equal environmental outcomes and the potential for increased financial outcomes.

(2) For the purposes of this rule, a landowner who qualifies as a small forestland owner, as described in OAR 629-607-0200, may use one of the following riparian vegetation retention options:

(a) The standard practice retention prescriptions described in Table 1 for Western Oregon and Table 2 for Eastern Oregon. The standard practice is available to optimize environmental benefits and mitigate risks to natural resources.

[Table 1. Western Oregon Standard Practice Vegetation Retention Riparian Management Area Distances]

Table 1. Western Oregon Standard Practice Vegetation Retention Riparian Management Area Distances

Stream Type	Large	Medium	Small	Upstream distance
Type F or Type SSBT	**110 feet**	**110 feet**	**100 feet**	**N/A**
Type N	**75 feet**	**75 feet**	**See Type Np**	**N/A**
Type Np, into Type SSBT			**75 & 50**	**75 feet for 500, then 50 feet for 650 feet. RH Max = 1,150 feet**
Type Np, into Type F			**75 feet**	**RH Max = 600 feet**
Type D	**75 feet**	**75 feet**	**75 or 20 feet[1]**	**See OAR 629-643-0150**

[1] 20 feet outside of Type Np vegetation retention requirements

[Table 2: Eastern Oregon Standard Practice Vegetation Retention Riparian Management Area Distances]

Table 2: Eastern Oregon Standard Practice Vegetation Retention Riparian Management Area Distances

Stream Type	Large		Medium		Small		Upstream distance[1]
	Inner	Outer[2]	Inner	Outer[2]	Inner	Outer[2]	
Type F or Type SSBT	**30**	**70**	**30**	**70**	**30**	**45**	**-**
Type N	**30**	**45**	**30**	**45**	**-**	**-**	**-**
Type Np, Terminal					**30**	**30**	**RH Max = 500 feet**
Type Np, Lateral					**30**	**N/A**	**RH Max = 250 feet**
Type D	**30**	**-**	**30**	**-**	**30 or 20 feet[3]**	**-**	**See OAR 629-643-0150**

[1] Upstream distance from either Type F or Type SSBT

[2] Outer Zone shall retain 60 square feet of basal area per acre; apply OAR 629-643-0120

[3] 20 feet outside of Type Np vegetation retention requirements

(b) The small forestland owner minimum option vegetation retention prescriptions described in Table 3 for Western Oregon and Table 4 for Eastern Oregon, as limited by the terms of this rule and OAR 629-607-0400. The small forestland owner minimum option prescription applies to harvest types 1, 2, and 3 within the riparian areas of both Western Oregon and Eastern Oregon streams.

[Table 3: Western Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances]

Table 3: Western Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances

Stream Type	Large	Medium	Small	Upstream distance[1]
Type SSBT	100 feet	80 feet	60 feet	N/A
Type F	100 feet	70 feet	50 feet	N/A
Type N	70 feet	50 feet	See Type Np	
Type Np, into Type SSBT			35	RH Max = 1,150 feet
Type Np, into Type F			35	RH Max = 600 feet
Type D	75	75	35 or 20 feet[2]	See OAR 629-643-0150

[1] Upstream distance from either Type F or Type SSBT
[2] 20 feet outside of Type Np vegetation retention requirements
[3] OAR 629-643-0143 describes all Type Np riparian vegetation requirements for small forestland owners

[Table 4: Eastern Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances]

Table 4: Eastern Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances

Stream Type	Large		Medium		Small		Upstream distance[1]
	Inner	Outer	Inner	Outer	Inner	Outer[2]	
Type F or Type SSBT	30	70	30	50	30	30	N/A
Type N	30	45	30	30	-	-	
Type Np, Terminal	-	-	-	-	20	20	RH Max = 500 feet
Type Np, Lateral	-	-	-	-	20	N/A	250 feet
Type D	30		30		20		See OAR 629-643-0150

[1] Upstream distance from either Type F or Type SSBT
[2] Outer Zone shall retain 60 square feet of basal area per acre; apply OAR 629-643-0120
[3] OAR 629-643-0143 describes all Type Np riparian vegetation requirements

(c) The forest conservation tax credit option. The standard practice riparian vegetation retention prescription with the option to apply for the forest conservation tax credit, as described in OAR 629-607-0400 through 629-607-0800. When the small forestland owner requests the forest conservation tax credit as part of a notice of operation, the State Forester shall review the request and notify the small forestland owner whether the small forestland owner is eligible for the credit. If the State Forester approves a request for a forest conservation tax credit, the small forestland owner shall receive a state tax credit for the stumpage value of this timber.

(3) Forest conservation tax credit. In addition to the small forestland owner minimum option, the small forestland owner may follow the standard practice vegetation retention requirements available to small forestland owners. When the small forestland owner selects the standard practice retention requirements in either Western Oregon or Eastern Oregon, the small forestland owner may apply for a forest conservation tax credit.

(a) A small forestland owner who selects the standard practice shall follow the same requirements in the standard practice retention rules for the riparian management area for harvest types 1, 2, and 3.

(b) A small forestland owner who selects the standard practice shall define the forest conservation area as the area between the outermost edge of the standard practice width and the outermost edge of the small forestland owner minimum option width.

(c) The forest conservation tax credit is equal to 100 percent of the stumpage value of standing trees that are retained in the forest conservation area, as described in OAR 629-607-0500. A small forestland owner who receives the forest conservation tax credit shall retain the trees within the forest conservation area for 50 years as required by the forest conservation tax credit program.

(d) A small forestland owner completing a harvest type 4 is not eligible to claim the forest conservation tax credit. No other limitations are in place for using a harvest type 4 within the fifth-field watershed.

(4) Fifth field watershed restriction for using the small forestland owner minimum option. There is a limit to the use of the small forestland owner minimum option within a fifth field watershed as delineated by the U.S. Geological Survey. It is limited to five percent of the riparian areas in a fifth field watershed within a five-year period. The department will track the use of the small forestland owner minimum options as described in (5)(b). Within 90 days after a small forestland owner completes a timber harvest adjacent to a riparian area, the small forestland owner who selects the small forestland owner minimum option shall report to the State Forester the total lineal feet of riparian area where the small forestland owner minimum option is applied within the harvest area. When reporting total lineal feet, the small forestland owner shall include each side of the stream. The small forestland owner shall report lineal feet in horizontal distance. The small forestland owner may use the small forestland owner minimum option harvest prescription in any defined fifth-field watershed based on the following criteria:

(a) When there are multiple small forestland owners within a fifth-field watershed, the small forestland owners within the watershed may use the small forestland owner minimum option for harvest types 1, 2, and 3 on no more than five percent of the total horizontal lineal feet of streams in the watershed. The five percent

maximum harvest limitation applies, in aggregate, to all small forestland owners within the fifth-field watershed. The five percent is measured within a five-year period.

(A) For the five percent maximum harvest limitation described in (a), the State Forester shall track stream distances for Type F and Type N streams separately. For this rule's tracking purposes, Type F streams shall include Type SSBT streams.

(B) The State Forester shall calculate the five percent maximum harvest limitation per fifth-field watershed using the five-year rolling average for each stream classification. The five percent maximum harvest limitation is calculated using the total horizontal lineal feet of riparian area harvest per stream classification (Type F or Type N), divided by the total available lineal feet of Type F and Type N streams in the defined watershed. Type F and Type N restrictions may be different in a fifth field watershed.

(i) Consideration of the five-year rolling average for calculating the lineal feet of riparian harvest shall be continuous.

(ii) Any harvest and the associated lineal feet that is older than five years shall be excluded from tracking and from the calculation of the watershed harvest limitation for each stream classification.

(C) The State Forester shall track lineal feet for each side of the stream associated with the small forestland owner minimum option tracking. Harvest occurring exclusively on one side of the stream shall be counted as one-half the lineal feet for the stream segment.

(b) When the five percent maximum harvest limitation exists for a defined watershed and the small forestland owner chooses to use the small forestland owner minimum option prescription, the small forestland owner may select from either option (A) or (B):

(A) Enroll on a waiting list to utilize the small forestland owner minimum option prescription at a time when the limitation has lowered below the calculation in (5)(a).

(i) The State Forester shall maintain and update the list on a first come, first served basis. The department shall notify any enrolled small forestland owner when the opportunity to utilize the small forestland owner minimum option becomes available.

(ii) After the State Forester provides the small forestland owner with a notification of eligibility, the small forestland owner shall elect to harvest according to the small forestland owner minimum option or forfeit priority on the waiting list.

(B) The small forestland owner may use the standard practice retention requirement and apply for a tax credit for the forest conservation area at 125 percent of the value for which the small forestland owner would have been eligible under the forest conservation tax credit program in OAR 629-607-0400 through 629-607-0800.

(c) OAR 629-607-0400(9) outlines a process if the forest conservation tax credit changes.

629-643-0141
Western Oregon; Small Forestland Owner Minimum Management Option Prescription

(1) The purpose of this rule is to provide the small forestland owner minimum option prescription for vegetation retention in Western Oregon riparian areas, as shown in Table 3.

[Table 3: Western Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances]

Table 3: Western Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances

Stream Type	Large	Medium	Small	Upstream distance[1]
Type SSBT	**100 feet**	**80 feet**	**60 feet**	**N/A**
Type F	**100 feet**	**70 feet**	**50 feet**	**N/A**
Type N	**70 feet**	**50 feet**	**See Type Np**	
Type Np, into Type SSBT			**35**	**RH Max = 1,150 feet**
Type Np, into Type F			**35**	**RH Max = 600 feet**
Type D	**75**	**75**	**35 or 20 feet[2]**	**See OAR 629-643-0150**

[1] Upstream distance from either Type F or Type SSBT
[2] 20 feet outside of Type Np vegetation retention requirements

(2) The small forestland owner shall apply the vegetation retention requirements to the riparian management areas of Type F, Type SSBT, and Type N streams. All other requirements for the standard practice prescription rules shall apply.

(3) The small forestland owner shall retain all trees and vegetation within the distances shown in Table 3, measured from the edge of the active channel or the channel migration zone, if a channel migration zone is present.

(4) For small Type Np streams flowing into a Type SSBT stream, the small forestland owner shall retain all trees as follows:
  (a) All trees within 35 feet of the active channel, for a maximum distance of 1,150 feet upstream of the Type SSBT stream.
  (b) The total distance of the tree retention area in (a) above the confluence according to the process in OAR 629-643-0143.
  (c) Locations outside the tree retention area retention requirements. The small forestland owner shall apply an R-ELZ or ELZ as required in OAR 629-643-0143.

(5) For small Type Np streams flowing into a Type F stream, the small forestland owner shall retain all trees as follows:
  (a) Within 35 feet of the active channel, for a maximum distance of 600 feet upstream of the Type F stream.
  (b) Above the confluence, the total distance of the tree retention area in (a) shall be determined according to the process in OAR 629-643-0143.

(c) Locations outside the tree retention area retention requirements, the small forestland owner shall apply an R-ELZ or ELZ as required in OAR 629-643-0143.

(6) For Type Np and Type Ns streams outside the tree retention area described in this rule, the small forestland owner shall follow all other Type N ELZ standard practice requirements as described in OAR 629-643-0105.

(7) The small forestland owner may count retained trees within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676, as follows:

(a) For all medium and large Type F and Type SSBT streams, retained trees within the outer 20 feet of the distances described in Table 3, that otherwise meet the wildlife leave trees requirements, may be counted towards the wildlife leave trees requirements within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676.

(b) For all small Type F and Type SSBT streams, and all Type N streams, retained trees that otherwise meet the wildlife leave trees requirements within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676, may be counted. Trees retained in the forest conservation area may be counted toward these requirements.

629-643-0142

Eastern Oregon; Small Forestland Owner Minimum Option Prescription

(1) The purpose of this rule is to provide the small forestland owner minimum option prescription for vegetation retention in Eastern Oregon riparian areas, as shown in Table 4.

[Table 4: Eastern Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances]

Table 4: Eastern Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances

Stream Type	Large		Medium		Small		Upstream distance[1]
	Inner	Outer	Inner	Outer	Inner	Outer[2]	
Type F or Type SSBT	30	70	30	50	30	30	N/A
Type N	30	45	30	30	-	-	
Type Np, Terminal	-	-	-	-	20	20	RH Max = 500 feet
Type Np, Lateral	-	-	-	-	20	N/A	250 feet
Type D	30		30		20		See OAR 629-643-0150

[1] Upstream distance from either Type F or Type SSBT

[2] Outer Zone shall retain 60 square feet of basal area per acre; apply OAR 629-643-0120

[3] OAR 629-643-0143 describes all Type Np riparian vegetation requirements

(2) The small forestland owner shall apply the vegetation retention requirements to the riparian management areas of Eastern Oregon Type F, Type SSBT, and Type N streams.

(3) All other requirements for the standard practice prescription rules shall apply.

(4) Both the small forestland owner minimum option and the standard practice prescriptions and riparian management widths apply to Type N streams depending on whether the stream classification is perennial (Np) or seasonal (Ns). The State Forester shall determine the classification of a Type N stream as Np or Ns following the process described in OAR 629-635-0200(18).
  (a) To apply the appropriate vegetation requirements as described in Tables 2 and 4, a small Type Np stream shall be classified as either terminal or lateral.
  (b) The State Forester shall provide these maps that show the stream classification. that identify the small Type Np streams.

(5) For all Type F, Type SSBT, and large and medium Type N streams, the small forestland owner shall:
  (a) Retain all trees and vegetation within the inner zone.
  (b) Retain all trees leaning over the channel.
    (A) For the outer zone, a minimum of 60 square feet of basal area per acre beyond the 30-foot inner zone, using the distances shown for the stream size described in Table 4. The small forestland owner shall measure the outer zone starting from the edge of the inner zone. To meet the basal area target requirement, the small forestland owner shall retain 27 trees from the largest diameter class per acre.

[Table 2: Eastern Oregon Standard Practice Vegetation Retention Riparian Management Area Distances]

Table 2: Eastern Oregon Standard Practice Vegetation Retention Riparian Management Area Distances

Stream Type	Large		Medium		Small		Upstream distance[1]
	Inner	Outer[2]	Inner	Outer[2]	Inner	Outer[2]	
Type F or Type SSBT	30	70	30	70	30	45	-
Type N	30	45	30	45	-	-	-
Type Np, Terminal					30	30	RH Max = 500 feet
Type Np, Lateral					30	N/A	RH Max = 250 feet
Type D	30	-	30	-	30 or 20 feet[3]	-	See OAR 629-643-0150

[1] Upstream distance from either Type F or Type SSBT
[2] Outer Zone shall retain 60 square feet of basal area per acre; apply OAR 629-643-0120
[3] 20 feet outside of Type Np vegetation retention requirements

  (B) The remainder of the trees shall consist of trees greater than eight inches DBH.
  (C) When present, retained species shall consist of ponderosa pine, Douglas-fir, Western larch, hardwoods, and other species that are considered fire-resilient.

(D) Retained trees shall be well distributed within the outer zone unless limited by existing site or stand conditions.

(E) Notwithstanding (A) through (D) above, the distribution, species, and size of retained trees shall be left on site in such a way that promotes fire resiliency and overall stand health, and shall be described in the written plan.

(c) The small forestland owner shall adhere to an ELZ in the outer zone for 30 feet, extending from the outer edge of the inner zone.

(6) For small terminal Type Np streams flowing into a Type F or Type SSBT stream, the small forestland owner shall retain:

(a) All trees within 20 feet from the edge of the active channel for a maximum distance of 500 feet upstream of the Type F stream, defined as the inner zone. The total distance of the tree retention area above the confluence shall be determined according to the process in OAR 629-643-0143.

(b) All trees leaning over the channel.

(c) Trees outside of 20 feet and at 40 feet from the edge of the active channel, defined as the outer zone. The outer zone retention requirements shall apply upstream for the same distance as required in (a) as follows:

(A) A minimum of 60 square feet of basal area per acre beyond the 20-foot inner zone and the distances shown in Table 4.

(B) To meet the basal area target requirement, the small forestland owner shall retain 27 trees from the largest diameter class per acre.

(C) The remainder of the trees shall consist of trees greater than eight inches DBH.

(D) When present, retained species shall consist of ponderosa pine, Douglas-fir, Western larch, hardwoods, and other species that are considered fire-resilient.

(E) Retained trees shall be well distributed within the outer zone limited by existing site or stand conditions.

(F) Notwithstanding (A) through (E) above, the distribution, species, and size of retained trees shall be left on site in such a way that promotes fire resiliency and overall stand health.

(d) The small forestland owner shall adhere to an R-ELZ or ELZ extending from the edge of the inner zone, extending the same distance as the distance determined in (a) as required in OAR 629-643-0143.

(e) The small forestland owner shall adhere to an ELZ upstream of the tree retention area for the remainder of the Type N channel.

(7) For small lateral Type Np streams flowing into a Type F or Type SSBT stream, the small forestland owner shall retain all trees within 20 feet from the edge of the active channel for a maximum distance of 250 feet upstream of the confluence with the Type F or Type SSBT stream.

(a) The small forestland owner shall determine the total distance of the tree retention area above the confluence as described in OAR 629-643-0143.

(b) The small forestland owner shall adhere to an R-ELZ or ELZ extending 50 feet from the edge of the active channel. The operator shall extend the R-ELZ or ELZ

the same distance as the distance determined in (a), as required in OAR 629-643-0143.

(c) The small forestland owner shall adhere to an ELZ upstream of the tree retention area and for the remainder of the Type N channel.

(8) For a small Type Ns stream, the small forestland owner shall retain all shrubs and trees under six inches DBH within 30 feet of the active channel or channel migration zone, and for 750 feet upstream of the confluence with the Type F or Type SSBT stream. The small forestland owner shall adhere to an ELZ from the edge of the active channel for the entire Type N stream.

(9) For Type Np and Type Ns streams outside the tree retention area described in this rule, the small forestland owner shall follow all other Type N ELZ standard practice requirements in OAR 629-643-0120.

(10) For all Type F, Type SSBT, and Type N streams, retained trees in the outer zone in Table 4 that otherwise meet the wildlife leave trees requirements may be counted toward wildlife leave trees requirements within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676. Trees in the forest conservation tax credit may be counted toward these requirements.

629-643-0143

Small Forestland Owners Small Type N Streams Vegetation Requirements

(1) The small forestland owner shall follow this rule for small Type N streams in addition to the rules described in OAR 629-643-0130. The small forestland owner shall apply the tree retention requirements according to OAR 629-643-0141 for Western Oregon and OAR 629-643-0142 for Eastern Oregon.

(a) If an area of inquiry extends beyond the small forestland owner ownership boundary and there is not a flow feature in the last 100 feet before reaching the small forestland owner's ownership boundary, the small forestland owner shall extend the tree retention area to the shorter of:

(A) The RH Max; or

(B) The furthest upstream flow feature within the ownership boundary.

(b) When the area of inquiry extends to the furthest upstream flow feature of the ownership boundary, the small forestland owner shall extend the R-ELZ beyond the furthest upstream flow feature within the ownership boundary to the ownership boundary, provided that prior surveys documented in the department's reporting and notification system identify evidence of a flow feature upstream of the ownership boundary that will alter the harvest zone layout.

(A) If the furthest identified upstream flow feature within the area of inquiry is below the RH Max, and flowing water that is too short to be considered a flow feature is encountered between the flow feature and the RH Max, the operator shall retain all trees within 35 feet of the flowing water; and

(B) The operator shall extend the R-ELZ from the furthest upstream flow feature within the area of inquiry to the tree retention area surrounding the flowing water.

(2) If the small forestland owner selects the standard practice, and there is 100 feet or more of surveyed dry stream between two flow features located downstream of the RH Max in which tree retention is required, the small forestland owner:

(a) May apply for a forest conservation tax credit for an amount that is half of the stumpage value of the retained tree located between the inside edge of the applicable small forestland owner minimum option distance and the edge of the stream.

(b) Shall retain all trees within the zone described in (a) regardless of whether the small forestland owner utilizes the forest conservation tax credit.

(3) The small forestland owner shall comply with all other requirements in the standard practice.

629-643-0145

Small Forestland Owner Minimum Option Prescription for Seeps and Springs

(1) The following prescriptions apply to seeps and springs located in Western Oregon:

(a) For seeps and springs located within the riparian management areas described in Table 3, the small forestland owner shall retain all trees within 15 feet of the seeps and springs. If the 15-foot retention for seeps and springs already exists within the riparian management area described in Table 3, the small forestland owner shall not be required to retain additional trees. The length along the stream of additional tree retention area shall be limited to the seep and spring feature length.

(b) The small forestland owner may retain trees that meet the wildlife leave trees requirements within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676, that are immediately adjacent to seeps and springs as described in OAR 629-655-0000.

[Table 3: Western Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances]

Table 3: Western Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances

Stream Type	Large	Medium	Small	Upstream distance[1]
Type SSBT	**100 feet**	**80 feet**	**60 feet**	**N/A**
Type F	**100 feet**	**70 feet**	**50 feet**	**N/A**
Type N	**70 feet**	**50 feet**	**See Type Np**	
Type Np, into Type SSBT			**35**	**RH Max = 1,150 feet**
Type Np, into Type F			**35**	**RH Max = 600 feet**
Type D	**75**	**75**	**35 or 20 feet[2]**	**See OAR 629-643-0150**

[1] Upstream distance from either Type F or Type SSBT

[2] 20 feet outside of Type Np vegetation retention requirements

(2) The following prescriptions apply to seeps and springs located in Eastern Oregon:

(a) For seeps and springs located within the inner zone distances described in Table 4, the small forestland owner shall retain all trees within 15 feet of the seeps and springs. No additional tree retention area shall be required if the 15 feet retention for seeps and springs already exists within the retention area described in Table 4.

The small forestland owner shall limit the additional tree retention area's length along the stream to the seep and spring feature length. These rules do not apply to seeps and springs that are identified as important springs, as described in OAR 629-645-0000.

(b) The small forestland owner may retain trees that meet the wildlife leave trees requirements within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676, that are immediately adjacent to seeps and springs, as described in OAR 629-655-0000.

[Table 4: Eastern Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances]

Table 4: Eastern Oregon Small Forestland Owner Minimum Option Vegetation Retention Riparian Management Area Distances

Stream Type	Large		Medium		Small		Upstream distance[1]
	Inner	Outer	Inner	Outer	Inner	Outer[2]	
Type F or Type SSBT	30	70	30	50	30	30	N/A
Type N	30	45	30	30	-	-	
Type Np, Terminal	-	-	-	-	20	20	RH Max = 500 feet
Type Np, Lateral	-	-	-	-	20	N/A	250 feet
Type D	30		30		20		See OAR 629-643-0150

[1] Upstream distance from either Type F or Type SSBT

[2] Outer Zone shall retain 60 square feet of basal area per acre; apply OAR 629-643-0120

(3) The small forestland owner shall submit a standardized form to the State Forester when using the small forestland owner minimum option around seeps or springs.

(4) In both Western Oregon and Eastern Oregon, if the tree retention area contains side channels and wetlands that extend beyond the riparian management areas described in Tables 3 and 4, the small forestland owner shall expand the tree retention area to entirely include any side channels and wetland plus at least 25 additional feet.

629-643-0150

Type D Vegetation Retention Requirements

(1) For classified small Type D stream segments that extend beyond the tree retention areas described in the Small Type Np requirements in OAR 629-643-0130 and OAR 629-643-0143, the operator shall retain in both Western Oregon and Eastern Oregon:
  (a) All understory vegetation with 10 feet of the active channel.
  (b) All trees within 20 feet of the edge the active channel.
  (c) All trees leaning over the channel.

(2) The operator may count retained trees along Type D streams that otherwise meet the requirements for wildlife leave trees within harvest type 2 or harvest type 3 units, pursuant to ORS 527.676.

(3) A small forestland owner shall not use the small forestland owner minimum option or tax credits for Type D streams.

629-643-0200

Placing Large Wood Key Pieces in Type F or Type SSBT Streams to Improve Fish Habitat

(1) In conjunction with a forest operation, placement of large wood key pieces in a Type F or Type SSBT stream to improve fish habitat is subject to the regulations in the Oregon Forest Practices Act and the forest practice rules.

(2) The goal of placing large wood key pieces is to deliver wood that is relatively stable but can reconfigure to a limited degree and work with the natural stream flow to restore and maintain habitat for aquatic species. When placing large wood key pieces in conjunction with an operation, the operator shall design and implement the project to:

  (a) Rely on the size of wood for stability and exclude the use of any type of artificial anchoring;

  (b) Emulate large wood delivery configurations that occur from natural riparian processes over time;

  (c) Restore and maintain natural aquatic habitat over time rather than rely on constructed habitat structures; and

  (d) Meet the standards established in "Guide to Placement of Wood, Boulders and Gravel for Habitat Restoration," developed by the Oregon Department of Forestry, Oregon Department of Fish and Wildlife, Oregon Department of State Lands, and Oregon Watershed Enhancement Board, January 2010.

629-643-0300

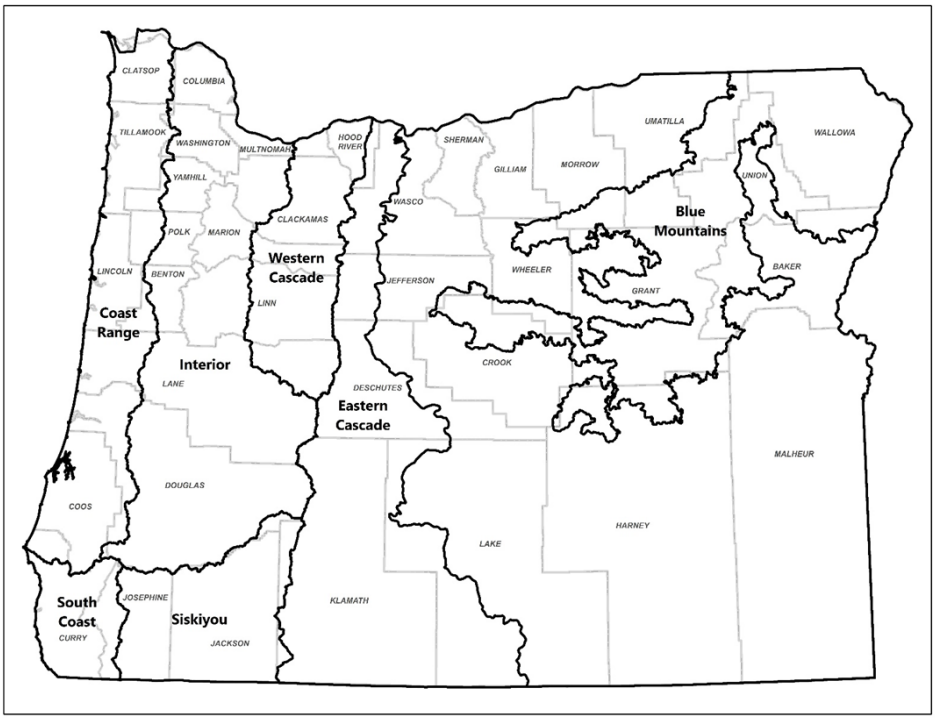
Alternative Vegetation Retention Prescriptions

(1) Alternative prescriptions are intended to apply to situations where the existing streamside stand is too sparse or contains too few live trees to maintain fish, wildlife, and water quality resources over time. Future desired streamside stand conditions are achieved through immediate manipulation of vegetation, including reforesting the riparian management area with conifer.

(2) Section (3) of this rule are alternative vegetation retention prescriptions described for the geographic areas in Figure 1, that the operator may apply if the basal area in the riparian management area is no more than one-half of the standard target indicated in either Table 5 or Table 6, as may be applicable, and conditions described in the alternative prescription are applicable.

[Figure 1. Geographic Areas, OAR 629-643-0300]

Figure 1. Geographic Areas, OAR 629-643-0300



[Table 5. Alternative Prescription Basal Area Table for Type F/SSBT Streams]

Table 5. Alternative Prescription Basal Area Table for Type F/SSBT Streams

Geographic Areas	SQUARE FEET OF BASAL AREA PER 1000 FEET OF STREAM EACH SIDE					
	LARGE TYPE F/SSBT		MEDIUM TYPE F/SSBT		SMALL TYPE F/SSBT	
	Standard Target	Active Mgt. Target	Standard Target	Active Mgt. Target	Standard Target	Active Mgt. Target
Coast Range, S. Coast	253	187	189	141	80	40
Interior & W. Cascades	297	220	220	173	80	40
Siskiyou	242	187	173	141	80	40
Eastern Cascade & Blue Mountain	170	130	129	100	75	75

[Table 6. Alternative Prescription Basal Area Table for Type D and Type N Streams]

Table 6. Alternative Prescription Basal Area Table for Type D and Type N Streams

Geographic Areas	SQUARE FEET OF BASAL AREA PER 1000 FEET OF STREAM, EACH SIDE		
	LARGE TYPE D and N	MEDIUM TYPE D and N	SMALL TYPE N and D
	Standard Target	Standard Target	Standard Target
Coast Range, S. Coast, & Siskiyou	96	75[1]	0
Interior & W. Cascades	118	75[1]	0
Eastern Cascade & Blue Mountain	75	75[1]	0

1 Hardwoods may count up to 30 square feet of basal area per 1000 feet toward meeting the standard target.

(3) Alternative vegetation retention prescription 1 (catastrophic events). This alternative prescription applies to streamside stands that have been damaged by wildfire or by catastrophic windthrow, or by insect or disease mortality. Such mortality must occur at the stand level and may not include normal endemic mortality. This alternative prescription is intended to provide adequate stream shade, woody debris, and bank stability for the future while creating conditions in the streamside area that will result in quick establishment of a new and healthy stand. The operator shall:

(a) Retain trees that have fallen in the stream. The operator may only harvest portions of these trees that are outside the high-water levels and do not contribute to the ability of the downed tree to withstand movement during high flows.

(b) Retain all live and dead trees within 20 feet of the high-water level of large and medium streams and 10 feet of the high-water level of small streams.

(c) For Type F and Type SSBT streams, retain live trees, dying or recently dead trees, and downed logs sufficient to satisfy the active management target shown in Table 5.

(d) For Type D and N streams, retain live trees, dying or recently dead trees, or downed logs sufficient to satisfy the standard target shown in Table 6.

(e) Retain live conifers first to meet the target. If live conifers are too few to satisfy the target, the operator shall meet the target as much as possible by including windthrown trees within the channel and dying or recently dead trees.

(f) For purposes of this prescription, the basal area of a windthrown tree in the channel or a retained dying or recently dead tree contributes two times its basal area toward meeting the target.

(4) Alternative vegetation retention prescription 2 (hardwood dominated sites). This alternative prescription applies to streamside sites that are capable of growing conifers, and where conifer stocking is currently low and unlikely to improve in a timely manner because of competition from hardwoods and brush. If portions of such riparian management areas currently contain abundant conifer basal area, it is intended that these areas of good conifer basal area be segregated and managed using the standard practice vegetation retention prescription while the remainder is managed according to this

alternative prescription. This alternative prescription is intended to provide adequate stream shade, some woody debris, and bank stability for the future while creating conditions in the streamside area that will result in quick establishment of a conifer stand. The operator shall:

(a) Submit to the State Forester a written plan that describes how the operator will meet these requirements and that demonstrates that the conversion will substantially improve the likelihood and timeline to reach the desired future condition.

(b) Evaluate the stand within the riparian management area and, where they exist, segregate segments 200 feet or more in length that are well-stocked with conifer, as identified from an aerial photograph, from the ground, or through other appropriate means. The standard practice vegetation retention prescription for vegetation retention shall be applied to these segments.

(c) For the remaining portion of the riparian management area that has lower conifer basal area, divide the riparian management area into conversion blocks and retention blocks.

(d) Include no more than half the total stream length in the harvest unit within conversion blocks. Conversion blocks shall be no more than 500 feet long and shall be separated from each other by at least:
  (A) 200 feet of retention block; or
  (B) A 200-foot segment where the standard practice vegetation retention prescription is applied.

(e) Within conversion blocks, the operator shall retain:
  (A) All trees growing in the stream, or within 10 feet of the stream's high-water level.
  (B) For large streams, all trees leaning over the channel within 20 feet of the high-water level of the stream.

(f) Within retention blocks the operator shall retain:
  (A) For large streams:
    (i) All conifer trees within 50 feet of the high-water level of the stream.
    (ii) All hardwood trees within 30 feet of the high-water level of the stream.
  (B) For medium streams:
    (i) All conifer trees within 30 feet of the high-water level of the stream.
    (ii) All hardwood trees within 20 feet of the high-water level of the stream.
  (C) For small streams, all trees within 20 feet of the high-water level of the stream.

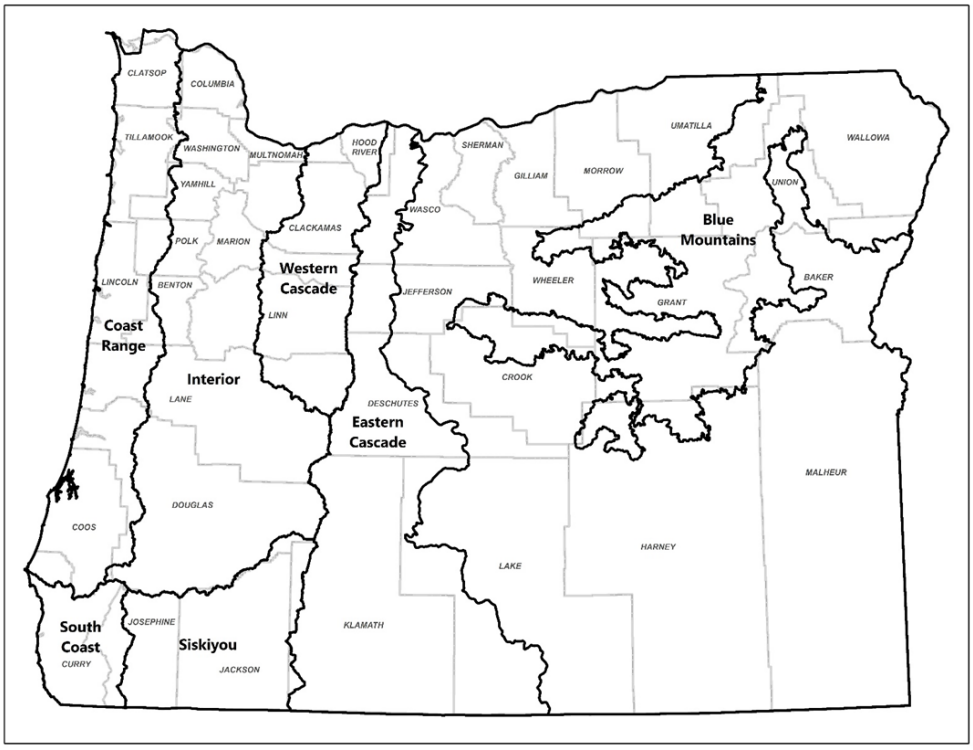
629-643-0400
Site Specific Vegetation Retention Prescriptions for Streams and Riparian Management Areas

(1) A primary purpose of these site-specific vegetation retention prescriptions in Table 7 and described for the geographic areas in Figure 1, is to identify opportunities and allow

incentives for restoring or enhancing riparian management areas or streams. Another purpose of site-specific vegetation retention prescriptions is to allow for changes to the vegetation retention requirements in this rule division. The changes must provide for the functions and values of streams and their riparian management areas as described in the vegetation retention goals for streams while affording a better opportunity to meet other objectives.

[Figure 1. Geographic Areas, OAR 629-643-0400]

Figure 1. Geographic Areas, OAR 629-643-0400



[Table 7. Site Specific Basal Area Targets]

Table 7. Site Specific Basal Area Targets

Geographic Areas	SQUARE FEET OF BASAL AREA PER 1000 FEET OF STREAM EACH SIDE		
	LARGE TYPE F	MEDIUM TYPE F	SMALL TYPE F
	RMA = 110 feet	RMA = 110 feet	RMA = 100 feet

Coast Range, S. Coast	**253**	**253**	**230**
Interior & W. Cascades	**297**	**297**	**270**
Siskiyou	**242**	**242**	**220**
	RMA = 30 feet	**RMA = 30 feet**	**RMA = 30 feet**
Eastern Cascade & Blue Mountain	**51**	**51**	**51**

(2) The operator may develop site specific vegetation retention prescriptions for streams and their riparian management areas to achieve the vegetation retention goals described in OAR 629-643-0000 if:
  (a) The potential of the streamside stand to achieve conditions similar to mature forest stands in a timely manner is questionable;
  (b) In-stream conditions are impaired due to inadequate large wood or other factors; or
  (c) The site-specific prescription would result in less environmental damage than the standard practice.

(3) An operator who wishes to implement site specific vegetation retention prescriptions instead of the standard practice shall submit to the State Forester a plan for an alternate practice.

(4) The State Forester shall approve a plan for an alternate practice if the State Forester determines that, when it is properly executed, the alternate plan will have no significant or permanent adverse effects, and:
  (a) The plan shall meet or exceed the vegetation retention goals in a more timely manner than if the plan were not implemented;
  (b) The long-term benefits of the plan are greater than short-term detrimental effects; or
  (c) The plan will result in less environmental damage than if the standard practice were followed.

(5) The State Forester may consider the following non-exhaustive list of factors in evaluating the plan:
  (a) The potential of the existing streamside stand to achieve mature streamside forest characteristics;
  (b) The long-term supply of woody debris;
  (c) The survival of newly established trees or shrubs;
  (d) Fish and wildlife species' sensitivity to changes in water temperature and water quality;
  (e) The potential for sedimentation;
  (f) The stability of woody debris placed in aquatic areas; and
  (g) The State Forester's ability to monitor the direct effects of the proposed practices.

629-643-0500
Reforestation Within Stream Riparian Management Areas

Harvested portions of riparian management areas along streams are subject to the same reforestation requirements that apply to adjacent areas that are outside of the riparian management areas. A number of factors make reforestation more difficult in riparian management areas. To succeed with the required reforestation, landowners should anticipate and plan for factors including but not limited to brush control measures, animal damage problems, and tree species that are suitable for wetter sites.

Division 655
WATER PROTECTION RULES: PROTECTION MEASURES FOR "OTHER WETLANDS," SEEPS AND SPRINGS

629-655-0000
Protection Measures for "Other Wetlands," Seeps and Springs

(1) Unless identified as stream-associated seeps, springs, or other wetlands under OAR 629-643-0135 and OAR 629-643-0145, there is no riparian management area for other wetlands, seeps, and springs. Important springs in Eastern Oregon, as described in division 645 Water Protection Rules: Riparian Management Areas and Protection Measures for Significant Wetlands rules, are not covered within this rule.

(2) When operating in or along other wetlands greater than one-quarter acre, the operator shall:
   (a) Protect soil and understory vegetation from disturbance that results in reduced water quality, hydrologic function, or soil productivity. Operators shall protect hydrologic functions by minimizing disturbances to soils during forest operations and shall prevent accelerating the natural conversions of wetlands to uplands;
   (b) Leave snags and downed trees in the wetlands, except for any snags determined by the State Forester to be fire hazards, or any snags that must be felled to achieve compliance with the safety requirements found in chapter 437, division 7, Forest Activities.
      (A) Any snags felled because of safety or fire hazards shall be left unyarded.
      (B) Snags and downed wood left within other wetlands, seeps, or springs may apply toward the requirements of ORS 527.676.

(3) When conducting operations along other wetlands less than one quarter acre, springs, or seeps, operators shall protect soil and vegetation from disturbances which would cause adverse effects on water quality, hydrologic function, and wildlife and aquatic habitat.

(4) Identification of other wetlands is sometimes difficult, especially when the wetland has no standing water. This is particularly true when the other wetland is forested or very small. In recognition of these facts, the State Forester shall apply appropriate discretion when determining compliance with this rule.

(5) Operators are encouraged to:
   (a) Retain blocks of intact vegetation, including green trees and snags as required to meet ORS 527.676 around other wetlands, seeps, and springs; and
   (b) For other wetlands that are forested, adequately consider how reforestation will be accomplished.

Division 670
FOREST PRACTICES ADMINISTRATION — ENFORCEMENT AND CIVIL PENALTIES

629-670-0000
Purpose
Note: This rule applies to all operations for which a notification is filed under ORS 527.670(6) on or after January 1, 2024 or a notification filed prior to January 1, 2024 if the operation is not completed on or before December 31, 2023. Rules that relate to fish streams apply to an operation, other than an operation on small forestland, for which a notification is filed on or after July 1, 2023.

OAR 629-670-0000 through 629-670-0350 shall be known as the Oregon Forest Practices Act Enforcement and Civil Penalty Rules. These rules direct the State Forester to take fair and uniform enforcement action when there is a violation of the Oregon Forest Practices Act (ORS 527.610 to 527.770; ORS 527.990(1), ORS 527.992) or laws relating to Pesticide Applications by Helicopter (ORS 527.786 to 527.798). OAR 629-670-0300 and 629-670-0310 provide an outline of contested case hearings procedures, with specific contested case rules in OAR 629, division 1 and OAR 137, division 3.

629-670-0010
Definitions
Note: This rule applies to all operations for which a notification is filed under ORS 527.670(6) on or after January 1, 2024 or a notification filed prior to January 1, 2024 if the operation is not completed on or before December 31, 2023. Rules that relate to fish streams apply to an operation, other than an operation on small forestland, for which a notification is filed on or after July 1, 2023.

As used in OAR chapter 629, divisions 670 through 680:

(1) "Board" means the State Board of Forestry.

(2) "Damage" means an adverse disturbance to a resource protected by the Oregon Forest Practices Act that cannot be immediately stabilized and corrected, resulting from a forest practice that is not in compliance with the Oregon Forest Practices Act or the forest practice rules.

(3) "Forest practice rule" means any rule regulating operations under the Oregon Forest Practices Act, as found in OAR chapter 629, divisions 600 through 680.

(4) "Operation" means any commercial activity relating to the establishment, management or harvest of forest tree species except as provided by the following:

  (a) The establishment, management or harvest of Christmas trees, as defined in ORS 571.505, on land used solely for the production of Christmas trees.

  (b) The establishment, management or harvest of hardwood timber, including but not limited to hybrid cottonwood that is:

    (A) Grown on land that has been prepared by intensive cultivation methods and that is cleared of competing vegetation for at least three years after tree planting;

    (B) Of a species marketable as fiber for inclusion in the furnish for manufacturing paper products;

    (C) Harvested on a rotation cycle that is 12 or fewer years after planting; and

(D) Subject to intensive agricultural practices such as fertilization, cultivation, irrigation, insect control and disease control.

(c) The establishment, management or harvest of trees actively farmed or cultured for the production of agricultural tree crops, including nuts, fruits, seeds and nursery stock.

(d) The establishment, management or harvest of ornamental, street or park trees within an urbanized area, as that term is defined in ORS 221.010.

(e) The management or harvest of juniper species conducted in a unit of less than 120 contiguous acres within a single ownership.

(f) The establishment or management of trees intended to mitigate the effects of agricultural practices on the environment or fish and wildlife resources, such as trees that are established or managed for windbreaks, riparian filters or shade strips immediately adjacent to actively farmed lands.

(g) The development of an approved land use change after timber harvest activities have been completed and land use conversion activities have commenced.

(5) "Operator" means any person, including a landowner or timber owner, who conducts an operation.

(6) “Plan for an Alternate Practice” means a document prepared by the landowner, operator or timber owner, submitted for approval in writing by the State Forester describing practices different than those prescribed in statute or administrative rule.

(7) "State Forester" means the State Forester or the duly authorized representative of the State Forester.

(8) "Timely corrective action" means action to be taken by the operator within a specified time to prevent or reverse the damage potentially caused by an unsatisfactory condition.

(9) “Repeat Violator” means an operator, timber owner or landowner for which a finding has been made by the State Forester under section 46(6), chapter 33, Oregon Laws 2022.

(10) “Significant violation” as defined in section 40(15), chapter 33, Oregon Laws 2022:

(a) “Significant violation” means:

(A) Violation of ORS 527.670(6) by engaging in an operation without filing the requisite notification;

(B) Continued operation in contravention of an order issued by the State Forester under ORS 527.680(2)(a), (3), or (5); or

(C) A violation resulting in major damage to a resource described in ORS 527.710(2) for which restoration is expected to take more than 10 years.

(b) “Significant violation” does not include:

(A) Unintentional operation in an area outside an operating area of an operation for which sufficient notification was filed pursuant to ORS 527.670(6);

(B) Continued operation in contravention of an order issued by the State Forester under ORS 527.680(2)(a), (3), or (5), where an operator demonstrates that it did not receive the order; or

(C) Failure to timely notify the State Forester of an intent to continue an operation into the next calendar year.

(11) "Unsatisfactory condition" means the circumstance which exists when an operator or landowner fails to comply with a practice specified in a forest practice rule or statute

listed in ORS 527.990(1) or 527.992 and the State Forester determines that all of the following conditions exist:

(a) The forest practice rule or statute applies to the type of operation conducted;

(b) The practice is necessary to meet the purpose of the statute or rule; and

(c) The operator has not been exempted from the rule or statute by obtaining approval for, or having obtained approval has not followed, a plan for an alternate practice as prescribed by OAR 629-605-0100.

(12) "Violation" means the circumstances which exist any time one or more of the following occurs:

(a) An operator fails to comply with any provision of ORS 527.670(6) or (7) requiring notification to the State Forester before commencing an operation.

(b) An unsatisfactory condition exists, and:

(A) Damage has resulted;

(B) The State Forester has determined that it is not feasible for the operator, by timely corrective action, to eliminate the consequences of the unsatisfactory condition; or

(C) A written statement of unsatisfactory condition has been issued to the operator, the deadline for action has passed and appropriate action has not been taken by the operator.

(c) The operator has failed to follow a procedural practice required in statute or rule including, but not limited to, failure to submit a required written plan.

(d) An operator has failed to comply with any term or condition of any order of the State Forester issued in accordance with ORS 527.680.

(13) "Written statement of unsatisfactory condition" means a written statement issued by the State Forester to a landowner or an operator that describes the nature of an unsatisfactory condition and that specifies the corrective action to be taken within a definite time limit.

629-670-0100

Inspections; Compliance Determination

Note: This rule applies to all operations for which a notification is filed under ORS 527.670(6) on or after January 1, 2024 or a notification filed prior to January 1, 2024 if the operation is not completed on or before December 31, 2023. Rules that relate to fish streams apply to an operation, other than an operation on small forestland, for which a notification is filed on or after July 1, 2023.

(1) The State Forester shall conduct inspections of operations consistent with section 43, chapter 34, Oregon Laws 2022.

(2) The State Forester shall conduct investigations of reported Oregon Forest Practices Act violations and make preventative and compliance inspections on forest operations subject to the Oregon Forest Practices Act.

(3) When inspecting operations, the State Forester shall examine practices used by the operator to assess compliance with the applicable forest practice rules and plans for an alternate practice. The State Forester may make recommendations that would help the operator avoid an unsatisfactory condition.

(4) When the State Forester determines that an unsatisfactory condition or a violation exists, enforcement action shall be initiated by the State Forester.

629-670-0200
Assessment of Civil Penalties; Notice of Penalty
Note: This rule applies to all operations for which a notification is filed under ORS 527.670(6) on or after January 1, 2024 or a notification filed prior to January 1, 2024 if the operation is not completed on or before December 31, 2023. Rules that relate to fish streams apply to an operation, other than an operation on small forestland, for which a notification is filed on or after July 1, 2023.

(1) In addition to any other remedy, the State Forester may assess a civil penalty for any violation described in ORS 527.992 (1) or 527.793.

(2) The purpose of this rule is to establish civil penalties that will be uniformly assessed by a civil penalty administrator who is appointed by the State Forester.

(3) After a citation is issued, the citation and any accompanying information shall be reviewed by a civil penalty administrator. The civil penalty administrator shall review the circumstances of the violation and determine the amount of penalty to be assessed.

(4) The State Forester shall give written notice of a civil penalty by certified and first class mail to the person incurring the penalty. The notice shall include but not be limited to:
   (a) A reference to the particular sections of the statute, rule, standard, order or permit involved;
   (b) A short and plain statement of the matters asserted or charged;
   (c) A statement of the amount of the penalty or penalties imposed and how it was calculated;
   (d) A statement that the party may request collaborative dispute resolution, within 20 days of service of the notice, in which an independent mediator would review the facts of the case, or facilitate any agreement to mitigate the penalty or penalties imposed;
   (e) A statement of the party's right to request a hearing within 20 days of service of the notice and an explanation of how a hearing or mitigation of a penalty may be requested;
   (f) A statement that the notice becomes a final order unless the person upon whom the civil penalty is assessed, makes a written request for a hearing within 20 days from the date of service of the notice; and
   (g) A statement that the record of the proceedings to date, including the agency file or files on the subject of the civil penalty, automatically becomes part of the contested case record upon default for the purpose of providing a prima facie case.

629-670-0210
Amount of Civil Penalties
Note: This rule applies to all operations for which a notification is filed under ORS 527.670(6) on or after January 1, 2024 or a notification filed prior to January 1, 2024 if the operation is not completed on or before December 31, 2023. Rules that relate to fish streams apply to an operation, other than an operation on small forestland, for which a notification is filed on or after July 1, 2023.

(1) The amount of civil penalty per violation shall be the lesser of $10,000 or the amount determined by the formula $B (C x P) + ($B x D x R) where:
   (a) $B is a base fine established by type of violation in section (2) of this rule;

(b) C is cooperation;
(c) P is prior knowledge or prior violations;
(d) D is damage to protected resources; and
(e) R is the extent of damage that cannot be corrected, or prevented in the future, even though repairs are made.

(2) The base penalty value ($B) shall be established as follows:
(a) A base penalty of $200 shall be applied to violations of a type where the operator fails to notify the State Forester of intent to operate or fails to submit a required written plan or obtain written approval of a plan for an alternate practice.
(b) A base penalty of $500 shall be applied to:
(A) Violations of any rule or statute which requires or sets standards for accomplishing reforestation.
(B) Violations involving a failure to comply with the terms or conditions of any order of the State Forester issued in accordance with ORS 527.680.
(C) Violations of a type where the operator fails to comply with any term or condition of an approved plan for an alternate practice.
(D) Violations where the State Forester determines that an operator has intentionally failed to notify the State Forester of intent to operate, notwithstanding subsection (2)(a) of this rule.
(E) All other violations of forest practice rules or statutes not specifically described in section (2) of this rule.
(c) A base penalty of $2000 shall be applied to violations of any rule or statute which sets a maximum size for harvesting operations.

(3) The cooperation value (C) shall be determined by the State Forester after reviewing whether the operator is taking all feasible steps or procedures necessary or appropriate to correct the violation for which the penalty is being assessed. The value shall be assigned as follows:
(a) A value of 0.5 shall be assigned when, in the judgment of the State Forester, the operator takes substantial initiative to correct the damage or problem that led to the violation. Substantial initiative may include, but is not limited to, reporting the violation before it is discovered, initiating effective repairs without having to be directed, or making substantive changes in operating procedures designed to identify and avoid potential recurrences.
(b) A value of 1 shall be assigned when the operator cooperates in following the direction of the State Forester by immediately ceasing further violation and taking prompt action to repair damage or correct any unsatisfactory condition where deemed feasible by the State Forester.
(c) A value of 2 shall be assigned when the State Forester determines that the operator does not immediately cease further violation, is evasive upon attempts to make necessary communications, or neglects to take necessary and timely action to repair damage or correct any unsatisfactory condition.

(4) The prior knowledge value (P) shall be determined by the State Forester after reviewing department records of citations, operation notification or operation inspections. A value from 0.5 through 10 shall be assigned as follows:

(a) A value of 0.5 is appropriate when the operator has little or no prior knowledge of the Oregon Forest Practices Act but has cooperated in ceasing violation and correcting unsatisfactory conditions.

(b) A value of 1 is appropriate when the operator has general knowledge of the Oregon Forest Practices Act and rules, but has not had significant past experience with the practice in question, or has significant past experience with the practice, but the violation is determined by the State Forester to be inadvertent or accidental.

(c) A value of 2 is appropriate when the operator has had significant past experience with a practice or condition, or has had specific correspondence or conversation with department personnel about the required practices or actions involved in the violation, before the violation.

(d) A value of 4 is appropriate when the State Forester has issued a written statement of unsatisfactory condition to the operator for the violation and timely corrective action was not taken.

(e) A value from 3 through 5 is appropriate when the operator has received citations for any other forest practice rule or statute within the past three years.

(f) A value from 5 to 10 shall be assigned when the operator has been cited within the past three years for a violation of the same forest practice rule, statute, or condition; or in a case of failure to comply with an order to cease further violation, or order to repair damage, or order to correct an unsatisfactory condition (ORS 527.680(2)).

(5) The damage value (D) shall be determined by the State Forester as a measure of extent or relative adverse effect of damage. The specific value applied shall be based on the pre-operation condition of the site, if known, the severity and extent of damage associated with the violation, and any potential economic gain to any involved operators. The damage value should be consistent with the policy of deterring future violations. A value from 0 through 20 shall be assigned. The following shall guide the State Forester's determination:

(a) A value of zero shall be assigned when the violation has not resulted and will not result in resource damage.

(b) A value of 1 shall be assigned when the adverse effects of the violation left uncorrected are minor and the affected resources will naturally self-restore within one year.

Example: Siltation from exposed soil flows into the upper reaches of a stream, but the site will naturally revegetate within the next growing season, preventing further siltation.

(c) A value from 2 to 5 shall be assigned when the damage from the violations left uncorrected is more serious than described in subsection (b) of this section, but the affected resources will self-restore naturally within five years.

Examples: A small volume debris avalanche is caused by road construction material placed in an unstable location and the debris comes to rest in a fish-bearing or domestic use water; or logs are skidded across a stream without an adequate temporary crossing leaving ruts and disturbed soil areas that will flow muddy water directly into the stream.

(d) A value from 5 through 10 shall be assigned when the damage from the violation left uncorrected is major in relative effect, with natural self-restoration taking up to 10 years. A consideration in selecting a value from 5 to 10 may include, but is not limited to the size of the area affected.
Examples: Failure to reforest five acres may be assigned no less than a 5, while failure to reforest 50 acres may be assigned a 10. Removal of understory vegetation along 500 feet of a small stream may be assigned a 10.

(e) A value from 5 through 20 shall be assigned when damage is the result of harvest or destruction of trees or snags required to be maintained; or when the damage from the violation left uncorrected is major in relative effect, with self-restoration taking more than 10 years.
Example: Severe riparian management area soil disturbance, combined with the total harvest or destruction of what had been a fully stocked stand of trees required to be maintained, along more than 500 feet of a small stream may be assigned a factor of 20.

(6) The repair value (R) shall be assigned by the State Forester as a measure of the relative extent of the damage that is corrected or prevented through timely corrective action. The value shall be set by the State Forester between 0 and 1, inclusive and expressed as a decimal. The decimal indicates the degree of damage that already occurred and future damage that cannot be prevented, even after the repairs are completed as directed in the repair order.
Example: A tractor crossed a stream with no temporary structure, breaking the stream banks down, leaving exposed skid trails which eroded, creating turbidity, and leaving visible sediment in the stream. With no repairs, the stream bank and skid trails would revegetate in 4 years. The landowner performed all repairs as ordered, including mulching, placing rip-rap, and building waterbars. In the State Forester's judgement, compliance with the repair order will prevent all but 20% of the potential damage expected over the next 4 years. Therefore R equals 0.20. If repairs are not feasible or are not completed, R equals 1.0.

629-670-0214
Civil Penalty Administrator Discretion

Note: This rule applies to all operations for which a notification is filed under ORS 527.670(6) on or after January 1, 2024 or a notification filed prior to January 1, 2024 if the operation is not completed on or before December 31, 2023. Rules that relate to fish streams apply to an operation, other than an operation on small forestland, for which a notification is filed on or after July 1, 2023.

(1) The civil penalty administrator shall have the discretion to combine violations for the sake of assessing reasonable penalties, under the following circumstances:
(a) Multiple citations have been issued for violations resulting from the same practice;
(b) Multiple citations have been issued for violations resulting in the same damage; or
(c) Upon a finding of the State Forester that a combination of violations is in the public interest and consistent with the policy of the Oregon Forest Practices Act, ORS 527.630.

(2) The civil penalty administrator shall have the discretion to find a penalty is not warranted for reforestation violation cases, when:
  (a) The party cited for the violation was not the landowner at the time the harvesting operation reduced stocking below the minimum standards; and
  (b) Planting is completed as directed in the repair order.

(3) The civil penalty administrator shall have the discretion to find a penalty is not warranted for cases where all of the following conditions exist:
  (a) The violation arose inadvertently;
  (b) There was little or no potential for damage;
  (c) No damage resulted; and
  (d) The cooperation of the operator shows there is little or no chance that the violation will be repeated.

(4) Penalties totaling less than $100 shall be suspended, pending no further violations within one year of issuance of the citation.

(5) The civil penalty administrator shall have the discretion to reduce the amount of the civil penalty when the party assessed:
  (a) Agrees to the facts of the case;
  (b) Accepts responsibility for the violation; and
  (c) Agrees to perform mitigation on the operation unit, or within the watershed, that is equal or greater in value than the amount by which the penalty will be reduced. Examples may include, but are not limited to, any of the following restoration and enhancement activities:
    (A) Reconstructing, relocating, or vacating roads that, because of their location, present a higher risk to water quality than if they had been located and designed to current forest practice rule standards;
    (B) Restoring or enhancing upstream and downstream fish passage, including replacing crossing structures not designed to current forest practice rule standards;
    (C) Restoring or enhancing fish habitat by placing large woody debris or other structures in or adjacent to stream channels;
    (D) Retaining conifers adjacent to streams, to supplement current forest practice rule requirements, consistent with forest health considerations;
    (E) Restoring or enhancing habitat for threatened and endangered species or other wildlife habitat;
    (F) Restoring or enhancing the protection of salmonid production areas. Salmonid production areas include habitat identified through stream or other inventories as being important for spawning, rearing, or over-wintering;
    (G) Participating in a research or monitoring program sponsored or endorsed by the Department of Forestry or the Department of Fish and Wildlife;
    (H) Participating with Watershed Councils to conduct watershed assessments, develop action plans or implement restoration projects;
    (I) Controlling noxious weeds or exotic species; or
    (J) Implementing strategies to reduce the risk of catastrophic fire or insect or disease damage.

(6) For the purpose of calculating civil penalties for a new violation, the civil penalty administrator shall consider a person's or entities' history of receiving temporary orders, orders of the state forester, citations, and violations. This may include consideration of:
  (a) As applies to individuals: business entities for which the individual was responsible for the actions of the business.
  (b) As applies to businesses: individuals who are responsible for the actions of the entity, and the history of the entity should it have changed its name, form, ownership, or structure.

629-670-0225
Significant Violation Civil Penalties that have been Committed by Repeat Violators
Note: This rule applies to all operations for which a notification is filed under ORS 527.670(6) on or after January 1, 2024 or a notification filed prior to January 1, 2024 if the operation is not completed on or before December 31, 2023. Rules that relate to fish streams apply to an operation, other than an operation on small forestland, for which a notification is filed on or after July 1, 2023.
(1) The purpose of this rule is to establish civil penalties for Significant Violations committed by Repeat Violators.
(2) Significant Violation civil penalty calculation when committed by a Repeat Violator:
  (a) The amount of civil penalty per Significant Violation shall be the lesser of $50,000 or the amount determined by the formula ($B (C x P) + ($B x D x R)) x N where:
    (A) $B is a base penalty of $2000 per (4)(b) of this rule;
    (B) C is cooperation;
    (C) P is prior knowledge or prior violations;
    (D) D is damage to protected resources;
    (E) R is the extent of damage that cannot be corrected, or prevented in the future, even though repairs are made; and
    (F) N is the average Number of Notifications yearly.
  (b) The base penalty value ($B) shall be $2000 for significant violations.
  (c) The cooperation value (C) shall be determined using OAR 629-670-0210(3).
  (d) The prior knowledge value (P) shall be determined using OAR 629-670-0210(4).
  (e) The damage value (D) shall be determined by using OAR 629-670-0210(5).
  (f) The repair value (R) shall be determined by using OAR 629-670-0210(6).
  (g) The average Number of Notifications yearly (N) shall be determined by the State Forester after reviewing the department's reporting and notification system records of Notifications to determine using a 5-year average when possible. A value of 0.8 to 1.0 shall be assigned as follows:
    (A) A value of 1.0 is appropriate when the operator has been listed on 1 through 50 notifications per year.
    (B) A value of 0.95 is appropriate when the operator has had been listed on 51 through 100 notifications per year.
    (C) A value of 0.9 is appropriate when the operator has been listed on 101 through 200 notifications per year.
    (D) A value of 0.85 is appropriate when the operator has been listed on 201 through 300 notifications per year.

(E) A value of 0.8 is appropriate when the operator has been listed on 301 or more notification per year.

(3) In imposing a civil penalty for repeat violators under this rule, the State Forester shall consider, in addition to the factors described in subsection (2) of this rule:

(a) The degree, if any, to which the operator, timber owner or landowner derived economic benefit from the significant violation.

(b) The proportion of total operations conducted by the operator, timber owner or landowner related to which significant violations have occurred compared to the total number of operations conducted by the operator, timber owner or landowner, while accounting for the organizational structure of the operator, timber owner or landowner.

629-670-0228

Repeat Violators and Financial Assurances

Note: This rule applies to all operations for which a notification is filed under ORS 527.670(6) on or after January 1, 2024 or a notification filed prior to January 1, 2024 if the operation is not completed on or before December 31, 2023. Rules that relate to fish streams apply to an operation, other than an operation on small forestland, for which a notification is filed on or after July 1, 2023.

(1) The purpose of this rule is to establish a process for tracking Repeat Violators and requirements for financial assurances.

(2) The State Forester may make a finding that an operator, timber owner or landowner is a Repeat Violator, pursuant to section 46(6), chapter 33, Oregon Laws 2022. The State Forester's finding shall consider whether the operator, timber owner or landowner has a history of significant violations that shows a pattern of willful disregard for the requirements of ORS 527.610 to 527.770 or rules or orders adopted or issued thereunder. The State Forester will maintain a list of Repeat Violators for use with civil penalty calculations and financial assurance.

(3) If the State Forester makes a finding under subsection (2), the State Forester shall provide notice to the operator, timber owner or landowner, who may challenge the decision as an order of the State Forester pursuant to OAR 629-672-0100.

(4) The State Forester shall remove a Repeat Violator from the Repeat Violator list three years after the last significant violation citation was issued. On rare occasions the State Forester may remove a Repeat Violator from the Repeat Violator list sooner than three years after the last significant violation citation if the Repeat Violator provides evidence sufficient to demonstrate that significant violations are unlikely to be repeated. In considering whether to remove the Repeat Violator from the list, the State Forester may consider:

(a) Date the last citation was issued;

(b) Changes in ownership, personnel, or contractors;

(c) Changes in training, techniques, or equipment;

(d) Recent violation history; and

(e) Any other evidence submitted or available to the department relevant to the potential for future significant violations.

(5) If required by the State Forester, an operator, timber owner or landowner shall provide financial assurance before conducting a new operation. The State Forester may impose

this requirement only if, within the preceding three-year period, the State Forester has made a finding under section 46(6), chapter 33, Oregon Laws 2022 applicable to the operator, timber owner or landowner. If required by the State Forester, the operator, timber owner or landowner shall acquire, post, and maintain a bond or other form of financial assurance as approved by the State Forester during the entire operation until the State Forester is notified that the operation is complete. The amount of the bond or financial assurance is based on the operation size or the operation type, whichever bond amount is greater:

(a) The operation acreage size:
  (A) Operations from 0 – 10 acres in size requires a bond of $20,000.
  (B) Operations from 11 – 25 acres in size requires a bond of $30,000.
  (C) Operations from 26 – 50 acres in size requires a bond of $40,000.
  (D) Operations 51 acres or great in size requires a bond of $60,000.

(b) The operation type:
  (A) Operations of all types of road construction or reconstruction without protected resources to include but not limited to HLHL, Streams, Stream Crossing, Wetlands requires a bond of $40,000.
  (B) Operations of all types of road construction or reconstruction with protected resources to include but not limited to HLHL, Streams, Stream Crossing, Wetlands requires a bond of $75,000.
  (C) Operations of pesticide application requires a bond of $30,000.

(c) If an operator, timber owner or landowner with a new operation involving two or more protected resources, the State Forester may assess a bond as appropriate for the risk of the operation up to a value of $250,000.

(6) The State Forester may make a claim against the bond or financial assurance and apply any money received towards correcting the conditions that give rise to the claim if the State Forester determines that:
(a) Actions required under the forest practice rules were not completed and the State Forester would incur costs to repair damage or correct an unsatisfactory condition;
(b) Protected resources were damaged;
(c) Fines or civil penalties that were assessed for the violation; or
(d) The actions taken during the operation otherwise caused the State Forester to incur costs to correct the conditions that gave rise to the claim.

629-670-0350
Orders Prohibiting New Operations

Note: This rule applies to all operations for which a notification is filed under ORS 527.670(6) on or after January 1, 2024 or a notification filed prior to January 1, 2024 if the operation is not completed on or before December 31, 2023. Rules that relate to fish streams apply to an operation, other than an operation on small forestland, for which a notification is filed on or after July 1, 2023.

(1) The purpose of this rule is to respond to situations where an operator or landowner has failed to complete repairs ordered by the State Forester to correct or mitigate damages resulting from a violation of forest practice rules, or has failed to pay civil penalties or

failed to obtain financial assurance as required by section 45(6), chapter 33, Oregon Laws 2022 and OAR 629-670-0225.

(2) If a final order directing a landowner or an operator to make reasonable efforts to repair damage or correct an unsatisfactory condition issued under ORS 527.680(2)(b) has not been complied with within the time specified by the order, the State Forester may issue an additional order that prohibits the landowner or operator from conducting any new operations on any forestland in Oregon until:
  (a) The repairs are completed or the unsatisfactory condition is corrected to the satisfaction of the State Forester; or
  (b) The order to prohibit conducting new operations has been revoked or modified following an appeal under the procedures of ORS 527.700.

(3) If a final order issued to a landowner or an operator under ORS 527.687 imposing civil penalties has not been complied with within the time specified by the order, the State Forester may issue an additional order that prohibits the landowner or operator from conducting any new operations on any forestland in Oregon until:
  (a) The civil penalty payment is received by the State Forester; or
  (b) The order to prohibit conducting new operations has been revoked or modified following an appeal under the procedures of ORS 527.700.

(4) If an operator, landowner, or timber owner fails to obtain and submit a required financial assurance to the State Forester as required in section 45(6), chapter 33, Oregon Laws 2022 and OAR 629-670-0225 before beginning the operation, the State Forester may issue an additional order that prohibits the landowner or operator from conducting any new operations on any forestland in Oregon until a financial assurance is filed with the State Forester as required in OAR 629-670-0225.

(5) The intent of an order issued under the provisions of section (2) or section (3) prohibiting a landowner or operator from conducting new operations is to compel timely compliance by the operator with either an order to repair damage or correct an unsatisfactory condition or a final order requiring payment of a civil penalty. Orders may be issued in addition to any other remedy available to the State Forester under statute or rule to compel compliance. Orders may be issued when, in the opinion of the State Forester, the other available remedies would likely be less effective in compelling compliance in a timely manner.

(6) For the purpose of this rule, "new operation" means any operation requiring notification to the State Forester under the provisions of OAR 629-605-0140 and 629-605-0150 for which a notification has not been received by the State Forester, or, if a notification has been received, operation activity has not started before an order prohibiting new operations is issued under sections (2) or (3) of this rule to the landowner or operator.

Division 672
FOREST PRACTICES ADMINISTRATION

629-672-0100
Orders of the State Forester

Note: This rule applies to all operations for which a notification is filed under ORS 527.670(6) on or after January 1, 2024 or a notification filed prior to January 1, 2024 if the operation is not completed on or before December 31, 2023. Rules that relate to fish streams apply to an operation, other than an operation on small forestland, for which a notification is filed on or after July 1, 2023.

(1) As used in OAR 629-672-0100 to 629-672-0310, order of the State Forester issued under ORS 527.610 to 527.770 means:
  (a) An order denying approval of a plan for an alternate practice (OAR 629-605-0173(3)).
  (b) An order to repair damage or correct unsatisfactory condition (ORS 527.680(2)(b)).
  (c) Temporary order to cease further activity (ORS 527.680(3)).
  (d) An order prohibiting new operations (ORS 527.680(5)).
  (e) An order denying approval of a stewardship agreement (ORS 527.662(13)).
  (f) An order requiring an operator, timber owner, or landowner to provide financial assurance pursuant to section 45(6), chapter 33, Oregon Laws 2022).
  (g) An order that an operator, timber owner or landowner has a history of significant violations pursuant to section 46(6), chapter 33, Oregon Laws 2022.

(2) Whenever an order affecting an operator, timber owner or landowner is issued under ORS 527.610 to 527.770, notice of the order shall be given to the affected party by personal service or certified mail. As used in this section, 'personal service' means service on the party by any officer, employee, or agent of the Oregon State Department of Forestry. The notice shall include:
  (a) A reference to the particular sections of the statute, rule, standard, order or permit involved;
  (b) A short and plain statement of the matters asserted or charged;
  (c) A statement of the person's right to request a hearing within 30 days from the date of service;
  (d) A statement that the notice becomes a final order unless the person makes a written request for a hearing within 30 days from the date of service or mailing of the notice; and
  (e) A statement that the record of the proceedings to date, including the agency file on the subject of the order automatically becomes part of the contested case record upon default, for the purpose of providing a prima facie case.

629-672-0200
Hearings for Operators, Landowners or Timber Owners

Note: This rule applies to all operations for which a notification is filed under ORS 527.670(6) on or after January 1, 2024 or a notification filed prior to January 1, 2024 if the operation is not completed on or before December 31, 2023. Rules that relate to fish streams apply to an operation, other than an operation on small forestland, for which a notification is filed on or after July 1, 2023.

(1) As provided in ORS 527.700(1), any operator, timber owner or landowner affected by a finding or order of the State Forester issued under ORS 527.610 to 527.770 and 527.992 may request a hearing within 30 days of the issuance of the order. The request for a hearing shall be in writing and must include a specific statement as to the reasons for disputing the State Forester's order, including but not limited to disagreement with any findings leading to the order. In addition, the request for hearing shall state what relief from the order is sought.

(2) Hearings under this rule shall be conducted as contested case proceedings under ORS 183.413 to 183.470.

(3) The hearing shall be commenced within 14 days after receipt of the request for hearing and a final order shall be issued within 28 days of the request for hearing unless all parties agree to an extension of the time limits.

(4) An administrative law judge from the Office of Administrative Hearings shall conduct hearings under ORS 527.700. The administrative law judge shall conduct the hearing and prepare the record for filing with the board within five working days of the close of the hearing. Except as provided in section (5) of this rule, no less than a majority of the board shall then review and consider the record, hold a meeting or telephone conference, and issue a final order.

(5) If upon a determination by the chairperson of the Board of Forestry, the board cannot complete a final order in the matter within 28 days of the request for a hearing, the chairperson may delegate the authority to issue a final order to the administrative law judge as provided in ORS 527.700(2).

(6) Failure of the person requesting the hearing to appear at the hearing shall be deemed a default and shall result in a final order being entered upon a prima facie case made on the record of the agency.

Division 678
COMPLIANCE MONITORING

629-678-0000
Purpose and Goals

(1) The purpose of the compliance monitoring program is to monitor forest practices rule implementation and analyze compliance rates.

(2) The compliance monitoring program shall assess the Forest Practices Act and rule compliance and report findings to the Board of Forestry, legislature, and federal services under the terms of an approved habitat conservation plan.

(3) The compliance monitoring program is intended to provide information that will allow for improvement in compliance of the forest practice rules through training, guidance, clarification, and targeted enforcement and to increase the public's trust in the implementation of the Forest Practice Act and Rules.

629-678-0100
Administration

(1) The Department of Forestry shall administer the compliance monitoring program.

(2) Compliance monitoring may be conducted by the department, through department contractors, or both.

(3) The department shall determine the status of the completion of forest activities that the State Forester received notification by the following measures:
  (a) Landowners shall inform the State Forester of the completion of notified forest activities, as described in OAR 629-605-0150(10); and
  (b) The State Forester is authorized under section 44, chapter 33, Oregon Laws 2022 to use the photogrammetric mapping for compliance monitoring.

(4) The compliance monitoring program shall be supported by a stakeholder group consisting of representatives with expertise in the rules being monitored, including but not limited to the department, landowners, operators, tribes, and public representatives.

(5) The board may direct the department to conduct compliance monitoring analysis for specific rules for multiple operations, multiple rules implemented at the operation unit level, or both, as appropriate to determine levels of compliance.

(6) The department shall develop study designs, including sample selection and evaluation criteria to ensure a high level of confidence in the statistical modeling findings, by doing the following:
  (a) Hire or consult an external, qualified statistician to aid in developing sample selection and evaluation criteria to ensure a high level of confidence in reported results;
  (b) Be informed by past board and third-party compliance monitoring program assessments and by similar reviews of other compliance monitoring programs in nearby states;
  (c) Explicitly define all sampling elements; and
  (d) Analyze rates of compliance at the appropriate temporal and spatial scale to reduce autocorrelation, variance, and statistical bias.

(7) Forest landowners shall accommodate the State Forester by allowing access to the operation site, for activities that they have informed the State Forester of completion, as described in OAR 629-605-0150(10).
(8) Notice shall be given to forest landowners before on-site compliance monitoring to provide the landowner an opportunity to be present with the State Forester.
(9) The State Forester may petition the circuit court with jurisdiction over the forestland for a warrant authorizing the State Forester property access to conduct compliance monitoring.
(10) When identified from the compliance monitoring, the department shall examine areas of noncompliance to determine the need for new training, guidance, rule clarification, or other action.

629-678-0110
Rule Group Priorities for Compliance
(1) The compliance monitoring program shall prioritize rules related to biological and aquatic resources, including the following:
  (a) Division 625 Forest Road Construction and Maintenance rules.
  (b) Division 630 Harvesting rules.
  (c) Division 643 Water Protection Rules: Vegetation Along Streams rules.
(2) The compliance monitoring program may monitor other rules as directed by the Board of Forestry.

629-678-0200
Reports
The compliance monitoring program shall develop the following information and monitoring reports:
(1) Information to support any required reporting to the federal services in support of a habitat conservation plan;
(2) Information to support an annual report to the public on the overall habitat conservation plan performance;
(3) A report to the Board of Forestry every two years that summarizes the results of completed compliance audits and provides a progress report of ongoing compliance monitoring efforts as described in OAR 629-678-0100(6)(a) through (d);
(4) An aggregate cumulative report every eight years that includes compliance trends since the beginning of the compliance monitoring program; and
(5) Other reports as directed by the board.

ESTERSON Sarah * ODOE

From: Sarah.ESTERSON@energy.oregon.gov
Subject: FW: Comments on B2H RFA1
Attachments: RFA1 Impact Analysis.xlsx

From: welchdj@comcast.net <welchdj@comcast.net>
Sent: Monday, July 17, 2023 11:32:01 AM
To: TARDAEWETHER Kellen * ODOE <kellen.tardaewether@energy.oregon.gov>
Cc: Dave PRICE <dlprice01@msn.com>; John Winner <swinner@dataentree.com>; 'John Briggs' <johnxbriggs@msn.com>; Jerry Eichhorst <jeichhotrails@gmail.com>; Sallie Riehl <sallieriehl@comcast.net>; Jenny Miller <rutnutqueen@gmail.com>
Subject: Comments on B2H RFA1

Mr. Tardaewether:

We have completed an analysis of each of the 47 changes in roads and transmission line routes as described in B2H RFA1. Our methodology was to identify significant impacts by calculating the distance to the change from the Oregon National Historic Trail (ONHT) and whether there was intervening terrain that would obscure the change. If the change was close to the trail (one-mile or less) and visible, we examined the impact. The results are summarized in the attachment.

Of the 47 locations examined, 11 are closer than one mile to the OHNT. Nine of these have no intervening terrain obscuring the change. A more detailed analysis of the remaining nine locations reveals only four of concern: Maps 1, 12, 13, and 16. Comments follow.

Map 1. The new road lies just outside the border with the Boardman Range. Just over the fence line (west) on the range are extensive Class 1 trail ruts. The location of the proposed road is to the east of the boundary. This area has long been in agricultural use with no obvious trail visible. However, while trail may not be obvious to an observer, there may be artifacts present that would reveal the trail. The trail location can be approximately very closely by extending the traces within the range eastward. Have archaeological studies of the area of the new road been conducted, and if so what in a general did they reveal?

Map 12 and 13. Our simulations do not include the effect of forest cover. We suspect that the new roads in this area will not be visible from the ONHT which is on the other side of I-84 on a ridgeline. Has this been verified?

Map 16. The location of the ONHT in the area of Clover Creek is not well documented. The construction of I-84 probably obliterated much of the original route. Through the BLM we have requested further studies and documentation of this area to provide better information on the

trail's location. Both the approved routing of the B2H transmission line and the new road will add to the degradation of the setting. The National Park Service's routing of the trail through this area can not be taken as definitive.

Please acknowledge receipt of these comments. Thank you for the opportunity to comment.

Dave Welch
Oregon-California Trails Association
welchdj@comcast.net

RFA1 Analysis (Last two digits are map number)	Amendment type	Shortest distance to trail	Obscuring terrain between site and shortest distance to trail	Integrity of trail and setting	Assessment
RFA1-1 01	Road	0.0 miles	No	Road is in agricultural area. Class 1 trail to the west of the Boardman boundary.	Disturbed area. Class 3 trail. Archaeological studies complete?
RFA1-1 02	Road	1.5 miles	No	Proposed change is in agricultural area	No impact.
RFA1-1 03	Road	7.6 miles	Yes	Not applicable	No impact.
RFA1-1 04	Road	8.4 miles	Yes	Not applicable	No impact.
RFA1-1 05	Road	19.7 miles	Yes	Not applicable	No impact.
RFA1-1 06	Road	18.3 miles	Yes	Not applicable	No impact.
RFA1-1 07	Road	17.3 miles	Yes	Not applicable	No impact.
RFA1-1 08	Road	17.3 miles	Yes	Not applicable	No impact.
RFA1-1 09	Road	17.4 miles	Yes	Not applicable	No impact.
RFA1-1 10	Road	2.9 miles	Yes	Emigrant Springs area. Class 2 or 3 trail.	No impact.
RFA1-1 11	Road	2.5 miles	Yes	Class 1 and 2 trail.	No impact.
RFA1-1 12	Road	1.0 miles	Yes	Class 1 and 2 trail.	No impact.
RFA1-1 12a	Road	0.4 miles	No	Class 1 and 2 trail.	Slight visual impact possible.
RFA1-1 13	Road	0.8 miles	Yes. Also forested.	California Gulch. Class 1 and 2 trail.	Slight visual impact possible.
RFA1-1 14	Road	0.9 miles	Yes. Also forested.	Class 1 and 2 trail.	No impact.
RFA1-1 15 ML	Road	1.4 miles	Yes	Class 1 and 2 trail.	No impact.
RFA1-1 16 CC	Road	0.0 miles	No	Clover Creek and I-84 area. Trail location uncertain.	Area needs further analysis.
RFA1-1 17	Road	1.4 miles	No	Class 4?	Little impact. Other intrusions in the area.
RFA1-1 18	Road	3.6 miles	Yes	Class 1 and 2 trail.	No impact.
RFA1-1 18a	Road	2.6 miles	Yes	Class 1 and 2 trail.	No impact.
RFA1-1 19	Road	2.4 miles	Yes	Class 1 and 2 trail.	No impact.
RFA1-1 20	Road	0.3 miles	Yes	Straw Creek Ranch. Class 1 and 2 trail.	No impact.
RFA1-1 21	Road	0.7 miles	Yes	Class 2 or 3 trail.	No impact.
RFA1-1 22	Road	1.7 miles	Yes	Class 2 or 3 trail.	No impact.
RFA1-1 22a DK	Road	3.9 miles	Yes	Class 3 or 4 trail	No impact.
RFA1-1 23	Road	2.7 miles	Yes	Class 3 or 4 trail	No impact.
RFA1-1 24	Road	3.7 miles	Yes	Class 2 trail	No impact.
RFA1-1 25	Road	1.6 miles	Yes	Class 3 or 4 trail	Probably no impact. Other intrusions in the area.
RFA1-1 25a	Road	1.7 miles	No	Class 3 or 4 trail	Probably no impact. Other intrusions in the area.
RFA1-1 26	Road	0.5 miles	No	Class 3 or 4 trail	Probably no impact. Other intrusions in the area.

RFA1 Analysis (Last two digits are map number)	Amendment type	Shortest distance to trail	Obscuring terrain between site and shortest distance to trail	Integrity of trail and setting	Assessment
RFA1-1 27 BR	Road	1.0 miles	Yes	Class 1 or 2 trail.	No impact.
RFA1-1 28	Road	0.7 miles	Probably yes.	Class 1 trail.	Probably no impact. Other intrusions in the area.
RFA1-1 29	Road	2.7 miles	Yes	Class 2 trail.	No impact.
RFA1-1 30	Road	2.8 miles	Probably yes.	Class 2 trail.	No impact. Modification beyond disturbed agricultural area.
RFA1-1 31	Road	5.2 miles	Yes	Class 2 trail.	No impact.
RFA1-1 32	Road	6.4 miles	Yes	Class 2 trail.	No impact.
RFA1-1 33	Road	11.2 miles	Yes	Class 4 trail.	No impact.
RFA1-1 34	Road	11.4 miles	Yes	Class 4 trail.	No impact.
RFA1-1 35	Road	8.9 miles	Yes	Class 2 trail.	No impact.
RFA1-1 36	Road	7.3 miles	Yes	Class 1 trail.	No impact.
RFA1-1 37	Road	6.5 miles	Yes	Class 1 trail.	No impact.
RFA1-1 38	Road	6.2 miles	Yes	Class 1 trail.	No impact.
RFA1-1 39	Road	3.4 miles	Yes	Class 3 trail.	No impact.
RFA1-1 40	Road	7.2 miles	Yes	Class 3 trail.	No impact.
RFA1-1 41	Road	7.2 miles	Yes	Class 3 trail.	No impact.
RFA1-2 01	TL reroute	5.3 miles	Probably yes.	Class 2 and 3 trail.	No impact.
RFA1-2 02	TL reroute	3.9 miles	No	Class 2, 3 or 4 trail.	No impact at 4.0 miles.
RFA1-2 03	TL reroute	5.4 miles	Yes	Class 2 and 3 trail.	No impact.
RFA1-2 04	TL reroute	4.4 miles	Yes	Class 2 and 3 trail.	No impact.
RFA1-2 05	TL reroute	0.5 miles	No. Top of towers visible. Other TLs in the area.	Class 2 and 3 traiil.	Little impact. Other intrusions in the area.
RFA1-2 06	TL reroute	1.8 miles	Yes	Class 1 and 2 trail.	No impact.

Attachment 3: Certificate Holder Responses to DPO Comments

Attachment 4-1. RFA Supplement to Final Order Attachment B-5 Appendix A

Unique ID	Mapbook	Map Number	RFA Name	Road Classification	Ownership	Access Control	Other	Percent Modification	Road Length (feet)	Construction Width (feet)	Operations Width (feet)	Construction Disturbance (acres)	Operation Disturbance (acres)	Temporary Disturbance (acres)	Spur Road	Traffic Volume Increase	Wildlife	Include in Indirect	Sage-grouse	Elk
BA-228b	Figure 4-2	18	Proposed Route	New Road, Bladed	Private	NA	NA	100%	731.74	35	14	0.59	0.24	0.35					NA	NA
BA-601	Figure 4-1	5	Durbin Quarry	New Road, Bladed	BLM	NA	NA	100%	3,442.50	35	14	2.77	1.11	1.66					Yes	Yes
BA-601	Figure 4-1	5	Durbin Quarry	New Road, Bladed	Private	NA	NA	100%	2,190.70	35	14	1.76	0.70	1.06					Yes	Yes
BA-602	Figure 4-1	5, 6	Durbin Quarry	New Road, Bladed	BLM	NA	NA	100%	6,728.61	35	14	5.41	2.16	3.24					Yes	Yes
BA-615	Figure 4-2	23	Proposed Route	Existing Road, Substantial Modification, 71-100% Improvements	Private	NA	NA	100%	5,815.22	30	14	4.00	1.87	2.14					NA	NA
BA-621	Figure 4-1	2	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	BLM	NA	NA	100%	1,332.66	30	14	0.92	0.43	0.49					NA	NA
BA-622	Figure 4-1	2	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	Private	NA	NA	100%	145.76	30	14	0.10	0.05	0.05					NA	NA
BA-623	Figure 4-1	2	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	BLM	NA	NA	100%	737.13	30	14	0.51	0.24	0.27					NA	NA
BA-624	Figure 4-1	2	True Blue Gulch	New Road, Bladed	BLM	NA	NA	100%	828.00	35	14	0.67	0.27	0.40					NA	NA
BA-624	Figure 4-1	2	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	252.90	35	14	0.20	0.08	0.12					NA	NA
BA-625	Figure 4-1	2	True Blue Gulch	New Road, Bladed	BLM	NA	NA	100%	1,747.35	35	14	1.40	0.56	0.84					NA	NA
BA-626	Figure 4-1	2	True Blue Gulch	New Road, Bladed	BLM	NA	NA	100%	998.20	35	14	0.80	0.32	0.48					NA	NA
BA-626	Figure 4-1	2	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	874.80	35	14	0.70	0.28	0.42					NA	NA
BA-627	Figure 4-1	3	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	Private	NA	NA	100%	1,621.71	30	14	1.12	0.52	0.60					No	Yes
BA-628	Figure 4-1	3	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	BLM	NA	NA	100%	308.20	30	14	0.21	0.10	0.11					No	Yes
BA-628	Figure 4-1	3	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	Private	NA	NA	100%	6,642.20	30	14	4.57	2.13	2.44					NA	NA
BA-629	Figure 4-1	2, 3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	927.60	35	14	0.75	0.30	0.45					NA	NA
BA-630	Figure 4-1	2	True Blue Gulch	New Road, Bladed	BLM	NA	NA	100%	790.40	35	14	0.64	0.25	0.38					NA	NA
BA-630	Figure 4-1	2	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	227.20	35	14	0.18	0.07	0.11					NA	NA
BA-631	Figure 4-1	2, 3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	1,206.32	35	14	0.97	0.39	0.58					NA	NA
BA-632	Figure 4-1	3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	668.45	35	14	0.54	0.21	0.32					No	Yes
BA-633	Figure 4-1	3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	1,143.27	35	14	0.92	0.37	0.55					No	Yes
BA-634	Figure 4-1	3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	847.27	35	14	0.68	0.27	0.41					No	Yes
BA-635	Figure 4-1	3	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	Private	NA	NA	100%	2,261.61	30	14	1.56	0.73	0.83					No	Yes
BA-636	Figure 4-1	3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	244.89	35	14	0.20	0.08	0.12					No	Yes
BA-637	Figure 4-1	3	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	Private	NA	NA	100%	3,282.91	30	14	2.26	1.06	1.21					No	Yes
BA-638	Figure 4-1	3	True Blue Gulch	New Road, Primitive	Private	NA	NA	100%	359.94	16	10	0.13	0.08	0.05					No	Yes
BA-639	Figure 4-1	3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	470.22	35	14	0.38	0.15	0.23					No	Yes
BA-640	Figure 4-1	3	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	Private	NA	NA	100%	1,108.63	30	14	0.76	0.36	0.41					No	Yes
BA-641	Figure 4-1	3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	126.49	35	14	0.10	0.04	0.06					No	Yes
BA-642	Figure 4-1	3	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	Private	NA	NA	100%	907.58	30	14	0.63	0.29	0.33					No	Yes
BA-643	Figure 4-1	3	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	BLM	NA	NA	100%	871.89	30	14	0.60	0.28	0.32					No	Yes
BA-644	Figure 4-1	3	True Blue Gulch	New Road, Bladed	BLM	NA	NA	100%	360.80	35	14	0.29	0.12	0.17					No	Yes
BA-644	Figure 4-1	3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	247.90	35	14	0.20	0.08	0.12					No	Yes
BA-645	Figure 4-1	3	True Blue Gulch	New Road, Bladed	BLM	NA	NA	100%	537.60	35	14	0.43	0.17	0.26					No	Yes
BA-645	Figure 4-1	3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	23.30	35	14	0.02	0.01	0.01					No	Yes
BA-646	Figure 4-1	3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	110.24	35	14	0.09	0.04	0.05					No	Yes
BA-647	Figure 4-1	3	True Blue Gulch	New Road, Bladed	BLM	NA	NA	100%	500.20	35	14	0.40	0.16	0.24					No	Yes
BA-647	Figure 4-1	3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	426.60	35	14	0.34	0.14	0.21					No	Yes
BA-648	Figure 4-1	3	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	Private	NA	NA	100%	3,143.77	30	14	2.17	1.01	1.15					No	Yes
BA-649	Figure 4-1	3, 4	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	1,012.31	35	14	0.81	0.33	0.49					NA	NA
BA-650	Figure 4-1	3	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	1,144.95	35	14	0.92	0.37	0.55					No	Yes
BA-651	Figure 4-1	4	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	1,171.67	35	14	0.94	0.38	0.56					NA	NA
BA-652	Figure 4-1	4	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	703.77	35	14	0.57	0.23	0.34					NA	NA
BA-653	Figure 4-1	4	True Blue Gulch	Existing Road, Substantial Modification, 71-100% Improvements	Private	NA	NA	100%	2,859.30	30	14	1.97	0.92	1.05					NA	NA
BA-654	Figure 4-1	4	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	1,412.16	35	14	1.13	0.45	0.68					NA	NA
BA-655	Figure 4-1	4	True Blue Gulch	New Road, Bladed	Private	NA	NA	100%	1,111.45	35	14	0.89	0.36	0.54					NA	NA
BA-661	Figure 4-2	18	Proposed Route	New Road, Bladed	Private	NA	NA	100%	627.95	35	14	0.50	0.20	0.30					NA	NA
BA-664	Figure 4-2	26	Proposed Route	New Road, Bladed	Private	NA	NA	100%	142.46	35	14	0.11	0.05	0.07					Yes	Yes
BA-672	Figure 4-2	19	Proposed Route	New Road, Bladed	Private	NA	NA	100%	1,423.22	35	14	1.14	0.46	0.69					Yes	No
BA-673	Figure 4-2	19	Proposed Route	New Road, Bladed	BLM	NA	NA	100%	1,166.70	35	14	0.94	0.37	0.56					Yes	No
BA-673	Figure 4-2	19	Proposed Route	New Road, Bladed	Private	NA	NA	100%	79.40	35	14	0.06	0.03	0.04					Yes	No
BA-674	Figure 4-2	19	Proposed Route	New Road, Primitive	Private	NA	NA	100%	1,564.12	16	10	0.57	0.36	0.22					Yes	No
BA-676	Figure 4-2	25	Proposed Route	New Road, Bladed	Private	NA	NA	100%	601.20	35	14	0.48	0.19	0.29					No	Yes
BA-677	Figure 4-2	25	Proposed Route	New Road, Bladed	BLM	NA	NA	100%	2,096.40	35	14	1.68	0.67	1.01					No	Yes
BA-677	Figure 4-2	25	Proposed Route	New Road, Bladed	Private	NA	NA	100%	1,034.90	35	14	0.83	0.33	0.50					No	Yes
BA-678	Figure 4-2	21	Proposed Route	New Road, Bladed	Private	NA	NA	100%	785.79	35	14	0.63	0.25	0.38					NA	NA
BA-679	Figure 4-2	22	Proposed Route	New Road, Bladed	Private	NA	NA	100%	424.28	35	14	0.34	0.14	0.20					NA	NA
BA-680	Figure 4-2	24	Proposed Route	New Road, Bladed	BLM	NA	NA	100%	283.81	35	14	0.23	0.09	0.14					No	Yes
BA-681	Figure 4-2	20	Proposed Route	New Road, Bladed	Private	NA	NA	100%	608.98	35	14	0.49	0.20	0.29					Yes	No
BA-683	Figure 4-1	6	Durbin Quarry	New Road, Bladed	BLM	NA	NA	100%	2,535.22	35	14	2.04	0.81	1.22					Yes	Yes
BA-684	Figure 4-1	6	Durbin Quarry	New Road, Bladed	BLM	NA	NA	100%	581.89	35	14	0.47	0.19	0.28					Yes	Yes
BA-685	Figure 4-1	6	Durbin Quarry	New Road, Bladed	BLM	NA	NA	100%	318.00	35	14	0.26	0.10	0.15					Yes	Yes
BA-686	Figure 4-2	19	Proposed Route	New Road, Bladed	Private	NA	NA	100%	923.86	35	14	0.74	0.30	0.45					Yes	No
BA-689	Figure 4-2	22	Proposed Route	Existing Road, Substantial Modification, 71-100% Improvements	BLM	NA	NA	100%	3,201.81	30	14	2.21	1.03	1.18					NA	NA
MA-599	Figure 4-2	33	Proposed Route	Existing Road, Substantial Modification, 71-100% Improvements	BLM	NA	NA	100%	980.30	30	14	0.68	0.32	0.36					NA	NA
MA-599	Figure 4-2	33	Proposed Route	Existing Road, Substantial Modification, 71-100% Improvements	Private	NA	NA	100%	3,813.30	30	14	2.63	1.23	1.40					NA	NA
MA-616	Figure 4-2	32	Proposed Route	New Road, Bladed	BLM	NA	NA	100%	1,251.79	35	14	1.01	0.40	0.60					NA	NA
MA-618	Figure 4-2	41	Proposed Route	New Road, Bladed	BLM	NA	NA	100%	3,886.43	35	14	3.12	1.25	1.87					NA	NA
MA-619	Figure 4-2	41	Proposed Route	New Road, Bladed	BLM	NA	NA	100%	3,551.16	35	14	2.85	1.14	1.71					NA	NA
MA-621	Figure 4-2	34	Proposed Route	New Road, Bladed	BLM	NA	NA	100%	2,126.35	35	14	1.71	0.68	1.03					NA	NA
MA-624	Figure 4-2	28	Proposed Route	New Road, Bladed	BLM	NA	NA	100%	859.10	35	14	0.69	0.28	0.41					No	Yes
MA-625	Figure 4-2	28	Proposed Route	New Road, Bladed	BLM	NA	NA	100%	524.80	35	14	0.42	0.17	0.25					No	Yes
MA-628	Figure 4-2	29	Proposed Route	New Road, Bladed	BLM	NA	NA	100%	692.50	35	14	0.56	0.22	0.33					No	Yes
MA-637	Figure 4-2	32	Proposed Route	New Road, Bladed	BLM	NA	NA	100%	1,196.98	35	14	0.96	0.38	0.58					NA	NA
MA-639	Figure 4-2	30	Proposed Route	New Road, Primitive	Private	NA	NA	100%	1,730.30	16	10	0.64	0.40	0.24					NA	NA
MO-190a	Figure 4-2	2	Proposed Route	New Road, Bladed	Private	NA	NA	100%	753.54	35	14	0.61	0.24	0.36					NA	NA
MO-422	Figure 4-1	1	Little Juniper Canyon	New Road, Primitive	Private	NA	NA	100%	949.59	16	10	0.35	0.22	0.13					NA	NA
MO-424	Figure 4-1	1	Little Juniper Canyon	New Road, Bladed	Private	NA	NA	100%	512.30	35	14	0.41	0.16	0.25					NA	NA
MO-425	Figure 4-1	1	Little Juniper Canyon	New Road, Primitive	Private	NA	NA	100%	92.17	16	10	0.03	0.02	0.01					NA	NA
MO-426	Figure 4-1	1	Little Juniper Canyon	New Road, Primitive	Private	NA	NA	100%	53.44	16	10	0.02	0.01	0.01					NA	NA
MO-428	Figure 4-1	1	Little Juniper Canyon	New Road, Primitive	Private	NA	NA	100%	61.15	16	10	0.02	0.01	0.01					NA	NA
MO-429A	Figure 4-1	1	Little Juniper Canyon	New Road, Bladed	Private	NA	NA	100%	650.17	35	14	0.52	0.21	0.31					NA	NA
MO-439	Figure 4-2	3	Proposed Route	New Road, Primitive	Private	NA	NA	100%	383.36	16	10	0.14	0.09	0.05					NA	NA

Unique ID	Mapbook	Map Number	RFA Name	Road Classification	Ownership	Access Control	Other	Percent Modification	Road Length (feet)	Construction Width (feet)	Operations Width (feet)	Construction Disturbance (acres)	Operation Disturbance (acres)	Temporary Disturbance (acres)	Spur Road	Traffic Volume Increase	Wildlife	Include in Indirect	Sage-grouse	Elk
MO-440	Figure 4-2	3	Proposed Route	New Road, Bladed	Private	NA	NA	100%	1,513.29	35	14	1.22	0.49	0.73					NA	NA
MO-478	Figure 4-2	2	Proposed Route	New Road, Bladed	Private	NA	NA	100%	3,457.70	35	14	2.78	1.11	1.67					NA	NA
MO-481	Figure 4-2	1	Proposed Route	New Road, Bladed	DOD	NA	NA	100%	908.88	35	14	0.73	0.29	0.44					NA	NA
MO-484	Figure 4-2	1	Proposed Route	New Road, Primitive	Private	NA	NA	100%	643.80	16	10	0.24	0.15	0.09					NA	NA
MO-485	Figure 4-2	1	Proposed Route	New Road, Bladed	DOD	NA	NA	100%	0.50	35	14	0.00	0.00	0.00					NA	NA
MO-485	Figure 4-2	1	Proposed Route	New Road, Bladed	Private	NA	NA	100%	383.20	35	14	0.31	0.12	0.18					NA	NA
MO-486	Figure 4-2	1	Proposed Route	New Road, Bladed	Private	NA	NA	100%	1,459.36	35	14	1.17	0.47	0.70					NA	NA
MO-490	Figure 4-2	1	Proposed Route	New Road, Bladed	DOD	NA	NA	100%	40.30	35	14	0.03	0.01	0.02					NA	NA
MO-519	Figure 4-2	4	Proposed Route	New Road, Bladed	Private	NA	NA	100%	5,143.80	35	14	4.13	1.65	2.48					NA	NA
UM-356	Figure 4-2	11	Proposed Route	New Road, Bladed	Private	NA	NA	100%	1,007.22	35	14	0.81	0.32	0.49					NA	NA
UM-359	Figure 4-2	9	Proposed Route	New Road, Bladed	Private	NA	NA	100%	924.61	35	14	0.74	0.30	0.45					No	Yes
UM-360	Figure 4-2	11	Proposed Route	New Road, Bladed	Private	NA	NA	100%	3,962.95	35	14	3.18	1.27	1.91					NA	NA
UM-363	Figure 4-2	8	Proposed Route	New Road, Bladed	Private	NA	NA	100%	1,625.86	35	14	1.31	0.52	0.78					No	Yes
UN-002b	Figure 4-2	12	Proposed Route	New Road, Bladed	Private	NA	NA	100%	2,950.25	35	14	2.37	0.95	1.42					NA	NA
UN-615	Figure 4-2	16	Proposed Route	New Road, Bladed	Private	NA	NA	100%	539.76	35	14	0.43	0.17	0.26					NA	NA
UN-616	Figure 4-2	16	Proposed Route	New Road, Bladed	Private	NA	NA	100%	4,624.20	35	14	3.72	1.49	2.23					No	Yes
UN-617	Figure 4-2	17	Proposed Route	New Road, Bladed	Private	NA	NA	100%	738.28	35	14	0.59	0.24	0.36					No	Yes
UN-625	Figure 4-2	13	Proposed Route	New Road, Bladed	USFS	NA	NA	100%	1,761.24	35	14	1.42	0.57	0.85					NA	NA
BA-322	Figure 4-2	19	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	527.89	16	14	0.52	0.46	0.07					Yes	No
BA-322	Figure 4-2	19	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	1,420.62	16	14	0.52	0.46	0.07					Yes	No
BA-429	Figure 4-1	<Null>	<Null>	<Null>	Private	NA	NA	70%	5,333.55	16	14	<Null>	<Null>	0.00					No	No
BA-432	Figure 4-1	4	<Null>	<Null>	Private	NA	NA	70%	2,647.85	16	14	<Null>	<Null>	0.00					No	No
BA-434	Figure 4-1	3, 4	<Null>	<Null>	Private	NA	NA	100%	3,652.96	30	14	<Null>	<Null>	0.00					No	No
BA-435	Figure 4-1	4	<Null>	<Null>	Private	NA	NA	100%	3,950.37	30	14	<Null>	<Null>	0.00					No	No
BA-438	Figure 4-1	4	<Null>	<Null>	Private	NA	NA	70%	6,151.58	16	14	<Null>	<Null>	0.00					No	Yes
BA-548	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	48.75	16	14	2.12	1.80	0.32					Yes	Yes
BA-548	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	440.13	16	14	2.12	1.80	0.32					Yes	Yes
BA-548	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	1,100.22	16	14	2.12	1.80	0.32					Yes	Yes
BA-549	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	90.80	35	14	2.12	1.80	0.32					Yes	Yes
BA-549	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	328.04	35	14	2.12	1.80	0.32					Yes	Yes
BA-550	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	99.90	16	14	2.12	1.80	0.32					Yes	Yes
BA-550	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	1,100.42	16	14	2.12	1.80	0.32					Yes	Yes
BA-552	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	289.55	16	14	2.12	1.80	0.32					Yes	Yes
BA-552	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	598.70	16	14	2.12	1.80	0.32					Yes	Yes
BA-554	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	200.26	16	14	2.12	1.80	0.32					Yes	Yes
BA-554	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	1,935.96	16	14	2.12	1.80	0.32					Yes	Yes
BA-556	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	197.21	16	14	2.12	1.80	0.32					Yes	Yes
BA-556	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	718.59	16	14	2.12	1.80	0.32					Yes	Yes
BA-556	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	1,152.74	16	14	2.12	1.80	0.32					Yes	Yes
BA-560	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	416.44	16	14	0.15	0.13	0.02					Yes	Yes
BA-560	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	718.57	16	14	0.15	0.13	0.02					Yes	Yes
BA-566	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	168.88	30	14	0.12	0.05	0.06					Yes	Yes
BA-566	Figure 4-2	26	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	1,263.07	30	14	0.12	0.05	0.06					Yes	Yes
BA-571	Figure 4-1	5	Durbin Quarry	Route Alignment Changes	Private	NA	NA	100%	1,488.47	30	14	<Null>	<Null>	0.00					Yes	Yes
BA-572	Figure 4-1	5	Durbin Quarry	Route Alignment Changes	Bureau of Land Management	NA	NA	100%	242.76	35	14	<Null>	<Null>	0.00					Yes	Yes
BA-572	Figure 4-1	5	Durbin Quarry	Route Alignment Changes	Private	NA	NA	100%	806.06	35	14	<Null>	<Null>	0.00					Yes	Yes
BA-573	Figure 4-1	5	Durbin Quarry	Route Alignment Changes	Private	NA	NA	100%	257.86	35	14	<Null>	<Null>	0.00					Yes	Yes
BA-574	Figure 4-1	5	Durbin Quarry	Route Alignment Changes	Private	NA	NA	100%	716.10	16	10	<Null>	<Null>	0.00					Yes	Yes
BA-575	Figure 4-1	5	Durbin Quarry	Route Alignment Changes	Private	NA	NA	100%	888.34	35	14	<Null>	<Null>	0.00					Yes	Yes
BA-580	Figure 4-1	5	Durbin Quarry	Route Alignment Changes	Bureau of Land Management	NA	NA	70%	321.25	16	14	<Null>	<Null>	0.00					Yes	Yes
BA-580	Figure 4-1	5	Durbin Quarry	Route Alignment Changes	Private	NA	NA	70%	673.90	16	14	<Null>	<Null>	0.00					Yes	Yes
BA-582	Figure 4-1	5	Durbin Quarry	Route Alignment Changes	Bureau of Land Management	NA	NA	100%	99.98	30	14	4.18	1.68	2.50					Yes	Yes
BA-582	Figure 4-1	5	Durbin Quarry	Route Alignment Changes	Bureau of Land Management	NA	NA	100%	225.68	30	14	4.18	1.68	2.50					Yes	Yes
BA-702	Figure 4-1	3	<Null>	<Null>	Private	NA	NA	100%	2,246.34	35	14	28.11	12.36	15.75					No	Yes
BA-706	Figure 4-1	3	<Null>	<Null>	Private	NA	NA	100%	600.72	35	14	28.11	12.36	15.75					No	Yes
BA-707	Figure 4-1	2	<Null>	<Null>	Bureau of Land Management	NA	NA	100%	1,156.44	35	14	<Null>	<Null>	0.00					No	No
BA-708	Figure 4-1	3	<Null>	<Null>	Private	NA	NA	100%	1,215.37	35	14	28.11	12.36	15.75					No	Yes
BA-710	Figure 4-1	4	<Null>	<Null>	Private	NA	NA	100%	800.79	35	14	28.11	12.36	15.75					No	No
BA-715	Figure 4-1	<Null>	<Null>	<Null>	Private	NA	NA	100%	2,561.76	30	14	<Null>	<Null>	0.00					No	No
MA-062	Figure 4-2	28	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	70%	339.26	16	14	0.12	0.11	0.02					No	Yes
MA-062	Figure 4-2	28	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	70%	1,140.54	16	14	0.12	0.11	0.02					No	Yes
MA-065	Figure 4-2	28	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	70%	49.93	16	14	0.44	0.39	0.06					No	Yes
MA-065	Figure 4-2	28	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	70%	1,197.84	16	14	0.44	0.39	0.06					No	Yes
MA-172	Figure 4-2	32	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	100%	1,014.83	35	14	1.65	0.64	1.01					No	No
MA-172	Figure 4-2	32	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	100%	1,467.07	35	14	1.65	0.64	1.01					No	No
MA-183	Figure 4-2	32	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	100%	183.95	35	14	0.62	0.25	0.37					No	No
MA-183	Figure 4-2	32	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	100%	574.31	35	14	0.62	0.25	0.37					No	No
MA-183	Figure 4-2	32	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	100%	1,407.66	35	14	0.62	0.25	0.37					No	No
MA-254	Figure 4-2	34	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	100%	198.29	30	14	2.06	1.19	0.87					No	No

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MA-254	Figure 4-2	34	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	100%	451.72	30	14	2.06	1.19	0.87					No	No
MA-255	Figure 4-2	34	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	70%	226.51	16	14	2.06	1.19	0.87					No	No
MA-255	Figure 4-2	34	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	70%	1,951.74	16	14	2.06	1.19	0.87					No	No
MA-259	Figure 4-2	34	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	70%	467.37	16	14	0.52	0.40	0.12					No	No
MA-259	Figure 4-2	34	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	70%	1,038.33	16	14	0.52	0.40	0.12					No	No
MA-261	Figure 4-2	34	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	100%	204.30	30	14	0.52	0.40	0.12					No	No
MA-261	Figure 4-2	34	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	100%	1,101.09	30	14	0.52	0.40	0.12					No	No
MA-315	Figure 4-2	36	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	539.36	30	14	0.51	0.23	0.27					No	No
MA-315	Figure 4-2	36	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	717.40	30	14	0.51	0.23	0.27					No	No
MA-337	Figure 4-2	37	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	100%	14.56	30	14	1.15	0.54	0.62					No	No
MA-337	Figure 4-2	37	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	353.90	30	14	1.15	0.54	0.62					No	No
MA-337	Figure 4-2	37	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	1,648.93	30	14	1.15	0.54	0.62					No	No
MA-394	Figure 4-2	38	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	100%	251.32	35	14	5.42	2.17	3.25					No	No
MA-394	Figure 4-2	38	Proposed Route	Other Access and Work Area Changes	Bureau of Land Management	NA	NA	100%	6,743.32	35	14	5.42	2.17	3.25					No	No
MA-522	Figure 4-2	41	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	107.46	16	14	1.09	0.96	0.14					No	No
MA-522	Figure 4-2	41	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	257.78	16	14	1.09	0.96	0.14					No	No
MA-522	Figure 4-2	41	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	707.52	16	14	1.09	0.96	0.14					No	No
MA-522	Figure 4-2	41	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	800.01	16	14	1.09	0.96	0.14					No	No
MA-525	Figure 4-2	41	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	218.07	16	14	1.09	0.96	0.14					No	No
MA-525	Figure 4-2	41	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	70%	3,869.38	16	14	1.09	0.96	0.14					No	No
MO-174	Figure 4-2	1	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	99.98	35	14	1.29	0.51	0.78					No	No
MO-174	Figure 4-2	1	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	340.58	35	14	1.29	0.51	0.78					No	No
MO-206	Figure 4-1	1	Little Juniper Canyon	Route Alignment Changes	Private	NA	NA	70%	513.43	16	14	3.25	2.31	0.94					No	No
MO-206	Figure 4-1	1	Little Juniper Canyon	Route Alignment Changes	Private	NA	NA	70%	1,073.71	16	14	3.25	2.31	0.94					No	No
MO-209	Figure 4-1	1	Little Juniper Canyon	Route Alignment Changes	Private	NA	NA	70%	1,504.82	16	14	<Null>	<Null>	0.00					No	No
MO-250	Figure 4-2	4	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	0.40	16	10	1.78	0.72	1.06					No	No
MO-250	Figure 4-2	4	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	528.70	16	10	1.78	0.72	1.06					No	No
MO-545	Figure 4-1	1	<Null>	<Null>	Private	NA	NA	100%	81.60	35	14	<Null>	<Null>	0.00					No	No
UM-204	Figure 4-2	9	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	264.81	35	14	4.00	1.58	2.43					No	Yes
UM-204	Figure 4-2	9	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	2,495.85	35	14	4.00	1.58	2.43					No	Yes
UM-216	Figure 4-2	6	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	440.26	35	14	0.35	0.14	0.21					No	No
UM-216	Figure 4-2	6	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	1,372.61	35	14	0.35	0.14	0.21					No	No
UM-241	Figure 4-2	<Null>	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	3,761.93	35	14	4.00	1.58	2.43					No	Yes
UM-241	Figure 4-2	8, 9	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	337.38	35	14	4.00	1.58	2.43					No	Yes
UM-241	Figure 4-2	8, 9	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	460.38	35	14	4.00	1.58	2.43					No	Yes
UM-245	Figure 4-2	8	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	666.48	35	14	4.00	1.58	2.43					No	Yes
UM-245	Figure 4-2	8	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	1,394.48	35	14	4.00	1.58	2.43					No	Yes
UM-246	Figure 4-2	8	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	592.96	35	14	4.00	1.58	2.43					No	Yes
UM-246	Figure 4-2	8	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	821.15	35	14	4.00	1.58	2.43					No	Yes
UM-260	Figure 4-2	8	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	1,376.67	35	14	4.00	1.58	2.43					No	Yes
UM-260	Figure 4-2	8	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	1,993.15	35	14	4.00	1.58	2.43					No	Yes
UM-274	Figure 4-2	7	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	206.87	35	14	0.23	0.07	0.16					No	No
UM-274	Figure 4-2	7	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	5,990.46	35	14	0.23	0.07	0.16					No	Yes
UN-034	Figure 4-2	12	Proposed Route	Other Access and Work Area Changes	Forest Service	NA	NA	100%	36.19	30	14	0.20	0.09	0.11					No	No
UN-034	Figure 4-2	12	Proposed Route	Other Access and Work Area Changes	Forest Service	NA	NA	100%	269.75	30	14	0.20	0.09	0.11					No	No
UN-034	Figure 4-2	12	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	276.34	30	14	<Null>	<Null>	0.00					No	No
UN-034	Figure 4-2	12	Proposed Route	Other Access and Work Area Changes	State or Local Parks and Recreation or Wildlife	NA	NA	100%	6.90	30	14	0.20	0.09	0.11					No	No
UN-236	Figure 4-2	15	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	280.63	35	14	0.22	0.09	0.13					No	Yes
UN-236	Figure 4-2	15	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	5,591.88	35	14	0.22	0.09	0.13					No	Yes
UN-471	Figure 4-2	16	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	551.13	35	14	1.99	0.79	1.19					No	Yes
UN-471	Figure 4-2	16	Proposed Route	Other Access and Work Area Changes	Private	NA	NA	100%	1,241.78	35	14	1.99	0.79	1.19					No	Yes

ATTACHMENT G-4

~~SPILL PREVENTION, CONTROL, AND COUNTERMEASURES PLAN~~HAZARDOUS WASTE MATERIALS AND SPILL RESPONSE PLAN

~~Spill Prevention, Control, and Countermeasures Plan~~Hazardous Waste Materials and Spill Response Plan

Boardman to Hemingway Transmission Line Project

Prepared by:

1221 West Idaho Street
Boise, Idaho 83702

~~September 2018~~June 2023

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ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
CI	Chief Inspector
Contractor	construction contractor
DOT	Department of Transportation
EI	Environmental Inspector
EPA	Environmental Protection Agency
ER Plan	Emergency Response Plan
HWMSRP	Hazardous Waste Material and Spill Response Plan
IPC	Idaho Power Company
kV	kilovolt
MSDS	Material Safety Data Sheets
OAR	Oregon Administrative Rules
Project	Boardman to Hemingway Transmission Line Project
PVC	Polyvinyl chloride
~~SPCC~~	~~Spill Prevention, Control, and Countermeasures Plan~~
U.S.	United States
USFS	United States Forest Service

1.0 INTRODUCTION

Idaho Power Company (IPC) is proposing to construct, operate, and maintain an approximately 296.6-mile-long electric transmission line between the Longhorn Station near Boardman, Oregon, and the Hemingway Substation located in southwestern Idaho as an extension of IPC's electric transmission system. This length comprises approximately 272.8 miles in Oregon and 23.8 miles in Idaho. The Boardman to Hemingway Transmission Line Project (Project) is primarily a single-circuit 500-kilovolt (kV) electric transmission line, with 270.8 miles of new single-circuit 500-kV electric transmission line, removal of 12 miles of existing 69-kV transmission line, rebuilding of 0.9 mile of a 230-kV transmission line, and rebuilding of 1.1 miles of an existing 138-kV transmission line into a new right-of-way. The Project includes ground-disturbing activities associated with construction of aboveground single- and double-circuit transmission lines involving towers, access roads, multi-use areas, pulling and tensioning sites and pulling and tensioning sites with light-duty fly yards, the station, communication sites, and electrical supply distribution lines. The Project crosses private land and public lands administered by the Bureau of Land Management (BLM), United States Forest Service, and the states of Idaho and Oregon.

IPC prepared this ~~Spill Prevention, Control, and Countermeasures Plan (SPCC Plan)~~Hazardous Waste Material and Spill Response Plan (HWPSRP) to be implemented during construction of the Project. ~~This SPCC Plan is required by the Environmental Protection Agency (EPA) regulations contained in Title 40 of the Code of Federal Regulations, Part 112 (SPCC Rule). This Plan meets the requirements of the updated rule promulgated by the EPA on November 5, 2009. The State of Oregon does not have specific additional oil handling, operation, or design requirements. Hazardous waste management is regulated under Division 100 of the Oregon Administrative Rules (OAR); oil spill contingency planning under Division 141; and oil and hazardous materials emergency response requirements under Division 142.~~

This ~~SPCC Plan~~HWPSRP outlines preventive measures and practices to reduce the likelihood of an accidental release of a hazardous or regulated liquid and, in the event such a release occurs, to expedite the response to and remediation of the release. This HWMSRP ~~SPCC Plan~~ restricts the location of fuel storage, fueling activities, and construction equipment maintenance along the construction right-of-way and provides procedures for these activities. Training and lines of communication to facilitate the prevention, response, containment, and cleanup of spills during construction activities are also described. Additionally, this plan identifies the roles and responsibilities of key IPC personnel and contractors (i.e., primary and subcontractors) that will be involved in construction of the Project. This ~~SPCC Plan~~ HWMSRP will be included in construction bid and contract documents as contractual requirements to the contractor.

All contractor and subcontractor personnel working on the IPC right-of-way are responsible for implementation of the measures and procedures defined in this HWMSRP~~SPCC Plan~~.

1.1 Responsibilities Under this Plan

1.1.1 Idaho Power Company Representatives

The Chief Inspector (CI) will evaluate and approve each construction contractor's (Contractor) submittal under this HWMSRP~~SPCC Plan~~. The project Environmental Inspector(s) (EI) will oversee implementation of the HWMSRP~~SPCC Plan~~ and of the Contractor's plans and submittals incorporated by reference. The EI will conduct regular inspections of Contractor activities and identify any issues that may require correction. The EI has the authority to stop construction to correct issues, if

necessary. The CI, Contractor, Subcontractor, and EI will be required to maintain a copy of this HWMSRP ~~SPCC Plan~~ on-site available to all personnel.

Table 1-1. **Boardman to Hemingway Project Idaho Power Representatives [To be completed prior to construction]**

Function	Name	Location	Telephone Number
IPC Project Manager			
Chief Inspector			
Environmental Inspector			
Emergency Response Coordinator: Primary			
Emergency Response Coordinator: Secondary			
Emergency Response Contractors (Company/Responsibility)			
Spill Response			
Transportation Services			
Site Remediation			

1.1.2 Contractor Responsibilities

The Contractor will prepare plans and submittals under this HWMSRP ~~SPCC Plan~~ that will include activities of the Contractor and its Subcontractors. The Contractor will ensure that such documents are maintained current and complete, and that this HWMSRP ~~SPCC Plan~~ is fully implemented.

Table 1-2. **Boardman to Hemingway Project Primary Contractor Representatives *[To be completed prior to construction]***

Function	Name	Location	Telephone Number
Contractor			
On-Site Foreman			
Emergency Response Coordinator: Primary			
Emergency Response Coordinator: Secondary			
Environmental Contact			
Safety Representative			

Table 1-3. **Boardman to Hemingway Project Subcontractor Representatives *[To be completed prior to construction]***

Function	Name	Location	Telephone Number
Contractor			
On-Site Foreman			
Emergency Response Coordinator: Primary			
Emergency Response Coordinator: Secondary			
Environmental Contact			
Safety Representative			

Responsibilities identified as “Contractor” in subsequent sections of this HWMSRP ~~SPCC Plan~~ apply to each Contractor and Subcontractor.

2.0 SPILL PREVENTION PRACTICES

2.1 Site Selection

Site selection for project staging areas where hazardous materials and hazardous wastes may be present has considered and avoided environmentally sensitive areas. These sites are located at least 100 feet from streams (including intermittent and perennial), wetlands (including dry or seasonal wetlands) and other waterbodies (e.g., lakes, ponds and reservoirs); 200 feet from any private water well; and 400 feet from any municipal or community water supply well. Hazardous materials and wastes may not be sorted, handled, or used in an area that has not been approved for that purpose by the CI.

2.2 Hazardous Materials and Waste Management

Each Contractor is required to develop a detailed, site-specific Hazardous Materials Management Plan prior to construction. The Plan will identify the legal requirements that apply and Contractor requirements, and the best management practices for Project-specific spill prevention procedures, and other stipulations and methods to address spill prevention, response and cleanup procedures for the Project. A Hazardous Materials Management Plan Framework is included in Appendix A. Each Contractor is required to identify the hazardous materials that the Contractor will use and the wastes that the Contractor may generate during project activities. This information includes Material Safety Data Sheets (MSDS) or waste designation information, quantities, locations of storage and use, the container or tank used secondary containment, and inspection procedures. The Contractor must keep a copy of this plan on-site for the duration of all construction-related activities.

2.2.1 Hazardous Materials

No new hazardous material may enter the job site without an amendment to the Contractor’s Hazardous Materials Management Plan and without the express approval of the EI.

Usable hazardous materials will be removed by the Contractor for future use upon completion of work on-site.

2.2.2 Wastes

Each waste generated will be evaluated by the EI for appropriate waste designation and appropriate disposal.

2.2.2.1 Rights-of-Way and Sites Owned or Leased by the Project

Wastes generated on the right-of-way and at sites owned or leased by IPC that have the potential of being hazardous waste will be returned to the approved staging point, whereupon the EI will be notified. As necessary, the Contractor will sample wastes and request assistance of the EI in waste management.

The Project EI is responsible for designation of hazardous waste, universal waste, special waste, or recyclable hazardous materials in accordance with applicable state and federal regulations, including OAR, Division 100.

Regulated wastes will be placed in IPC-approved containers, maintained in good condition, and appropriately labeled. Containers will be in an approved area and the EI will be notified of the waste activity. IPC representatives will arrange for appropriate disposal of regulated wastes.

2.2.2.2 Domestic Sewage

Domestic sewage will be handled during construction by means of portable self-contained toilets, which will be stationed at central locations and reasonable distances throughout the work area.

2.2.2.3 Waste Disposal On-Site Prohibited

In no case will any waste material be disposed of at the job site, right-of-way location, or adjacent property.

2.3 Spill Prevention

The Contractor will store, handle, and transfer fluids used during construction so as to prevent the release or spill of oil or other hazardous materials. Materials that are likely to be used in construction equipment include gasoline, diesel fuel, hydraulic fluid, and lubricating oils.

2.3.1 Tank and Container Specifications

Specifications for tanks and containers must meet generally approved standards (including but not limited to supplier's recommendations and specifications of the U.S. Department of Transportation (DOT)). In meeting these standards, tanks and containers must continuously be of integrity and condition to be acceptable for storage and transportation.

2.3.2 Dispensing and Transfer

Dispensing and transfer of hazardous materials and wastes must occur in accordance with nationally recognized standards. This includes bonding or grounding during transfer of flammable liquids. The Contractor will inspect transfers of hazardous materials and waste.

Transfer of liquids and refueling will occur only at approved locations that are at least 100 feet away from any wetlands or surface waters, 200 feet from any private water well, and 400 feet from any municipal or community water well, with certain exceptions noted below (see Section 2.3.4).

Crews must have adequate spill response equipment available at the dispensing or transfer location.

Repair/overhaul of equipment will not occur on the right-of-way or temporary work space except for emergency-type repair of short duration. Any liquids will be collected in suitable containers and appropriately disposed of.

When materials are transferred from a storage tank or container to a vehicle, the Contractor will:

- operate during daylight hours or where lighting is adequate to illuminate the area;
- monitor the transfer operations at all times;
- refuel at least 100 feet from wetlands or surface waters and at least 200 feet from potable water supplies, with certain exceptions noted below;
- keep sufficient spill control materials on-site; and
- in the event of a spill, implement the spill response procedures.

2.3.3 Materials Storage

When materials are stored in a fuel storage tank, the Contractor will:

- locate the tank at least 100 feet from wetlands, 200 feet from private water wells, and 400 feet from municipal water supply wells, with certain exceptions noted below (see Section 2.3.4);
- install a temporary earthen berm around the tank and line it with plastic to provide containment;
- inspect the tank, berm, and liner daily;
- inspect the tank after refilling;
- correct any conditions that could result in a spill, leak, or compromise the integrity of the secondary containment;
- plug or close all tank openings when not in use;
- remove any precipitation from the bermed area with a pump and spray in surrounding upland area (note: inspect precipitation for an oil sheen and, if sheen is present, collect the liquid for disposal); and
- keep sufficient spill control materials on-site.

When materials are stored in a container, the Contractor will:

- store containers at least 100 feet from wetlands and surface waters with certain exceptions noted below (see Section 2.3.4);
- use small containers that are in good condition (maximum capacity 55 gallons);
- protect the containers from the elements and physical damage;
- replace any leaking or damaged containers;
- close containers when not in use; and
- keep sufficient spill control materials on-site.

2.3.4 Setback Exceptions

The dispensing and transfer (e.g., refueling) setbacks identified above may not be practical for certain construction activities in certain locations. Exceptions may only be allowed for:

- areas such as rugged terrain or steep slopes where movement of equipment to refueling stations would cause excessive disturbances to the surface of the right-of-way;
- construction sites where moving equipment to refueling stations is impractical or where there is a natural barrier from the waterbody or wetland (e.g., road or railroad);
- locations where the waterbody or wetland is located adjacent to a road crossing from which the equipment can be serviced; and
- refueling and fuel storage for immobile equipment.

All exceptions to the required setbacks must be approved by the EI.

In these situations, the Contractor shall exercise extreme caution during fueling and lubrication of equipment and all other oil and hazardous materials transfers. Only a fuel truck with a maximum of 300 gallons of fuel may enter restricted areas to refuel construction equipment. Two trained personnel will be present during refueling to reduce the potential for spill or

accidents. Adequate spill containment equipment suitable to the refueling activities as described in Section 3.2.1.2 will be maintained at designated setback locations during refueling.

2.3.5 Other Material-Specific Measures

Paint containers will be tightly sealed and stored in a designated area. Excess paint will be properly disposed of according to manufacturer's instructions and federal, state, and local regulations. All paint tools will be cleaned in a designated area located at least 100 feet from all wetlands and surface waters.

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site in designated areas. The designated area will include sediment controls installed around the perimeter and will be located 100 feet away from wetlands or surface waters. After construction, the concrete washout area will be restored to pre-construction conditions.

2.3.6 Equipment for Safe Tank Operation

Tanks will be equipped with all standard safety equipment required for the specification packaging and its use.

2.3.7 Separation of Incompatible Materials

Incompatible materials will be stored in areas separated in accordance with nationally recognized standards. Incompatible materials will not be consecutively placed into a container or tank. In addition, sources of ignition will be prohibited in hazardous materials areas and waste areas.

2.3.8 Labeling, Marking and Placarding

Each cylinder, container, and tank will be appropriately identified with contents as per Occupational Safety and Health Administration requirements (see samples in Appendix B). Containers and tanks used for transport of hazardous materials and wastes will be marked and labeled in accordance with DOT requirements (e.g., Proper Shipping Name, UN/NA Number, Hazard Class labels or placards). In addition, tanks will be labeled in accordance with National Fire Protection Association, where required by the local jurisdiction.

Approved areas for hazardous materials and waste will be secured against unauthorized entry and vandalism.

2.4 Secondary Containment

2.4.1 Approved Secondary Containment

Approved secondary containment will be provided for each tank and each container with a capacity of 5 gallons or more.

2.4.2 Minimum Standards for Secondary Containment

2.4.2.1 Containers

Secondary containment for containers with 5 or more gallons of capacity may include a temporary containment area with temporary earthen berms and contiguous 10 mil polyethylene containment; or it may consist of a portable containment system constructed of polyvinyl chloride (PVC) or other suitable material.

Secondary containment volume will be at least 110 percent of the volume of the larger tank of hazardous materials and wastes stored. If earthen berms are utilized, they will be constructed

with slopes no steeper than 3:1 (horizontal to vertical) to limit erosion and provide structural stability.

Polyethylene drum spill skids will be used for storage of 55-gallon drums of fuel or hazardous materials that may be placed temporarily in the immediate work area.

2.4.2.2 Tanks

Secondary containment for tanks will be provided that includes the tank and the dispensing area. Secondary containment volume will be 110 percent of the volume of the largest tank of hazardous materials and wastes stored. Tanks should be elevated a minimum of 2 feet above grade.

2.4.2.3 Contractor's Secondary Containment

Secondary containment provided by the Contractor must meet these minimum standards and must be implemented as proposed in the Contractor's Hazardous Materials Management Plan.

2.5 Regular Inspections

The Contractor will conduct daily inspections at locations where hazardous materials and wastes are stored, handled, and dispensed. The Contractor will also inspect aboveground tanks after refilling. Inspections will follow site-specific procedures in the approved Contractor's Hazardous Materials Management Plan. The source of any container or tank leak will be stopped immediately and residual wastes will be aggregated, designated, and properly disposed of. Any leaking container will be immediately overpacked.

All vehicles (e.g., trucks, side-booms, dozers, etc.) shall be:

- inspected daily for leaks or signs of deterioration that could result in a leak;
- repaired when defective tanks, hoses, fittings, etc. are found; and
- parked at least 100 feet from wetlands or surface waters, with certain exceptions noted above (see Section 2.3.4).

The EI will provide oversight to the Contractor's activities on hazardous materials and waste management.

3.0 EMERGENCY PREPAREDNESS

Each Contractor is required to develop a Contractor's Emergency Response Plan (ER Plan) (see Appendix C) for environmental emergency preparedness and response. The ER Plan is appropriate for the hazardous materials and wastes used and generated. The initial ER Plan will be approved by the Chief Inspector. This ER Plan will be maintained current; subsequent revisions may be approved by the EI.

The Contractor will maintain adequate resources, including:

- emergency response coordinators;
- fire-fighting equipment (such as portable fire extinguishers);
- spill control and cleanup equipment (absorbent materials such as pads, pillows, booms and socks, non-sparking shovels, etc.);
- appropriate personal protective equipment; and
- the Contractor's ER Plan.

3.1 Emergency Responders

The Contractor will designate personnel responsible for incident or emergency response, in the event of a release to the environment. The Contractor will ensure that emergency responders identified will have appropriate training in environmental emergency or incident preparedness, prevention, and response. The Contractor's emergency contact information will be maintained current.

In addition, IPC will designate primary and secondary Emergency Response Coordinators. IPC Emergency Response Coordinators will have the authority to commit necessary resources to respond to environmental releases and to conduct cleanup.

3.2 Emergency Response Equipment

3.2.1 Contractor's Spill Containment and Cleanup Resources

3.2.1.1 On-site Equipment

The Contractor will have available, adequate spill containment and cleanup resources that are appropriate to their activities and to the hazardous materials and wastes handled. Minimum standards are identified on Appendix C. The following additional materials will be available at a central location on each multi-use area and light-duty fly yards:

- boom(s);
- cleanup rags;
- 55-gallon DOT-approved containers;
- replacement parts and equipment for repair of tanks, hoses, nozzles, etc.;
- fire extinguisher, Type B, C;
- two bags of chemical sorbent material (e.g., kitty litter);
- three 17-inch x 17-inch chemical pillows;
- four 48-inch x 3-inch chemical socks;
- twenty 18-inch x 18-inch x 3/8-inch sorbent pads;
- twenty 30-gallon 6-mil polyethylene bags;
- two 30-gallon polyethylene open-head drums;
- 10 pairs of polypropylene gloves;
- two, each type, waste labels;
- two 8' x 10' polyethylene tarps;
- one cooler;
- one quart jar;
- one trowel; and
- 20 hay bales.

The Contractor will be prepared to clean up, characterize, and dispose of spill debris. IPC will have additional contractors available for associated emergency spill response, transportation, remediation, and disposal activities.

3.2.1.2 Vehicle Response Equipment

The Contractor will maintain a supply of spill materials as descried below.

Any vehicle used to transport lubricants and fuel will be equipped with:

- one 20-pound fire extinguisher (Type: B, C);
- 50 pounds of oil absorbent (e.g., Speedy Dry or equivalent);
- ten 48-inch x 3-inch oil socks;
- five 17-inch x 17-inch oil pillows;
- two 10-foot x 4-inch oil booms;
- twenty 24-inch x 24-inch x 3/8-inch oil absorbent pads;
- twenty 30-gallon 6-mil polyethylene bags;
- one roll of 10-mil plastic sheeting;
- two shovels;
- 10 pairs of polypropylene gloves;
- one 55-gallon (or equivalent capacity) DOT-approved container; and
- two, each type, waste label.

All foremen's vehicles and heavy equipment will be equipped with:

- absorbent pads;
- heavy duty plastic bags; and
- one shovel.

3.2.2 Maintaining Emergency Response Equipment

The Contractor will inspect emergency response equipment weekly to ensure that all equipment identified in the Contractor's ER Plan is available in quantities and locations identified. After response to an incident or emergency release, any equipment used will be replaced or decontaminated and returned to inventory.

4.0 INCIDENT OR EMERGENCY RESPONSE

4.1 Environmental Release Notification

The Contractor will notify the IPC Emergency Response Coordinator on call in the event that a spill occurs during project activities. **There will be immediate notification in the event of a release of 1 pound or more of any hazardous material or any amount of hazardous waste.** The Contractor is required to complete the Spill Report Form (Appendix D) and submit the form to the Project Manager and EI. The Contractor will be considered the Waste Generator for all spills caused by construction.

If agency notification is required, IPC representatives will notify the Project Manager and appropriate agencies in accordance with IPC policies. IPC will provide 48-hour advance notification to surface water intake operators of public drinking water source areas regarding construction through the waterbodies where their intakes are located. Appendix E will contain a description of the Project, including maps, flow diagrams, and topographical maps as necessary, which will be updated prior to construction.

4.2 Incident Response

If an environmental release occurs and is an incident that can be handled with available resources, the Contractor may be requested to perform the following, under direction of the IPC Emergency Response Coordinator.

- Stop the source of release. This may mean plugging a container or tank, turning off a valve, etc.
- Remove all sources of ignition from the area.
- Contain the spill. Use an approved container, or create a lined, covered containment area.
- Collect spilled materials. Block off drains. Create/expand containment areas using available means. Use appropriate neutralizers, sorbents, pigs, and pads. Create barriers to protect sensitive areas. Personal protective equipment will be worn as recommended on the MSDS of the specific product.
- Remove all contaminated soil or other material and cover with a plastic sheet.
- Contain contaminated material and temporarily store in a secured area 100 feet away from any wetland or surface water.
- Perform any necessary sampling of waste material.
- Conduct preliminary cleanup of the site.

4.2.1 Wetland or Waterbody Response

Regardless of size, the following conditions apply if a spill occurs near or in a stream, wetland, or other waterbody.

- For spills in standing water, floating booms, skimmer pumps, and holding tanks shall be used as appropriate by the Contractor to recover and contain released materials in the surface of the water.
- For a spill threatening a waterbody, berms and/or trenches will be constructed to contain the spill before it reaches the waterbody. Deployment of booms, sorbent materials, and skimmers may be necessary if the spill reaches the water. The spilled product will be collected and the affected area cleaned up in accordance with appropriate state or federal regulations.
- Contaminated soils in wetlands must be excavated, and placed on and covered by plastic sheeting in approved containment areas a minimum of 100 feet away from the wetland or surface water. Contaminated soil will be disposed of as soon as possible in accordance with appropriate state or federal regulations.

4.2.2 Emergency Response

The Emergency Response Coordinator will act as Incident Commander, overseeing emergency release response actions taken.

If additional resources are needed, the IPC Emergency Response Coordinator will retain emergency response contractors and/or request assistance of local emergency responders (including fire, police, hazardous materials teams, ambulance or hospitals, and highway patrol) and will coordinate all emergency response activities. As necessary, the IPC Emergency Response Coordinator will signal evacuation of site personnel.

Where site cleanup is necessary, IPC Emergency Response Coordinator will coordinate cleanup actions with appropriate agency representatives. IPC Representatives will provide guidance on appropriate waste management and disposal.

The Oregon Office of Emergency Management (1-800-452-0311) serves as the coordinator of spill response in the State of Oregon. The Office of Emergency Management determines the severity of spills and contacts the appropriate agency.

5.0 TRAINING

IPC will require that all Contractor employees involved with transporting or handling fueling equipment or maintaining construction equipment be required to complete spill training before they commence work on the Project. IPC will audit Contractor compliance with this requirement. Spill training will also be required for Contractor supervisory personnel prior to commencement of work. These training sessions will provide information concerning pollution control laws; inform personnel concerning the proper operation and maintenance of fueling equipment; and inform personnel of spill prevention and response requirements. Measures, responsibilities, and provisions of this HWMSRP~~SPCC Plan~~, and identification of response team individuals, will be incorporated into the training.

Training of other workers will be provided through ongoing weekly safety meetings. Topics will include spill handling and personal responsibility for initiating and adhering to appropriate procedures, and the required spill containment supplies to be maintained with each construction crew. These weekly sessions will be held by the Contractor as crew “tailgate” meetings. IPC will audit the Contractor compliance with this requirement to ensure the meetings are conducted.

APPENDIX A
CONTRACTOR'S HAZARDOUS WASTE MANAGEMENT FORMS

CONTRACTOR'S HAZARDOUS MATERIALS MANAGEMENT

IPC Project:	Description:	Chief Inspector's Name:	Tel. No./Location:	IPC Project Number/Accounting :
Contractor:	Firm Name:	Contact Name/Tel. No.:	Address:	
	Project Dates:	Number of Contractor Personnel On-site:	Work Schedule:	

HAZARDOUS MATERIALS			STORAGE AND HANDLING PROCEDURES						
Material Name	**Manufacturer**	**MSDS Reference[1] (Attach)**	**Estimated Quantity Needed for Job (Units)**	**Quantity On-Site (Units)**	**Location(s) at Job Site**	**Marking/Labeling/ Placarding (Discuss or Attach)[4]**	**Tank/ Container Size(s)/ Type(s)**	**Secondary Containment (Discuss or Attach[2])**	**Inspection Procedure (Discuss or Attach[3])**
Comments:									
Attachments:	[1] Provide MSDSs. [2] Describe secondary containment for containers of 5 gallons or more capacity.		[3] Describe inspection procedures. [4] Describe tank/drum marking, labeling and placarding procedures.						

CONTRACTOR'S HAZARDOUS, UNIVERSAL AND SPECIAL WASTE and RECYCLABLE HAZARDOUS MATERIALS MANAGEMENT

WASTE DESCRIPTION[1]		WASTE ACCUMULATION AND HANDLING PROCEDURES				
Waste Type and Description	**Estimated Monthly Generation Quantity/Unit(s)**	**Accumulation Area Location(s)[2] On-Site**	**Tank/Container Size(s)/Type(s)**	**Marking/Labeling/ Placarding (Discuss or Attach)[3]**	**Secondary Containment (Discuss or Attach)[4]**	**Inspection Procedure (Discuss or Attach)[5]**

Process Generating Waste(s):

Contractor's Staging Point Location:

Comments:

Attachments:

1 If Contractor intends to completely use or re-use hazardous materials on-site or off-site and no hazardous waste will be generated, please discuss.

2 Note: Locations may be established on site during mobilization.

3 Describe tank/drum marking, labeling and placarding procedures.

4 Describe secondary containment for containers of 5 gallons or more capacity.

5 Describe inspection procedures, inspection frequency, title of inspector.

Distribution:	Original:	Informational Copies:		Revision Date (by Contractor):	
	Chief Inspector/IPC File	IPC Environmental Inspector: _____			
		Safety-Training: _____			
		Others: _____			

APPENDIX B
LABELS FOR WASTE CONTAINERS

"MATERIALS IDENTIFICATION LABEL" (all containers)

<table>
<tr><td colspan="3">Boardman to Hemingway Project</td></tr>
<tr><td colspan="3">MATERIALS IDENTIFICATION LABEL</td></tr>
<tr><td rowspan="5">Boardman to Hemingway Project:</td><td colspan="2">Description:</td></tr>
<tr><td colspan="2">Facility/Location:</td></tr>
<tr><td colspan="2">Chief Inspector:</td></tr>
<tr><td colspan="2">Environmental Inspector:</td></tr>
<tr><td colspan="2">IPC Project Number/Account:</td></tr>
<tr><td rowspan="3">Contractor:</td><td colspan="2">Contractor Name:</td></tr>
<tr><td colspan="2">Environmental Contact Name:</td></tr>
<tr><td colspan="2">Telephone No.:</td></tr>
<tr><td colspan="3">Process:</td></tr>
<tr><td>Materials Description:</td><td colspan="2">Quantity: ____pounds
____gallons</td></tr>
<tr><td>Container Type (drum, tank, etc.):</td><td colspan="2">Container Location:</td></tr>
<tr><td>Container Number:</td><td colspan="2">Date of Accumulation:</td></tr>
<tr><td rowspan="6">Status of Material:
(if sampling and analysis are required)</td><td colspan="2">Sample Number:</td></tr>
<tr><td colspan="2">Sample Date:</td></tr>
<tr><td colspan="2">Analytical Laboratory:</td></tr>
<tr><td colspan="2">Analysis Date:</td></tr>
<tr><td colspan="2">Report Date:</td></tr>
<tr><td colspan="2">Analytical Results:</td></tr>
</table>

"RECYCLABLE MATERIAL/WASTE" CONTAINER LABEL

Boardman to Hemingway Project

RECYCLABLE MATERIAL/WASTE LABEL

Facility Name: _____

Address: _____

State/Zip: _____

Contact: _____

Type: ☐ **USED OIL**

_____

UNIVERSAL WASTE:

☐ Universal Waste – Batteries

☐ Universal Waste – Lamps

☐ Universal Waste – Mercury Thermostats

☐ **SPECIAL WASTE**

☐ **RECYCLABLE MATERIAL**

Description: _____

Accumulation Date: _____

DOT Proper Shipping Name: _____

_____

_____

UN/NA Number: _____

HAZARDOUS WASTE "WORKPLACE ACCUMULATION CONTAINER" LABEL

WORKPLACE ACCUMULATION CONTAINER

Proper D.O.T Shipping Name: _____

UN/NA# _____

Generator: _____

Facility: _____

Address: _____

Phone: _____ **City:** _____

State: _____ **Zip:** _____

EPA ID No: _____

Workplace Accumulation Start Date: _____

HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL. IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, THE U.S. ENVIRONMENTAL PROTECTION AGENCY, OR THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

HANDLE WITH CARE!

Composition: _____

Physical State of Waste:

Solid _____ **Liquid** _____

Hazardous Properties: ☐ **Toxic** ☐ **Flammable** ☐ **Corrosive** ☐ **Reactivity** ☐ **Other** _____

EPA Waste No. _____

CA Waste No. _____

Date Placed in Hazardous Waste Storage Area: _____

Manifest Document Number: _____

"USED OIL" CONTAINER LABEL

USED

OIL

APPENDIX C
CONTRACTOR'S EMERGENCY RESPONSE PLAN FORM

CONTRACTOR'S EMERGENCY RESPONSE PLAN

IPC HWMSRPSPCC/Emergency Response Plan
Reviewed: (Y/N)

Emergency Response Coordinator

Name	**Title**	**Telephone** (Office/Job Site)	**Address**
Primary			
Secondary			

Incident/Emergency Response Equipment

Emergency Response Equipment	**Type**	**Capability**	**Quantity**	**Location**
Fire Fighting	Fire Extinguishers	Type: B, C?		Jobsite Crew Staging Area
Incident Response Kit	Chemical sorbent material (e.g., kitty litter)	Chemical Spill Response	2 bags	Project Staging Area
	17” x 17” chemical pillows	“	3	“
	48” x 3” chemical socks	“	4	“
	Sorbent pads 18” x 18” x 3/8”	“	20	“
	6 mil polyethylene bags	“	20, 30-gal.	“
	Polyethylene open-head drum	“	2, 30-gal.	“
	Polypropylene gloves	“	10 pair	“
	Waste Labels	“	2 Each	“
	8’ x 10’ Polyethylene Tarp	“	2	“
Release Response Kit	48”x3” oil socks	Fuel/Oil Spill Response	10	Each Fuel/Oil Truck
	17” x 17” oil pillows	“	5	“
	10’ x 4” oil boom	“	2	“
	24” x 24” x 3/8” oil mats	“	20	“
	6 mil polyethylene bags	“	20, 30-gal.	“
	Polypropylene Gloves	“	10 pair	“
	Propylene open-head drum	“	1, 55-gallon	“
	Waste Labels	“	2 Each	“
Sample Kit	Cooler, Quart Jars, Trowel	Sampling of solids	1	Project Staging Area
Spill Containment	8’ x 10’ Polyethylene Tarp	Contain Spill Debris	2	Project Staging Area
	Hay Bales	“	20	“

Evacuation Procedures

Distribution:	Original:	Informational Copies:		Revision Date (by Contractor):
	Chief Inspector/IPC File	IPC Environmental Inspector: _____		
		Safety-Training: _____		
		Others: _____		

APPENDIX D
SPILL REPORT FORM

Boardman to Hemingway
Spill Report Form

General Information

Date/time of spill: _____

Date/time of spill discovery: _____

Name and title of discoverer: _____

Milepost/Legal Description: _____

Spill Source and Site Conditions

Material spilled/Estimated volume: _____

Unique qualifier, if relevant, such as manufacturer: _____

Media in which the release exists: (circle: sand, silt, clay, upland, wetland, surface water, other):

_____

Topography and surface conditions of spill site: _____

_____

Proximity to wetlands and surface waters (including ditches): _____

_____

Proximity to private or public water supply wells: _____

_____

Directions from nearest community: _____

_____

Weather conditions at the time of release: _____

Describe the causes and circumstances resulting in the spill: _____

_____

_____

_____

Describe the extent of observed contamination, both horizontal and vertical (i.e., spill-stained soil in a 5-foot radius to a depth of 1 inch): _____

_____

_____

_____

Boardman to Hemingway Project
Spill Report Form

Spill Control and Clean-up

Describe immediate spill control and/or cleanup methods used and implementation schedule:

Location of any excavated/stockpiled contaminated soil:

Describe the extent of spill-related injuries and remaining risk to human health and environment:

Name, company, and telephone number of party causing spill (e.g., contractor):

Current status of cleanup actions:

Contact Information

Name and company for the following:

Construction Superintendent (Contractor):

Spill Coordinator:

Environmental Inspector:

Chief Inspector (IPC)

Landowner notified (if appropriate):

Date:

Form completed by:

Date:

Government agency notified **(to be completed by IPC or IPC's Representative)**:

Date:

Spill Coordinator must complete this form for any spill, regardless of size, and submit the form to the IPC Representative and Environmental Inspector within 24 hours of the occurrence.

APPENDIX E
PROJECT DESCRIPTION AND SITE MAPS

[Site maps will be provided prior to construction]

ATTACHMENT G-5
DRAFT AMENDED FRAMEWORK BLASTING PLAN

Draft Amended Framework Blasting Plan

Boardman to Hemingway Transmission Line Project

Prepared By

1221 West Idaho Street
Boise, Idaho 83702

Modified by the Oregon Department of Energy and Energy Facility Siting Council

September 2022

Agency Review Process

The agency review process outlined in this section aligns with the OAR 345-025-0016 agency consultation process applicable to monitoring and mitigation plans.

As described in the draft Framework Blasting Plan, blasting may be required in areas of rocky terrain, if determined necessary following the site-specific geotechnical investigation for transmission line structure foundation and access road locations. If blasting is required, the draft Framework Blasting Plan will be finalized, as described throughout the plan. In addition, the plan may be amended at any time during construction, subject to the agency review process outlined below.

To afford an adequate opportunity for applicable local, state and federal agencies to review the draft plan prior to finalization and implementation, and any future plan amendments, the certificate holder shall implement the following agency review process.

Step 1: Certificate Holder's Initial Notification to the Department of Potential Blasting: In the electronic transmittal of the pre-construction Geotechnical Investigation to the Department (Structural Standard Condition 1(b)), the certificate holder shall identify whether blasting activities are recommended for facility construction, and shall identify, in table and map format, potential blasting locations including tower number, milepost and county.

Step 2: Certificate Holder's Update of Draft Plan or Future Plan Amendment: The certificate holder may develop one Blasting Plan to cover all blasting activities for the entire facility; or, may develop individual plans per county, segment or phase, as best suited for facility construction. Based on the draft Framework Blasting Plan included as Attachment G-5 of the Final Order on the ASC, the certificate holder shall update the draft plan(s) identifying applicable regulatory requirements, including any necessary blasting or explosive permits. If the plan(s) are amended following finalization, the certificate holder shall clearly identify and provide basis for any proposed changes.

Step 3: Certificate Holder and Department Coordination on Appropriate Review Agencies and Agency Review Conference Call(s): Prior to submission of the updated draft plan, or any future amended plans, the certificate holder shall coordinate with the Department's Compliance Officer to identify the appropriate federal, state and local agencies to be involved in the plan review process. In this instance, "appropriate" federal agencies are based on landownership where blasting is recommended or planned; "appropriate" state agencies are based on landownership where blasting is recommended or planned, as well as the Department of Geology and Mineral Industries (DOGAMI) and Oregon State Fire Marshal. "Appropriate" local agencies include the local planning department of the jurisdiction blasting is recommended or planned to occur. Once appropriate federal, state and local agency contacts are identified by the Department and certificate holder, the Department's Compliance Officer will initiate coordination between agencies to schedule review/planning conference call(s). If blasting is recommended within multiple counties, the Department and certificate holder may agree to schedule separate conference calls per county.

The intent of the conference call(s) are to provide the certificate holder, or its contractor, an opportunity to describe blasting locations, details of the updated draft or amended plan; and, agency plan review schedule. Agencies may provide initial feedback on requirements to be included in the plan during the call, or may provide written comments during the 14-day comment period. The Department will request that any comments provided be supported by an analysis and local, state or federal regulatory requirement (citation).

The certificate holder may coordinate with appropriate review agencies, in advance of or outside of the established agency review process; however, this established agency review process is necessary under OAR 345-025-0016 and may result in more efficient plan finalization and amendment if managed in a consolidated process, utilizing the Department's Compliance Officer as the lead Point of Contact.

Step 4: Agency Review Process: Either with, or prior to, the agency conference call(s), the certificate holder shall distribute electronic copies of the draft, or future amended, plan(s) requesting that the Department coordinate agency review comments within 14-days of receipt, or as otherwise determined feasible. Following the 14-day agency review period, the Department will consolidate comments and recommendations into the draft, or amended, plan(s), using a Microsoft Word version of the plan provided by certificate holder. Within 14-days of receipt of the agency review comments, the certificate holder shall provide an updated final version of the plan, incorporating any applicable regulatory requirements, as identified during agency review or must provide reasons supporting exclusion of recommended requirements. Final plans will be distributed to applicable review agencies by the Department, including the certificate holder's assessment of any exclusions of agency recommendations, and a description of their opportunity for dispute resolution.

Step 5: Dispute Resolution: If any review agency considers the final, or amended, plan(s) not to adhere to applicable state, federal or local laws, Council rules, Council order, or site certificate condition or warranty, the review agency may submit a written request of the potential violation to the Department's Compliance Officer or Council Secretary, requesting Council review during a regularly scheduled Council meeting. The Council would, as the governing body, review the violation claim and determine, through Council vote, whether the claim of violation is warranted and identify any necessary corrective actions.

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ACRONYMS AND ABBREVIATIONS

CIC	Compliance Inspection Contractor
IPC	Idaho Power Company
ODOE	Oregon Department of Energy
POD	Plan of Development
Project	Boardman to Hemingway Transmission Line Project
U.S.	United States

1.0 INTRODUCTION

The Blasting Plan Framework outlines methods to mitigate risks and potential impacts associated with blasting procedures that may be required for construction of the Boardman to Hemingway Transmission Project (Project). Also included in this section is a preliminary outline for the Blasting Plan to be prepared by the Construction Contractor(s) and submitted to Idaho Power Company (IPC) if blasting is required. The Compliance Inspection Contractor (CIC) and the appropriate agencies will be notified in advance of any required blasting so the area can be cleared. If blasting is to occur on federal lands, IPC will submit the Blasting Plan to the federal land-management agencies for final review and approval.

1.1 Plan Framework Updates

This plan framework will support the Project sufficiently to complete and execute the Oregon Department of Energy (ODOE) site certificate. This plan framework serves as baseline document to guide development of the complete Blasting Plan developed with the Plan of Development before issuance of the site certificate and commencement of construction. The complete Blasting Plan will be developed by the Construction Contractor(s) in consultation with IPC as detailed engineering design of the Project is completed and will contain the detailed information necessary for site-specific guidance. This plan framework provides Project-specific guidance for development of the complete Blasting Plan by identifying treatments and measures required to avoid, minimize, and mitigate Project-related impacts; prevent unnecessary degradation of the environment; ensure blasting activities comply with federal, state, or other agency requirements; and meet any stipulations of the Site Certificate. The Construction Contractor(s) will be responsible for preparing and implementing the complete Blasting Plan.

1.2 Blasting Plan Purpose

Once completed, the Blasting Plan will provide construction crews, the CIC, and environmental monitors with Project-specific information concerning blasting procedures, including the safe use and storage of explosives. The objective of the Blasting Plan is to prevent adverse impacts on human health and safety, property, and the environment that could potentially result from the use of explosives during Project construction.

Blasting may be needed in certain areas with rocky terrain to excavate tower footings, prepare station pads, and to construct access roads. Blasting will be used only in areas where traditional excavation and earth-moving equipment and practices are unable to accomplish the excavation. If hard rock is encountered within the planned drilling depth, blasting may be required to loosen or fracture the rock to reach the required depth to install the structure foundations. Precise locations where blasting is expected will be identified based on a site-specific geotechnical investigation carried out as part of detailed design. In addition, the Construction Contractor(s) may elect to use implosive sleeves during line-stringing activities to fuse conductor wire together.

2.0 REGULATORY COMPLIANCE AND PROCEDURES

The Construction Contractor(s) will be responsible for preparing and implementing the Blasting Plan and must comply with all applicable federal, state, and local laws and regulations. No blasting operations will be undertaken until approval and appropriate permits have been obtained from the applicable agencies. Failure to comply with such laws could result in substantial financial penalty and/or imprisonment.

The Construction Contractor(s) will use qualified, experienced, and licensed blasting personnel who will perform blasting using current and professionally accepted methods, products, and procedures to maximize safety during blasting operations. Blasting procedures will be carried out according to, and in compliance with, applicable laws and will be closely monitored by the CIC.

3.0 BLASTING PLAN GUIDANCE

Prior to blasting, the Construction Contractor(s) shall prepare a Blasting Plan for review and approval by IPC, ODOE, CIC, and any other relevant jurisdictional organization, as applicable. The plan will address safety as well as design for production and controlled blasting. The Blasting Plan also will contain the full details of the drilling and blasting patterns, as well as the controls the Construction Contractor proposes to use for both controlled and production blasting. Review of the plan by the parties shall not relieve the Construction Contractor(s) of the responsibility for the accuracy and adequacy of the Blasting Plan when implemented in the field. A minimum of 2 weeks should be allowed for review and approval of the Blasting Plan by ODOE and other appropriate agencies. If at any time changes are proposed to the Blasting Plan, the Construction Contractor(s) shall submit them to IPC, who will then submit the proposed changes to ODOE and other appropriate agencies and the CIC for review and approval.

3.1 Overview of Blasting Principles

3.1.1 Locations

The Construction Contractor(s) will avoid blasting in potential rockslide/landslide areas to the maximum extent possible and will consult with a geologist before blasting in such areas. A common practice for fusing conductor wire together is the use of implosive sleeves, which use explosive materials. The Construction Contractor(s) should be knowledgeable about this practice and should coordinate with the CIC, particularly with regard to the locations of these practices.

3.1.2 Materials

The Construction Contractor(s) will determine the specific materials needed for blasting operations. These materials will be included on the hazardous materials list for the Project, and their use and storage will comply with applicable federal, state, and local laws and regulations.

3.2 Blasting Plan Components

The Blasting Plan prepared by the Construction Contractor(s) shall contain the following minimum information in the following format:

1. Purpose
2. Scope of the Blasting
3. Definitions
4. Responsibilities
    - 4.1 Management Organization
    - 4.2 Authority Responsibility
    - 4.3 Blaster in Charge (licensed in Idaho and Oregon)

5. Location of Blasting Area
    - 5.1 Description of Blasting Area
    - 5.2 Description of Bedrock and Geological Problems
    - 5.3 Description of Adjacent Utility Facilities
6. Environmental Considerations
7. Safety Considerations
    - 7.1 General
    - 7.2 Warning Signs and Signals
    - 7.3 Procedures around Adjacent Utility Facilities
    - 7.4 Traffic Control
    - 7.5 Emergency Blast Initiation
    - 7.6 Safety Publications
    - 7.7 Fire Prevention
    - 7.8 Safety Hazards
    - 7.9 Emergency Services and Communication
    - 7.10 Minor or Nonemergency Medical Care
    - 7.11 First Aid
8. Risk Management
    - 8.1 Protection of Adjacent Utility Facilities
    - 8.2 Lightning
    - 8.3 Flyrock (Note: Flyrock will be controlled with blasting mats.)
    - 8.4 Carbon Monoxide
    - 8.5 Ground Vibrations
    - 8.6 Seismically Sensitive Receptors and Monitoring Plan

      Description of seismic monitoring to ensure ground vibration does not exceed the maximum limit in 2018 NFPA 495 Figure 11.2.1 at the nearest structures or buildings. Where seismic monitoring is not provided, explosive use shall be limited to the “scaled distance factors” at the nearest structure as identified in 2018 NFPA 495 Table 11.2.2
    - 8.7 Preblast Survey and Inspection
    - 8.8 Post Monitoring and Seismic Report
    - 8.9 Blast Damage Complaints
    - 8.10 Airblast
    - 8.11 Bond or insurance certificate

Demonstration that contractor has bond or insurance certificate for blasting activities in an amount not less than $1,000,000. The Fire Marshal may determine that more coverage is necessary for certain projects

9. Blast Design Concept

9.1 Station limits of proposed shot

9.2 Plan and section views of proposed drill pattern, including free face, burden, blasthole spacing, blasthole diameter, blasthole angles, lift height, and sub-drill depth

9.3 Loading diagram showing type and amount of explosives, primers, initiators, and location and depth of stemming

9.4 Initiation sequence of blastholes, including delay times and delay system

9.5 Manufacturers' data sheets for all explosives, primers, and initiators to be employed

10. Procedures

10.1 Delivery of Explosives

10.2 Storage of Explosives and Blasting Agents

10.3 Blast Hole Drilling

10.4 General Handling of Explosives

10.5 Blast Hole Loading

10.6 Notification

10.7 Initiation of Blast

10.8 Misfire Management

10.9 Test Blasting

11. Records

12. Attachments

3.3 Safety Procedures

Safe storage and use of explosive materials will be a top priority during construction. The safety measures discussed in this section are intended to prevent theft and/or vandalism of the explosive materials, protect against fire, and prevent personal injury and property damage. These measures are intended as general guidelines and specific safety requirements will be identified by the construction contractor prior to construction.

3.3.1 Storage

Explosives must be stored in an approved structure (magazine) and kept cool, dry, and well-ventilated. IPC's Construction Contractor(s) will provide the respective states' Bureau of Alcohol, Tobacco, Firearms, and Explosives office with a list of dates and locations for the explosives and blasting-agent storage facilities to be used on the Project at least 14 days before the establishment of such storage facilities.

At a minimum, the following storage requirements will be implemented:

- Explosives must be stored in an approved structure (magazine), and storage facilities will be bullet, weather, theft, and fire resistant.
- Magazine sites will be located in remote (out-of-sight) areas with restricted access; will be kept cool, dry, and well ventilated; and will be properly labeled and signed.
- Detonators will be stored separately from other explosive materials.

- The most stringent spacing between individual magazines will be determined according to the guidelines contained in the Bureau of Alcohol, Tobacco, Firearms, and Explosives publication or state or local explosive storage regulations.
- Both the quantity and duration of temporary onsite explosives storage will be minimized.

The Construction Contractor(s) will handle and dispose of dynamite storage boxes in accordance with relevant federal, state, and local laws.

3.3.2 Blasting Notification and Safety Procedures

The Construction Contractor(s) will obtain a permit from the appropriate county as needed, for the period when blasting may occur.

At least 14-days prior to any blasting necessary during construction of the facility, certificate holder shall ensure that its Construction Contractor identifies all landowners of record and occupants within 1,250 feet of blasting actions and provide notification to those landowners and occupants of the blasting schedule, certificate holder or construction contractor contact information, potential risks/hazards and of measures that will be taken to monitor and minimize any ground shaking impacts.

Construction Contractor(s) will comply with the following additional requirements developed by the federal land-management agencies:

- The Construction Contractor(s) shall publish a proposed blasting schedule in the local newspaper 1 week prior to any blasting taking place. The schedule shall identify the location, dates, and times blasting will occur. No blasting shall occur outside of the published schedule, except in emergency situations.
- The Construction Contractor(s) shall post warning signs at all entry points for the Project. Warning signs shall include information on blasting, including the general hours blasting might take place, and audible signals to be used warning of impending blasting and to indicate the site is all clear.
- Access points to areas where blasting will take place will be blocked to prevent access by the public at least 30 minutes prior to blasting. The site shall be swept 5 minutes prior to blasting to ensure no unauthorized personnel have wandered onto the site. An audible warning signal, capable of carrying for 0.5 mile, shall be used at least 2 minutes prior to blasting. An “all-clear” signal will be given once it has been determined the area is safe.
- Blasting in the vicinity of pipelines will be coordinated with the pipeline operator and will follow operator-specific procedures, as needed.
- Damages that result solely from the blasting activity will be repaired or the owner fairly compensated.

A determination that the blasting area is all clear of danger will be derived once the blasting area has been inspected for undetonated or misfired explosives. The blasting area also will be inspected for hazards, such as falling rock and rock slides. Once the area has been inspected and these issues have been addressed, the all-clear signal as described above will sound and persons will be able to safely re-enter the blast zone. Additional safety precautions will be developed to address site-specific conditions at the time of the blast. Special attention will be given to preventing potential hazards in the blasting area resulting from flying rock, destabilized walls or structures, presence of low flying aircraft, and dispersion of smoke and gases.

3.3.3 Fire Safety

The presence of explosive materials on the Project site could potentially increase the risk of fire during construction. Special precautions will be taken to minimize this risk, including the following:

- Prohibiting ignition devices within 50 feet of explosives storage areas
- Properly maintaining magazine sites so they are clear of fuels and combustible materials, well ventilated, and fire-resistant
- Protecting magazines from wildfires that could occur in the immediate area

- Posting fire suppression personnel at the blast site during high-fire danger periods
- Prohibiting blasting during extreme fire danger periods

3.3.4 Transportation of Explosives

Transportation of explosives will comply with all applicable federal, state, and local laws, including Title 49 of the Code of Federal Regulations, Chapter III. These regulations are administered by the United States (U.S.) Department of Transportation and govern the packaging, labeling, materials compatibility, and safety of transported explosives, as well as driver qualifications. In general, these regulations require vehicles carrying explosive materials be well-maintained, properly marked with placards, and have a non-sparking floor. Materials in contact with the explosives will be non-sparking, and the load will be covered with a fire- and water-resistant tarpaulin. Vehicles also must be equipped with fire extinguishers and a copy of the Emergency Response Guidebook (U.S. Department of Transportation 2008). Every effort will be made to minimize transportation of explosives through congested or heavily populated areas.

Prior to loading an appropriate vehicle for carrying explosives, the vehicle shall be fully fueled and inspected to ensure its safe operation. Refueling of vehicles carrying explosives shall be avoided. Smoking shall be prohibited during the loading, transporting, or unloading of explosives. In addition, the following specific restrictions apply to transport of other items in vehicles carrying explosives:

- Tools may be carried in the vehicle, but not in the cargo compartment.
- Detonation devices can, in some cases, be carried in the same vehicle as the explosives, but they must be stored in a specially constructed compartment(s).
- Batteries and firearms shall never be carried in a vehicle with explosives.
- Vehicle drivers must comply with the specific laws related to the materials being transported.

Vehicles carrying explosives shall not be parked or left unattended except in designated parking areas with approval of the State Fire Marshall. When traveling, vehicles carrying explosives will avoid congested areas to the maximum extent possible.

3.4 Design Features of the Project for Environmental Protection

This section will serve as the baseline measures for inclusion in the complete Blasting Plan to be developed by the Construction Contractor(s). Design features of the Project for environmental protection are applied Project-wide and will address many of the concerns associated with blasting. Design Features of the Project for Environmental Protection are developed in accordance with ODOE and other appropriate agency standards. Following is a description of design features of the Project for environmental protection that relate to blasting during the construction and operation of Project facilities.

Design Feature 14. State standards for abandoning drill holes will be adhered to where groundwater is encountered.

Design Feature 21. Hazardous material will not be discharged onto the ground or into streams or drainage areas. Enclosed containment will be provided for all waste. All construction waste (i.e., trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials) will be removed to a disposal facility authorized to accept such materials within 1 month of Project completion, except for hazardous waste which will be removed within 1 week of Project completion.

Refueling and storing potentially hazardous materials will not occur within a 200-foot radius of all identified private water wells, and a 400-foot radius of all identified municipal or community water wells. Spill prevention and containment measures will be incorporated as needed.

Design Feature 32. If, based on landowner consultation, on parcels that contain a natural spring or well and on which blasting will be conducted, the certificate holder shall conduct pre-blasting flow measurements to establish a baseline for potential impacts to the spring or well. Watering facilities (tanks, natural springs and/or developed springs, water lines, wells, etc.) will be repaired or replaced if they are damaged or destroyed by construction and/or maintenance activities to their predisturbed condition as required by the landowner or land-management agency. Should construction and/or maintenance activities prevent use of a watering facility while livestock are grazing in that area, then the Applicant will provide alternate sources of water and/or alternate sources of forage where water is available.

3.5 Literature Cited

U.S. Department of Transportation. 2008. Emergency Response Guidebook. Available at http://www.ehso.com/hmerg.php.

ATTACHMENT P1-4
AMENDED VEGETATION MANAGEMENT PLAN

Amended Vegetation Management Plan

Boardman to Hemingway Transmission Line Project

1221 West Idaho Street
Boise, Idaho 83702

~~September 2018~~June 2023

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Appendix A PacifiCorp's Transmission and Distribution Vegetation Management Program Specification Manual

ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
BLM	Bureau of Land Management
IPC	Idaho Power Company
kV	kilovolt
NERC	North American Electric Reliability Council
ODOE	Oregon Department of Energy
OSHA	U.S. Department of Labor Occupational Safety and Health Administration
Project	Boardman to Hemingway Transmission Line Project
ROW	right-of-way
TVES	Terrestrial Visual Encounter Surveys
TVMP	Transmission Vegetation Management Program
USFS	United States Forest Service

Agency Review Process

The agency review process outlined in this section aligns with the OAR 345-025-0016 agency consultation process applicable to monitoring and mitigation plans.

To afford an adequate opportunity for applicable local, state and federal agencies to review the draft plan prior to finalization and implementation, and any future plan amendments, the certificate holder shall implement the following agency review process.

Step 1: Certificate Holder's Update of Draft Plan or Future Plan Amendment: The certificate holder may develop one Right of Way Clearing Assessment to cover all construction activities for the entire facility; or, may develop individual plans per county, segment or phase, as best suited for facility construction. Based on the draft Right of Way Clearing Assessment included as Attachment K-2 of the Final Order on the ASC, the certificate holder shall update the draft plan(s) based on facility design and construction plans. If the plan(s) are amended following finalization, the certificate holder shall clearly identify and provide basis for any proposed changes.

Step 2: Certificate Holder and Department Coordination on Appropriate Review Agencies and Agency Review Conference Call(s): Prior to submission of the updated draft plan, or any future amended plans, the certificate holder shall coordinate with the Department's Compliance Officer to identify the appropriate federal, state and local agencies to be involved in the plan review process. Once appropriate federal, state and local agency contacts are identified by the Department and certificate holder, the Department's Compliance Officer will initiate coordination between agencies to schedule review/planning conference call(s). The Department and certificate holder may agree to schedule separate conference calls per county.

The intent of the conference call(s) are to provide the certificate holder, or its contractor, an opportunity to describe details of the updated draft or amended plan; and, agency plan review schedule. Agencies may provide initial feedback on requirements to be included in the plan during the call, or may provide written comments during the 14-day comment period. The Department will request that any comments provided be supported by an analysis and local, state or federal regulatory requirement (citation).

The certificate holder may coordinate with appropriate review agencies, in advance of or outside of the established agency review process; however, this established agency review process is necessary under OAR 345-025-0016 and may result in more efficient plan finalization and amendment if managed in a consolidated process, utilizing the Department's Compliance Officer as the lead Point of Contact.

Step 3: Agency Review Process: Either with, or prior to, the agency conference call(s), the certificate holder shall distribute electronic copies of the draft, or future amended, plan(s) requesting that the Department coordinate agency review comments within 14-days of receipt, or as otherwise determined feasible. Following the 14-day agency review period, the Department will consolidate comments and recommendations into the draft, or amended, plan(s), using a Microsoft Word version of the plan provided by certificate holder. Within 14-days of receipt of the agency review comments, the certificate holder shall provide an updated final version of the plan, incorporating any applicable regulatory requirements, as identified during agency review or must provide reasons supporting exclusion of recommended requirements. Final plans will be distributed to applicable review agencies by the Department, including the certificate holder's assessment of any exclusions of agency recommendations, and a description of their opportunity for dispute resolution.

~~Step 4: Dispute Resolution: If any review agency considers the final, or amended, plan(s) not to adhere to applicable state, federal or local laws, Council rules, Council order, or site certificate condition or warranty, the review agency may submit a written request of the potential violation to the Department's Compliance Officer or Council Secretary, requesting Council review during a regularly scheduled Council meeting. The Council would, as the governing body, review the violation claim and determine, through Council vote, whether the claim of violation is warranted and identify any necessary corrective actions.~~

1.0 INTRODUCTION

This Attachment to Exhibit P1 to Idaho Power Company's (IPC) Application for Site Certificate provides information on the Vegetation Management Plan that IPC will follow for the life of the Boardman to Hemingway Transmission Line Project (Project). The Project area, or Site Boundary, as defined in Oregon Administrative Rule 345-001-0010(55) includes "the perimeter of the site of a proposed energy facility, its related or supporting facilities, all temporary laydown and staging areas, and all corridors and micrositing corridors proposed by the applicant." The Site Boundary for this Project includes the following facilities in Oregon:

- The Proposed Route, consisting of 270.8 miles of new 500-kilovolt (kV) electric transmission line, removal of 12 miles of existing 69-kV transmission line, rebuilding of 0.9 mile of a 230-kV transmission line, and rebuilding of 1.1 miles of an existing 138-kV transmission line;
- Four alternatives that each could replace a portion of the Proposed Route, including the West of Bombing Range Road Alternative 1 (3.7 miles), West of Bombing Range Road Alternative 2 (3.7 miles), Morgan Lake Alternative (18.5 miles), and Double Mountain Alternative (7.4 miles);
- One proposed 20-acre station (Longhorn Station);
- Ten communication station sites of less than ¼ acre each and two alternative communication station sites;
- Permanent access roads for the Proposed Route, including 206.3 miles of new roads and 223.2 miles of existing roads requiring substantial modification, and for the Alternative Routes including 30.2 miles of new roads and 22.7 miles of existing roads requiring substantial modification; and
- Thirty temporary multi-use areas and 299 pulling and tensioning sites of which four will have light-duty fly yards within the pulling and tensioning sites.

The Project features are fully described in Exhibit B, and the Site Boundary for each Project feature is described in Exhibit C, Table C-24. The location of the Project features and the Site Boundary is outlined in Exhibit C. This Vegetation Management Plan includes a discussion of 1) the purpose, goals and objectives, 2) an overview of the vegetation community types within the Site Boundary where vegetation management will occur, and 3) methods of vegetation management.

1.1 Purpose

This Vegetation Management Plan describes the framework for the development of the final Vegetation Management Plan. The focus of this framework and the final Plan is to describe the methods in which vegetation along the transmission line will be managed during operation of the Project. The measures IPC will undertake to control noxious and invasive-plant species and prevent the introduction of these species within the Project Site Boundary are discussed in the Noxious Weed Management Plan (Exhibit P1, Attachment P1-5). The measures that will be taken to reclaim and revegetate areas that have been impacted by construction activities are discussed in the Reclamation and Revegetation Plan (Exhibit P1, Attachment P1-3).

This Plan is applicable Project-wide, and it is expected that modifications to this Plan will be made once final agreements are reached with the appropriate land management agencies and the Oregon Department of Energy (ODOE), as well as with counties and individual landowners. The final Vegetation Management Plan is intended to meet the applicable guidance contained in the Oregon Forest Practices Act (Oregon Administrative Rule Chapter 629), United States

Forest Service (USFS) Manual 2070 (USFS 2008) and 2900 (USFS 2011), as well as any applicable Bureau of Land Management (BLM) Resource Management Plans and local (i.e., county or city) management plans. Vegetation management specifications will follow those detailed in PacifiCorp's Transmission and Distribution Vegetation Management Program Specification Manual (Appendix A).

1.2 Goals and Objectives

IPC has two goals for conducting vegetation management during operation of the Project:

1. Access: IPC's access goal for conducting vegetation management is to maintain work areas adjacent to Project features but within the right-of-way (ROW), that will allow vehicle and equipment access; this access is necessary for operations, maintenance, and repair of the Project.
2. Safety/reliability: IPC's safety and reliability goal for vegetation maintenance is to maintain the safety and reliability of the transmission line, by preventing tall vegetation from coming into contact with conductors.

2.0 OVERVIEW OF EXISTING ENVIRONMENTS

Vegetation management activities may occur throughout the Project but will be heavily focused in forest and woodland areas, and forested riparian and forested wetlands where tall shrubs and trees may impact transmission lines and structures. IPC used data from the Terrestrial Visual Encounter Surveys (TVES) to identify the ecological systems and assign a habitat type and category based on vegetation characteristics. However, due to limitations on access to private lands, surveys have not been completed within the entire Site Boundary. Approximately 67 percent of the Site Boundary was surveyed for TVES (see Exhibit P1). In areas where survey information was not available due to unsigned right-of-entry agreements or changes in route alignment, biologists used desktop analysis methods to assign habitat type and category. The U.S Geological Service Gap Analysis Project data (USGS 2011) and aerial imagery interpretation were used to delineate habitat type and agency designated habitats (e.g., Oregon Department of Fish and Wildlife designated big game habitats). Known occurrences of special status species, and conditions in adjacent surveyed areas were used to approximate the appropriate category type. Detailed descriptions of the modeling and criteria used to identify and categorize habitats within the Site Boundary are included in Attachment P1-1, Habitat Categorization Matrix, and Attachment P1-6, Fish and Wildlife Habitat Mitigation Plan.

TVES and subsequent desktop analysis for the habitat categorization process identified various habitat types present within the Site Boundary. These habitat types were then assembled into vegetation cover types for purposes of this Vegetation Management Plan. Grouped cover types are useful in presenting and describing vegetation management methods used for specific habitat types, mainly forest and woodland. These vegetation cover types differ slightly from the "General Vegetation Type" identified as part of the habitat categorization process and are described below in Table 1.

The extent of each vegetation cover type and the habitat types included in each cover type within the Site Boundary are presented in Table 1. Descriptions of each cover type are provided in the Reclamation and Revegetation Plan (Exhibit P1, Attachment P1-3), but are described as Reclamation Zones in that plan. The vegetation cover types specific to the Vegetation Management Plan are described below.

Table 1. Vegetation Cover Types within the Site Boundary

Vegetation Cover Type	Percent of Site Boundary	Habitat Types Included in Each Vegetation Cover Type
Shrubland	37	Desert Shrub Shrub-Steppe with Big Sage Shrub-Steppe without Big Sage
Grassland	18	Native Grasslands
Agriculture	8	Agriculture
Forest and Woodland	13	Douglas-Fir / Grand Fir Ponderosa Pine Western Juniper / Mountain Mahogany Woodland Forested – Other
Wetland / Riparian	1	Emergent Wetland Scrub-Shrub Wetland Forested Wetland Aquatic Bed Wetland Ponds and Lakes Ephemeral, Intermittent, and Perennial Stream Herbaceous Riparian Introduced Riparian Riparian Woodland and Shrubland
Other	23	Introduced Upland Vegetation Developed / Disturbed Bare Ground, Cliffs, Talus

Forest and Woodland, where most vegetation management will occur, account for 11 percent of the Site Boundary. Forest and Woodland types are made up mostly of Douglas-fir (*Pseudotsuga menziesii*) forest and ponderosa pine (*Pinus ponderosa*) forest with lesser amounts of western juniper (*Juniperus occidentalis*) woodlands. Forested habitats are found predominantly in the Blue Mountains, in Umatilla and Union counties, from just south of La Grande to south and east of Pendleton. Small pockets of Douglas-fir forests are also mapped in the drainages and highest elevations southwest of the town of Durkee. Logging and other disturbance such as grazing is common in these cover types. Juniper woodlands are mostly found in Baker County northwest of Durkee to south of Weatherby.

Wetland and Riparian habitat occurs in 1 percent of the Site Boundary. These areas are found throughout the Site Boundary adjacent to rivers, springs, and seeps. Vegetation management may be required in forested wetland and riparian areas where trees and shrubs may grow sufficiently large to interfere with transmission lines and structures.

3.0 VEGETATION MANAGEMENT

General vegetation management strategies are described below, with specifications and methodologies detailed in the PacifiCorp Transmission and Distribution Vegetation Management Program Specification Manual (Appendix A).

IPC must maintain work areas adjacent to electrical transmission structures and along the ROW to allow access for vehicles and equipment necessary for operations, maintenance, and repair. Furthermore, vegetation management under the transmission line minimizes the potential for fires and power outages that can result when vegetation comes into contact with conductors.

Vegetation management is expected to be minimal for the Project, as the vast majority of the Project crosses through areas that contain low-growing vegetation cover types (e.g., grasslands and shrublands; Table 1). As these vegetation cover types will not grow to heights that could interfere with the transmission line, they will not be maintained or cleared under the line during operation of the Project. Forest and Woodlands make up 13 percent of the area within the Site Boundary and will account for the majority of the vegetation management activities. Some vegetation management may also be required in wetland/riparian areas that are dominated by trees or tall shrubs.

Vegetation management will be conducted in compliance with the American National Standards Institute (ANSI) Pruning Standards Best Management Practices for Utilities, Oregon Forest Products Act, the U.S. Department of Labor Occupational Safety and Health Administration (OSHA), North American Electric Reliability Council's (NERC) Standard FAC-003-3 Transmission Vegetation Management Program (TVMP)[1], and IPC's TVMP (Appendix A). The vegetation management program will accomplish the following tasks:

- Lines that are 138-kV, 161-kV, 230-kV, and above are patrolled, at a minimum cycle of once a year, to identify hazardous vegetation, within or adjacent to the ROW, that could fall in or onto transmission lines or associated facilities. Hazardous trees, snags, or "hot spots" are removed. Any trees that will become a clearance violation prior to the next scheduled maintenance cycle are evaluated, and trimmed or removed.
- Trim trees and tall shrubs to the extent that the clearance lasts for the duration of the cycle.
- Remove vegetation, as necessary, to provide required electrical clearance and improve access to facilities.
- Remove tall-growing vegetation within structures. Clear brush and grass around wood poles to help protect structures from range fires.
- Facilitate a low-growing plant community that stabilizes the site, inhibits the growth of tall-growing shrubs and trees, and provides habitat for wildlife.

Clearing of vegetation near Project components will be accomplished using manual (i.e., hand pulling, lopping by hand crews), and mechanical methods (i.e., chainsaws, weed trimmers, rakes, shovels, mowers, brush hooks, and Slash Buster [a track-driven machine]), or a combination of these methods. The specific methods depend on site-specific conditions, such as slope, access, size/extent of vegetation, previous agreements with landowners, and the presence of sensitive resources. In order to meet vegetation maintenance objectives, herbicides may also be used to control vegetation in selected areas as described in Section 3.3 of this Plan.

Forest and woodland habitats are concentrated in the portion of the Project that crosses the Blue Mountains, but are also found northwest of Durkee to south of Weatherby. Initial ROW clearing activities in forest and woodland habitats are detailed in Exhibit K, Attachment K-2 ROW Clearing Assessment. Unlike the portion of the Project that crosses low-lying vegetation (e.g., grasslands and shrublands), these forest and woodland habitats, as well as some wetland and riparian areas, contain vegetation that will need to be maintained within the ROW in order to maintain access, safety, and reliability of the Project. Maintenance of the ROW will require IPC to file with the Oregon Department of Forestry a Plan for an Alternate Practice under the Oregon

[1] FAC-003-1 requires transmission owners to prepare, and keep current, a formal TVMP. The TVMP shall include the transmission owner's objectives, practices, approved procedures, and work specifications. Available at: http://www.nerc.com/files/FAC-003-1.pdf

Forest Practices Act. IPC's Plan for an Alternate Practice is included in Exhibit BB, Attachment BB-1. The vegetation management that will be conducted along these forested and woodland portions of the Project is discussed in the following sub-section.

3.1 Right-of-Way Maintenance

Vegetation management practices along the ROW will be conducted in accordance with the TVMP in Appendix A. As stated above, these practices will comply with the standards set by the ANSI Pruning Standards Best Management Practices for Utilities, the Oregon Forest Products Act, and by OSHA and NERC requirements.

A wire-border zone method will be used during maintenance of the ROW in forested and woodland habitats to control tall vegetation and to ensure adequate ground-to-conductor clearances (Appendix A, Section 6.7.1.5.1). This method results in two zones of clearing and revegetation: the wire zone and the border zone. The wire zone includes the linear area along the ROW located under the wires as well as the area extending 10 feet outside of the outermost phase-conductor. After initial clearing, vegetation in the wire zone will be maintained to consist of native grasses, legumes, herbs, ferns, shrubs, and other low-growing vegetation that remain under approximately 5 feet tall at maturity. The border zone is the linear area along each side of the ROW extending from the edge of the wire zone to the edge of the ROW. Vegetation in the border zone will be maintained to consist of tall shrubs or short trees (up to 25 feet high at maturity), grasses, and forbs. These cover plants along the border zone benefit the ROW by competing with and excluding undesirable plants. No clearing will be conducted in areas where the height of mature trees will not come within 50 feet of the wires (e.g., a canyon or ravine crossing with high ground clearance at mid-span). Minimum clearance values are affected by circuit voltage, terrain, span length, ruling span length, conductor size and tension, anticipated wind conditions, and structure framing parameters. Figures 6.4a, 6.4b, and 6.5 in Appendix A illustrate specifications for the wire-border zones.

Transmission lines are inspected and cleared on long-term cycles; however, shorter clearing cycles may occur if conditions dictate out-of-cycle trimming is needed to maintain the wire-border zone objectives. During operations, vegetation growth will be monitored and managed to maintain the wire-border zone objectives. The methods for maintaining vegetation within the wire and border zones will be similar to those described above, with the exception that mechanical as opposed to manual methods will be employed due to the scope and extent of area to the treated.

In addition to the cyclical inspection cycles described above, Transmission Patrolmen patrol and inspect lines at a minimum once a year to identify any transmission defects and any vegetation hazards that may develop between the long-term clearing cycles. During these inspections, the Patrolman will identify hazardous vegetation, within or adjacent to the ROW, that could fall in or onto the transmission lines or associated facilities and cause an outage. The Patrolman will evaluate the hazardous vegetation as to the level of threat posed by categorizing the vegetation as an "imminent threat," "medium hazard," or "low hazard." Any issues found are reported to the grid operator and to vegetation management, and documented on an Emergency Tree Action Form. If possible, the Patrolman will take photos of the "imminent threat" vegetation for further evaluation by vegetation management staff.

Imminent threats are any vegetation issue that poses an imminent threat of causing a line outage and that has a high risk of failure in the next few days or weeks. These imminent threats are normally tall trees that have one or more drastic defects that could cause the tree to fail and fall in or onto transmission lines and cause an outage. An "imminent threat" could also be vegetation that is in good condition but that has grown so close to the transmission line that it could be brought into contact with the line through a combination of conductor sag and/or wind-

induced movement in the conductor or the vegetation. Hazards are any vegetation issue that poses a threat of causing a line outage, but that has either a low or medium risk of failure in the next month. These hazards are normally trees that have one or lesser defects that could cause the tree to fail and fall in or onto transmission lines and cause an outage.

On federal and state ground, IPC prefers to clear cut all tall-growing trees in the ROW. Clear-cut methods include crews that use chain saws, or track-driven machines such as Slash Buster and the Brontosaurus. On private property, removal is IPC's first choice, but if not approved, IPC will proceed to trim the trees. The typical trimming methods used are a top trim or side trim.

During tree- and shrub-trimming operations, strategies that minimize effects to wildlife will be used. Tree and shrub trimming will be avoided during the primary avian breeding season (April 1–July 15), especially in sensitive habitat (i.e., riparian). Upland habitat suitable to nesting migratory birds will be surveyed prior to ground clearing between April 1 and July 15 for active nests. A 100-foot no-construction-buffer around active nests will be implemented. No seasonal restrictions will be imposed on clearing upland habitat between July 15 and February 15. Ground clearance in riparian habitats will be allowed between August 1 and March 30, with the exception of a seasonal constraint for impacts to fisheries resources.

3.2 Slash and Debris Management

As the vast majority of the Project crosses through areas where little to no vegetation management will be conducted, substantial slash and debris is unlikely to be generated along most portions of the Project during operations. However, maintenance and construction along the portion of the Project that crosses forested and woodland areas could generate timber slash and debris. In general, this slash and debris can be either 1) chipped, with the chips scattered along the ROW or removed; 2) lopped and scattered on site; or 3) piled on site. IPC's preferred method for handling slash is to lop and scatter the slash on site, as long as the scattered material does not block access, represent a safety hazard, or adversely affect management goals for the area. The method for managing slash and debris in these areas will be determined based on the requirements and recommendations by the appropriate land management or regulatory agency and ODOE. Slash management strategies will be developed to minimize fuel loading and wildfire hazard.

3.3 Herbicide Use

On federally controlled lands, a Pesticide Use Proposal will be submitted prior to any application as recommended in the Final Environmental Impact Statement on Vegetation Treatments Using Herbicides on BLM Lands in Oregon (BLM 2010). The Pesticide Use Proposal will include the dates and locations of application, target species, herbicide, adjuvants, application rates and methods (e.g., spot spray vs. boom spray), and anticipated impacts to non-target species and susceptible areas. Private property will be sprayed only if written approval is obtained from the landowner. All herbicide applications will comply with U.S. Environmental Protection Agency label instructions; federal, state, and/or county regulations; permit stipulations; and landowner agreements. Herbicide contractors, certified and approved in the state of Oregon, will have current safety data sheets and will take all reasonable precautions to prevent spills.

Herbicide use near special status species and waterbodies will follow label requirements, state and federal law, and BLM and USFS recommendations. Only herbicides approved by the land-managing agency as safe to use in aquatic environments and reviewed by IPC for effectiveness will be used within 100 feet of aquatic resources, and no herbicides will be applied within 100 feet of known threatened and endangered plants or waterbodies during preconstruction activities. Areas of flowing water, wetlands, or other sensitive resources where herbicide use will be prohibited will be described in the Final Noxious Weed Plan and be identified on construction

maps and flagged. IPC will also comply with the Idaho and Oregon National Pollutant Discharge Elimination System permits related to the use of herbicides in and adjacent to waterbodies.

Care will be taken during transport and storage to minimize the potential for leaks. In the event of an herbicide spill, the spill will be promptly cleaned up by appropriately trained personnel, and contaminated materials will be transported to a disposal site that meets local, state, and federal requirements. If a spill occurs whose cleanup is beyond the capability of on-site equipment and personnel, an Emergency Response Contractor available to further contain and clean up the spill will be identified. Potential contractors will be identified prior to the start of construction activities. Emergency spill response kits will be maintained at all locations where hazardous materials, including herbicides and pesticides, are stored in sufficient quantities based on the amount of materials stored on-site. Spill kits will include materials to address spills both on land and into water. If a spill occurs, the applicator will report it in accordance with applicable laws and will contact Construction Contractor(s) supervisory personnel, the appropriate land management agency, and the ODOE. Spill preventive and containment measures or practices will be incorporated as described in Exhibit G, Materials Analysis, and Attachment G-4, Draft Spill Prevention, Control, and Countermeasures Plan.

Additional information pertaining to herbicide use is listed in the Noxious Weed Plan (Exhibit P1, Attachment P1-5).

4.0 PLAN UPDATES

Once the preferred route is selected and final engineering is completed, an updated Vegetation Management Plan will be prepared. The Vegetation Management Plan will be updated prior to the start of construction.

5.0 LITERATURE CITED

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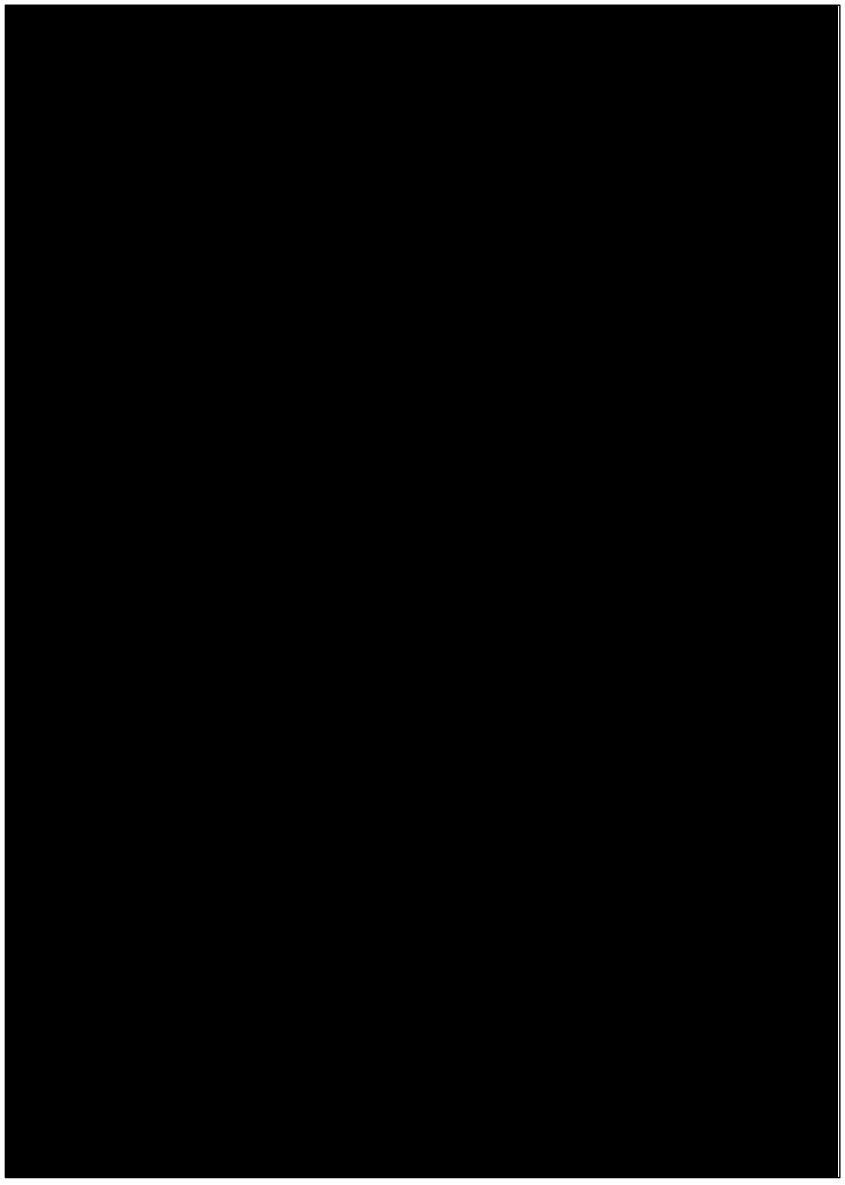
APPENDIX A
PACIFICORP'S TRANSMISSION AND DISTRIBUTION VEGETATION MANAGEMENT PROGRAM SPECIFICATION MANUAL

Transmission & Distribution
Vegetation Management Program

Standard Operating Procedures



Revision	Status	Date	Author	Change Tracking
00	Issued for implementation	12/15/2008	R. H. Miller	Manual created
01	Reviewed/Updated	06/15/2012	R. H. Miller	1. Clarified language throughout 2. Revised Chapter 4 to reflect a process checklist used for project management. 3. Modified Clearance 2 to strictly reflect table 5 in IEEE 516-2003 Table 5. 4. Section 6.4.1 changed so that if contract utility foresters identify an imminent threat, they contact the appropriate line patrolmen to initiate the imminent threat procedure.
02	Reviewed/Updated	09/06/2013	R.H. Miller	1. Clarified language throughout. 2. Revised distribution action thresholds and clearance standards to accommodate three and four year cycles. 3. Modified transmission clearance requirements to accommodate FAC-003-02
03	Reviewed/Updated	06/24/2015	R.H. Miller	1. Clarified language 2. Brought specification manual into line with FAC-003-03
04	Reviewed/Updated	07/01/2015	R.H. Miller	1. Corrected Table of Contents 2. Updated Figures 2.1 and 6.6 with Rocky Mt. Power 3. Corrected reference to Table 2.2 4. Added substation inspection Section (2.6 and 4.2.4.6) 5. Clarified definition of interim work. 6. Clarified side work.
05	Reviewed/Updated`	06/01/2016	R.H. Miller	1. Changed document to "Standard Operating Procedures" 2. Clarified language 3. Chapter 2. a. Added "At Fault" tree crew caused outages language – Section 2.1.6 b. Added language to contact media – Section 2.4.2.1 c. Added language to contact legal – Section 2.4.2.2 d. Added language that mechanical cutting (Jarraff's and helicopters) to comply with ANSI A300. e. Added language for storm emergency response 2.10. f. Added language assigning responsibility for property damage to contractors 2.12. 4. Chapter 4 a. Added language to requiring rules be followed on hydroelectric facilities and communicate with plant manager – Section 4.2.4.7. b. Added language requiring limited visual hazard tree inspections around substations and transition stations – 4.2.4.8.

Revision	Status	Date	Author	Change Tracking
				c. Added language on working around schools – Section 4.2.7.1. d. Added language regarding working near mobile home parks and apartment complexes – Section 4.2.7.2. e. Simplified language on accounting for pruning in – Section 4.3.1 5. Chapter 5 a. Updated interim maintenance language – Section 5.3 b. Added a section on distribution herbicide maintenance – Section 5.5 c. Updated work thresholds and clearances – Table 5.1 d. Added table on interim work thresholds and clearances – Table 5.2 e. Added section on padmount transformers – Section 5.7. 6. Chapter 7 a. Added section on closed chain of custody – Section 7.1 b.

Approval: Steve Anderton, Managing Director, T&D Support Services Date: 06/01/2017

Transmission & Distribution
Vegetation Management Program

Standard Operating Procedures

June 1, 2017

PacifiCorp, Director, Vegetation Management
1407 West North Temple, Room 230
Salt Lake City, Utah 84116
801.220.2271

Transmission & Distribution
Vegetation Management Program

Standard Operating Procedures

Mission Statement:

Manage trees and vegetation around PacifiCorp's transmission and distribution facilities in a professional, cost effective and environmentally conscientious manner to provide safe, reliable and outstanding service to our customers.

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1. PROGRAM OVERVIEW

Trees growing into or near power lines are a concern for PacifiCorp because they can create safety and service reliability risks. Close growing branches can provide access for children and others to high-voltage lines, exposing them to the potential danger of serious injury or death due to electric contact. Branches touching power lines can spark and start fires and cause interruptions in electric supply. Trees whipped by winds or weighed down by rain or snow can interrupt power, which disrupts businesses, homes, and compromises critical community infrastructure, such as hospitals and emergency services.

Three major electric grid failures, including the catastrophic blackout on August 14, 2003, were initiated by tree-caused outages on transmission lines (U.S.-Canada Power System Outage Task Force 2003).

For these reasons and others, the National Electrical Safety Code (ANSI 2016) Section 2l8-A-l, states:

> *Trees which may damage ungrounded supply conductors should be pruned or removed. Note: Normal tree growth, the combined movement of trees and conductors under adverse weather conditions, voltage and sagging of conductors at elevated temperatures are among the factors to be considered in determining the extent of pruning required.*

PacifiCorp's distribution system averages scores of trees for every mile of line, any of which could potentially create problems. With that level of exposure, it is impossible to secure the system completely. Electric utilities, such as PacifiCorp, manage their systems to reduce electric supply and service reliability risks by clearing trees from power lines.

Often, particularly in the case of transmission lines, the best solution is to remove tall-growing trees in favor of low-growing species that will never interfere with the high-voltage lines. However, it is not always possible to remove conflicting trees. Trees that cannot be removed must be pruned to clear the utility space using modern, arboriculturally-sound pruning practices.

PacifiCorp's standard operating procedures cover the vegetation management program for both distribution and transmission facilities. It includes program descriptions, specifications and protocols for customer relations. Its intent is to provide direction for foresters as well as contract GF/supervisors, contract utility foresters and utility tree workers on PacifiCorp's system, and helps inform PacifiCorp employees about vegetation management.

1.1 Applicable References

The following standards and best practices shall be followed:

- *American National Standard for Tree Care Operations: ANSI A300 (Part 1) Pruning*
- *American National Standard for Tree Care Operations: ANSI A300 (Part 7) Integrated Vegetation Management*
- *American National Standard for Tree Care Operations: ANSI A300 (Part 9) Tree Risk Assessment.*

- *American National Standard for Arboricultural Operations ANSI Z133 Safety Requirements*

The following best practice should be followed:

- International Society of Arboriculture: *Best Management Practices, Utility Pruning of Trees*
- International Society of Arboriculture: *Best Management Practices, Integrated Vegetation Management*
- International Society of Arboriculture: *Best Management Practices, Tree Risk Assessment*
- Utility Arborist Association Best Management Practices: *Field Guide to Closed Chain of Custody for Herbicides in the Utility*

1.2 Professionalism

PacifiCorp employs a staff of professional foresters to manage its vegetation program and communicate effectively the community service it provides. Contractor front line managers, supervisors or general foreman (GFs) must be Society of Arboriculture (ISA) Certified Arborists and ISA Certified Utility Specialists. PacifiCorp promotes Board Certified Master Arborist credentials among its staff foresters.

1.2.1 Contract utility forester Qualifications

Contract utility foresters should have the following qualifications:

- Contract utility forester 1: No experience required. ISA certification and a certified applicator card not required. Maximum of 90 days in this position.
- Contract utility forester 2: Minimum of an associate's degree and up to two (2) years' experience. ISA certification and a certified applicators license required.
- Contract utility forester 3: Minimum of an associates degree and over two (2) years' experience. Certified applicator's license and ISA certification required.
- Contract utility forester 4: Minimum of a bachelor's degree or four (4) years' experience. Certified applicator's license, ISA certification and Utility Specialist certification are required.
- Contract utility forester 5: Minimum of a bachelor's degree and five (5) years' experience. Certified applicator's license, ISA certification and Utility Specialist certification are required. This is the preferred classification.

PacifiCorp vegetation management is founded on the industry's best practices, including systematic maintenance, scientifically-based pruning, tree removal, tree replacement, cover type conversion, herbicide use and tree growth regulator applications; as well as specialized tools and equipment. PacifiCorp is progressive in trying innovative methods, products and equipment in order to improve safety and productivity.

1.3 Tree Line USA

PacifiCorp has been a Tree Line USA recipient utility every year since 2002. Tree Line USA is an award from the National Arbor Day Foundation, which recognizes utilities for utilizing practices that protect America's urban forests. To qualify, utilities must apply scientifically-based tree care, conduct annual worker training, plant trees, and conduct public education, including participating in Arbor Day celebrations. Contract

employees should participate in annual worker training to cooperate with and help PacifiCorp continue to merit this award.

2. GENERAL PROCEDURES

General specifications cover safety, the environment, how to approach archeological sites, communication, tree growth rate definition, tree removal, mechanical and helicopter cutting, slash disposal, emergency disposal, facility inspection, property damage, freelance work and miscellaneous procedures.

2.1 Safety Federal and state OSHA requirements governing vegetation management activities shall be followed at all times. ANSI Z133.1 (ANSI 2012) and OSHA 1910.269, are examples of these requirements. Activities shall be conducted in a manner that minimizes both tree crew and public safety risks. Crews shall have functional radio or telephone communication on the job site at all times.

PacifiCorp's electrical system will continue in normal operations during routine vegetation management work. Contract employees shall be aware of the potential dangers and qualified to work in the vicinity of energized facilities. Contract personnel performing line clearance work shall hold one of the following designations as defined by ANSI Z13:

- Qualified Line Clearance Arborist
- Qualified Line Clearance Arborist Trainee

2.1.2 Holds and Clearances

Minimum approach clearances for qualified line clearance arborists specified in ANSI Z133 or PacifiCorp's *Accident Prevention Manual* (Joint Safety Committee 2003 [Table 2.1]), should not be compromised. If there is a difference in the distances required in the two standards, the greater of the two is operative. If work requires violating minimum approach distances, or if a crew leader determines conditions to be unsafe, crew leaders should contact their supervisor/GF before proceeding. The GF/supervisor should determine whether or not a clearance or hold is necessary at that work site.

A hold means deactivating automatic line reclosers on a circuit. It is intended to protect PacifiCorp facilities and should not be considered a safety measure. If, in the judgment of the crew leader, an energized line cannot be worked safely, the GF/supervisor should arrange a clearance. A clearance is de-energizing a line.

PacifiCorp does not issue holds or clearances to tree crews. Rather, the Company will issue holds or clearances to a journeyman lineman, who shall be present at the site during work. Holds require at least 48 hours' notice to dispatch, vegetation management and the district operations manager. In some cases, a clearance on transmission lines must be requested weeks or even months in advance. Customers do not need to be notified if a clearance is necessary to safely work trees from lines in an emergency.

Customers who will be affected by planned power outages associated with clearances must also receive 48 hours notice, except during emergency situations such as storm restoration work. De-energized lines; whether due to a planned outage, wind or storm damage, or some other reason; must be worked as if they are energized. If a line cannot be worked safely assuming it is energized, it must be grounded. Linemen must set the grounds and be present during work, and

give approval prior to tree crew members breaching minimum approach distances to ensure safety.

Figure 2-1 Emergency procedure for a tree on line incident.

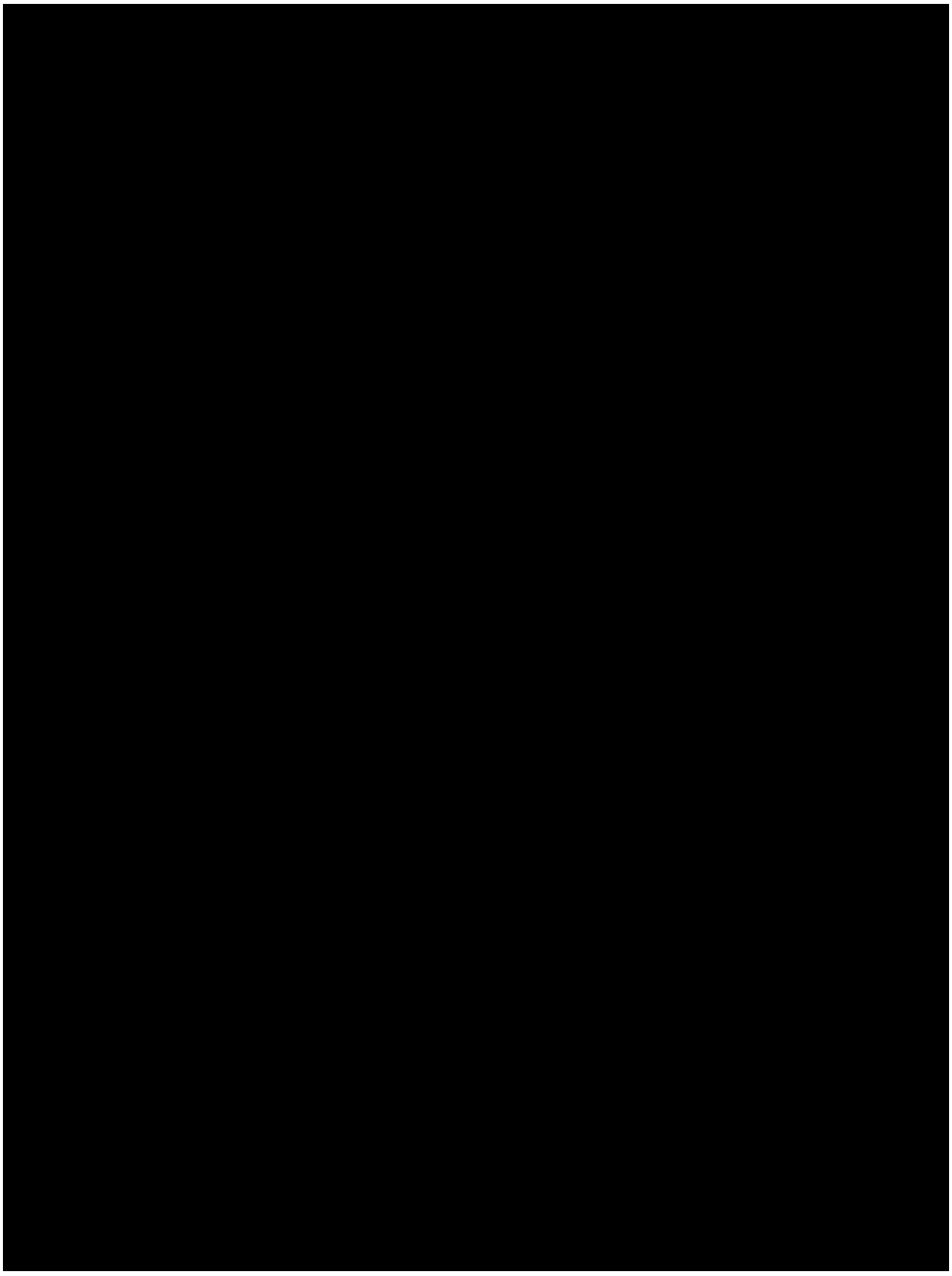

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Table 2-1 Minimum approach distances for qualified line-clearance arborists and line-clearance arborist trainees

Voltage Phase-to-Phase	Minimum Approach Dist.	Source
50-300 v	Avoid contact	APM/Z133
301-750 v	1 foot	APM/Z133
301 v-15 kV	2 feet, six inches	APM
15-46 kV	3 feet	APM/Z133
46-72 kV	4 feet, 2 inches	Z133
72-121 kV	4 feet, 6 inches	Z133
138-145 kV	5 feet, 2 inches	Z133
161-169 kV	6 feet	Z133
230-242 kV	7 feet 11 inches	Z133
345-362 kV	13 feet 2 inches	Z133
500-550 kV	19 feet	Z133

Note: APM is PacifiCorp's *Accident Prevention Manual* (Joint Safety Committee 2003). Z133 is the *American National Standard for Tree Care Operations*. Z133 distances are for sea level up to 5,000. Distances increase for elevations above 5,000 feet (ANSI 2012).

2.1.1 Emergencies

An emergency is major storm (as declared by PacifiCorp), or situation where vegetation has either caused or presents a clear, imminent threat of causing an outage, fire or public electric contact.

2.1.1.1 Whistles

Every crew member, supervisor/GF and forester shall carry a whistle at all times while on work sites. A whistle shall be used as an alarm, commanding all crew members to immediately stop work and respond to the emergency. Whistle blasts should also be used to initiate aerial rescue drills. Whistles are not to be used for non-emergency situations, such as getting another crew member's attention.

2.1.1.2 Tree on Line

If a tree or tree part accidentally falls onto an energized line, work shall stop immediately, and procedures outlined in Figure 2.1 followed.

2.1.2 Readily Climbable

Readily climbable trees have low limbs that are accessible from the ground and sufficiently strong and close together to support a child or average person so that the tree and can be accessed without using a ladder or special equipment. Access into a tree by a vehicle does not render a tree climbable.

Readily climbable trees pose a high risk when a main stem would allow a child or average person to climb either within arm's reach of an uninsulated, energized electric line or within such proximity to the electric line that the climber could be injured by direct or indirect contact. They are located near homes, schools, parks, businesses or other locations where people (particularly children) frequent.

If readily climbable trees are identified, within two weeks, steps shall be taken to reduce the safety risk by removing the tree or pruning it to specification clearances. If possible, branches should be removed to at least 8 feet above the ground or altering facility construction so energized lines can no longer be accessed through the tree.

2.1.3 Tree Houses

Tree houses built in trees growing near high voltage lines present possible electric safety risks. Safety risks in these cases could materialize if a tree house is sufficiently close to the conductors so that children or others may contact the line either directly or indirectly. Indirect contact may occur through any conductive object, including a tree or tree parts that are contacting power lines.

Tree houses built in trees growing in proximity to power lines must meet two criteria in order to remain where they are located. First, no part of the structure may be any closer than twice the minimum approach distances for persons other than qualified line-clearance arborists as specified in Table 2 of ANSI Z133 (Table 2.2). Second, the tree must be pruned so that it grows no closer than ANSI Z133 Table 2 (Table 2.2) distances, at least until the next scheduled work. Maximum line sag and sway should be taken into consideration. Tree houses that do not meet these conditions shall be removed within two weeks of their identification.

Tree house safety risks may be managed by changing facility construction so tree house clearances can be maintained. Facility reconfiguration for this purpose may be done at a property owner's request, provided they cover the expense of the facility modification.

2.1.4 Fire Protection

Federal, state and local fire protection laws and regulations shall be followed, and the contractor performing the work must obtain necessary work permits. Crews shall have all firefighting tools and equipment required by the responsible governmental agency. Contractors shall also adhere to fire restrictions concerning work hours, fire watch following work and other policies of the pertinent jurisdiction. Crews working in fire-prone rural areas should receive fire prevention and suppression training from the competent authorities.

2.1.5 At Fault Tree Crew-Caused Outages

Primary distribution and transmission outages caused by tree crews shall be assessed by a committee made up of the managing director of distribution and transmission support, director of vegetation management, business analyst and two contract representatives. The conduct of the subject crew during the incident will be compared to requirements in ANSI Z133, OSHA 1610.269, contractor safety rules and the PacifiCorp Accident Prevention Manual. Outages determined to be "at fault" by the majority of committee members will result in a credit to PacifiCorp from the contractor in an amount specified contractually.

2.2 Environment

Environmental respect is a MidAmerican Energy Holding Company core value, requiring strict adherence to all environmental rules and regulations.

2.2.1 Species of Concern

Tree work should not disturb or harm any rare, threatened, endangered, or protected plant or animal species. Nesting season work restrictions are examples of

important scheduling considerations necessary to accommodate threatened and endangered species. Prior to beginning projects on federal and state lands, PacifiCorp foresters shall contact the responsible agency to determine whether or not such species are present on the right-of-way. If there are, foresters should contact PacifiCorp environmental services for support.

All tree and brushwork shall conform to guidelines of the responsible governing agency. Field data inventories of threatened or endangered species may be on file in PacifiCorp district offices. PacifiCorp environmental services should be contacted whenever threatened and endangered species are identified.

2.2.2 Wetlands

Wetlands are lands where water saturation is the dominant factor determining the nature of soil development and the types of plant and animal communities present living in and on the soil (EPA 2004). Wetlands shall be worked by hand. Federal, State and local laws and regulations concerning wetlands shall be followed.

2.2.3 Stream Protection

Work shall not pollute water. Trees shall not be felled into streams or drainage ditches in a way that could obstruct or impair the flow of water, unless instructed otherwise by the responsible governing agency. Machine work shall not be performed within fifty feet of a stream. Soil or debris shall not be placed below the high water mark of streams, unless instructed otherwise by a responsible authority. Equipment shall use existing or designated stream crossings. State forestry or fish and wildlife agencies shall be contacted if tree removal in and around streams could cause erosion or if resulting exposure could increase water temperature. Federal and state laws and regulations shall be followed concerning stream protection.

2.2.4 Bird Protection

Migratory birds are protected by the *Migratory Bird Treaty Act of 1918* (16 USC 703-712). The act was most recently amended in 1998. All but a handful of bird species are protected under the act. Vegetation management's policy is that all bird species should be considered subject to the law's provisions. Foresters should provide annual training on bird protection to every tree crew.

The Migratory Bird Treaty Act prohibits removal of bird nests that have eggs or chicks, and killing protected species. Active nests may be disturbed in rare cases of urgent fire or electrical safety risk (in the judgment of the responsible Company regional forester). If tree crews identify a possible immediate risk, they should contact the regional forester for authorization. Foresters should consult PacifiCorp environmental services regarding whether or not work may be approved. If it may not, work should be postponed until after young have left the nest.

Eagle and colonial water bird nests (such as those of cormorants and herons) may not be disturbed regardless of whether or not they are active. Eagles are subject to additional protection insofar as it is illegal to disturb them near their nests or winter roosting sites.

Figure 2-2 Bird nest procedure

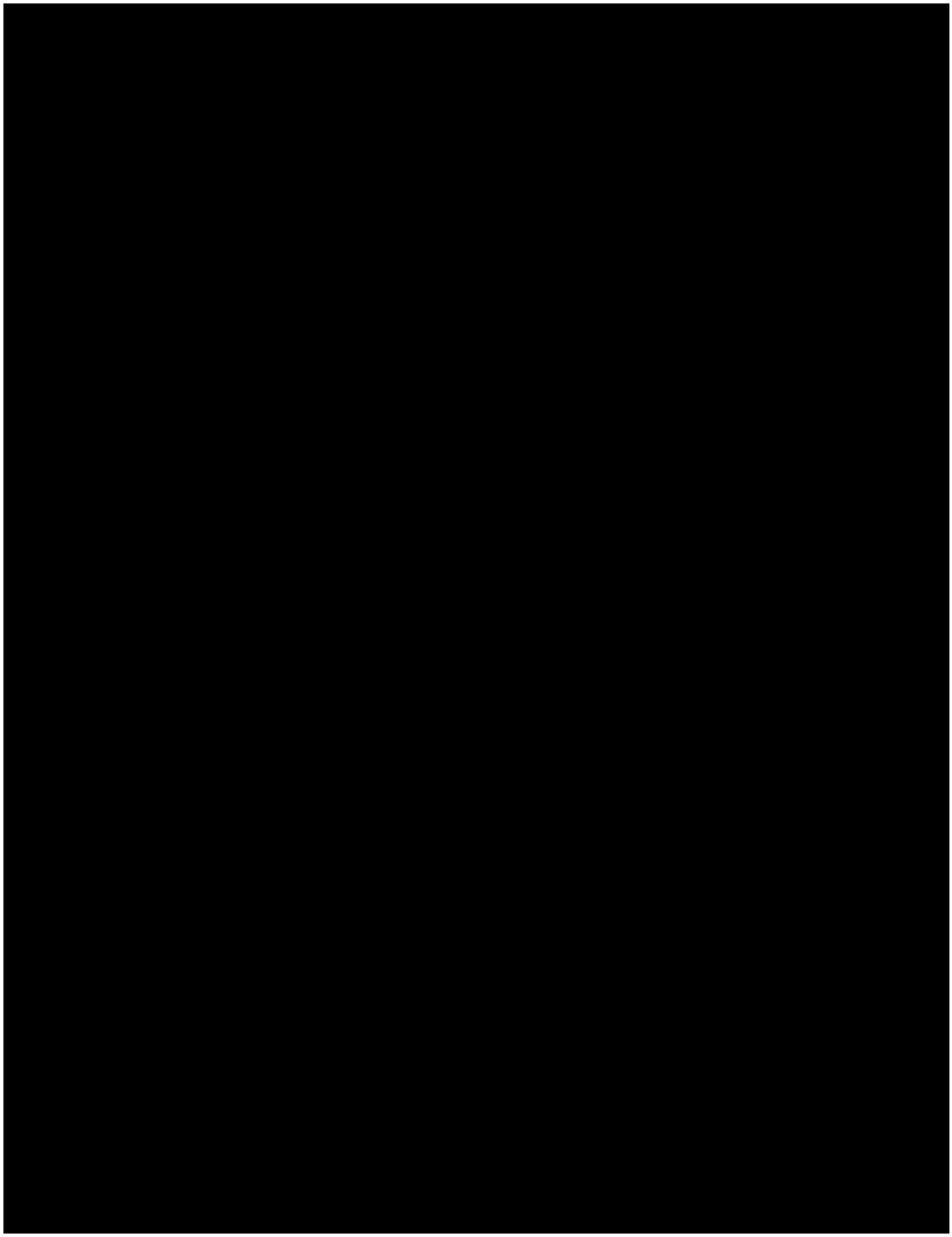


Table 2.2. Tree house clearances.

Tree houses may only be allowed in a tree if they are more than minimum distances from conductors and the tree can be pruned to kept to clearances specified in this table at all times. Specified tree clearances are those for persons other than qualified line-clearance arborists specified in Table 2 of ANSI Z133. Minimum tree house distances are twice ANSI Z133 Table 2 distances.

Voltage (kV phase to phase)	**Minimum Tree House Distance From Conductors (ft.-in)**	**Tree Clearance** (If tree house is built in a tree more than minimum distance from conductors)
0.31-0.75	20-00	10-00
0.751-15	20-00	10-00
15.1-36.0	20-00	10-00
36.1-50.0	20-00	10-00
50.1-72.5	21-06	10-09
72.6-121.0	24-08	12-04
138.0-145.0	26-04	13-02
161.0-196	28-00	14-00
230.0-242.0	32-10	16-05
345.0-362.0	40-10	20-05
500.0-550.0	53-04	26-08

Table 2.3. Work buffers around active nests of eagles and herons.

Species	**Work Buffer**
Herons	1000 feet
Owls	¼-mile
Hawks, ospreys, golden eagles	½-mile
Bald eagles	1 mile

Figure 2.3. Valuable archeological sites.

An ancient food storage structure along the Camp Williams-Four Corners 345 kV right-of-way in Southern Utah. This is an example of the type of valuable archeological site that needs to be identified and protected during vegetation management work.

Rich Buelte photo

Raptors (birds of prey) and herons require buffers around active nests to prevent them from being disturbed (Table 2.3), unless instructed otherwise by competent environmental or fish and wildlife authorities. In general, if a bird leaves a nest and does not return within an hour, it is being disturbed and the buffer should be increased. In these cases, environmental services should be contacted within 24 hours to monitor the nest and respond appropriately if the adults fail to return.

2.2.4.1 Reporting

Active bird nests and inactive eagle nests should be reported to the appropriate forester and environmental services following the procedure outlines in Figure 2.2. Anyone working in vegetation management encountering a dead bird should report it to environmental services.

2.2.5 Spills

To prepare for accidental spills, absorptive material shall be available. Mixing, loading and cleaning equipment are critical activities that present the greatest exposure to accidents or spills (Miller 1993).

In the event of a spill or herbicide misapplication:

- STOP, CONTAIN, ISOLATE
  - Stop the source of the spill
  - Contain the spill (it is especially important to prevent the spill from entering waterways)
  - Isolate the area – prevent people or vehicles from passing through the area.
- Report the spill to the Spill Hotline: 800.94.SPILL and provide:
  - Caller and manager's name
  - Date and time spill was discovered
  - Location (address or longitude and latitude)
  - Manufacturer name and serial number
  - Cause of spill
  - Amount of spill
  - Types of surfaces contaminated
  - Containment and/or clean-up activities performed so far
- Request the help of and notify supervisor/GF and PacifiCorp forester and environmental services.
- Remediate the spill
  - Clean up the spill or have it cleaned up, following directives from the Spill Hotline
  - Wash equipment and vehicles.
  - Properly dispose of cleanup materials
  - Follow up with appropriate cleanup documentation.
- Clean-up at or near PacifiCorp generating sites or substations must comply with site specific spill prevention and remediation plans.

2.3 Archaeological Sites

Vegetation management activities shall not disturb archeological sites. Known archaeological sites (Figure 2.3) shall be identified on the process checklist described in Chapter 4. If a contract utility forester or tree crew identifies something that might have archeological significance, they should move off site and contact the appropriate forester. The forester should contact environmental services for advice on whether or not to continue. Work should not proceed without environmental service's authorization.

Prior to beginning work on federal and state lands, PacifiCorp vegetation management shall contact the appropriate agency to determine whether or not such sites are present on or near the right-of-Way. PacifiCorp district offices may have field data inventories of known sites to assist in the determination. If present, foresters should secure the assistance of PacifiCorp environmental services.
Archeological sites shall be located and marked. Work must conform to guidelines of the responsible governing agency. If archaeological artifacts are located on private lands, the finding shall be reported to PacifiCorp environmental services. Field data inventories of known sites could be on file in PacifiCorp district offices.

2.4 Communication

Communication should be open and interactive. It should include everyone involved: management, planners, vegetation management crews, property owners, public land managers, appropriate governmental officials, members of organizations dedicated to related causes and others.

2.4.1 Internal Communication

Communication within the vegetation management department needs to be clear and concise to ensure everyone involved understands the desired results. Decision

making authority should be delegated throughout the origination, as appropriate.

Communication between vegetation managers and workers ought to be both written and verbal. Written instruction should include PacifiCorp Vegetation Management Standard Operating Procedures. It should also include details regarding concerned customers and locations of environmentally sensitive or archeological areas. Written instruction should be reviewed verbally. Appropriate communication also involves post work debriefings to review challenges and prevent problems from recurring.

Communication between utility vegetation management staff and other internal employees, such as engineers and operations managers, includes why, where, when and how vegetation management projects will be conducted. This is important because people within PacifiCorp, but outside vegetation management, can help set priorities, anticipate and prevent potential problems, and provide historical perspectives. Communicating with operations staff during work can also add a margin of safety. By knowing there is a vegetation management job underway, operations staff may be able to provide a timelier and more appropriate incident response than they would if they were unaware of the project. At the beginning of every week, districts in which vegetation management work is being conducted shall be emailed a spreadsheet with the approximate tree crew work locations for the coming week.

2.4.1.1 Communication of Vegetation Conditions that is Likely to Cause an Outage At Any Moment)

Members of the vegetation management team must comply with *Transmission Grid Operations Operating Procedure PCC-215,* which is designed to meet Requirement 4 of the *NERC Transmission Vegetation Management Program* standard FAC-003. Requirement 4 instructs utilities to notify the control center with switching authority for the applicable line of vegetation conditions that could cause an outage at any moment (see Figure 6.6 for the appropriate PacifiCorp dispatch center). PacifiCorp may implement temporary action, such as rating reductions or taking transmission lines out of service until vegetation can be cleared. Inspectors should report the exact location of the subject trees (providing longitude and latitude if possible) as part of the process.

2.4.1.2 Media

Requests from media (print, electronic, radio or television) shall be referred to PacifiCorp Media Relations and the community relations manager responsible for the area in which the request was made. Media Relations can be reached for each business unit at:

- Pacific Power: 800.570.5838
- RMP: 800.775.7950

Vegetation management personnel and contractors shall not speak to media representatives without prior authorization from PacifiCorp Media Relations.

2.4.1.3 Legal

No response shall be made to an attorney unless through PacifiCorp's General Counsel's office.

2.4.2 Communication with External Stakeholders

Public land managers, property owners, regulators, and civic organizations have interests in utility vegetation management activities.

Educating potentially affected parties about the need for, benefits of and science behind vegetation management can clarify expectations. Members of the vegetation management team, including crewmembers, should know the facts about the program, be prepared to answer basic questions and refer more complex issues through to their GF/Supervisor.

Communication should begin well in advance of work and involve listening to and understanding people's concerns. Work on governmentally-managed property can involve administrative procedures that take months of advance work, including navigating through permit processes and the concerns of specialists who have responsibility for stewardship over public lands. It is not always clear to lands specialists how vegetation management helps balance their (the land manager's) responsibilities against the public's need for a safe and reliable electric grid. A memorandum of understanding among Edison Electric Institute (EEI) member utilities and federal land management agencies (EEI 2006) established a framework for developing cooperative rights-of-way integrated vegetation management (IVM) practices among EEI shareholder-owned electric companies, federal land management agencies and the Environmental protection agencies. The MOU is expired and being renewed as of this writing.

2.5 Growth Rate Definitions

Slow-growing trees grow vertically less than one-foot a year. Moderate growing trees grow between one and three feet a year and fast-growing trees grow more than three feet a year.

2.6 Tree Removal

Tree removal is an important component of PacifiCorp's vegetation management program. Tree removal can reduce safety risks; improve access to facilities, clear lines of sight and moderate future workloads. Tree conditions are site and tree specific.

Tree removal on distribution facilities requires either written notification to or signed permission from the property owner, unless there is a right-of-way, easement or permit that expressly authorizes tree removal. If such an easement or permit exists, notification to the property owner may be verbal, provided it is documented. Signed permission may be obtained on the removal door hanger (see Section 8.2.1.3) or *Property Owner Permission Form* (see Section 8.2.2).

Stumps shall be cut to within six inches of the ground or as close to it as practical (for example, at the top of a barbed wire fence that has become imbedded in the trunk). Stumps of all deciduous trees, brush and vines that are removed shall be treated with an approved herbicide, where permitted (see Section 7.3.5).

PacifiCorp prefers to remove the entire tree in the following situations:

- Transmission rights-of-way where the conductors are fewer than 50 feet off the ground or between 50 and 100 feet off the ground depending on the size of the tree (see Table 6.1 and Figure 6.3).
- High risk trees (dead, dying, clearly diseased, deformed, or unstable trees which have a high probability of falling and contacting transmission or distribution conductors). Note that every tree is potentially hazardous. With millions of trees under management, it is impossible to

identify and correct every potentially hazardous tree. Nevertheless, PacifiCorp has a responsibility to maintain its system by making a reasonable effort to identify trees that are clearly hazardous, and correct the problems they could cause in a timely manner.

- Trees that will take no more than twice the time to remove than to prune during distribution cycle work. High risk trees are not limited by this constraint.
- Trees that take no more time to remove than to prune during interim and ticket work. High risk trees are not limited by this constraint.
- Readily climbable trees.
- Trees with tree houses not meeting the clearance to transmission or distribution conductors shown in (Table 2.2)
- Fast-growing trees that, through growth could interfere with distribution conductors or violate specific state regulatory clearances before the next scheduled maintenance work (cycle-busters).
- Volunteer trees less than six-inches in diameter (DBH), which, through growth, could eventually interfere with distribution conductors.

2.6.1 Equipment Mowing

Mowing is often more cost effective than manual methods of tree removal and should be pursued wherever practical (Figure 2.4). Mowing should be limited to fifteen feet either side of distribution primary wires within transmission rights-of-way and along access roads serving Company facilities

2.7 Mechanical and Helicopter Cutters

Mechanical and helicopter cutters can improve productivity in rural, densely vegetated areas (Figure 2.5). Mechanical cutting shall comply with ANSI A300 (Part 1) section 9.3.2. It should be limited to rural or remote locations and cuts should be made close to the main stem, outside of the branch bark ridge and branch collar. Precautions should be taken to avoid stripping or tearing of bark or excessive wounding.

In subsequent cycles, mechanical work should be monitored and repaired if need be to prevent high risk conditions from developing.

2.8 Slash Disposal

Slash is brush and limbs less than six-inches in diameter removed during tree operations.

2.8.1 Developed Areas

In developed areas, slash should be chipped and removed from the site unless an agreement has been reached with the property owner to leave it. Slash may be left temporarily, provided the crew has notified the property owner or tenant, and arrangements made to clean it up to the customer's reasonable satisfaction within two business days. Tree stems greater than six-inches in diameter should be left on site. Work locations shall left in a safe and orderly condition.

2.8.2 Rural Areas

In rural areas, slash should be disposed of on-site whenever possible. For off-road, wooded areas, brush should be lopped into three-foot maximum lengths, and scattered in piles no more than two-feet high. Stems larger than six-inches in diameter should be left on site.

Limbs and slash should be piled separately. Limbs and slash should be disposed of at the sides of distribution rights-of-way, and outside the wire zone of transmission rights-of-way, unless specified otherwise by the regional forester. If brush is chipped, it should be broadcast on site wherever possible. Resulting chip piles should be no higher than two-feet. Debris piles should not limit or block access to the right-of-way, or create fire risk.

2.9 Emergency Response

Tree work will be required from time to time on emergency storm restoration. Crews shall be properly equipped to perform the work. PacifiCorp will be the sole determiner of equipment appropriateness. Travel and lodging during the storm is billable. Double occupancy is expected for crew members.

Contractor should provide a designated contact person for each region. Requests for crews should be routed through that contact. Contractor shall be responsible for dispatching crews whenever emergency restoration services are needed.

Crew rosters shall be provided by the contractor and maintained during restoration efforts. At a minimum, rosters shall include: crew member names and position, location, contact information, equipment and identification number.

Debris from storm work is left on site and not chipped or cleaned up, so chippers should not be taken into the field during restoration work. Notification is not required during emergency restoration work, but crews should conduct themselves respectfully.

Emergency work shall be reported on a *Weekly Vegetation Report* according to section 4.2.1.

Emergency work is done under the authority of the district operations managers in cooperation with Company foresters. Tree crews and contract utility foresters assigned to storms should work under the direction of circuit captains assigned by operations. Tree crews should report their progress at least daily to both the circuit captain and their GF/supervisor. The supervisor should report crew progress to the appropriate forester.

Figure 2.4. Side mower used on distribution rights-of-way.

Figure 2.5. Jarraff mechanical "trimmer" that may improve productivity in remote areas.

Figure 2.6. Cracked pole – an example of the type of conditions tree crews should report.

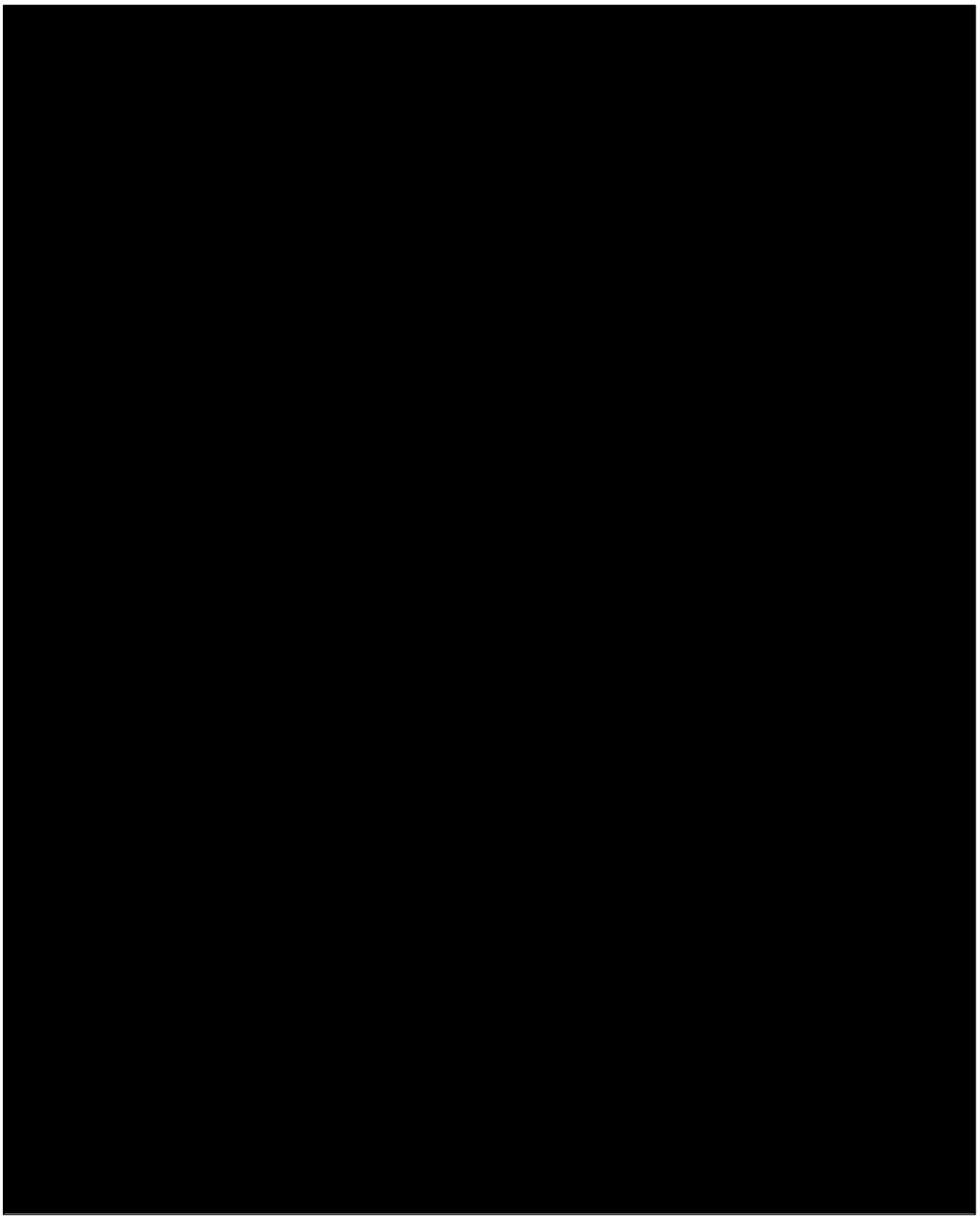


Figure 2.7. PacifiCorp Vegetation Management Maintenance inspection report form.

All storm work must be conducted as if the line is energized. If the line cannot be worked safely under the assumption it is energized, it must be grounded in accordance with section 2.1.1. In general, PacifiCorp does not dispose of slash or debris resulting from storm damage. Trees that fall during storms would do so regardless of whether or not the lines are present. It should not be the Company's responsibility to clear the debris simply because the tree or trees from which it originated damaged Company facilities on the way down. However, if an outage is preventable, slash may be cleaned-up and removed from a property at the forester's discretion.

2.10 Facility Inspection

While tree crew members are not facility inspectors, they can be helpful in identifying pronounced conditions, such as cracked poles (Figure 2.6) broken cross arms or insulators, loose guy wires, and other problems. Tree crew members should report the condition on the *Maintenance Condition Report Form* (Figure 2.7).

When contract utility foresters are lining out work, they should inspect the perimeter around substations for trees that could interfere with or hazard trees that could fall into the facility, or for climbable trees that could allow access into the substation.

2.11 Property Damage

Contractor shall be responsible for property damage arising out of or related to work. Restoration of surfaces and repair of property damage in the execution of the Contract shall be part of the work. Such restoration shall include, but is not limited to, ruts, disturbed drainage ditches,

broken drain tiles, cut fences and damaged fence posts.

Contractor shall inform PacifiCorp of claims within 24 hours of damaging the property. Contractor has 15 business days to resolve any damages or PacifiCorp will settle the claim and bill the contractor. Contractor must inform PacifiCorp personnel and get permission for an extension if the time frame cannot be met.

Contractor shall be responsible for any damage or claims against PacifiCorp resulting in violations of conservation measures as a consequence of Contractors actions.

2.12 Freelance Work

No one employed in PacifiCorp's vegetation management department or their contractor may solicit or perform arboricultural-consulting or tree work (pruning, removal, insect or disease control, fertilization etc.) for interests outside of officially authorized PacifiCorp projects on open feeders, grids, transmission projects, tickets, storm orders, work orders or other PacifiCorp assigned project. Outside projects may include side jobs for cash, work for private arboricultural firms (whether or not they are owned by the tree crew members doing the work), consulting or any other arboriculturally related enterprise.

2.13 Miscellaneous Items

2.13.1 Fences and Gates

Gates should be left open or closed as they were found, or as the property owner instructs. Damage to fences or gates shall be reported to the property owner and the appropriate supervisor/GF, and repaired as soon as possible.

2.13.2 Climbing Spurs

Climbing spurs shall not be used when climbing to prune trees.

Exceptions:

- when limbs are more than throw line distance apart and there is no other safe means of climbing the tree.
- when the bark is sufficiently thick to prevent spur damage to the cambium.
- when working high risk trees that are to be reduced in height and left for wildlife.

2.13.3 Winching Vehicles**.**

Winch cables or ropes should not be wrapped directly around anchor trees. Doing so damages a tree's bark and cambium and can not only reduce its health and value, but also eventually create high risk to overhead lines. If the need arises to winch a vehicle (including an all-terrain vehicle), a nylon strap (or equivalent) at least 2-inches wide shall be used around the tree, and cables or ropes attached to the strap. Utility poles or towers shall not be used as winch anchors.

3. TREE BIOLOGY AND PRUNING

The primary purpose of utility line clearance work is to minimize safety and service reliability risks caused by tree-power line conflicts. Pruning is primarily performed on distribution facilities, although it can have application to transmission lines in some cases.

Pruning to clear conductors shall adhere to the principles of modern arboriculture. The *American National Standard for Tree Care Operations* A300 (ANSI 2012a), International Society of Arboriculture (ISA) *Best Management Practices: Tree Pruning* (Gilman and Lilly 2002), *Best Management Practices: Utility Pruning of Trees* (Kempter 2004), and *An Illustrated Guide to Pruning* (Gilman 2002), among other references, convey those principles.

While proper utility line clearance work should be consistent with practices that promote tree health, utilities cannot place tree health over public welfare. Sometimes, there is no way to obtain proper clearance in a manner that ensures the health of a tree (Lilly 2010). This is particularly true regarding foliage retention. In cases were the tree cannot be pruned without harming its health, tree removal is often best for the tree, tree owner and utility. If tree removal is not permissible or practical, the tree should be pruned to specification clearances, even if that work is against a customer's wishes or could harm the tree.

3.1 Pruning for Clearance (directional pruning).

Directional pruning is natural target pruning applied to routing tree growth away from utility lines (Miller 1998). ANSI A300 (2012a) and ISA's *Best Management Practices* (Kempter 2004) instruct that pruning to clear the utility space involves thinning cuts: removing at natural targets entire branches that are growing toward (or once cut will produce sprouts that will grow toward) the power lines.

While heading cuts produce sprouts that grow quickly back into the power lines, branch removal and reduction promotes growth away from conductors. Since the point of utility pruning is to train trees around power lines wherever practical, branches growing away from the electric facility should not be pruned. Instead, these stems should be allowed to develop to their natural height or length, provided that growth does not create unreasonable safety risks. This cannot be accomplished with strongly excurrent trees trapped directly beneath conductors.

Topping,round-overs, flush cuts, branch tipping and rip cuts are improper because they damage trees. Directional pruning is consistent with natural tree structure. Remaining branches retain their taper, strong attachments, growth regulators and spacing. They continue to grow and function normally, allowing the tree to reach to its natural height.

"V" shapes often result on properly pruned trees growing under power lines, particularly on decurrent, deciduous trees (Miller 1998, Shigo 1990, Gilman 2002, Kempter 2004) [Figure 3.1]). Limbs growing upward and toward the facility should be cut back to the trunk or to limbs growing away from the conductors.

Remaining branches should have sufficient clearance so they do not damage

the conductors in inclement weather common for the locality (high wind, freezing rain, snow or other conditions). Excurrent trees (such as many conifers) are more problematic, but should be reduced to appropriate laterals or whorls.

"L" or one-sided shapes often result on properly pruned trees to the side of conductors. (Shigo 1990, Gilman 2002 [Figures 3.2]). Limbs on the wire side of trees located adjacent to facilities should be cut back to the trunk; or to limbs growing vertically, sideways or downward; depending on the distance to the line or available natural target.

3.2 Tree Biology

Understanding fundamental tree biology is essential to applying proper pruning to utility line clearance (Miller 1998).

3.2.1 Leaves

Leaves are the tree's food source. Tree survival depends on the leaves' ability to manufacture carbohydrates from the sun's energy, carbon dioxide and water. Current thinking among scientists is that if a tree abruptly loses a large portion of its foliage, as can happen with over-pruning, it could lack the energy resources to meet its needs. Trees with insufficient foliage could be weakened to the point where they become subject to attack by opportunistic insect and disease pests. Damage can extend to the roots as well as to above ground portions of the tree (Shigo, 1986). Trees can suffer sun injury after sudden excessive foliage loss (Miller 1998).

Authorities disagree over how much foliage removal trees can tolerate in a given year. ANSI A300 (2008) recommends no more than 25%, while Gilman (2002) suggests less than 10 to 15 percent. Often, much more than 25% of foliage must be removed from the tree in order to appropriately maintain electric facilities. The ANSI committee did not intend the 25% provision to impede utilities from achieving appropriate clearances (Smith 2002). Utility arborists faced with the choice of maintaining public welfare by clearing the tree to specifications and removing more than 25% of the foliage have no choice but to remove more than 25% of the foliage

3.2.2 Stem Anatomy

Trunks and branches are tree stems. Their function is support, energy storage, and water, mineral, carbohydrate and growth regulator transport. The point of origin of a branch or limb is a node. A lead is an upright trunk or major limb with a dominant role in the tree crown, and a lateral is a branch off a parent stem. Some leads can also be laterals.

3.2.3 Xylem

Xylem is wood tissue. Sapwood is young, living xylem that stores carbohydrates, provides support, and conducts water and essential elements. Heartwood is old, dead xylem that provides support, and often contains anti-microbial compounds.

Long, hollow conducting cells (trachieds or vessels) predominate xylem structure. While trees need this vascular structure to conduct water and essential elements, it can be exploited by pathogens to spread up and down the stem. Trees attempt to block or "wall" off disease spread by plugging conducting cells in various ways, but pathogens can use energy stored in the trunk or branch to breach these walls (Shigo1986).

Figure 3.1. "V"-shapes can develop from crown reduction on deciduous trees (left). The ultimate objective is to train trees up and around the wire wherever possible, so the facility is clear and the tree is healthy. These two photos are of the same tree, in 1992 (left) and 2007 (right).

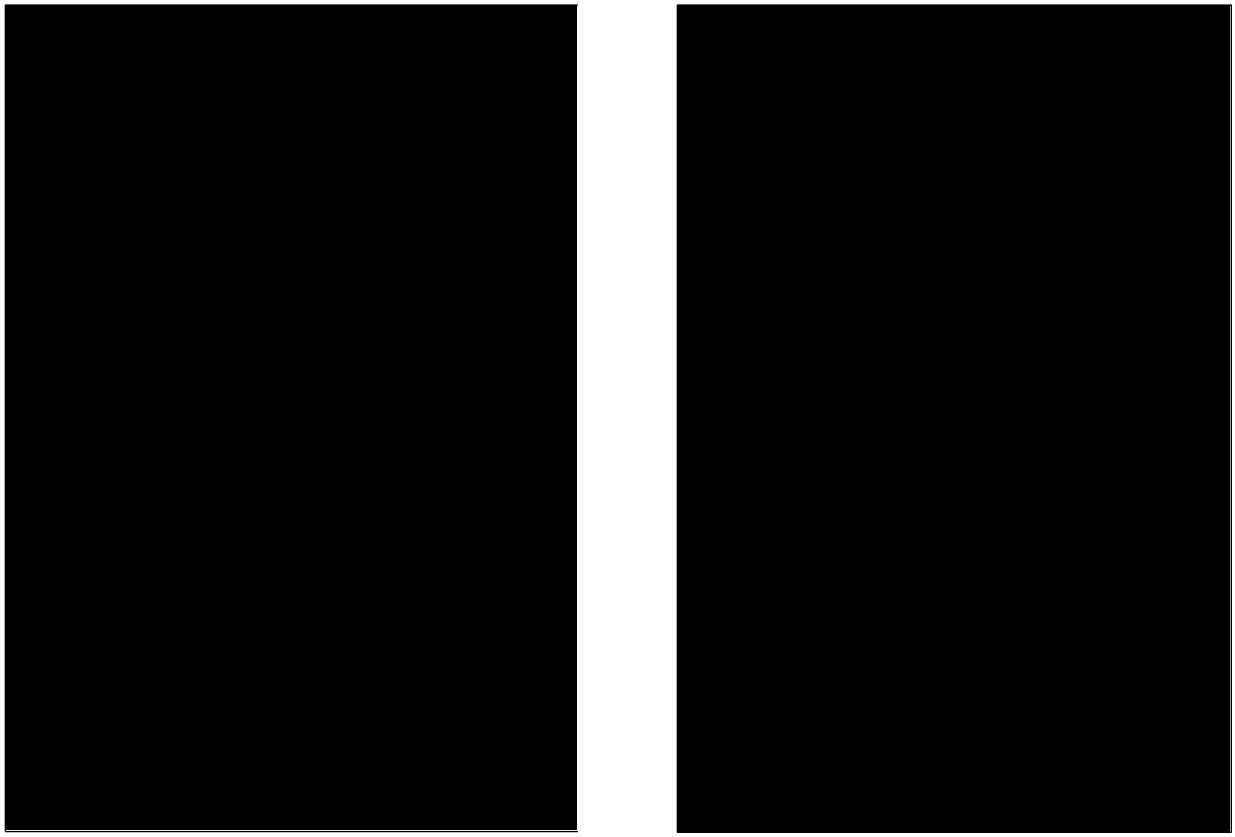
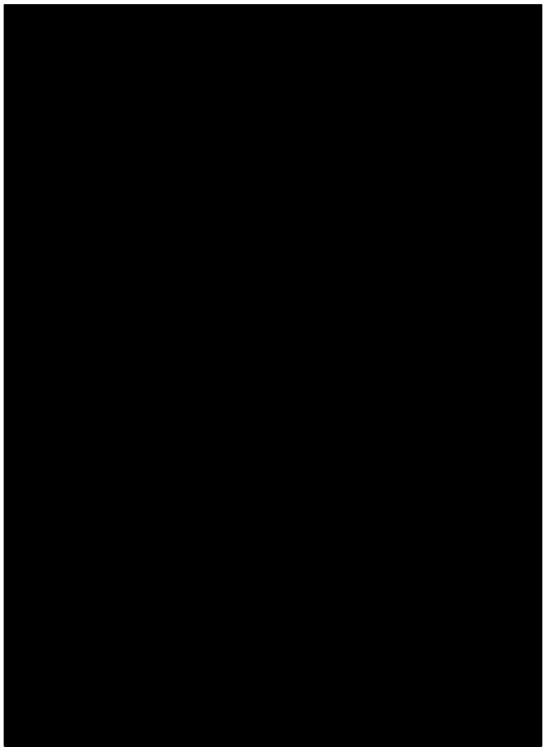
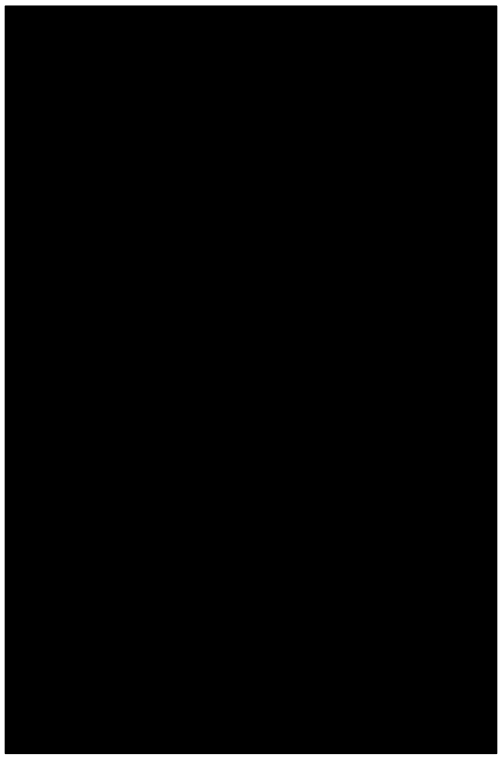
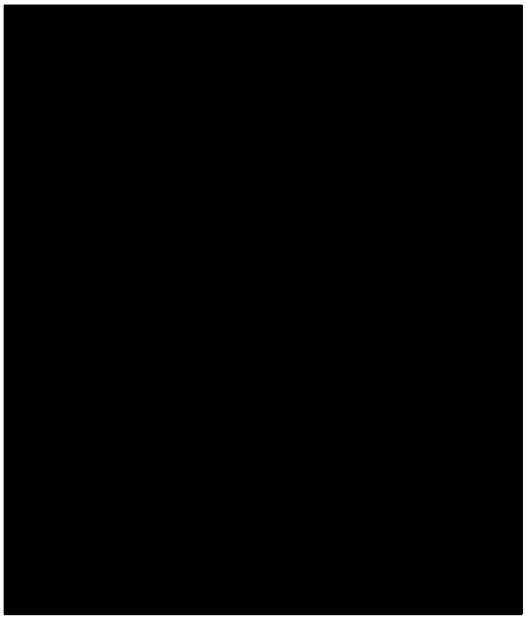


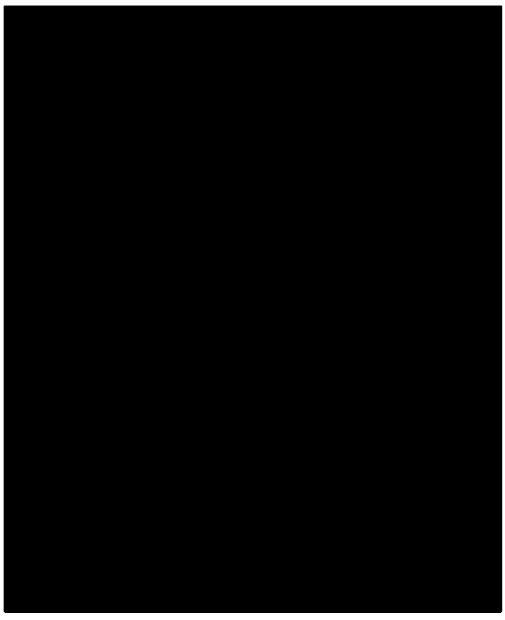
Figure 3.2 "L" or one-sided shapes.

"L" or one-sided shapes often result on properly pruned trees growing to the side of conductors. Pruning may be mechanical in rural areas, below right









3.2.4 Cambium

The tree's cambium is a thin layer of rapidly dividing cells around the outside of the sapwood. One of the functions of the

cambium is to produce wood to its inside, creating diameter growth. This is the only source of wood production in the tree system, and the tree has no ability to replace damaged or decayed wood.

Pathogens gain access to wood through wounds. In response to wounding, the cambium generates a "barrier zone" containing antimicrobial compounds (Figure 3.3). It protects new wood by separating it from potentially infected wood that existed at the time of wounding. Following infection, a "race" develops between the cambium and wood-rotting microorganisms, with the structural integrity of the tree at stake. The cambium must produce new wood faster than pathogens can digest the former stem if the tree is to remain viable (Figure 3.3).

While the barrier zone contains strong antimicrobials, it is weak structurally. This structural weakness can be problematic, as cracks may develop along the barrier zone when the stem twists and flexes due to wind, ice or other stress loads. These cracks allow pathogens to breach the barrier zone and enter new wood, further threatening the tree (Figure 3.3 [Shigo 1986]).

3.2.5 Branch Collars

Branch collars are a combination of parent stem and branch tissue generated through coordinated growth around the branch attachment (Figure 3.4). In the spring of the year, diameter growth begins at branch tips, and works toward the base. When new wood meets the branch base, it turns at 90°, and wraps around the juncture. Later in the growing season, wood from the parent stem envelops branch wood laid down earlier. As a result, two layers of wood secure the branch every year, and the attachment increases in strength as the branch grows (Shigo1986).

3.2.6 Branch Bark Ridge

An important structure associated with branch attachment is the branch bark ridge. The branch bark ridge is a line of raised bark, formed as the branch and parent stem grow together. It marks where branch wood meets stem wood Figure 3.5). A raised branch bark ridge is often a sign of a strong attachment.

3.2.7 Branch Protection Zone

Branch protection zones are areas of antimicrobial compounds that form internally at the base of diseased or injured branches (Shigo 1986). They inhibit pathogens in the branch from passing to the parent stem. While protection zones are effective, pathogens can overcome them using energy stored in the branch.

3.2.8 Taper

Tree stems taper from their bases, where they are widest, to twig tips, where they narrow to buds or apical meristems. Taper provides flexibility and strength that disperses loads from branch weight and from wind, snow or ice loads. The adaptation reduces the likelihood of failure under stress.

Figure 3.3 The cambium creates a barrier zone that contains discoloration and decay in old wood, protecting new wood. Note on the right, a ring shake formed along the old barrier zone. This is a structural flaw.

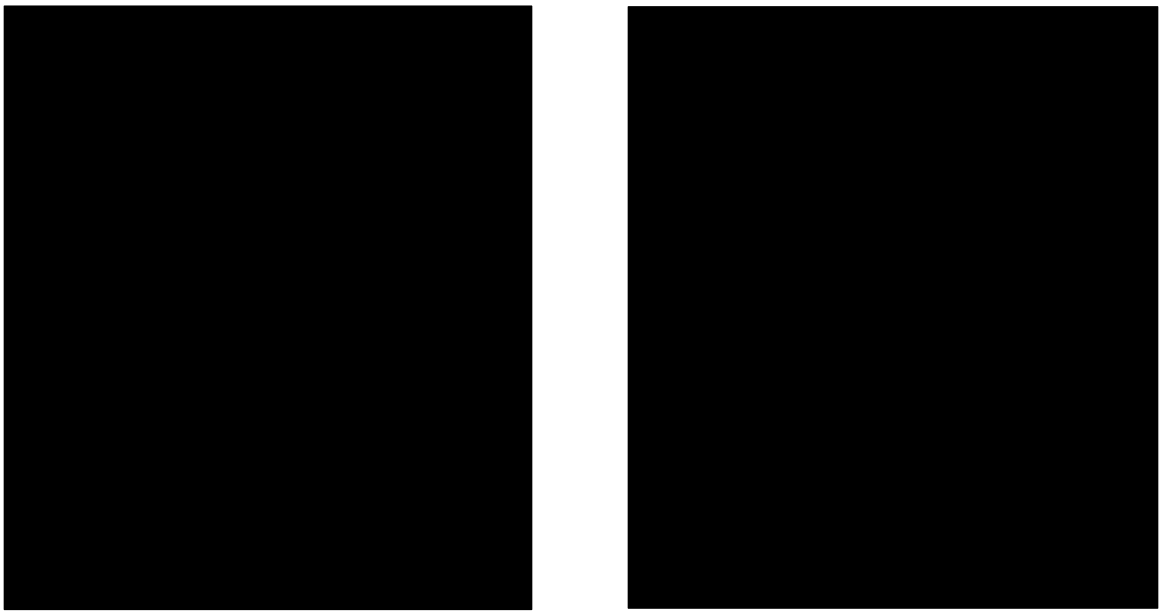


Figure 3.4. Branch collars form at branch bases.

Figure 3.5. A raised branch bark ridge i

A raised branch bar ridge s often a sign of a strong attachment. It marks where the branch meets the parent stem.

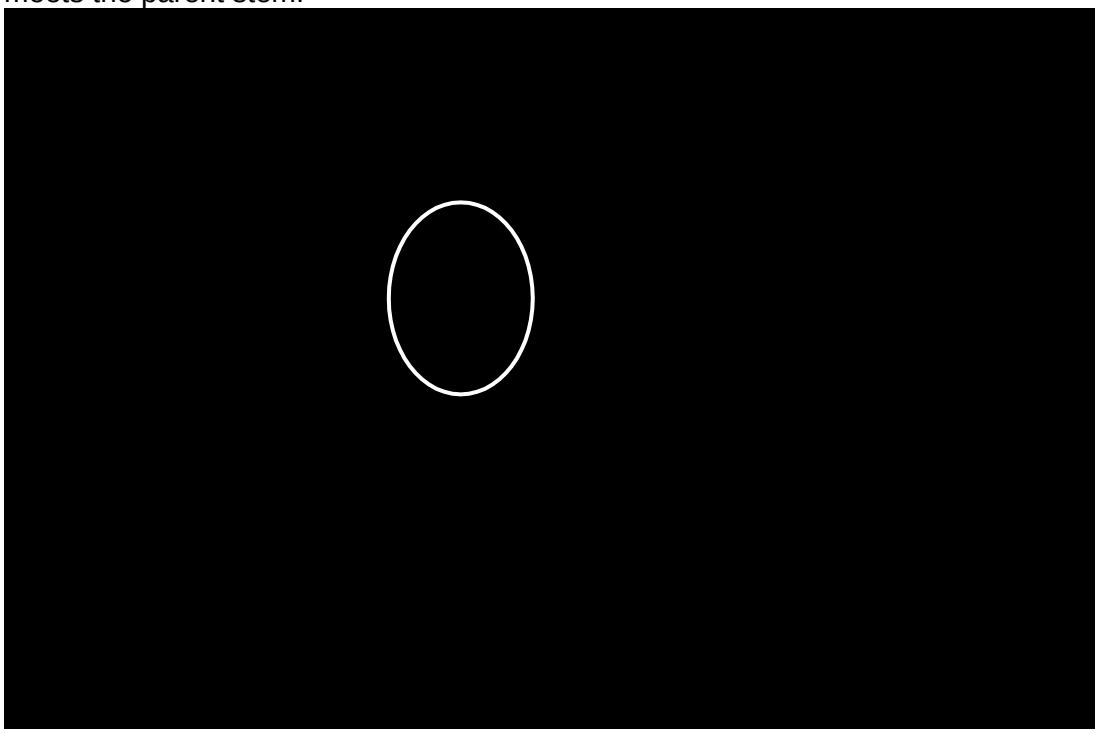
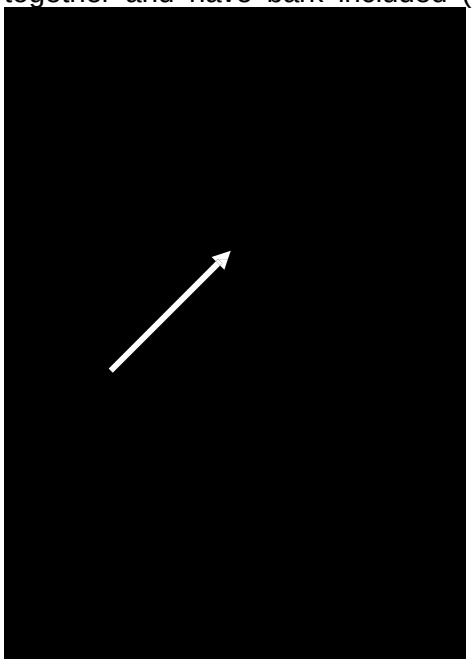


Figure 3.6. Codominant stems are at least 50% of the diameter of their parent stem.

They have no branch collars or branch protection zones. Codominant stems can grow together and have bark included (embedded) between the stems in the attachment.



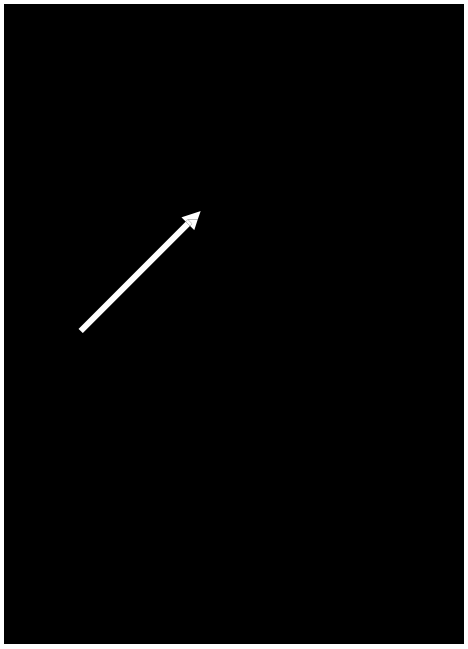


Figure 3.7. A before and after collar cut.

3.2.9 Codominant Stems

Codominant stems are stems that are at least half the diameter of their parent stem, and compete for dominance in the tree crown (Gilman 2002). They are similar to branches, but have no branch collars or branch protection zones. Disease moves from one codominant stem to another as readily as it moves through ordinary stems. Codominant stems can have a branch bark ridge. However, they are structurally flawed because they do not have room to develop (Figure 3.6). As crowded branches grow in diameter, they can press together, creating wounds and squeezing bark in between the two stems (Figure 3.6).

The resulting wounds allow disease entry and weaken branch attachments. Moreover, stems with included bark often pry one another apart as they grow, further weakening their attachments. Attachments with included bark often fail, and can be recognized by a crease between stems near their juncture (Figure 3.6).

3.2.10 Growth Regulators

Growth regulators are chemicals that coordinate plant growth. A growth regulator can have confusing, even contradictory roles depending on its concentration, the concentration of other growth regulators, environmental conditions the species of tree, and other factors. Nevertheless, scientists understand that growth regulators are responsible for orderly plant growth and development.

For example, auxin is a growth regulator produced in apical meristems, while cytokinin is another type synthesized in root tips. In response to environmental factors, roots grow and make cytokinens that stimulate shoot growth, which can result in auxin production that promotes root development. The resulting cycle is one way the tree system "communicates" to stay in balance as it grows. Auxin also functions in apical dominance. Auxin produced in apical meristems inhibits lateral growth, and helps to account for orderly branch development and spacing. Conversely, removing an apical bud or

meristem promotes lateral growth, which alters the tree's normal growth habit, and can lead to codominant stems, poor spacing, and included bark.

Gibberellins are another class of growth regulators. Among other functions, gibberellins promote cell elongation. Marketed chemicals commonly known as "Tree Growth Regulators" (TGRs) are actually gibberellin inhibitors. By inhibiting gibberellins synthesis, TGRs reduce cell elongation, which in turn slows growth.

3.3 Natural Target Pruning

Natural targets are proper final pruning cut locations at strong points in the tree's disease defense system. Removing branches at natural targets rarely damages the joining trunk or limb (Miller 1998). The ISA *Best Management Practices: Tree Pruning* (Gilman and Lilly 2002) and *A300* (ANSI 2008) describe the technique. Targets vary depending on whether a branch is removed or reduced.

3.3.1 Collar Cuts

Branches should be removed at the collar (Figure 3.7). Cutting into the collar, known as flush cutting, is inappropriate because it creates a direct port of disease entry into the parent stem.

Disease can weaken stems, potentially creating safety risks. On the other hand, proper branch removal does not leave stubs that pathogens can use as an energy source to overcome the tree's defense system and spread into the trunk. If the branch is removed correctly, only the branch protection zone is exposed, giving an advantage to trees in keeping out disease. As a result, collar cuts virtually prevent decay from entering the parent stem (Figure 3.7 [Miller 1998]).

3.3.2 Approximating the Collar

Occasionally, branch collars are not readily evident and the collar must be approximated using the branch bark ridge (Figure 3.8). Start the cut in the branch crotch, just outside the branch bark ridge, and follow an outward angle that mirrors the inward angle the branch bark ridge makes with the trunk or parent stem. The cut should end roughly opposite the bottom of the branch bark ridge (Figure 3.8).

3.3.3 Reduction Cuts

Reduction cuts shorten leads to appropriate laterals. An appropriate lateral is no less than one-third the diameter of the original limb and retains at least three-quarters of the lead's foliage (ANSI 2008 [Figure 3.9]). The reason for these requirements is that branches are autonomous in their energy requirements. Removing too much foliage from a limb could deprive it of sufficient energy to establish apical dominance, maintain its taper, close the wound, and compartmentalize and "out-race" disease which will enter the wound.

As a result, the lateral will not develop into a structurally viable leader. Moreover, shortening a lead removes apical meristems and other points of growth regulator production, which can disrupt orderly growth. If, for example, auxin concentrations are insufficient, on some species a crowded mass of upright, rapidly growing, poorly attached shoots can sprout from the cut and grow directly back into the lines.

Therefore, removing more than 25% of foliage from a limb has the same damaging result as a random topping cut (Figure 3.10), regardless of whether or not the cut is made to a proper-sized lateral. Even under the best circumstances, reduction cuts are potentially harmful,

acting more like a heading than a thinning cut (Gilman 2002). Consequently, if a lead cannot be shortened to a limb at least one-third the diameter of the original lead, or if a cut removes more than 25% of the foliage, that limb should be either targeted for removal, or not pruned. Removal may be gradual over the course of several cycles.

3.3.4 Large Branches

Large branches (those 3-inches in diameter or greater) can seldom, if ever, be removed without harming the tree, particularly if they are codominant stems. Yet, large branches must be prevented from growing toward the utility space, and that nearly always means heading or removing them entirely. Either option can be harmful, but heading large branches not only injures the tree, but fails to effectively clear the conductors (Figure 3.10).

Removal may take a measured approach. For example, one or two large limbs might be removed out of three that are growing toward the conductors, and the remaining limb(s) targeted for removal on subsequent cycles.

Large branches selected for later removal can be subordinated, or removed gradually over subsequent cycles (either interim or cycle). Subordination thins a portion of a limb's foliage. Reducing a fraction of the foliage in this way suppresses the stem's growth, and allows the remaining tree parts to adjust and develop. In some cases, subordination can allow a codominant stem to develop into a branch over time, enabling a branch protection zone to form so a limb can be removed without unnecessarily subjecting a tree to disease (Gilman 2012). Using subordination over multiple cycles to remove large branches can reduce the effect of structural limb removal on tree health, while ultimately circumventing the permanent problems heading cuts can cause, even if that
means temporarily heading the branch.

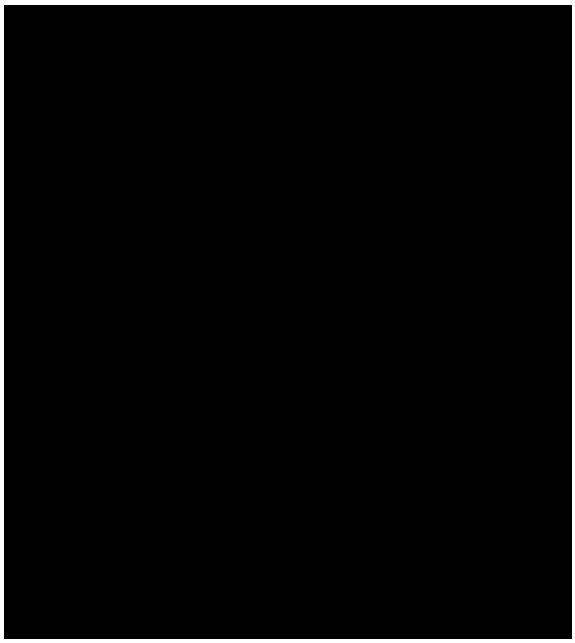
3.3.5 Old Heading Cuts

Removing large stems that have been headed often leaves wide gaps in the tree, because shoots that proliferate from the old heading cuts often dominate the crown (Figure 3.10), and gaps result when branches containing these shoot clusters are removed. Moreover, previously headed branches usually lack natural targets. When such branches are growing toward the conductors, there might be no alternative but to remove them entirely. However, in some cases, headed limbs may be left as a temporary measure. Such headed branches could be removed on subsequent cycles.

Headed branches growing away from the facility space should not be pruned as a matter of standard practice. However, shoots growing from the old heading cuts should be inspected for structural integrity during subsequent visits. Corrective action, such as crown restoration (ANSI 2008), could be necessary if these sprouts are found to be structurally weak.

However, in some cases, structural defects resulting from heading cuts are so severe that they cannot be corrected (Dahle et al. 2006). In these cases, the customer should be contacted about removing the entire tree, or at least the subject branch or branches. If tree or branch removal is not possible, there could be no choice but to remove the weak growth with a new heading cut. This should be done only when extensive decay or hollow exists in the remain-ing branch, with the approval of the forester or GF/supervisor, for safety (not "aesthetic") purposes.

Figure 3.8 Approximated collar cut.



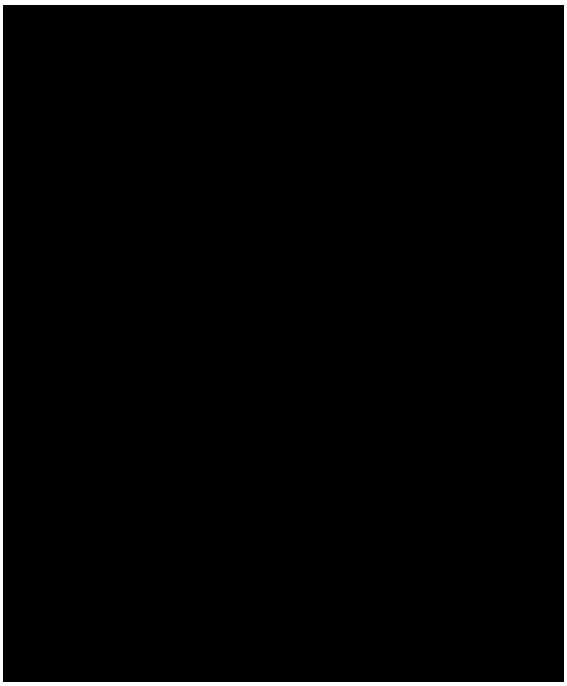


Figure 3.9. Crown reduction cut.

Figure 3.10. Old heading cut.

Shoots that proliferate from these cuts often dominate the tree's crown, and gaps result when branches containing these shoot clusters are removed.

3.3.6 Reduction

Reduction is selective pruning applied to reduce the top or side of a tree or individual limb (ANSI 2008). In a utility context, the goal of reduction is to promote future tree growth away from the conductors, at least on decurrent trees (Figure 3.1)

3.3.6.1 Deciduous Trees

The "V" in many crown reduced deciduous trees quickly fills in with shoots. These shoots eventually require pruning to be kept from interfering with the lines (Figure 3.1) In subsequent cycles, it is important not to strip all these sprouts away, since that causes lion's tailing and can stimulate resurgent growth in many species. Rather, about half of the shoots should be removed, and the other half retained (Figure 3.11).

Shoots selected for removal should be the largest and most vigorous, leaving smaller sprouts behind. Growth selected for retention should be pencil-thin at the point of attachment. If need be, these remaining shoots may be headed back to obtain specification clearances. In this way, a rotation can be established where the largest, most vigorous shoots are removed each cycle, but smaller, suppressed shoots are left to soften the negative visual effect that many customers find objectionable.

Moreover, leaving shoots in the interior of a "V" provides shade and retains auxin production, both of which suppress vigorous sprouting, and helps the trees hold (Figure 3.11). Eventually the sides of the tree will overtop the wires, resulting in more of a "U," and shade the interior of the tree, suppressing shoot growth even more. In time, this top growth decreases the proportion of the crown occupied by the cleared utility space, and softens the negative aesthetics.

3.3.6.2 Conifers

Many conifers; such as pine (*Pinus spp.*), spruce (*Picea spp.*) and Douglas-fir

(*Pseudotsuga menziesii*); have strong central leaders (excurrent form). When these types of trees grow directly under the lines, they should be reduced to the whorl or largest available lateral that provides specification clearance. Cuts made to conifer whorls are typically flat-topped in order not to damage any branches in the whorl (Figure 3.12). Laterals should be tipped on conifers, which prevents them from forming compression wood and bending up toward the conductor.

Figure 3.11 On return visits to "V-Outs", under pruning should leave the smaller, suppressed shoots to retain foliage and soften the visual effect of crown reduction.

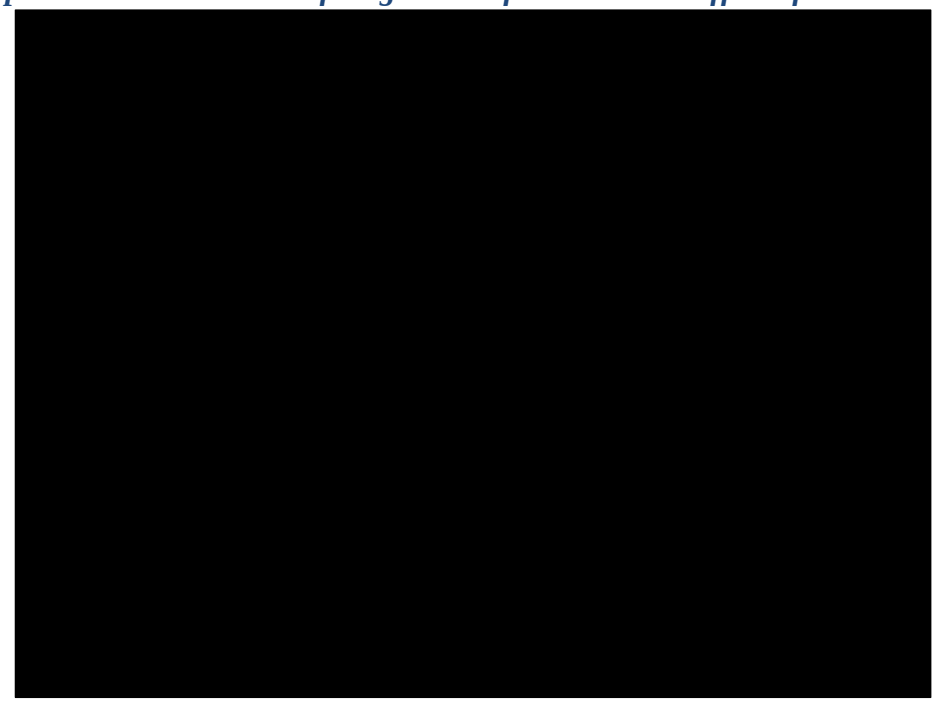


Figure 3.12.

Crown reduction.

4. SCHEDULING AND REPORTING WORK

Scheduled work involves systematic cycle or interim projects on both distribution and transmission lines. Schedules should be based on the time elapsed since the last scheduled work, compliance, voltage (particularly for transmission lines), the frequency of tree-caused outages, customer count, the existence of important accounts (hospitals, factories, mines or other high demand facilities), tree conditions, the number of customer complaints, the growth rate of predominant tree species, geography, customer density, rainfall and other environmental factors.

4.1 Process Checklist

Scheduled distribution and transmission work should follow the *PacifiCorp Vegetation Management Process Checklist* (Figure 4.1). The purpose of the process checklist is to facilitate systematic project management. The project should be identified along with the start date on the top of the process checklist.

4.1.1 Authorize Project Work

PacifiCorp foresters are responsible for work authorization. No work should begin on a project until foresters have authorized it to proceed as outlined.

4.1.1.1 Contractor Work Release

Before beginning a scheduled project, the forester shall open a *Work Release* (Figure 4.2). The *Work Release* authorizes a contractor to proceed with a specific maintenance project, and provides written instructions for the work. Contractors will not get compensated for work performed on projects that have not been authorized through a work release.

The *Work Release* specifies the project type (distribution cycle or interim, transmission cycle or interim, TGR or chemical). It provides instructions on tree removals, tree replacement, tree growth regulators (TGRs) and other particulars. It also assigns desired starting and ending dates. Before work begins, the GF/supervisor shall distribute copies of the *Work Release* to each crew assigned to the project, and review instructions for proceeding.

After the project is finished, the supervisor/GF shall sign the *Work Release* to certify the project is completed and closed. The contractor shall provide the actual starting and completion dates, as well as any pertinent comments. Comments should note work that is either incomplete (due to refusals, for example) or does not meet specifications at the time the *Work Release* is closed. By signing off on a project, the contractor guarantees that the work has been completed to PacifiCorp's specifications, and assumes responsibility for any failures to meet Company requirements, outside of exceptions noted in the comments.

4.1.1.2 Set Labor-hour Goals

The forester should set goals for labor-hours a tree and mile for time and equipment distribution cycle and interim work. These goals should be based on production data drawn from the last work on the feeder or grid, with a stretch goal of 10% improvement. Goals should also be established for transmission facilities at labor-hours a mile from previous or similar projects.

Figure 4.1 Process Checklist

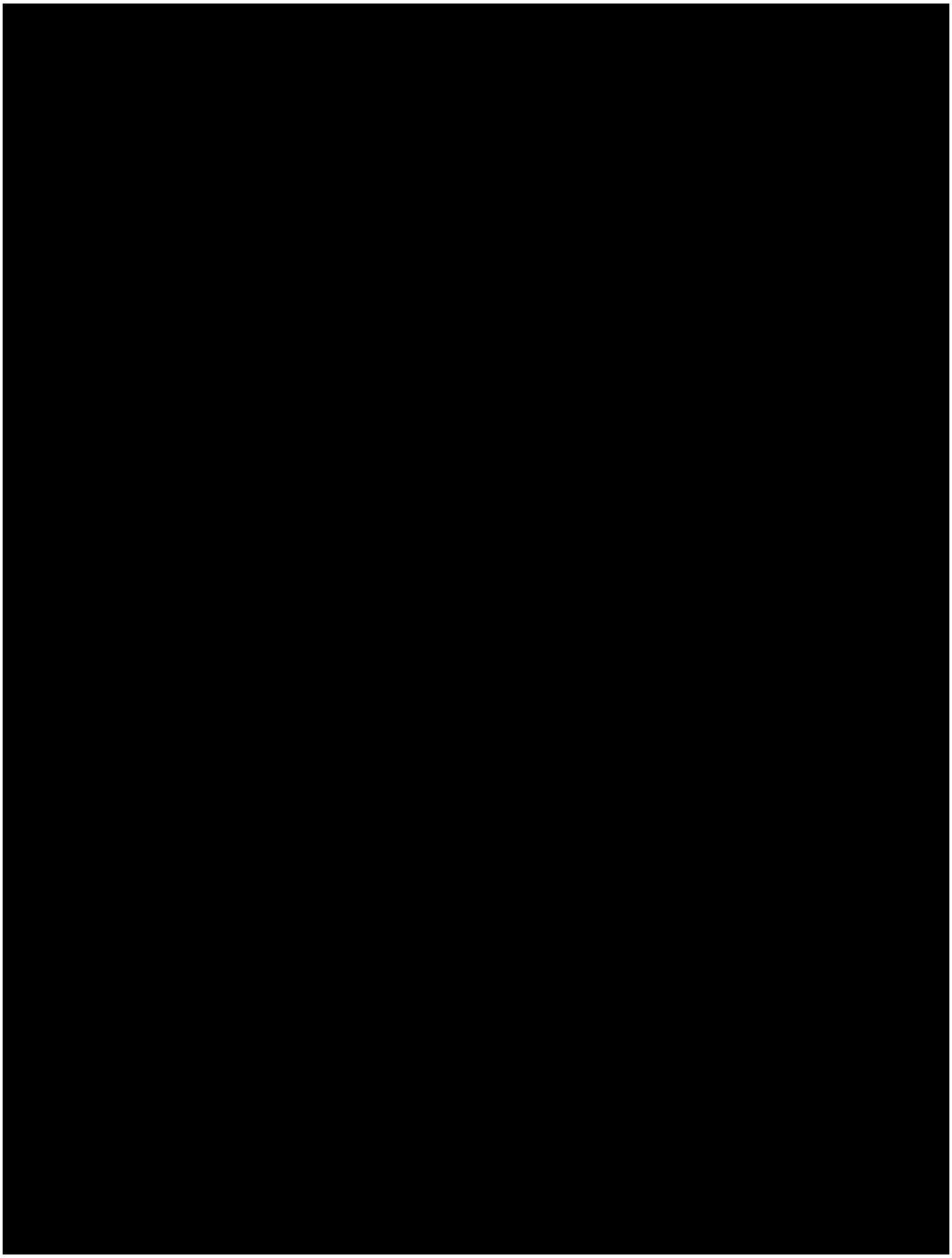


Figure 4.1. Continued

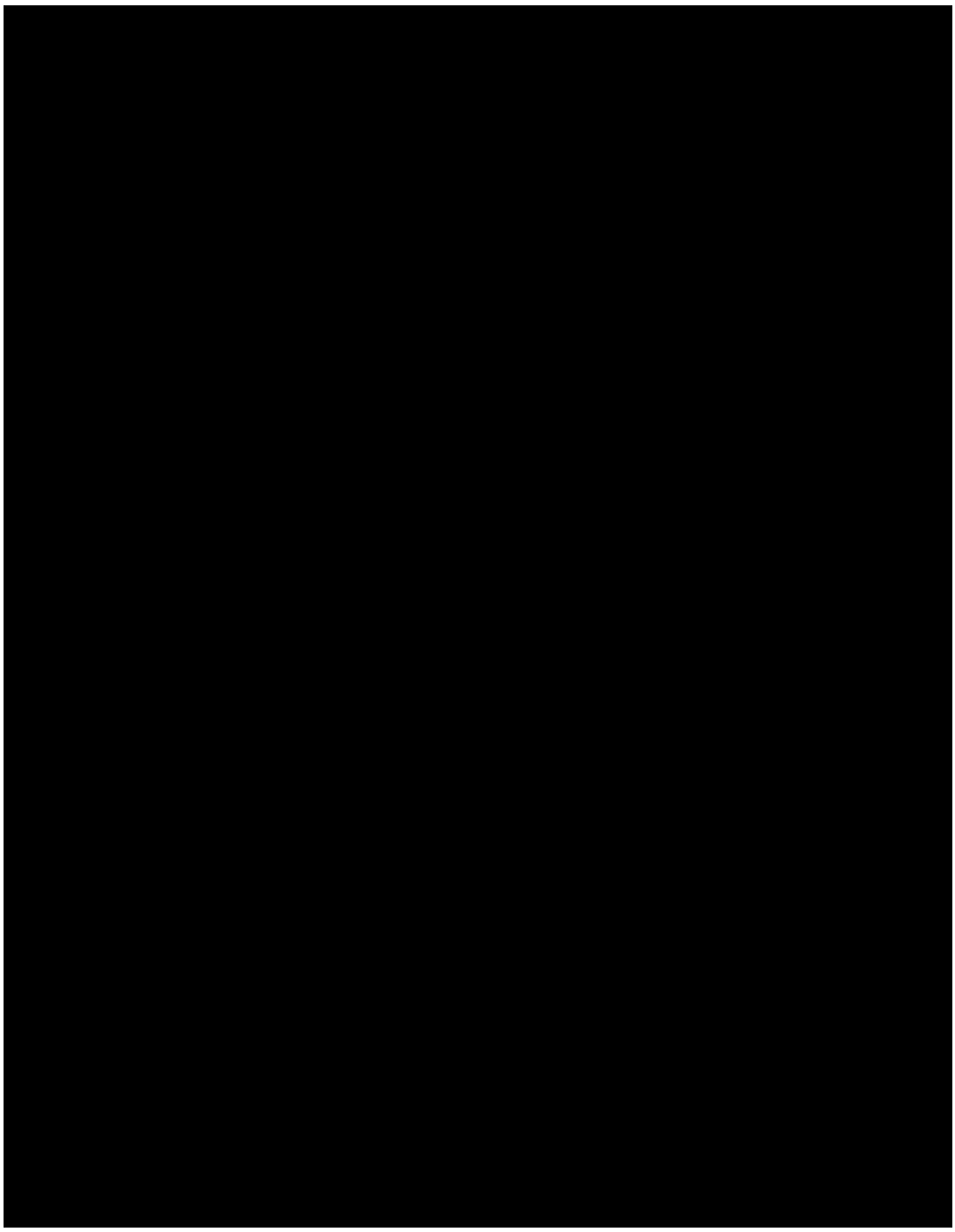
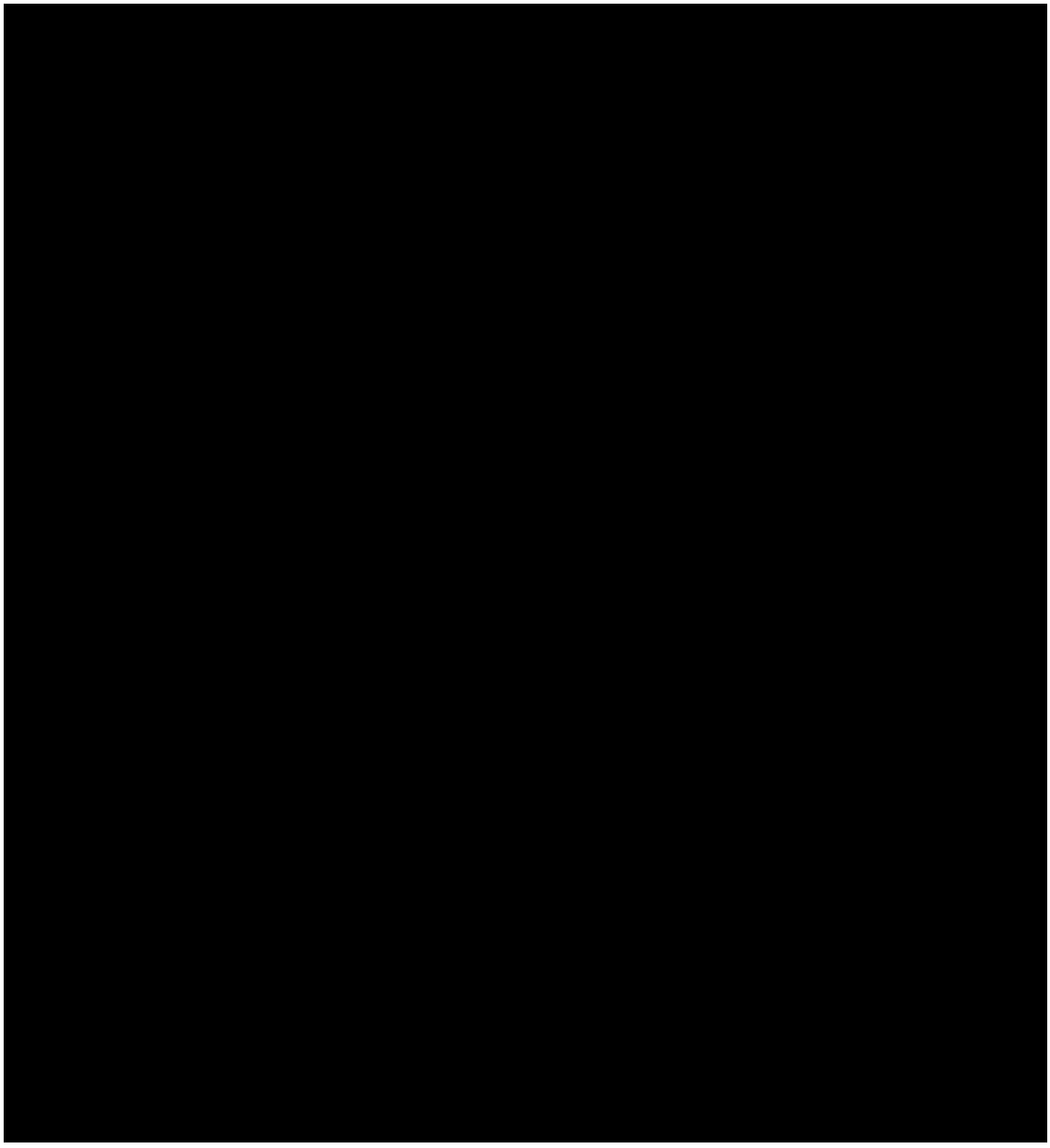


Figure 4.2. Vegetation Management Contractor Work Release



4.1.1.3 Work Release Forwarded to Senior Business Specialist and Director of Vegetation Management

The forester should forward the work release and goals to the PacifiCorp senior business specialist and director of vegetation management. The consultant will authorize payment for work on the project.

4.1.1.4 Notify Appropriate Company Personnel

The forester should notify internal stakeholders of a project prior to beginning work. Internal stakeholders include operations managers, customer-community managers, line patrolmen, hydro facility site managers and other personnel. PacifiCorp tariff policy should be notified if work will be conducted in a location where either past or current state public utility commission complaints have been received. PacifiCorp communications department should be informed if work will be conducted in the vicinity where public relations issues have surfaced in the past or could be reasonably expected to arise during currently planned work.

4.1.2 Project Plan

The project plans section provides direction for foresters, contract supervisors and contract utility foresters.

4.1.2.1 ID Overbuilt Transmission and Open Transmission Work Release

Transmission overbuilt on distribution lines should be worked in conjunction with distribution feeder or grid projects.

4.1.2.2 Research and Identify Governmental, Tribal and Environmentally Sensitive Areas.

Governmental, tribal and environmentally sensitive lands present particular demands. Lands under governmental or tribal management and environmentally sensitive areas should be identified early to allow time to work through the required processes.

4.1.2.3 Identify External Agencies and Notify if Necessary.

Identify federal, state, county, city and pertinent non-governmental organizations potentially affected by the project. The appropriate entity should be notified of the impending project, and asked whether or not they have any concerns.

4.1.2.4 Conduct Pre-job Meetings with Governmental Agencies

Before any field work begins, a meeting shall be conducted with governmental agencies that have interest in the project. This is especially important for federal land managers and tribal leaders. In particular, no work may begin on Bureau of Land Management or Forest Service managed lands without a pre-work meeting among federal officials and vegetation management. Multiple projects and multiple agencies may be covered by a single meeting.

The meeting(s) shall be organized by the forester and PacifiCorp's environmental services must be notified and invited to attend. The meeting may be held either in person or through a conference call. Work shall not begin until vegetation management receives written notice to proceed from the appropriate agency.

4.1.2.5 Contract Expert to Delineate Sensitive Areas

If environmentally or culturally sensitive areas are identified on governmentally-managed lands, a contractor with appropriate expertise should be retained to delineate subject sites or areas. Target locations should be marked on maps and on site. Care should be taken with field marking to ensure it is sufficiently clear to alert crews, while at the same time being sufficiently discreet to avoid casual detection.

4.1.2.6 Forester Inventories, Compiles, Assembles, Checks Out Maps to Vegetation Contract Supervisor

It is critical for foresters to be gatekeepers over company maps in order to ensure there is only a single master version of each. If paper map copies are necessary, the forester will check out copies of the master version, which should include sensitive environmental or cultural sites. Effort should be made to work off of digitized maps wherever possible. Contract utility foresters should work with mapping to secure digital maps and communicate with the Company forester responsible for the region. Foresters should ensure that there is a digital master with all pertinent information.

4.1.3 Project Plan Developed

The contract supervisor and contract utility forester are responsible for developing the project plan.

4.1.3.1 Pre-Job Meeting

The contract supervisor and contract utility forester must have a pre-job meeting to discuss the upcoming project. They should discuss elements of the project plan and focus on solving problem issues that arose during the initial stages of the planning process.

4.1.3.2 Identify Concerned or Dangerous Customers

Contract utility foresters should research the feeder or grid file to identify customers with a history of concerns. Contract utility foresters should be proactive in working with these customers. Contract utility foresters, supervisors/general forepersons and foresters should discuss strategies for avoiding violence with dangerous customers.

4.1.3.3 Identify and Obtain Federal Special Use Permits

PacifiCorp facilities that cross federally-managed lands are in place under the authority of special use permits. Contract utility foresters and supervisors should study and ensure the conditions in the pertinent special use permits are satisfied. Any concerns about the potential of not complying with provisions in special use permits shall be communicated to the forester.

4.1.3.4 Identify and Obtain Federal, State and Local Herbicide Use Permits.

Herbicide or pesticide use permits are required in certain jurisdictions, particularly on federally-managed land. If a permit is required, foresters must ensure that contract utility foresters or supervisors/GFs have obtained it before herbicide application may proceed.

4.1.3.5 Identify and Obtain Other Required Permits.

Permits may be required. Examples may include projects along state road rights-of-way, in some communities, county or state forests or riparian areas. All required permits shall be obtained by the contractor before work may proceed.

4.1.3.6 Identify Outstanding Ticket Work.

From time to time, customers who have called in work requests have been told that their request did not present an immediate threat to safety or electric service and could wait until regularly scheduled work. Contract utility foresters should research tickets associated with a feeder or grid, ensure contact is made with those customers, and either explain the reasons why the work does not need be done or schedule it for completion

4.1.3.7 Identify Flagging Work.

Many areas require flaggers and traffic control. Contract utility foresters should identify areas where flagging support is necessary. Those locations should be identified on both the *Activity Report* and a map. Planning should maximize the number of tree crews working with each flagging crew.

4.1.3.8 Identify Circuit Configuration

The overwhelming majority of PacifiCorp distribution circuits are built with wye configuration, which includes a neutral wire. However, delta construction, which does not have a neutral wire, is found in some areas.

The difference is of little consequence on wires attached to cross arms, as all cross arm-mounted wires should be cleared to primary specifications (see section 5.6.5). However, there is a significant distinction on lines without cross arms. Wye construction has a low neutral, while the low wire on delta carries primary voltage. This could lead to safety and clearance risks if the low primary is mistakenly identified as a neutral. In noting that a circuit is delta construction, contract utility foresters should alert tree crew leaders of the potential of a low-mounted primary, so safe work practices can be conducted and proper clearances obtained.

4.1.4 Work Identification

Contract utility foresters are responsible for work identification.

4.1.4.1 Review Special Precautions

Before beginning field work on a project, contract utility foresters should review special precautions. These might include areas where difficulties have arisen in the past, such as a particularly sensitive community or neighborhood, areas where the media has been called to help oppose line clearance work, locations where there is a concentration of people who object to herbicide application, environmentally or culturally sensitive areas, or other matters of concern.

4.1.4.2 Follow-up On Items of Concern

Contract utility foresters should follow-up with customers who requested personal contact in the past, note special access (property owners who have requested tree crews not use a gate or drive, for example), or time sensitive instructions. Examples of time sensitive instructions include advisories not to work prior to hay harvest, not to drive in a field during the raining season in the Pacific Northwest, or some other matter.

4.1.4.3 Verify Facility Point Locations

Contract utility foresters should print outstanding facility points for the feeder, grid or transmission lines on which they are planning work. They should inspect outstanding conditions and assign work where necessary.

4.1.4.4 Verify Aerial Waypoint Locations

For transmission projects, contract utility foresters should print outstanding locations from recent aerial patrols and ensure they are inspected and worked if necessary.

4.1.4.5 Review Environmental and Cultural Requirements

For work crossing governmentally managed land, contract utility foresters should review any existing environmental and cultural requirements. These can include threatened and endangered species, riparian areas or the location of culturally sensitive sites.

4.1.4.6 Inspect, Prioritize Work Areas

Contract utility foresters shall document their contact with property owners or land managers, and organize work for tree crews on an *Activity Report* (Figure 4.3).

The *Activity Report* should identify the district in which work is to be conducted, the project number (the discrete number assigned to the district), the contractor assigned to the job and the feeder or grid number for distribution or plant locality number for transmission.

For each work location, the contract utility forester should note the date they inspected the site, a detailed location, the identity of the tenant or property owner (if known), the type of contact (door hanger, letter, personal visit, telephone or no contact), the crew type required to perform the work (lift, climb, flagging, mowing or other), a description of the work, and comment, if necessary. Comments could include special considerations such as how to access the work, whether or not there is a dog on site, a sensitive area of the yard such as flower beds, cultural or environmental sites, or other matters.

4.1.4.7 Hydroelectric Facilities

PacifiCorp hydroelectric facilities and adjacent rights-of-way could have restrictions on vegetation management activities. PacifiCorp's hydro operations and implementation (compliance group), PacifiCorp right-of-way services, or PacifiCorp environmental services shall be contacted before activities on or adjacent to hydroelectric facilities begin.

Herbicide use on or adjacent to PacifiCorp hydroelectric facilities shall be reported to the plant manager weekly. Tree crews working on property that is part of a hydroelectric project site should check in with the plant office before beginning work and check out after work each day.

4.1.4.8 Substations and Transition Stations

Contract utility foresters should provide a limited visual assessment of the vicinity around substations and transition stations for trees that have a high probability of falling into or interring with the facility. Trees identified in the limited visual assessment should undergo a basic assessment. If the basic assessment indicates trees are likely to interfere with or fail and strike the sub or transition station, the trees should be assigned to a tree crew for removal or mitigation. Limited visual and basic assessments are described in Smiley, Matheny and Lilly (2011). Climbable trees that could provide access into the fenced area should

also be identified and corrected along with any vegetation growth that could interfere with the facility. Tree crew substation

4.1.4.9 Notify Private Landowners and Public Land Managers

Prior to any tree crew work, contract utility foresters should attempt to contact the property owner or tenant on whose property the work will occur. Customer contact shall follow procedures outlined in Section 8.2.

Public land managers should have been consulted before this stage (see section 4.1.2.4). However, during the notification process, contract utility foresters should follow-up with appropriate land managers to inform them that work is proceeding as planned, and provide an update on when crews are expected to begin work.

4.1.4.10 Schools

School main or administrative offices should be notified of work to be done within school grounds or on property adjacent to schools. An effort should be made to schedule work without children present or specific accommodations made for pupils' safety. Particular effort should be made to identify targets within drop zones, climbable trees, access issues and other safety matters on site.

4.1.4.11 Mobile Home Parks and Apartment Complexes

Mobile home park and apartment complex managers should be notified in advance of planned work. Managers could be aware of tenants with specific concerns. Mobile home park and apartment managers should be encouraged to communicate with affected renters. Individual units may still need notification of impending work.

activity should be charged to a work order supplied by sub operations.

4.1.5 Work Assigned to Project Crews

Work assignments are the responsibility of both contract utility foresters and supervisors/GFs.

4.1.5.1 Activity Reports and Other Pertinent Information Issued to Tree Crews

Contract utility foresters or supervisors/GFs should distribute completed *Activity Reports* to the tree crews.

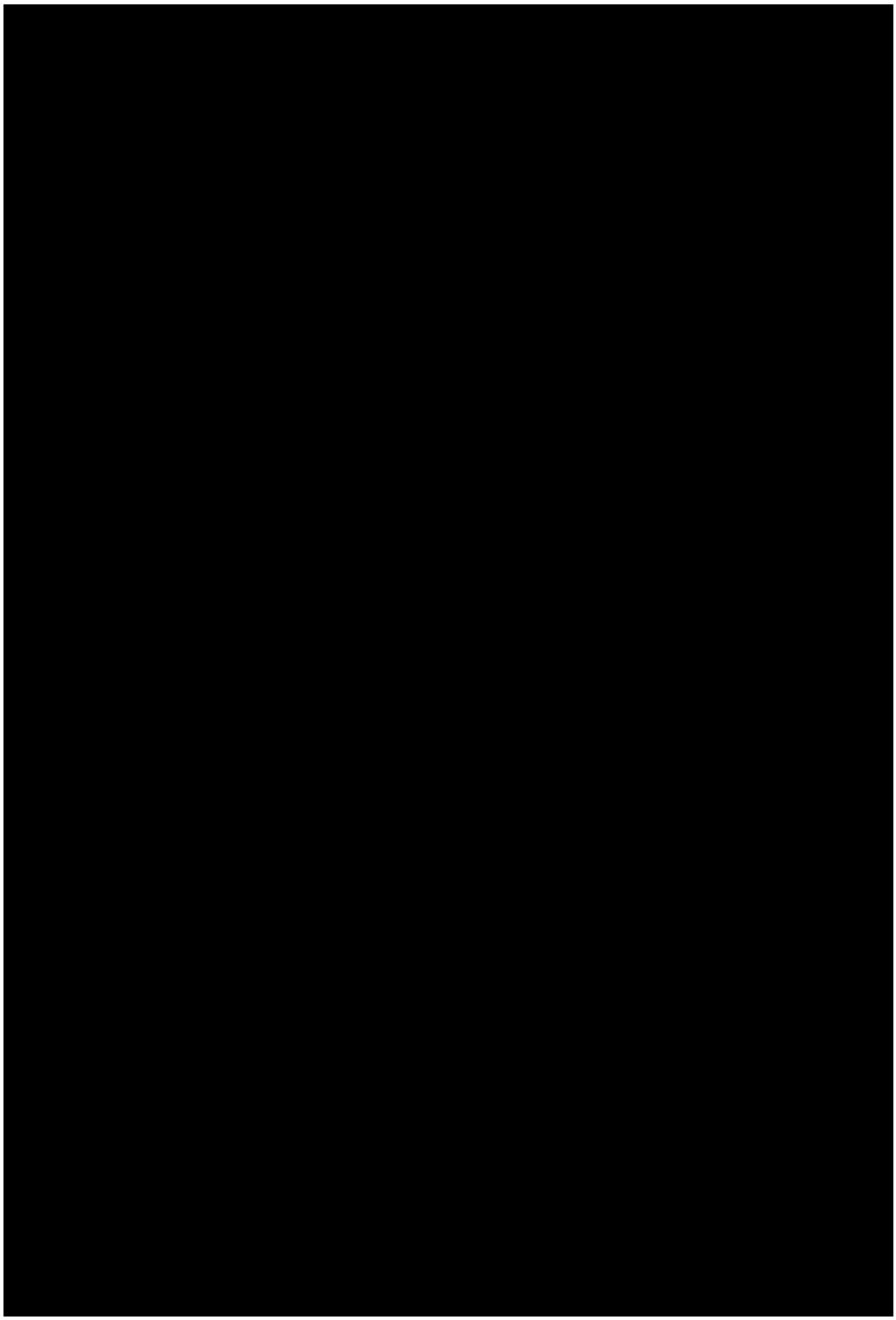
4.1.5.2 Required Permits Issued to Tree Crews

Appropriate permits shall be issued to tree crews. Tree crew members should have them available to produce to the appropriate authorities on demand.

4.1.5.3 Work Release and Project Specifics Communicated and Issued to Crews

Before beginning work on a project, the tree crew should be issued the pertinent work release. Tree crews should be able to produce the work release to foresters during audits.

Figure 4.3. PacifiCorp Vegetation Management Activity Report.



4.1.5.4 Sensitive Site or Area Review With Crews

Sensitive site locations should be communicated to tree crews.

4.1.5.5 Special Instructions

If there are special instructions, such as working in sensitive areas, contract utility foresters should communicate this in writing and ensure that tree crews have read and understand them.

4.1.6 Project Completion

After completing work, the crew leader shall note the date it was performed and initial the location entry.

4.1.6.1 Post Inspection to Verify Completion

The vegetation management contractors are ultimately responsible for ensuring that all work on a project is completed to PacifiCorp specifications. Supervisors/GFs should either inspect the work themselves, or delegate that inspection. If the work is delegated to the contract utility foresters, supervisors/GFs still have the responsibility for ensuring the project is completed to specifications. Any exceptions to specifications for any reason must be noted on the work release (see section 4.1.1.1).

4.1.6.2 Inventory and Check in Maps

Supervisors/GFs and contract utility foresters should collect all maps that have been distributed to tree crews and return them to the forester from whom they were initially issued. Foresters shall account for all maps originally issued, and file them appropriately.

4.1.6.3 Maps and Documentation Submitted

Supervisors should submit maps, completed activity reports and other pertinent documentation to foresters.

4.1.6.4 Concerned Customer Tracking

Contract utility foresters and supervisors should gather information on customers that might require follow-up the next time a project is worked. Examples are customers who refuse to allow work or access, customers who express concerns about work or customers or property owners who threaten vegetation management employees. Information should be presented to the forester in writing on the customer refusal form and appropriately filed, preferably digitally.

4.1.6.5 Tree Replacement Voucher Copies Submitted

Contract utility foresters and supervisors should submit digitized copies of tree replacement coupons to the forester.

4.1.6.6 Hazard Forms Copied, Filed and Submitted to the Utility General Foreman

Forms documenting facility points (Figure 2.7) that need to be corrected (broken cross arms, broken insulators, leaning or unstable poles, for example) should be submitted to the PacifiCorp district general foreman or operations manager.

4.1.6.7 Daily Logs for Project Submitted to Area Forester

Supervisors should collect *Daily Logs* from each crew member under their direction. These should be digitized and emailed to the forester, as well as filed by the forester.

4.1.6.8 Sign Work Release

Once they have determined that all work on a project is completed to specifications, GF/supervisor should sign and date the work release. Any locations that have not been worked to specifications should be documented on the work release with an explanation of the circumstances (see section 4.1.1.1).

4.1.7 Project Closure

Foresters are responsible for closing projects by completing the tasks in 4.1.7.1-4.1.7.3.

4.1.7.1 Verify Receipt of Maps and Other Pertinent Information

Foresters should inventory maps and collect daily logs, tree replacement vouchers, hazard forms as well as concerned customer, dangerous customer and refusal information from the supervisor. Foresters should file this information digitally so it can be retrieved when work is conducted the next time through. Foresters should ensure to keep one master digital map.

4.1.7.2 Verify Receipt of Signed Work Release

Foresters should ensure they have received and filed a copy of the signed work release from the contractor. They should examine the comment section for any work that was not completed to specification, and if necessary, make provisions to correct those outstanding conditions.

4.1.7.3 Close Work Release

The forester should close the work release and inform the lead/senior consultant and director of vegetation management of the closure by electronic mail.

4.2 Reporting Work

After completing work, the crew leader shall document tree work on *Weekly and Daily Reports*. Note the date the work was performed, the crew ID number and the crew leader's initials.

4.2.1 Weekly Vegetation Report

Tree work shall be reported on the *Weekly Time & Vegetation Report* (Figure 4.4) or other approved method. The report is a combination contractor time sheet and PacifiCorp weekly production report. The back of the report provides instructions and definitions for each cell (Figure 4.5). Weekly Reports, along with the corresponding invoice should be submitted to the forester responsible for the area in which the report was completed,

Most of the items on the *Weekly Report* are self explanatory. A few cells warrant clarification, (reference Figures 4.4 and 4.5).

- Item 23. General Work Location: The general location should be the approximate address. For example, the 4000 block of Dead Elm Memorial Road. Note that for audit purposes, crew leaders will be responsible to find and identify all the trees they worked over the course of a week. Consequently, more detailed information should be kept in the *Daily Report* (covered in Section 4.2.2 [Figure 4.6]).
- Items 31 and 32. Woody plants (including vines) less than 4-inches in diameter at breast height are classified as saplings. The actual square footage occupied by the above ground portion of the plant should be measured and recorded, with a 100 ft^2 maximum per plant for both pruned and removed vegetation. Note that multi-stemmed

woody plants where no single stem is over 4-inches in diameter are classified as saplings, with a maximum of 100 ft^2 per plant.

- Item 37. Stump Spraying: Document the time spent treating stumps of trees and brush feet that have been removed during the day. Use quarter-hour increments.
- Items 43-45. To obtain the diameters of multi-stemmed trees, add the diameters at breast height of individual stems. For example, if a tree has three stems of 8, 4 and 3- inches in diameter, the tree would be 15 inches in diameter and reported as a 12-24 inch removal. An exception would be if no stems on the plant are over 4-inches in diameter at breast height, in which case the plant should be classified as a sapling (see items 31 and 32). If only one stem is over 4-inches in diameter and the remaining stems are less, report the diameter of that specific removal as the diameter of the single largest stem.
- Item 47 and 48. Saplings pruned and removed. Saplings are trees under four-inches in diameter at breast height (they could also be 6-inches or less in diameter at the stump). Report area covered by the crown of the plant, with a 100 ft^2 maximum for each plant. There must be six inches of soil between stems of the same species to count as multiple plants.
- Items 54 and 55. For transmission cycle work, capture the number of acres cleared or sprayed respectively using linear feet.

4.2.2 Daily Report

The *Daily Report* shall be used by crew leaders to keep detailed records on their productivity (Figure 4.6). It is particularly important as a reference for locating trees during audits and tracking chemical use. Like the *Weekly Report*, the *Daily Report* provides instructions on a cell by cell basis. The *Daily Report* is the property of PacifiCorp, and when completed, supervisors/GFs shall digitize it, and sent to the appropriate forester.

4.3 Tree Crew Audits

The primary purpose of a crew audit is quality control. Furthermore, crew audits offer an opportunity for the forester to provide tree crew leaders and their supervisors/GFs with a clear understanding of PacifiCorp's expectations.

Foresters shall audit one full week of work as many times a year as specified in their goals. All work, including transmission and pole clearing, shall be audited. Each audit should have the forester, the crew's GF/supervisor and the crew leader in the field together reviewing completed work. Audits should begin with the first tree, and progress in order to the last tree worked during the week. Over the course of the audit, the forester, supervisor/GF and crew leader should open a dialog regarding the week's results.

The audits should objectively assess quality, adherence to specifications, tree counts, herbicide and other matters. Moreover, audits should provide the tree crew leader with feedback on production, professionalism, equipment, safety and crew efficiency. Results shall be documented on a *Tree Crew Audit Report* (Figure 4.8).

4.3.1 Objective Components

Objective audit components shall be determined on the straight percentage of trees that meet expectations compared to the total trees worked in each category. The percent score shall be averaged for the final rating.

4.3.1.1 Quality

The quality component documents crew adherence to natural target pruning as described in Section 3.3. Before conducting an audit, the forester and supervisor/GF should agree on a day to examine cut quality. One way would be to roll a die. In this case, 1 would designate Monday as cut quality day, 2 Tuesday and so on. Six would represent Saturday, so it would require further rolls until a different number turns up.

All final cuts made by the crew that day should be counted and examined for proper technique. A minimum of 20 cuts shall be inspected. If a crew did not make 20 cuts on the selected day, another day should be added until a minimum of 20 cuts have been evaluated. Note that if Friday is the selected day and 20 cuts were not made, the crew leader should alert the forester and GF/supervisor before the audit begins so another day can be added for cut quality.

Rip cuts, flush cuts and improper lateral selections violate the principles of natural target pruning, and shall be counted against the category score. Foresters should grant tree crews one grace faulty cut (the "Mulligan"). In addition, each "hanger" left in the tree will count as one improper cut per inch of the hanger's diameter. For every two hangers under one-inch in diameter, a single cut penalty should be assessed.

Lombardi poplar, Douglas hawthorn and other species are exempted from cut quality examination at the PacifiCorp director of vegetation management's discretion.

4.3.1.2 Specification Adherence

The *Specification* section examines all trees worked over the course of a week, both pruned and removed. It takes a straight percentage of trees that comply with clearances specified in Chapters 5 and 6 against all those worked during the week. Brush feet sprayed may be counted as brush feet removed. In addition, if climbing spurs were used in violation of section 2.6.3, the crew will be penalized for a tree out of specification.

4.3.1.3 Tree Count

The tree count section is used to validate numbers in the *Weekly Report* against those actually identified in the field on a straight percentage basis. Reported trees pruned, secondary trees, and brush feet equivalents ($ft^2 \div 100\ ft^2$ of saplings pruned or removed) should be validated for discrepancies in these categories. Note that no plant should be reported at more than 100 ft^2. Smaller, pencil-diameter stems may be counted at 10 ft^2 each.

Figure 4.4. Weekly Time and Vegetation Report

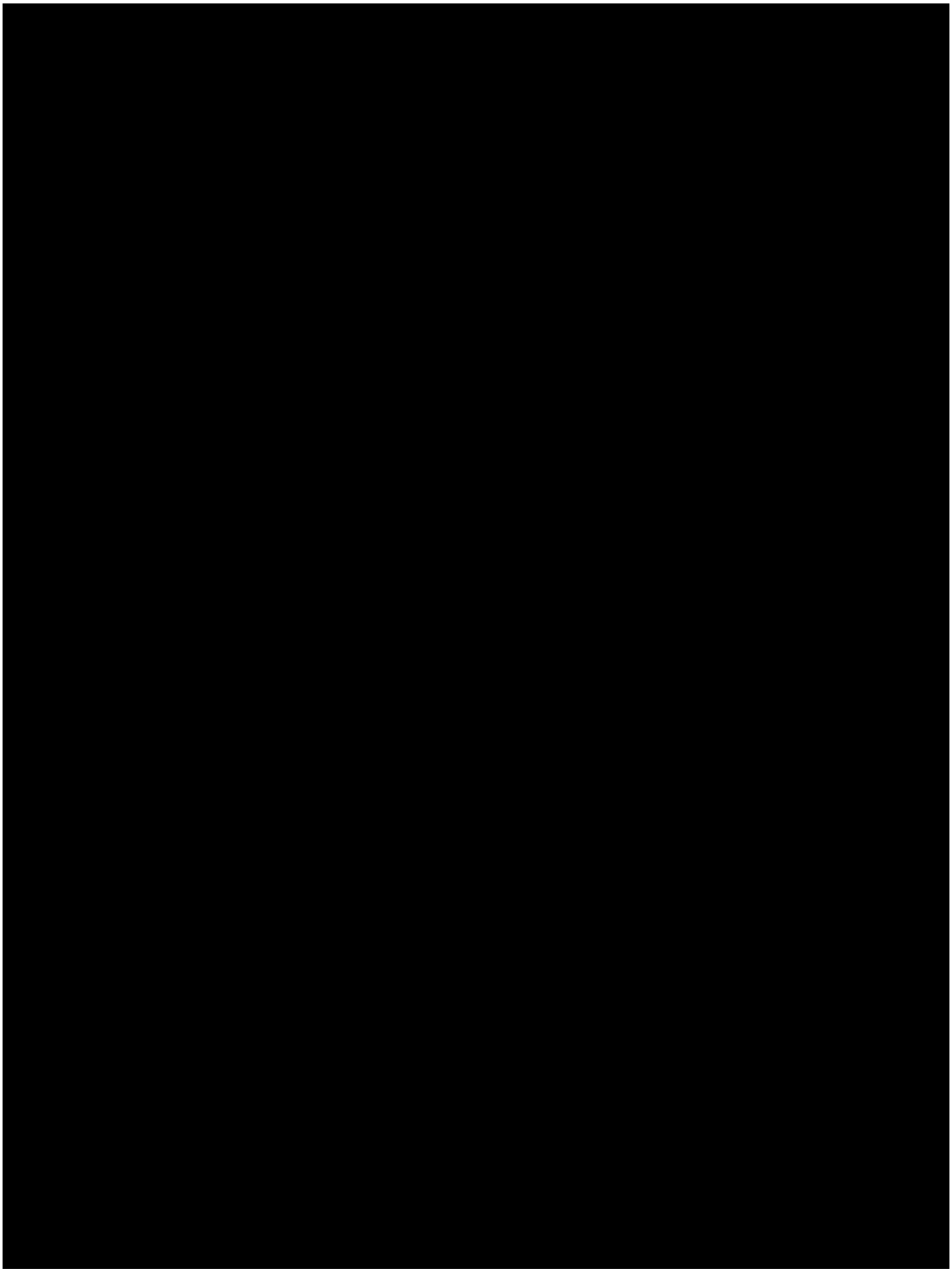


Figure 4.5. PacifiCorp Weekly Time and Vegetation Management Report Instructions and Definitions.

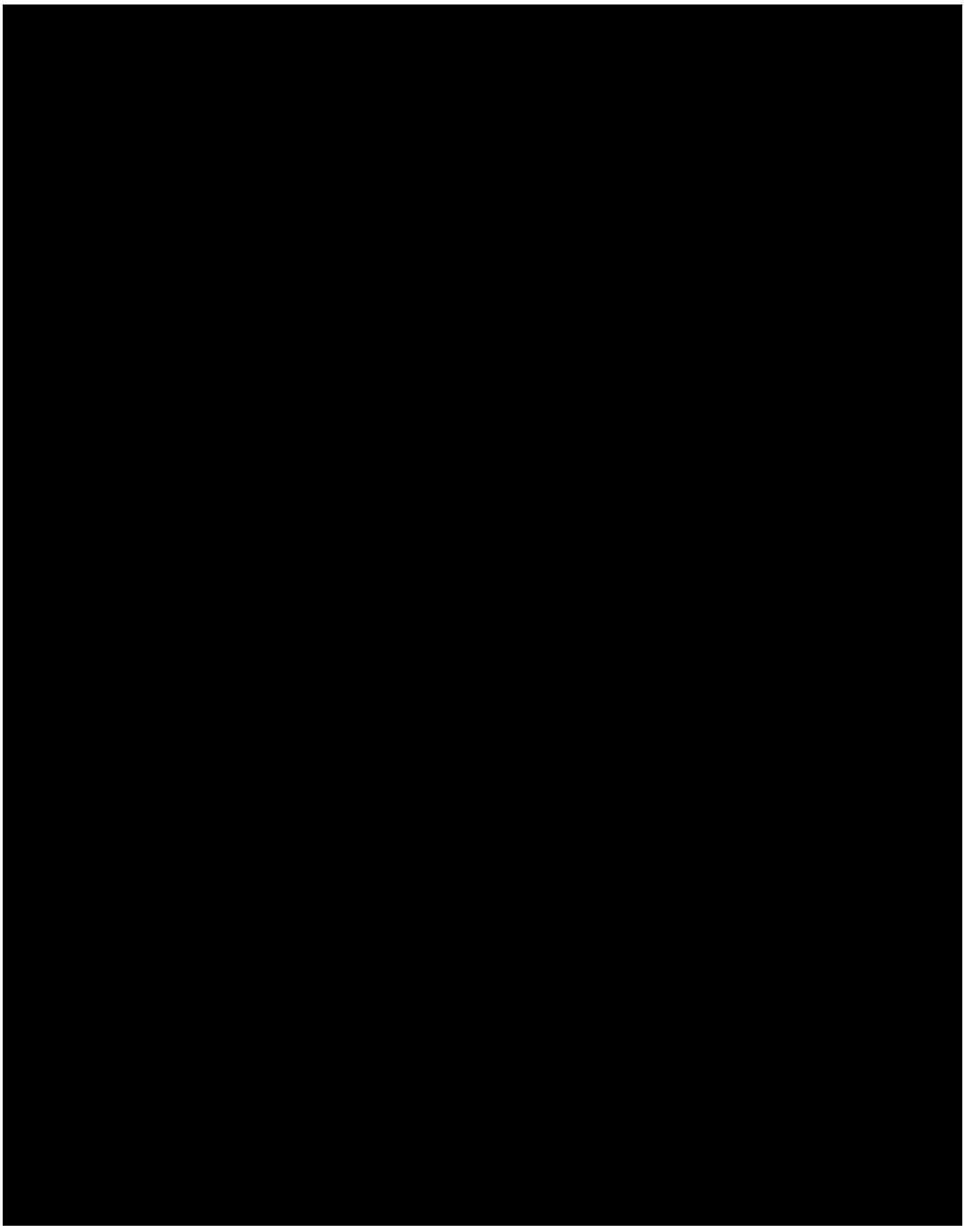


Figure 4.6 Daily Report

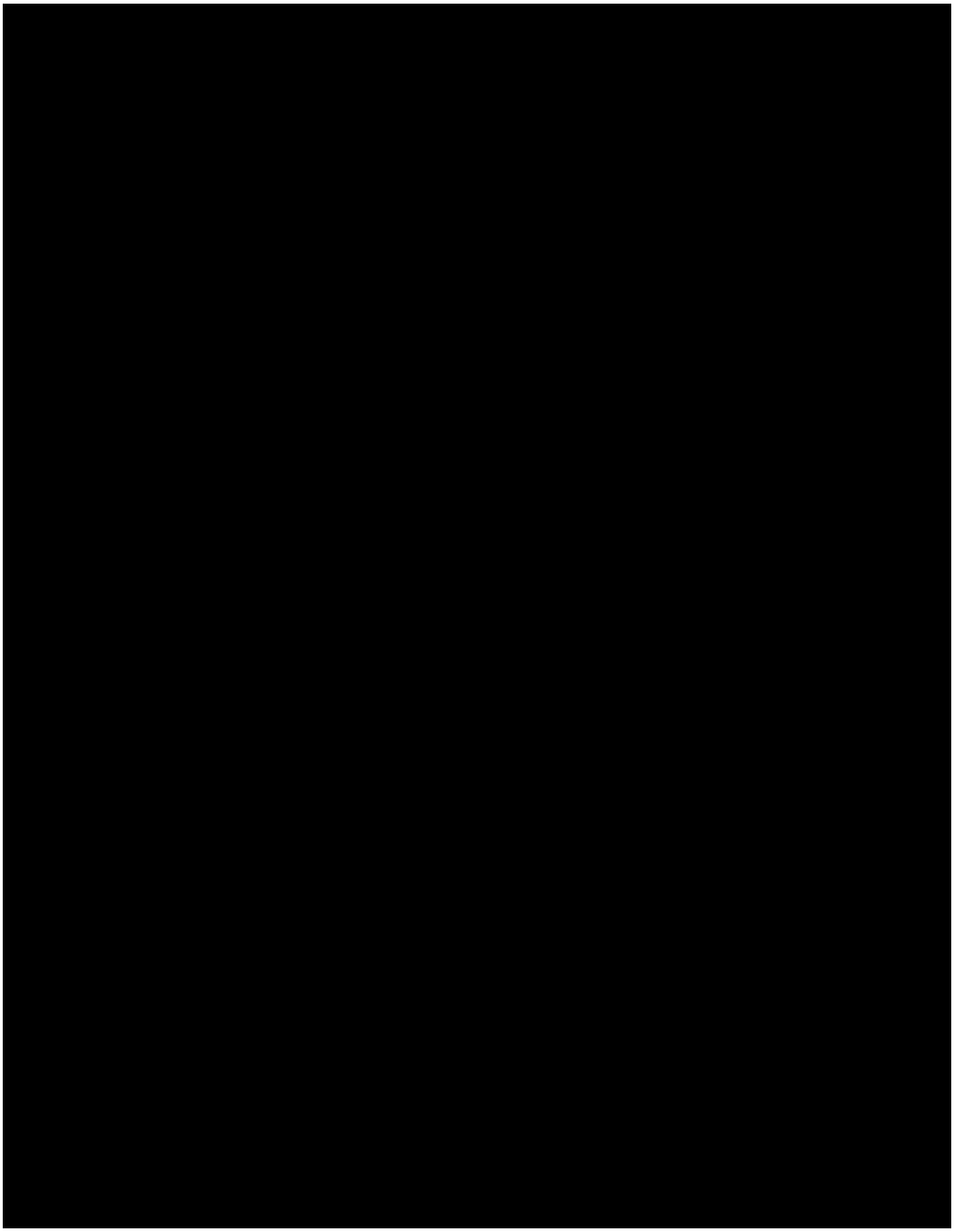


Figure 4.7 Vegetation Management Daily Report

Figure 4.8 Tree Crew Audit Form.

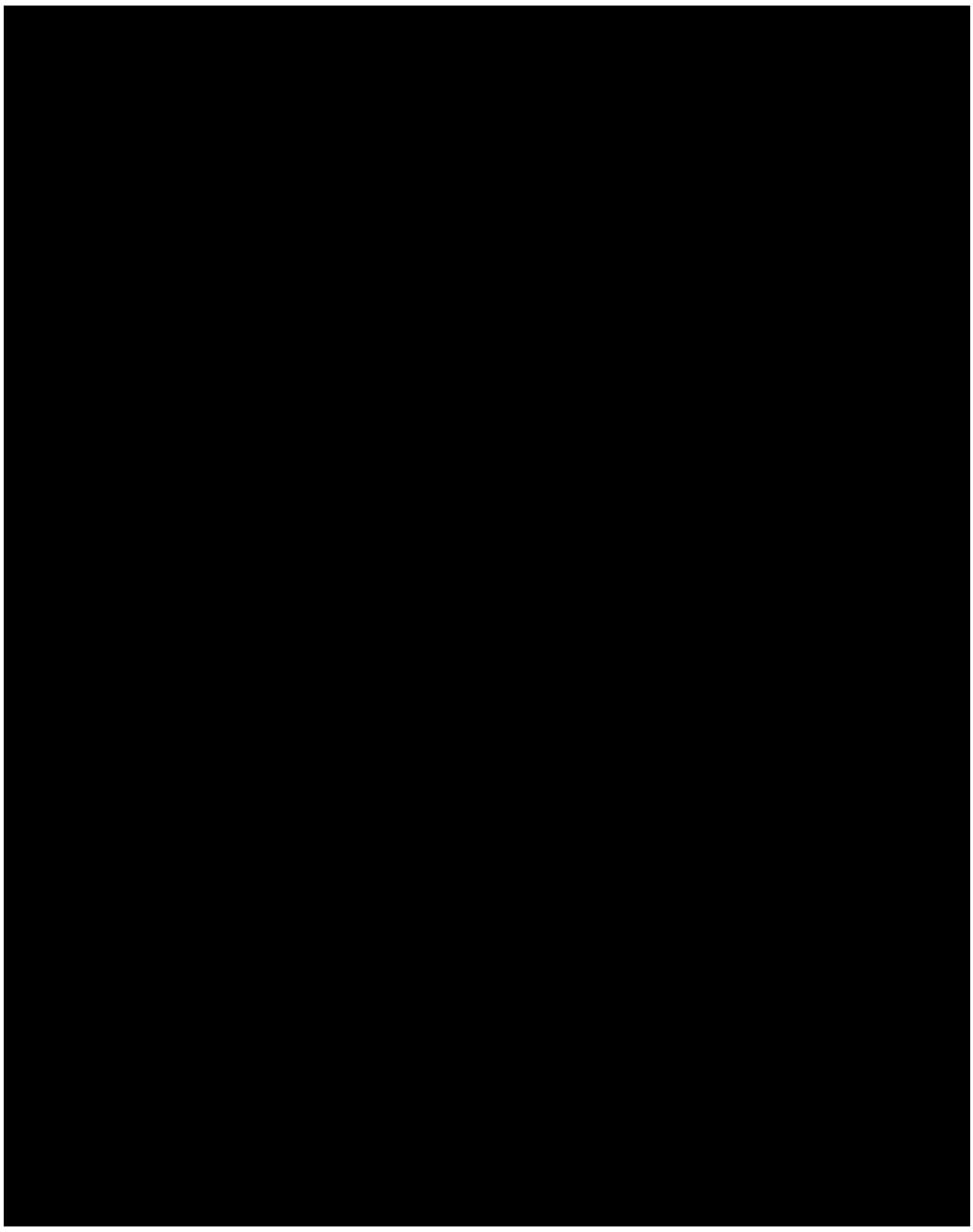


Table 4.1 Herbicide category deductions. Deductions are added together.

Penalty Description	Deduction
Failing to treat stumps or ft^2 of brush requiring treatment	Percentage of stumps or ft^2 of brush missed against the total of those requiring treatment.
Misreported stumps or ft^2 of brush	Percentage of over or under reported stumps, or ft^2 of brush against the total that were actually treated
Crews without a crew leader or an applicator (if required by state regulations) holding a current applicator's license	100% (crew may be shut down at the forester's discretion).
Crew leader or applicator (if required by state regulations) who have a current applicator's license, but does not have it on site.	10%
Missing herbicide SDS or Label	10% for each missing chemical document of on the truck

On transmission projects, work in the right-of-way should be reported as acres cleared if there are more than 40 trees per acre. If there are fewer than 40 trees per acre, work should be reported as individual trees. Trees outside the right-of-way should be reported as individual trees.

4.3.1.4 Herbicide

The herbicide component should compare total treated stumps and brush feet equivalents (total $ft^2 \div 100\ ft^2$) against those that should have been treated. It should also compare stumps and brush feet equivalents treated with herbicide against the total number reported. Deductions for over or under treatment or reporting should be made on a straight percentage basis and added together (Table 4.1). For example, if in an area where herbicide use was acceptable, a tree crew removed five deciduous trees, but only treated four stumps, they would receive a 20% deduction ($[1 \div 5] \times 100 = 20\%$). Moreover, if they reported only three out of the four stumps actually treated, the crew would receive an additional 25% demerit. The total deduction in this example would be 45%, and the crew's herbicide score would be 55% (assuming everything else was in order).

Moreover, foresters should apply penalties for violations of herbicide policy. Penalties include a 100% category deduction for cases where the crew leader or applicator did not hold a valid applicator's license (California excepted). The crew may be shut down until the crew is properly credentialed. Further penalties include a 10% penalty for crew leaders or applicators that have valid applicator's licenses, but do not have it on site, and a 10% penalty for each required pesticide

document that is missing (SDS and labels, for example [Table 4.1]).

Failing to report treated trees is a violation of law, in addition to not providing PacifiCorp with accurate information. Examples of trees and brush that do not require treatment include conifers that do not sprout from the stump (pines, firs, spruces, cedars and others), and stumps located in areas where herbicide use is prohibited (certain Federal jurisdictions, municipal watersheds and private property where the owner objects to herbicide use).

4.3.2 Subjective Components

While not included in the final audit score, subjective factors such as productivity, professionalism, equipment and safety are also critical to program success. The audit process allows the forester to comment on these items.

4.3.2.1 Production

For time and equipment work, foresters should provide the tree crew's *Statistics Report* (Figure 4.11) and a *Crew Productivity Report* from PVM for the year to date. On the *Statistics Report,* foresters should review the percentage of removals, the type of removals, the amount of nonproductive time and other factors that affect a tree crew's productivity and quality. The *Crew Productivity Report* compares the subject crew's data with the average productivity of crews working in similar areas. It enables crew members to compare their performance against that of their peers.

While productivity data is objective, valid comparisons involve subjective judgment because specific work types are different from one another. For example, a climb crew's production results will invariably be lower than those of lift crews, ticket work will be worse than cycle work, and one cycle crew working in a vegetation-dense area will have different production from crews working in urban areas. Nevertheless, 70% of PacifiCorp's contractor performance formula is based on productivity; so, audits should stress productivity's importance to program success.

4.3.2.2 Professionalism

Since vegetation management has more interaction with PacifiCorp customers than any other department, it is vitally important for tree crews to exhibit professionalism. Foresters should comment on factors such as ISA Certification, appearance, and other considerations.

4.3.2.3 Equipment

The condition of equipment relates to professionalism and productivity. Well cared for equipment and organized tool boxes are not only a positive reflection on the crew, but they also make work safer and more efficient. Foresters should comment on the appearance and functionally of equipment and organization of the bins.

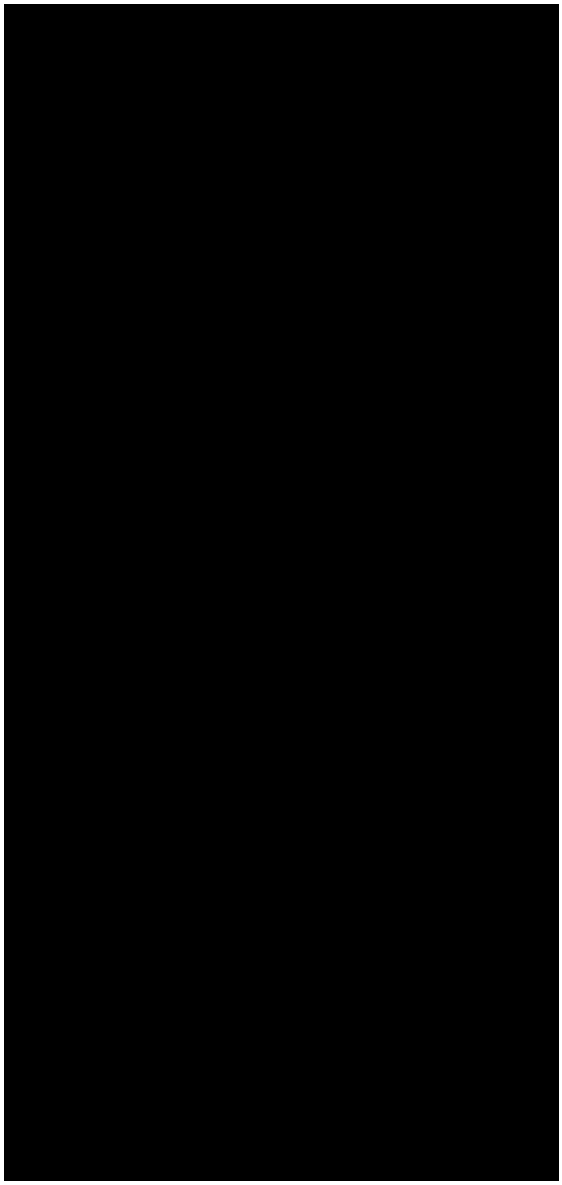
4.3.2.4 Safety

Safety should be evaluated by the supervisor/GF. However, if a forester observes unreasonable safety risks or obvious safety violations (such as someone failing to wear personal protective equipment), he/she should relate their concerns to the crew, and inform that crew's GF/supervisor so that he or she may correct the situation. All crew members should know the safety requirements applicable to their positions and take responsibility for following those requirements.

4.3.2.5 Crew Efficiency

Reviewing work systematically from the first to last tree worked allows foresters and supervisors/GF to gain an

Figure 4.9. Herbicide Audit Form.



impression of job planning, which is a reflection of crew efficiency. Foresters should share their impression of crew efficiency and also comment on methodology, clean up and chip disposal. Inefficient work organization may be the responsibility of the contract utility forester who originally lined-out the work. Trends in disorganization may require contract utility forester counseling.

4.3.2.6 Crew Composition

Foresters will note the number of crew members and equipment type on the crew being audited. The field notes will be compared to an itemized invoice for accuracy. Foresters should also note the week ending date to help access the proper invoice. Results should be reported monthly on the invoice audit.

4.3.2.7 Customer Surveys

Foresters should compare surveys distributed against the occupied buildings along the audit. The score will be based on the number of surveys distributed against the number that ought to have been distributed. It will not count toward the overall audit score.

4.4 Herbicide Crew Audit

The primary purpose of the herbicide crew audit is quality control. Audits should evaluate one full week of herbicide crew work. Each audit should have the forester, the crew's GF/supervisor and the crew leader in the field together observing completed work. Audits should begin with the first area treated, and progress in order to the last area worked during the week. Over the course of the audit, the forester, supervisor/GF and crew leader should open a dialog regarding the week's results.

Moreover, audits should provide the herbicide crew leader with feedback on production, professionalism, equipment, safety and crew efficiency. Results shall be documented on an *Herbicide Crew Audit Report* (Figure 4.9).

4.4.1 Objective Components

Objective audit components shall be determined on the straight percentage of trees that meet expectations compared to the total trees reported in each category. The percent score shall be averaged for the final rating.

4.4.1.1 Quality

The quality section examines proper square footage of brush treated following specifications described in Chapter 7. Calculate the score by using percentages of proper brush or acres treated against the total number reported.

4.4.1.2 Count

To complete the *Count* section, the square feet of brush or acres treated against which should have been sprayed.

4.4.1.3 Herbicide

Foresters should apply penalties for violations of herbicide policy. Penalties include a 100% category deduction for cases where the crew leader or applicator did not hold a valid applicator’s license (California excepted). The crew may be shut down until the crew leader or applicator are properly credentialed. Further penalties include a 10% penalty for crew leaders or applicators that have valid applicator's licenses, but do not have it on site, and a 10% penalty for each required pesticide document that is missing (SDS and labels, for example [Table 4.1]).

Failing to report treated trees is a violation of law, in addition to not providing PacifiCorp with accurate information. Examples of trees and brush that do not

require treatment include conifers that do not sprout from the stump (pines, firs, spruces, cedars and others), and stumps located in areas where herbicide use is prohibited (certain Federal jurisdictions, municipal watersheds and private property where the owner objects to herbicide use). Foresters should also comment on material, proper tools and crew knowledge.

4.4.2 Subjective Components

While not included in the final audit score, subjective factors such as productivity, professionalism, equipment and safety are also critical to program success. The audit process allows the forester to comment on these items. Failing to report herbicide treatment or not having a licensed applicator on the crew is a violation of the law.

4.4.2.1 Professionalism

Same instructions as 4.3.2.2

4.4.2.2 Equipment

Same instructions as 4.3.2.3

4.4.2.3 Safety

Same instructions as 4.3.2.4

4.4.2.4 Crew Efficiency

Same instructions as 4.3.2.5

4.4.2.5 Crew Composition

Same instructions as 4.3.2.6

4.4.2.6 Customer Surveys

Same instructions as 4.3.2.7

4.5 Worksite Inspection

PacifiCorp has a *Worksite Inspection Form* (Figure 4.10), which is designed to check tree crew safety. Foresters are required to perform a number of worksite inspections as specified in their annual goals. Foresters may use the form during crew visits. The form provides a general review, as well as tailboard, bucket or climb setup, vehicle, herbicide and other safety provisions.

4.6 PVM

PacifiCorp Vegetation Management (PVM) is a PacifiCorp intranet-based program available at: http://pdxappw51vp.pacificorp.us:8080/BOE/BI?startFolder=AVPSDml489dAlLbJ3JVVZzE&isCat=false. The databse organizes data downloaded from the *Weekly Report* (Figure 4.4). PVM offers a variety of reports, such as the *Statistics Report* (Figure 4.11), which enable program analysis.

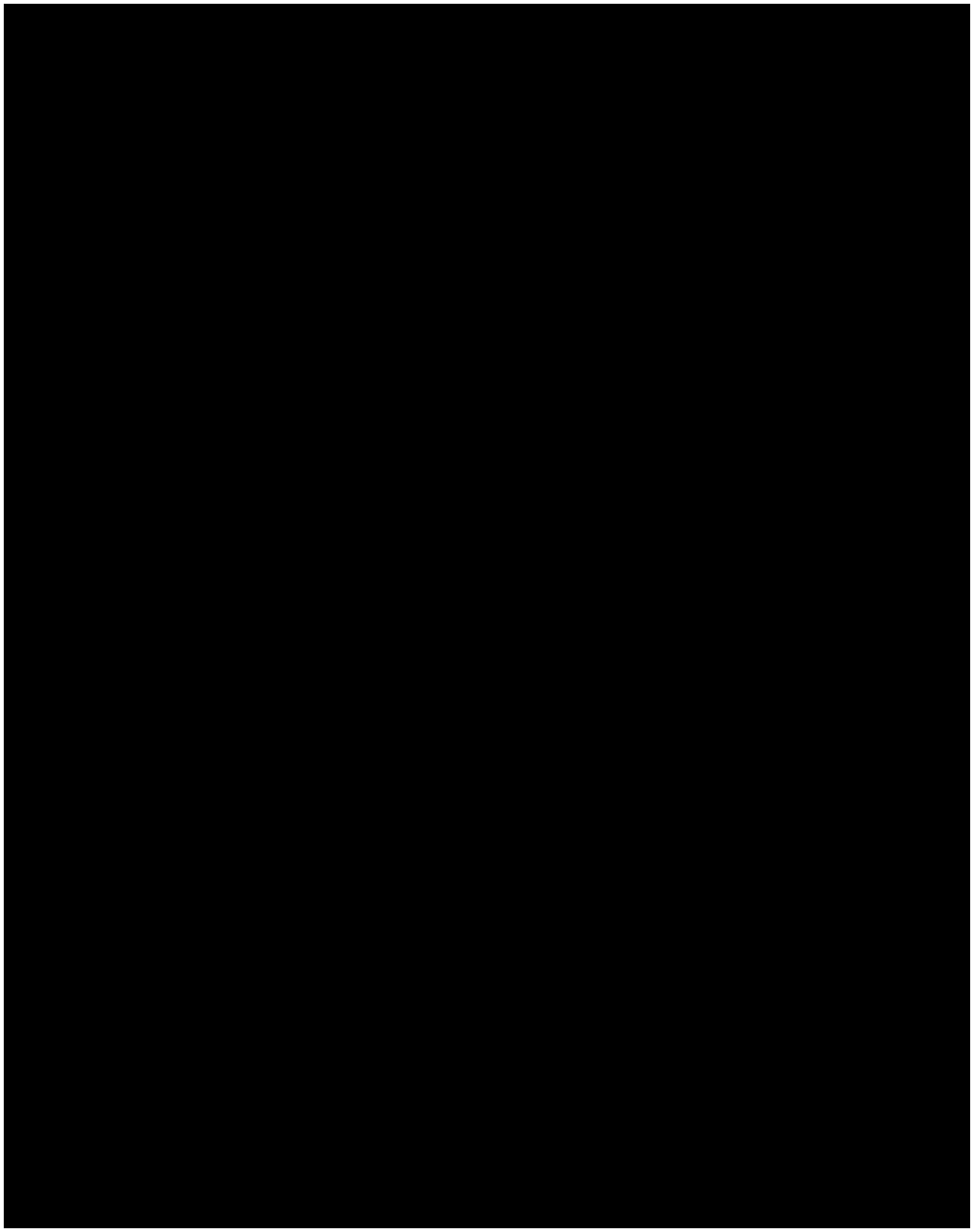
The statistics reports are designed to be flexible. They allow data examination on a program level (it contains data since 1996 for Pacific Power, for example), down to a crew level for a specific week of work. They also provide cost and man-hours per tree, the percentage of various work types (tree removals, the size of trees removed, the number of side pruned trees, crown reduction and others), the percentage of time spent on travel, flagging, cleanup and other activities.

Other PVM reports compare the productivity of individual crews, or breakdown production by district, state, and work code. The reports provide objective information upon which foresters and supervisors/GFs can make sound management decisions based on objective information.

4.7 Monthly Reports

Vegetation management has monthly reports tracking distribution cycle and

Figure 4.10. Vegetation Management Worksite Inspection Form.



interim progress, distribution spray progress, tree crew deployment, cycle progress, California Pole Clearing and transmission progress reports. These reports can be found at the PacifiCorp T&D Support Services Website: http://idoc.pacificorp.us/pacificorp_organization/rmp/rmpto/rtss/vm.html. A description of three prominent reports follows.

4.7.1 Distribution Progress Report

The distribution progress report (Figure 4.12) accounts for line miles achieved on systematic distribution work compared to goals for a given year. Systematic distribution work is cycle work throughout the six state service territory, as well as interim work in the Pacific Power service territory. The goal is the recommended scheduled miles prorated by the week of the year.

The report provides a summary of line miles achieved, breaks down progress by Pacific Power and Rocky Mountain Power's service territory, includes monthly miles ahead or behind goals, a chart depicting monthly line mile progress, and progress in each state by district and where appropriate, by forester.

4.7.2 Distribution Cycle Progress Report.

The distribution cycle report records line miles achieved over the course of the current recommended cycle compared to goals (Figure 4.13). Goals are prorated monthly and compared to actual progress.

4.7.3 Tree Crew Deployment Report

The tree crew deployment report (Figure 4.14) lists tree crews, contract utility foresters and supervisors/general foremen by forester and district as of the first of each month. In addition to providing information on tree crew locations, the tree crew deployment is used for budget projections.

4.7.4 Invoice Audit Report

Foresters will compare invoices to crew composition information obtained during the crew audits (see sections 4.3.2.6 and 4.4.2.5). Each month, results will be submitted to the director of vegetation management and senior business specialist on the Invoice Audit Report (Figure 4.15). The senior business specialist will ensure discrepancies are reconciled with the appropriate contractor.

Figure 4.11. A sample PVM Statistics Report showing distribution cycle data for Oregon 2010.

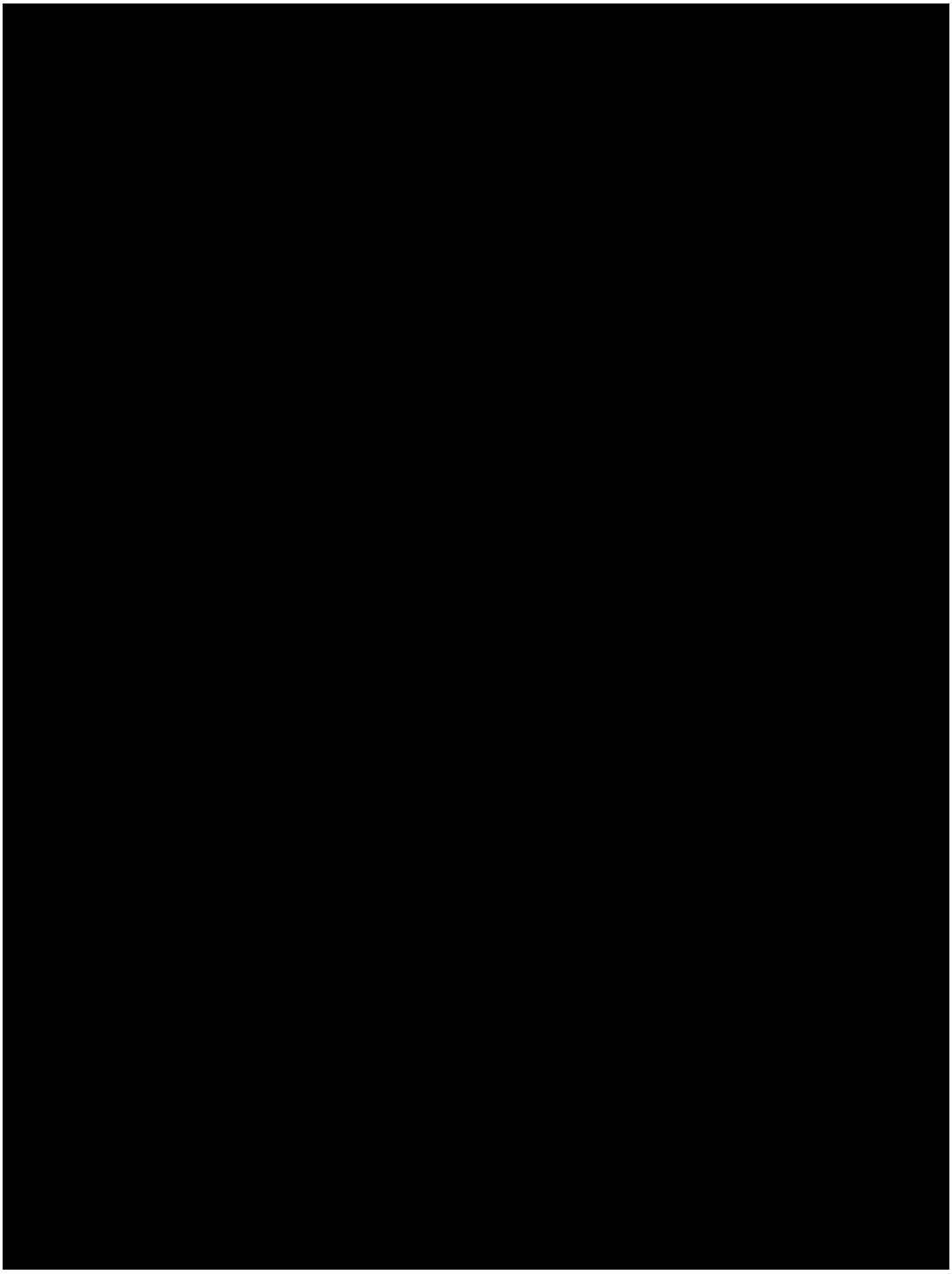


Figure 4.12 Monthly Distribution Progress Report

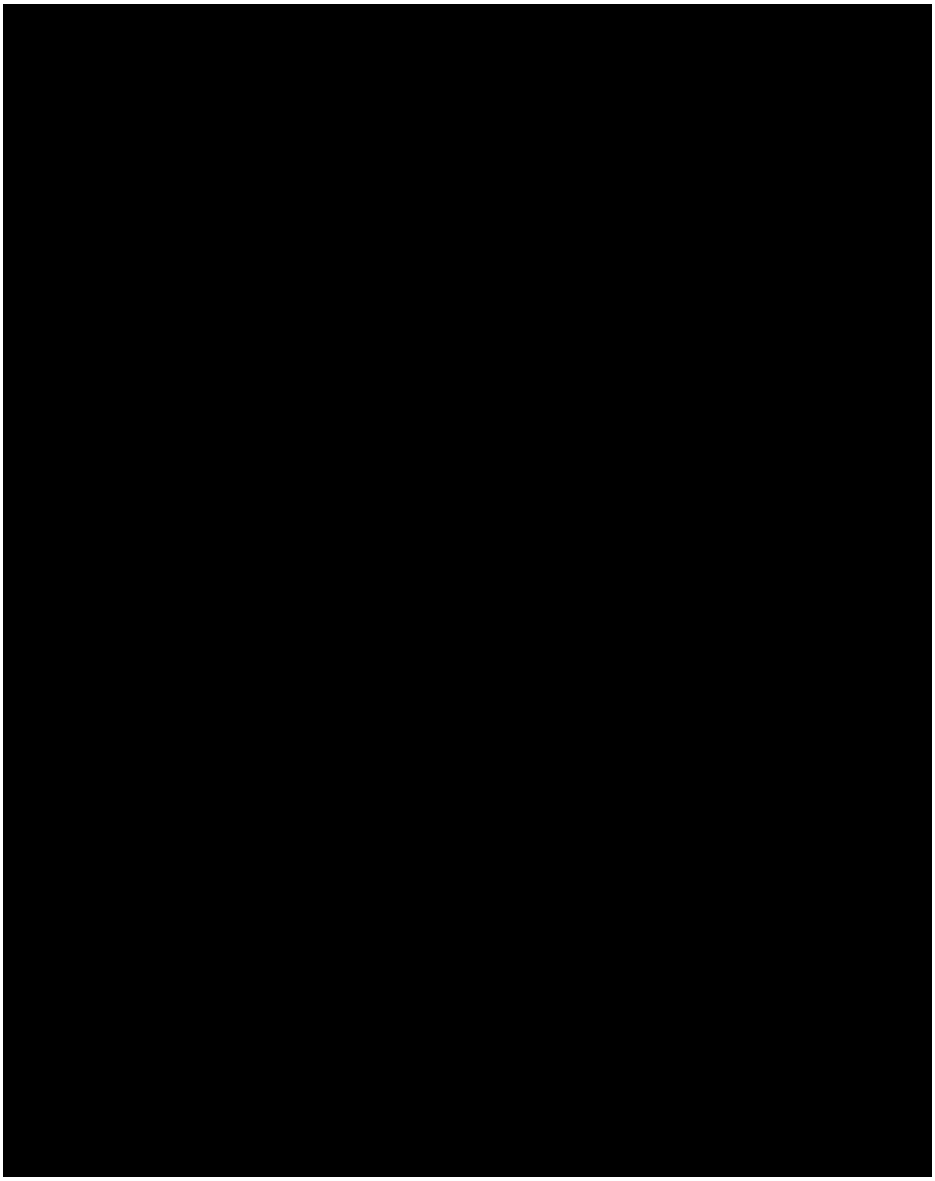


Figure 4.13. Cycle Progress Report.

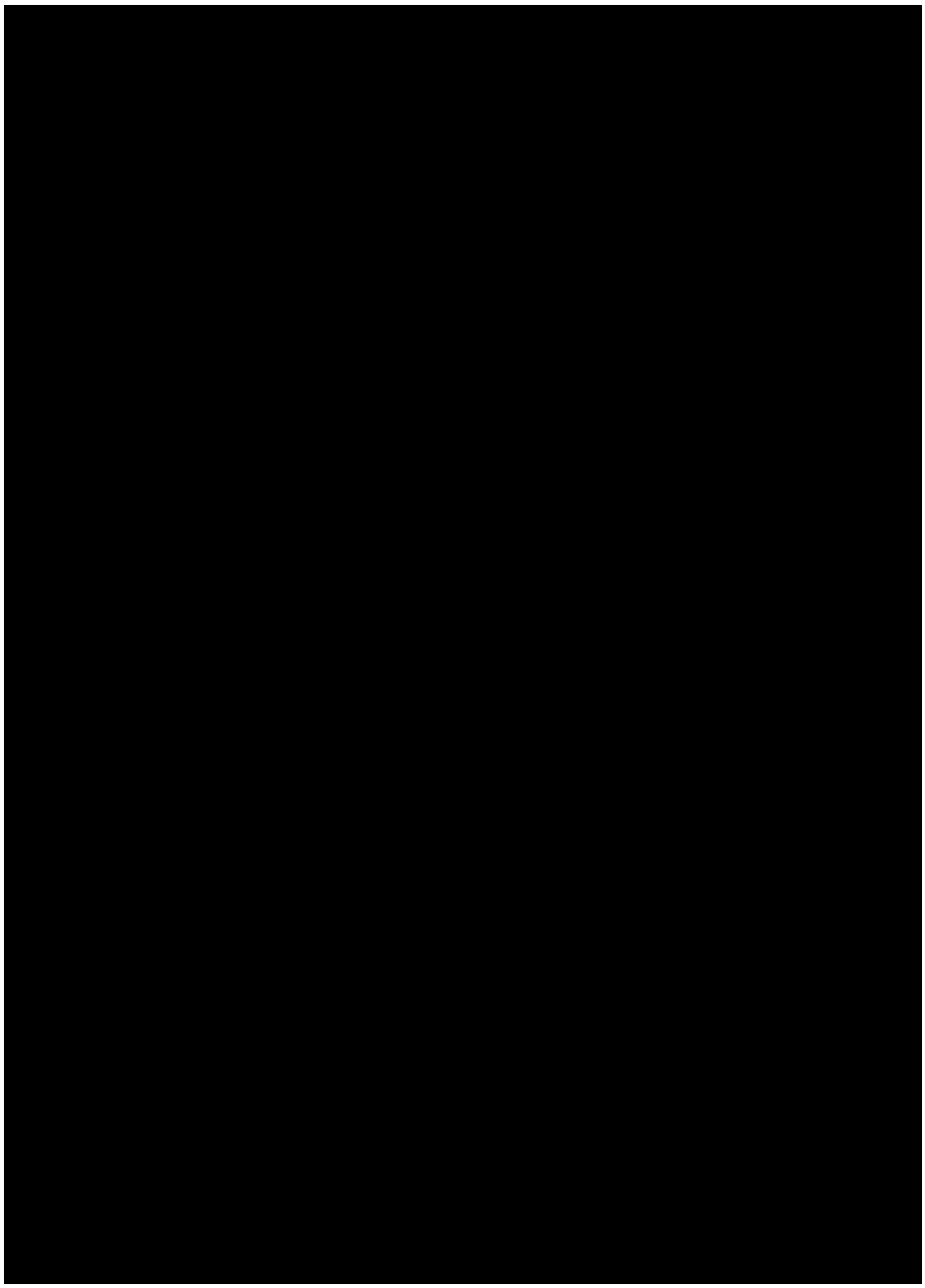


Figure 4.14. Monthly Tree Crew Deployment Report.

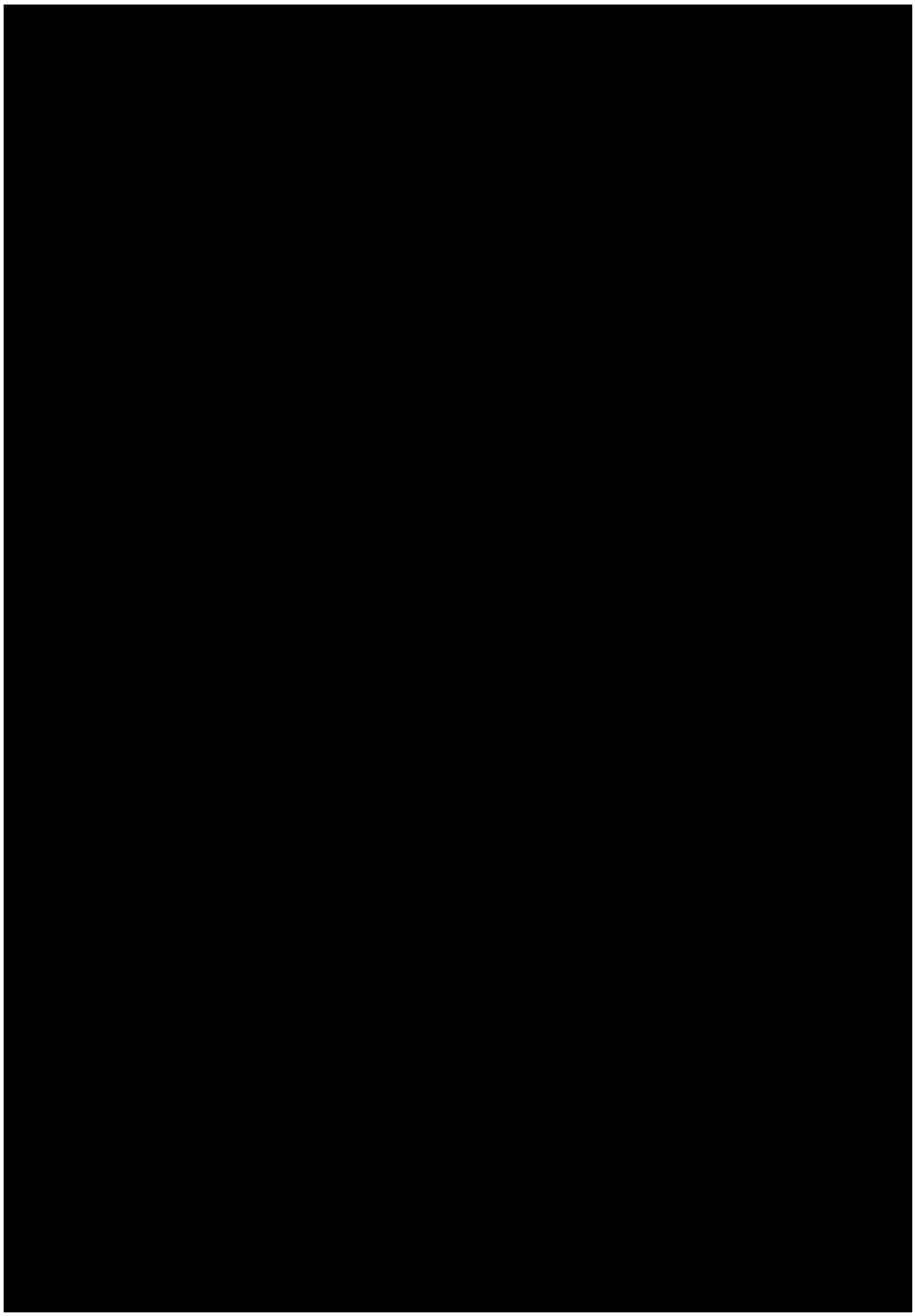
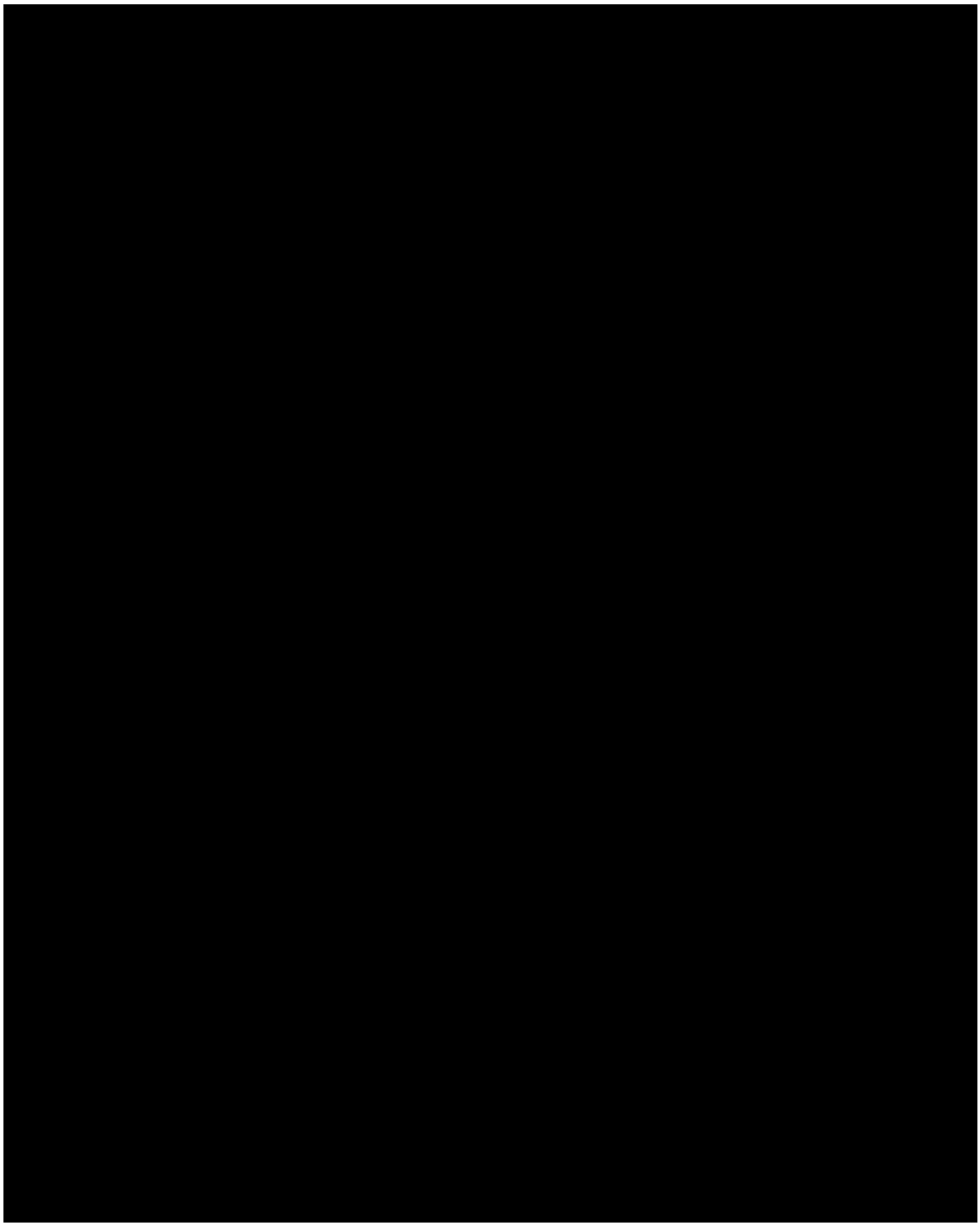
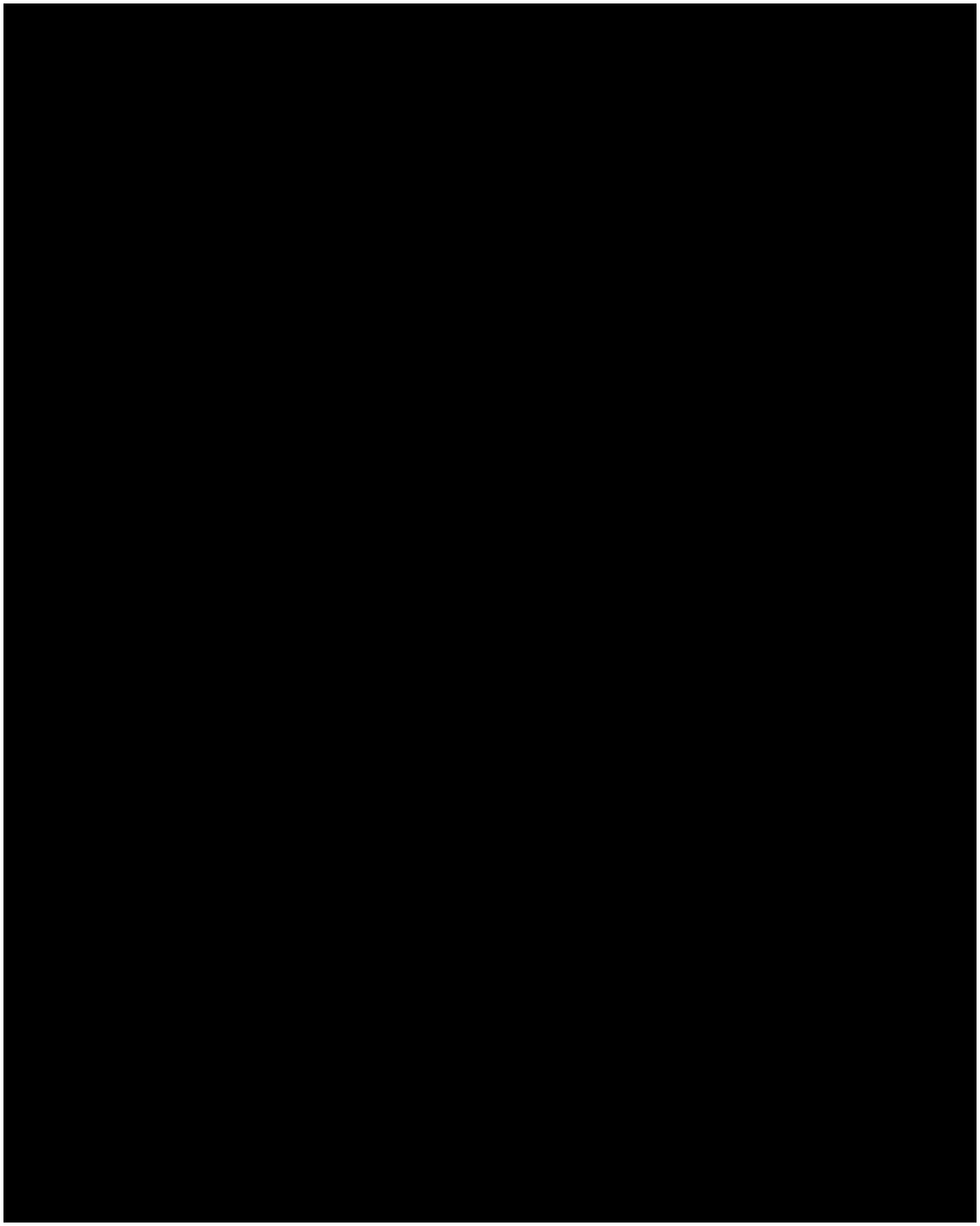


Figure 4.15. Monthly Invoice Audit Form.





5. DISTRIBUTION

Distribution lines are overhead facilities that are energized less than 46 kV. Distribution primary voltage ranges from 600 to 45,000 volts, while lines energized below 600 volts are secondary.

5.1 Distribution New Construction Clearing

Every effort should be made by the Company not to build new line over or through trees that will need to be cleared from the facilities in the future. New distribution rights-of-way should be cleared to specification before the lines are energized. Initial clearing is important because it sets a pattern for future work.

5.2 Distribution Cycle Maintenance

Trees and vegetation should be cleared from distribution facilities on scheduled cycles. Cycle work is methodical, and facilities shall be worked systematically, either by feeder or grid map. Cycles should be based on considerations such as the time elapsed since the last scheduled work, the type of facilities, tree conditions, the number of customer complaints, the growth rate and density of predominant tree species, geography, the frequency of tree-caused outages, customer count, the existence of important accounts (hospitals, factories, mines or other facilities) customer densities, single or multiple phase wires and other factors. Trees and vegetation should be cleared from distribution facilities to last until the next scheduled cycle work.

SPECIFICATIONS

The intent of the cycle program is to:

- Systematically obtain specification clearance and maintain compliance with state regulatory rules, laws or regulations.
- Reduce inventories of trees that could potentially grow into Company facilities. This includes removing non-landscape trees 6-inch DBH or less, after providing the property owner notification (following Section 8.2).
- Improve access to facilities.
- Identify and correct readily climbable trees.
- Identify and remove tree houses built inside of criteria specified in Table 2.2.
- Clear insulated services that have stems causing strain to the point of deflection (Figure 5.1) or that are abrading the insulation to the extent they could cause an outage before the next scheduled cycle. If pruning or removal is not practical, arrangements should be made with operations to re-route facilities or have suitable material or devices installed to avoid insulation damage by abrasion.
- Prune non-insulated services and streetlight wire for one-foot of clearance.
- Prune pole to pole insulated secondaries to 2-feet of clearance from the conductors
- Prune pole to pole non-insulated services. and secondaries for three feet of clearance from the conductors
- Identify and remove high risk trees that could fall through facilities.
- Apply herbicide to saplings (< 4” DBH) of tall-growing species after property owner notification (presuming the property owner has not expressed objection to herbicide application) on the property on which other work is being performed. Spray work in other locations may be authorized at foresters discretion as directed in a work release.

- Apply tree growth regulators (TGR's) to fast-growing tree species after providing property owner notification.

5.3 Distribution Interim Maintenance

Interim work is a cycle performed half way between cycles to address fast-growing trees that will not hold for an entire cycle.On PacifiCorp's system, interim work should be prescribed in California and Oregon. Identified tree conditions on a feeder or grid should be corrected systematically in the interim half way through the scheduled cycle. Work should be limited to trees that grow six feet or more a year or hazard trees.

Interim work should be restricted to critical conditions, including:

- High risk trees.
- Trees violating specific state regulatory agency regulations.
- Trees that have grown within work thresholds specified in Table 5.2.
- Readily climbable trees inside of work thresholds in Table 5.2
- Identifying and removing tree houses built inside of criteria specified in Table 2.2.
- All work should be completed to company specifications. Non-critical conditions should be monitored until the next scheduled cycle work.
- Non-primary facilities do not require work on interim cycles unless they present a clear safety or service reliability risk.

5.4 Distribution Ticket Maintenance

Customers, district operations staff, governmental bodies, regulatory agencies or others alert vegetation management to real or perceived conflicts between trees and power lines from time to time. The intent of ticket maintenance is to determine whether or not the reported conditions present immediate, unreasonable safety or electrical service risks, and if they do, correct them.

Emergency situations should be corrected within 24 hours. Critical conditions reported by regulatory agencies and other urgent situations should be inspected within 48 hours and corrected within 7 days. Other tickets should be inspected within 10 business days from the date of request, and a determination made regarding whether or not the reported condition warrants work.

The concerned party shall be contacted regarding the inspection determination. This contact may be face to face if the customer is present, or by door hanger, letter, or telephone if they are not present.

Ticket work should be limited to critical conditions, including:

- Trees representing an unreasonable safety risk as determined by the responsible contract utility forester.
- Trees that have caused an outage.
- Trees violating specific state regulatory regulations.
- Limbs that are deflecting secondary conductors to the extent they present a high probability of tearing down the wire before the next scheduled cycle work.
- Trees that are likely to start a fire.
- Readily climbable trees.
- Trees where the property owner requires clearance so non-utility line clearance workers may work the tree. This work complies with various state line safety act and may be billed to the requesting party.

All work should be completed to Company specifications. Non-critical conditions should be monitored and corrected on the next scheduled maintenance work.

5.5 Distribution Herbicide Maintenance

Distribution herbicide maintenance should be prescribed in the interim between cycles. Saplings (< 4" DBH) of tall-growing species after property owner notification (presuming the property owner has not expressed objection to herbicide application). Procedures outlined in Chapter 7 shall be followed.

5.6 Distribution Clearance Specifications

Removal of trees that could potentially grow into distribution facilities should be pursued. When trees are pruned, branches should be cut to natural targets rather than predetermined clearance limits (following section 3.3). Consequently, the clearances in these standard operating procedures should not be used as strict boundaries requiring cuts at the precise distances indicated. Rather, they are guidelines to use in obtaining proper clearances. Accurate natural target pruning is the overriding principal, with tree structure dictating appropriate cut locations. In many cases, the best targets are outside established clearance limits. So, many properly pruned trees will have more than specified clearance from conductors.

The type of facility, tree growth rate and perscription determine distribution clearance. Trees should be removed or pruned to provide for specification clearances as described in Figures 5.2, 5.3 and 5.4 and tables 5.1, 5.2 and 5.3. The figures and table provide work thresholds and specification clearances for slow, medium and fast-growing trees. Trees that exceed work threshold distances should hold until the next scheduled cycle and not need to be pruned. However, these trees should still be considered to be removal candidates if they could grow into distribution facilities or they present a high risk of failure. If trees violate thresholds, they shall be removed or pruned to provide specification clearances.

5.6.1 Growth Rate Definitions

Slow-growing trees grow vertically less than one-foot a year. Moderate growing trees grow between one and three feet a year and fast-growing trees grow more than three feet a year.

5.6.2 Side Clearance

Side work thresholds and side clearances from conductors can be found in Tables 5.1, 5.2 and 5.3, as well as Figures 5.2 to 5.4.

Side clearances from conductors may be reduced to 18-inches for structurally sound limbs greater than 6-inches in diameter at wire height, provided the tree is not readily climbable and the tree shows no evidence of conductor contact due to wire or tree sway. High risk trees should be removed or pruned to reduce the potential threat they pose.

5.6.3 Under Clearance

Under clearances work thresholds and clearances from conductors can be found in Tables 5.1 and 5.2, as well as Figures 5.2 to 5.4.

5.6.4 Overhang Clearance

Trees overhanging primary conductors should be removed or pruned to provide at least ten feet of clearance from the conductors (Figures 5.2, 5.3 and 5.4). Increased clearance should be considered by the forester or GF/supervisor under the following types of circumstances: three-phase lines (particularly to the first protective device), rural or difficult to access areas, for weak-

wooded or fast-growing tree species, on poorly-structured trees and to accommodate foreseeable weather conditions such as frequent high wind, heavy rains, ice and snow. Dead wood that could fall or be blown into the primary conductors shall be removed. In some cases, such as three phase lines or remote areas, all overhanging branches may be removed. Overhang may be tapered, with the greatest side clearance at minimum clearance height, with gradually more overhang higher in the tree.

Figure 5.1. Trees with branches applying sufficient pressure to cause damage to insulated service and street light lines should be pruned on cycle to relieve the pressure.

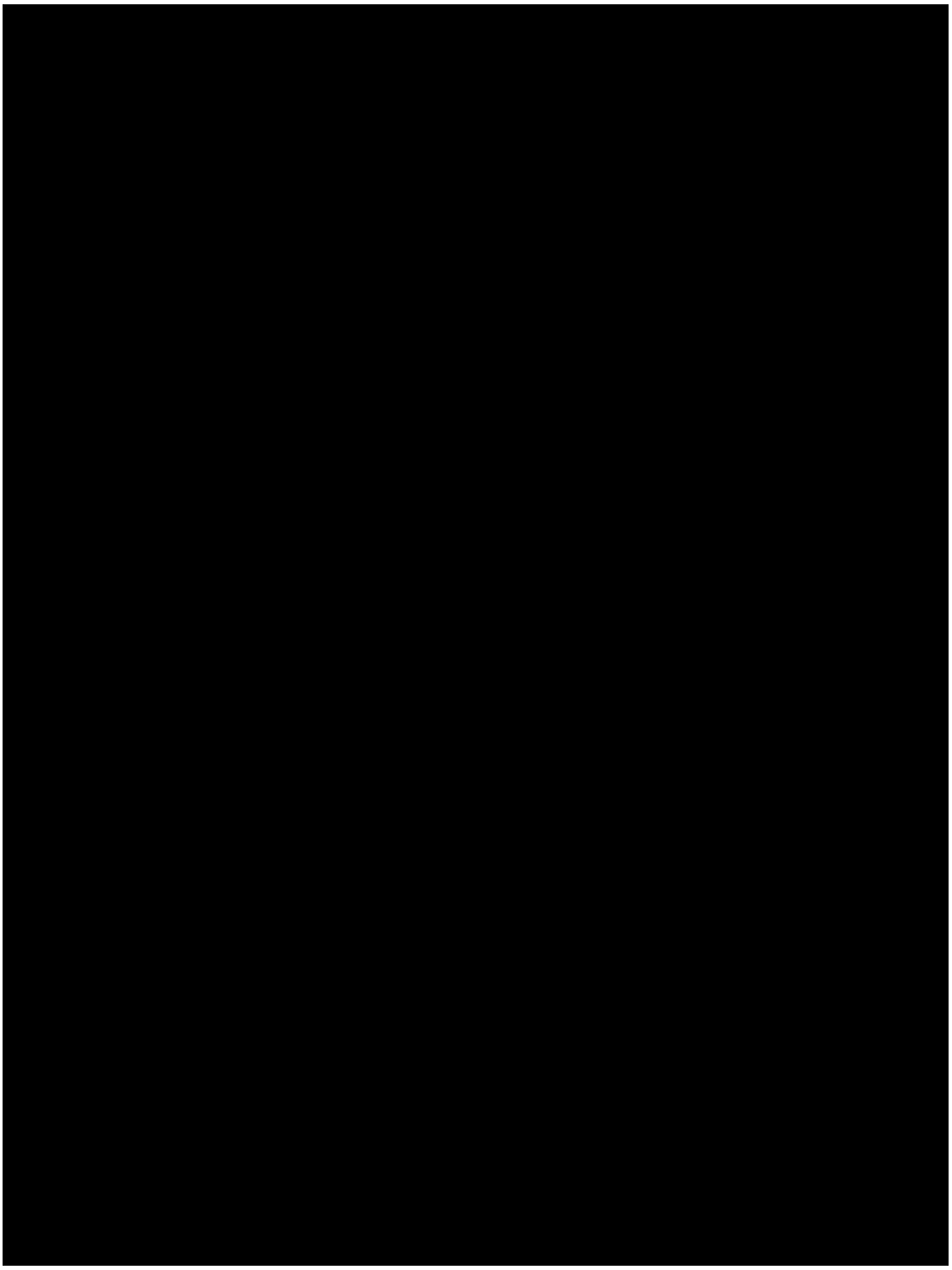


Figure 5.2 Vegetation Management Distribution Primary Clearnances – Slow Growing Trees

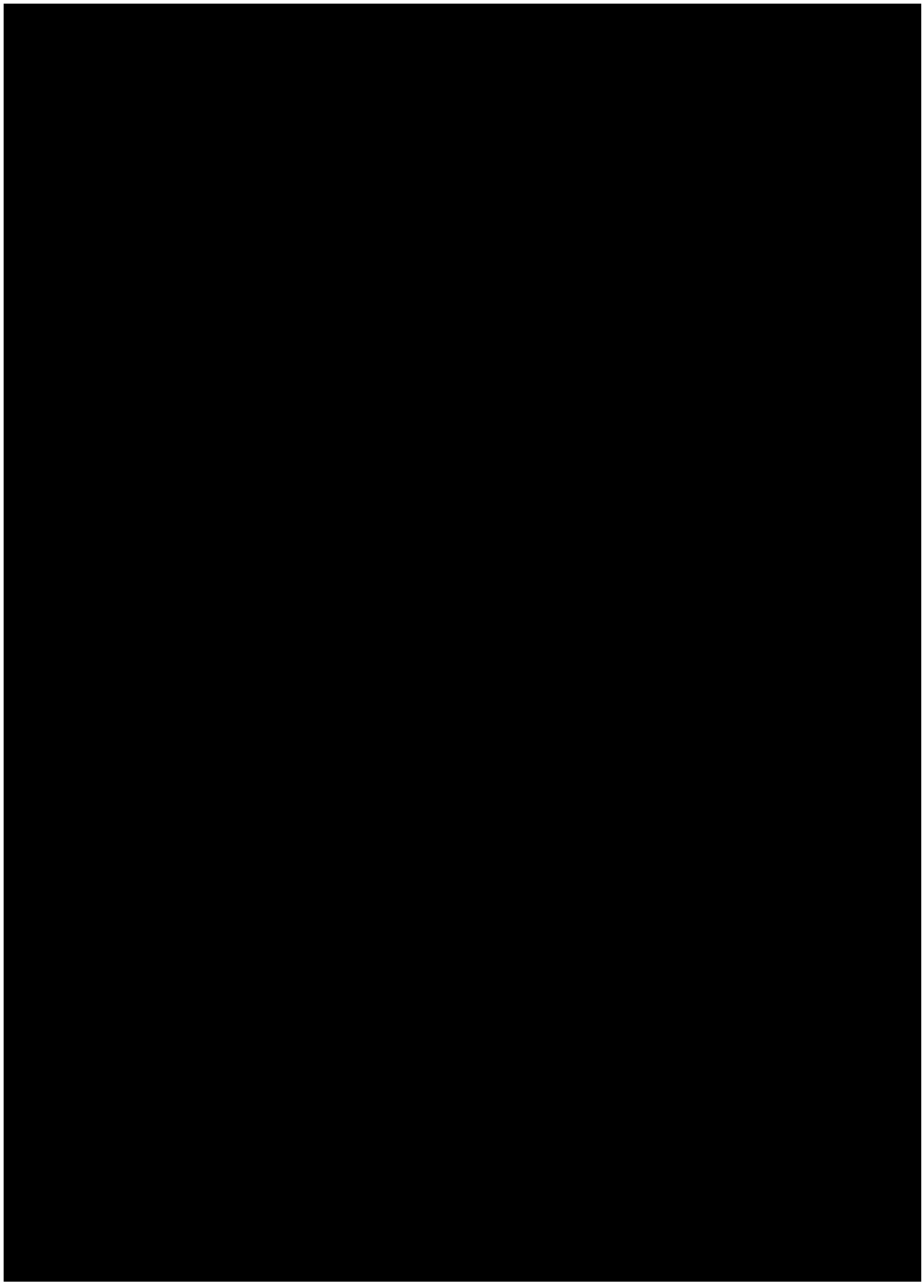


Figure 5.3 Vegetation Management Distribution Primary Clearnances – Moderate Growing Trees

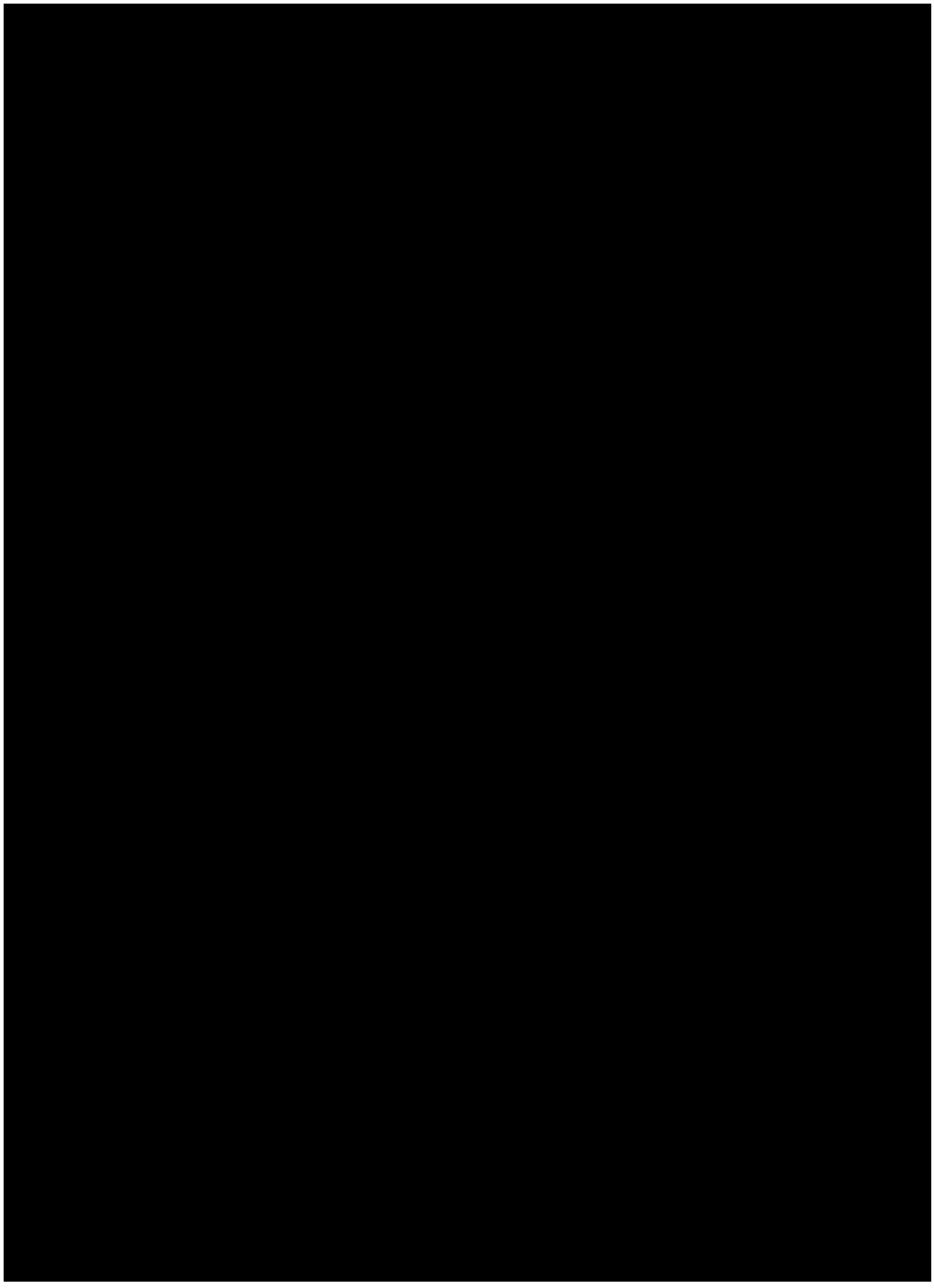


Figure 5.4 Vegetation Management Distribution Primary Clearnances – Fast Growing Trees

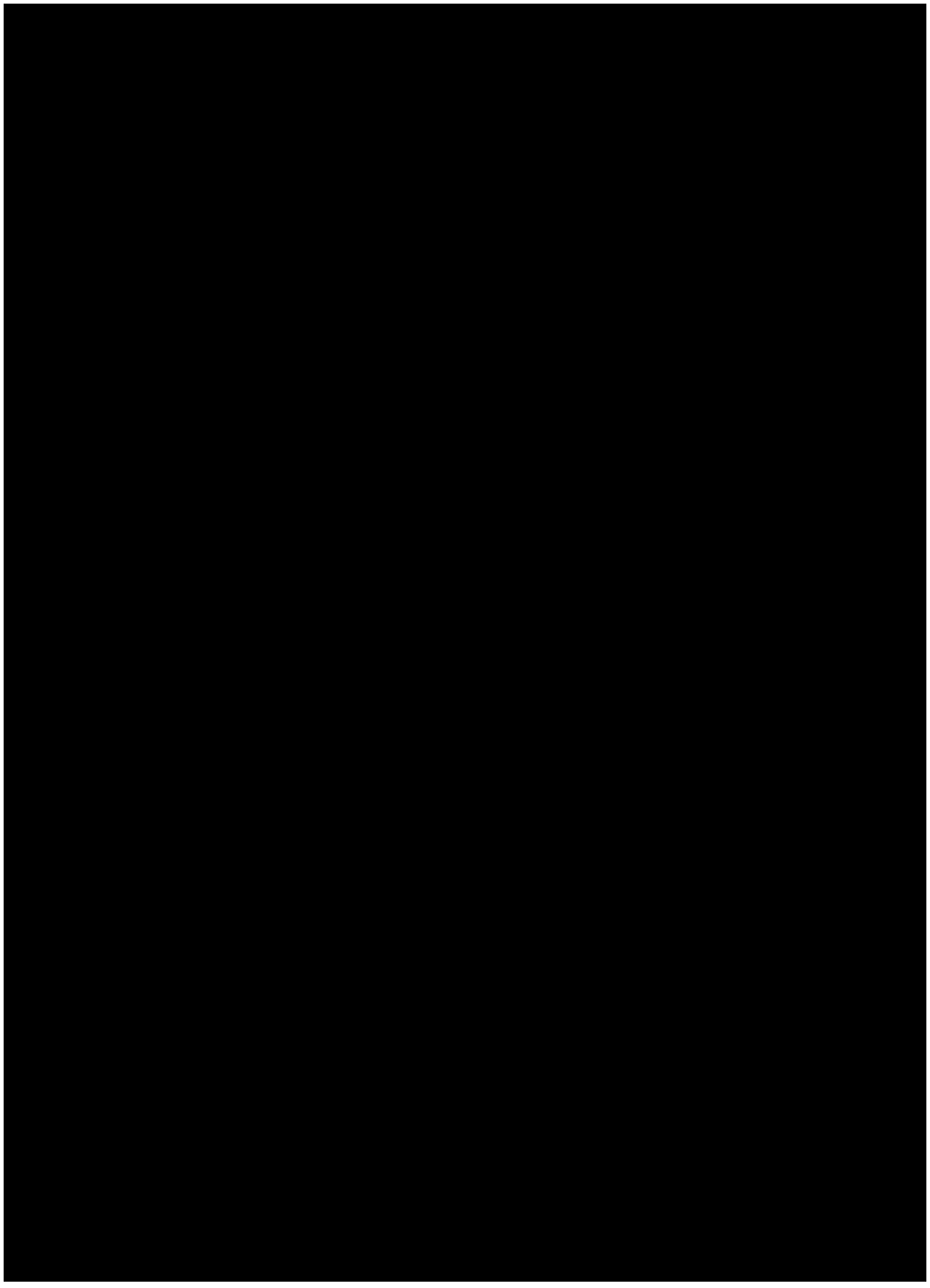


Table 5.1. Distribution primary cycle clearances.

	Slow-Growing < 1 foot/year		Moderate-growing 1-3 feet/year		Fast-growing > 3-feet/year*	
	Work Threshold	***Specification Clearance***	***Work Threshold***	***Specification Clearance***	***Work Threshold***	***Specification Clearance***
Three-year cycle						
Side Clearance	4 feet	8 feet	6 feet	10 feet	8 feet	12 feet
Under Clearance	6 feet	10 feet	8 feet	12 feet	10 feet	14 feet
Overhang Clearance	8 feet	10 feet	8 feet	10 feet	8 feet	10 feet
Four-year cycle						
Side Clearance	4 feet	8 feet	8 feet	10 feet	12 feet	14 feet
Under Clearance	6 feet	10 feet	12 feet	14 feet	13 feet	16 feet
Overhang Clearance	8 feet	10 feet	10 feet	12 feet	8 feet	12 feet

*Note: Specified clearance distances are assumed to be from conductors, Growth-rate definitions refer to vertical growth. Side and overhang growth toward the conductors are assumed to be slower. Specification clearances are minimum, and actual distances achieved at the time of work will often need to exceed those itemized above. Trees with clearances that exceed the pruning threshold should not require work, provided they will not interfere with the primary conductors or violate state tree clearance requirements before the next scheduled cycle work. Work thresholds may have to be expanded for fast-growing trees.

*Fast-growing work thresholds on four-year cycles assume interim work. Wyoming will require at least 25% greater clearances.

Table 5.2. Minimum Distribution primary interim clearances.

	Slow-Growing < 1 foot/year		Moderate-growing 1-3 feet/year		Fast-growing > 3-feet/year	
	Work Threshold	***Specification Clearance***	***Work Threshold***	***Specification Clearance***	***Work Threshold***	***Specification Clearance***
Four-year cycle						
Side Clearance	2 feet	8 feet	3 feet	10 feet	8 feet	14 feet
Under Clearance	2 feet	10 feet	5 feet	14 feet	9 feet	18 feet
Overhang Clearance	2 feet	10 feet	3 feet	10 feet	8feet	10 feet

Table 5.3. Non-primary wire cycle clearances.

Line Type	Work Threshold	Specification Clearance
Triplex service	Deflection/abrasion	Relieve pressure
Triplex pole-to-pole secondary/streetlight wire	Deflection/abrasion	2-feet
Non-insulated wire service/street light wire	Contact	1-foot
Non-insulated wire pole-to-pole secondary	Contact	3-feet
Neutral low position	Contact	2-feet
Neutral on cross arm	Primary as in Table 5.1	Primary as in Table 5.1
Guy wire	2-inch or greater diameter limb applying pressure, threatened by high risk trees	Relieve pressure or remove high risk trees.

5.6.5 Neutral and Insulated Pole-to-Pole Secondary Clearance

During cycle work, trees should be maintained to provide at least two-feet of clearance around insulated pole-to-pole secondary and neutral conductors (Table 5.3). Except trees that have already reached their maximum anticipated mature height. Tree limbs should not be allowed to remain between primary and neutral or insulated secondary conductors. Neutral conductors in a raised (primary) position should be provided secondary clearance distances during ticket or interim work, and primary specification clearance distances during cycle work.

5.6.6 Non-Insulated Open/Spaced Secondary Clearances

Trees growing around non-insulated open/spaced secondary conductors shall be pruned on cycle to provide a minimum of three-feet of clearance from the secondary wires (Table 5.2). During cycle work, trees shall be cleared from the space between primary and non-insulated open/spaced secondary conductors. Side clearances may be reduced to one foot for structurally sound limbs greater than 6-inches in diameter at wire height.

5.6.7 Insulated Service and Insulated Street Light Line Clearances

Stems that are causing strain to the point of deflection (Figure 5.1) or that are abrading the insulation to the extent they could cause an outage before the next scheduled cycle should be pruned to relieve the pressure (Table 5.2). If pruning or removal is not practical, arrangements should be made with operations to have the facility re-routed or have suitable

material or devices installed to avoid insulation damage by abrasion.

If the customer desires to remove other limbs or trees around these lines, they must arrange for a temporary disconnection to allow the desired work to be done safely. PacifiCorp does not clear trees for street light illumination, unless required to by specific language in a franchise agreement.

5.6.8 Non-insulated Service Line and Non-Insulated Street Light Line Clearances

Trees should be pruned on cycle to provide at least one-foot of clearance around non-insulated service and street light lines (Table 5.3). If the customer desires to remove other limbs or trees around these lines, contract utility foresters or crew leaders should inform the customer to call the customer service line to arrange for a temporary disconnection of the facilities to allow safe completion the desired tree work, as required by law.

5.6.9 Other Facility Clearances

5.6.9.1 Guy Wires.

Trees or branches two-inches or more in diameter applying direct pressure to or threatening to fall on or through
poles or guy wires shall be removed or pruned on cycle (Table 5.3).

5.6.9.2 Poles

One-third of the circumference around poles shall be cleared of vegetation to a distance of 5-feet to allow linemen a climbing path.

5.6.9.2.1 Vines

Vines shall be removed on cycle from poles and guys, cut at ground level, and treated with an approved herbicide (see Section 7.3). They shall be reported as brush or tree removed (if they are over 4" in dbh). Vines clearly part of a landscape and rooted well away from the pole may be pruned and reported as saplings pruned. Vines shall be pulled off the bottom 5-feet of poles after they have been cut. The facility point shall be documented by the tree crew and given to their supervisor/GF, who shall report it to operations to clear the remainder of the pole, and arrangements made with PacifiCorp journeymen linemen for the job.

5.6.9.3 Telecom and Private Electrical Lines

Trees should not be pruned or removed expressly to provide clearance for television cable, telephone lines or private electrical facilities unless authorized in advance by the appropriate forester.

5.6.9.4 Street Light Illumination

Trees shall not be pruned to improve street light illumination, unless required by specific language in a franchise agreement.

5.7 Pole Clearing

California Resource Code 4292, requires a ten-foot radius cylinder of clear space from pole top to bare ground around "subject" poles in delineated resource areas during designated fire season. Trees or saplings with trunks within clearance zone should have eight feet of vertical clearance from the ground to the highest limb (Figure 5.5.
Subject poles have fuses, air switches, clamps or other devices that could create sparks and start fires (Nichols et al. 1995). This cleared space should be established and maintained by pruning and removing above ground branches and plant parts. After removingvegetation to bare ground for a 10-foot radius around subject poles,

herbicides, including soil sterilants, should be applied, unless expressly prohibited or is against the customer's wishes.

5.8 Padmount Transformers

Padmount transformers should not be cleared as part of normal distribution cycle or interim maintenance. They may be cleared in response to facility point inspection requests should operations require access and a work order is provided. Qualified line clearance tree workers are not required to clear padmount transformers, so contractors responsible for landscape maintenance around substations may be assigned to remove shrubs and other low-growing vegetation that is interfering with padmount transformers

Figure 5.5. California pole clearing requirements (from Nichols et al. 1995).

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6. TRANSMISSION VEGETATION MANAGEMENT PLAN (STANDARD OPERATING PROCEDURES)

Transmission facilities are overhead lines energized to greater than 45kV. Typical transmission voltages on PacifiCorp's system are 46kV, 69kV, 115kV, 138kV, 161kV, 230kV, 345kV and 500kV. Facility voltage and type determine the amount of transmission clearance needed. Table 6.1 provides specification clearances for transmission rights-of-way.

Transmission work shall comply with the ANSI A300 (Part 7): *American National Standard for Tree Care Operations (Integrated Vegetation Management a Electric Utility Rights-of-way* [ANSI 2012a]) and the ISA *Best Management Practice: Integrated Vegetation Management for Electric Utility Rights-of-way* (Miller 2014). As well as Tree Risk A300 (Part 9): *American National Standard for Tree Care Operations (Tree Risk Assessment)* and ISA *Best Management Practice: Tree Risk Assessment* (Smiley, Matheny and Lilly, 2011).

Transmission work on lines at or above 200 kV and those designated by the Western Electricity Coordinating Council as an element of the major transfer path in the bulk electric system, including those that extend greater than one mile beyond the fenced area of the generating station switchyard to the point of interconnection with a Company facility or do not have a clear line of site form the generating station switchyard fence to the point of interconnection with a Company facility shall also conform to the North American Electric Reliability Corporation's (NERC) Reliability Standard FAC-003 (NERC 2008) along with other chapters in this manual.

6.1 Work Objective

The objective of systematic transmission work is to improve the reliability of PacifiCorp's transmission system by preventing outages from vegetation located on transmission rights-of-way and minimizing outages from vegetation located adjacent to the right-of-way.

6.2 Philosophy

PacifiCorp's vegetation management philosophy for transmission lines is to utilize integrated vegetation management best practices wherever possible to conduct cover type conversion and to cultivate stable, low-growing plant communities comprised of plants that will never interfere with transmission lines in their lifetime.

Reliability and safety are most effectively protected through establishing and maintaining a right-of-way consistent with the wire-border zone concept (see section 6.8.1.4.1). When the line is less than 50 feet off the ground, the wire-border zone should be cleared of all incompatible vegetation unless an easement fails to provide appropriate authority or there are legal impediments preventing it.

6.3 Initial Clearing and Construction

Newly constructed transmission lines should be cleared to full specifications prior to being energized. In densely vegetated areas, rights-of-way usually have to be completely cleared as the initial stage of establishing a wire-border zone (Figures 6.1 and 6.1)

6.4 Inspection

Transmission lines falling under the auspices of FAC-003 should be inspected at least once a year by ground or air, depending on the anticipated growth of vegetation and any other environmental or operational factors that could affect the relationship of vegetation to the transmission line.

Local transmission (non-FAC-003 lines) over built on distribution should be inspected in conjunction with distribution cycle work.

Line Patrolmen have responsibility for inspecting transmission lines subject to FAC-003 and reporting conditions to vegetation management. In addition, each area forester shall meet twice each year to discuss vegetation conditions with the line patrolman assigned to the area.

Line Patrolmen encountering a tree that poses a threat of causing a transmission outage at any moment shall follow procedures in PacifiCorp Operating Procedure PCC-215, in order to comply with Requirement R4 of NERC Standard FAC-003 (*Transmission Vegetation Management Program*). Line patrolmen must:

- Immediately notify the grid operator by phone and describe the nature and extent of the threat.
- Complete and process the Emergency Tree Action Form.
- Communicate the vegetation conditions to vegetation management for urgent attention.

Examples of tree conditions that pose a threat of causing a transmission outage at any moment include (but are not limited to) trees that violate or pose a risk within 72 hours of violating NERC Minimum Vegetation Clearance Distance (MVCD), uprooted trees that are leaning toward the line and pose a risk of immediate failure and trees with structural failures that may cause them to break in part or whole onto the transmission facilities (See Smiley, Matheny and Lilly 2011).

6.4.1 Additional Inspection

Foresters should annually select lines among those subject to FAC-003 for annual inspection. This inspection is to be done in addition to that performed by line patrolmen. These inspections supplement, rather than substitute for, those conducted by line patrolmen. Foresters should assign representatives to complete these inspections. Using Level 1 assessments from the ISA *Best Management Practices: Tree Risk Assessment (Smiley Matheny and Lilly 2011).*

Such inspection should identify trees that pose a threat of causing an outage at any moment, and trees that could possibly violate work thresholds within the next year. Company plan and profiles should be used in the field itemizing maximize sag and sway along with range finders to confirm the MVCD has not been violated. Locations should be noted on an activity report, and assigned to a tree crew for work, with the appropriate forester's approval.

If the inspections discover a tree that poses a high likelihood of posing an outage at any moment, contract utility foresters shall contact the appropriate forester within three hours. Foresters shall immediately request the appropriate line patrolman to inspect the line according to the imminent threat procedure described in section 6.4.

6.5 Work Plan

The Vegetation Management A300 standard (ANSI 2012a) and the ISA integrated vegetation management best management practice (Miller 2014) recommend against cycle-based

transmission work thresholds. Rather, work should be scheduled depending on line voltage, line importance, vegetation conditions that violate the action thresholds in Table 6.1, location, predominant species' growth rates, threatened and endangered species, archeological sites, topography and other factors.

A comprehensive approach that exercises the full extent of legal rights is superior to incremental management in the long term because it reduces overall encroachments, and it ensures that future planned work is sufficient at all locations on the right-of-way. Removal of trees in the right-of-way is superior to pruning and shall be pursued whenever legal rights exist to do so. Removal minimizes the possibility of conflicts between energized conductors and vegetation.

6.5.1 Annual Work Plan

PacifiCorp performs vegetation management work in accordance with annual work plans that details the circuits and facilities to be managed during a calendar year. MS Project is encouraged as planning software. Plans should include:

- A list of facilities subject to scheduled work.
- If only a portion of a line is scheduled, the line segment must be identified (e.g. structure to structure).
- Dates when work is anticipated to start and end on each project (Gantt charts are recommended).
- A description of the type of control methods, (cycle, herbicide, mowing, aerial, etc.)

6.5.1.1 Annual Work Plan Adjustments

The annual work plan may be adjusted during the year to account for changes in conditions that require a circuit, line segment or project to be moved into or out of the work plan. Examples of reasons for adjustments include, but are not limited to, vegetation growth in excess of anticipated levels, vegetation inspection results, new construction projects or removal of existing facilities. Adjustments to the annual work plan shall be documented as they occur and shall be authorized by the director of vegetation management.

6.6 Action Thresholds

The action thresholds in Table 6.1 provide roughly ten-foot buffers from the NERC MVCD. Trees identified within the action thresholds should be scheduled for work within twelve months.

6.7 Clearances

6.7.1 Minimum Clearances Following Work

Minimum clearances from conductors to be achieved at the time of work are in Table 6.1. These distances should be increased, depending upon local conditions and the expected time frame to return for future vegetation management work. Local conditions may include appropriate vegetation management techniques, fire risk, reasonably anticipated tree and conductor movement, species types and growth rates, species failure characteristics, local climate and rainfall patterns, line terrain and elevation, location of the vegetation within the span, worker approach distance requirements and other factors.

6.7.1.1 Side Clearance in Transmission Rights-of-Way

Specification side clearances to be obtained following work s are presented in Table 6.1. Consider potential sway of

conductors in fresh gale-force (36 mph) or greater wind, particularly mid span, where clearances could need to be increased to accommodate conductor sag and swing in high temperature and winds. If there is any question regarding the need to extend clearances, error should be made on the side of caution.

Table 6.1. Transmission clearance requirements (in feet).

	500 kV	345 kV	230 kV	161 kV	138 kV	115 kV	69 kV	45 kV
Maximum Flash Distances (MVCD)	8.5	5.3	5.0	3.4	2.9	2.4	1.34	N/A
Action thresholds	18.5	15.5	15.0	13.5	13.0	12.5	10.5	5
*Minimum clearances following work	50	40	30	25	25	25	25	20

The Minimum Vegetation Clearance Distance (MVCD) represents minimum clearances that should be maintained from conductors at all times, considering the effects of ambient temperature on conductor sag under maximum design loading, and the effects of wind velocities on conductor sway. MVCDs in this chart are for 10,000-11,000 feet above sea level (the maximum in Table 2 of FAC-003-04) and apply across PacifiCorp's service territory regardless of elevation. Action thresholds indicate work should be scheduled within the next year. They are roughly MVCD plus 10 feet, with the exception of the 46kV, for which no MVCD exists.

6.7.2 MVCD

NERC Minimum Vegetation Clearance Distances (MVCD) are established in FAC-003 (NERC 2008), and represent radial distances from the lines inside of which trees should not encroach (Table 6.1) Trees that violate MVCDs shall be corrected within 24 hours of their identification following PacifiCorp SOP-PCC-215. *Transmission Grid Operations Operating Procedure.*

6.7.3 Structure Clearances

Trees and brush should be cleared within a twenty-five foot radius of transmission "H" or metal structures, a ten-foot radius of single pole construction and a five-foot radius of guy anchors. Clearing activities shall not damage poles, structures, guys or anchors. Grasses, forbs, ferns and other herbaceous species may be left around structures and guys.

6.7.4 Guy Wires

Trees or branches two-inches or more in diameter applying direct pressure to or threatening to fall on or through poles or guy wires shall be removed or pruned.

6.8 Integrated Vegetation Management

The purpose of vegetation management on utility rights-of-way is to Establish sustainable plant communities that are compatible with the electric facilities, wherever possible. These communities are stable, low-growing, compatible with conductors, diverse, and establish a sustainable supply of forage, escape and nesting cover, movement corridors for wildlife, reduced fire risk, and more open access to the line (Yanner and Hutnik 2004). Establishing native vegetation will also reduce the invasion of noxious weeds into the corridor (BPA 2000).

6.8.1 IVM Control Methods

Control methods are the processes used to achieve objectives. Many cases call for a combination of methods. There are a variety of controls from which to choose, including manual, mechanical, chemical, biological, and cultural options (Miller 2014). Ground disturbance shall be minimized on all rights-of-way.

6.8.1.1 Manual Control Methods

Manual methods involve workers using hand-carried tools, such as chainsaws, handsaws, pruning shears. Manual techniques are selective and can be used where others may not be appropriate, including urban or developed areas, environmentally sensitive locations (such as wetlands or places inhabited by sensitive species), in the vicinity of archeological sites and on steep terrain.

6.8.1.2 Mechanical Control Methods

Machines are used for mechanical control. They are efficient and cost effective, particularly for clearing dense vegetation during initial establishment, or reclaiming neglected or overgrown rights-of-way (Figure 6.3). On the other hand, mechanical control methods can be non-selective and disturb sensitive sites, such as wetlands, archeologically rich localities or developed areas. At times, machines leave behind petroleum products, leaks and spills from normal operation. Furthermore, heavy equipment can be risky to use on steep terrain, where they may be unstable. So, they are not always appropriate.

6.8.1.3 Chemical Control Methods

Tree growth regulators and herbicides must be used according to directives on

their labels. Applicators are not only required to comply with label instructions, but also all other laws and regulations pertaining to tree growth regulator and herbicide use (see Chapter 7).

6.8.1.3.1 Tree Growth Regulators

Tree growth regulators (TGRs) are designed to reduce growth rates by interfering with natural plant processes. TGRs can be used to slow some fast-growing species, and be helpful where removals are prohibited or impractical.

6.8.1.3.2 Herbicides

Herbicides control plants by interfering with specific botanical biochemical pathways. There are a variety of herbicides, each of which behaves differently in the environment and in their effects on plants, depending on the formulation and characteristics of the active ingredient. While appropriate herbicide use reduces the need for future intervention, if misused they can cause unintended environmental harm due to drift, leaching and volatilization.

6.8.1.4 Biological Control Methods

Biological control uses natural processes to control undesirable vegetation. For example, some plants, including certain grasses, release chemicals that suppress other species growing around them. Known as allelopathy, this characteristic can serve as a type of biological control against incompatible species. Promoting wildlife populations is also a form of biological control. Birds, rodents and other animals can encourage compatible plant communities by eating seeds or shoots of undesirable plants.

A biological control known as cover-type conversion provides a competitive advantage to short-growing, early successional plants, allowing them to thrive and eventually out-compete unwanted tree species for sunlight, essential elements and water. Cultural methods also take advantage of seed banks of native, compatible species lying dormant on site. In the long run, cultural control is the most desirable method where it is applicable.

The early successional plant community is relatively stable, tree-resistant and reduces the amount of work, including herbicide application, with each successive treatment.

While it is a type of biological control, cover-type conversion employs a combination of manual, mechanical, herbicide and cultural methods. For example, although encouraging allelopathic plants and increasing wildlife populations by improving habitat are types of biological controls, they are also forms of cultural control.

Tree-resistant communities are created in two stages. The first involves non-selectively clearing the right-of-way of undesirable trees using the best applicable control method or methods. The second develops a tree-resistant plant community using selective techniques, including herbicide applications to release the seed bank of native, compatible species for germination.

Cover type conversion, uses herbicides to remove incompatible tall-growing trees and other vegetation from the right-of-way in order to establish a stable, low-growing plant community. The specific IVM technique selected for a particular site is based upon various conditions, which include terrain, accessibility, environmental considerations (wetlands, streams, etc.) cultural factors, worker and public health, economics and other factors.

6.8.1.4.1 Wire-Border Zone

Over sixty years of research on transmission rights-of-way has demonstrated that integrated vegetation management applied to creating distinct, compatible plant communities not only effectively manages vegetation on rights-of-way, but also enhances wildlife habitat, at least in forested areas (Yanner and Hutnik 2004). The wire zone-border zone concept was developed by W.C. Bramble and W.R. Byrnes (Bramble et al 1991).

On flat terrain, the wire zone is the right-of-way portion directly under the wires and roughly 10-feet to the field side of the outside phases. The border zone ranges from ten-feet outside the outer phases to the right-of-way edge (Figure 6.4a). The border zone should be reduced or eliminated on up-slopes where wire sag and sway may preclude leaving trees of any type. It may also extend on down-slopes (Figure 6.4b). Species that could grow into the wires at any time in their lives should not be allowed in the border zone.

Properly managed, wire zone-border zone linear corridors not only effectively protect the electric facilities, but also can become an asset for forest ecology and forest management (Bramble et al 1991, Yanner, Bramble and Byrnes 2001, Yanner and Hutnik 2004).

6.8.1.4.1.1 Region A

Region A is the area where lines are less than 50 feet off the ground (Figure 6.5). The 50 foot height should be from maximum engineered sag mid-span, with attention to side slope and potential sway of conductors in high wind. The right-of-way in Region A should be cleared following the wire zone - border zone recommendations of Bramble and Byrnes (Bramble et. al. 1991 [Figure 6.4a]).

After clearing, the Region A wire zone should consist of grasses, legumes, herbs, ferns and low-growing shrubs (under 5-feet at maturity). The border zone should consist of tall shrubs or short trees (up to 25 feet in height at maturity), grasses and forbs. These cover types benefit the right-of-way by competing with and excluding undesirable plants.

6.8.1.4.1.2 Region B

Region B occurs where the lines are between 50 and 100 feet off the ground from maximum engineered sag (Figure 6.5). In Region B, a border zone regime should be established throughout the right-of-way.

Note that many transmission structures are over 50 feet high. In cases where they are, a border zone community can be maintained near structures. Care should be taken to maintain access to the structure.

6.8.1.4.1.3 Region C

Region C is where the lines are 100 feet or more off the ground (Figure 6.5). Tall-growing trees may be allowed in Region C, provided they have at least 50 feet of clearance. Trees with less than 50 feet of clearance should be selectively removed.

6.8.1.5 Cultural Control Methods

Cultural methods modify habitat to discourage incompatible vegetation. Cultivated landscapes of compatible plants and agricultural crops are examples of cultural control.

6.9 Transmission Rights-of-Way - Widths

Right-of-way clearing should conform to the width indicated on the easement or permit. Removals in Regions A and B shall be done in transmission

rights-of-way wherever legal rights allow. They should also be done when trees have grown within 50 feet of the line in Region C.

Transmission lines may be constructed on the edge of dedicated road right-of-way where there may or may not be an easement or permit on the adjoining property allowing encroaching vegetation to be cleared. In these cases or others where the easement or permit does not specify a width, right-of-way dimensions in Table 6.2 apply. However, if no authority exists to remove trees, at minimum work should conform to Tables 6.1.

Easements should be researched through PacifiCorp Right-of-Way Services referencing the *Plan and Profile.* The *Plan and Profile* may also be useful in determining if the age of the line qualifies it for a prescriptive easement (see Section 8.3.1.1 and Table 8.1). Ground disturbance should be minimized on all rights-of-way.

6.10 Post Work Assessment

Foresters should audit transmission work following procedures outlined in Section 4.4. The audits should objectively assess quality, adherence to specifications, production, herbicide and other matters. Moreover, audits should provide the tree crew leader with feedback on production, professionalism, equipment, safety and crew efficiency. Results shall be documented on an *Audit Report* (Figure 4.7). Following systematic work, the entire length of completed line shall be inspected by the contractor to verify work complies with PacifiCorp specifications.

6.11 Mitigation Measures

NERC Requirement R5 directs transmission owners to develop mitigation measures to achieve sufficient clearances for protection of the transmission facilities when it identifies locations on the right-of-way where the transmission owner is restricted from performing work that may lead to a vegetation encroachment into the MVCD prior to the implementation of the next annual work plan, the owner shall take corrective action to ensure continued vegetation management to prevent encroachments.

Whenever the restriction is caused by a landowner, the refusal process in Chapter 8 shall be followed. If the refusal process has been completed without attaining clearances that would prevent encroachment into the MVCD before the next scheduled work, such locations should be documented on the *Work Release* (Figure 4.2). These sites should be reported in writing to the appropriate line patrolmen within 30 days. The line patrolmen should report annually on these site's status. Moreover, foresters or their contract designee should inspect the site biannually.

Figure 6.1 In densely vegetated areas, rights-of-way usually have to be completely cleared as the initial stage of establishing a wire-border zone.

Figure 6.2. Line 4 in California following work (note the trees mid-span where the line is more than 100-feet off the ground).

Lorelei Phillips photo

Figure 6.3. Right-of-way reclamation using mechanical control. In this case, a slashbuster.

TABLE 6.2. Active transmission right-of-way widths.

Facility	Distance from Center	Urban Width	Rural Width
46 kV Single pole	25 feet	50 feet	50 feet
69 kV Single pole	25 feet	50 feet	50 feet
115 kV Single pole	30 feet	60 feet	60 feet
138 kV Single pole	30 feet	60 feet	60 feet
161 kV Single pole	40 feet	80 feet	80 feet
230 kV Single pole	40 feet	80 feet	80 feet
69 kV H frame	40/50 feet	80 feet	100 feet
115 kV H frame	40/50 feet	80 feet	100 feet
138 kV H frame	40/50 feet	80 feet	100 feet
161 kV H frame	40/50 feet	80 feet	100 feet
230 kV H frame	62½ feet	125 feet	125 feet
345 kV H frame	75 feet	150 feet	150 feet
345 kV Steel tower	75 feet	150 feet	150 feet
500 kV Steel tower	87½ feet	175 feet	175 feet

Note rights-of-way should be cleared to those specified in the easement. If no easement exists or if no width is specified in the easement, rights-of-way in this table apply. Widths conform to PacifiCorp Transmission Construction Standard TA 181.

Figure 6.2. Line 4 in California following work (note the trees mid-span where the line is more than 100-feet off the ground).

Lorelei Phillips photo

Figure 6.4a. Bramble and Byrnes Wire Zone - Border Zone (adapted from Yahner, Bramble and Byrnes, 2001).

Figure 6.4b. The border zone may be reduced or eliminated on up-slopes where wire sag and sway could bring it into contact with trees, and can be extended on down-slopes.

Brad Gouch drawings (Figures 6.4 and 6.5).

Figure 6.5. Under clearance regions.

Region Definitions:
Region A: Where conductor to ground clearance is less than 50 feet (from maximum engineered sag and sway.
Region B: Where the conductor to ground clearance is 51-100 feet (from maximum engineered sag and sway.
Region C: Where the conductor to ground clearance is over 100 feet (from maximum engineered sag and sway.

Appropriate Region Plant Species:
Region A: Grasses, legumes, ferns and low-growing shrubs (<5' at maturity).

Region B: Region A species as well as large shrubs and short-growing trees (<25' at maturity).
Region C: All tree and shrub species.

6.12 High Risk Trees

High risk trees are structurally unsound and could strike a target (such as electric facilities) when they fail. Off right-of-way hazard trees shall be identified following Smiley, Matheny and
Lilly (2011) using an initial Level 1 assessment and bearing prevailing winds in mind.

Trees on the uphill and windward sides of rights-of-way should receive particular scrutiny. Hazard trees should be either removed or pruned to reduce the exposure. Work shall be performed in a manner that neither damages trunks nor disturbs root systems of adjacent trees. Damaged trees could decline, decay or die, threatening the conductors if they fall.

Federal and state agencies could request high risk trees to be topped to create "wildlife trees". PacifiCorp may honor such requests provided the safety of the tree workers or the integrity of facilities are not compromised, and the trees are topped below a height that would allow them to contact Company facilities should they fall.

PacifiCorp manages multitudes of trees across its over 15,000 mile transmission system. In every mile of line, the Company potentially has hundreds or thousands of trees, any one of which could compromise public safety and electrical service reliability. It is impossible to completely secure an electrical system from that level of exposure. Nevertheless, PacifiCorp has a responsibility to make a reasonable effort to maintain vegetation to reduce risks to both the public and power supply.

6.13 Vegetation Screens

Vegetation screens may be required by federal or local authorities in some locations at high visibility areas such as major road crossings. Where these mandates exist, vegetation screens should consist of border zone communities and be located near structures (where the line is unlikely to sag), if possible. If no border zone species are present, tall-growing trees may be left provided they have at least the minimum clearances in Table 6.1 following scheduled work.

Leaving tall-growing trees in transmission rights-of-way should be discouraged because they impede cover type conversion. So, trees should be removed (gradually over a number of years, if need be), rather than be pruned to obtain proper clearances, if at all possible. Vegetation screens should be no more than twenty-five feet from frequented vantage points into the right-of-way. Areas where tall-growing species are retained as screens shall be documented and monitored annually by line patrolmen. If remaining trees violate work thresholds specified in Table 6.1, within 30 days line patrolmen should report them to Vegetation Management for correction.

6.14 Merchantable Timber

Rights-of-way could contain merchantable timber. Merchantable timber is defined as trees with at least six-inch diameter at breast height (DBH), that are recoverable and have a market in the local area. Merchantable timber belongs to the property owner unless the easement or permit states otherwise. If merchantable timber needs to be felled, the property owner should be contacted regarding timber recovery.

After the merchantable timber is felled, it should be de-limbed and left in total tree length on the right-of-way for recovery by the owner. In limited cases, PacifiCorp may decide to purchase merchantable timber from the property owner and retain or transfer ownership to

another party. A forest practice permit from the appropriate state department of forestry may be required for timber recovery.

6.15 Transmission Safety Procedures

The following safety procedures shall be followed by all tree crews on PacifiCorp transmission facilities.

6.15.1 Pre-work Communication with Dispatch

Operative communication capability is mandatory at all times on transmission rights-of-way Communication with dispatch is critical for tree crew safety. Every morning before starting transmission work, tree crews shall call the dispatcher from the right-of-way by radio or telephone and provide the following information to comply with *Power Delivery System Operations System policy SOP-152* (Figure 6.6):

- Name of crew leader
- Name of company
- Contact information (radio or cell number)
- Name of transmission line
- Line section (substation names between which work is to occur, such as "Alvey to Dixonville," or "Ben Lomond to Terminal")
- Location of work (structure number, address or both)
- How long the crew will be working at that location
- Radio or cellular telephone number of the crew
- Name of GF/supervisor and their cellular telephone number

If radio or telephone contact cannot be made with the dispatcher from the right-of-way, non-emergency work shall not be performed at that site. The crew should relocate to work where they can communicate with the dispatcher. Satellite phones might be necessary in remote locations to provide the required communication.

6.15.2 Post-Work Communication with Dispatch

Each afternoon after completing transmission work for the day, tree crews shall call the dispatcher and provide the following information (Figure 6.6):

- Name of crew foreman
- Name of company.
- Contact information (radio or cell number)
- Name of transmission line
- Line section (substation names between which work occurred, such as "Alvey to Dixonville," or Ben Lomond to Terminal").
- Location where work was performed
  Crew members and equipment are off the right-of-way or in the clear.

6.15.3 Safe Working Procedure

If a tree cannot be felled or pruned safely, work shall not proceed. If a tree or limb falls into the conductors, work shall stop immediately and emergency procedures outlined in Figure 2.1 followed Minimum approach distances (Table 2.1) shall not be violated. Remember, transmission conductors can sag considerably at mid-span during hot

weather, ice buildup and heavy electrical loads. Trees that have safe clearance in the morning may not have safe clearance in the afternoon. Conditions could require a hold or clearance. Clearances on some transmission lines can take weeks or months to schedule. See Section 2.1.1 for hold and clearance instructions.

6.16 Monthly Progress Tracking

Figure 6.6. Transmission communication procedure with Dispatch (operative communication is mandatory at all times on transmission rights-of-way. Satellite phones could be necessary in remote locations).

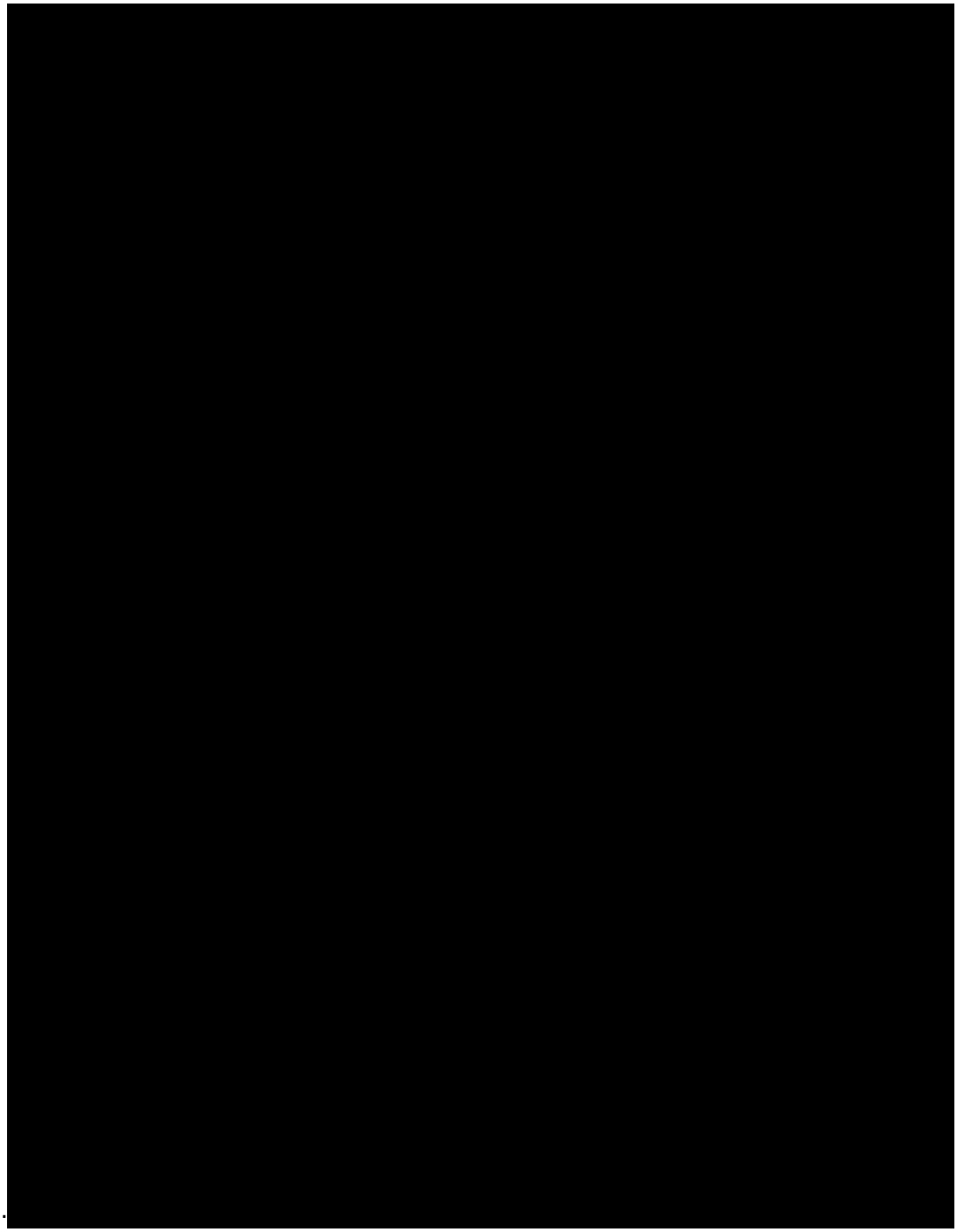
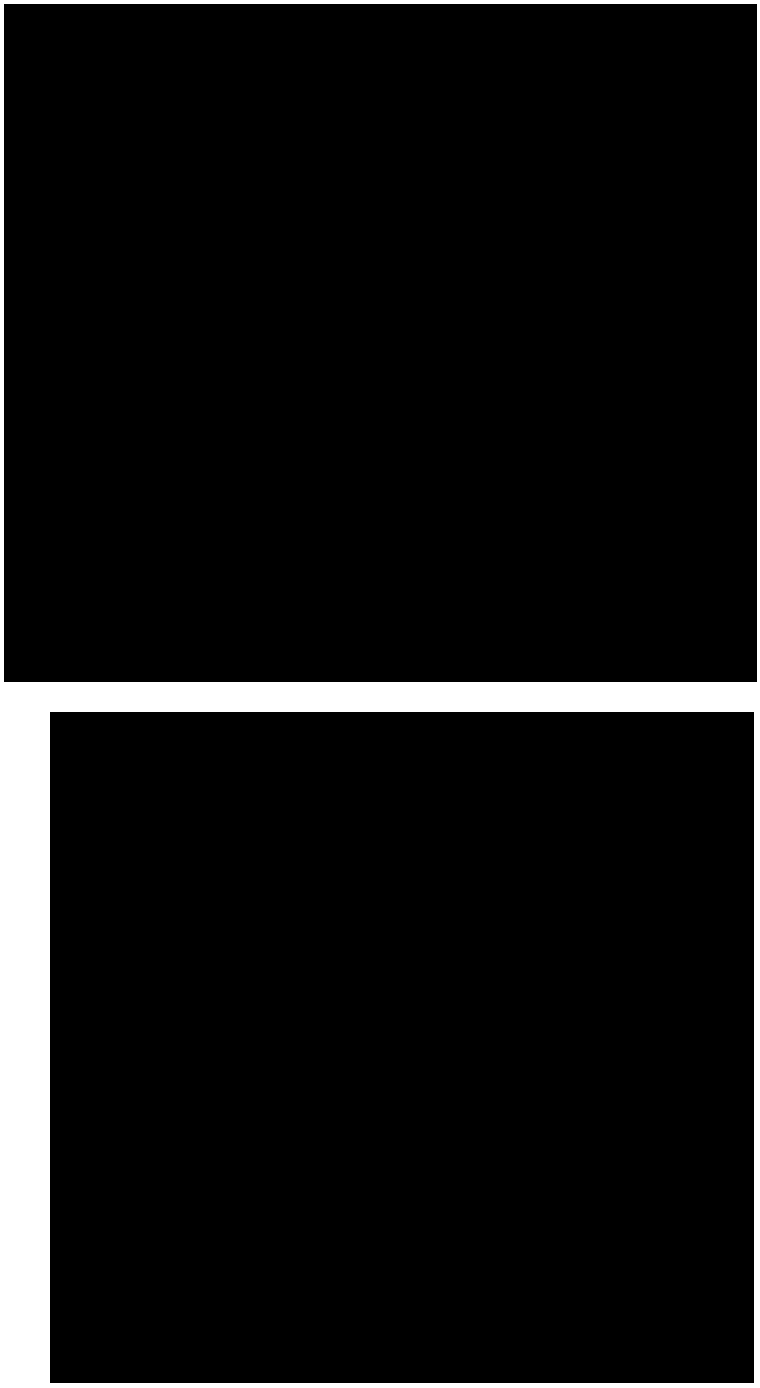


Figure 6.7. Summary pages of main grid and local transmission monthly reports.



Progress on the annual work plan for NERC Transmission Lines shall be tracked on the *PacifiCorp Main Grid Transmission MASTER* for lines under the auspices of NERC Standard FAC-003. Progress on the annual work plan for other transmission lines shall be tracked on the monthly *Local Transmission Progress Report.* Both reports track miles achieved against plan on a monthly basis (Figure 6.7).

6.17 Quarterly WECC Audit Report

PacifiCorp is required to report outages on transmission lines subject to FAC-003.

7. CHEMICAL PRODECURES

Herbicides and tree growth regulators (TGRs) are an integral part of PacifiCorp's Vegetation Management program. Chemical applications shall be performed according to federal, state and local regulations. Labels are the law, and chemical use must comply with labeling. PacifiCorp's director of vegetation management shall approve all products and mixes. Property owners shall be notified at least five days, but no more than six weeks in advance, whenever chemicals are to be used on their property. Property owner objection to herbicide use shall be honored.

The company making the application is responsible for chemical purchase and storage, record keeping as well as container disposal. Crew leaders in all states except California shall hold a valid applicator's license. Applicators shall either hold that license, or work under the direct supervision of a certified applicator as required in the state in which they are working. Tree crews found working without a crew leader or applicator without a valid applicators license for the state in which they are working may be shut down at the forester's discretion. Supervisors/GFs of qualified applicators shall hold a certified applicator's license in the state or states in which they supervise crews**.**

7.1 Closed Chain of Custody

Closed chain of custody best practices are encouraged. CU*tility Arborist Association Best Management Practices: Field Guide to Closed Chain of Custody for Herbicides n the Utility Vegetation Management Industry* (Goodfellow and Holt 2011).

Closed chain of custody is a concept in which ready-to-use, diluted concentrate formulations are utilized in closed delivery systems. Closed chain of custody includes herbicide shipping, distribution, storage, and mixing, which includes returning empty containers for refilling and reuse.

7.2 Chemical Reports

All chemical applications shall be documented in the *Daily Report* (Figure 4.6) or other method approved by a Company forester. The company making the application shall be responsible for maintaining reports for review by the state departments of agriculture.

When chemical work is done on or adjacent to PacifiCorp Hydro properties, copies of chemical reports shall be provided to the plant manager weekly.

7.3 Herbicide Applications

Herbicide applications shall be pursued wherever possible as a vegetation management tool. Herbicides prevent sprouting from stumps of deciduous trees and should be used on saplings of tall-growing species to reduce future inventories (Figures 7.1 and 7.2). Herbicides are essential in cover type conversion necessary in establishing the wire zone-border zone method on transmission lines.

When properly used, herbicides are effective and efficient, minimize soil disturbance, and enhance plant and wildlife diversity. Herbicide application can benefit wildlife by improving forage as well as escape and nesting cover. In some instances, noxious weed control is a desirable objective on utility rights-of-way that can be satisfied through herbicide treatment.

Herbicide use can control individual plants that are prone to re-sprout or sucker

after removal. When trees that re-sprout or sucker are removed without herbicide treatment, dense thickets develop, impeding access, swelling workloads, increasing costs, blocking lines-of-site, and deteriorating wildlife habitat (Yanner and Hutnik 2004 [Figures 7.1 and 7.2]).

Treating suckering plants allows early successional, compatible species to dominate the right-of-way and out-compete incompatible species, ultimately reducing work.

7.3.1 Selectivity

Herbicides can be selective or non-selective depending on their type. Selective herbicides only control specific kinds of plants, when applied according to the label. For example, synthetic auxins are a class of selective herbicides that control broadleaved plants, but do not harm grass species. By contrast, non-selective herbicides work against both broadleaved plants and grasses. Non-selective herbicides can be effective where a wide variety of target plant species are present, like those often found during initial clearing or reclaiming dense stands of invasive or other undesirable vegetation.

Application techniques can also be either selective or non-selective. Selective applications are used against specific plants or pockets of plants. Non-selective techniques target areas rather than individual plants (see *Application Methods*). Non-selective use of non-selective herbicides eliminate all plants in the application area. Non-selective use of a selective herbicide controls treated plants that are sensitive to the herbicide, without differentiating between compatible or incompatible species. Selective use of either would only control targeted vegetation. Selective use is preferable unless target vegetation density is high.

7.3.2 Herbicide Best Management Practices

PacifiCorp is dedicated to ensuring proper application of approved herbicides to minimize the effects on non-target vegetation, human health, fish and wildlife species, and water quality (Childs 2005).

Herbicide applications shall (Childs 2005):

- Follow all product label mandatory provisions such as registered uses, maximum use rates, application restrictions, worker safety standards, restricted entry levels, environmental hazards, weather restrictions, and equipment cleansing.
- Follow all product label advisory provisions such as mixing instructions, protective clothing and others matters.
- Have on site a copy of the label and SDS sheets.
- Be made in the presence of a licensed applicator valid for the state in which work is performed.

7.3.3 Wetlands and Waterbodies

The effects of herbicides on wetland and water resources should be minimized by utilizing buffer zones (Table 7.1). Buffer zones reduce the movement of herbicides from the application site into adjoining water bodies. They must be followed unless instructed otherwise by competent authorities. Climate, geology and soil types should be considered when selecting the herbicide mix with the lowest relative risk of migrating to water resources (Childs 2005)

Figure 7.1. Untreated rights-of-way quickly fill in with thickets of sprouts following mowing

Jay Neil photo

Figure 7.2. Incompatible species treated in the Line 72 right-of-way in, Oregon two years after reclamation. Herbicide treatments help maintain the right-of-way and are used to convert it to a wire zone-border zone prescription (Figure 6.3)

Table 7.1. Buffer Widths to Minimize Impacts on Non-Target Resources (adapted from Childs 2005).

7.3.4 Spills

Mixing, loading and cleaning equipment are critical activities that present the greatest exposure to accidents or spills (Miller 1993). Spills should adhere to Section 2.2.5. Spills can be avoided by using closed chain of custody best management practices.

7.3.5 Inappropriate Applications

There are situations where herbicide applications are inappropriate. If application company representatives are uncertain whether or not applications are appropriate, they shall consult the appropriate forester. Inappropriate situations include (but are not limited to):

- Areas where the property owner expresses objections to herbicide use.
- Areas where herbicide could drift or leach into organic farms.
- Governmental lands where herbicides are prohibited.
- Conditions of heavy precipitation or strong winds. If these conditions exist, the treatment should be deferred until weather improves.
- Periods of high temperatures, which can cause product volatility and damage off-target plants. This is particularly important for foliar applications. During high temperatures, treatment should be deferred until weather cools. Note that vineyards can be especially sensitive to synthetic auxins.
- Trees that could be root grafted to desirable trees.
- Trees that are near desirable plants where the herbicide could move into contact with off target foliage or roots.
- Trees that are sufficiently close agricultural crops or harvestable, edible plants that contamination could be reasonably expected

If there is any uncertainty regarding whether or not an application is appropriate, contact the forester with responsibility for the area.

7.3.6 Application Methods

Herbicide application methods are categorized by the quantity of herbicide

used, the character of the target, vegetation density and site parameters. Dyes can be used in the herbicide mix to mark areas that have been treated. Treatments include individual stem, broadcast and aerial treatments. Ninety-five percent control shall be obtained.

7.3.6.1 Individual Stem Treatment

Individual stem treatments are selective applications. They include stump, basal, injection, frill, selective foliar and side-pruning applications. Due to their specific nature, proper individual stem applications work well to avoid damage to sensitive or off target plants. However, they are impractical against broad areas or sites dominated by undesirable species.

Stump applications are a common individual stem treatment, where herbicides are applied to the stump cut surface around the cambium and to the top side of the bark. Water-based formulations require immediate stump treatment, while oil herbicides can be applied hours, days or even weeks after cutting.

Injections involve inserting herbicide into a tree. Frill (commonly called "hack and squirt") treatments, consist of herbicide application into cuts in the trunk. Injections or frill treatments are especially useful against large incompatible trees to be left standing for wildlife.

Basal applications often use a herbicide in an oil-based carrier at the base of stems and root collar. The oil penetrates the bark, carrying the herbicide into the plant. Although basal applications can be made year round, dormant treatment is often best on deciduous plants, when they do not have foliage that can obstruct access to individual stems.

Selective foliar applications are done by spraying foliage and shoots of specific target plants. They can be either low or high volume treatments. For low volume applications, comparatively high concentrations of herbicide active ingredient are made in lower volumes of water than would be used with high volume treatment. Foliar applications are only made during the active growing season, normally late spring to early fall.

Side pruning is a technique where non-translocatable herbicides are applied to control specific branches growing toward the electric facility. Treating large branches could damage trees in the same way as removing them through pruning.

7.3.6.2 Broadcast Treatment

Broadcast treatments are nonselective because they control all plants sensitive to a particular herbicide in a treatment area. They can provide a degree of selectivity with proper herbicides. Even then, broadcast treatments do not differentiate between compatible and incompatible plants that the herbicide controls. Broadcasting is particularly useful to control large infestations of incompatible vegetation (including invasive species) in rights-of-way or along access roads.

Broadcast techniques include high-volume foliar, cut-stubble and bare ground applications. High volume foliar applications are similar to high volume selective foliar applications. The difference is that broadcast high volume foliar treatments target a broad area of incompatible species, rather than individual plants or pockets of plants. Cut-stubble applications are made over areas that have just been mowed. Bare-ground treatments are used for clearing all plant material in a prescribed area, such as in substations or around poles to protect against fire. Bare-ground applications are usually granular or liquid applications following mechanical removal of

vegetation, or used as a pre-emergent in maintaining graveled areas such as substations.

7.3.6.3 Aerial Treatment

Aerial treatments are made by helicopter (rotary wing) or small airplane (fixed wing). Rotary wing aircraft provide the most accuracy, because helicopters can fly more slowly and are more maneuverable than airplanes. However, airplanes are less expensive to operate than helicopters. Aerial control methods are also nonselective, but can provide a level of selectivity with proper herbicides. Aerial applications can be useful in remote or difficult to access sites, and be cost effective and quick, especially if large areas need to be treated. They also can be used where incompatible vegetation dominates a right-of-way. The primary disadvantage of aerial application is that it carries the threat of off-target drift, so it must be performed under low-wind conditions with low toxicity herbicides.

7.4 Approved Herbicides

A list of approved products appears in the following sections. PacifiCorp's director of vegetation management must authorize other chemicals.

7.4.1 Stump Application

- 2, 4-D
- Glyphosate
- Picloram
- Triclopyr

7.4.2 Low Volume Basal Application

- Imazapyr
- Triclopyr

7.4.3 Foliar Application

- 2, 4-D
- Aminopyralid
- Fosamine ammonium
- Glyphosate
- Imazapyr
- Metasulfuron methyl
- Picloram
- Sulfometuron methyl
- Triclopyr

7.4.4 Soil Application

- Diuron
- Imazapyr
- Picloram
- Sulfentrazone
- Tebuthiuron

7.5 Tree Growth Regulators

Tree Growth Regulator (TGR) applications are intended to retard fast-growing trees so that they will not interfere with facilities or violate state regulatory agency tree policy before the next scheduled maintenance.

7.5.1 Approved TGR Application Chemicals

- Fluprimidol
- Paclobutrazol

8. CUSTOMER RELATIONS

Representatives of vegetation management meet with more customers than any other Company department. As a result, customers often develop an impression of the entire Company based on their experience with PacifiCorp vegetation management. Since vegetation management work is often controversial, excellent customer service is imperative for a successful program. Company and contract personnel must be professional, prompt, fair and courteous to customers.

8.1 Educational Information

PacifiCorp has a variety of educational materials about tree-power line conflicts and planting the right tree in the right place.

8.1.1 Trees and Power Lines Brochure

The *Trees and Power Lines* brochure is a companion to the "yellow door card" (see Section 8.2.1). It explains the need for line clearance work, as well as natural target pruning. It also provides color pictures of how properly pruned trees could look following line clearance.

8.1.2 Small Trees for Small Places

The *Small Trees for Small Places* is a publication in PDF format available at PacificPower.net or RockyMountainPower.net. It provides tree selection tree planting and electrical safety information. It offers an easy to use chart on ornamental and adaptive characteristics of 100 different species that can be used adjacent to power lines. Not all these trees can be used everywhere in PacifiCorp's service territory. However, with a choice of 100 small-statured trees, there should be several to use in any given location around PacifiCorp's system.

8.1.3 Right Tree in the Right Place Poster

The *Right Tree in the Right Place* poster provides illustrations and descriptions of small trees that are suitable across PacifiCorp's service territory. It also relates information about proper utility tree pruning and tree planting.

8.2 Notification for Tree Work

Notification for tree work is not required by any state tariff in PacifiCorp's service territory. However, PacifiCorp vegetation management attempts to notify property owners or tenants prior to vegetation management work at home and business sites. PacifiCorp area foresters should authorize any line clearance work to be done without property owner or tenant notification. In cases of municipal, county, state or federal properties, the proper agency representative shall be notified. The appropriate customer and community relations manager should be notified prior to meeting with governmental officials.

Notification, including that for tree or chemical work, should be by letter, phone, personal visit or door card at least five business days, but no more than six weeks, prior to the crew arriving. Notification shall be documented on an *Activity Report* (Figure 4.3). Notification cards shall not be placed in U.S. Mail boxes. Notification cards should be used only where the owner or tenant is likely to be present on a regular basis. Some circumstances, such as work on historic, unique or unusual trees, could

warrant personal contact with the customer.

8.2.1 Door hangers

PacifiCorp has a variety of door hangers (Figure 8.1). These door hangers come in Pacific Power and Rocky Mountain Power versions. Pacific Power door hangers shall be used in California, Oregon and Washington. Rocky Mountain Power printings shall be used in Idaho, Utah and Wyoming.

8.2.1.1 Distribution (Yellow)

PacifiCorp's yellow distribution door hanger, and should be used to notify customers of upcoming distribution cycle or interim work. The door hanger has contract utility forester contact information, an explanation of the need for line clearance work, of how the work will be performed and how much clearance is required. The door hanger informs customers that volunteer trees (those not planted as part of a landscape) six or fewer inches in diameter at breast height will be removed. It also includes drawings of shapes customers could expect from the work, and tips about tree planting (Figure 8.2). Grow into facilities at some time in their life approx. 10 ft. each side of center

8.2.1.2 Ticket (Blue)

The blue door hanger should be used to communicate with customers who have called in requests for tree work. It has four check boxes with the most common responses to customer requests. The tree(s):

- Do not pose an immediate threat to electric service.
- Are not affecting PacifiCorp facilities.
- Are growing in proximity to service lines, but do not threaten electric service. If a customer wishes to have the tree pruned, PacifiCorp can disconnect the line to enable the customer to safely perform the work or hire a professional tree care company to do it for them.
- Are the customer's responsibility because they have more than ten feet from distribution primary conductors.

The form also has space for comments, and contract utility forester contact information.

8.2.1.3 Distribution Removal (Ivory)

The white door hanger is a tree removal request, to fulfill PacifiCorp's requirement for written permission to remove trees where no easement granting authority exists to do so (see Section 2.7.1). The white door hanger identifies trees to be removed, has check boxes indicating whether or not the logs will be cut to firewood length and the stumps treated with herbicide. The door card also provides contact information for the forest tech, or comments and a sketch to help the customer understand the request.

8.2.1.4 Rural Transmission (Purple)

The rural transmission door hanger explains the need to remove trees under transmission lines. It relates the process the customer can expect, how trees and debris will be left. It informs customers that herbicide could be used on their property, and that we have a coupon program for tree replacement. It provides information on the voltage of the line and widths of the right-of-way. The door hanger also has a wire zone-border zone

Figure 8.1 Various PacifiCorp Vegetation Management door hangers .

illustration and offers contract utility forester contact information.

8.2.1.5 Urban Transmission (Forest Service Green)

The green transmission door hanger is for use in urban or developed areas. It differs from the rural door hanger insofar as it doesn't have a diagram of the wire-border zone concept. It still stresses removal.

8.2.1.6 TGR (Grey)

The grey TGR door hanger is for notifying customers about upcoming tree growth regulator application on their property. It provides space to see what trees will be treated and contract utility forester contact information.

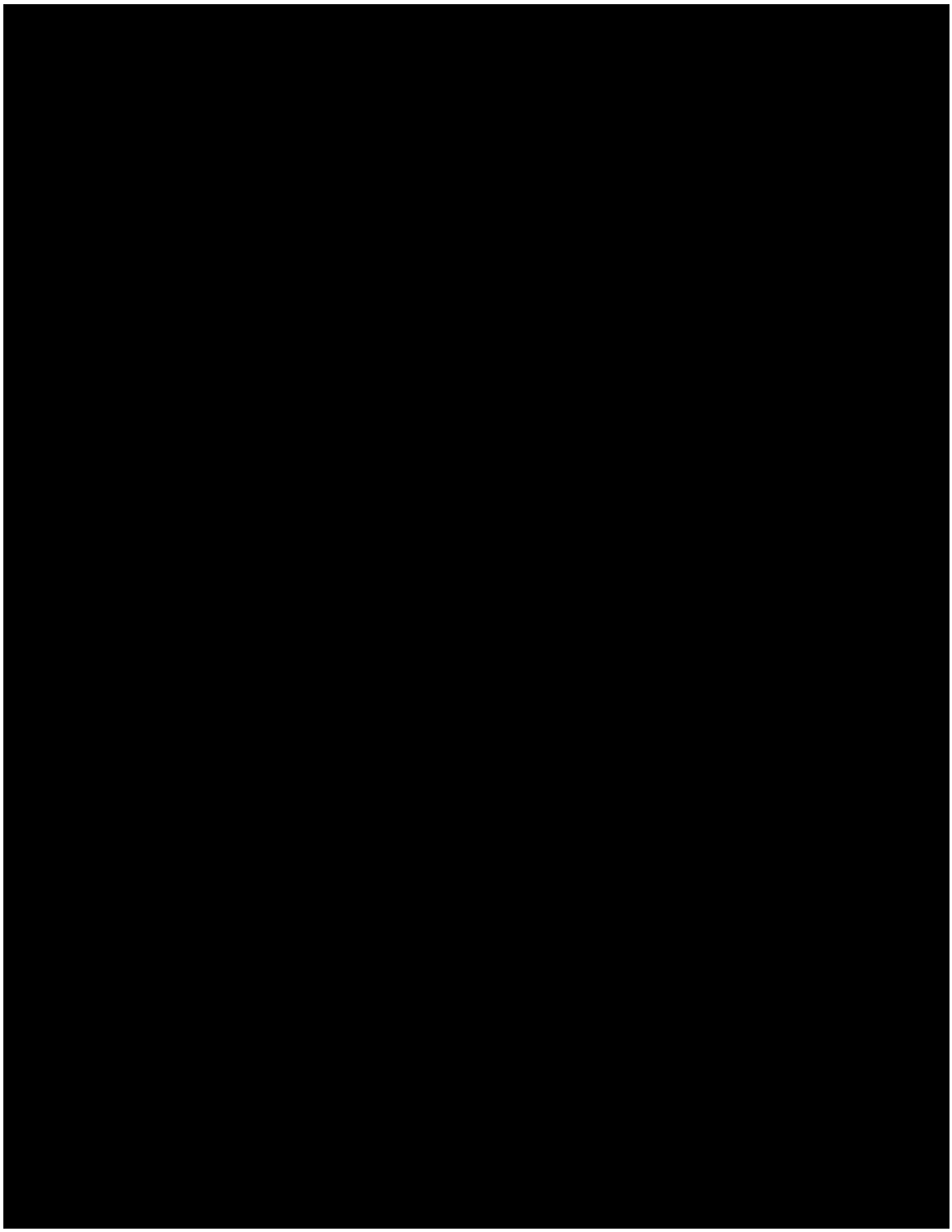
8.2.1.7 Herbicide (Grey)

The grey herbicide door hanger is for notifying customers about upcoming herbicide application on their property.

8.2.1.8 Tree Crew Request (Orange)

The orange door hanger is for tree crews to use to ask customers for their cooperation with upcoming tree work. It provides information about when a tree crew will arrive on site, and has check

Figure 8.2. "Yellow" door hanger.



boxes for requests to move something (like a car) from under the tree or secure a dog. It also can be used for permission to dive on property and has space for comments.

8.2.1.9 Pole Clearing

The pole clearing door hanger is to notify California customers of upcoming work to comply with California Resource Code 2492 (see Section 5.6)

8.2.2Other Customer Contact Forms In addition to door hangers, PacifiCorp has two forms for use in customer communication. The *Property Owner Permission* form has check boxes requesting authorization for tree removal, tree and brush disposal, mowing, notification of herbicide and TGR application. It provides a space for the property owner's signature. Property owner signatures are required for tree removal, but not brush disbursal or herbicide application.

PacifiCorp also has a *Refusal /Complaint Form.* This form should be completed by contract utility foresters, supervisors/GFs, tree crews or foresters whenever a customer has concerns about upcoming or recently completed work. It identifies the property owner, the type of project and the nature of the refusal or complaint. These documents should be kept in a permanent file.

8.2.3 Crew Arrival on Site

When crews arrive for work at a residential site, they should make a courtesy knock on the door and let the homeowner or tenant know they are about to begin work. If no one is home, the crew should proceed with the planned tree work.

8.3 Customer and Property Owner Refusal Procedure

The customer refusal process is presented in Figure 8.3. Detailed records must be kept of every conversation, including the date and time it occurred, and summary of the matters discussed. If a vegetation management representative makes a failed attempt to contact a refusal by phone, the date and time of the call should also be noted.

8.3.1 Contract Utility Forester Refusal Procedure

When a property owner refuses to allow the work necessary to satisfy PacifiCorp specifications, the contract utility forester shall complete a *Property Owner Refusal/Complaint Report* and notify their supervisor/GF, and area forester within two working days and before any work is performed on the property. Contract utility foresters shall not compromise clearances.

8.3.1.1 Easements

After documenting the refusal, the contract utility forester should research the right-of-way to determine PacifiCorp's property rights for that location. PacifiCorp often owns easements, copies of which are available from PacifiCorp right-of-way services. In addition, states grant prescriptive rights if the line has existed for specified length of time. This time period varies depending on the state (Table 8.1). This information should be provided to the appropriate GF/supervisor.

8.3.2 Crew Leader Refusal Procedure

When a property owner refuses to allow the crew leader to obtain specification clearances, the crew leader shall complete a *Property Owner*

Refusal/Complaint Report and notify their GF/supervisor, contract utility forester, or area forester within two working days and before any work is performed on the property. Crew leader notification initiates the refusal procedure from the beginning.

8.3.3 General Foreman/Supervisor Procedure

The supervisor/GF should contact the property owner within two weeks of being informed of a refusal to try to resolve the situation. The GF/Supervisor should review the documentation surrounding the refusal before contacting the customer. GF/supervisors should not compromise work below the specification without written authorization from the responsible area forester. If a prescriptive or written easement exists, the supervisor/GF should inform the customer of our rights under those easements. Notwithstanding, the general foreman/supervisor should not have the trees worked without customer consent.

If the general foreman/supervisor cannot resolve the refusal to full specification, he or she shall refer it to their area forester by turning in the *Property Owner Refusal/Complaint Report.*, along with any associated easement information.

8.3.4 Regional Forester Procedure

When aregional forester receives a refusal that the contract utility forester and general foreman/supervisor have been unable to resolve, within two weeks he or she shall contact the property owner to attempt to resolve the refusal. The forester may compromise work below the specifications, provided that trees have not grown within work thresholds in Tables 5.1 or 6.1 and the agreement will not present unreasonable safety or electric service risks. This section is not intended to defer judgment to property owners on how much clearance to allow. Neither is it intended to justify clearances outside of specification in order to avoid dealing with an escalated complaint.

If the forester cannot resolve the refusal, the customer shall be sent two letters by the same certified post. One is a description of the legal authority under which the Company is acting and the other letter summarizing the circumstances of the refusal and setting date and time that the tree will be worked. The date shall be at least five business days from the time the letter is postmarked. The refusal letter should reference the applicable written or prescriptive easement if they exist. The forester shall alert the director of vegetation management, transmission and distribution support managing director, as well as the appropriate operations manager, customer and community manager, wires director, and regulatory analyst about the letters. The regulatory analyst will inform the proper regulatory agency about the action. If it appears the media could become involved, the Media Hotline should be notified.

Once the letter is sent, tree crews shall be dispatched to work the site to specifications at the assigned date and time, regardless of whether or not a right-of-way or prescriptive easement exists. The forester or GF/supervisor should be on site during work. Records shall be kept for use in potential litigation. Before and after photos of the site should be taken.

TABLE 8.1. Prescriptive easement time requirements by state

State	Time
California	5 years
Idaho	20 years
Oregon	10 years
Utah	20 years
Washington	10 years
Wyoming	10 years

Figure 8.3. Refusal process.

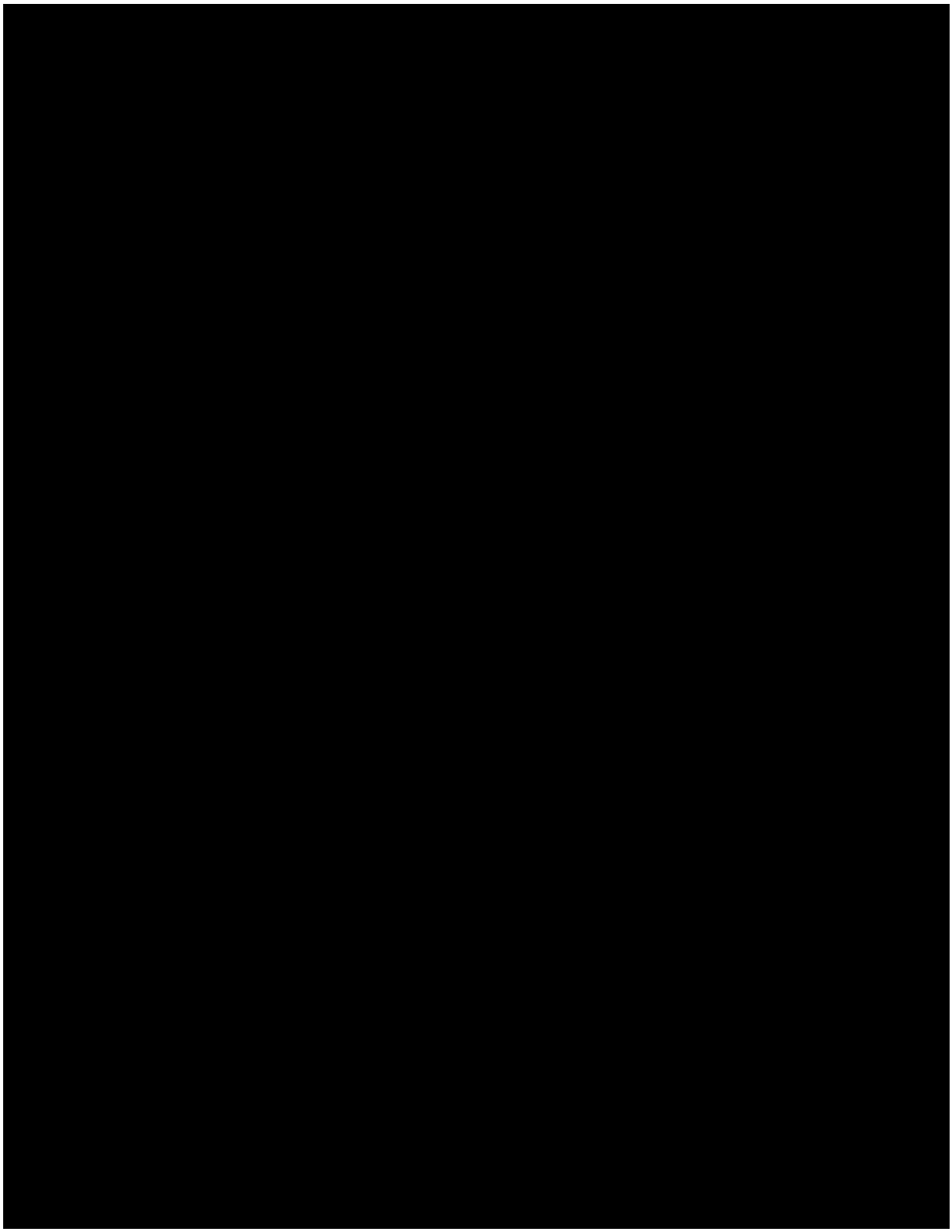


Figure 8.4. Information surrounding refusals should be documented and electronically filed with the appropriate project.

8.4 Customer and Property Owner Complaints

Customerand property owner complaints regarding any aspect of the vegetation management program shall be addressed promptly, fairly and professionally. PacifiCorp should be notified of complaints using a *Property Owner Refusal/ Complaint Report.* Customers will be contacted within 48 hours of receipt of the complaint. Documentation surrounding the refusal should be digitally filed to be accessed with other information from the specific project for use the next time through.

8.5 Commission Complaints

Response to commission complaints should take the highest priority. Commission responses should be made the same day and go through tariff policy with assistance from the vegetation management service coordinator. It is important to provide timelines with appropriate summaries of vegetation management's interaction with the subject party. Response for data request should be provided by the next business day if at all possible, but no later than three business days. Foresters should take the lead in Commission responses.

8.6 Customer Survey

PacifiCorp has Pacific Power and Rocky Mountain Power customer surveys. Surveys are vitally important for quality control, and for giving customer's a voice regarding vegetation management's performance.

The survey asks customers to rate from 1 (lowest) to 5 (highest) Vegetation Management's performance relative to five questions:

- Our notification clearly explained the work we would be doing.
- The workers were friendly and courteous.
- The work was completed as you understood it would be.
- The property was left neat and orderly.
- Overall, I am satisfied with how the work was handled.
- It also allows space for comments and for the customer to identify him/herself.

Tree crews should leave customer surveys on each property on which utility tree work is performed. For work on municipal or other government agency trees, a survey should be provided to the appropriate management authority. The area forester should also see that surveys are left on properties where they conduct crew audits. The survey is self-addressed and postage paid for the respondent's convenience.

9. DEFINITIONS

Allelopathy. Production of a chemical by one plant to suppress competing plants of other species.

BMP. Best management practice

Border zone. The Region A right-of-way portion that extends from the right-of-way edge to 10 feet from the outside phases.

Branch bark ridge. Area of raised bark between two stems. The ridge is formed as the two stems grow together, pushing the bark outward. A raised branch bark ridge is often a sign of a strong branch attachment.

Branch collar. Wood formed around a branch attachment. It contains wood from both the branch and parent stem.

Branch core. Area in the trunk of a tree that traces the branch back to its origins as a bud on a twig.

Branch protection zone. Area in the branch core that undergoes chemical change in response to wounding or disease in the branch. The chemicals protect the tree by inhibiting or preventing diseases from passing from the branch to the parent stem.

Caliper. The diameter of a tree six inches off the ground.

Cambium. Area of cell division responsible for stem diameter growth.

Clearance. Line de-energizing for safety purposes. Clearances require 48 hour notices to all customers that will be effected by the outage.

Company. PacifiCorp.

Crown reduction. Reduction of the top or sides of the tree by thinning cuts (lateral or branch collar cuts).

Crown Restoration. Restoring a previously headed stem's natural structure by thinning sprouts emanating from the old wound. Crown restoration should be done incrementally over the course of several cycles. The crowns of many third order trees may be so damaged they may never be restored.

Cycle buster. Fast-growing tree species that will not hold for a complete cycle.

Cycle work. Cycle work is described in section 5.2. It involves systematic work, addressing trees that have grown within work thresholds outlined in Tabe 5.1, and includes removals, herbicide and TGR treatments as outlined in the *Work Release.*

DBH. Diameter at breast height.

Danger tree. A tree on or off the right-of-way that may contact electric facilities either through growth or if it should fall.

Decurrent form. Trees lacking a strong central leader, resulting in a spreading crown (for example, American elm [*Ulmus americana]*).

Distribution line. Lines energized between 600 and 45,000 volts.

Drip line. The horizontal extent of the crown out to the branch tips.

Drop-crotch. Archaic term for lateral cut.

Excurrent form. Tree with a strong central leader (for example, Ponderosa pine [*Pinus ponderosa]*).

Fast -growing species. Tree species that vertically grows more than three feet per year.

Flush cut. A final pruning cut flush with the parent stem (the trunk, for example) that cuts into or removes the branch collar. Flush cuts are damaging and inappropriate.

GF. General foreman.

Hazard tree. Dead, dying, diseased, deformed, or unstable trees which have a high probability of falling and contacting a substation, distribution or transmission conductors, structure, guys or other Company electric facility.

Heading cut. Internodal cut on a stem, or a cut made to an inappropriate lateral.

Hold. Deactivating the automatic re-closers and the line. Holds are issued to a Journeyman lineman who, in the event of an outage, is responsible for ensuring that it is save to re-energize the line.

Included bark. Bark included in the juncture between two stems. It is a structural defect that can lead to stem failure.

Integrated Vegetation Management (IVM). Integrated vegetation management is a system of managing vegetation in which undesirable vegetation is identified, action thresholds are considered, all possible control options are evaluated, and selected control(s) are implemented (ANSI 2012a).

Interim Work. Scheduled work in the interim half way between cycles. For example, most of Oregon is on a four years cycle. Two years after completing cycle work, feeders will be scheduled for a systematic pass to work trees that will interfere with primary conductors before the end of the current cycle. Work should be limited to trees that grow six feet or more a year or hazard trees.

ISA. International Society of Arboriculture.

kV. One thousand volts.

Lateral cut. A cut that shortens a branch to a lateral no less than one-third the diameter of the original stem and removing no more than one-half the lead's foliage.

Lead. An upright trunk or major limb with a dominant role in the tree crown, and a lateral is a branch off a parent stem

Low-growing tree species. Trees with a potential mature height under 25 feet.

Merchantable timber. Trees with a DBH of 6 inches or more, which are

recoverable and have a market in the area.

Moderate-growing species. Tree species that can be expected to vertically grow between one and three feet per year under normal conditions.

MVCD. Minimum vegetation clearance distance. Maximum flash distance established by FAC-003.

Natural target. Proper final pruning cut location at a strong point in a tree's disease defense system. They are branch collars and proper laterals.

Pruning. Scientifically-based arboricultural practice of removing tree parts.

Readily climbable tree. Readily climbable trees have low limbs that are accessible from the ground and sufficiently close together so that the tree can be climbed by a child or average person without using a ladder or special equipment. Vehicles do not render trees climbable. Climbable trees should have a main stem or major branch that would support a child or average person either within arm's reach of an uninsulated energized electric line or within such proximity to the electric line that the climber could be injured by direct or indirect contact. They are located near homes, schools, parks, businesses or other locations where people (particularly children) frequent.

Refusal. A case where a property owner does not allow trees to be cleared from PacifiCorp facilities to specification.

Region A. The area in transmission rights-of-way where the wire is less than 50 feet off the ground.

Region B. The area in transmission rights-of-way where the wire is between 50 feet and 100 feet off the ground.

Region C. The area in transmission rights-of-way where the wire is more than 100 feet off the ground.

Round over. A traditional line clearing technique that lowers a tree to a specified clearance distance and sculpts it into a ball. Round overs are a damaging practice that expressly violate PacifiCorp specifications.

Sapling. Tree under four inches in diameter at breast height.

Secondary line. Wire energized to less than 600 volts.

Service line. A secondary line that runs between the electric supply and the customer.

Shall. A mandatory requirement.

Short-growing tree. A tree with a potential mature height of 25 feet or less.

Should. A strongly advisory recommendation. It shall be followed unless there is a compelling reason not to.

Slash. Brush and stems under 6 inches in diameter removed from trees during vegetation management operations.

Slow-growing species. Tree species that can be expected to vertically grow less than one foot per year.

Subordination. Removing the terminal, typically upright or end portion of a parent branch or stem to slow the growth rate so other portions of the tree grow faster (Gilman 2002).

Tall-growing species. Tree species that grow to 25 feet or more at maturity.

TGR. Tree Growth Regulator. In the context of these specifications, TGR refers to chemicals that slow growth of some tree species.

Transmission lines. Wire energized over 45 kV

Trimming. Reducing the length of toenails, hair, the amount of budgets and other things, Christmas tree decoration and unskilled removal of tree parts.

Volunteer. A naturally seeded, non-landscape tree.

Wetland. Wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface (EPA 2004) http://www.epa.gov/owow/wetlands/vital/what.html.

Whorl. A node in a pine tree where three or more limbs commonly originate.

Wire zone. Right-of-way portion that is directly under the wires and within 10 feet to the field side of the outside phases (Bramble et al. 2001).

Work threshold. Distance from conductors inside of which trees should be pruned or removed during cycle work.

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Attachment 7-9. Redline Attachment P1-6 Habitat Mitigation Plan

Fish and Wildlife Habitat Mitigation Plan

Boardman to Hemingway Transmission Line Project

1221 West Idaho Street
Boise, Idaho 83702

September 2018, Revised May 2023

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Appendix A. Habitat Mitigation Sites
Appendix B. Wolf Creek Mitigation Site Expanded Assessment

ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
EFSC or Council	Energy Facility Siting Council
HMP	Habitat Mitigation Plan
ILF	in-lieu fee
IPC	Idaho Power Company
MZ	Management Zone
OAR	Oregon Administrative Rules
ODOE	Oregon Department of Energy
ODFW	Oregon Department of Fish and Wildlife
Project	Boardman to Hemingway Transmission Line Project
WAGS	Washington ground squirrel

1.0 INTRODUCTION

To obtain an Oregon Energy Facility Siting Council (EFSC or Council) site certificate for the Boardman to Hemingway Transmission Line Project (Project), Idaho Power Company (IPC) must show that the design, construction, and operation of the Project, taking into account mitigation, is consistent with the Oregon Department of Fish and Wildlife's (ODFW) Habitat Mitigation Policy at Oregon Administrative Rule (OAR) 635-415-0025 (see OAR 345-022-0060, EFSC's Fish and Wildlife Habitat Standard). This Fish and Wildlife Habitat Mitigation Plan (HMP) sets forth the mitigation measures IPC will implement to achieve the goals and standards of ODFW's Habitat Mitigation Policy with respect to fish and wildlife species other than the greater sage-grouse (*Centrocercus urophasianus)*, which is addressed in the Greater Sage-Grouse Habitat Mitigation Plan (Exhibit P2, Attachment P2-3).

As background, IPC considered avoidance of sensitive resources a priority throughout the siting process, as explained in the Project's Siting Study (Exhibit B, Attachment B-1), 2012 Siting Study Supplement (Exhibit B, Attachment B-2), and 2015 Supplemental Siting Study (Exhibit B, Attachment B-3). In particular, IPC's initial siting process avoided sensitive resource areas to the extent practical, including Bureau of Land Management (BLM) designated areas of critical environmental concern, BLM-designated wilderness study areas, waterbodies (including wetlands, wild and scenic rivers, streams that support special status species), areas with sensitive wildlife resources (e.g., sage-grouse leks, Washington ground squirrel colonies, raptor nests), U.S. Department of Agriculture Forest Service designated visual resource retention and preservation lands and inventoried roadless areas, city and town boundaries, and irrigated agriculture. Furthermore, the Project is designed to follow existing developments and utility corridors, such as existing roads and transmission lines, to the extent practical and without violating the Western Electricity Coordinating Council's reliability criteria, in order to consolidate impacts on areas that have already been disturbed as opposed to impacting undisturbed areas. IPC will also implement measures during construction and maintenance that are intended to minimize impacts on the environment, and specifically fish and wildlife habitat. Regardless of the efforts to site the Project to avoid high value fish and wildlife habitat and the implementation of measures to minimize impacts on fish and wildlife habitat, unavoidable impacts from the Project will occur.

This Fish and Wildlife HMP presents the direct and indirect impacts to fish and wildlife habitats, provides an approach for quantifying the impact debits resulting from the Project and the mitigation credits created through the proposed mitigation projects, and sets forth a schedule for implementing the necessary mitigation projects. Consistent with the ODFW Habitat Mitigation Policy, mitigation measures will be implemented and completed either prior to or concurrent with the Project.

If, after review and potential approval by EFSC of the Fish and Wildlife HMP, should the approved mitigation projects no longer be available, or if IPC decides to select another mitigation project not previously considered by EFSC, or if the reviewed mitigation projects do not provide sufficient mitigation credit and additional mitigation is necessary, IPC will amend the Fish and Wildlife HMP and submit the same to Oregon Department of Energy (ODOE) for its approval.

2.0 APPLICABLE RULES AND AGENCY GUIDANCE

2.1 General Standards for Siting Facilities

The Fish and Wildlife Habitat Standard at OAR 345-022-0060 states:

> *For the Council to issue a site certificate, it must find that the design, construction, and operation of the facility, taking into account mitigation, are consistent with the fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025 in effect as of September 1, 2000.*

2.2 Implementation of ODFW Habitat Mitigation Recommendations

OAR 635-415-00252 provides the following:

> *(1) "Habitat Category 1" is irreplaceable, essential habitat for a fish or wildlife species, population, or a unique assemblage of species and is limited on either a physiographic province or site-specific basis, depending on the individual species, population or unique assemblage.*
>
> *(a) The mitigation goal for Category 1 habitat is no loss of either habitat quantity or quality.*
>
> *(b) The Department shall act to protect Category 1 habitats described in this subsection by recommending or requiring:*
>
> *(A) Avoidance of impacts through alternatives to the proposed development action; or*
>
> *(B) No authorization of the proposed development action if impacts cannot be avoided.*
>
> *(2) "Habitat Category 2" is essential habitat for a fish or wildlife species, population, or unique assemblage of species and is limited either on a physiographic province or site-specific basis depending on the individual species, population or unique assemblage.*
>
> *(a) The mitigation goal if impacts are unavoidable, is no net loss of either habitat quantity or quality and to provide a net benefit of habitat quantity or quality.*
>
> *(b) The Department shall act to achieve the mitigation goal for Category 2 habitat by recommending or requiring:*
>
> *(A) Avoidance of impacts through alternatives to the proposed development action; or*
>
> *(B) Mitigation of impacts, if unavoidable, through reliable in-kind, in-proximity habitat mitigation to achieve no net loss of either pre-development habitat quantity or quality. In addition, a net benefit of habitat quantity or quality must be provided. Progress towards achieving the mitigation goals and standards shall be reported on a schedule agreed to in the mitigation plan performance measures. The fish and wildlife mitigation measures shall be implemented and completed either prior to or concurrent with the development action.*
>
> *(c) If neither 635-415-0025(2)(b)(A) or (B) can be achieved, the Department shall recommend against or shall not authorize the proposed development action.*

(3) "Habitat Category 3" is essential habitat for fish and wildlife, or important habitat for fish and wildlife that is limited either on a physiographic province or site-specific basis, depending on the individual species or population.

(a) The mitigation goal is no net loss of either habitat quantity or quality.

(b) The Department shall act to achieve the mitigation goal for Category 3 habitat by recommending or requiring:

(A) Avoidance of impacts through alternatives to the proposed development action; or

(B) Mitigation of impacts, if unavoidable, through reliable in-kind, in-proximity habitat mitigation to achieve no net loss in either pre-development habitat quantity or quality. Progress towards achieving the mitigation goals and standards shall be reported on a schedule agreed to in the mitigation plan performance measures. The fish and wildlife mitigation measures shall be implemented and completed either prior to or concurrent with the development action.

c) If neither 635-415-0025(3)(b)(A) or (B) can be achieved, the Department shall recommend against or shall not authorize the proposed development action.

(4) "Habitat Category 4" is important habitat for fish and wildlife species.

(a) The mitigation goal is no net loss in either existing habitat quantity or quality.

(b) The Department shall act to achieve the mitigation goal for Category 4 habitat by recommending or requiring:

(A) Avoidance of impacts through alternatives to the proposed development action; or

(B) Mitigation of impacts, if unavoidable, through reliable in-kind or out-of-kind, in-proximity or off-proximity habitat mitigation to achieve no net loss in either pre-development habitat quantity or quality. Progress towards achieving the mitigation goals and standards shall be reported on a schedule agreed to in the mitigation plan performance measures. The fish and wildlife mitigation measures shall be implemented and completed either prior to or concurrent with the development action.

(c) If neither 635-415-0025(4)(b)(A) or (B) can be achieved, the Department shall recommend against or shall not authorize the proposed development action.

(5) "Habitat Category 5" is habitat for fish and wildlife having high potential to become either essential or important habitat.

(a) The mitigation goal, if impacts are unavoidable, is to provide a net benefit in habitat quantity or quality.

(b) The Department shall act to achieve the mitigation goal for Category 5 habitat by recommending or requiring:

(A) Avoidance of impacts through alternatives to the proposed development action; or

(B) Mitigation of impacts, if unavoidable, through actions that contribute to essential or important habitat.

(c) If neither 635-415-0025(5)(b)(A) or (B) can be achieved, the Department shall recommend against or shall not authorize the proposed development action.

(6) "Habitat Category 6" is habitat that has low potential to become essential or important habitat for fish and wildlife.

(a) The mitigation goal is to minimize impacts.

(b) The Department shall act to achieve the mitigation goal for Category 6 habitat by recommending or requiring actions that minimize direct habitat loss and avoid impacts to off-site habitat.

(7) For proposed developments subject to this rule with impacts to greater sage-grouse habitat in Oregon, mitigation shall be addressed as described in OAR 635-140-0000 through 635-140-0025, except that any energy facility that has submitted a preliminary application for site certificate pursuant to ORS 469.300 et seq. on or before the effective date of this rule is exempt from fulfilling the avoidance test contained in 635-140-0025, Policy 2, subsections (a), (b), (c) and (d)(A). Other mitigation provisions contained in 635-140-0025, Policy 2, subsections (d)(B) and (e), and Policies 3 and 4 remain applicable.

2.3 ODFW Mitigation Framework for Indirect Road Impacts to Rocky Mountain Elk Habitat

In April 2015, ODFW provided IPC with guidance on mitigation for impacts to Rocky Mountain elk (*Cervus canadensis nelsoni*). The guidance document is entitled *Mitigation Framework for Indirect Road Impacts to Rocky Mountain Elk Habitat* (Elk Mitigation Framework) (ODFW 2015). The Elk Mitigation Framework provides a methodology for quantifying the area of indirect impacts from energy facility roads and provides guidance for how ODFW will consider indirect impacts to elk habitat under their Habitat Mitigation Policy. Indirect impacts are calculated in Exhibit P3 and are presented in summary in this Fish and Wildlife HMP.

3.0 ANALYSIS

3.1 Avoidance

ODFW's Habitat Mitigation Policy sets forth a mitigation goal for each of Habitat Category 1 through 6, and provides recommendations or requirements ODFW shall take to achieve the mitigation goals. Depending on the habitat category, ODFW's recommendations or requirements provide that the project proponent must avoid impacts to the habitat or at least consider avoidance of the habitat.

3.1.1 Habitat Category 1

For Habitat Category 1, ODFW's recommendations or requirements provide that impacts to the habitat must be avoided through alternatives to the proposed development action or the project should not be authorized (see OAR 635-415-00252(1)(b)). Here, the Project Site Boundary includes Category 1 habitat associated with raptor nests. Although trees or structures with raptor nests are managed as Category 1 habitat, they are not included in the habitat categorization analysis for acres of Category 1 habitat because of their relatively small size on the landscape. To ensure that Category 1 raptor nests and raptor breeding activities are not

disturbed by Project activities, the seasonal and spatial restrictions identified in Exhibit P1, Attachment P1-10 and listed in Exhibit P1, Section 3.5.3.1 will be applied.

There is potential for Category 1 Washington ground squirrel (*Urocitellus washingtoni*, WAGS) habitat to be identified within the Site Boundary during future surveys. IPC has modified the Project location to avoid Category 1 WAGS habitat in the past and will perform WAGS surveys in the future within previously unsurveyed areas to identify Category 1 WAGS habitat for avoidance. IPC is proposing site certificate conditions that will ensure that surveys for raptor nests and WAGS are conducted within an appropriate timeframe prior to construction, that seasonal restrictions are applied to raptor nests to avoid impacts to Category 1 habitat, and that all construction activities avoid Category 1 WAGS habitat. WAGS surveys will be used to complete final design, facility layout, and micrositing of facility components and IPC will not construct any facility components within areas of Category 1 habitat and will avoid temporary disturbance of Category 1 habitat. Refer to Fish and Wildlife Condition 18, Fish and Wildlife Condition 19, and Threatened and Endangered Species Condition 1 in Exhibit P1 and Exhibit Q, Section 4.0. Accordingly, the Project will avoid impacts to Category 1 habitat consistent with ODFW's Habitat Mitigation Policy, and no compensatory mitigation is required or proposed.

3.1.2 Habitat Categories 2 through 6

ODFW's recommendations or requirements for meeting the mitigation goals for Habitat Categories 2 through 6 provide that the project proponent must consider avoiding impacts to the relevant habitats. However, unlike with Habitat Category 1, strict avoidance is not a requirement in Habitat Categories 2 through 6. Rather, unavoidable impacts to Habitat Categories 2 through 5 may be excused by showing the impacts will be mitigated for, and unavoidable impacts to Habitat Category 6 need only be minimized (see OAR 635-415-00252(2)(b)(B), (3)(b)(B), (4)(b)(B), (5)(b)(B), and (6)(b)). Here, as discussed in Exhibit P1, Section 3.5.6, IPC considered avoidance of sensitive resources related to fish and wildlife habitat during initial routing of the Project. IPC is proposing measures to be implemented during construction and operation that will avoid and minimize impacts to fish and wildlife habitats (see Exhibit P1, Section 3.5.6).

3.2 Minimization

3.2.1 Habitat Categories 2 through 5

ODFW's Habitat Mitigation Policy does not specify that unavoidable impacts to Habitat Categories 2 through 5 must be minimized, in addition to being mitigated. Regardless, the minimization measures that IPC is proposing (Exhibit P1, Section 3.5.6) will be implemented Project-wide and across all habitat categories. Therefore, the measures will minimize impacts to Habitat Categories 2 through 5 even though the Habitat Mitigation Policy does not expressly provide for the same.

3.2.2 Habitat Category 6

ODFW's Habitat Mitigation Policy provides for minimizing impacts to Habitat Category 6 and does not require compensatory mitigation for such impacts (see OAR 635-415-00252(6)(b)). Implementation of the Reclamation and Revegetation Plan (Exhibit P1, Attachment P1-3) will minimize impacts to Habitat Category 6 consistent with ODFW's Habitat Mitigation Policy, and no compensatory mitigation is required or proposed.

3.3 Compensatory Mitigation

For unavoidable impacts to Habitat Categories 2 through 5, compensatory mitigation will be required. The following discussion presents the potential impacts to Habitat Categories 2 through 5 and proposed mitigation projects that could be used to offset the Project impacts.

3.3.1 Quantifying Project Impacts

IPC determined the number of fish and wildlife habitat acres impacted by the Project as follows:

- ***Direct impacts to habitat***: IPC identified habitat types within the Site Boundary consistent with the Habitat Mitigation Policy (see Exhibit P1 and Attachment P1-1). IPC then identified the direct impacts of the Project to each habitat type by calculating the number of acres of each habitat type within the construction and operation footprints. Direct impacts are defined as the impacts that will have an adverse effect upon species habitat or individuals, and that will occur at the same, or in close proximity to, time and place. Direct impacts may be permanent or temporary. Permanent impacts will exist for the entire life of the Project. Temporary impacts are those impacts that will last for a time less than the life of the Project. Here, permanent direct impacts may occur in the form of vegetation clearing at the transmission line, communication stations, and access roads; and direct mortality. Temporary direct impacts may occur in the form of vegetation clearing at construction areas used during construction or retirement. For a more-detailed description of the types of activities considered under direct impacts, see Exhibit P1, Section 3.5.3. The analysis of direct impacts to the habitat types is discussed in more detail below in Section 3.3.1.1, and the resulting impact acres are set forth below in Table 1.
- ***Indirect impacts to elk summer and winter range***: Indirect impacts are defined as the impacts that will have an adverse effect upon fish and wildlife habitat or individuals, and that will occur later in time or in a different place than the Project activities. Indirect impacts may be permanent or temporary. Permanent impacts will exist for the entire life of the Project. Temporary impacts are those impacts that will last for a time less than the life of the Project. In this instance, permanent indirect impacts may occur in the form of habitat fragmentation at the transmission line and access roads. Temporary indirect impacts may occur in the form of noise, traffic, dust, and other nuisances resulting from construction activities at the access roads; and potential invasive species introduction during construction. For a more-detailed description of the types of activities considered under indirect impacts, see Exhibit P1, Section 3.5.4. Consistent with ODFW guidance, IPC did not quantify indirect impacts to fish and wildlife habitat, except with respect to elk and sage-grouse. Exhibit P2 discusses sage-grouse impacts and mitigation. IPC quantified the indirect impacts of the Project to elk summer and winter range based on the methodology and principles set forth in the Elk Mitigation Framework. Indirect impacts are calculated in Exhibit P3 and presented in summary in this Fish and Wildlife HMP.
- ***Impacts to greater sage-grouse***: IPC addresses impacts to sage-grouse in Exhibit P2 and Attachment P2-3.

3.3.1.1 Impacts to Habitat

The location of the Project presented in this application is based on a preliminary design developed in September of 2016. Direct and indirect impacts, both temporary and permanent, to fish and wildlife habitat have been estimated using the preliminary design. IPC will update the estimated impacts contained within this Fish and Wildlife HMP based upon the final design of the Project which will occur after issuance of a site certificate and prior to construction. In the third year of operation, IPC will submit a report to ODOE presenting the final compensatory

mitigation calculations based on the as-constructed footprint of the Project and showing mitigation is commensurate with those final numbers. The report will come in the third year of operation and not sooner, because the elk mitigation calculations are dependent on the post-construction traffic study that will take place during Year 2 of operation.

Direct Impacts to Habitat

Exhibit P1, Section 3.5.2.4 quantifies the direct impacts of the Proposed Route and alternatives by habitat category, habitat type, and impact type (temporary or permanent). Table 1 quantifies the direct impacts of the Proposed Route and alternatives by habitat category, general vegetation type, and impact type. The general vegetation types are groupings of similar habitat types (see Exhibit P1, Attachment P1-1).

In categorizing fish and wildlife habitat pursuant to the ODFW Habitat Mitigation Policy, ODFW directed IPC to overlay the following species-specific habitats on the Site Boundary: WAGS habitat, elk winter and summer range, mule deer (*Odocoileus hemionus*) winter and summer range, and California bighorn sheep (*Ovis canadensis californiana)* herd range (see Exhibit P1, Attachment P1-1, Appendix A). The preceding quantification of direct impacts includes, in part, impacts to those species-specific habitats. However, in many instances, those species-specific habitats overlap with each other—for example, a particular acre may be considered both elk winter range and mule deer winter range. For purposes of quantifying total acres of direct impacts, IPC counted each acre within the construction and operation footprint only once, even though certain acres may include more than one of the relevant species-specific habitats. Even so, Table 2 shows the acres of direct impacts that occur within each species-specific habitat.

Table 1. Estimated Acreage of Temporary and Permanent Direct Impacts by General Vegetation Type

Habitat Category and General Vegetation Type	Proposed Route		West of Bombing Range Road Alternative 1		West of Bombing Range Road Alternative 2		Morgan Lake Alternative		Double Mountain Alternative		Little Juniper Canyon Alternative		True Blue Gulch Alternative		Durbin Quarry Alternative	
	Temp[1]	Perm	Temp	Perm	Temp	Perm	Temp	Perm	Temp	Perm	Temp	Perm	Temp	Perm	Temp	Perm
Category 2																
Agriculture / Developed[2]	95.0	10.6	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Bare Ground	4.0	1.2	–	–	–	–	–	–	2.0	0.5	–	–	0.6	0.0	–	–
Forest / Woodland	8.3	537.4	–	–	–	–	68.1	12.5	–	–	–	–	8.7	1.7	–	–
Open Water / Wetlands	2.0	1.0	–	–	–	–	0.0	0.0	0.0	0.0	–	–	–	–	–	–
Riparian Vegetation	0.6	0.4	–	–	–	–	0.0	0.0	–	–	–	–	–	–	–	–
Shrub / Grassland	2,034.4	356.4	6.3	0.4	6.3	0.4	137.9	19.3	21.9	1.2	4.7	1.4	61.5	13.3	30.7	4.1
Subtotal	*2,144.3*	*896.4*	*6.3*	*0.4*	*6.3*	*0.4*	*206.1*	*31.9*	*23.9*	*1.6*	*4.7*	*1.4*	*70.8*	*15.1*	*30.7*	*14.1*
Category 3																
Agriculture / Developed	10.1	0.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Bare Ground	0.4	0.2	–	–	–	–	–	–	0.1	0.0	–	–	–	–	–	–
Forest / Woodland	22.6	460.6	–	–	–	–	31.4	5.8	–	–	–	–	–	–	–	–
Open Water / Wetlands	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	–	–	–	–	–
Riparian Vegetation	5.5	0.1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Shrub / Grassland	319.9	33.5	0.0	0.0	0.8	0.8	–	–	36.5	3.5	1.9	0.2	–	–	–	–
Subtotal	*358.9*	*495.3*	*0.0*	*0.0*	*0.8*	*0.8*	*31.4*	*5.8*	*36.6*	*3.5*	1.9	0.2	–	–	–	–
Category 4																
Open Water / Wetlands	0.0	0.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Shrub / Grassland	165.3	26.1	4.9	0.7	6.2	1.2	–	–	15.8	2.5	–	–	–	–	–	–
Subtotal	*165.3*	*26.1*	*4.9*	*0.7*	*6.2*	*1.2*	–	–	*15.8*	*2.5*	–	–	–	–	–	–
Category 5																
Forest / Woodland	–	–	–	–	–	–	0.0	0.0	–	–	–	–	–	–	–	–
Shrub / Grassland	329.3	43.3	13.4	2.5	5.7	1.7	–	–	57.3	16.3	–	–	–	–	–	–
Subtotal	*329.3*	*43.3*	*13.4*	*2.5*	*5.7*	*1.7*	–	–	*57.3*	*16.3*	–	–	–	–	–	–
Category 6																
Agriculture / Developed	319.6	265.1	2.3	1.6	1.9	1.5	0.3	15.5	0.1	4.8	7.4	0.9	–	–	0.5	–
Subtotal	*319.6*	*265.1*	*2.3*	*1.6*	*1.9*	*1.5*	*0.3*	*15.5*	*0.1*	*4.8*	*7.4*	*0.9*	–	–	*0.5*	–
TOTAL	**3,317.4**	**1,726.2**	**26.9**	**5.3**	**20.9**	**5.7**	**237.8**	**53.3**	**133.7**	**28.8**	**14.0**	**2.5**	**70.8**	**15.1**	**31.2**	**4.1**

[1] Temporary impacts will be reclaimed as described in Exhibit P1, Attachment P1-3, Reclamation and Revegetation Plan.
[2] The Category 2 Agriculture / Developed general vegetation type includes areas that appear to be in CRP within elk or mule deer winter range.
0.0 = less than 0.05 acre; – = 0.

Table 2. Estimated Acreage of Direct Impacts within Wildlife Habitat Layers

Wildlife Habitat Layer[1]	Habitat Category	Acres of Impact							
		Proposed Route	West of Bombing Range Road Alt. 1	West of Bombing Range Road Alt. 2	Morgan Lake Alternative	Double Mountain Alternative	Little Juniper Canyon Alternative	True Blue Gulch Alternative	Durbin Quarry Alternative
WAGS Habitat	2	22.7	6.7	6.7	–	–	6.1	–	–
Elk Winter Range	2	437.0	–	–	89.6	–	–	43.8	14.9
Elk Summer Range	3	142.2	–	–	61.3	–	–	45.5	–
Mule Deer Winter Range	2	3,022.5	–	–	235.2	25.6	–	85.9	34.8
Mule Deer Summer Range	3	915.8	–	–	100.3	–	–	84.6	–
California Bighorn Sheep Herd Range	2	15.8	–	–	–	–	–	–	–

[1] Habitat layers overlap each other; therefore, acres of impact between habitat layers should not be added together.
Note: – = 0

Indirect Impacts to Habitat

Indirect impacts to fish and wildlife habitat will occur during construction and operation of the Project as described in Exhibits P1 and P3. The nature and extent of indirect impacts varies depending on the species and habitat being affected. There is no guidance on quantifying indirect impacts to fish and wildlife species or their habitat, other than for elk (see Exhibit P3) and sage-grouse (see Exhibit P2). Further, ODFW has advised IPC that ODFW does not require compensatory mitigation for indirect impacts to habitat beyond such impacts to elk habitat and sage-grouse habitat. Therefore, compensatory mitigation for indirect impacts is required only for elk habitat and sage-grouse habitat to meet the goals and objectives of ODFW's Habitat Mitigation Policy. IPC is only proposing compensatory mitigation for indirect impacts to elk habitat within this HMP. Compensatory mitigation for indirect impacts to sage-grouse is presented in Exhibit P2, Attachment P2-3.

3.3.1.2 Impacts to Elk Summer and Winter Range

Direct Impacts to Elk Summer and Winter Range

Direct impacts to elk summer and winter range are included in the direct impacts set forth above in Section 3.3.1.1, Table 2.

Indirect Impacts to Elk Summer and Winter Range

The description and quantification of indirect impacts to elk are detailed in Exhibit P3, Section 3.5.4. For the Proposed Route, indirect impacts to summer range total 5.6 acres and indirect impacts to winter range total 428.0 acres. For the Morgan Lake Alternative, indirect impacts to summer range total 152.7 acres and indirect impacts to winter range total 175.8 acres.

3.3.1.3 Direct and Indirect Impact Summary

Approximately 5,052 acres of Category 2 through Category 6 habitat will be directly affected during construction of the Proposed Route and approximately 434 acres of elk habitat will be indirectly affected due to anticipated traffic increases from new and improved roads associated with the Proposed Route. These disturbances will occur over 270.8 miles of transmission line, crossing five counties in Oregon. The Project crosses four Level III ecoregions: the Columbia Plateau, the Blue Mountains, the Snake River Plain, and the Northern Basin and Range (EPA 2011).

Summarizing impacts within an ecoregional framework will assist in describing potential mitigation (Section 4.2) and accounting for mitigation debits and credits (Section 4.3). For purposes of this Fish and Wildlife HMP, the boundaries of the four ecoregions crossed by the Project are modified slightly and referred to as mitigation zones (MZ) (Figure 1). Mitigation Zone 1 (MZ1) corresponds to the Columbia Plateau ecoregion. MZ2 corresponds to the Blue Mountain ecoregion, without its Continental Zone Foothills Level IV ecoregion. MZ3 combines the Snake River Plain, Northern Basin and Range, and the Continental Zone Foothills of the Blue Mountains ecoregion into a single zone. This was done to group the mitigation debits and credits from the shrub/grassland vegetation type within the Baker, Keating, and Durkee valleys with those in the Northern Basin and Range and Snake River Plain.

Impacts are summarized for the Proposed Route only. The two West of Bombing Range Road alternatives and Little Juniper Canyon Alternative are in MZ1, the Morgan Lake Alternative is in MZ2, and the True Blue Gulch Alternative, Durbin Quarry Alternative, and Double Mountain Alternative are in MZ3. Since each of the alternatives is wholly contained within an MZ, Table 1 and Table 2 above can be referenced for direct impacts. Section 3.3.1.2 quantifies the indirect impacts on elk habitat associated with the Morgan Lake alternative contained within MZ2.

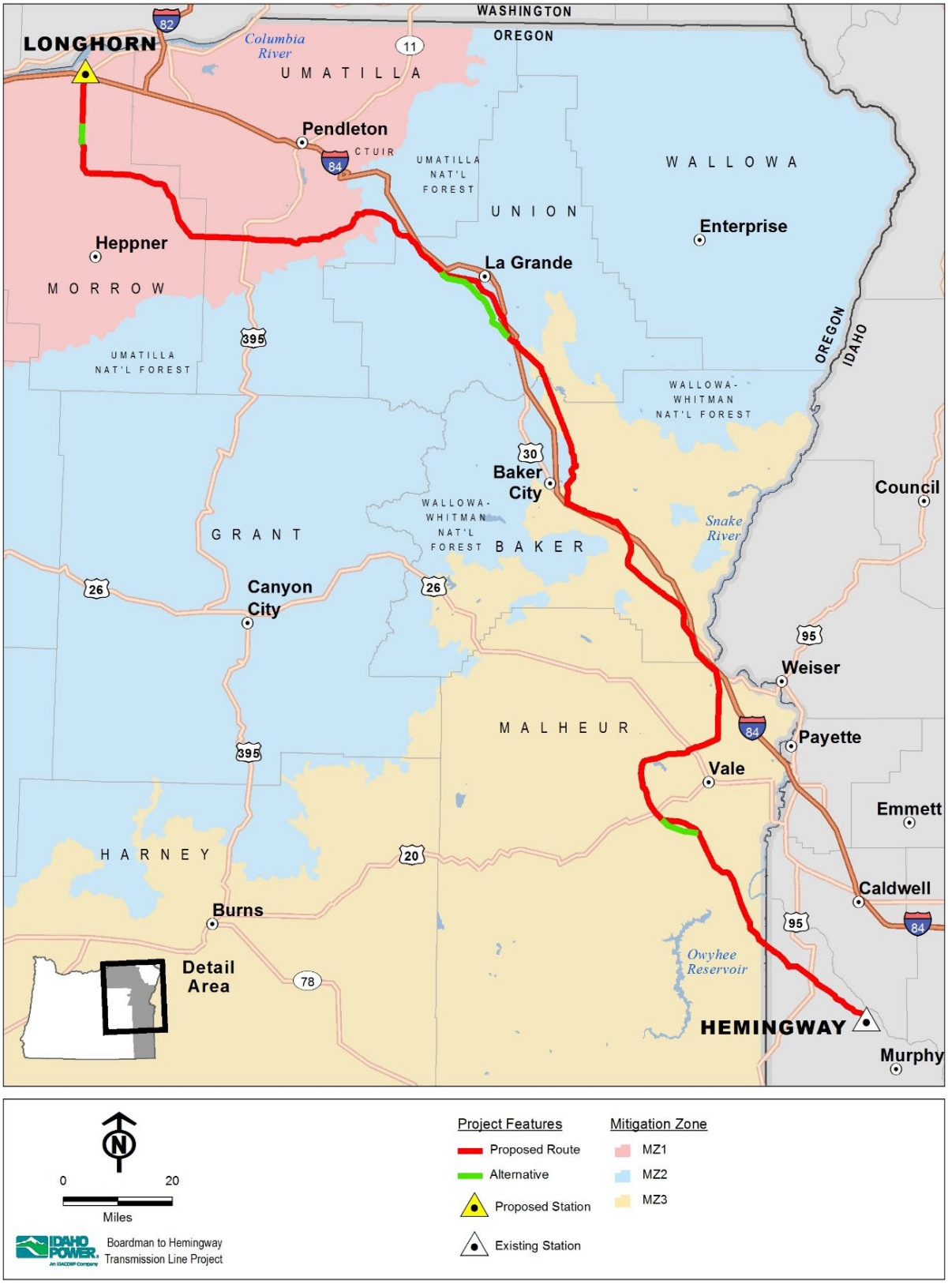

Figure 1. Mitigation Zones

MZ1 Impacts

MZ1 encompasses the northern portion of the Proposed Route from the Longhorn Station, through the Naval Weapons System Training Facility Boardman, east from Morrow County into Umatilla County, across highway 395 and into the foothills of the Blue Mountains south and east of Pilot Rock, Oregon. Approximately 1,173 acres of direct impacts and 0 acres of indirect impacts are anticipated within MZ1, with a majority of impacts occurring within agriculture/ developed and shrub/grassland general vegetation types (Table 3). Impacts on the shrub/grassland general vegetation type occur mostly within the introduced upland vegetation and native grassland habitat types, with fewer impacts occurring in shrubland habitat types. The impact acreage in MZ1 originates from the proposed construction of 60 miles of existing roads requiring substantial modification, 66.9 miles of new roads, 336 tower structures to support 77.6 miles of transmission line, and 13 multi-use areas.

Table 3. Direct and Indirect Impacts from the Proposed Route on General Vegetation Types by ODFW Habitat Categories in MZ1

General Vegetation Type	ODFW Habitat Categories (acres)					Total	*General Veg. Type Subtotal Temporary*	*General Veg. Type Subtotal Permanent*
	2	3	4	5	6			
Direct Impacts								
Agriculture/ Developed	105.6	10.9	–	–	299.1	**415.6**	***306.2***	***109.4***
Forest/ Woodland	7.6	–	–	–	–	**7.6**	**–**	***7.6***
Open Water/ Wetlands	0.5	0.0	–	–	–	**0.5**	***0.3***	***0.2***
Riparian Vegetation	0.5	0.1	–	–	–	**0.6**	***0.4***	***0.2***
Shrub/ Grassland	619.1	20.8	19.2	113.8	-	**772.9**	***654.5***	***118.4***
Indirect Impacts								
Impact Area[1]	–	–	–	–	–	**–**	**–**	**–**
Totals								
Total	**734.1**	**31.8**	**19.2**	**113.8**	**299.1**	**1,198.0**	***962.2***	***235.9***
Category Subtotal Temporary	***620.8***	***25.7***	***15.8***	***98.8***	***201.1***	***962.2***	–	–
Category Subtotal Permanent	***113.3***	***6.1***	***3.5***	***15.0***	***98.0***	***235.9***	–	–

[1]The vegetation composition of the indirect impact area in elk summer and winter range has not been attributed at this time. Currently, no indirect impacts to elk summer or winter range have been identified within MZ1.
Note: 0.0 = less than 0.05 acre; – = 0

Within MZ1, impacts overlap with habitat for WAGS, elk, and mule deer. Table 4 identifies the acreage of each wildlife habitat layer within MZ1 that will be affected by the Proposed Route. MZ1 contains all of the Project's impacts on WAGS habitat.

Table 4. Direct and Indirect Impacts from the Proposed Route on Wildlife Habitat in MZ1

Wildlife Habitat Layer[1]	Habitat Category	Impact Type			*Total*
		Temp	Perm	Indirect	
WAGS	2	19.9	2.8	–	***22.7***
Elk winter range	2	54.6	8.5	–	***63.2***
Elk summer range	3	20.4	2.8	–	***23.2***
Mule deer winter range	2	600.3	109.7	–	***710.0***
Mule deer summer range	3	–	–	–	**–**

[1] Habitat layers overlap each other; therefore, acres of impact between habitat layers should not be added together.
Note: – = 0

MZ2 Impacts

MZ2 encompasses the central portion of the Proposed Route from the foothills of the Blue Mountains east of Pilot Rock, Oregon, from Umatilla County across the Blue Mountains into Union County past La Grande, Oregon, to where the Project crosses Interstate 84 near Ladd Canyon and Craig Mountain in the Clover Creek Valley area. Approximately 1,453 acres of direct impacts and 6.3 acres of indirect impacts are anticipated within MZ2, with a majority of impacts occurring within forest/woodland and shrub/grassland general vegetation types (Table 5). Impacts on the forest/woodland general vegetation type occur mostly within the Douglas-fir / mixed grand fir habitat type, as well as ponderosa pine habitat type. A 250-foot-wide corridor around the centerline is assumed to be a permanent disturbance to the forest/woodland general vegetation type within MZ2 because of the vegetation management that will occur under the line. To keep vegetation clear of the conductors, a 250-foot-wide area will be treated and maintained such that a forest/woodland vegetation type cannot reestablish. This is reflected by the greater amount of permanent impacts than temporary impacts to forest/woodland in MZ2. Impacts on shrub/grassland general vegetation type occur mostly within the native grassland and shrub-steppe habitat types. The impact acreage in MZ2 originates from the proposed construction of 42 miles of existing roads requiring substantial modification, 20.4 miles of new roads, 217 tower structures to support 49.6 miles of transmission line, and 9 multi-use areas.

Table 5. Direct and Indirect Impacts from the Proposed Route on General Vegetation Types by ODFW Habitat Categories in MZ2

General Vegetation Type	ODFW Habitat Categories (acres)						Total	*General Veg Type Subtotal Temporary*	*General Veg Type Subtotal Permanent*
	1	2	3	4	5	6			
Direct Impacts									
Agriculture/ Developed	–	–	–	–	–	101.2	**101.2**	***59.5***	***41.6***
Bare Ground	–	–	–	–	–	–	**–**	**–**	**–**
Forest/ Woodland	–	391.1	483.2	–	–	–	**874.3**	***30.2***	***844.2***
Shrub/ Grassland	–	191.0	164.6	15.4	12.6	–	**383.6**	***348.6***	***35.0***
Open Water/ Wetlands	–	26.1	0.2	0.0	–	–	**26.3**	***25.9***	***0.4***
Riparian	–	0.0	5.4	–	–	–	**5.4**	***5.4***	***0.1***

General Vegetation Type	ODFW Habitat Categories (acres)						Total	*General Veg Type Subtotal Temporary*	*General Veg Type Subtotal Permanent*
	1	2	3	4	5	6			
Vegetation									
Indirect Impacts									
Impact Area[1]	–	**–**	6.3	**–**	**–**	**–**	***6.3***	**–**	***6.3***
Totals									
Total	–	**608.2**	**659.7**	**15.4**	**12.6**	**101.2**	**1,397.1**	***469.6***	***927.6***
Category Subtotal Temporary	–	***202.2***	***183.7***	***12.5***	***11.6***	***59.5***	***469.6***	**–**	**–**
Category Subtotal Permanent	–	***406.1***	***476.0***	***2.9***	***1.1***	***41.6***	***927.6***	**–**	**–**

[1]The vegetation composition of the indirect impact area in elk summer and winter range has not been attributed at this time.
Note: 0.0 = less than 0.05 acre; – = 0.

Within MZ2, impacts overlap with habitat for elk and mule deer. Table 6 identifies the acreage of each wildlife habitat layer within MZ2 that will be affected by the Proposed Route. Table 6 includes the indirect impacts within elk winter range and elk summer range. Elk and deer seasonal ranges cover a vast majority of the impacts from the Proposed Route that occur within MZ2, speaking to the importance of this zone to big game species.

Table 6. Direct and Indirect Impacts from the Proposed Route on Wildlife Habitat in MZ2

Wildlife Habitat Layer[1]	Habitat Category	Impact Type			*Total*
		Temp	Perm	Indirect	
Elk winter range	2	86.9	140.1	–	***227.0***
Elk summer range	3	29.8	89.5	6.3	***125.6***
Mule deer winter range	2	172.5	404.5	–	***577.0***
Mule deer summer range	3	188.0	507.1	–	***695.1***

[1] Habitat layers overlap each other; therefore, acres of impact between habitat layers should not be added together.
Note: – = 0

MZ3 Impacts

MZ3 encompasses the southern portion of the Proposed Route, from south of Ladd Canyon and Craig Mountain in the Clover Creek Valley area, across the Union/Baker county line, east of the Baker Valley across the Burnt River Canyon towards Huntington, Oregon and the remainder of the Project area in Malheur County. MZ3 is the largest mitigation zone and is where most of the Project's direct impacts occur. Approximately 2,642 acres of direct impacts and 432.7 acres of indirect impacts are anticipated within MZ3, with a vast majority of impacts occurring within the shrub/grassland general vegetation type (Table 7). Impacts on the shrub/grassland general vegetation type occur mostly within the shrub-steppe with big sage and introduced upland vegetation habitat types, with fewer impacts in native grassland and other shrub habitat types. The impact acreage in MZ3 originates from the proposed construction of 121.2 miles of existing roads requiring substantial modification, 118.9 miles of new roads, 635 tower structures to support 145.4 miles of transmission line, and 22 multi-use areas.

Table 7. Direct and Indirect Impacts from the Proposed Route on General Vegetation Types by ODFW Habitat Categories in MZ3

General Vegetation Type	ODFW Habitat Categories (acres)						Total	General Veg Type Subtotal Temporary	General Veg Type Subtotal Permanent
	1	2	3	4	5	6			
Direct Impacts									
Agriculture/ Developed	–	–	–	–	–	184.5	**184.5**	***59.1***	***125.5***
Bare Ground	–	5.1	0.5	–	–	–	**5.6**	***4.3***	***1.3***
Forest/ Woodland	–	147.0	–	–	–	–	**147.0**	***0.8***	***146.2***
Shrub/ Grassland	–	1,580.6	168.0	156.8	246.1	–	**2,151.5**	***1,845.8***	***305.9***
Open Water/ Wetlands	–	3.0	0.3	0.0	–	–	**3.3**	***2.3***	***1.1***
Riparian Vegetation	–	0.5	0.0	–	–	–	**0.5**	***0.3***	***0.2***
Indirect Impacts									
Impact Area[1]	–	427.3	–	–	–	–	**427.3**	**–**	***427.3***
Totals									
Total	–	**2,158.5**	**168.8**	**156.8**	**246.1**	**184.5**	2,914.7	***1,912.6***	***1,007.5***
Category Subtotal Temporary	**–**	***1,348.0***	***149.4***	***137.1***	***219.0***	***59.1***	***1,912.6***	–	–
Category Subtotal Permanent	**–**	***815.5***	***19.4***	***19.7***	***27.2***	***125.5***	***1,007.5***	–	–

[1] The vegetation composition of the indirect impact area in elk summer and winter range has not been attributed at this time.
Note: 0.0 = less than 0.05 acre; – = 0

Within MZ3, impacts overlap with habitat for elk, mule deer, and California bighorn sheep. Table 8 identifies the acreage of impacts to each wildlife habitat layer within MZ3 that will be affected by the Proposed Route. Table 8 includes the indirect impacts within elk winter range and elk summer range. The East Beulah Management Unit is managed by ODFW as an elk de-emphasis area and occurs within MZ3. Project impacts' habitat categories are not modified by overlap with elk winter and summer range within the de-emphasis area.

Table 8. Direct and Indirect Impacts from the Proposed Route on Wildlife Habitat in MZ3

Wildlife Habitat Layer[1]	Habitat Category	Impact Type			*Total*
		Temp	Perm	Indirect	
Elk winter range	2	106.2	35.9	427.3	***569.4***
Elk summer range	3	–	–	–	**–**
Mule deer winter range	2	1,347.4	388.0	–	***1,735.4***
Mule deer summer range	3	115.5	105.2	–	***220.7***
California Bighorn Sheep Herd Range	2	1.6	14.2	–	***15.8***

[1] Habitat layers overlap each other; therefore, acres of impact between habitat layers should not be added together.
Note: – = 0

3.3.2 Calculating Debits

Permanent impacts will be mitigated through the restoration, establishment, enhancement, and/or preservation of similar habitat. Table 9 outlines the approach to calculating the mitigation debit accrued from permanent impacts.

Table 9. Accounting for Mitigation Debit for Permanent Direct Impacts

Habitat	Impact Acres	Mitigation Debit	Mitigation Explanation
Category 2	1	>1	The mitigation goal for Category 2 habitat is "no net loss" and "net benefit." Accordingly, mitigation for permanent impacts on Category 2 habitat needs to demonstrate a net benefit in quality or quantity. Mitigation debits are accrued at a greater amount of acreage than what is impacted by the Project.
Category 3 & Category 4	1	1	The mitigation goal for Category 3 & 4 habitat is "no net loss" in quantity or quality. Mitigation debits are accrued at an equal amount of acreage to what is impacted by the Project.
Category 5	1	<1	The mitigation goal for Category 5 habitat is a "net benefit in habitat quantity or quality." Mitigation debits are accrued at a lesser amount (but greater than zero) of acreage than what is impacted by the Project; however, mitigation actions performed to offset the Category 5 debits will be improving the quality of Category 2, 3, or 4 habitats and result in a net benefit to quality.
Category 6	1	0	The mitigation goal for impacts on Category 6 habitat is minimization; no compensatory mitigation proposed. A majority of impacts on Category 6 habitat occurs within agricultural areas. IPC has prepared an Agricultural Impacts Mitigation Plan (Exhibit K, Attachment K-1) to address these impacts.

Temporary impacts will be restored during reclamation. IPC plans for reclamation to be successful. IPC will mitigate beyond reclamation for temporary impacts on Category 2 habitat to meet the net benefit requirement. IPC is also proposing to mitigate beyond reclamation for the temporal loss of Category 2, 3, and 4 habitat functionality that occurs from temporary impacts during recovery of habitat. Table 10 outlines the approach to calculating the mitigation debit accrued from temporary impacts.

Table 10. Accounting for Mitigation Debit for Temporary Direct Impacts

Habitat	Impact Acres	Mitigation Debit	Mitigation Explanation
Category 2	1	>1	The mitigation goal for Category 2 habitat is "no net loss" and "net benefit." Accordingly, mitigation for temporary impacts on Category 2 habitat needs to demonstrate a net benefit in quality or quantity. Mitigation debits are accrued at a greater amount of acreage than what is impacted by the Project. All areas of temporary disturbance will be revegetated at the site of impact. Mitigation debits are accrued to meet the "net benefit" requirement and to account for the temporal loss of habitat function during reclamation.
Category 3 & Category 4	1	<1	The mitigation goal for Category 3 & 4 habitat is "no net loss" in quantity or quality. Mitigation debits are accrued at a lesser amount (but greater than 0) of acreage than what is impacted by the Project. All areas of temporary disturbance will be revegetated at the site of impact. Mitigation debits are accrued to account for the temporal loss of habitat function during reclamation.
Category 5	1	0	The mitigation goal for Category 5 habitat is a "net benefit in habitat quantity or quality." IPC assumes that reclamation activities will result in a higher functioning habitat and therefore be a "net benefit" in habitat quality for all temporary impacts on Category 5 habitat; therefore, no mitigation debits are accrued.
Category 6	1	0	The mitigation goal for Category 6 habitat is minimization; no mitigation debits are accrued. A majority of impacts on Category 6 habitat occurs within agricultural areas. IPC has prepared an Agricultural Impacts Mitigation Plan (Exhibit K, Attachment K-1) to address these impacts.

Indirect impacts on elk winter range, a Category 2 habitat, and elk summer range, a Category 3 habitat, will be mitigated similar to permanent impacts. Table 11 outlines the approach to calculating the mitigation debit accrued from indirect impacts. The elk and deer habitat layers contain significant overlap, so the mitigation debits accrued for each should not be considered additive. Section 3.3.4.3 includes a discussion on how the wildlife habitat layer overlap may be addressed in the accounting process.

Table 11. Accounting for Mitigation Debit for Indirect Impacts

Habitat	Impact Acres	Mitigation Debit	Mitigation Explanation
Elk winter range Category 2	1	>1	The mitigation goal for Category 2 habitat is "no net loss" and "net benefit." Accordingly, mitigation for impacts on Category 2 habitat needs to demonstrate a net benefit in quality or quantity. Mitigation debits are accrued at a greater amount of acreage than what is impacted by the Project.
Elk summer range Category 3	1	1	The mitigation goal for Category 3 habitat is "no net loss" in quantity or quality. Mitigation debits are accrued at an equal amount of acreage to that impacted by the Project.

3.3.3 Purchasing Credits

IPC proposes offsetting fish and wildlife habitat impacts by either purchasing credits or conducting its own compensatory mitigation projects. With respect to purchasing credits, IPC proposes that it may do so through one or both of the following mechanisms:

- **Mitigation Banking**. Purchasing mitigation credits from mitigation banks to address Project impacts where available; no mitigation banks are currently available within the mitigation service area. In the event that a habitat mitigation bank becomes available within the mitigation service area, IPC would seek to accomplish all or part of its mitigation for the Project by participation in the bank.
- **In-Lieu Fee (ILF)**. Fees paid to an approved ILF sponsor which are then used to develop an on the ground mitigation project within a certain time period. IPC is not aware of any ILF sponsors within the Project's mitigation service area. In the event that an ILF sponsor becomes available within the mitigation service area, IPC would seek to accomplish all or part of its mitigation for the Project by participation through an ILF sponsor.

3.3.4 Creating Credits through Mitigation Projects

If IPC creates credits through a mitigation project or projects rather than purchase all of the required credits, IPC will secure the necessary mitigation sites prior to commencing construction on the Project. In this section, IPC describes the mitigation site selection process, the mitigation credit score assessment approach, the standards for each mitigation project, and the documentation and verification processes for the mitigation projects. In Appendix A, IPC provides a desktop analysis of certain potential mitigation sites that currently are on the market, demonstrating there are mitigation site opportunities sufficient to meet the needs of the Project.

3.3.4.1 Mitigation Project Standards

Mitigation Zones and Service Area

Because the Project crosses multiple habitat types and habitat categories, mitigation will need to occur at multiple locations. The mitigation zones and the mitigation service area[1] were developed to support mitigation planning. As an example, for impacts to the shrub/grasslands general vegetation type within MZ3, IPC will make every effort to identify mitigation within the portion of the service area that is within MZ3 that provides uplift to the shrub/grasslands general vegetation type. Following this approach will simplify the presentation of and accounting for potential mitigation. It may not be possible or necessary to mitigate for all impacts within a MZ with mitigation actions within that same MZ and it may not be possible or necessary to locate all mitigation actions within the mitigation service area (for instance, mitigation for impacts to Category 4 and Category 5 habitat can be located off-proximity).

Bare Ground General Vegetation Habitat

IPC will not seek out specific mitigation opportunities for the bare ground general vegetation type. The bare ground general vegetation type is made up of features that are typically found within the shrub/grassland and forest/woodland general vegetation types; such as rock outcrops, scree slopes, cliffs or canyons, and bare soil. Proposed mitigation of shrub/grassland

[1] The mitigation service area consists of the subbasins (i.e., hydrologic unit boundary 8) in Oregon that are crossed by the Project. See discussion in Section 4.1.1 for a list of subbasins crossed.

and forest/woodland general vegetation types will contain features that are part of the bare ground general vegetation type. Mitigation actions that provide ecological uplift to shrub/grassland and forest/woodland general vegetation types will provide a benefit to those species that utilize bare ground. Bare ground is found within most of the potential mitigation that IPC has identified to date (Appendix A).

Agriculture/Developed Habitat

To address mitigation for areas identified as agriculture/developed, IPC has prepared an Agricultural Impacts Mitigation Plan (Exhibit K, Attachment K-1). Impacts on agricultural habitats presented in this Fish and Wildlife HMP did not consider the methods used to assess impacts on agricultural land in Exhibit K.

Agency Input

IPC has requested input from the following federal, state, and local agencies regarding potential mitigation actions and areas within the mitigation service area. The agencies and organizations that have been or will be contacted include:

- BLM Vale, Oregon Field Office
- BLM Idaho State Office
- Wallowa-Whitman National Forest
- ODFW, La Grande Field Office,
- Idaho Department of Fish and Game
- Natural Resources Conservation Service
- Grande Ronde Model Watershed
- Various Rural Fire Protection Districts that occur along the Project
- Various land trusts
- Private individuals

IPC has worked closely with ODFW to identify potential mitigation for consideration in this Plan. IPC will continue to work with all the listed agencies and organizations as mitigation continues to be developed.

Conservation Actions

Credits may be generated by a combination of the following types of conservation actions:

- **Enhancement**: Measures that increase the quantity and/or quality of fish and wildlife habitat and are aimed at transitioning an area of habitat from a less than desirable state to something more desirable. Appropriate enhancement measures may vary among sites, depending on the initial and desired states of a site.
- **Avoided loss**: Measures that prevent undesirable state changes in areas that are at a demonstrated risk of degradation from threats such as development, wildfire, and invasive species. Depending on the current and anticipated future threats at a given site, appropriate avoided loss activities may include legal protection, fire prevention, and management of invasive species. Avoided loss is not being proposed as a stand-alone mitigation action; it will be considered alongside enhancement actions.

Specific conservation actions will be developed upon identification of a mitigation site and formal valuation of site conditions and possible habitat improvement measures. Table 12 below includes a preliminary list of potential conservation actions that IPC might apply to its mitigation projects.

Further, IPC will continue to seek out mitigation opportunities that would fund private, state, or federal programs and/or projects that would not necessarily involve a land acquisition component. IPC will work with the stakeholders to identify any unfunded or underfunded projects that could benefit from additional funding sources, as well as determining how much mitigation credit each of these projects will represent to the Project. These types of mitigation must remain functional and legally protected through the duration of impacts being mitigated and cannot include programs that have sufficient funding now or are likely to have sufficient funding in the future.

Table 12. Other Potential Mitigation Actions

Mitigation Action	Habitat Benefit	General Vegetation Type[1]	MZ	Size (acres)
Road Closure or Decommissioning	Reduces chronic sediment delivery to riparian areas, reduces potential of human caused fire and invasive species introduction	All	Unknown	Unknown
Stream Habitat Enhancement	Improve water quality, and fish and riparian wildlife habitat	Open Water/Wetlands	Unknown	Unknown
Culvert Removal / Replacement	Improve water quality and aquatic species passage	Open Water/Wetlands	Unknown	Unknown
Upland Habitat Enhancement	Multiple benefits	Shrub/Grassland Forest/Woodland	Unknown	Unknown
Juniper Removal	Improve/restore native grassland and shrub-steppe habitats, improve sage-grouse habitat	Shrub/Grassland	Unknown	Unknown
Fence Removal / Marking	Reduce wildlife collisions	Shrub/Grassland	Unknown	Unknown
Boardman Conservation Area	Preservation and enhancement of native grasslands, WAGS habitat	Shrub/Grassland	MZ1	22,642

3.3.4.2 Mitigation Project Documentation

Mitigation Management Plan

For each habitat mitigation site (mitigation site), IPC will produce a site-specific Mitigation Management Plan that identifies the extent, type, and description of all proposed conservation actions, including the following:

- **Introduction and background** – mitigation site name, date acquired, time period covered by the management plan, plan preparer, mitigation site manager and technical staff, mitigation site size, location, access, and adjacent land use. Also describe the purpose of the mitigation site and how it relates, if at all, with other mitigation properties or existing agency management areas.

- **Mitigation Durability** – description of the management, legal protection, and financial assurances that ensure the mitigation will be in place and effective for the intended duration. The mitigation duration should be commensurate with the duration of the impact, which can range from 3 to 5 years through the Project life.[2]
- **Baseline Ecological Setting** – vegetation mapping via field visit or some combination of remote classification and field verification, wildlife species that are likely to be present, mapped soil types, and a description of hydrologic features and current water rights and usage. Invasive species and noxious weed locations should also be identified and discussed.
- **Proposed Mitigation Goals and Actions** – description of the desired future condition for each habitat type. Describe the mitigation actions and operation and maintenance activities being proposed to achieve the desired future condition (juniper removal, seeding, noxious weed treatment, land management change).
- **Effectiveness** - proposed mitigation actions should be effective or reasonably likely to deliver expected conservation benefits. Mitigation actions should follow reliable methods. Reliable mitigation methods, meaning "a mitigation method that has been tested in areas with site factors similar to the area proposed for mitigation and that has been found (e.g., through field trials, demonstration projects or scientific studies) to produce the habitat effects required to meet the mitigation goal for that action." OAR 635-415-0005(29). The mitigation methods should be clearly stated or included by reference.
- **Monitoring and Performance Measures** – description of monitoring procedures (including baseline data collection), timeframes, and success criteria. Monitoring plans will incorporate standard monitoring procedures, timeframes, and success criteria. The purpose of the monitoring plans will depend on the mitigation action, but in general they will address long-term project monitoring, corrective actions, and maintenance responsibilities, if apple, including performance objectives, methods for measuring effectiveness/success, reporting requirements, funding source, and responsible parties. IPC will implement monitoring efforts as soon as is reasonable depending on the mitigation action being implemented. Monitoring efforts will occur at appropriate intervals for each individual mitigation action for the life of the Project. Below are some examples of generalized monitoring schedules and success criteria. Inclusion of these examples does not commit IPC to following them during implementation of mitigation.
  - **Monitoring:** Monitoring will occur annually until success criteria are met. Annual reports will be supplied to agencies for review. If the mitigation is not trending towards the defined success criteria within the first 3-5 years, adaptive management strategies will be implemented. Long-term monitoring and reporting will occur at 5 to 10 year intervals after success criteria are met.
  - **Performance Measures:** performance measures are typically very specific to the mitigation site where actions are being applied and the desired outcomes determined in consultation with a permitting agency. However, the following is a non-specific list of examples.
    - Native grass establishment with greater than 25 percent total canopy cover with 60 percent of the plant cover from planted species within 4 years.

[2] Under OAR 635-415-0005(27), "Project life" means "the period of time during which a development action is subject to regulation by local, state or federal agencies." For the B2H Project, that period will be continuously until the facility site is restored and the site certificate is terminated in accordance with OAR 345-027-0110.

  - Increase in density or cover of desirable native species.
  - Increase in desirable perennial plants over five years.
  - Elimination of noxious weeds or other undesirable plant species or reduced to a level that does not interfere with mitigation goals.
  - 20 to 40 percent of planted sagebrush seedlings survey after the third growing season following planting.
  - Site is trending toward its ecological site description over five years.
  - Juniper is removed form a site and long-term treatment maintains the absence of juniper trees.
  - Natural recruitment of sagebrush is occurring.
  - Successful establishment of important shrub species for big game winter range.
  - Demonstrate effectiveness in excluding livestock from and allowing big game access to the mitigation site.
  - Demonstrate effectiveness of new water source in providing water.
  - Demonstrate effectiveness in reducing erosion.
  - The conditions on the rest of the mitigation site do not pose a threat to maintaining the habitat quality where mitigation actions have improved habitat.
  - Fencing has been properly constructed and continues to be effective.
  - Traffic volume is reduced through access control device or road decommissioning.
- **Management Restriction and Prohibitions** – if the mitigation site is a conservation easement, describe landowner reserved rights and when, where, how much, and how those rights are managed. Define each prohibited use and explain any exceptions. Describe any findings from the Phase I environmental site assessment that may affect management.
- **Other Management Actions** – water usage and water rights management, infrastructure management, proposed access control, describe existing access rights or easements, and protection of historical resources.
- **Adaptive Management** – describe potential issues that could delay or eliminate the mitigation site from achieving mitigation goals and provide a framework process to address the issues.
- **Reporting** – list all reporting requirements for baseline, mitigation monitoring, and general management reports.
- **Appendices** – include all pertinent supporting information (mining permits, water rights certificates, access easements, previous baseline studies, etc.)

Legal Protections and Financial Assurances

Mitigation projects must be durable—that is, the period of time that mitigation is effective must be commensurate with the duration of the impacts being offset. Demonstrating project durability requires that legal protections be put in place to ensure the mitigation project benefits are not disturbed for the life of the credits. Legal protection may be demonstrated through term or permanent conservation easements or through other tools ensuring the protections will last for the duration of the impacts.

Financial assurances must be in place to ensure appropriate management will occur throughout the life of the credits. Funding for site management may occur through various mechanisms, provided they ensure management will persist throughout the life of the mitigation project.

Each Mitigation Management Plan will either include or reference all of the documentation of legal protections and financial assurances.

3.3.4.3 Calculating Credits

IPC will accrue one credit for one acre of habitat acquired or put into easement. For instance, if a 100-acre mitigation site is acquired, IPC would receive 100 credits once certain success criteria are met for the mitigation site. The type and area of ecological uplift actions necessary to meet success criteria and secure mitigation credits will be determined on a site-specific basis. However, IPC assumes that mitigation actions may occur on a portion, but not the entirety, of the mitigation site. That is, IPC does not need to conduct mitigation actions on all 100 acres of the mitigation site to receive 100 credits.

IPC will account for the location (MZ), general vegetation type, wildlife habitat layer, and habitat category when evaluating mitigation sites against the mitigation debit balance. IPC may need to account at the habitat type level instead of the general vegetation type level, such as to ensure adequate credits are developed in habitat types with a big sagebrush component to account for mitigation debits accrued within big sagebrush habitat types. The habitat type and category attributed to acres within each mitigation site will follow the same methodology performed to attribute Project impacts (Exhibit P1, Attachment P1-1).

The mitigation sites included in Appendix A have had a desktop assessment performed that identified habitat types and habitat categories within the mitigation site. Most of the mitigation sites in Appendix A were selected by IPC with input from ODFW because of their overlap with the wildlife habitat layers used to attribute habitat categories to Project impacts. Therefore, a vast majority of the available mitigation credits within the mitigation sites occurs within Category 2 and Category 3 habitats.

Stacking

In calculating credits accrued by a mitigation site, IPC will provide for “stacking” of habitat credit requirements (FWS 2014). Credit stacking occurs where more than one resource or credit type occurs on spatially overlapping areas. Here, IPC must offset Project impacts to habitat types (Table 1), WAGS habitat, elk winter and summer range, mule deer winter and summer range, California bighorn sheep herd range (Table 2), and sage-grouse (Exhibit P2 and Attachment P2-3). To the extent a mitigation site includes an area comprising more than one of those habitats, IPC will receive credit towards each of the habitats. For example, a single credit may satisfy compensatory mitigation needs on an impact site where elk winter range and mule deer winter range overlap. IPC may propose mitigation that enhances one acre of habitat that is within elk winter range and mule deer winter range that would count as 1 credit against the total debits for both elk winter range and mule deer winter range as well as the total debits for Category 2 habitat. Within the geographical information system used to maintain the project impacts and resulting habitat categorization of those impacts, IPC is able to identify how much wildlife habitat overlap occurs on each acre impacted and the types of habitat overlapping.

3.3.4.4 Verification

Monitoring conducted at reclamation sites related to temporarily disturbed areas, and the associated annual reports to the applicable agencies, are discussed in IPC’s Reclamation and Revegetation Plan (Exhibit P1, Attachment P1-3). The following discussion addresses monitoring related to mitigation sites. Mitigation site monitoring is also part of the Mitigation Management Plan discussed in Section 3.3.4.2.

Performance Measures

The criteria used to measure success will depend on the extent of impacts and the final mitigation strategy (e.g., success criteria could be different if mitigation is conducted through payments to a conservation bank as opposed to permittee-responsible mitigation sites). The criteria used to measure mitigation success will be site-specific, will depend on the goals and objectives of the mitigation site, and will need to be developed for each individual mitigation site prior to the onset of mitigation efforts.

Reporting

IPC will document the progress of mitigation efforts to applicable federal and state-management agencies in a progress report that will be provided following the periodic monitoring surveys. These reports will also contain recommendations from IPC regarding any additional remedial actions that may be necessary. It is expected that the applicable federal and state management agencies will provide comments and counter suggestions, or approval of IPC's suggestions if remedial efforts are required (i.e., corrective measures if revegetation or mitigation efforts were not successful). Separate monitoring reports may be prepared for each individual mitigation site. Reports will contain information regarding the mitigation actions taken during the reporting period, the success of these actions (based on predefined success criteria established for that mitigation site), and a description of the methods used to monitor the mitigation site.

4.0 DRAFT MITIGATION SITE ASSESSMENTS

Prior to commencement of construction, IPC will secure mitigation sites with sufficient credits to offset the impacts of the Project. In order to show there are mitigation site opportunities sufficient to meet the needs of the Project and to demonstrate how IPC's debiting and crediting approach will be implemented, in the following discussion and in the HMP appendices, IPC discusses potential mitigation sites and provides a desktop-level assessment of the credits available at each site.

4.1 Desktop Habitat Mitigation Site Assessment

There are a number of factors that influence the suitability of potential mitigation. In order to assess the potential mitigation opportunities consistently, IPC (in cooperation with ODOE) developed a desktop habitat mitigation site assessment (desktop assessment) form that was used to assess more than 40 potential mitigation properties. Properties that passed the desktop assessment were then reviewed by IPC and ODOE to determine which properties provided the greatest opportunity for IPC to meet its mitigation needs for the Project. IPC has included in this HMP the properties that provide the greatest opportunity, with their respective desktop assessment forms in Appendix A.

The desktop assessment has two parts, as described below.

4.1.1 Desktop Assessment – Part 1

The first part of the desktop assessment is to complete the desktop assessment worksheet that describes the location and ecological setting of the property. During this step, a determination is made as to whether a property passes or fails the desktop assessment. If the property passes, because it is located in an appropriate ecological setting, the second part of the desktop assessment is completed.

Location – When reviewing the location of a property, preference is given to a location that:

- Is within the mitigation service area (Figure 2). The mitigation service area consists of the subbasins (i.e., hydrologic unit boundary 8) in Oregon that are crossed by the Project. Implementing mitigation projects within this area will ensure that ecological uplift will result in a beneficial effect to species and habitat impacted by the Project. The mitigation service area includes the following subbasins: Umatilla; Middle Columbia-Lake Wallula Subbasin (restricted to Oregon); Upper Grande Ronde; Burnt; Powder; Bully; Willow; Lower Malheur; Lower Owyhee; and Brownlee Reservoir (the area south of where the Burnt River enters the reservoir). Mitigation actions and areas outside of the mitigation service area will still be considered if agreement is reached with permitting agencies that the mitigation would benefit species/habitats affected by the Project.
- Involves large parcels of land, or parcels whose size corresponds to specific mitigation needs.
- Is adjacent to existing wildlife management areas or parcels sought after by a state or federal land management agency to achieve wildlife habitat goals.
- Is not located close to land uses that will obviate long-term success of the mitigation. A qualitative discussion is presented regarding adjacent land use and infrastructure occurrence.

Ecological Setting – When reviewing the ecological setting of a property, preference is given to settings where:

- Baseline habitat quality and conditions are similar in kind to habitat structures and functions that will be displaced by the Project.[3]
- Regional Gap Analysis Project (USGS 2011) data were used to identify the habitat types that occur within the mitigation site and correspond to habitat disturbed by the Project.
- Potential mitigation sites within designated wildlife habitat ranges disturbed by the Project were prioritized. These included those for WAGS, sage-grouse, elk, and deer.
- Implementation of mitigation on the property is likely to create a “net benefit” as defined in OAR 635-415-0005(21).
- Soil types – The Soil Survey Geographic database (NRCS 2011) contains soil maps that provide insight into the potential vegetation that may be considered during restoration efforts.
- Hydrologic features – The National Hydrography Dataset (USGS 2010) and the Oregon Wetlands Cover (Oregon Natural Heritage Information Center & The Wetlands Conservancy 2009) data were reviewed to identify potential wetland and water resources within each potential mitigation site.

[3] "In-kind Habitat Mitigation" means habitat mitigation measures that recreate similar habitat structure and function to that existing prior to the development action (OAR 635-415-0005(12)).

Figure 2. Mitigation Service Area and Mitigation Zones

Pass/Fail – Parameters associated with a property's failure to pass the desktop assessment include:

- 40 percent or more of the property is within the agriculture/developed general vegetation type.
- Infrastructure on the property significantly increased the market value of the property above other properties with similar habitat and similar potential mitigation credit value.
- Property contains a high-voltage transmission line(s).
- Property is too far removed from the mitigation service area.
- Property is made up of disjunct parcels that could not be effectively managed.

4.1.2 Desktop Assessment – Part 2

The second part of the desktop assessment discusses how the property would function as a mitigation site, lists the mitigation actions that may be implemented on the mitigation site, and provides a financial outline.

Mitigation Function – A general description of the Project impacts that the mitigation site would mitigate for:

- Identifies the general vegetation type or specific habitat types the site would offer mitigation for;
- Identifies the wildlife habitat layers that overlay with the mitigation site (e.g., elk winter range); and
- Identifies the ODFW habitat categories that the mitigation site contains.

Mitigation Actions – Lists potential mitigation actions that may be performed within the mitigation site to provide an ecological uplift to the habitat. These potential mitigation actions were often discussed during field visits to the mitigation site. If no field visits occurred, applicable mitigation actions were listed based on known land use and land cover. In general, IPC considered mitigation actions that would improve habitat quality, such as:

- Preserve essential habitats through acquisition and easements;
- Provide general improvement of habitat condition through revegetation efforts;
- Perform treatments to prevent, reduce, or eradicate invasive plants and noxious weeds;
- Implement access control to the mitigation area;
- Implement grazing management techniques that could improve habitat;
- Conduct Phase 1 and Phase 2 juniper removal;
- Remove or mark (e.g., fence marking to avoid collision) anthropogenic structures;
- Conduct fire rehabilitation with native vegetation; and
- Reduce risk of catastrophic fire with creation of a fire readiness plan and use of fire breaks.

Financial Outline – The cost of acquisition of the property and yearly operation and maintenance costs were estimated for each mitigation site. In some instances, the cost of acquisition is unavailable.

4.1.3 Further Development of Desktop Assessments

One desktop assessment has been further developed as an example of how mitigation sites will be brought forward for consideration and ultimately inclusion in a final Fish and Wildlife HMP. IPC sees this format as the next step in the mitigation process from identifying opportunities to proposing mitigation sites that account for the balance of mitigation debits accrued per Section 4.3. The Wolf Creek mitigation site expanded assessment (Appendix B) has been further developed to include mitigation actions that IPC is proposing to gain full mitigation credit for the site (one credit for each acre within the property's boundary). Ongoing coordination with ODOE will identify other mitigation sites, either from those currently included in Appendix A or new opportunities brought to IPC's attention, to move forward in a similar fashion as part of a formal mitigation proposal to be included in the final Fish and Wildlife HMP.

4.2 Habitat Mitigation Sites

Through the desktop assessment and field reviews, IPC has brought forward 14 mitigation sites, which demonstrate that adequate mitigation opportunities exist to address all of the Project's impacts on wildlife habitat. The 14 mitigation sites included in this Fish and Wildlife HMP collectively exceed the quantity of mitigation that will ultimately be needed for the Project by approximately ten- to twenty-fold. IPC will continue to coordinate with ODOE in preparation of a final Fish and Wildlife HMP that will be sufficient to compensate for the Project's impacts on wildlife habitats and achieve the mitigation goals set forth in ODFW's Habitat Mitigation Policy. IPC will begin funding mitigation once a site certificate is issued by EFSC and prior to construction of the Project.[4]

Mitigation sites are presented by their location relevant to the MZs described under Section 3.3.1.3. Presentation of mitigation sites by the MZ will show which Project impacts are being mitigated for at each mitigation site.

4.2.1 MZ1 Mitigation Sites

Within MZ1, IPC has identified four mitigation sites. These include Government Mountain, Olex, Ione, and Eightmile (Appendix A). The Olex and Ione mitigation sites are both potential conservation easements while the Government Mountain and Eightmile mitigation sites are currently for sale and would be fee simple title acquisitions. Government Mountain is also partially within MZ2. For purposes of this HMP, the mitigation site will be considered under MZ1.

All four mitigation sites within MZ1 are outside of the mitigation service area (Figure 3). The focus of mitigation efforts within MZ1 have been to address Project impacts on WAGS habitat. The availability of mitigation sites that contain WAGS habitat is lacking within the mitigation service area in MZ1; therefore, IPC went outside of the mitigation service area to identify mitigation sites. Both the Olex mitigation site and Ione mitigation site were recommended to IPC by ODFW as potential WAGS mitigation.

[4] For all mitigation, IPC will provide ODOE with proof of funding prior to construction. For actions involving land acquisition, IPC will acquire the legal right to create, maintain, and protect habitat mitigation areas for the life of the facility by means of an outright purchase, conservation easement, or similar conveyance or contract.

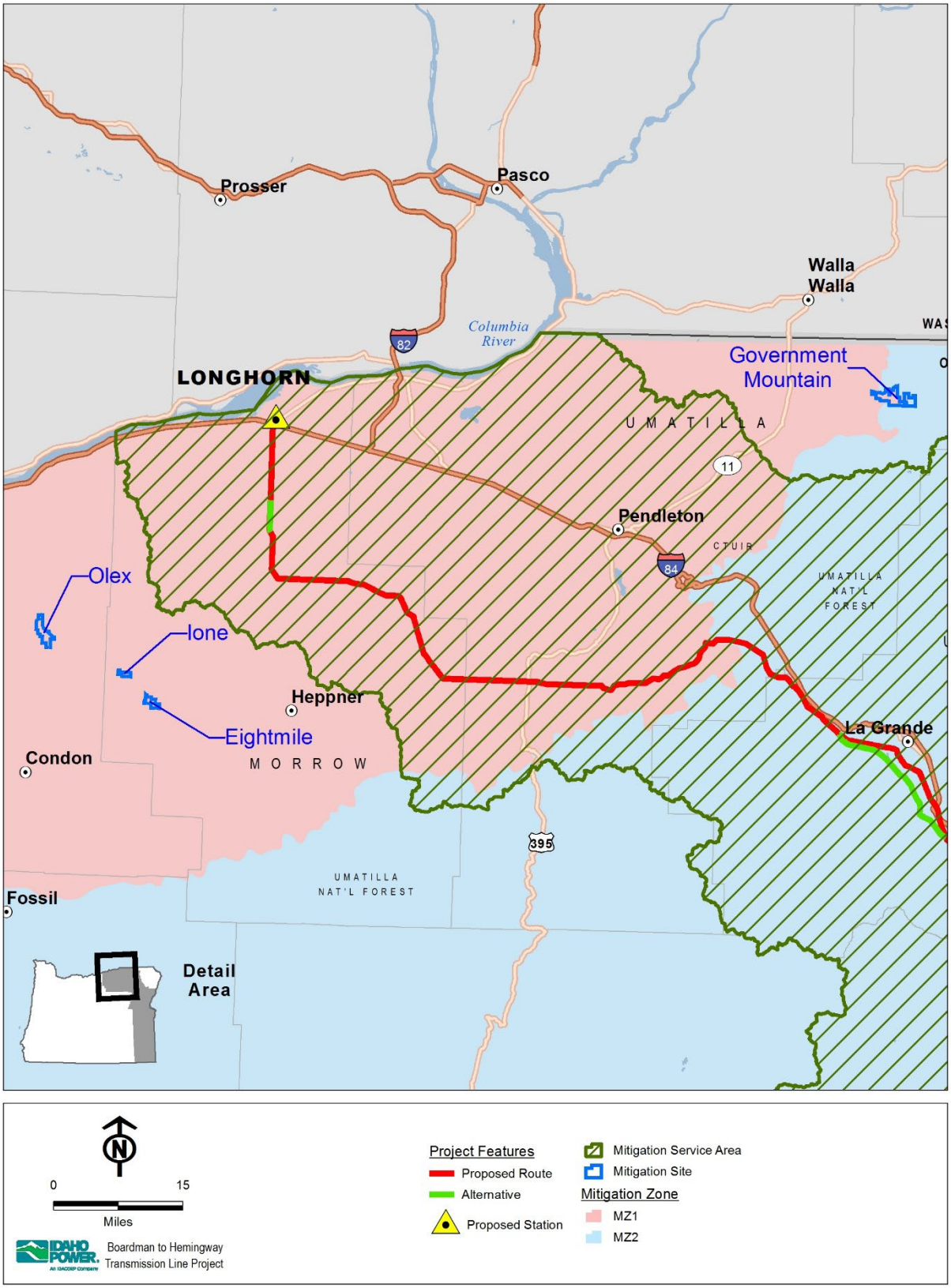

Figure 3. Mitigation Sites within MZ1

Table 13 shows that the mitigation sites identified by IPC within MZ1 provide abundant opportunity to mitigate for Project impacts based on general vegetation types and habitat categories. When considering wildlife habitat layers, the mitigation sites identified within MZ1 provide abundant opportunity to mitigate for Project impacts on WAGS habitat, mule deer winter range, elk winter range, mule deer summer range, and elk summer range (Table 14).

Table 13. Acres of General Vegetation Types by Habitat Category for Mitigation Sites in MZ1

Mitigation Site	General Vegetation Type	ODFW Habitat Categories (acres)						Total
		1	2	3	4	5	6	
Government Mountain	Forest/Woodland	–	1,243.0	399.7	–	–	–	**1,642.7**
	Shrub/Grassland	–	1,572.0	13.8	–	–	–	**1,585.8**
	Agriculture/Developed	–	–	–	–	–	82.7	**82.7**
	Open Water/Wetlands	–	141.2	–	–	–	–	**141.2**
Olex[1]	Agriculture/Developed	–	–	–	–	–	68.2	**68.2**
	Shrub/Grassland	418.6	1,583.2	–	–	–	–	**2,001.8**
Ione	Agriculture/Developed	–	–	–	–	–	–	**–**
	Shrub/Grassland	–	108.0	–	–	–	–	**108.0**
Eightmile	Agriculture/Developed	–	429.9	–	–	–	36.7	**466.6**
	Shrub/Grassland	–	369.5	–	–	–	–	**369.5**
MZ1 Mitigation Site Total		**418.6**	**5,446.8**	**413.5**	**–**	**-**	**187.6**	**6,466.5**

[1] IPC is aware that significant portions of the Olex site are not available for mitigation but the exact amount is not currently known.
Note: – = 0

Table 14. Acres of Wildlife Habitat within Mitigation Sites of MZ1

Wildlife Habitat Layer[1]	Mitigation Site				
	Gov. Mtn.	Olex[2]	Ione	Eightmile	MZ1 Mitigation Site Total
WAGS	–	1,406.4[3]	–	–	**1,406.4[3]**
Elk winter range	3,038.3	–	–	–	**3.038.3**
Elk summer range	2,774.3	–	–	–	**2,774.3**
Mule deer winter range	1,626.4	2,070.0	–	836.1	**2,906.1**
Mule deer summer range	1,822.2	–	–	–	**1,822.2**

[1] WAGS = Category 1 and Category 2; elk winter range = Category 2; elk summer range = Category 3; mule deer winter range = Category 2; mule deer summer range = Category 3.
[2] IPC is aware that significant portions of the Olex site are not available for mitigation but the exact amount is not known at this time.
[3] This includes 418.6 acres of Category 1 habitat and 987.8 acres of Category 2 habitat for WAGS. However, not all this habitat is available for mitigation; the exact amount is not currently known.
Note: – = 0

4.2.2 MZ2 Mitigation Sites

Within MZ2, IPC has identified five mitigation sites (Figure 4). These include High Valley, Glass Hill, County Line, Wolf Creek, and Antelope Mountain (Appendix A). All of these mitigation sites would be fee simple title acquisitions. Only the Antelope Mountain mitigation site is currently for sale, the remaining properties' owners have been contacted and have shown some interest in selling all or a portion of their property. In addition to the five mitigation sites, IPC is developing the wetland mitigation property within MZ2. The Government Mountain mitigation site is partially within MZ2, but a majority is within MZ1 and therefore addressed above.

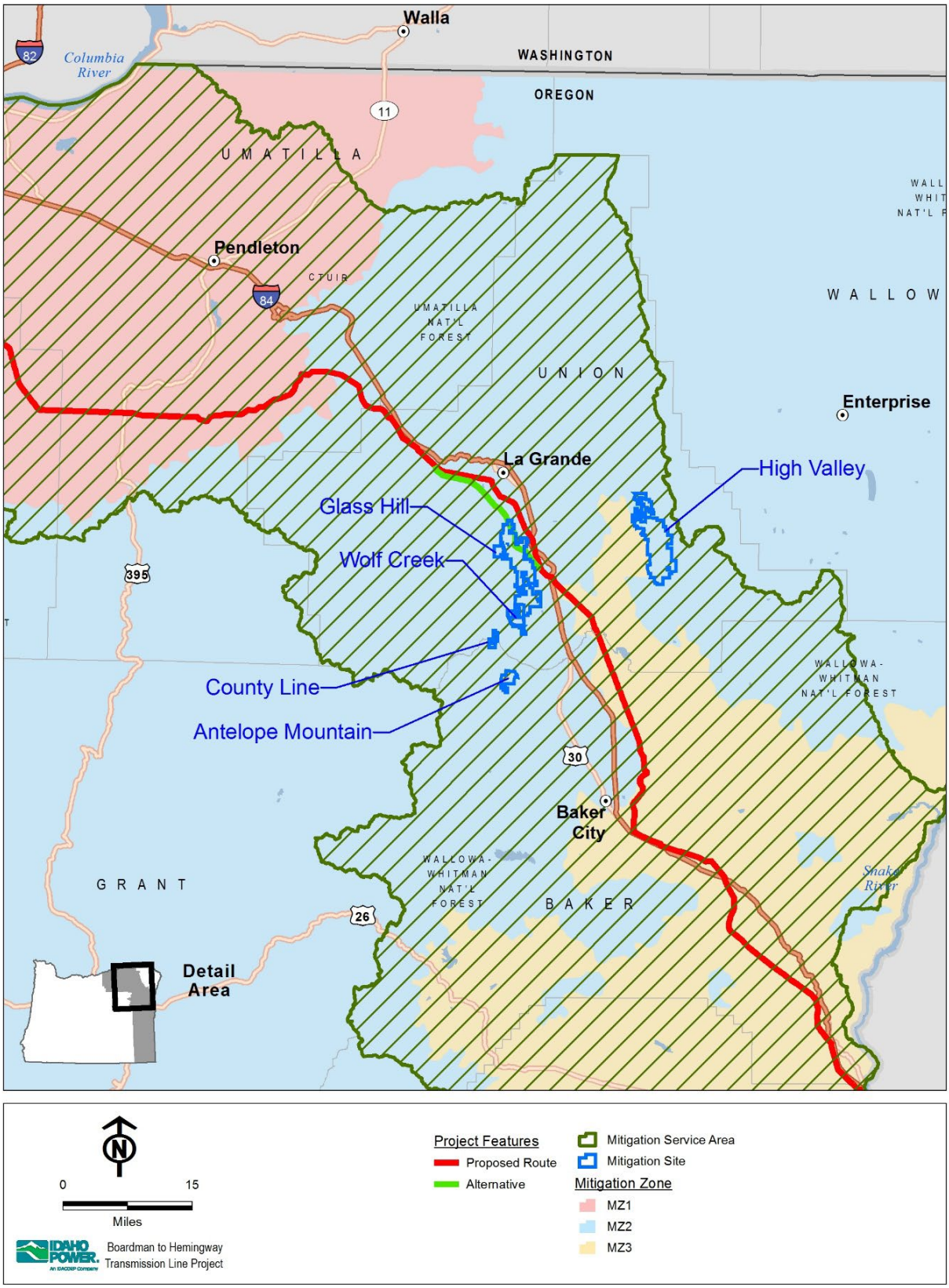

Figure 4. Mitigation Sites within MZ2

The focus of mitigation efforts within MZ2 have been to address Project impacts on the forest/woodland general vegetation type and impacts on elk and mule deer winter and summer range.

Table 15 shows that the mitigation sites identified by IPC within MZ2 provide abundant opportunity to mitigate for Project impacts based on general vegetation types and habitat categories. When considering wildlife habitat layers, the mitigation sites identified within MZ2 provide abundant opportunity to mitigate for impacts on mule deer winter range, elk winter range, mule deer summer range, and elk summer range (Table 16).

Table 15. Acres of General Vegetation Types by Habitat Category for Mitigation Sites in MZ2

Mitigation Site	General Vegetation Type	ODFW Habitat Categories (acres)						Total
		1	2	3	4	5	6	
Antelope Mountain	Forest/Woodland	–	1,239.8	–	–	–	–	**1,239.8**
	Shrub/Grassland	–	325.4	–	–	–	–	**325.4**
	Open Water/Wetlands	–	37.3	–	–	–	–	**37.3**
Wolf Creek	Forest/Woodland	–	1,361.4	–	–	–	–	**1,361.4**
	Shrub/Grassland	–	344.2	–	–	–	–	**344.2**
	Open Water/Wetlands	–	66.9	–	–	–	–	**66.9**
County Line	Forest/Woodland	–	707	–	–	–	–	**707**
	Shrub/Grassland	–	40	–	–	–	–	**40**
	Open Water/Wetlands	–	24.9	–	–	–	–	**24.9**
Glass Hill	Forest/Woodland	–	8,458	3,734	–	–	–	**4,002**
	Shrub/Grassland	–	1,306	96	–	–	–	**1,402**
	Open Water/Wetlands	–	211	80	–	–	–	**291**
High Valley	Forest/Woodland	–	6,934	7,083	–	–	–	**14,017**
	Shrub/Grassland	–	212	126	–	–	–	**338**
	Open Water/Wetlands	–	268	196	–	–	–	**464**
	Agriculture/Developed	–	**–**	–	–	–	**12**	**12**
MZ2 Mitigation Site Total		**–**	**21,536**	**11,315**	–	–	**12**	**32,863**

Note: – = 0

Table 16. Acres of Wildlife Habitat within Mitigation Sites of MZ2

Wildlife Habitat Layer[1]	Mitigation Site					
	Antelope Mtn.	Wolf Creek	County Line	Glass Hill	High Valley	MZ2 Mitigation Site Total
Elk winter range	1,602.5	1,772.5	771.9	9,975.0	7,426.0	**21,547.9**
Elk summer range	1,079.5	1,263.4	771.9	13,215.0	11,850.0	**28,179.8**
Mule deer winter range	1,602.5	2,070.0	771.9	5,498.0	745.0	**10,687.4**
Mule deer summer range	–	1,772.5	771.9	13,823.0	14,516.0	**30,883.4**

[1] Elk Winter Range = Category 2; Elk Summer Range = Category 3; Mule Deer Winter Range = Category 2; Mule Deer Summer Range = Category 3.
Note: – = 0

4.2.3 MZ3 Mitigation Sites

Within MZ3, IPC has identified five mitigation sites (Figure 5). These include Trail Creek, Glasgow, Upper Timber, Pole Creek, and Alder Creek (Appendix A). The mitigation sites within MZ3 would all be fee simple title acquisitions.

The focus of mitigation efforts within MZ3 have been to address Project impacts on the shrub/grassland general vegetation type and specifically the shrub-steppe with big sagebrush habitat type and impacts on sagebrush obligate species and big game species.

Table 17 shows that the mitigation sites identified by IPC within MZ3 provide abundant opportunity to mitigate for Project impacts based on general vegetation types and habitat categories. When considering wildlife habitat layers, the mitigation sites identified within MZ3 provide abundant opportunity to mitigate for impacts on mule deer winter range, elk winter range, mule deer summer range, and elk summer range (Table 18).

Table 17. Acres of General Vegetation Types by Habitat Category for Mitigation Sites in MZ3

Mitigation Site	General Vegetation Type	ODFW Habitat Categories (acres)						Total
		1	2	3	4	5	6	
Pole Creek	Forest/Woodland	–	1,527.9	–	–	–	–	
	Shrub/Grassland	–	1,652.1	–	–	–	–	
	Open Water/Wetlands	–	47.4	–	–	–	–	
Alder Creek	Forest/Woodland	–	18.6	–	–	–	–	
	Shrub/Grassland	–	2,704.3	–	–	–	–	
	Open Water/Wetlands	–	18.9	–	–	–	–	
Glasgow	Forest/Woodland	–	30.7	–	–	–	–	
	Shrub/Grassland	–	1,404.2	–	–	–	–	
	Open Water/Wetlands	–	1.8	–	–	–	–	
Trail Creek	Forest/Woodland	–	20.9	–	–	–	–	
	Shrub/Grassland	–	600.9	–	–	–	–	
	Open Water/Wetlands	–	0.7	–	–	–	–	
Upper Timber	Forest/Woodland	–	4.5	–	–	–	–	
	Shrub/Grassland	–	1,556.4	–	–	–	–	
	Open Water/Wetlands	–	8.9	–	–	–	–	
	Agriculture/Developed	–	7.1	–	–	–	–	
MZ3 Mitigation Site Total		**–**	**9,605.3**		–	**–**	–	**9,605.3**

Note: – = 0

Table 18. Acres of Wildlife Habitat within Mitigation Sites of MZ3

Wildlife Habitat Layer[1]	Mitigation Site					
	Pole Creek	Alder Creek	Glasgow	Trail Creek	Upper Timber	MZ3 Mitigation Site Total
Elk winter range	–	2,947.0	611.8	624.5	153.8	**4,337.1**
Elk summer range	2,287.7	–	622.7	624.5	888.6	**4,423.5**
Mule deer winter range	3,227.4	773.8	1,436.7	–	1,576.9	**7,014.8**
Mule deer summer range	3,178.5	–	–	624.5	–	**3,803.0**

[1] Elk winter range = Category 2; Elk summer range = Category 3; Mule deer winter range = Category 2; Mule deer summer range = Category 3.
Note: – = 0

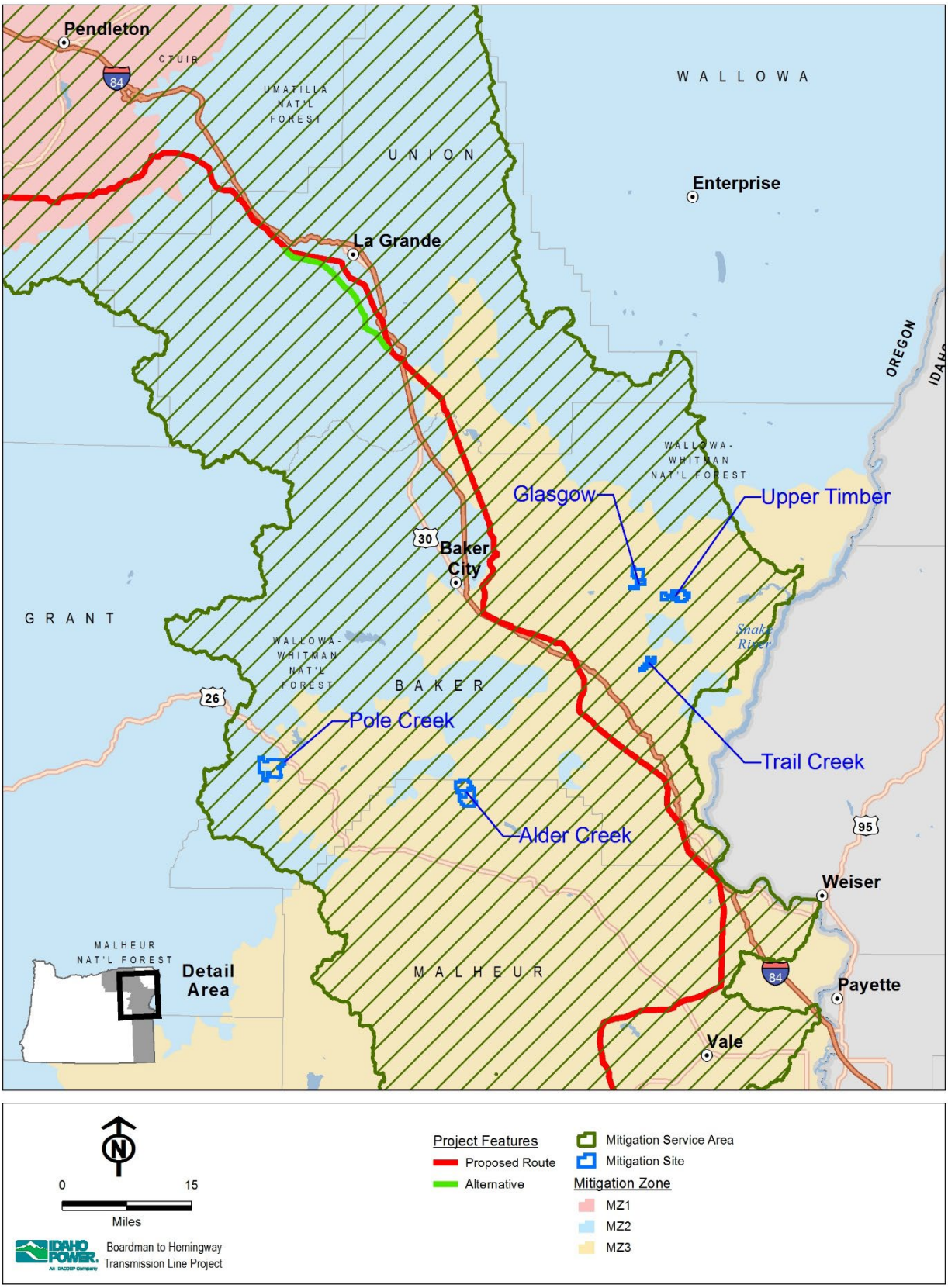

Figure 5. Mitigation Sites within MZ3

4.3 Debit and Credit Accounting for Draft Assessment

For Request for Amendment 1, the redline changes shown in the impact tables in Section 3.3.1.3 are run through the following accounting sections. The amount of mitigation identified in this HMP is more than adequate to address the relatively minor additions of impact acreages.

4.3.1 MZ1 Accounting

IPC has identified a mitigation debit of approximately 732 to 765 acres that will be accrued for impacts from the Proposed Route within MZ1. Mitigation sites identified within MZ1 account for approximately 6,279 available credits. Table 19 displays the debits and available credits by ODFW habitat category.

Table 19. Mitigation Accounting by Habitat Category in MZ1

ODFW Habitat Category	Impact	Acres	Mitigation Debit	Debit Subtotal by Habitat Category	Subtotal of Available Credits within MZ1 Mitigation Sites from Table 13
1	Temp	–	–	–	418.6
	Perm	–	–		
2	Temp	614.1	>614.1	>724	5,446.8
	Perm	109.9	>109.9		
3	Temp	21.5	<21.5	4.1 to 25.6	413.5
	Perm	4.1	4.1		
4	Temp	15.8	<15.8	>3.5 to 19.2	–
	Perm	3.5	3.5		
5	Temp	98.8	–	<15.0	–
	Perm	15.0	<15.0		
6	Temp	410.2	–	–	187.6
	Perm	60.0	–		
			Total	**>731.6 to 764.6**	**6,278.9**

Note: – = 0

Impacts from the Proposed Route within MZ1 will also accrue species-specific mitigation debits. Table 20 identifies the debits and available credits by wildlife habitat layer. These debits are not in addition to those identified in Table 19. For instance, of the 724 acres of Category 2 debits identified, 22.4 acres originate from impacts to Category 2 WAGS habitat.

Table 20. Mitigation Accounting by Wildlife Habitat Layer in MZ1

Wildlife Habitat Layer	Impact	Acres	Mitigation Debit	Debit Subtotal by Wildlife Habitat[1]	Subtotal of Available Credits within MZ1 Mitigation Sites from Table 14
WAGS	Temp	19.7	>19.7	>22.4	1,406.4[2]
	Perm	2.7	>2.7		
Elk winter range	Temp	54.6	>54.6	>63.2	3,038.3
	Perm	8.5	>8.5		
Elk summer range	Temp	20.4	<20.4	>2.8 to 23.2	2,774.3
	Perm	2.8	2.8		
Mule deer winter range	Temp	593.8	>593.8	>700.2	2,906.1
	Perm	106.4	>106.4		
Mule deer summer range	Temp	–	–	–	1,822.2
	Perm	–	–		

[1] These subtotals should not be added together as the resulting total would be double-counting acres where wildlife habitat layers overlap. Overlap is abundant between seasonal ranges of both elk and mule deer.
[2] IPC is aware that not all this habitat is available for mitigation. The exact amount is currently unknown.
Note: – = 0

IPC will look at the general vegetation type (sometimes habitat type), habitat category, and wildlife habitat layer together when performing the mitigation accounting for MZ1. This accounting will be performed during final selection of habitat mitigation sites and after issuance of the site certificate and prior to construction.

4.3.2 MZ2 Accounting

IPC has identified a mitigation debit of 1,078 to 1,268 acres that will be accrued for impacts from the Proposed Route within MZ2. Mitigation sites identified within MZ2 account for approximately 32,863 available credits. Table 21 identifies the debits and available credits by ODFW habitat category.

Table 21. Mitigation Accounting by Habitat Category in MZ2

ODFW Habitat Category	Impact	Acres	Mitigation Debit	Debit Subtotal by Habitat Category	Subtotal of Available Credits within MZ2 Mitigation Sites from Table 15
2	Temp	198.5	>198.5	>602.4	21,536
	Perm	403.9[1]	>403.9		
3	Temp	176.4	<176.4	>473.0 to 649.4	11,315
	Perm	473.0	473.0		
4	Temp	12.5	<12.5	2.9 to 15.4	–
	Perm	2.9	2.9		
5	Temp	11.6	–	<1.1	–
	Perm	1.1	<1.1		
6	Temp	59.2	–	–	12.0
	Perm	41.4	–		
			Total	**>1,078.3 to 1,268.3**	**32,863**

[1] Includes 0 acres of indirect impacts on elk winter range within MZ2 (Table 6).
[2] Includes 6.3 acres of indirect impacts on elk summer range within MZ2
Note: – = 0

Table 22 identifies the debits and available credits by wildlife habitat layer within MZ2. These debits are not in addition to those identified in Table 21. For instance, of the 602 acres of Category 2 debits identified in Table 21, approximately 573 acres originate from impacts to Category 2 mule deer winter range habitat (Table 22).

Table 22. Mitigation Accounting by Wildlife Habitat Layer in MZ2

Wildlife Habitat Layer	Impact	Acres	Mitigation Debit	Debit Subtotal by Wildlife Habitat[1]	Subtotal of Available Credits within MZ2 Mitigation Sites from Table 16
Elk winter range	Temp	83.2	>219.1	>221.1	21,547.9
	Perm	137.9[2]	>500.4		
Elk summer range	Temp	23.0	<23.0	>92.5 to 115.6	28,179.8
	Perm	92.5[3]	92.5		
Mule deer winter range	Temp	169.8	>169.8	>573.0	10,687.4
	Perm	403.1	>403.2		
Mule deer summer range	Temp	180	<180.0	>503.4 to 683.4	30,883.4
	Perm	503.4	503.4		

[1] These subtotals will not correspond to the mitigation debits calculated by habitat category in Table 21. For instance, some elk summer range Category 3 habitat overlaps with elk winter range Category 2 habitat, these areas default to Category 2. For this reason, these subtotals should not be added together.
[2] Includes 0 acres of indirect impacts on elk winter range within MZ2 (Table 6).
[3] Includes 6.3 acres of indirect impacts on elk summer range within MZ2 (Table 6).
Note: – = 0

IPC will look at the general vegetation type (sometimes habitat type), habitat category, and wildlife habitat layer together when performing the mitigation accounting for MZ2. This accounting will be performed during final selection of habitat mitigation sites and after issuance of the site certificate and prior to construction.

4.3.3 MZ3 Accounting

IPC has identified a mitigation debit of approximately 2,145 to 2,456 acres that will be accrued for impacts from the Proposed Route within MZ3. Mitigation sites identified within MZ3 account for approximately 9,605 available credits. Table 23 identifies the debits and available credits by ODFW habitat category.

Table 23. Mitigation Accounting by Habitat Category in MZ3

ODFW Habitat Category	Impact	Acres	Mitigation Debit	Debit Subtotal by Habitat Category	Subtotal of Available Credits within MZ3 Mitigation Sites from Table 17
2	Temp	1,310.5	>1,310.5	>2,106.7	9,605.3
	Perm	796.2[1]	>796.2		
3	Temp	146.7	<146.7	>18.3 to <165.0	–
	Perm	18.3	18.3		
4	Temp	137.1	<137.1	>19.7 to 156.8	–
	Perm	19.7	19.7		
5	Temp	219.0	–	<27.2	–
	Perm	27.2	<27.2		
6	Temp	55.7	–	–	-
	Perm	123.4	–		
			Total	**>2,144.7 to 2,455.7**	**9,605.3**

[1] Includes 427.3 acres of indirect impacts on elk winter range within MZ3 (Table 8).
Note: – = 0

Table 24 identifies the mitigation debits and available credits by wildlife habitat layer within MZ3. These debits are not in addition to those identified in Table 23. For instance, of the more than 2,106 acres of Category 2 debits identified in Table 23, approximately 1,678 acres originate from impacts to Category 2 mule deer winter range habitat.

Table 24. Mitigation Accounting by Wildlife Habitat Layer in MZ3

Wildlife Habitat Layer	Impact	Acres	Mitigation Debit	Debit Subtotal by Wildlife Habitat[1]	Subtotal of Available Credits within MZ3 Mitigation Sites from Table 18
Elk winter range	Temp	100.8	>100.8	>566	4,337.1
	Perm	459.6[2]	>459.6		
Mule deer winter range	Temp	1,309.9	>1,309.9	>1,678.6	10,408.5
	Perm	368.7	>368.7		
Mule deer summer range	Temp	108.7	<106.9	101.7 to <208.6	7,196.7
	Perm	102.5	101.7		
California Bighorn Sheep Herd Range	Temp	1.6	>1.6	>15.8	–
	Perm	14.2	>14.2		

[1] These subtotals will not correspond to the mitigation debits calculated by habitat category in Table 23 due to overlap among wildlife habitat layers. For this reason, these subtotals should not be added together.
[2] Includes 427.3 acres of indirect impacts to elk winter range within MZ3 (Table 8).

5.0 MITIGATION SCHEDULE

Coordination continues between IPC and the applicable land and wildlife management agencies regarding mitigation projects and options. IPC has identified preliminary scheduling milestones for mitigation that track with the EFSC process (Table 25).

Table 25. Mitigation Schedule

Date Range	EFSC Stage	Mitigation Planning
Present to July 2017	Submittal of 2017 Amended Preliminary Application for Site Certificate (ASC)	Respond to ODOE comments on the HMP included in the amended preliminary ASC.
July 2017 to July 2019	Final Order and Site Certificate	Develop and finalize mitigation sites and associated Mitigation Management Plans. Land acquisition will begin following issuance of the Site Certificate and prior to construction.
July 2019 to start of construction, 2022 or later	Monitoring Project compliance with conditions of approval as described in the Final Order.	All mitigation land acquisitions will be completed. Baseline data acquisition will occur at mitigation sites according to the Mitigation Management Plan. Initial mitigation actions will begin if timing is appropriate. Finalize HMP and submit to ODOE for its approval.

Date Range	EFSC Stage	Mitigation Planning
Start of construction in 2022 or later	Monitoring Project compliance with conditions of approval as described in the Final Order.	Initial mitigation actions (e.g., juniper removal, native seeding) will be completed or continued, and mitigation monitoring will track success.
In Service to Project decommissioning	Monitoring Project compliance with conditions of approval as described in the Final Order.	Any adaptive management techniques will be implemented if mitigation success criteria are not being met. Long-term monitoring and reporting will be performed as needed.

6.0 REFERENCES

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APPENDIX A
HABITAT MITIGATION SITES

APPENDIX B
WOLF CREEK MITIGATION SITE EXPANDED ASSESSMENT

Attachment 7-16. Wildfire Mitigation Plan

ALISON WILLIAMS
Regulatory Policy & Strategy Leader
Regulatory Affairs
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June 28, 2022

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
Filing Center
201 High Street SE, Suite 100
Salem, Oregon 97301

Re: Docket UM 2209
Idaho Power Company Wildfire Protection Plan

Attention Filing Center:

Attached for electronic filing is Idaho Power Company's ("Idaho Power" or "Company") updated Wildfire Mitigation Plan ("WMP"), included in both clean and redline versions. This update constitutes version 3 of the Company's WMP, as reflected on the report cover.

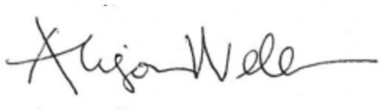
Idaho Power submits this update in accordance with the Commission's required conditions of approval, as stated in Order 22-133. The Company has met the conditions of approval through inclusion of the following to the 2022 WMP:

- A new introductory section with regulatory background on wildfire mitigation activities pertinent to Idaho and Oregon (clean version, page 1);
- Oregon- and Idaho-specific asset information (clean version, page 6);
- Delineated Oregon and Idaho asset information in risk zones (clean version, page 12);
- Detailed maps of elevated wildfire risk zones in Idaho and Oregon (clean version, pages 14-17), as well as a link to an online map of risk zones on Idaho Power's website (clean version, page 13);
- A strategy for maturing the Company's approach to balancing cost and risk with respect to wildfire mitigation for the 2023 WMP (clean version, page 21);
- Narrative descriptions of costs and risks associated with selected mitigation activities, including estimates of Oregon- and Idaho-specific expenditures (clean version, pages 23-34); and
- A new cover of the 2022 WMP.

Idaho Power is grateful for Staff's recent collaboration and input in review of the Company's updated wildfire information. The Company looks forward to continued evolution of its WMP in consultation with Staff, stakeholders, public safety partners, and customers.

If you have any questions, please do not hesitate to contact me or Jon Axtman, Transmission & Distribution Engineering and Reliability Senior Manager, at (208) 388-5036.

Very truly yours,



Alison Williams

AW/sg
Enclosures

WILDFIRE Mitigation Plan 2022

(V3.0)
Updated June 28, 2022

IDAHO POWER®

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The Wildland Fire Preparedness and Prevention Plan.

Appendix B
The Public Safety Power Shutoff (PSPS) Plan.

Review/Revision History

This document has been approved and revised according to the revision history recorded below.

Review Date	Revisions
Jan. 22, 2021	WMP Version 1 was filed with the Idaho Public Utilities Commission and posted to the Idaho Power website.
Dec. 29, 2021	Modifications including expanded cost-benefit discussion, plan progress and updates, and inclusion of Idaho Power's Public Safety Power Shutoff plan.
March 18, 2022	Added Appendix C.
June 28, 2022	Added information to comply with the Public Utility Commission of Oregon's conditions of approval of Idaho Power's 2022 Wildfire Mitigation Plan.

REGULATORY CONTEXT

As part of Idaho Power Company's (Idaho Power or company) commitment to deliver safe, reliable, and affordable energy, the company developed a comprehensive Wildfire Mitigation Plan (WMP) to reduce wildfire risk associated with its facilities. The WMP has three core objectives:

1. Reducing wildfire risk for the safety of Idaho Power's customers and the communities in which it operates.
2. Ensuring the continued and reliable delivery of electricity to more than 600,000 retail customers in Southern Idaho and Eastern Oregon.
3. Furthering the company's good stewardship of the beautiful and natural lands within Idaho Power's service area and beyond.

Idaho Power released its inaugural WMP in January 2021. The company's WMP is a living document that will evolve over time. Idaho Power will seek to review, modify, and expand the WMP in the coming years to reflect shifts in industry best practices and to ensure the company is following procedures and requirements established by its regulators. Given that Idaho Power operates in both Oregon and Idaho, below is a description of recent wildfire-related regulatory activities by state.

Idaho

On January 22, 2021, Idaho Power proactively filed its first WMP with the Idaho Public Utilities Commission (IPUC). The company's application provided a narrative of Idaho Power's effort to develop the WMP, including discussion of risk analysis across its service area and evaluation of specific wildfire mitigation activities (e.g., enhanced vegetation management and system hardening) the company would undertake in the coming fire season. Idaho Power asked the IPUC for authority to defer the Idaho jurisdictional share of incremental operations and maintenance expenses and capital depreciation expenses related to implementing the measures in the WMP, as well as incremental insurance costs.

On June 17, 2021, the IPUC issued Order No. 35077, granting the company's application and allowing cost deferral of all incremental wildfire mitigation and insurance expenses identified in Idaho Power's application.

Oregon

In August 2020, the Public Utilities Commission of Oregon (OPUC) opened an informal rulemaking related to mitigating wildfire risks to utilities, utility customers, and the public. The scope of this docket (AR 638) shifted following the 2020 wildfire season, splitting into two tracks—a temporary wildfire rulemaking to govern the 2021 wildfire season and a secondary track to establish replacement permanent rules for the 2022 fire season.

On July 19, 2021, Oregon Governor Kate Brown signed into law Senate Bill 762 (SB 762), a wildfire bill that, among other actions, established minimum requirements for utility wildfire protection (or mitigation) plans. The bill required that utilities file inaugural plans no later than December 31, 2021.

In response to the passage of SB 762, the OPUC halted the permanent wildfire rulemaking in AR 638 and opened docket AR 648 to develop interim permanent rules adhering to the requirements and timing of the new law. The permanent rulemaking docket remains open to establish rules related to wildfire mitigation plan requirements for the 2023 wildfire season, as well as Public Safety Power Shutoff rules.

Below is a mapping of wildfire mitigation plan rules established in AR 648, per OPUC Order 21-440, to corresponding sections within Idaho Power's WMP.

Oregon Requirement	Corresponding Location in WMP
(1) Wildfire Protection Plans and Updates must, at a minimum, contain the following requirements as set forth in Section 3(2)(a)-(h), chapter 592, Oregon Laws 2021 and as supplemented below: *(a) Identified areas that are subject to a heightened risk of wildfire, including determinations for such conclusions, and are:*	See Section 3: Quantifying Wildland Fire Risk See Idaho Power website for details of wildfire risk zones outside of service territory
(A) Within the service territory of the Public Utility, and *(B) Outside the service territory of the Public Utility but within the Public Utility's right-of-way for generation and transmission assets.*	See Section 3.2.2: Wildfire Risk Areas See Figure 3: B2H Proposed Route Risk Zones
(b) Identified means of mitigating wildfire risk that reflects a reasonable balancing of mitigation costs with the resulting reduction of wildfire risk.	See Section 4: Costs and Benefits of Wildfire Mitigation
(c) Identified preventative actions and programs that the Public Utility will carry out to minimize the risk of utility facilities causing wildfire.	See Section 5: Situational Awareness; Section 6: Mitigation—Field Personnel Practices; Section 7: Mitigation—Operations; Section 8: Mitigation—T&D Programs; and Section 8.3: T&D Vegetation Management
(d) Discussion of outreach efforts to regional, state, and local entities, including municipalities regarding a protocol for the de-energization of power lines and adjusting power system operations to mitigate wildfires, promote the safety of the public and first responders and preserve health and communication infrastructure.	See Section 10.2 Idaho Power External Communications and Section 10.2.1: Community Engagement See Appendix B: Idaho Power's Public Safety Power Shutoff Plan, Section 10.2.1: Coordination with Government Entities and Section 10.2.2: Community Preparedness
(e) Identified protocol for the de-energization of power lines and adjusting of power system operations to mitigate wildfires, promote the safety of the public and first responders and preserve health and communication infrastructure.	See Section 7.4: Public Safety Power Shutoff and Appendix B: Idaho Power's Public Safety Power Shutoff Plan
(f) Identification of the community outreach and public awareness efforts that the Public Utility will use before, during and after a wildfire season.	See Section 10: Communicating the Plan

Oregon Requirement	Corresponding Location in WMP
(g) Description of procedures, standards, and time frames that the Public Utility will use to inspect utility infrastructure in areas the Public Utility identified as heightened risk of wildfire.	For Transmission, see Section 8.2.1: Transmission Asset Management Programs (with information on aerial, ground, detailed visual, pole, and other protection programs) For Distribution, see Section 8.2.2: Distribution Asset Management Programs (with information on visual, pole, and line equipment inspection programs)
(h) Description of the procedures, standards, and time frames that the Public Utility will use to carry out vegetation management in in areas the Public Utility identified as heightened risk of wildfire.	See Section 8.3.2: Transmission Vegetation Management and Section 8.3.3: Distribution Vegetation Management
(i) Identification of the development, implementation, and administrative costs for the plan, which includes discussion of risk-based cost and benefit analysis, including consideration of technologies that offer co-benefits to the utility's system.	See Section 4: Costs and Benefits of Wildfire Mitigation, specifically Section 4.3: Wildfire Mitigation Cost Summary and Section 4.4: Mitigation Activities
(j) Description of participation in national and international forums, including workshops identified in Section 2, chapter 592, Oregon Laws 2021, as well as research and analysis the Public Utility has undertaken to maintain expertise in leading edge technologies and operational practices, as well as how such technologies and operational practices have been used develop implement cost effective wildfire mitigation solutions.	See Section 2: Government, Industry, and Peer Utility Engagement

1. INTRODUCTION

1.1. Background

In recent years, the Western United States has experienced an increase in the frequency and intensity of wildland fires (wildfires). A variety of factors have contributed in varying degrees to this trend including climate change, increased human encroachment in wildland areas, historical land management practices, and changes in wildland and forest health, among other factors.

While Idaho Power has not experienced catastrophic wildfires within its service area at the same level experienced in other western states, such as California and more recently certain areas in Oregon, millions of acres of rangeland and southern Idaho forests have burned in the last 30 years.[1] In that same time period, the wildfire season in Idaho has expanded by 70 days.[2] Idaho's wildfire season is defined by Idaho Code § 38-115 as extending from May 10 through October 20 each year, or as otherwise extended by the Director of the Idaho Bureau of Land Management (BLM). Oregon's wildfire season is designated by the State Forester each year pursuant to Oregon Revised Statute § 477.505 and typically begins in June. Idaho Power's operational practices account for the differences between Idaho and Oregon's wildfire seasons and requirements.

1.2. Idaho Power Profile and Service Area

Idaho Power is an investor-owned utility headquartered in Boise, Idaho, engaged in the generation, transmission, and distribution of electricity. Idaho Power is regulated by the Federal Energy Regulatory Commission (FERC) and the state regulatory commissions of Idaho and Oregon. Idaho Power serves approximately 600,000 retail customers throughout a 24,000 square mile area in southern Idaho and eastern Oregon (see Figure 1).

[1] Rocky Barker, *70% of S. Idaho's Forests Burned in the Last 30 Years. Think That Will Change? Think Again.*, Idaho Statesman, October 4, 2020.

[2] Ibid.

Figure 1
Idaho Power service area

Of Idaho Power's 24,000 square mile service territory, approximately 4,745 square miles are located in Oregon and 19,255 in Idaho. Approximately 20,000 customers are served in Oregon and 580,000 in Idaho.

1.3. Asset Overview

Idaho Power delivers electricity to its customers via more than 310 substations, 4,800 miles of overhead transmission lines, and 19,300 miles of overhead distribution lines. Table 1 summarizes the overhead powerline asset information by state.

Of Idaho Power's 24,000-square mile service territory, approximately 4,745 square miles are located in Oregon and 19,255 in Idaho. With regard to overhead powerlines, approximately 2,871 pole miles (12%) are located in Oregon and 21,042 (87%) are in Idaho.

Table 1
Overhead transmission voltage level and approximate line mileage by state (Dec. 31, 2021)

ASSET	TOTAL	IDAHO		OREGON		MONTANA		NEVADA		WYOMING	
	Pole Miles	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%
46 kV Transmission Lines	383	383	100								
69 kV Transmission Lines	1,136	743	65	344	30	50	4				
115 kV Transmission Lines	3			3	100						
138 kV Transmission Lines	1,448	1,242	86	141	10			65	4		
161 kV Transmission Lines	84	84	100								
230 kV Transmission Lines	1,148	927	81	219	19						
345 kV Transmission Lines	473	364	77							110	23
500 kV Transmission Lines	103	53	51	50	49						
Total OH Transmission Lines	4,778	3,796	80	757	16	50	1	65	1	110	2
Total OH Distribution	19,297	17,183	89	2,114	11						
Total OH Pole Miles	**24,075**	**20,979**	**87**	**2,871**	**12**	**50**	**0.21**	**65**	**0.27**	**110**	**0.46**

1.4. Objectives of this Wildfire Mitigation Plan

The primary objectives of this WMP are to identify and implement strategies to accomplish the following:

1. Reduce wildfire risk associated with Idaho Power's transmission and distribution (T&D) facilities and associated field operations.

2. Improve the resiliency of Idaho Power's T&D system in a wildfire event, independent of the ignition source.

3. Comply with all wildfire mitigation requirements established by its regulators.[3]

Idaho Power's approach to achieving these objectives includes the following actions:

- Engage with government and industry entities and electric utility peers to ensure understanding and commonality of wildfire mitigation plans.

- Utilize a risk-based approach to quantify wildland fire risk that considers *wildfire probability* and *consequence* to identify areas of elevated wildfire risk within Idaho Power's service area. These identified areas are then incorporated in Idaho Power's geographic information system (GIS) mapping.

- Create specific and targeted operations and maintenance practices, system hardening programs, vegetation management, and field personnel practices to mitigate wildfire risk.

[3] The OPUC established docket AR 648, the interim permanent wildfire rulemaking, after the Oregon legislature passed Senate Bill 762. The bill created a requirement for public utilities in Oregon to submit "wildfire protection plans" to the OPUC by December 31, 2021.

- Incorporate information regarding current and forecasted weather and field conditions into operational practices to increase situational awareness.

- Determine public safety power shutoff (PSPS) protocols for Idaho Power's service area and transmission corridors.

- Evaluate the performance and effectiveness of strategies identified in this WMP through metrics and monitoring. The WMP and all its components will be reviewed prior to wildfire season each year.

2. GOVERNMENT, INDUSTRY, AND PEER UTILITY ENGAGEMENT

2.1. Objective

Idaho Power recognizes the importance of engaging with federal, Idaho and Oregon State governments, and local governments as an integral part of mitigating wildfire risk. Idaho Power also recognizes the importance of engagement and outreach with respect to potential future PSPS events to minimize customer impact.

Idaho Power's wildfire mitigation plan and outage preparedness strategy includes specific activities to engage with key stakeholders to share information, gain feedback, and incorporate lessons learned. Peer utility engagement is crucial to ensure the company's efforts are informed by the best practices of its peers in Idaho and Oregon.

2.2. Government Engagement

Much of Idaho Power's service area extends over land managed by the BLM and U.S. Forest Service. Idaho Power engages with both agencies to share information and identify areas and activities that are mutually beneficial. For example, Idaho Power allowed for an extended firebreak along Highway 93 in Jerome County, Idaho, on its property to help with BLM wildfire mitigation initiatives.

Idaho Power is also a member of the Idaho Fire Board, which was initiated by the U.S. Forest Service. Membership is voluntary and currently includes the Forest Service, BLM, Federal Emergency Management Agency (FEMA), Idaho State Lands Department, Idaho Department of Insurance, Idaho Military Division, City of Lewiston, Idaho Power, and The Nature Conservancy in Idaho.

Idaho Power is actively engaged with both the IPUC and the OPUC with respect to wildfire mitigation activities. Idaho Power filed its WMP with the IPUC in 2021 and submitted the plan to the OPUC as part of the temporary wildfire rulemaking in AR 638. Idaho Power continues to participate in the OPUC's Oregon Wildfire and Electric Collaborative (OWEC) and in the ongoing permanent wildfire rulemaking (docket AR 638).

2.3. Industry and Peer Utility Engagement

Although Idaho Power relied on plans developed by several California utilities in drafting its own WMP, modifications were made to account for Idaho Power's considerably different risk profile. Additionally, Idaho Power participated in multiple workshops with San Diego Gas and Electric, Southern California Edison, Pacific Gas and Electric, Sacramento Municipal Utility District, and PacifiCorp. The company continues to engage with these utilities to learn about California's evolving practices.

In the Pacific Northwest, many utilities work collaboratively to understand and ensure commonality of their various wildfire mitigation plans, while accounting for the variation in each

utility's unique service area. These utilities include Idaho Power, Avista Utilities, Portland General Electric, Rocky Mountain Power, Pacific Power, Chelan County Public Utility District, Puget Sound Energy, NV Energy, Bonneville Power Administration (BPA), and Northwestern Energy.

Idaho Power is also a member of both the Edison Electric Institute (EEI) and the Western Electric Institute (WEI). The company participated in multiple workshops and conferences with both entities and member utilities to evaluate the strength and effectiveness of Idaho Power's WMP in comparison to other members' plans. Additionally, Idaho Power's CEO and President is an active member of the EEI Electricity Subsector Coordinating Council Wildfire Working Group. This working group has been partnering with the U.S. Department of Energy and other government agencies to collectively minimize wildfire threats and potential impacts.

These workshops continue to prove valuable for sharing wildfire mitigation best practices and discussing new and existing technology related to wildfire mitigation. For example, EEI and WEI workshops, as well as independent investigations, led Idaho Power to expand its use of Unmanned Aircraft Systems ([UAS] also known as drones) during line patrols, replace expulsion fuses with energy limiting fuses, and add mesh wraps to wood poles in wildfire risk zones. Idaho Power has also enlisted a team of employees to focus on wildfire mitigation technologies by identifying opportunities to incorporate new and innovative technologies into Idaho Power's wildfire mitigation efforts.

3. QUANTIFYING WILDLAND FIRE RISK

3.1. Objective

Idaho Power's approach to quantifying wildland fire risk is to identify geographic areas of elevated wildfire risk if a wildfire ignites near a power line. Mitigation actions and programs are prioritized in those areas identified as elevated wildfire risk areas.

3.2. Identifying Areas of Elevated Wildfire Risk

Idaho Power hired an external consultant that specializes in assessing and quantifying the threat of wildfire through a risk-based methodology that leverages weather modeling, wildfire spread modeling, and Monte Carlo simulation. This methodology is not unique to Idaho Power's WMP. The California Public Utilities Commission (CPUC) used the same modeling approach (and in fact, the same consultant) in developing its CPUC Fire Threat Map. In addition, other utilities in Oregon, Idaho, Nevada, and Utah have utilized similar modeling to identify and quantify wildfire risk.

This methodology is consistent with conventional definitions of *risk*, which is usually taken as an event's *probability* multiplied by its potential negative *consequences* or impacts should that event occur. For Idaho Power's wildfire risk assessment, this formula is:

Wildfire Risk = Fire Probability x Consequence

The definition of each component is as follows:

Fire Probability. Fire volume (i.e., spatial integral of fire area and flame length) is used as Fire Probability because rapidly spreading fires are more likely to escape initial containment efforts and become extended fires than slowly developing fires. Data inputs used in the fire spread model to determine the fire volume (Fire Probability) include:

- Historical weather (temperature, wind speed/direction, relative humidity)
- Topography
- Fuel types present
- Fuel moisture content (both dead and live fuels)

Consequence. Number of structures (i.e., homes, businesses, other man-made structures) that may be impacted by a wildfire.

Wildfire Risk. Fire Probability multiplied by the Consequence. The highest Wildfire Risk areas are those where both the Fire Probability and Consequence are elevated. Conversely, combinations of low Fire Probability and elevated Consequence, or elevated Fire Probability and low Consequence typically indicate lower Wildfire Risk.

3.2.1. Wildfire Risk Modeling Process

The wildfire risk modeling process incorporated the following major steps:

1. A 20-year (2000–2019) fire weather climatology was developed utilizing the Weather Research and Forecasting (WRF) model to recreate historical days of fire weather significance across Idaho Power's service territory. This analysis generated high-resolution hourly gridded fields of relative humidity, temperature, dead fuel moisture, and wind speed/direction that was used as input to a Monte Carlo-based fire modeling analysis.

2. Estimates of seasonal variation in live fuel moisture across Idaho Power's service territory were developed. This was accomplished by analyzing historical fuel measurements and/or weather station observations. This step was necessary because live fuel moisture data is needed for fire spread modeling, but the WRF weather model does not provide live fuel moistures.

3. The federal LANDFIRE program was utilized to provide high-resolution (approximately 100 feet) fuel rasters for use in fire spread modeling.[4]

4. The data developed above (WRF climatology, live fuel moisture, and LANDFIRE data) was used to drive a Monte Carlo[5] fire spread modeling analysis. This Monte Carlo simulation was accomplished by randomly selecting an ignition location and a randomly selected day from the fire weather climatology developed in step 1 above. Ignition locations were limited in the model to be within a two-kilometer buffer surrounding Idaho Power's overhead T&D lines (i.e., 1 kilometer on either side). Note that transmission lines jointly owned by Idaho Power and PacifiCorp were included in the analysis. Furthermore, the proposed Boardman-to-Hemingway (B2H) 500 kilovolt (kV) line route was also included in this analysis. For each combination of ignition location and time of ignition, fire progression was then modeled for 6 hours. For each modeled fire, potential fire impacts to structures were quantified using structure data. This was repeated across Idaho Power's service territory for millions of combinations of ignition location and time of ignition.

5. The Monte Carlo results were processed, and GIS based data depicting fine grained wildfire risk was developed. This risk was then visually depicted on GIS based wildfire risk maps.

[4] Chris Lautenberger, Mapping areas at elevated risk of large-scale structure loss using Monte Carlo simulation and wildland fire modeling. IAFSS 12th Symposium 2017.

[5] Ibid.

3.2.2. Wildfire Risk Areas

Based on the previously described modeling, draft risk tiers were generated algorithmically[6] by establishing threshold values which, if exceeded, would classify an area as Tier 2 or Tier 3. To aid in customer and public understanding, Idaho Power also color-coded the tiers to reflect relative risk—Yellow Risk Zones (YRZ) for Tier 2 and Red Risk Zones (RRZ) for Tier 3. This was accomplished by manually setting threshold values at naturally occurring breaks. Consequently, the resulting risk tiers reflect risk relative to Idaho Power's service territory only and not absolute risk. As set forth later in this plan, Idaho Power's risk profile is significantly lower than utilities serving California.

An integral part of the consultant's mapping process involved reviewing the tiers and making necessary adjustments to account for unique aspects of certain areas, including factors that may increase or decrease risk, which would not be accounted for in the computer modeling. Several factors were considered, including the following:

- Topography and resistance to fire control
- Means of ingress and egress
- Presence/absence of defensible space
- Vulnerable populations
- Cell phone coverage
- Non-burnable land cover such as built-up urban areas

Below, Table 2 provides a breakdown of pole miles in risk zones on a system-wide basis and by state. Across Idaho Power's service area, 8% of pole miles exist in elevated risk zones (either RRZs or YRZs). In Idaho, 5% of pole miles exist in YRZs and 3% exist in RRZs. In Oregon, less than 1% of pole miles exist in YRZs. The company has no RRZs in Oregon.

Table 2
Idaho Power's Transmission and Distribution Lines by Risk Zone in Idaho and Oregon

ASSET	TOTAL	TOTAL IN WILD-FIRE RISK ZONES		YELLOW RISK ZONES - IDAHO		RED RISK ZONES - IDAHO		YELLOW RISK ZONES - OREGON		RED RISK ZONES - OREGON	
	Pole Miles	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%
Transmission Lines	4,841	511	11	371	8	110	2	21	0.43	0	0
Distribution Lines	19,297	1,414	7	808	4	577	3	29	0.15	0	0
Total Pole Miles	24,138	1,925	8	1,179	5	687	3	50	0.21	0	0

[6] Ibid.

The final two-tier risk map reflecting relative increased risk in YRZs and RRZ is shown in Figure 2. The map is the foundation of Idaho Power's wildfire mitigation and risk reduction strategies. It is used to determine and prioritize targeted investments, inspection activities, and increase situational awareness for field personnel.

The risk zone map can be viewed in detail on Idaho Power's website. Individual addresses can be entered on the map to determine proximity to identified risk zones.

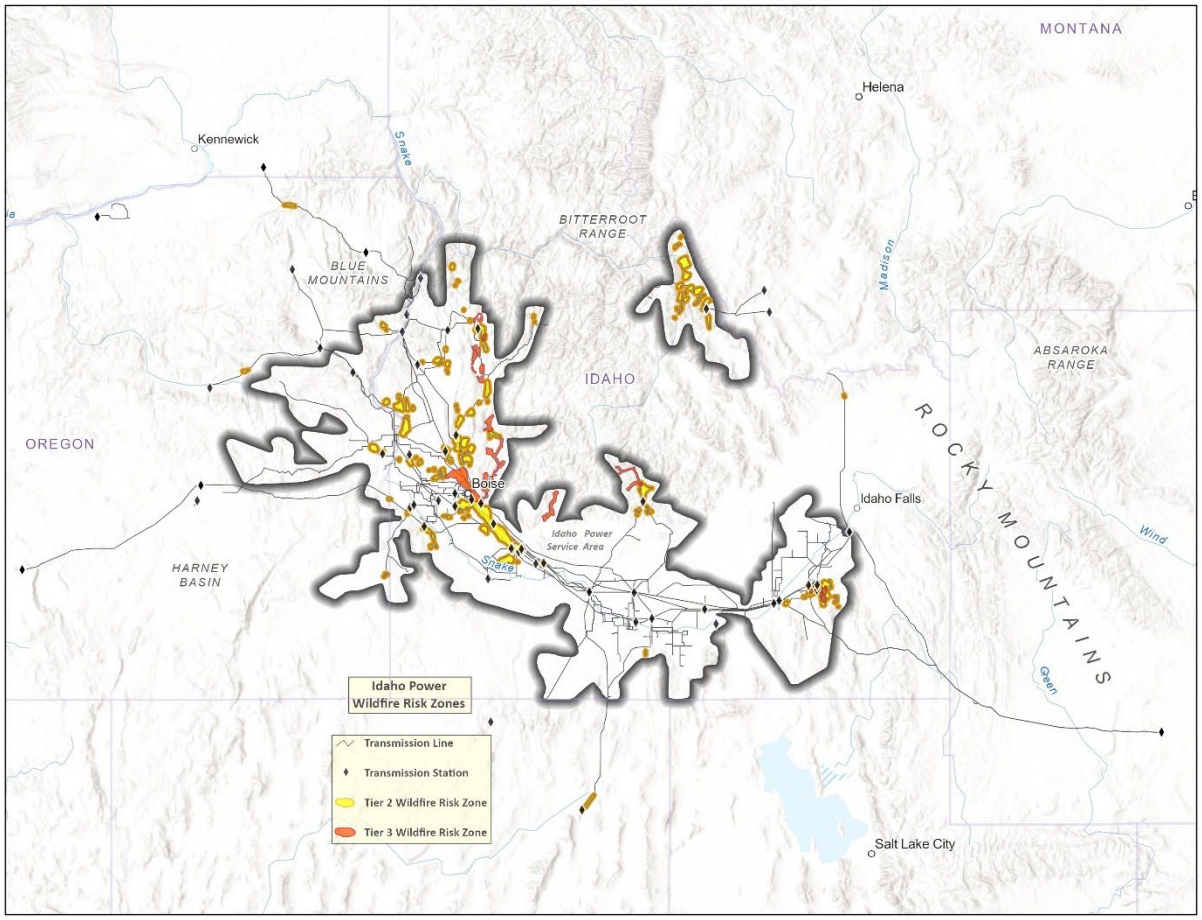


Figure 2
Wildfire Mitigation Plan—Risk Map

Additionally, Figures 3 through 6 delineate risk zones in Idaho and Oregon.

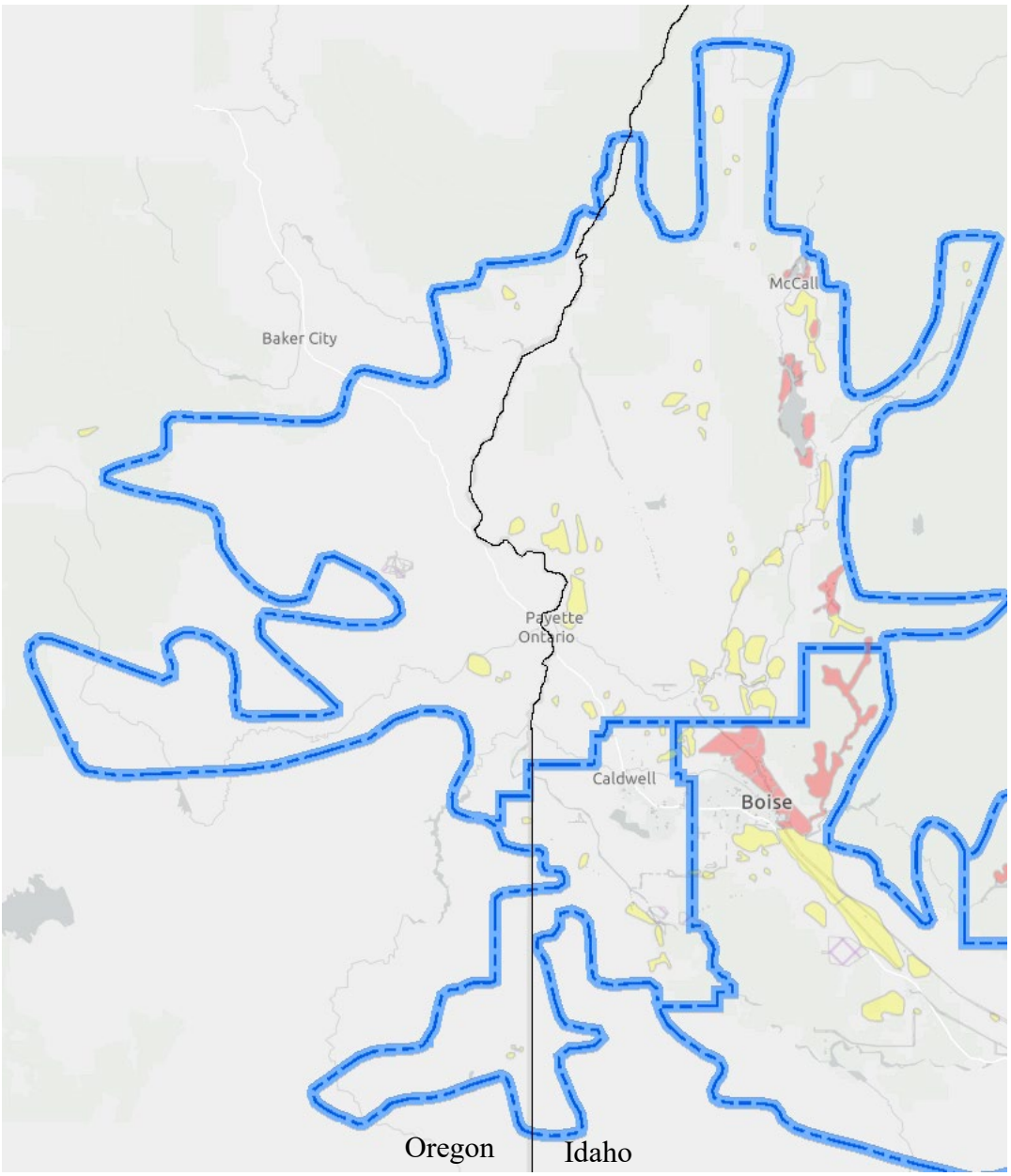
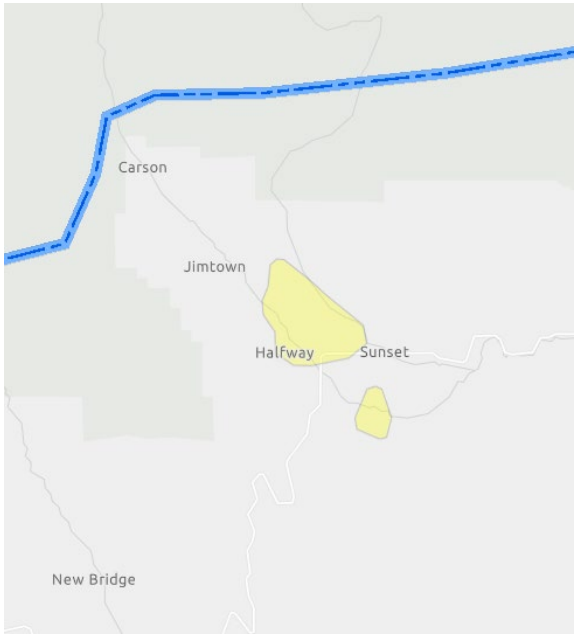
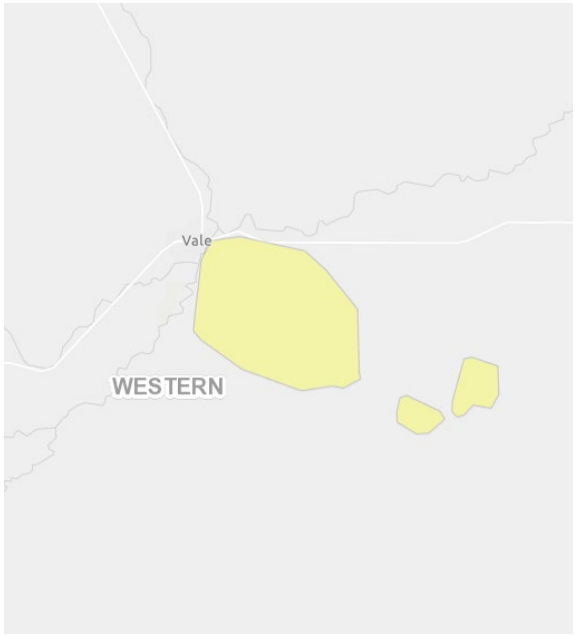


Figure 3
Wildfire Risk Map—western Idaho and eastern Oregon

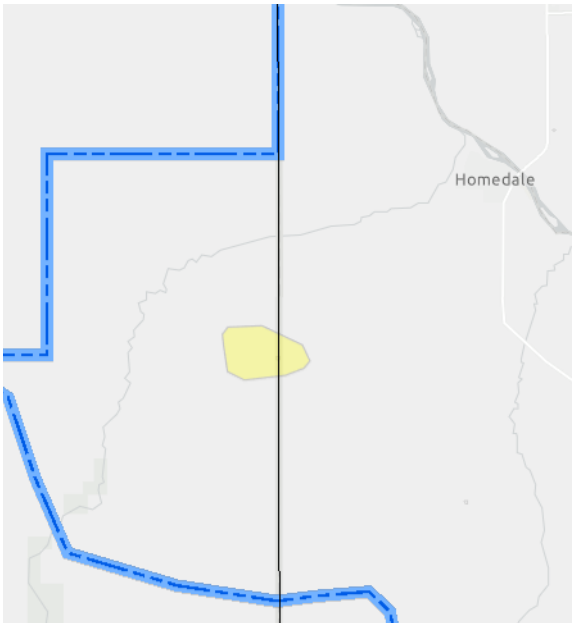
Halfway



Vale



Idaho-Oregon Boarder



Jordan Valley

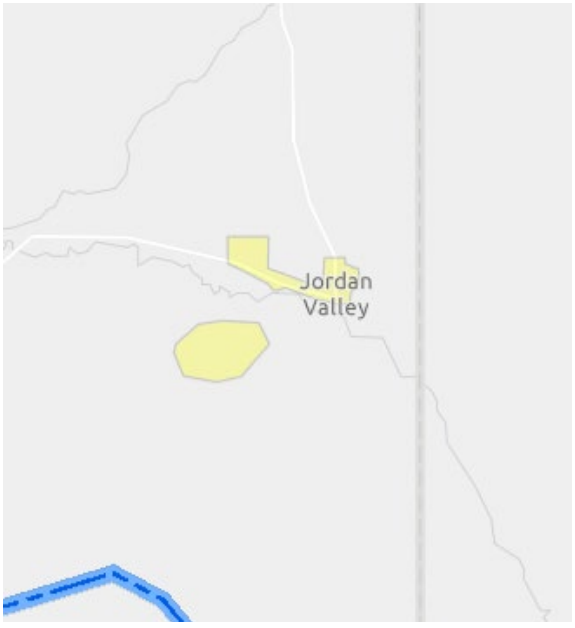


Figure 4
Oregon-specific zones

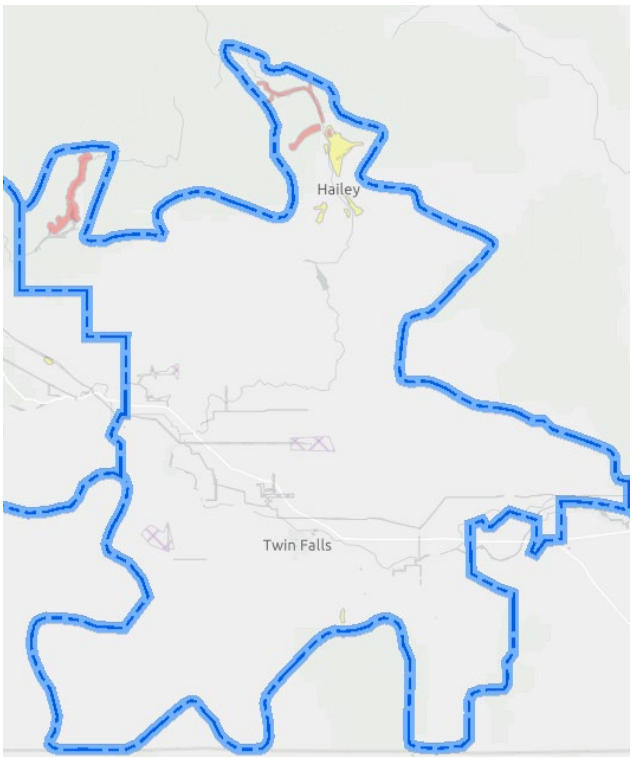
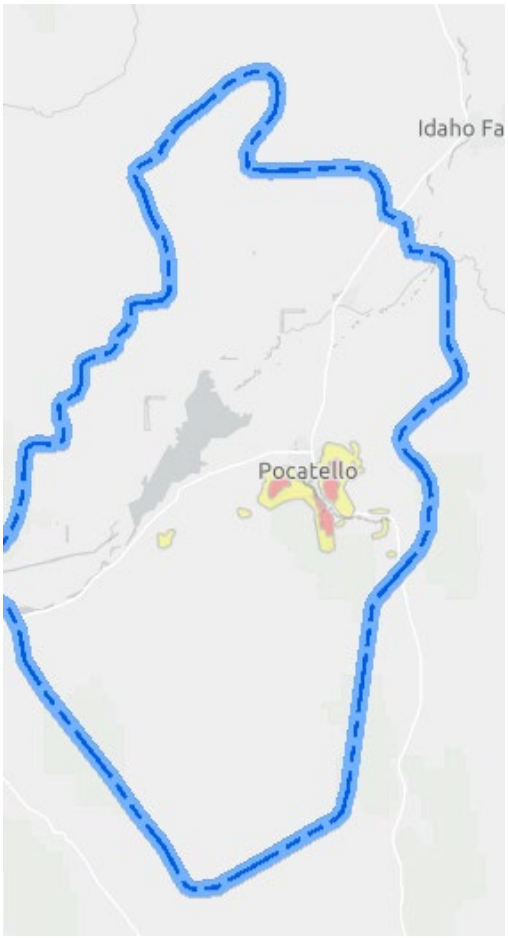


Figure 5
Wildfire Risk Map—southern Idaho

Pocatello



Salmon

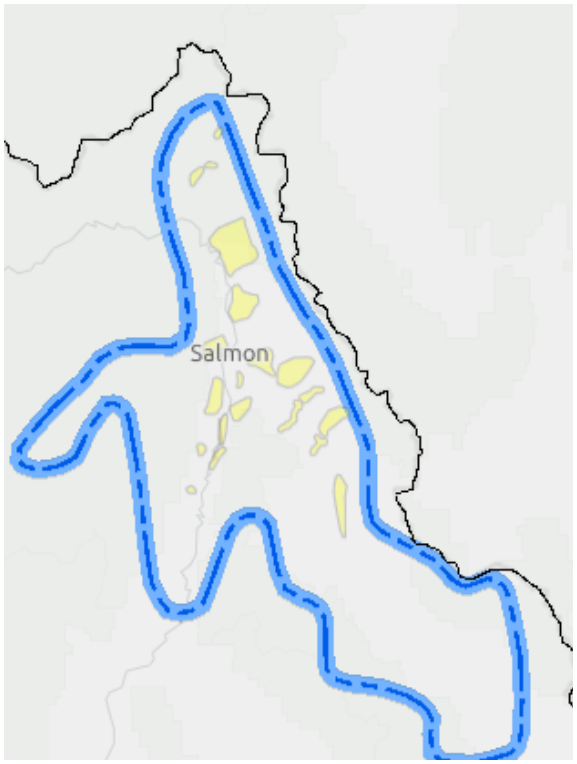


Figure 6
Wildfire Risk Map—eastern Idaho

3.2.2.1. Boardman to Hemingway Proposed Transmission Line

Idaho Power specifically considered the proposed route of the B2H 500 kV transmission line as part of the WMP. The proposed B2H route was included in the wildfire risk assessment and associated map analysis (see Figure 3). Two locations are identified along the route as having increased wildfire risk (YRZs), and there were no areas of higher risk (RRZs). Although the B2H transmission line has not been constructed as of the publication of this 2022 WMP, Idaho Power intends this WMP (as it will be reviewed annually) will apply to B2H. Additionally, Idaho Power will continue to update its fire risk mapping periodically and address the locations with elevated risk consistent with the mitigation strategy for transmission lines as described in sections 5–9 of this WMP.

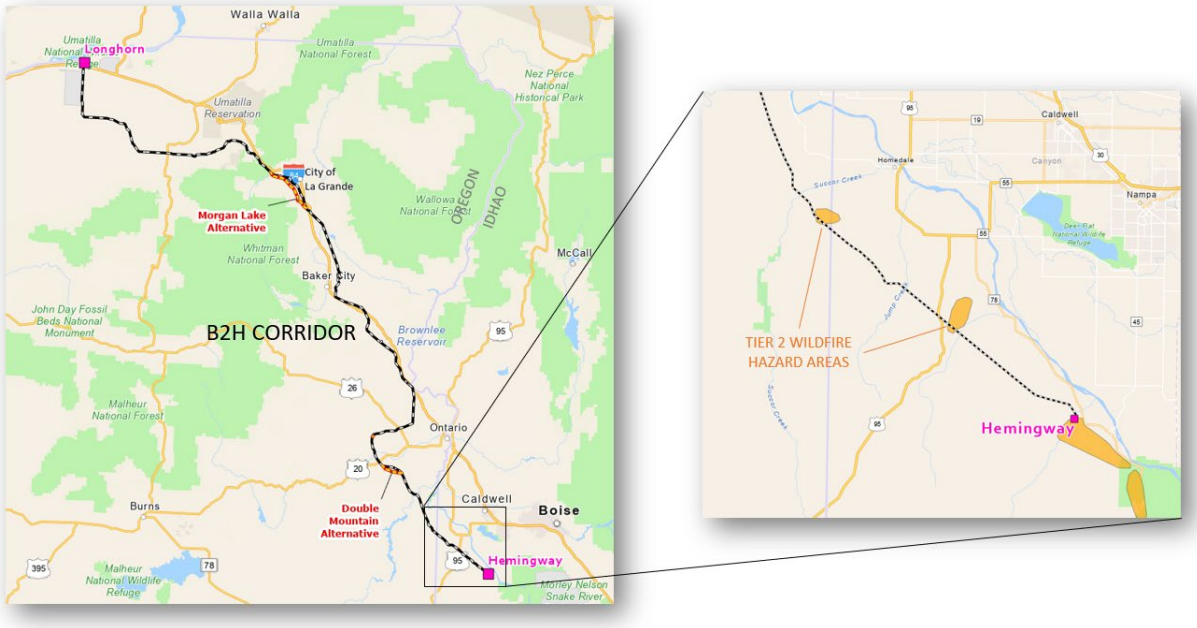


Figure 7
B2H proposed route risk zones

4. COSTS AND BENEFITS OF WILDFIRE MITIGATION

4.1. Objective

This section details Idaho Power's assessment of high-level risk with respect to undertaking wildfire mitigation activities. This assessment provides a framework for understanding the potential consequences of wildfire damage and the possibility of diminishing those consequences through targeted mitigation activities.

To that end, Section 4.3 identifies selected mitigation activities and the estimated costs of those activities on a system level. In Section 4.4, each mitigation activity is discussed in detail, with an assessment of why it was selected, what alternatives (if any) may be available, and any additional benefits (referred to as "co-benefits") the company believes may result from pursuing it. For each mitigation activity, costs have been estimated for Idaho and Oregon.

4.2. Risk-Based Cost and Benefit Analysis of Wildfire Mitigation

In assessing the probability and consequence of wildfire risk, and to identify benefits of various wildfire mitigation efforts, Idaho Power engaged with its external consultant and considered several sources of empirical data on the costs of major wildfires—both in terms of fires that burn into Idaho Power's facilities or that originate from electric infrastructure. These costs can include replacement costs of the company's property; the cost of fire suppression and environmental damage; third-party claims for property damage; employee and public injuries and fatalities; and other economic losses.

Through its research, Idaho Power found that obtaining a precise calculation of the potential costs of future wildfires is not realistic. The damage that any fire may cause depends on factors such as wind and weather, vegetation, fire risk levels, location, and population and structure density.

Idaho Power's assessment of the potential costs of wildfires—used in developing the WMP and the scope of proposed updates to practices—involved a review of prior major fires in other states, as well as calculations by other western utilities. While this assessment did not yield a precise quantification of potential benefits specific to Idaho Power, it provides a helpful illustration of the potential costs of not taking actions aimed at reducing wildfire risk.

Idaho Power reviewed and considered calculations analyzing the potential reduction in probability of igniting wildfires based on risk-mitigating activities. For instance, in a June 2020 filing before the IPUC, Avista Corporation (Avista) stated that its "analysis indicates a 10-year inherent potential risk exposure of at least $8 billion dollars," though noted the figure should not

be interpreted as a precise financial estimate.[7] Avista further noted that the actions it proposes in its own wildfire resiliency plan result in an average percentage of risk mitigation of 89% for the overall plan.[8]

In California, costs and damages associated with wildfires in recent years have exceeded $10 billion per year, with those associated with the 2020 fires alone potentially set to exceed $20 billion.[9] This increase[10] is consistent with the fact that, with few exceptions, the prevalence, intensity, and impact of wildfires continues to escalate year after year as evidenced by information compiled by the California Department of Forestry and Fire Protection (CAL FIRE) and detailed in Table 3.

Table 3
CAL FIRE Wildfire Data by Year

Year	Estimated Acres Burned	No. of Wildfires	No. of Confirmed Fatalities	No. of Structures Damaged or Destroyed
2020	4,197,628	9,279	31	10,488
2019	259,823	7,860	3	732
2018	1,975,086	7,948	100	24,226
2017	1,548,429	9,270	47	10,280
2016	669,534	6,954	6	1,274

The data compiled by peer utilities, historic fire costs, and known damage from prior fires are instructive. Considering peer metrics and analyses on probability and magnitude, as well as Idaho Power's own empirical review of wildfire events such as those in California and Oregon—and the resulting loss of lives—it is reasonable to conclude that the potential human and capital costs and damage from wildfire events vastly exceed any incremental costs of wildfire mitigation efforts identified in this WMP.

[7] *In the Matter of Avista Corporation's Application for an Order Authorizing Accounting and Ratemaking Treatment of Costs Associated with the Company's Wildfire Resiliency Plan,* Case No. AVU-E-20-05, Application at 17.

[8] Ibid.

[9] Jill Cowan, *How Much Will the Wildfires Cost?*, The New York Times, Sept. 16, 2020, at https://www.nytimes.com/2020/09/16/us/california-fires-cost.html.

[10] Idaho Power believes that its system is in notably better condition than some utilities in California. Nevertheless, these figures illustrate the destruction that can occur from vegetation contact if vegetation is not actively managed.

2023 Wildfire Mitigation Analysis Framework

Idaho Power plans to continue advancing its analytical approach to balancing cost and risk mitigation in its 2023 WMP. The company will evolve its risk analysis framework by building on the risk modeling detailed in its 2022 WMP and expanding its evaluation of risk reduction associated with present and future mitigation activities. The company's risk framework will seek to accomplish the following:

- Weigh the costs and potential benefits of alternative strategies to determine the most cost-effective wildfire mitigation solutions;
- Evaluate the effectiveness of current mitigation activities to determine whether those activities should be continued, refined, or replaced (e.g., analysis to determine circumstances in which underground line and facility conversions may be the optimal mitigation strategy compared to hardening overhead power lines); and
- Explore a range of risk management methodologies and expand the use of outage and fault analytics to further identify and refine areas for ignition reduction.

The company's cost and risk balancing framework will evolve over time and ultimately guide how it will identify, analyze, monitor, and address wildfire-related risk.

4.3 Wildfire Mitigation Cost Summary

From 2022–2025, Idaho Power estimates investing $46.8 million in incremental operations and maintenance (O&M) expenses to further wildfire mitigation measures. The following table summarizes the company's planned expenditures associated with executing its WMP through 2025. Estimated amounts reflect the company's best estimates and plans as of the 2022 WMP. These estimates will likely change in the future as the company reviews and refines its WMP and associated mitigation activities. For the 2022 WMP, each wildfire mitigation category—and associated estimated expenditures in Oregon and Idaho—is discussed in Section 4.4.

Table 4
Estimated system-wide incremental O&M expenses for wildfire mitigation (2022–2025) [11]

Forecast of Idaho Power System Incremental O&M Expenditures ($000s)					
	2022	2023	2024	2025	2022 - 2025
Quantifying Wildland Fire Risk					
Risk Map Updates	$ -	$ 67	$ -	$ 69	$ 136
Situational Awareness					
Weather Forecasting - Fire Potential Index (FPI) and Public Safety Power Shutoff (PSPS) Personnel	$ 210	$ 220	$ 230	$ 241	$ 901
Weather Forecasting - System development and support	$ 10	$ 29	$ 55	$ 55	$ 149
Pole Loading Modeling & Assessment (Contract service)	$ 25	$ 75	$ -	$ -	$ 100
Cameras	$ 50	$ 55	$ 113	$ 50	$ 268
Mitigation - Field Personnel Practices					
Mobile Weather Kits for Field Observers	$ 20	$ -	$ -	$ -	$ 20
Tools/Equipment	$ 5	$ 5	$ 5	$ 5	$ 20
Mitigation - Transmission & Distribution Programs					
Wildfire Mitigaton Program Manager	$ 180	$ 185	$ 190	$ 195	$ 750
O&M Component of Capital Work	$ 54	$ 61	$ 60	$ 54	$ 229
Annual O&M T&D Patrol Maintenance Repairs	$ 50	$ 50	$ 50	$ 50	$ 200
Environmental Management Practices	$ 25	$ 25	$ 25	$ 25	$ 100
Transmission Thermography Inspection Mitigation - Red Risk Zones	$ 20	$ 20	$ 20	$ 20	$ 80
Distribution Thermography Inspection Mitigation - Red Risk Zones	$ 30	$ 30	$ 30	$ 30	$ 120
Thermography Technician Personnel	$ 155	$ 160	$ 165	$ 170	$ 650
Transmission Wood Pole Fire Resistant Wraps - Red Risk Zone	$ 88	$ 88	$ -	$ -	$ 176
Transmission Wood Pole Fire Resistant Wraps - Yellow Risk Zone	$ 163	$ 163	$ 163	$ 163	$ 652
Covered Wire Evaluation - Pilot Program in PSPS Zones	$ 25	$ 50	$ 50	$ -	$ 125
Vegetation Management					
Vegetation Mgmt Incremental Expense to Transition to/Maintain 3-yr cycle Line Clearing Program	$ 8,087	$ 8,796	$ 9,547	$ 8,372	$ 34,802
Vegetation Distribution Red & Yellow Risk Zone: Pre-Fire Season Patrols/Mitigation, Pole Clearing, Removals, Work QA	$ 1,223	$ 1,284	$ 1,349	$ 1,416	$ 5,272
Line Clearing Personnel	$ 155	$ 159	$ 164	$ 169	$ 647
Communications					
Wildfire/Wildfire Mitigation Communications - Advertisements/Meetings/Other	$ 100	$ 100	$ 100	$ 100	$ 400
PSPS Customer Education/Communication - Advertisements, Bill Inserts/Other	$ 71	$ 71	$ 71	$ 71	$ 284
Information Technology					
Communication/Alert Tool development (System set up, outage maps, critical facilities identification)	$ 163	$ -	$ -	$ -	$ 163
Communication/Alert Tool for PSPS Customer Alerts/Extended Use	$ 141	$ 129	$ 129	$ 129	$ 528
Forecast Incremental O&M Expenditures Total	**$ 11,050**	**$ 11,822**	**$ 12,516**	**$ 11,384**	**$ 46,772**

[11] As of December 30, 2021.

4.4 Mitigation Activities

Idaho Power selected individual wildfire risk mitigation activities based on a variety of factors, including assessment of industry best practices in wildfire mitigation; discussions with peer utilities; consultation with government entities and agencies; and with consideration of alternatives that could be pursued.

Below is a narrative of each mitigation activity, its purpose, estimated near-term cost in Idaho and Oregon, potential co-benefits of the activity to Idaho Power and its customers, and potential alternatives.

With respect to Idaho and Oregon cost estimates, the estimated costs identified below are grounded in cost assignment between the company's Idaho and Oregon service areas and further informed by anticipated work in the two service areas.

4.4.1 Quantifying Wildland Fire Risk

Idaho Power's assessment of wildland fire risk is discussed in Section 3 of this WMP.

The first step in developing Idaho Power's WMP was to conduct a comprehensive assessment of the company's service area and transmission corridors. The company worked with Reax Engineering, a consulting firm that specializes in wildfire risk modeling and fire science, to conduct Idaho Power's wildfire risk analysis. The company determined that hiring an external consultant was beneficial for two reasons: (1) an external consultant was more cost effective than hiring additional resources within Idaho Power to perform the modeling, and (2) an outside consultant helped ensure Idaho Power's risk analysis approach was similar to its peer utilities.

An additional co-benefit of hiring an external consultant is aligning risk analysis with other utilities' practices to create a basis for comparison of risk and also a standard terminology and methodology in discussing risk. Idaho Power deemed Reax Engineering a qualified consultant to perform wildfire risk analysis based on the work it performed for the CPUC in developing the CPUC Fire Threat Map. Other utilities in Oregon, Idaho, Nevada, and Utah have utilized similar modeling approaches to identify and quantify wildfire risk.

Cost Estimate for Quantifying Wildland Fire Risk (2022–2025)

Idaho Power intends to re-evaluate its risk analysis using an external consultant on two more occasions between 2022 and 2025. Idaho Power estimates system-wide expenditure for these services to be approximately is $136,000. To determine state-specific estimates, the company assigned a share based on the number of line miles in each jurisdiction.

- Idaho estimated cost: $119,000
- Oregon estimated cost: $17,000

4.4.2 Situational Awareness—Fire Potential Index & Weather Forecasting

Idaho Power discusses specific situational awareness practices in Section 5 of this WMP.

In developing the WMP, Idaho Power created a new Fire Potential Index (FPI) tool to support operational decision-making to reduce wildfire threats and risks. The tool takes data on weather, prevalence of fuel (i.e., trees, shrubs, grasses), and topography, and converts that data into an easily understood forecast of the short-term fire threat for different geographic regions in Idaho Power's service area. Additionally, Idaho Power plans to continue to enhance meteorological and weather forecasting capabilities to further improve FPI forecasting and help determine when a Public Safety Power Shutoff may be necessary in Idaho Power's service area.

The benefits of developing the FPI and enhancing the company's meteorological forecasting capabilities is greater situational awareness of Idaho Power's system during critical peak summer months. To continue to generate useful information and system benefits, Idaho Power's situational awareness activities will be evaluated and updated annually as necessary to support the company's wildfire preparedness.

The company considers the FPI and related efforts an essential part of reducing the risk of ignition from work activities. This provides Idaho Power field personnel would not have a tool to assess the fire potential on a consistent basis. Given the distinct benefits that result from the FPI and enhanced foresting capabilities, Idaho Power did not consider alternatives to the development of these critical tools.

Cost Estimate for Situational Awareness—FPI and Weather Forecasting (2022–2025)

The estimated expenditure for the FPI tool is $901,000 and an additional $149,000 for enhanced weather forecasting capabilities, for a system-wide total of $1.1 million between 2022 and 2025. To determine state-specific estimates, the company applied its traditional jurisdictional separation amounts of 95% for Idaho and 5% for Oregon.

- Idaho estimated cost: $998,000
- Oregon estimated cost: $53,000

4.4.3 Situational Awareness—Advanced Technologies

Beginning in 2022, Idaho Power created a Technology Strategy Initiative team aimed at determining how new technologies and innovative practices can be incorporated into the company's wildfire mitigation practices to further decrease wildfire risk. Technology-based practices being considered include—amongst others—strategic use of cameras, satellite, and aerial imagery to detect vegetation hazards, pole loading modeling (to assess the structural integrity of poles), as well as covered conductors. With regard to cameras, the company is evaluating a pilot to test placement of cameras in strategic, high-risk locations to enhance situational awareness. Additionally, the company is learning more about artificial intelligence and how it can be leveraged to detect wildfire ignitions. Multiple camera and analytics

companies are being considered to determine potential cost-effective solution(s). The company is also working with local agencies to explore the possibility of partnering on the installation and ongoing use of cameras which may lead to reduced cost.

Cost Estimate for Situational Awareness—Pole Loading Modeling and Assessment (2022–2025)

The estimated system-wide expenditure to conduct pole loading modeling and assessment, which includes LIDAR assessment, is $100,000 for 2022 through 2025. Idaho Power plans to conduct the assessment in its highest risk zones, which are located exclusively in Idaho as set forth in Table 2. Because there are no Red Risk Zones in the company's Oregon service area, all expenditures will occur in Idaho at this time.

- Idaho estimated cost: $100,000
- Oregon estimated cost: $0

Cost Estimate for Situational Awareness—Cameras (2022–2025)

The estimated system-wide expenditure for the pilot evaluation installation of cameras in high-risk areas is $268,000 for 2022 through 2025. Idaho Power plans to prioritize the use of cameras in its highest risk zones, which are located exclusively in Idaho as detailed in Table 2. Because there are no Red Risk Zones in the company's Oregon service area, there are no current estimated expenditures for cameras in Oregon.

- Idaho estimated cost: $268,000
- Oregon estimated cost: $0

4.4.4 Field Personnel Practices

Idaho Power discusses its field personnel practices in Section 6 of this WMP.

Idaho Power's wildfire mitigation strategy includes procedural measures to reduce potential ignition and spread of wildfires. Idaho Power developed a *Wildland Fire Preparedness and Prevention Plan* (included as Appendix A to this WMP) to provide guidance to Idaho Power employees and contractors. The plan includes information regarding fire season tools and equipment available on the job site; daily situational awareness relative to areas with heightened fire conditions; expected actions and mechanisms for reducing on-the-job wildfire risk as well as reporting requirements in the event of an ignition; and training and compliance requirements.

All Idaho Power crews, and certain field personnel and contractors performing work on or near Idaho Power's facilities are required to operate in accordance with the provisions of the *Wildland Fire Preparedness and Prevention Plan* and expected to conduct themselves in a fire-safe manner. They should be prepared for wildfire by carrying specific tools, including but not

limited to, shovels, Pulaskis,[12] and water for initial suppression. Additionally, Idaho Power's PSPS program (included as Appendix B to this WMP) includes employees acting as Field Observers to report on site conditions as part of the de-energization process. Field Observers are equipped with mobile weather kits that include wind meters, compasses, and satellite communication devices to report real-time conditions.

The preparedness of Idaho Power crews and contractors is critical to comprehensive wildfire risk reduction practices. The incremental investment in field personnel equipment is focused on additional tools carried by employees working in elevated risk zones.

Cost Estimate for Field Personnel Equipment (2022–2025)

The estimated system-wide expenditure for field personnel equipment (tools and mobile weather kits) is $40,000 between 2022 and 2025. To determine state-specific estimates, the company applied its traditional jurisdictional separation amounts of 95% for Idaho and 5% for Oregon.

- Idaho estimated cost: $38,000
- Oregon estimated cost: $2,000

4.4.5 Transmission and Distribution (T&D) Programs for Wildfire Mitigation

Idaho Power's T&D-related wildfire mitigation activities primarily involve expanded asset management programs and system hardening efforts, discussed in detail in Section 8.2 of this WMP. The narratives below provide insight into Idaho Power's consideration and selection of certain mitigation and hardening practices.

4.4.5.1 Annual T&D Patrol, Maintenance, and Repairs

Visual inspections are a critical component of T&D line-related wildfire mitigation efforts. On an annual basis, Idaho Power uses helicopters for visual aerial inspection of transmission lines that are Western Electricity Coordinating Council (WECC) path lines. Under the WMP, Idaho Power will continue to use this method of line inspection for all transmission lines located in Red Risk Zones. Idaho Power strives to complete these inspections prior to the start of the wildfire season.

Distribution lines that are located within RRZs are inspected on an annual basis through detailed visual inspections. Helicopters are not practical for carrying out all distribution patrols due to greater population, structural, and vegetation density, so unmanned aerial vehicles (UAV) with high-definition cameras are used to aid in these inspections in certain situations. These inspections allow personnel to look for potential line defects that may not be obvious from

[12] A Pulaski is a hand tool specifically used for fighting fires that combines an axe and an adze atop a single handle. The tool is the invention of Edward Crockett Pulaski, a ranger with the U.S. Forest Service who was based in Wallace, ldaho, in the early 1900s.

the ground. “Priority 1” defects, or conditions that may result in an outage or potential ignition, are immediately reported and repaired as soon as possible.

The company will continue to explore the expanded use of UAVs, as the detailed images and data collected through high-resolution aerial inspections can provide several co-benefits, including more granular data on vegetation growth and line and facility conditions.

Cost Estimate for Annual T&D Patrol, Maintenance, and Repairs (2022–2025)

The estimated system-wide incremental expenditure for annual T&D patrols, maintenance,and repairs is $200,000 from 2022 to 2025. To determine state-specific estimates, the company applied its traditional jurisdictional separation amounts of 95% for Idaho and 5% for Oregon.

- Idaho estimated cost: $190,000
- Oregon estimated cost: $10,000

4.4.5.2 Thermography Inspections

While Idaho Power periodically conducts infrared thermography inspections as part of reliability and maintenance programs, the company is expanding these inspections in Red Risk Zones on an annual basis. These inspections are conducted using hand-held and drone-mounted cameras with thermal-sensing technology and can help identify defects associated with the overheating of equipment, connections, splices, or conductors.

As part of the thermography inspections, temperature gradients are analyzed to detect potential problems and issues found are prioritized based on their severity and repaired. Idaho Power recently created a new Thermography Technician position to carry out the inspections and coordinate repair activities, and additional resources may be added to perform this function across more of Idaho Power’s service area if a single technician proves insufficient. To prioritize the use and information gained from this technology, it will initially be employed only in RRZs. 2022 is the test year to determine how many inspections can be performed, and the overall cost-benefit of the technology to help evaluate the possibility of expanding use and adding more resources.

Thermography inspections are uniquely valuable in that they are able to uncover problems undetectable to the naked eye. From the company’s perspective, there is not a viable alternative to this practice. The technology enables more proactive identification of potential issues than would otherwise be possible.

Cost Estimate for Thermography Inspections (2022–2025)

The estimated system-wide expenditure for thermography inspections is $850,000 from 2022 to 2025. Idaho Power currently plans to prioritize the use of this mitigation practice in its highest risk zones. Because the company’s Oregon service area does not have any Red Risk Zones, there is no estimated expenditure on thermography inspections there at this time.

- Idaho estimated cost: $850,000
- Oregon estimated cost: $0

4.4.5.3 Wood Pole Fire-Resistant Wraps

To help improve the resiliency of the company's wood transmission poles, Idaho Power now wraps them with a fire-resistant mesh in Red and Yellow Risk Zones. The mesh wrap helps protect the integrity of the pole if it is exposed to fire and improves the resiliency of Idaho Power's transmission system. An alternative to installing fire-proof mesh wrap is to replace wood poles with structures made of non-combustible material, such as steel. With 3,863 existing wood transmission poles in Idaho Power's Red and Yellow Risk Zones, the cost of replacing all wood poles is much higher than the cost of covering with a fire-resistant mesh.

Prior to developing the WMP, Idaho Power evaluated different products to determine the most cost-effective approach for protecting existing wood poles from fire. Several products were considered and trialed, including short-term spray-on and paint-on fire retardants, long-term retardants, and steel wraps. In 2020, the company evaluated a protective mesh wrap and compared the cost and performance to the alternatives. The evaluation found that the mesh wrap was approximately 53% less costly than the alternatives and offered the same level of risk reduction. The decision to use a mesh wrap product was not based solely on cost; other criteria were considered, including availability of the product, ease of installation, expected protective life span, and performance when exposed to fire. By all these measures, fire-resistant mesh was the best solution.

Cost Estimate for Wood Pole Fire-Resistant Wraps (2022–2025)

The estimated system-wide expenditure for applying fire-resistant mesh wraps to transmission poles in Red and Yellow Risk Zones is $828,000 between 2022 and 2025. To determine state-specific estimates, the company assigned a share based on the number of wood poles in each jurisdiction that are in elevated risk zones.

- Idaho estimated cost: $789,000
- Oregon estimated cost: $39,000

4.4.5.4 Covered Conductor Pilot

Idaho Power's Technology Strategy Initiative identified covered conductor as a potential mitigation measure to pilot. Benchmarking and feedback from other utilities highlighted the potential benefit of covered conductor as a mitigation measure. The company will conduct a pilot of covered conductor in 2022 through 2024 to explore the benefits, tooling requirements for field personnel, and design parameters. While covered conductor may reduce the risk of wildfire, the company will analyze potential co-benefits, including improved reliability outside of wildfire season and reduced outage restoration costs.

Cost Estimate for the Covered Conductor Pilot (2022–2024)

The estimated cost of the pilot is $125,000 from 2022–2024. To determine state-specific estimates, the company applied its traditional jurisdictional separation amounts of 95% for Idaho and 5% for Oregon.

- Idaho estimated cost: $119,000
- Oregon estimated cost: $6,000

4.4.6 Enhanced Vegetation Management

Idaho Power's enhanced vegetation management practices are discussed in detail in Section 8.3 of this WMP.

In the initial stage of developing its WMP, Idaho Power conducted an analysis to determine the most likely sources of ignition across the company's service area. Reliability data revealed vegetation contact as one of the most common causes of outages on Idaho Power's system. With the goal of eliminating potential ignition sources and to reduce risk, enhanced vegetation management was recognized as a critical aspect of Idaho Power's WMP.

To prioritize risk reduction from vegetation contact, Idaho Power determined it would move to a three-year pruning cycle and apply enhanced vegetation management practices in Red and Yellow Risk Zones. These enhanced practices include pre-fire season vegetation patrols, more targeted pole clearing and vegetation removal, and additional quality assurance for vegetation management practices.

The company considered other vegetation management alternatives, including shorter trimming cycles, longer trimming cycles, and strategies that evaluate each tree individually and only trim it once it has nearly grown back to the power line (known as "just-in-time trimming"). Each alternative presented challenges or resulted in negative impacts that undermined any potential benefits.

While shorter trimming cycles result in less vegetation being removed during each trimming cycle, this practice costs more due to the need for more resources and more frequent trimming of trees near the power lines. In contrast, longer cycles result in less frequent trimming of each tree but larger amounts of vegetation that must be removed to maintain larger clearance envelopes around the power lines to accommodate additional years of vegetative growth. Further, longer trimming cycles create logistical challenges that are exacerbated by tree biology. Some trees simply grow faster than a given trimming cycle and the longer the trimming cycle, the more pervasive this issue becomes. Longer cycles that call for heavy pruning also lead to hormonal imbalances between a tree's canopy and its root system. To correct this imbalance, the tree aggressively re-grows new sprouts to quickly replace its lost canopy. In this regard, heavier pruning results in a faster rate of tree regrowth than normal, making it even more difficult to consistently maintain longer trimming cycles. Finally, "just-in-time trimming" is primarily a reactive strategy that ultimately leads to challenges associated with securing qualified tree-trimming crews, as this ad hoc approach involves hiring crews on an as-needed basis rather

than on a consistent schedule. After evaluating these alternative approaches, Idaho Power concluded that the goal of maintaining a consistent three-year trimming cycle is the most cost-effective and sustainable strategy to keep vegetation away from the power lines in a proactive manner.

Moving forward with a three-year cycle and performing the additional activities detailed above will involve a sizeable increase in incremental O&M expenditure: approximately $8 million annually. An alternative to enhancing Idaho Power's vegetation management program is to convert overhead distribution circuits to underground. While undergrounding is used in certain circumstances, undergrounding has generally not been determined to be a cost-effective expense relative to enhanced vegetation management. That said, the company continues to evaluate and implement underground solutions, as appropriate, as part of its WMP hardening efforts detailed below.

Although vegetation management is a sizeable increased wildfire mitigation expense, performing this work is expected to have notable co-benefits, including reduced vegetation-caused outages in Red and Yellow Risk Zones. Idaho Power plans to monitor performance and outage metrics to confirm the success of the enhanced program.

Decreasing vegetation outages was considered one of the most important, cost-effective measures Idaho Power could take to reduce the likelihood of an ignition event and protect utility infrastructure. Shifting vegetation management practices was deemed a prudent course of action based on the number of potential outages or ignition sources that may be eliminated. It is also the approach that has been adopted by many of Idaho Power's peer utilities.

Cost Estimate for Enhanced Vegetation Management (2022–2025)

The estimated system-wide expenditure for enhanced vegetation management is $40.7 million from 2022 to 2025. Because vegetation management contracts are based on the company's system-wide needs and not separated by state, the company determined state-specific vegetation management estimates by applying its traditional jurisdictional separation amounts of 95% for Idaho and 5% for Oregon.

- Idaho estimated cost: $38.7 million
- Oregon estimated cost: $2 million

4.4.7 Communications and Customer Notification Enhancements

Idaho Power's efforts to communicate with customers and the public about wildfire and mitigation are discussed in detail in Section 10 of this WMP.

Idaho Power considers communication a vital part of its wildfire mitigation efforts. Customer and public awareness and education are a vital part of ensuring that the communities that Idaho Power serves are protected and safe from the threat of wildfire. New communication expenses related to customer and community educational outreach include advertisements, printed media, social media, and public meetings. The purpose of these communications is to

keep customers aware of mitigation and fire-related activities before, during, and after fire season. Additionally, the company is building out communication systems to be able to alert customers more quickly and easily about wildfire events and outages, including potential PSPS events.

Cost Estimate for Communication and Customer Notification Enhancements (2022–2025)

The estimated system-wide expenditure for communication expenses is $400,000 and $691,000 for customer notification system enhancements, totaling $1.1 million from 2022 to 2025. To determine state-specific estimates, Idaho Power applied its traditional jurisdictional separation amounts of 95% for Idaho and 5% for Oregon.

- Idaho estimated cost: $1.04 million
- Oregon estimated cost: $54,600

4.4.8 Incremental Capital Investments

Idaho Power's wildfire mitigation efforts include capital investments in system hardening practices including approaches deployed after internal testing and analysis, many of which also provide co-benefits to the company.

Idaho Power's capital investments for wildfire mitigation are discussed in detail in Section 8.2 (T&D Asset Management Programs) of this WMP.

4.4.8.1 Circuit Hardening and Infrastructure Upgrades

Idaho Power estimates spending $5.1 million annually through 2025 on circuit hardening and infrastructure upgrades across its system.

Idaho Power's WMP includes an overhead distribution hardening program for Red Risk Zones. The program includes systematic replacement of hardware, equipment, and materials to improve safety and reliability and reduce ignition risk. The first five years of the program are focused on circuits in Red Risk Zones, but it may be expanded to Yellow Risk Zones in the future. The company will review hardening outcome metrics annually to determine the benefit of the program and to determine whether to expand the program after 2025.

Prior to developing its WMP, Idaho Power successfully implemented many of the same hardening measures detailed below as part of the company's reliability program. Outage data and analytics showed that customer outages were reduced by approximately 38% in areas where hardening projects were carried out. With the success of reducing outages, some of these same activities to increase reliability were chosen to be part of the WMP to help reduce ignition potential in Red Risk Zones. Enhanced system hardening efforts include installation of fire safe fuses, Spark Prevention Units, and fiberglass crossarms.

All the hardening activities and equipment identified in this program were evaluated by patrolmen, troublemen, reliability engineers, and the company's Methods and Materials

department to determine cost-effective solutions that balance overall costs with expected risk reduction.

As an alternative to conducting circuit hardening upgrades, the company considered converting overhead distribution circuits to underground. While underground conversions are used in certain circumstances, the cost is estimated to be 2–10 times higher than the cost of carrying out hardening work. In general, overhead hardening efforts provide the benefit of being able to impact a greater number of circuit miles and customers in a shorter time horizon with less investment than undergrounding. Idaho Power will continue to evaluate underground opportunities as part of overall system hardening efforts.

The following summarizes the incremental capital investments the company is making to harden its system and further reduce wildfire risk:

- **Wood Pole Replacement—**The company will replace wood poles if field evaluations determine that significant deterioration or damage has occurred since the last inspection or treatment. Poles are inspected above the groundline to determine strength and climbability. Poles identified as "rejects" will be replaced on an expedited basis. Furthermore, poles having wood stubs/structural reinforcements are changed out pursuant to current practices.

- **Fuse Replacements—**Expulsion fuses located in Red Risk Zones will be changed out with energy-limiting and power fuses. Fuse applications include overhead transformers, line taps, risers, and capacitor banks. In 2018, Idaho Power began exploring different fusing technology to replace expulsion fuses with non-expulsion fuses. Three different fuse types were considered and subsequently piloted. The pilot was used to determine the performance of each fuse type, installation requirements, and coordination characteristics. Financial analysis included the cost of each fuse along with associated cutout and hardware and helped determine the most cost-effective option. This information was used to evaluate non-expulsion fuses. *Replacement of all expulsion fuses in Red Risk Zones is expected to take approximately three years at a cost of approximately $1.9 million. Because this work will be conducted in Red Risk Zones, the company does not anticipate replacing fuses in Oregon at this time.*

- **Spark Prevention Units—**Porcelain arresters used for overvoltage protection will be changed out with arresters utilizing Spark Prevention Units (SPU). The SPU acts to eliminate the potential of catastrophic failure during arrester operation. This work includes all distribution arresters located on primary distribution lines in Red Risk Zones. In 2019, Idaho Power piloted new arrester technology to determine performance characteristics, installation requirements, and potential benefits in reducing ignition risk. As part of the pilot, Idaho Power compared different manufacturers with similar technology and conducted performance analysis to determine the most cost-effective solution. *Replacement of the arresters is expected to take approximately three years to complete and will cost approximately $1.7 million. Because this work will be conducted in Red Risk Zones, the company does not anticipate replacing arrestors in Oregon at this time.*

- **Fiberglass Crossarms—**Idaho Power began piloting fiberglass crossarms in 2018 to determine potential cross-functional benefits associated with fiberglass. The pilot focused on cost, ease of installation, strength, supply availability, and reduced potential for tracking of electrical current. Tracking is known as the flow of current over an insulator, which can generate heat. The company compared different crossarm types and manufacturers and determined that fiberglass was most cost effective when considering up-front capital and installation costs. The pilot program, along with benchmarking of peer utilities, helped determine that fiberglass crossarms provided a number benefits relative to improved safety and reliability. Therefore, Idaho Power's hardening program includes the installation of both tangent and dead-end fiberglass crossarms in Red Risk Zones. However, Idaho Power does not intend to replace all wood crossarms with fiberglass immediately. As part of the fielding phase, company distribution designers will assess wood crossarms and initially change those showing signs of defects or damage. Identified crossarms utilizing wood pins will also be replaced with fiberglass. This approach will spread the cost out over time and help reduce the upfront cost of the program.

- **Small Conductor—**In the early stages of developing the WMP, Idaho Power considered the possible risk associated with small conductor and the potential for breakage. As a result of this exercise, the company's WMP hardening program includes the replacement of overhead distribution conductor that meets certain criteria which includes approximately 60 miles in Red Risk Zones. Conductor losses were analyzed and showed that replacing the conductor will result in an approximately 50% reduction of line losses, resulting in co-benefits for the company and customers in terms of greater reliability and line loss improvements.

- **Porcelain Switches—**Idaho Power's Outage Management System and feedback from field personnel revealed potential benefits of switches made of material other than porcelain. Therefore, porcelain switches installed in Red Risk Zones will be changed out with cutouts featuring Ethylene Propylene Diene Monomer Rubber (EPDM). Idaho Power's Methods and Materials Department trialed different cutout switches made up of different material, including silicone and polymer, to determine the most cost-effective solution. The results of the trial highlighted the potential for avian issues with silicone (i.e., ravens tended to eat the silicone), and the cost of EPDM versus polymer was nearly equivalent. The financial analysis determined that EPDM would preserve the integrity of the insulator body, prevent outages, and provide an estimated savings of $10,798 per year over silicone.

- **Avian Protection—**Idaho Power employs several different protection measures to protect wildlife on existing structures including but not limited to covers, insulated conductor, diverters, perches, nesting platforms, and structural modifications. The company has an extensive history working with manufacturers of animal guards/covers and regularly seeks new solutions for avian issues to prevent mortalities, increase reliability, and eliminate other risks. The company's Avian Protection Plan (APP) was developed in the mid-2000s and many of the practices identified in the APP are used for wildfire mitigation in Red and Yellow Risk Zones. For example,

new wildlife guards were recently developed and installed in conjunction with the installation of new power fuses and SPUs. Idaho Power consulted with different manufacturers to develop new products that would accomplish the dual goals of avian protection and wildfire mitigation. The best solution is determined on a case-by-case basis depending on the specific location, the type and extent of avian presence, and other relevant factors.

4.4.8.2 Overhead to Underground Conversions

Another aspect of Idaho Power's system hardening program is the select conversion of overhead to underground distribution lines in Red Risk Zones. In 2022, the company will convert 1.5 miles of overhead distribution lines to underground lines. In 2023 and beyond, the company will work to build a strategic undergrounding program to weigh the cost-benefit of undergrounding versus other circuit hardening measures. While underground distribution lines offer benefits associated with being less exposed to the elements and external forces, conversion may not be possible, advisable, or economical in certain situations. The company will continue to evaluate the feasibility of underground conversions as well as the relative value and cost effectiveness as part of the WMP.

4.4.8.3 Transmission Steel Poles

In 2021 and as part of its WMP, Idaho Power revised its transmission construction standards to utilize steel poles and structures for new line construction built to 138 kV and above in elevated wildfire risk zones. This change is intended to minimize the potential for wildfire damage, improve transmission line resiliency, and increase reliability for customers. Wood poles continue to be accepted and used in the industry, and the company will still utilize wood poles in many transmission system applications in consideration of the specific engineering, right-of-way, permitting, and scheduling requirements for each project.

In addition, wood poles will continue to be the standard construction practice for transmission line voltages below 138 kV unless a different material is needed to meet specific engineering or planning requirements. As discussed above, Idaho Power will wrap wood poles located in Red and Yellow Risk Zones with fire-proof mesh.

5. SITUATIONAL AWARENESS

5.1. Overview

Visibility and readily available access to current and forecasted meteorological conditions and fuel conditions is a key aspect of Idaho Power's wildfire mitigation strategy. Meteorological and fuel conditions can vary significantly across Idaho Power's service territory. Idaho Power leverages its internal atmospheric science department's modeling/forecasting capabilities, its existing field weather stations, and publicly available weather/fuel data to develop projections of current and future wildfire potential across Idaho Power's service territory. This wildfire potential information is then available to operations personnel to factor into their operational decision-making.

5.2. Fire Potential Index

Idaho Power has developed an FPI tool based upon original work completed by San Diego Gas and Electric, the National Forest Service, and the National Interagency Fire Center and modified for Idaho Power's Idaho and Oregon service territory. This tool is designed to support operational decision-making to reduce fire threats and risks. This tool converts environmental, statistical, and scientific data into an easily understood forecast of the short-term fire threat which could exist for different geographical areas in the Idaho Power service territory. The FPI is issued for a seven-day period to provide for planning of upcoming events by Idaho Power personnel.

The FPI reflects key variables, such as the state of native vegetation across the service territory ("green-up"), fuels (ratio of dead fuel moisture component to live fuel moisture component), and weather (sustained wind speed and dew point depression). Each of these variables is assigned a numeric value and those individual numeric values are summed to generate a Fire Potential value from zero to sixteen, each of which expresses the degree of fire threat expected for each of the 7 days included in the forecast. The FPI scores are grouped into the following index levels:

- **Green**: FPI score of 1 through 11 indicates low potential for a large fire to develop and spread as there is normal vegetation and fuel moisture content as well as weak winds and high relative humidity.
- **Yellow**: FPI score of 12 through 14 indicates an elevated potential for a large fire to develop and spread as there are lower than normal vegetation and fuel moisture content as well as moderate winds and lower than normal relative humidity.
- **Red**: FPI score of 15 through 16 indicates a higher potential for a large fire to develop and spread as there are well below normal vegetation and fuel moisture content as well as strong winds and low relative humidity.

Fire Potential Index (FPI) Category			
	Normal	Elevated	High
FPI Range	1 to 11	12 to 14	15 - 16

The state of native grasses and shrubs, or **Green-Up Component**, of the FPI is determined using satellite data for locations throughout the Idaho Power areas of interest. This component is rated on a 0-to-5 scale ranging from very wet (or "lush") to very dry (or "cured"). The scale is tied to the Normalized Difference Vegetations Index (NDVI), which ranges from 0 to 1, as follows:

Green-Up Component						
NDVI	Very Wet/Lush: 1.00 to 0.65	0.64 to 0.60	0.59 to 0.55	0.54 to 0.50	0.49 to 0.40	Very Dry/Cured 0.39 to 0.00
Score	0	1	2	3	4	5

The **Fuels Component (FC)** of the FPI measures the overall state of potential fuels which could support a wildfire. Values are assigned based on the overall state of available fuels (dead or live) for a fire using the following equation:

$$FC = FD / LFM$$

Where FC represents Fuels Component in the scale below, FD represents 10-hour Dead Fuel Moisture (using a 1-to-3 scale), and LFM represents Live Fuel Moisture (percentage). This data will be collected from satellite sources and regional databases supported by state and federal agencies.

The product of this equation represents the fuels component that is reflected in the FPI as follows:

Very Wet					Very Dry
0	1	2	3	4	5

The **weather component** of the FPI represents a combination of sustained wind speeds and dew-point depression as determined using the following scale. Regional adjustment to criteria limits for the upper wind speeds may occur after further discussion with subject matter experts from each of the regional operations. This data will be sourced from the weather, research and forecasting (WRF) products produced by Idaho Power using its High-Performance Computing (HPC) system. In addition to the HPC system produced WRF data, several national level

meteorological products will be used. These products will include regional weather observations used to validate model information.

Dewpoint Depression/Wind	≤5 mph	6 to 11 mph	12 to 18 mph	19 to 25 mph	26 to 32 mph	≥33 mph
≥50ºF	4	4	4	5	5	6
40ºF to 49ºF	3	3	4	4	5	5
30ºF to 39ºF	3	3	3	4	4	5
20ºF to 29ºF	3	3	3	3	3	4
10ºF to 19ºF	2	2	2	2	2	3
<10ºF	0	1	1	1	1	2

5.3. FPI Annual Process Review

The FPI process will be reviewed annually after completion of the fire season and, with consultation of interested parties (e.g., Load Serving Operator, Line Crews, and others), will be updated to enhance Idaho Power's wildfire preparedness.

6. MITIGATION—FIELD PERSONNEL PRACTICES

6.1. Overview

A component of Idaho Power's wildfire mitigation strategy is to prevent the accidental ignition and spread of wildfires due to employee work activities. Idaho Power developed the *Wildland Fire Preparedness and Prevention Plan* (Appendix A) to provide guidance to Idaho Power employees and contractors to help prevent the accidental ignition and spread of wildfires due to company work activities in locations and under conditions where wildfire risk is heightened. All Idaho Power crews and certain field personnel performing work on or near Idaho Power's facilities are expected to operate in accordance with the Plan and continue to conduct themselves in a fire-safe manner.

6.2. Wildland Fire Preparedness and Prevention Plan

The *Wildland Fire Preparedness and Prevention Plan* informs Idaho Power personnel and its line construction contractors about the following factors:

- Annual fire season tools and equipment to be available when on the job site
- Daily situational awareness regarding locations of heightened potential for fire risk and weather conditions in those areas
- Expected wildfire ignition prevention actions while working and reporting instructions in the event of fire ignition
- Training and compliance requirements

7. MITIGATION—OPERATIONS

7.1. Overview

A component of Idaho Power's wildfire mitigation strategy is to continue safe and reliable operation of its T&D lines while also reducing wildfire risk. These operational practices primarily center around the following:

- Temporary operating procedures for transmission lines during the fire season[13]
- An operational strategy for T&D lines during time periods of elevated wildfire risk during the fire season
- A PSPS strategy for Idaho Power's service area and transmission corridors

7.2. Transmission Line Operational Strategy

7.2.1. Fire Season Temporary Operating Procedure for Transmission Lines

Each year, typically in May, leadership within Idaho Power's Load Serving Operations (LSO) department updates and issues its Fire Season Temporary Operating Procedure. The purpose of this temporary operating procedure is to provide LSO employees with guidelines for operating transmission lines during the summer fire season. The procedure aims to reduce wildfire risk through practices relating to information collection, notification, and procedures for testing/closing in on locked-out transmission lines.

7.2.2. Red Risk Zone Transmission Operational Strategy

During wildfire season, Idaho Power determines a daily FPI as described in Section 5 of this WMP. The FPI informs the transmission line operational strategy for those lines owned, operated, and located in RRZs. These lines will be operated in normal settings mode but with no "testing"[14] of a line that may have "locked out" during the time of a red FPI. Essentially, in the event of a fault on the specified transmission line(s) during a red FPI, the line will operate as normal and may "lock out," at which time the line(s) will either need to be patrolled before "testing" or wait until the FPI level drops out of the red category prior to being reenergized.

[13] The duration of the fire season will be reviewed and defined annually.

[14] Transmission line "testing" refers to the human act of re-energizing a line without completing a physical field patrol or observation of a line.

7.3. Distribution Line Operational Strategy

7.3.1. Red Risk Zone Distribution Operational Strategy

During wildfire season, Idaho Power determines a daily FPI as described in Section 5 of this WMP. The FPI informs the distribution line operational strategy for those lines located in the wildfire RRZs. These lines will be operated in a non-reclosing[15] state during the time of red FPI. Essentially, in the event of a fault on the specified distribution line(s) during the red FPI, the line(s) will be automatically de-energized with no reclosing attempts until either the line(s) has been patrolled or the FPI level drops out of the red category.

7.4. Public Safety Power Shutoff

7.4.1. PSPS Definition

PSPS, as used in this WMP, is defined as the proactive de-energization of electric transmission and/or distribution facilities during extreme weather events to reduce the potential of those electrical facilities becoming a wildfire ignition source or contributing to the spread of wildfires. The concept is as follows: if significant weather events can be predicted far enough in advance, the resulting proactive line de-energization before the forecasted weather conditions materialize could mitigate the risk of a wildfire. A PSPS event has significant customer impact and requires significant planning.

PSPS is <u>not</u> the practice of de-energizing lines in the following types of situations:

- Unplanned de-energization of lines required for emergencies and during outage restoration situations.
- Planned line or station work activities that require a planned outage (Idaho Power currently has a planned outage customer notification process in place for this).
- Reactive de-energization of electric transmission and/or distribution facilities, which may be either at Idaho Power's determination or at the request of fire managers (e.g., BLM, U.S. Forest Service, or other fire-fighting managers) in response to existing/encroaching wildfire threatening to burn into such facilities.
- Automated de-energization of electric transmission and/or distribution facilities due to smoke/fire from an existing fire causing a fault on the line.

[15] Distribution line "non-reclosing" refers to the deactivation of automatic re-energization of a distribution line or use of a non-reclosing device such as a fuse.

Idaho Power will continue its current de-energization practices in the above referenced, and comparable situations. Such outage situations are not defined as PSPS events in the context used here and, as a result, would not trigger PSPS protocols.

7.4.2. PSPS Plan

Idaho Power developed a PSPS Plan (see Appendix B) that operates in parallel with its wildfire mitigation strategy. Although the wind patterns in Idaho Power's service area are generally of a much lower sustained velocity and often less predictable (i.e., micro-bursts) than other utilities' service areas where PSPS has most frequently been utilized (i.e., California), the company's PSPS Plan generally follows industry best practices by considering other utilities' PSPS plans and incorporating input from Idaho Power's external consultant, discussed in 3.2 above, which developed the company's WMP risk maps.

8. MITIGATION—T&D PROGRAMS

8.1. Overview

Idaho Power's wildfire mitigation strategy relies in part on its various asset management programs and vegetation management program to maintain safe and reliable operation of its T&D facilities in reducing wildfire risk.

8.2. T&D Asset Management Programs

In addition to maintaining a number of existing and newly implemented robust asset management programs intended to reduce wildfire risk, Idaho Power continues to research, monitor, and pilot emerging technologies and strategies to manage its T&D infrastructure.

Idaho Power's key asset management programs supporting wildfire prevention and mitigation are summarized in the table below.

Table 5
Summarized T&D asset management programs (associated with the WMP)

Transmission
Aerial Visual Inspection Program
Ground Visual Inspection Program
Detailed Visual (High Resolution Photography) Inspection Program
Wood Pole Inspection and Treatment Program
Cathodic Protection and Inspection Program
Wood Pole Wildfire Protection Program (enhanced)
Steel Pole (Structures) (enhanced)
Distribution
Ground Detail Inspection Program (enhanced)
Wood Pole Inspection and Treatment
Wood Pole Fire Protection Program (enhanced)
Line Equipment Inspection Program
Overhead Primary Harden Program
Replace "small conductor" with new 4acsr or larger conductor (new)
Replace or repair damaged conductor
Re-tension loose conductors including "flying taps" and slack spans as required
Replace wood-stubbed poles with new wood poles (enhanced)

- Replace white and yellow square tagged poles with new wood poles
- Replace wood pins/wood crossarm with new steel pins/fiberglass crossarms
- Replace steel insulator brackets with new steel pins/fiberglass crossarms (new)
- Replace wedge deadends on primary taps with new polymer deadend strain insulators
- Replace aluminum deadend strain insulators with new polymer deadend strain insulators (new)
- Replace porcelain switches with new polymer switches
- Replace hot line clamps
  - Replace aluminum stirrups
  - Install avian cover
  - Relocate arresters
- Install bird/animal guarding
- Update capacitor banks
  - Replace swelling capacitors
  - Replace oil-filled switches with vacuum style
  - Replace porcelain switches with polymer switches
- Install disconnect switches on CSP transformers
  - Install avian cover
- Update down guys
  - Replace/Install down-guy insulators with fiberglass insulators
  - Tighten down guys
- Tighten hardware
- Correct 3rd party pole attachment clearances (report to Joint Use Department)

8.2.1. Transmission Asset Management Programs

Several of Idaho Power's transmission management programs have been in place for decades and include condition-based aerial visual inspections, ground visual inspections, detailed visual (generally using high-resolution photography) inspections, transmission wood pole inspection and treatment, and cathodic protection. Additionally, Idaho Power has used various methods and materials to prevent wildfire from damaging wood structures and now intends to use a fire-resistant mesh wraps installed on structures located in the RRZ and YRZs.

8.2.1.1. Aerial Visual Inspection Program

Annually, Idaho Power uses helicopters to assist Idaho Power qualified personnel in the visual aerial inspection of transmission lines identified as WECC Path Lines. This method of line inspection is now used for transmission lines located in the RRZs. In addition, unmanned aerial vehicles with high-definition cameras are now used in certain situations to inspect facilities on these lines. These inspections allow personnel to look for potential line defects, which, if found, are noted and scheduled for repair.

All noted defects are prioritized as Priority 1, Priority 2, or Priority 3, based on the criteria listed below:

- **Priority 1**: Defects that, depending on the circumstances, require reporting and repair as soon as reasonably possible.

- **Priority 2**: Defects that, depending on the circumstances, generally require reporting and correction within 24 months of identification. The correction of these defects should be scheduled during crews' normal work schedules. Priority 2 defects not assigned a corrective plan within 24 months will be reviewed by the T&D vegetation and maintenance engineering leader.

- **Priority 3**: Potential issues that may need correction but do not pose a threat to the system and should be monitored. A Priority 3 designation may also be used by Idaho Power personnel for tracking of certain line construction practices.

Corrective action plans for Priority 1 and 2 defects are determined by engineering personnel for each prioritized defect and are scheduled and repaired.

8.2.1.2. Ground Visual Inspection Program

Annually, Idaho Power qualified personnel (i.e., trained in transmission line inspection procedures and experienced in transmission line construction) complete ground visual inspections of all transmission lines. Ground patrols are completed using four-wheel-drive vehicles, all-terrain vehicles, utility terrain vehicles, and/or on foot. These inspections identify potential line defects that are noted and scheduled for repair following the same process as described in 8.2.1.1.

8.2.1.3. Detailed Visual (High-resolution Photography) Inspection Program

In addition to the annual inspections and associated maintenance, Idaho Power also completes detailed visual inspections generally utilizing high resolution photography. This detailed inspection is typically completed using helicopters, unmanned aerial vehicles, and contracted professionals operating high definition cameras and, if potential line defects are noted, they are scheduled for repair following the same process as described in 8.2.1.1. The detailed inspections are completed on a 10-year cycle in conjunction with the 10-year cycle of wood pole ground line inspection and treatment (see 8.2.1.4).

8.2.1.4. Wood Pole Inspection and Treatment Program

All wood poles are visually inspected, sounded, and bored for defects and decay on a 10-year cycle. The poles are categorized according to the following:

- **Reported**: Any wood pole inspected and found to be installed within 10 years of the manufactured date or last inspection date.

- **Treated**: Any wood pole inspected and found to be installed 11 years or more prior to the inspection date and is determined to be in sound enough condition to warrant treatment.

- **Rejected**: Any wood pole determined to fit the following criteria:

- Have less than 4 inches of shell at 48 inches above the ground line; and/or
- Less than 2 inches of shell at 15 inches above the ground line; and/or
- Less than 2 inches of shell at the ground line; or
- Is deteriorated and does not meet minimum strength criteria; or
- Fails a visual inspection.

Rejected poles are categorized as: reinforceable with steel, non-reinforceable and are to be replaced.

- **Visually Rejected**: Any wood pole that has been damaged (i.e., burned, split, broken, hit by a vehicle, damaged by animals, etc.) above the ground line to such an extent as to warrant rejection and that cannot be further tested to determine priority status.
- **Sounded, Bored, and Treated**: Any wood pole set in concrete, asphalt, or solid rock 11 years or more prior to the inspection date is internally treated. Internal treatment involves fumigating the good wood and flooding the voids with fumigant.

8.2.1.5. Cathodic Protection and Inspection Program

Cathodic protection systems are employed on select steel transmission towers. These systems use either an impressed current corrosion protection system (ICCP) or direct-buried sacrificial magnesium anodes. Included in Idaho Power's tower maintenance plan, every 10 years, structure-to-soil potential testing is performed on select towers with direct-buried anodes. For ICCP systems, rectifiers and ground-beds are tested to ensure they are functioning properly. Based on test results repairs and adjustments are completed. Each year all rectifiers are inspected, and direct current (DC) voltage and DC current readings noted.

8.2.1.6. Thermal Imaging (Infra-red) Inspections

Idaho Power will complete annual inspections of lines and equipment using thermal imaging (infra-red) cameras. This inspection methodology, although not new to Idaho Power, is being expanded to specifically include the RRZs. Compromised electrical connections and overloaded equipment may be identified using thermal imagery. Identified risks will be prioritized and mitigated using the prioritization methodology noted in 7.2.1.1 of this WMP.

8.2.1.7. Wood Pole Wildfire Protection Program

Idaho Power has utilized numerous technologies to minimize the damage to wood poles that have been exposed to wildfires. The current technology of "mesh wraps" is utilized on transmission wood poles located in the RRZs and YRZs.

8.2.1.8. Transmission Steel Poles

Idaho Power will utilize steel poles or structures for new transmission line construction projects built to 138 kV standards and above in an attempt to minimize wildfire damage and improve transmission line resilience. Wood poles may be used on 138 kV structures for emergency and maintenance replacements based on the specific engineering, right-of-way, permitting, and scheduling requirements for each project. Wood construction is used for voltages below 138 kV unless a different material is needed to meet specific engineering or planning requirements.

8.2.2. Distribution Asset Management Programs

Idaho Power has several distribution asset management programs that are mature, have been implemented for decades, and will continue to be utilized in the RRZs. These programs include condition-based, detailed, and ground visual inspection; distribution wood pole inspection and treatment; and line equipment inspection.

Idaho Power also has an enhanced overhead distribution "hardening" program to implement in the RRZs. Examples of specific work include replacement of small conductors and associated hardware and replacement of wooden pins and associated wooden crossarms.

8.2.2.1. Ground Detailed Visual Inspection Program

Annually, qualified line patrol personnel (trained in distribution line inspection procedures and experienced in distribution line construction) complete detailed ground inspections of the distribution lines located in the RRZs. The ground patrols are completed using four-wheel-drive vehicles, all-terrain vehicles, utility terrain vehicles, or on foot. These inspections identify potential line defects that are noted and scheduled for repair.

All noted defects are prioritized as Priority 1, Priority 2, or Priority 3, based on the criteria listed below:

- **Priority 1**: Defects that, depending on the circumstances, require reporting and repair as soon as reasonably possible.
- **Priority 2**: Defects that, depending on the circumstances, generally require reporting and correction within 24 months of identification. The correction of these defects should be scheduled during crews' normal work schedules. Priority 2 defects not assigned a corrective plan within 24 months will be reviewed by the T&D Vegetation and maintenance engineering leader.
- **Priority 3**: Potential issues that may need correction but do not pose a threat to the system and should be monitored; or tracking of certain line construction practices.

Corrective action plans for Priority 1 and 2 defects are determined by engineering personnel for each prioritized defect and are scheduled and repaired.

8.2.2.2. Wood Pole Inspection and Treatment Program

All wood poles are visually inspected, sounded, and bored for defects and decay. The procedure is noted in 8.2.1.4.

8.2.2.3. Line Equipment Inspection Program

Line equipment, particularly distribution system protection line equipment, is inspected annually by line operations technicians. The inspection includes a visual inspection and, when electronic reclosers are present, data is retrieved from controls and analyzed for proper operation.

8.2.2.4. Overhead Primary Hardening Program

Overhead distribution infrastructure located in the RRZs will be analyzed and may be inspected and hardened depending upon proximity to fuels conducive to wildfires in the unlikely event of failure of the line infrastructure. It is expected to take multiple years to inspect and harden all applicable overhead distribution lines.

The Overhead Primary Hardening program is intended to upgrade or repair certain overhead distribution infrastructure. Criteria as outlined in Table 5 drives the program work. Notable criteria are further explained in the following sections of this WMP.

8.2.2.4.1. Conductor "Small" Replacement

Idaho Power is implementing replacement of small conductors in the RRZs. Small conductors are those in sizes less than that of 4ACSR conductor. Examples of small wires include 6Cu, 6-3SS, 8A, 8A CW, 9IR, etc. These small conductors will be replaced with standard larger conductors, primarily with 4ACSR conductor.

8.2.2.4.2. Wood Pin and Crossarm Replacement

Wooden crossarms installed with wooden pins will continue to be replaced with fiberglass crossarms and steel pins. This work will be coordinated and included in the overhead primary hardening program. And, whenever work is being completed on a structure that requires replacement of wooden crossarms, Idaho Power will, generally, install fiberglass crossarms.

8.2.2.4.3. Porcelain Switch Replacement

Porcelain switches located in the RRZs will continue to be replaced with polymer switches. Additionally, associated hot clamps and stirrups will be replaced. This work will be coordinated and included in the overhead primary hardening program.

8.2.2.4.4. Fuse Options

Idaho Power investigated reasonable alternatives to replace certain expulsion fuses and expulsion arrestors. A pilot program was initiated in 2020 to replace several expulsion fuses with non-expulsion fuses in the vicinity of the Boise foothills. This pilot program was successful and Idaho Power implemented a subsequent program to replace expulsion fuses with non-expulsion fuses in RRZs as a part of its distribution overhead primary wildfire hardening program.

8.2.2.4.5. Thermal Imaging (Infra-red) Inspections

Idaho Power will complete annual inspections of lines and equipment using thermal imaging (infra-red) cameras. This inspection methodology, although not new to Idaho Power, is being expanded to specifically include the RRZs. Compromised electrical connections and overloaded equipment may be identified using thermal imagery. Identified risks will be prioritized and mitigated using the prioritization methodology noted in 8.2.2.1 of this WMP.

8.2.2.4.6. Wood Pole Wildfire Protection Program

Idaho Power has utilized numerous technologies to minimize the damage to wood poles that have been exposed to wildfires. The current technology of "mesh wraps" is utilized on certain distribution wood poles located in the RRZs.

8.3. T&D Vegetation Management

Idaho Power's T&D vegetation management program (VMP) addresses public safety and electric reliability and helps to safeguard T&D lines from trees and other vegetation that may cause an outage or damage to facilities. Specifically, the lines are inspected periodically, and trees and vegetation are cleared away from the line while certain trees are removed entirely. In addition, the VMP addresses the clearing of vegetation near the base of certain poles and line structures. The responsibilities of the VMP include the planning, scheduling, and quality control of VMP associated work. The VMP is active year-round and complies with applicable NESC, federal, and state requirements. Additional vegetation monitoring tools are in various stages of development, and Idaho Power will evaluate such tools for potential future implementation.

Idaho Power's key components of its VMP, relative to the WMP, are summarized in the table below.

Table 6
VMP summary

Vegetation Management
Pre-Fire Season Inspection and Mitigation
Line Clearing Cycle Goal: 3-year cycle for valley areas & 6-year cycle for mountain areas
Tree Removals - Hazard Trees
Targeted Pole Clearing
100% Quality Assurance/Quality Control Auditing in RRZs and YRZs
Pre-Fire Season Inspection and Mitigation
Line Clearing Cycle Goal: 3-year cycle in all areas with mid-cycle pruning occurring in 2nd year in RRZs and YRZs*
Tree Removals - Cycle Busters/Hazard Trees
Targeted Pole Clearing
100% Quality Assurance/Quality Control Auditing in RRZs and YRZs

*Distribution line clearing cycles vary by utility. Idaho Power has set a goal of achieving a 3-year cycle of distribution line clearing.

8.3.1. Definitions

Applicable Transmission Lines—Each overhead transmission line operated within the WMP RRZ at 46 kilovolts (kV) or higher.

Cycle Buster—Trees that grow at a rapid rate, requiring a more frequent trimming schedule than the normal trim cycle.

Hazard Tree—Any vegetation issue that poses a threat of causing a line outage but has either a low or medium risk of failure in the next month. Hazard trees will be further defined as posing either a medium hazard or low hazard.

High-Priority Tree—Any vegetation condition likely to cause a line outage with a high risk of failure in the next few days or weeks. High-priority trees could also be vegetation that is in good condition but has grown so close to the lines that it could be brought into contact with the line through a combination of conductor sag and/or wind-induced movement in the conductor or the vegetation.

Line Clearing Cycles—T&D clearing of lines defined on a periodic basis.

8.3.2. Transmission Vegetation Management

Maintaining a zone near transmission lines that is free of vegetation has long been a priority for Idaho Power. The clearance zone is voltage-level dependent and defined by federal and state regulations.

8.3.2.1. Transmission Vegetation Inspections

Utility arborists annually conduct aerial and/or ground patrols on each applicable transmission line to identify and mitigate vegetation hazards. In addition, transmission patrol personnel inspect all applicable transmission lines once a year to identify any transmission defects and vegetation hazards. During these inspections, the patrol personnel will identify hazardous vegetation, within or adjacent to the Right of Way (ROW), that could fall in or onto the transmission lines or associated facilities. The patrol personnel will evaluate the hazardous vegetation as to the level of threat posed by categorizing the vegetation as a *high priority*, *medium hazard*, or *low hazard*. Any hazardous vegetation found is reported to the utility arborist and documented. Any hazardous vegetation categorized as a *high priority* and that presents a risk to cause an outage at any moment shall also be reported without any intentional time delay to the grid operator. The utility arborist will conduct a follow-up inspection if potential hazard trees or grow-ins are identified. The utility arborist prioritizes and schedules any remedial action for all reported vegetation issues.

8.3.2.2. Transmission Line Clearing Cycles

Transmission lines will be cleared on long-term cycles based on 3 years for urban and rural valley areas and 6 years for mountain areas. However, shorter clearing cycles may occur if conditions dictate out-of-cycle trimming. In most cases, vegetation is cleared primarily through manual cutting of targeted trees and tall shrubs. However, when appropriate and in compliance and permission with federal and state requirements, tree-growth regulators and spot herbicide treatments are applied as effective techniques for reducing re-growth of sprouting deciduous shrubs and trees and extending maintenance cycles.

8.3.2.3. Transmission Line Clearing Quality Control and Assurance

When line clearing work is required, either a utility arborist or a contracted notifier completes field inspections to make sure the clearing work meets requirements. A line clearing audit form is completed and retained.

8.3.3. Distribution Vegetation Management

Idaho Power is actively working to clear distribution lines throughout Idaho Power's service territory on a three-year cycle.[16] Additionally, in the RRZs and YRZs, Idaho Power completes annual vegetation line inspections and mid-cycle clearing of the lines in the second year,

[16] Idaho Power will test a three-year cycle for a period of 4 or 5 years to verify that such a cycle can be maintained and that the expected benefits are realized.

is increasing the number of trees removed, and is completing 100% quality control reviews of contractor line clearing work by certified arborists.

8.3.3.1. Distribution Line Clearing Cycles

Idaho Power is actively working to clear distribution lines on a three-year cycle. In RRZs and YRZs, Idaho Power's goal is to perform mid-cycle pruning in the second year to remove faster growing vegetation to ensure the lines are clear of vegetation for the full pruning cycle. In addition, Idaho Power clears lines based upon "special request" in the situations that fast growing, unexpected growth occurs and is reported by any employee or customer.

8.3.3.2. Distribution Vegetation Inspections

In addition to regular cycle pruning activities, utility arborists are annually conducting ground patrols to identify potential vegetation hazards of each distribution line identified in the RRZs and YRZs. In addition, distribution patrol personnel also inspect the lines in the RRZs annually. During these inspections, patrol personnel identify infrastructure defects and hazardous vegetation, within or adjacent to the ROWs, that could fall in or onto the distribution lines or associated facilities. The patrol personnel then evaluate the hazardous vegetation as to the level of threat posed by categorizing the vegetation as a *high priority*, *medium hazard*, or *low hazard*. Any hazardous vegetation found is reported to the utility arborist and documented.
Any hazardous vegetation categorized as a *high priority* and that presents a risk to cause an outage at any moment shall also be reported without any intentional time delay to the Grid Operator. The utility arborist will conduct a follow-up inspection if potential hazard trees or grow-ins are identified. The utility arborist prioritizes and schedules any remedial action for all reported vegetation issues.

8.3.3.3. Distribution Line Clearing Procedures

In most cases, vegetation is cleared as scheduled work and includes, but is not limited to, the removal of dead branches overhanging power lines, weak branch attachments, damaged root base or dead or dying trees leaning toward Idaho Power facilities. Vegetation clearing methods include crews using chain saws or specialized pruning machines. Trees are cleared using a pruning procedure called directional or natural pruning, a method recommended by the International Society of Arboriculture, and the ANSI A300 standards.

However, when appropriate and in compliance and permission with federal and state requirements, tree-growth regulators and spot herbicide treatments are applied as effective techniques for reducing re-growth of sprouting deciduous shrubs and trees and extending maintenance cycles.

Through its vegetation management program, Idaho Power has a target to maintain clearance distance between vegetation and conductors as follows:

- Five feet for conductors energized at 600 through 50,000 volts.
- Clearances may be reduced to three feet if the vegetation is not considered to be readily climbable because the lowest branch is greater than eight feet above ground level.

- New tree growth that is no larger than ½ inch in diameter may intrude into this minimum clearance area provided it does not come closer than six inches to the conductor. This new growth is identified during line patrols and removed.

- For conductors energized below 600 volts, vegetation is pruned to prevent the vegetation from causing unreasonable strain on electric conductors.

8.3.3.4. Distribution Line Clearing Quality Control and Assurance

When line clearing work is required, either a utility arborist or a contracted notifier completes field inspections to make sure the clearing work meets requirements. A line clearing audit form is completed and retained.

8.3.4. Pole Clearing of Vegetation

Idaho Power has historically cleared vegetation from the base of certain transmission wood poles and a limited number of distribution wood poles in Idaho. These vegetation clearing practices have been deemed an effective method of minimizing wildfire damage to existing wood poles. Where acceptable and permissible, Idaho Power removes or clears vegetation in a 20-foot radius surrounding the wood poles and applies a 10-year weed-control ground sterilant (SpraKil SK-26 Granular). Idaho Power submitted an SF-299 application with the Oregon BLM Vale District Office to prepare an Environmental Assessment to use the same ground sterilant on transmission and distribution facilities in Oregon. The schedule provided to Idaho Power by the BLM for this work shows it to be completed by June 2022 and implemented in July 2022 pending no appeals.

9. WILDFIRE RESPONSE

9.1. Overview

Idaho Power responds to wildfires involving or impacting its facilities and/or resulting in a system outage; depending on the specific circumstances, Idaho Power may also respond to wildfires with the potential to result in an outage. Idaho Power's actions include without limitation:

- Taking appropriate steps, where safe to do so, to protect Idaho Power-owned facilities from fire damage;
- Restoring electrical service following an outages; and,
- Communicating with and informing customers.

These actions are taken on a 24-hour basis.

9.2. Response to Active Wildfires

Idaho Power field crews are trained to respond to active wildfires to monitor the situation regarding Idaho Power's facilities. Although they carry certain fire suppression equipment for use on very small fires in limited situations, Idaho Power's crews are not professionally trained firefighters and are instructed not to place themselves in a hazardous position when responding to wildfires. When responding to an active wildfire, Idaho Power personnel immediately report to, and take appropriate direction from, the Incident Commander (IC) or other fire response entity official with jurisdiction over the incident.

9.3. Emergency Line Patrols

At certain times, unplanned de-energization of lines requires qualified line personnel to conduct "emergency" patrols (inspections) of the de-energized lines. These patrols identify outage causes, damaged facilities, ingress/egress routes, and restoration requirements (number of crews, crew sizes, and necessary materials).

9.4. Restoration of Electrical Service

Idaho Power personnel restore electrical service when it is safe to do so following a wildfire. Trained field crews report to the site where damage has occurred with equipment and new materials and develop a plan to remove and rebuild damaged facilities. Depending on the situation, contracted field crews—such as line crews and vegetation management crews—are also deployed to assist in restoration efforts. Restoration work may take hours or, in some rare cases, days to complete. Depending on the extent of damage, customers may need to

perform repairs on their facilities and pass inspections by local agencies prior to having full electric service restored.

Due to the unique construction, need for specialized equipment, and—in many cases—remote location of many of Idaho Power's transmission lines, Idaho Power developed a *Transmission Emergency Response Plan*. This plan includes restoration processes related to all transmission voltage classes from 46 through 500 kV. The plan outlines the basic approach and certain details about notification, materials, damage assessment, coordination, and preparedness.

9.4.1. Mutual Assistance

Idaho Power is a member of the Western Region Mutual Assistance Agreement (WRMAA), of which the majority of western United States electric utilities are also members. Member utilities provide emergency repair and restoration assistance to other member utilities requesting assistance when dealing with damaged electric facilities following a significant wildfire or weather event. In the event of a catastrophic wildfire that causes widespread damage to Idaho Power's system, Idaho Power may request restoration assistance via the WRMAA as a last resort option after utilizing available internal personnel and contracted entities.

9.5. Public Outreach and Communications

Idaho Power maintains an *Emergency Response Communication Plan*. The intent of this communication plan is to provide consistent and reliable internal and external communication in large outage or emergency situations, including wildfires, that have wide-ranging impacts on Idaho Power's service areas. Internal and external communications precipitated by a wildfire will be performed in accordance with this emergency response plan, which is reviewed and updated annually.

10. COMMUNICATING THE PLAN

10.1. Objective

Idaho Power communicates about this WMP internally to employees and externally to the public. The company provides related fact sheets and maps depicting areas of elevated wildfire risk as well as online resources (some of which are continuing to be developed) aimed at:

- Demonstrating Idaho Power's focus on system integrity and reliability and potential impacts on the public
- Demonstrating Idaho Power is proactively, reasonably, and responsibly addressing wildfire risk, including meeting requirements of its state regulators
- Furthering Idaho Power's collaboration and information sharing with federal, state, and local government and agencies
- Keeping Idaho Power customers informed
- Informing and guiding Idaho Power employee and contractor

10.2. Idaho Power External Communications

10.2.1. Community Engagement

Idaho Power presents and distributes information regarding its WMP to a wide variety of stakeholders including without limitation the BLM, U.S. Forest Service, and county and city officials.

Idaho Power engages with various Public Safety Partners, including local governments, emergency response management and Idaho's and Oregon's ESF-12 and social service and welfare agencies (e.g., Oregon's Department of Human Services). These engagements focus on wildfire awareness, prevention and outage preparedness outreach and opportunities for collaboration. For example, the company worked collaboratively with the Boise City Fire Department in developing certain portions of the Boise City Fire Code–043019. Idaho Power may also include tabletop exercises with Public Safety Partners prior to wildfire season, designed to mimic fire emergency events, including PSPS events, to assist with wildfire preparedness.

10.2.2. Idaho Power Customers

Safety is Idaho Power's most important value. Attention to the detail of safe operations permeates our workplace culture and interactions with customers. This standard is applied to protecting Idaho Power's equipment from wildfire, reducing the likelihood of wildfire and informing the public about the likelihood of wildfire and ways customers should respond.

Idaho Power distributes information regarding its WMP to its customers via the following tools:

- Fact sheets
- Mass media articles/videos
- Community and/or individual presentations/discussions
- Social media
- Idaho Power online website
- Customer email/mailings
- Public education campaigns

10.2.2.1 Prior to Wildfire Season

Idaho Power communicates to customers and the public what steps the company is taking, such as vegetation management and equipment maintenance, to reduce the likelihood of wildfires. Various communication mediums include:

- *Connections* (This monthly newsletter is an effective way to give customers nuanced information about the work Idaho Power does, but its planning and development takes months, so it is not an effective way to communicate urgent information.)
- eNews (video stories about a variety of topics, such as vegetation management)
- Emails
- Social media
    - Posts on Facebook, Instagram, Twitter and other platforms are an efficient way to reach large numbers of customers and the public. They are less intrusive than newsletters or phone calls.

Each fire season Idaho Power conducts wildfire awareness, prevention, and outage preparedness outreach to customers. Outreach content may include the following: wildfire prevention tips, Idaho Power fire mitigation efforts, PSPS considerations, emergency and outage preparedness tips and checklists, where to find outage information and Idaho Power's WMP or PSPS Plans, and recommendations to sign up for alerts and update contact information.
Annually, Idaho Power will hold at least one public meeting in Oregon and Idaho, offering a virtual meeting with additional access and functionality options. Feedback opportunities are also provided during and after the meetings.

Idaho Power also monitors long-term weather forecasts and fuel conditions and communicates to customers and the public the company's wildfire outlook using a combination of some or all of the following communication mediums:

- Idaho Power's website
- *Connections* (a monthly newsletter Idaho Power includes in customer electric bills to keep customers informed about topics such as affordable, reliable and clean energy, the company's efforts to protect the environment including wildfire mitigation, energy efficiency programs and customer options for doing business with Idaho Power.)
- Emails telling customers how to prepare for wildfires, the potential loss of power and potential evacuation.
- Social media
- News media (news releases, appearances on broadcast TV and radio shows, interviews, etc.)

10.2.2.2 During Wildfire Season

Idaho Power monitors weather forecasts and fuel conditions near Idaho Power equipment and communicates to customers and the public plans for reducing wildfire risk and protecting company equipment should a wildfire occur. Various communication mediums include:

- Idaho Power's website (The company's website provides wildfire safety information, such as videos, safety tips, and the latest version of the WMP.)
- Emails (If the likelihood of wildfire is elevated, these messages would take on greater urgency, though they would contain much of the same information as pre-wildfire season messages.)
- Social media (This is the quickest way to spread word of safety concerns, potential loss of power, evacuations, etc. Communication likely would contain up-to-date information from organizations like National Interagency Fire Center, USFS, and/or BLM.)
- News media
- Phone calls and text messages to customers

10.2.2.3 After Wildfire Season

Idaho Power will communicate to customers and the public the scope of wildfires that approached Idaho Power equipment, how Idaho Power communicated safety messages to customers and the public, measures Idaho Power took to keep power lines safe, and the status of any ongoing recovery measures, such as replacement of poles, lines, and other equipment. Various communications mediums include:

- *Connections*
- eNews

- Social media
- News media
- Idaho Power website

10.3. Idaho Power Internal Communications—Employees

Idaho Power communicates with its employees in a variety of ways:

- *News Scans* for all employees
- Emails
- Leader communications
- GIS-based visual communication of risk zones and affected overhead lines
- Online training for employees influenced by the WMP
- In-person, hands-on, training for certain field employees

11. PERFORMANCE MONITORING AND METRICS

11.1. Wildfire Mitigation Plan Compliance

The Chief Operating Officer (COO) is the designated oversight officer for the Idaho Power WMP. The Vice President of Planning, Engineering and Construction (VP) is responsible for compliance monitoring, necessary training, and annual review of this WMP.

11.2. Internal Audit

Idaho Power's internal audit department, Audit Services, will periodically conduct an independent and objective evaluation of the WMP to assess compliance with policies and procedures and evaluate achievement of the Plan's objectives. Idaho Power's Compliance department will also periodically review Idaho Power's compliance with federal reliability standards regarding vegetation management practices.

11.3. Annual Review

Idaho Power will conduct an annual review of its WMP and incorporate necessary updates prior to wildfire season.

11.4. Wildfire Risk Map

The Wildfire Risk Map was established in 2020 by an external consultant. As noted in Section 2 of this report, the 2020 analysis was based, in part, on population census data from 2010. Considering the national census was conducted in 2020, Idaho Power is working with its external consultant to update the Wildfire Risk Map, which the company will continue to update periodically based on similar factors and other changing circumstances.

11.5. Situational Awareness

Idaho Power will share its FPI regularly and broadly with Idaho Power personnel and contractors during wildfire season to ensure condition-specific operating requirements are met.

11.6. Wildfire Mitigation—Field Personnel Practices

Idaho Power crews and certain personnel are required to follow the *Field Personnel Practices* when working on lines in the RRZs and YRZs during a red FPI. Specific requirements are found in Idaho Power's *Field Personnel Practices* which is consulted by such crews working in these areas.

11.7. Wildfire Mitigation—Operations

Each year in preparation for the fire season, Idaho Power reviews and establishes:

- Temporary operating procedures for transmission lines during the fire season
- An operational strategy for distribution lines during time periods of elevated wildfire risk during the fire season
- Use of PSPS as a tool of last resort to prevent Idaho Power T&D facilities from becoming a wildfire ignition source or contributing to the spread of wildfires

11.8. Wildfire Mitigation—T&D Programs

This section lists metrics used to evaluate Idaho Power's asset management and vegetation management programs. Work is identified and prioritized each year and approved by executive management. Idaho Power's goal is to complete 100% of the work plan each year; however, emergencies or other unplanned events can occur and disrupt the annual work plan. All work is completed in accordance with safety and applicable requirements and industry standards.

Table 7
T&D programs metrics

Transmission	
Transmission Asset Management Programs	**Description**
Aerial Visual Inspection Program	Perform annual patrols and document identified defects according to priority. Complete repairs according to priority definition.
Ground Visual Inspection Program	Perform annual patrols and document identified defects according to priority. Complete repairs according to priority definition.
Detailed Visual (High Resolution Photography) Inspection Program	Perform 10-year cycle patrols and document identified defects according to priority. Complete repairs according to priority definition.
Wood Pole Inspection and Treatment Program	Perform 10-year cycle patrols and document identified defects according to priority. Complete repairs according to priority definition.
Cathodic Protection and Inspection Program	Perform 10-year structure-to-soil potential testing on select towers with direct-buried anodes. Perform 10-year rectifier and ground-bed testing on ICCP systems. Annually inspect and record DC voltage and current readings of rectifiers. Complete repairs and adjustments.
Wood Pole Wildfire Protection Program	Inspect and install wraps on selected poles.
Distribution	
Distribution Asset Management Programs	**Description**
Wood Pole Inspection and Treatment Program	Perform 10-year cycle patrols and document identified defects according to priority. Complete repairs according to priority definition.
Line Equipment Inspection Program	Complete annual inspections and data analysis and mitigate defects
Ground Detailed Inspection Program	Perform annual patrols and document identified defects according to priority. Complete repairs according to priority definition.
Distribution Infrastructure Hardening Program	Complete annual work plan

Replace "small conductor" with new 4acsr or larger conductor

Replace or repair damaged conductor

Re-tension loose conductors including "flying taps" and slack spans as required

Replace wood-stubbed poles with new wood poles

Replace white and yellow square tagged poles with new wood poles

Replace wood pins/wood crossarm with new steel pins/fiberglass crossarms

Replace steel insulator brackets with new steel pins/fiberglass crossarms

Replace wedge deadends on primary taps with new polymer deadend strain insulators

Replace aluminum deadend strain insulators with new polymer deadend strain insulators

Replace porcelain switches with new polymer switches
- Replace hot line clamps
- Replace aluminum stirrups
- Install avian cover
- Relocate arresters

Install bird/animal guarding

Update capacitor banks
- Replace swelling capacitors
- Replace oil-filled switches with vacuum style
- Replace porcelain switches with polymer switches

Replace certain expulsion arrestors

Install disconnect switches on CSP transformers
- Install avian cover

Update down guys
- Replace/Install down-guy insulators with fiberglass insulators
- Tighten down guys

Tighten hardware

Correct 3rd party pole attachment violations (report to Joint Use Department)

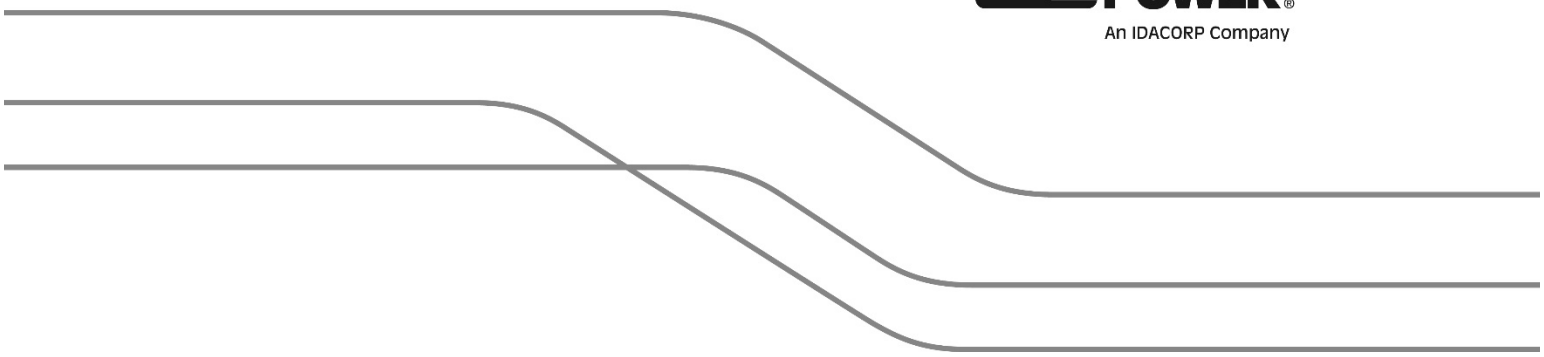
Replace certain expulsion fuses

Vegetation Management

Transmission	Description
Pre-Fire Season Inspection and Mitigation	Perform annual pre-fire season inspections and mitigate noted "hot spots"
Line Clearing Cycles: Strive to maintain 3-year cycle for valley areas & 6-year cycle for mountain areas	Complete annual cycle pruning work plan
Tree Removals - Hazard Trees	Remove targeted hazard trees
Targeted Pole Clearing	Complete annually targeted structures
100% QA/QC Audits in RRZs and YRZs	Complete annually QA/QC audits

Distribution	Description
Pre-Fire Season Inspection and Mitigation	Perform annual pre-fire season inspections in RRZs and YRZs and mitigate noted "hot spots"
Line Clearing Cycle: Strive to maintain 3-year cycle	Complete annual cycle pruning work plan
Mid-Cycle Pruning in RRZs and YRZs	Complete annual mid-cycle pruning work plan in RRZs and YRZs
Tree Removals - Cycle Busters/Hazard Trees	Complete annual cycle pruning work plan
Targeted Pole Clearing	Complete annually targeted structures
100% QA/QC Audits in RRZs and YRZs	Complete annually QA/QC audits

Appendix A
The Wildland Fire Preparedness and Prevention Plan.



Wildland Fire Preparedness and Prevention Plan

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1. Plan Overview

A. Intent of Plan

The purpose of this Wildland Fire Preparedness and Prevention Plan (Plan) is to provide guidance to Idaho Power Company (IPC) employees to help prevent the accidental ignition and spread of wildland fires (wildfires) due to employee work activities in locations and under conditions where wildfire risk is heightened. It is expected that all IPC employees be aware of the provisions of this Plan, operate in accordance with the Plan and conduct themselves in a fire-safe manner.

B. Scope of Plan

The scope of this Plan includes tools, equipment, and field behaviors IPC employees incorporate when working in locations and under conditions where wildfire ignition is heightened.

Operations of Transmission and Distribution (T&D) lines facilities, vegetation management, and T&D lines programs that mitigate wildfire risks are not included in this Plan; they are referenced in the separate Wildfire Mitigation Plan.

2. Situational Overview and Applicability

A. Wildfire Season

The provisions of this Plan shall be applicable during wildfire season. Within IPC's service area, wildfire season is defined as the closed fire season of May 10 through October 20 of each year, as established by Idaho State Law, Title 38-115.

Should any local, state, or federal government land management agency (i.e., the BLM, U.S. Forest Service, Oregon Department of Forestry, Idaho Department of Lands, etc.) issue any wildfire related order that extends wildfire season beyond that specified above, then compliance with that agency's order shall govern.

Many variables—such as drought conditions, weather, and fuel moisture—can cause the wildfire season to begin and/or end earlier or later. In summary, flexibility, judgment, attention to current and forecasted field conditions, and attention to governmental agency issued wildfire orders are necessary such that operational practices can be adjusted accordingly.

B. Wildfire Risk Zones

IPC's Wildfire Mitigation Plan includes a Wildfire Risk Map of IPC's service area. This Wildfire Risk Map may be accessed at the Idaho Power SharePoint site. All lands in the vicinity of IPC facilities are mapped as Red Zone, Yellow Zone or areas of minimal wildfire risk (i.e., not within a Red or Yellow Zone). Red and Yellow Zones are designated as Wildfire Risk Zones (WRZ). The provisions of this Plan shall apply to work activities taking place during wildfire season in these WRZs.

Should any local, state, or federal government land management agency (i.e., BLM, U.S. Forest Service, Oregon Department of Forestry, Idaho Department of Lands, etc.) issue any wildfire related order, then compliance with that agency's order shall govern if their order is more restrictive than that set forth in this Plan.

C. Fire Potential Index

Idaho Power's Atmospheric Science department has developed an FPI rating system that forecasts wildfire potential across IPC's service territory. The FPI considers many current and forecasted elements such as meteorological (winds-surface and aloft, temperatures, relative humidity, precipitation, etc.) and fuel state (both live and dead). The FPI is designed and calibrated for IPC's service area; specifically, those areas in proximity to IPC transmission, distribution, and generation facilities.

The FPI consists of a numerical score ranging from 1 (very green, wet fuels with low to no wind and high humidity) to 16 (very brown and dry, both live and dead dry fuels with low humidity and high temperatures). The FPI scores are grouped into the following 3 index levels:

- **Green:** FPI score of 1 through 11
- **Yellow:** FPI score of 12 through 14
- **Red:** FPI score of 15 through 16

During wildfire season, Idaho Power will determine a daily FPI as described in Section 5 of the WMP. This weather forecast and FPI dashboard is contained within IPC geographic information system (GIS) viewers available to all IPC employees.

D. Decision Making for Field Work Activities

Employees working in the field shall be cognizant of current and forecasted weather and field conditions. Awareness of these conditions, and exercising appropriate judgment, is essential when considering whether to undertake work activities when combinations of high temperatures, low humidity, dry fuels, and/or wind are present or forecasted to be present.

The following process steps shall apply to employees and crews contemplating field work during wildfire season:

<u>Planned or Scheduled Work Activities</u>:

1. Fire Potential Indices:

    a) Employees working in the field—NOT working on transmission or primary distribution lines should:

i. Be aware of the current and forecasted weather and the FPI level for the area in which the work will be performed, through the FPI dashboard.

ii. Once the FPI level for the work zone is identified, proceed with work but consider utilizing Prevention—Practices of Field Personnel (see Section 6 of this Plan).

b) Employees working in the field—working on transmission or primary distribution lines should:

i. Be aware of the current and forecasted weather and the FPI level for the area in which the work will be performed.

ii. Once the FPI level for the work zone is identified, proceed as follows for each FPI level:

1. **Green FPI in All Zones:** Proceed with the work. Consider utilizing Prevention—Practices of Field Personnel (see section 4 of this Plan)

2. **Yellow FPI in All Zones:** Proceed with the work. Consider utilizing Prevention—Practices of Field Personnel (see section 4 of this plan)

3. Red FPI

a) **In Normal Zone:** Proceed with the work. Consider utilizing Prevention—Practices of Field Personnel (see Section 6 of this plan)

b) **In Medium Zone:** Proceed with the work. However, it is a requirement to follow the Prevention—Practices of Field Personnel (see Section 6 of this plan)

c) **In High Zone: STOP.** No planned work activities shall take place unless approved by operations level manager. Work consideration will be restoration of electric service or work deemed critical to providing safe, reliable electric service. If work is approved to proceed it is a requirement to follow the Prevention—Practices of Field Personnel (see Section 6 of this plan).

Fire Potential Index (FPI)	High	15 to 16 (Red)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel REQUIRED	STOP/NO WORK
	Elevated	12 to 14 (Yellow)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)
	Normal	1 to 11 (Green)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)
			None	Yellow (Tier 2)	Red (Tier 3)

2. Land Management Agency Restrictions: Follow the requirements and restrictions of any wildfire restrictions related order that is issued by local, state, or federal land management agencies.

    a) Immediately upon receiving knowledge of an order, The Environmental Services department will notify, via email, operations leadership within Power Supply, Customer Operations and Business Development, and T&D Engineering and Construction of wildfire related requirements and restrictions orders that are issued by local, state, or federal land management agencies.

Emergency Response and Outage Restoration Work Activities:

Follow the same steps as identified above for planned work activities. However, it is recognized that the nature of emergency response and outage restoration situations will often require exceptions to the above. In these situations, leadership should be consulted, and appropriate judgment should be used given the nature of the emergency or outage at hand.

3. Preparedness—Tools and Equipment

A. Required Personal Protective Equipment

Standard IPC Personal Protective Equipment (PPE) shall be worn in accordance with the IPC Safety Standard.

When entering a designated fire area being managed by the BLM or the U.S. Forest Service, additional PPE requirements may be in force by those agencies. These typically include:

- Hardhat with chinstrap
- Long sleeve flame-resistant (FR) shirt and FR pants
- Leather gloves
- Exterior leather work boots, 8" high, lace-type with Vibram type soles
- Fire shelter

B. Required Tools and Equipment

Employees NOT working on transmission or distribution lines: Standard tools and equipment in accordance with the IPC Safety Standard and Fleet Services.

Employees working on transmission or distribution lines: IPC and the State of Idaho BLM entered into a March 2019 Master Agreement that governs various IPC and BLM interactions, including wildfire prevention related provisions. In addition to State of Idaho BLM lands, IPC has elected to apply these requirements to all work activities taking place on all WRZ in Idaho, Nevada, Montana, and Oregon. These requirements include:

- During the wildfire season (May 10–October 20) or during any other wildfire season ordered by a local, state, or federal jurisdiction, IPC, including those working on IPC's behalf, will equip at least 1 on-site vehicle with firefighting equipment, including, but not limited to:

    a) Fire suppression hand tools (i.e. shovels, rakes, Pulaski's, etc.),
    b) a 16-20-pound fire extinguisher,
    c) a supply of water, sufficient for initial attack, with a mechanism to effectively spray the water (i.e. backpack pumps, water sprayer, etc.). This requirement to carry water is dependent on the vehicle type and weight restrictions. For example, a mini-excavator would not be required to carry water since there is no safe way to do so, or a loaded bucket truck may not be required to carry water because of weight limitations.

- At a minimum, equip each truck that will be driven in the WRZs during wildfire season with at least:
    a) One round, pointed shovel at least 8-inches wide, with a handle at least 26 inches long
    b) One axe or Pulaski with a 26-inch handle or longer
    c) A combination of shovels, axes, or Pulaskis available to each person on the crew

d) One fire extinguisher rated no less than 2A:10BV (5 pounds)
e) 30-200 gallons of water in a fire pumper and 5-gallon back packs

IPC personnel will be trained to use the above tools and equipment to aid in extinguishing a fire ignition before it gets out of control and take action that a prudent person would take to control the fire ignition while still accounting for their own personal safety.

C. Land Management Agency Restrictions and Waivers

The Environmental Services department will notify operations leadership within Power Supply, Customer Operations and Business Development, and T&D Engineering and Construction of any wildfire related requirements and restrictions orders that are issued by local, state, or federal land management agencies. Typical orders issued each fire season include:

- BLM. During BLM's Stage II Fire Restrictions, IPC's Environmental Services department will obtain an appropriate waiver. Field personnel shall take appropriate precautions when conducting work activities that involve an internal combustion engine, involve generating a flame, involve driving over or parking on dry grass, involve the possibility of dropping a line to the ground, or involve explosives. Precautions include a Fire Prevention Watch Person who will remain in the area for 1 hour following the cessation of that activity. Also, IPC personnel will not smoke unless within an enclosed vehicle, building, or designated recreation site or while stopped in an area at least 3 feet in diameter that is barren or cleared of all flammable materials. All smoking materials will be removed from work sites. No smoking materials are to be discarded.
- State of Oregon Department of Forestry (ODF). Prior to each summer fire season, the ODF issues a "Fire Season Requirements" document that specifies required tools, equipment, and work practices. In addition to State of Oregon lands, IPC has elected to apply these requirements to all work activities taking place on all WRZ, BLM lands, and Forest Service lands within the State of Oregon. Go to https://www.oregon.gov/ODF/Fire/Pages/Restrictions.aspx for ODF's Fire Season Requirements order.

- Other sites for reference that contain fire restriction orders include:
  - Oregon— Blue Mountain Interagency Fire Center at http://bmidc.org/index.shtml
  - Nevada—Fire Information at https://www.nevadafireinfo.org/restrictions-and-closures
  - Montana—https://firerestrictions.us/mt/

4. Prevention—Practices of Field Personnel

A. General Employee Practices

The below listing includes, but is not limited to, practices and behaviors employees shall incorporate depending on the FPI and level of WRZs during fire season.

1. Daily tailboards must include discussion around fire mitigation planning. Discussion topics include, but are not limited to:
    a. Items 2 through 7 below
    b. Water suppression
    c. Hand tools
    d. Welding blankets
    e. Mowing high brush areas (weed wacker)
    f. Watering down the worksite before setting up equipment

2. Weather conditions and terrain to be worked shall be considered and evaluated. Items to be considered include, but are not limited to:
    a. Identify the FPI for the area being worked (see Section 3.2.2)
    b. Monitor weather forecasts and wind and humidity conditions
    c. Identify surroundings. i.e., wildland-urban interface, BLM lands, Forest Service lands, proximity to any homes and structures, etc.
    d. Identify local fire departments and locations
    e. Evaluate the terrain you are working in (steep or flat)
    f. Consider whether the work will occur during the day or at night

3. Work procedures and tools that have potential to cause a spark or flash shall be considered and evaluated. Items to be considered include, but are not limited to:
    a. Performing energized work
    b. Grinding or welding
    c. Trees contacting electrical conductors
    d. Hot saws
    e. Chainsaws
    f. Weed wackers
    g. Sawzalls

4. Monitoring the worksite throughout the project.
    It is imperative that all crews and equipment working in the WRZs areas are continuously monitoring and thoroughly inspecting the worksite throughout the project. This includes prior to leaving the work area for the night or before moving on to the next structure.

5. Employee cooking stoves.
    When working in remote locations, often employees bring food that needs to be cooked. Open flames should not be allowed. Cook stoves may be permitted by leadership but special precautions must be followed to use:
    a. The stove or grill must be in good repair and of sturdy construction
    b. Stoves must be kept clean, grease build up is not allowed
    c. Fueling of the stove must follow the fueling procedures when liquid fuels are used
    d. Cooking must be in areas free of combustible materials

6. Smoking on the job site.
   Carelessly discarded smoking materials can result in wildfire ignition. The following practices shall be followed:
   a. Do not discard any tobacco products from a moving vehicle.
   b. Smoking while standing in or walking through forests or other outdoor areas when IPC's FPI rating is above a Green level is prohibited.
   c. All employees must smoke **only in designated areas** and smoking materials must be disposed of in half filled water bottles or coffee containers half filled with sand. Smoking materials shall not be discarded on any site.

7. Post job site inspection.
   Final inspection or post-checking the work site for any ignition hazards that may remain is essential to the proper completion of the work and true mitigation of the hazards. Post-checking the work will help ensure the hazards were mitigated and provide a final chance to see if any new hazards or hot spots exist before leaving the work site.

B. Behaviors Relating to Vehicles and Combustion Engine Power Tools

It is important to consider work procedures, equipment conditions, employee actions, potential causes, and other sources that could lead to fire ignition. Some work practices may be performed on roadways that have little to no risk of fire ignition. Leadership should consider scheduling off-road equipment use during times of green fire risk. Employees should also consider alternative tools, work methods or enhanced suppression tools to reduce the risk or spread of fire.

1. Additional heat may bring vegetative materials to an easier point of ignition.
   This includes, but is not limited to, the following vehicles:
   a. Pickups, crew cabs, line-beds, buckets trucks (large and small), backhoes, excavators and rope trucks, and any other motorized equipment.

2. Vehicle Procedures:
   a. Inspect all engine exhaust, spark arresters and electrical systems of vehicles used off road, daily for debris, holes or exposed hot components and to ensure that heat shields and protective components are in place.
   b. Conduct inspections of the vehicle undercarriage before entering or exiting the project area to clear vegetation that may have accumulated near the vehicle's exhaust system.
   c. Vehicles shall be parked overnight in areas free from flammable vegetation at a minimum distance of 10 feet.
   d. Vehicles and equipment will not be stationary or in use in areas where grass, weeds or other flammable vegetation will be in contact with the exhaust system.
   e. If there is no other workable option for the location that doesn't include weeds, grass or other flammable vegetation, the vegetation and debris will need to be removed.

f. Consider using a fire-resistant material such as a welding blanket to cover flammable material to act as a heat shield; fire blankets may be a suitable option to avoid removal of vegetation.

3. Hot brakes on vehicles and equipment:
    a. Park vehicles in areas free of combustible materials.
    b. Hot brake emergency parking, during times of yellow or red FPI shall be cleared of combustible materials for a distance of at least 10 feet from the heat source.

4. Fueling procedures:
    a. Tools or equipment should NOT be fueled while running.
    b. Cool down period must be given to allow equipment time to no longer be considered a fire risk.
    c. Allow for a ten-foot radius from all ignition sources.
    d. Any combustible debris should be cleared from the immediate area.
    e. Never smoke while fueling.
    f. Designate fueling areas for all gas-powered tools.

5. Combustion engine power tools:
    Poorly maintained or missing spark arrester screens may allow sparks to escape and cause ignition of vegetation. Ensure proper spark arrester screens are in place for the following tools:
    a. Generators
    b. Pony motors
    c. Pumps
    d. Chain saws
    e. Hot saws
    f. Weed eaters
    g. Brush hog

    Inspect spark arresters daily; clean or replace when clogged, damaged or missing or remove from service until repaired.

5. Reporting

A. Fire Ignition

All fire ignitions shall be immediately reported to regional or system dispatch. Dispatch will notify local fire authorities. All work shall immediately stop and necessary steps taken to extinguish the fire with available tools, water, and equipment. If the fire gets too large to safely contain or extinguish, ensure all employees are accounted for and get to a safe location.

B. Fire Reporting

When reporting a fire ignition to regional or system dispatch provide the following information:

1. Your name
2. Location-reference points including an address, road or street name, cross streets, mountain range, GPS coordinates, as applicable
3. Fire information
4. Size and behavior of the fire
5. Weather conditions

6. Training

Each employee who performs work in wildland fire designated zones shall be trained on the content of this document and be required to complete annual refresher courses through the Workday system. Employees are required to complete fire extinguisher and fire shelter training annually as part of the lineman safety compliance. Documentation of all training shall be retained in Workday.

7. Roles and Responsibilities

Employee	1. Be familiar with the requirements specified in this Plan and operate in accordance with this Plan. 2. Be aware of daily weather forecast and FPI level. 3. Be aware of whether field work will be performed in a WMZ.
Crew Foreman and Front-Line Leaders	1. Establish expectations to direct report employees they are to be familiar with, and follow, Plan requirements. 2. Ensure the crew or team conducts field operations in accordance with this Plan. 3. Be aware of daily weather forecast and FPI level (by viewing the FPI dashboard or by calling into dispatch or a leader): a) Ensure employees are aware of the FPI level. b) Ensure work practices comply with this Wildland Fire Preparedness and Prevention Plan when the FPI is “Red” and the WMZ is Yellow. c) Ensure no work takes place when FPI is “Red” and the WMZ is Red. Any exceptions to be discussed with manager. 4. Ensure annual training of employees is completed prior to wildfire season. 5. Ensure required tools and equipment are in place prior to wildfire season.
Manager (Regional Operations Manager, Area Manager, T&D Construction Manager)	1. Establish expectations to Crew Foremen and Front-Line Leaders they are to operate in accordance with Plan requirements. 2. Support Crew Foremen and Front-Line Leaders in scheduling training and making required tools and equipment available. 3. View daily weather forecast and FPI dashboard: a) Authorize any exceptions to working when FPI is “Red” and the WRZ is Red. b) Ensure specified audits are timely completed.
Meteorology Department	1. Provide daily weather forecast and update the FPI dashboard contained within the IPC Enviro Viewer.
Environmental Services Department	1. Monitor local, state, and federal land management agencies for any wildfire restriction orders that are issued. 2. Communicate content of any orders issues to Power Supply, COBD, and PEC operations leadership.
Operations Procurement Department	1. Ensure contractors have a copy of this Plan and that contractual requirements are in place to ensure adherence to the Plan.
Vice-President of Planning, Engineering and Construction (VP of PEC)	1. Ensure annual review/update of this Plan is conducted following the completion of each wildfire season.

8. Audit

Prior to the start of wildfire season (May 10), all vehicles will be audited by leadership to ensure that those working in WRZs are properly equipped with firefighting equipment. The following checklist must be completed, dated, and signed by a member of leadership (front-line supervisor or above) and kept with the crew or individual until fire season has ended (Oct 20). A copy of each audit checklist shall be sent to the respective manager and senior manager.

Wildland Fire Preparedness Audit Checklist:

Inspector: _____

Signature: _____

Date: _____

Crew: _____

Crew:

At least 1 vehicle will be equipped with the following:

- Fire suppression hand tools (shovels, Pulaski, axes, etc.) for each member of the crew
- A 16–20-pound fire extinguisher (2-10-pound fire extinguishers)
- A supply of water, sufficient for initial attack, with an effective spraying mechanism (i.e., backpack pumps, water sprayer, etc.)
- 30–75-gallon mechanical fire pumper

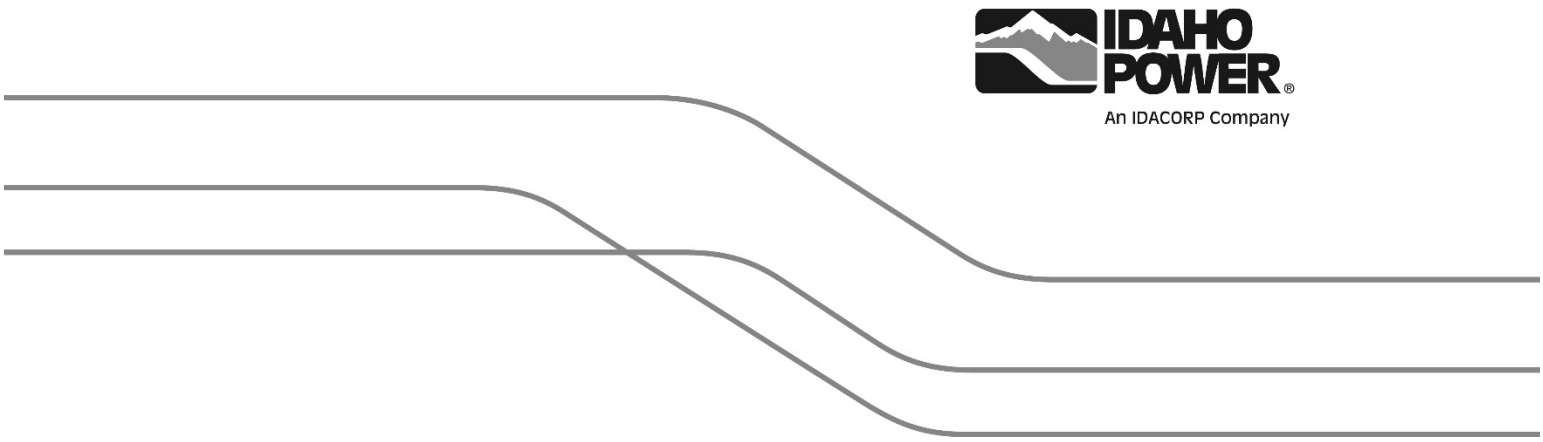
Individual Truck:

- One round, pointed shovel at least 8-inches wide, with a handle at least 26 inches long
- One axe or Pulaski with a 26-inch handle or longer
- A combination of shovels, axes, or Pulaskis to each person on the crew
- One fire extinguisher rated no less than 2A:10BV (5 pounds)
- 30-200 gallons of water in a fire pumper and 5-gallon back packs

Personal protective equipment (PPE) IPC and BLM standards: Each employee will be required to have the following PPE:

- Hard hat with a chin strap
- Safety glasses
- Hearing protection
- Long sleeve FR shirt FR pants
- Leather gloves
- Exterior leather work boots 8″ high lace type with Vibram type soles
- Fire shelter

Appendix B
The Public Safety Power Shutoff (PSPS) Plan.



Idaho Power Company's Wildfire Public Safety Power Shutoff Plan

December 2021

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1. INTRODUCTION

Wildfires in the Pacific west have increased in their intensity in recent years. In an effort to keep Idaho Power's customers and the communities it serves safe and continue improving the resiliency of Idaho Power's transmission and distribution facilities, Idaho Power implemented a Wildfire Mitigation Plan in 2021, focused on situational awareness, field personnel safety practices and operational wildfire mitigation strategies to prevent the accidental ignition of wildfires. As part of its operational mitigation practices, Idaho Power has developed this Public Safety Power Shutoff Plan (PSPS Plan or Plan) to proactively de-energize electrical facilities in identified areas of extreme wildfire risk to reduce the potential of those electrical facilities becoming a wildfire ignition source or contributing to the spread of wildfires. This Plan identifies the relevant considerations, process flow and implementation protocol before, during and after a PSPS event. The Plan will be active during wildfire season and reviewed annually and updated as necessary prior to the start of the next wildfire season.

This Plan identifies PSPS implementation considerations and responsibilities for different Idaho Power departments before, during and after PSPS events. Table 2 describes the different phases Idaho Power will use during PSPS events and Figure 7 depicts the communication audiences and timeline Idaho Power will ideally follow during an event. Finally, this Plan describes activities Idaho Power will undertake to prepare and improve the Plan over time, including interactions with local emergency agencies, and briefly describes the financial administration of the Plan.

2. LIST OF ACRONYMS

AAR—After Action Review

BLM—Bureau of Land Management

COO—Chief Operations Officer

ECMWF—European Centre for Medium-Range Forecasts

EMT—Emergency Management Team

ERC—Energy Release Component

F100—100-Hour Fuel Moisture

FPI—Wildfire Mitigation Plan Fire Potential Index

FWW—Fire Weather Watch

GBCC—Great Basin Coordination Center

GIS—Geographic Information System

IPUC—Idaho Public Utility Commission

IRWIN—Integrated Reporting of Wildland-Fire Information

LSO—Load Serving Operations

NIFC—National Interagency Fire Center

NOAA—National Oceanic and Atmospheric Administration

NWS—National Weather Service

OPUC—Oregon Public Utility Commission

PEC—Planning, Engineering and Construction

PSPS—Public Safety Power Shutoff

RFW—National Weather Service issued Red Flag Warning

SGM—Smart Grid Meter

SME—Subject Matter Expert

T&D—Transmission & Distribution

TDER—Transmission & Distribution Engineering and Reliability

UKMET—United Kingdom Meteorological Office

WMP—Wildfire Mitigation Plan

WRF—Weather Research and Forecasting

3. DEFINITIONS

(1) Critical Facilities—Refers to the facilities identified by Idaho Power that, because of their function or importance, have the potential to threaten life safety or disrupt essential socioeconomic activities if their services are interrupted.

(2) ESF-12—Refers to Emergency Support Function-12 and is the Idaho Power Company liaison from the State Office of Emergency Management for energy utilities issues during an emergency for both Idaho and Oregon.[1]

(3) Exercise—Refers to planned activities and assessments that ensure continuity of operations, provide and direct resources and capabilities and gather lessons-learned to develop core capabilities needed to respond to incidents.

(4) Community—Refers to a group of people that share goals, values and institutions.[2]

(5) Local Emergency Manager—Refers to a jurisdiction's role that oversees the day-to-day emergency management programs and activities.[3]

(6) Public Safety Partners—As defined by Idaho Power refers to ESF-12, Local Emergency Management and Idaho's and Oregon's Department of Human Services (or equivalent).

(7) Public Safety Power Shutoff or PSPS—A proactive de-energization of a portion of an Electric Utility's electrical network, based on the forecasting of and measurement of extreme wildfire weather conditions.

[1] Federal Emergency Management Institute (FEMA) National Response Framework (NRF) Emergency Support Functions (ESF) National Response Framework | FEMA.gov.

[2] FEMA definition under "Communities" (pg. 26) National Response Framework (fema.gov).

[3] FEMA definition under "Local Government" (pg. 29) National Response Framework (fema.gov).

4. PUBLIC SAFETY POWER SHUTOFF OVERVIEW

In recent years, the western United States (U.S.) has experienced an increase in the intensity of wildland fires (wildfires). A variety of factors have contributed in varying degrees to this trend, including climate change, increased human encroachment in wildland areas, historical land management practices and changes in wildland and forest health. Recent events in western states have increased awareness of electric utilities' role in wildfire prevention and mitigation.

In an effort to keep Idaho Power's customers and the communities it serves safe and continue improving the resiliency of Idaho Power's transmission and distribution (T&D) facilities, Idaho Power implemented a Wildfire Mitigation Plan (WMP) in 2021 focused on situational awareness, field personnel safety practices and operational wildfire mitigation strategies. As part of its operational mitigation practices, Idaho Power developed this Wildfire Public Safety Power Shutoff Plan (PSPS Plan or Plan) to proactively de-energize electrical facilities in identified areas of extreme wildfire risk to reduce the potential of those electrical facilities becoming a wildfire ignition source or contributing to the spread of wildfires. Based on the inherently disruptive nature of power outages, Public Safety Power Shutoff (PSPS) events must be carefully evaluated under this Plan to balance wildfire risk with potential PSPS impacts on Idaho Power customers and the communities it serves.

The unpredictable nature of wildfire and weather patterns create significant challenges with forecasting PSPS events. Real-time evaluations and decision-making are therefore critical in making PSPS determinations and, depending on the associated wildfire risk, those determinations may result in proactive de-energization in areas not originally anticipated.

5. SCOPE

This PSPS Plan identifies the relevant considerations, process flow and implementation protocol before, during and after a PSPS event. The Plan will be active during wildfire season and reviewed and updated annually as necessary prior to the start of the next wildfire season. Wildfire season (also known as "closed season") is defined by Idaho Code § 38-115 as extending from May 10 through October 20 each year, or as otherwise extended by the Director of the Idaho Bureau of Land Management (BLM). Oregon's wildfire season generally aligns with Idaho's wildfire season and is designated by the State Forester each year pursuant to Oregon Revised Statute 477.505.

6. KEY TENETS

- Advancing the safety of Idaho Power employees, customers and the general public
- Collaborating with key external stakeholders (agencies, counties, local governments, public safety partners, first responders)

- Minimizing both potential wildfire risk and power outage impacts on communities and customers
- Maintaining reliable electric service

7. WILDFIRE ZONES

Idaho Power's WMP identifies areas of heightened wildfire risk within its service territory reflected by the following risk zones:

- Tier 2 Yellow Risk Zones are deemed increased risk areas.
- Tier 3 Red Risk Zones are deemed higher risk areas.

In its WMP, Idaho Power identifies operational practices specific to these zones of heightened wildfire risk for purposes of (1) reducing potential wildfire risk associated with Idaho Power's T&D facilities and field operations, and (2) improving the resiliency of the Idaho Power's T&D system impacted by wildfire. This PSPS Plan sets forth Idaho Power's PSPS evaluation criteria and processes, including operational and communication protocol, for implementing a PSPS.

8. PSPS IMPLEMENTATION CONSIDERATIONS

Idaho Power will initiate a PSPS if the company determines a combination of critical conditions indicate the T&D system at certain locations is at an extreme risk of being an ignition source and wildfire conditions are severe enough for the rapid growth and spread of wildfire. Idaho Power will evaluate as a whole (not relying on one single factor but a combination of all factors), without limitation, the criteria set forth in 9.1–9.17 below.

8.1. Fire Potential Index

In addition to the Risk Zone designations in its WMP, Idaho Power developed a Fire Potential Index (FPI) to forecast wildfire potential across Idaho Power's service area. The FPI converts data on weather; prevalence of fuel (shrubs, trees, grasses); and topography into a numerical FPI score to forecast the short-term wildfire threat in geographical areas throughout Idaho Power's service area. FPI scores range from 1 (very green, wet fuels with low to no wind and high humidity) to 16 (very brown and dry, both live and dead dry fuels with low humidity and high temperatures). FPI scores are grouped into the following 3 index levels:

1) Green—lower fire potential: FPI score of 1 through 11
2) Yellow—elevated fire potential: FPI score of 12 through 14
3) Red—highest fire potential: FPI score of 15 and 16

The FPI supports operational decision-making to reduce potential wildfire risk. During wildfire season, Idaho Power will determine a daily FPI as described in Section 5.2 of the WMP. The FPI

forecast is broken into four 6-hour time periods throughout each seven-day forecast. FPI information is provided via email, certain Geographic Information System (GIS) viewers and an FPI dashboard accessible to both Idaho Power employees and contractors from Idaho Power's website. The WMP details operational mitigation efforts in Red Risk Zones when the FPI score in that Red Risk Zone is also Red, including stopping planned work and changing distribution protection operations. A Red FPI score will be a consideration in Idaho Power's determination of whether to initiate a PSPS.

8.2. National Weather Service Red Flag Warning

A Red Flag Warning (RFW) is a forecast warning issued by the National Weather Service (NWS) to inform the public, firefighters and land management agencies that conditions are ideal for wildland fire combustion and rapid spread. RFWs are often preceded by a Fire Weather Watch (FWW), which indicates weather conditions that could occur in the next 12–72 hours. The NWS has developed different zones across the nation for providing weather alerts (such as RFWs) to more discrete areas. These zones are shown on this NWS webpage: Fire Weather. RFWs for Idaho Power's service territory include Idaho Zones (IDZ) 401, 402, 403, 413, 420 and 422; and Oregon Zones (OR) 636, 637, 642, 634, 644, 645 and 646; and are monitored and are factored into Idaho Power's determination of whether to initiate a PSPS. Boise and Pocatello NWS offices will not issue RFWs if fuels are moist and fire risk is low. The following thresholds are used by most NWS offices:

- Daytime:
    - Relative humidity of 25% or less
    - Sustained winds greater than or equal to 10 miles per hour (mph) with gusts greater than or equal to 20 mph over a four-hour time period
- Nighttime:
    - Relative humidity of 35% or less
    - Sustained winds greater than or equal to 15 mph with gusts greater than or equal to 25 mph over a three-hour time period
- Lightning:
    - The NWS rarely issues RFWs for lightning in the western United States. For this to occur, the Lightning Activity Level—a measure of lightning potential specifically as it relates to wildfire risk—needs to be at 3 or higher.

8.3. NWS Fire Weather Forecasts

The NWS provides detailed forecasts for the different weather zones with an emphasis on fire weather indicators (wind speed, relative humidity, lightning potential). A discussion

summarizing the weather patterns and highlighting fire threats is included in their extended forecast.

8.4. Publicly Available Weather Models

Idaho Power's Atmospheric Science department uses the following weather models to predict weather timing, duration and intensity:

- Pivotal Weather Link (pivotalweather.com/model.php): Provides numerical weather data, including a NWS blend of models, European Centre for Medium-Range Weather Forecasts (ECMWF), United Kingdom Meteorological Office weather service information and GOES-16 satellite information.

- Graphical Weather Link (graphical.weather.gov/sectors/conusFireWeek.php): A NWS website providing weather, water and climate data, forecasts and warnings for the United States for the protection of life and property. The Fire Weather page provides a daily and weekly view of multiple weather and environmental conditions influencing wildfire activity.

8.5. Idaho Power Weather Model

Idaho Power maintains its own Weather Research and Forecasting (WRF) model using high-resolution data from Idaho Power's weather stations across its service area. This model, along with publicly available weather models, helps develop weather forecasts that include timing, duration and intensity of weather systems. An Idaho regional WRF low-resolution map view is available to the public at atmo.boisestate.edu/view/.

8.6. Storm Prediction Center Fire Weather Outlooks

The Storm Prediction Center's Fire Weather Outlook provides a current, one-day-ahead and three- to eight-day forecast for wildfires over the contiguous United States. This forecast takes into account pre-existing fuel conditions combined with predicted weather conditions that result in a significant risk of wildfire ignition or spread.

8.7. Current Weather Observations

Identifying real-time wildfire weather and associated risks requires predicting conditions that could trigger a PSPS based on observing current weather conditions. Resources available for observing current weather conditions include direct, real-time data from Idaho Power's network of weather stations, available real-time wind speed information from Idaho Power's network of Smart Grid Meters (SGM), as well as Windy: Wind Map and Weather Forecast and the National Weather Service National Oceanic and Atmospheric Administration's (NOAA) Weather and Hazards Viewer.

8.8. National Significant Wildland Fire Potential Forecast Outlook

The National Significant Wildland Fire Potential Forecast Outlook provides wildland fire expectations for the current month, the following month and a seasonal look at the two months beyond that. The main objective of this tool is to provide information to fire management decisionmakers for proactive wildland fire management, reducing firefighting costs and improving firefighting efficiency.

8.9. Great Basin Coordination Center Morning Briefing

The Great Basin Coordination Center (GBCC) is the focal point for coordinating the mobilization of resources for wildland fire and other incidents throughout the Great Basin Geographic Area, which encompasses Utah, Nevada, Idaho south of the Salmon River, the western Wyoming mountains and the Arizona Strip. The GBCC hosts a morning briefing (around 10 a.m. most mornings) that provides situational awareness for Idaho Power's service area.

8.10. GBCC Current and Predicted ERC and F100

The GBCC as described above also provides day-ahead Energy Release Component (ERC), 100-Hour Fuel Moisture (F100) and other fuels conditions information that helps Idaho Power understand wildfire potential in the service area.

8.11. Agency Input

Idaho Power works with Boise NWS Fire Forecasters through daily briefings and NIFC Predictive Service Forecasters on an as-needed basis, generally regarding data clarification, to streamline the transfer of data, information and communications about wildland fire critical to Idaho Power's service area.

Idaho Power works with other agencies, including the U.S. BLM and U.S. Forest Service, as wildland fires approach and impact Idaho Power T&D facilities.

8.12. De-Energization Windspeed Considerations

Idaho Power’s service area covers 24,000 square miles across southern Idaho and eastern Oregon. The environmental factors across this area vary drastically from high desert landscape to mountainous terrain. Weather and environmental conditions also vary greatly within this area. Regional vegetation becomes “conditioned” to withstand different environmental conditions, which also influences de-energization thresholds. Idaho Power developed windspeed considerations, which it will continue to refine with additional data and weather technology based on historic wind conditions compared to system outage information.

8.13. Engineering Assessment

Idaho Power follows robust transmission and distribution maintenance and inspection practices. When a potential PSPS event is identified, Idaho Power's T&D Maintenance and Engineering department will evaluate potential impacts to current or planned maintenance activities.

8.14. Alternative Protective Measures

Considering the significant potential impact of a PSPS to customers, Idaho Power will thoroughly evaluate other potential alternatives for reducing wildfire risk prior to implementing a PSPS.

8.15. Real-time Field Observations

Idaho Power uses SGMs for various purposes on its the distribution systems, including communication (where available) to provide near real-time information and to detect wind speed with anemometers. This information is displayed on a GIS viewer and used to inform Idaho Power's evaluation and decision-making during storm events.

Idaho Power may also deploy field personnel to evaluate if a PSPS event should be initiated.

8.16. Other

Idaho Power plans to evaluate expanding existing capabilities to enhance weather forecasting and add new capabilities to detect fires.

9. RESPONSIBILITIES

Developing and implementing PSPS protocol involves various groups throughout the company. Below is a non-exhaustive list of responsibilities by department, representatives of which will work together to promote organized, consistent and safe implementation of PSPS events.

9.1. Load Serving Operations

- Develop and implement safe and reliable power shutoff protocols and procedures
- Ensure System and Regional Dispatch employees are appropriately trained to perform relevant responsibilities under this PSPS Plan, and that such employees receive timely information regarding wildfire risk and weather conditions for purposes of performing those responsibilities in the event of a PSPS
- Assist with PSPS evaluation and decision-making

- Safely restore service to PSPS areas when notified by Customer Operations it is safe to re-energize
- Provide required notifications to public safety partners to enhance public safety
- Participate in After-Action Reviews (AAR) (further discussed in Section 13 below) and ensure modifications to PSPS protocol are implemented as necessary

9.2. Atmospheric Science

- Monitor daily, weekly and long-term weather forecasts
- Monitor fuels conditions and trends
- Monitor Fire Weather Watches, Red Flag Warnings and High Wind Watches and Warnings
- Communicate with external agencies for increased situational and conditional awareness. Increase communications as conditions require
- Communicate internally to Idaho Power's Transmission & Distribution Engineering and Reliability (TDER) senior manager when extreme conditions indicate a PSPS event is likely
- Support PSPS activities such as planning, training and exercises
- Assist in PSPS information-gathering, evaluation and decision-making
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.3. TDER Senior Manager

- Oversee wildfire mitigation program and support cross-departmental collaboration
- Monitor daily, weekly and long-term weather and wildfire forecasts
- Monitor Fire Weather Watches, Red Flag Warnings and High Wind Watches and Warnings
- Develop and lead training modules for PSPS implementation
- Activate the PSPS Assessment Team if a PSPS is likely
- Communicate with Oregon and Idaho ESF-12

- Ensure PSPS activities such as operations planning, training and exercises occur annually
- Ensure a coordinated and cohesive external and internal communication and notification plan is in place and reviewed annually
- Coordinate with Atmospheric Science to continue evaluating enhancements to situational awareness capabilities
- Participate in AARs and provide input on, and monitor as necessary, modifications to PSPS protocol

9.4. Customer Operations and T&D Construction

- Develop and implement safe and reliable power shutoff protocols and procedures
- Ensure field personnel are appropriately trained to perform all relevant responsibilities under this PSPS Plan
- Assist in PSPS information-gathering, evaluation and decision-making
- Ensure crews and equipment are available to support PSPS events
- Perform field observations, line patrols and other PSPS tasks as necessary
- Perform required repairs to safely re-energize the system after a PSPS event
- Request/obtain air patrol contractors for line inspections as required
- Participate, with assistance from Corporate Communications, in Idaho Power's general external education campaign
- Develop, with assistance from Corporate Communications, a cohesive notification framework with public safety partners while consistently evaluating ways to increase communication and outreach effectiveness
- Engage with public safety partners and critical facilities before, during and after a PSPS event
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.5. Supply Chain/Stores

- Ensure preparedness for wildfire season with materials readily available for restoration purposes

- Work with Customer Operations and T&D Construction in response to a PSPS event, which could include pre-event activities such as staging materials and supplies
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.6. Fleet/Equipment Resource Pool

- Ensure employees are appropriately trained to perform all relevant responsibilities under this PSPS Plan
- Ensure readiness of employees and resource pool equipment for a PSPS event
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.7. Supply Chain Contracting

- Ensure contract resources are appropriately trained to perform all relevant responsibilities under this PSPS Plan
- Work with Customer Operations to provide contracting resources as required
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.8. Substation Operations

- Monitor substations and perform actions to support PSPS operations
- Coordinate activities with Dispatch and Customer Operations
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.9. Corporate Communications

Corporate Communications will develop and execute PSPS communications to Idaho Power customers and employees and support other business units in their communication efforts with regulators, critical facility operators, public safety partners and other stakeholders.

Corporate Communications will:

- In coordination with Customer Operations and Regulatory Affairs, work with public safety partners, critical facilities, regulators and other stakeholders to develop a comprehensive, coordinated and cohesive customer notification framework.
- With input from public safety partners, develop and implement a wildfire education and awareness campaign focused on wildfire prevention and mitigation, PSPS awareness and outage preparedness for customers.
- In the event of a PSPS:
    - To the extent possible and in coordination with Customer Service and IT, notify customers before, during and after a PSPS event with the following information:
        - Expected timing and duration of the PSPS event
        - 24-hour contact information and website resources
    - Provide up-to-date information on a dedicated Idaho Power PSPS webpage prominently linked on the Idaho Power homepage.
    - Distribute information via media and social media channels.
- Participate in AARs and modify communication practices as necessary.

9.10. Distribution Engineering and Reliability

- Support Dispatch and Customer Operations in developing de-energization and re-energization plans for PSPS events
- Monitor and verify the protection system operated correctly after any device operations caused by events on the circuit as appropriate
- Evaluate and enact protective device setting changes as required.
- Support rapid repairs of damaged infrastructure as needed.
- Support Load Serving Operations in planning improvements to PSPS operational capabilities
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.11. Safety

- Ensure the safety professionals are appropriately trained to perform all relevant responsibilities under this PSPS Plan
- Provide PSPS training for field personnel
- Assist in AARs after a PSPS event (or potential event in which the PSPS Team is activated)

9.12. Vegetation Management

- Following de-energization, and when it is safe to do so, Customer Operations will report impacts to infrastructure and assets from vegetation, as appropriate. Vegetation Management will then work toward removing vegetation debris necessary for re-energization.
- Ensure contractors and field personnel are appropriately trained to perform all relevant responsibilities under this PSPS Plan.
- Use reasonable efforts to ensure contract resources are available and prepared for PSPS events.
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary.

9.13. Geographic Information Systems

- Work with Customer Operations and Corporate Communications to develop PSPS boundary information for PSPS GIS maps required for the PSPS website
- Before wildfire season and during preliminary notifications of a potential PSPS event, provide relevant GIS data within the confines of applicable law to public safety partners

9.14. Customer Service

- Respond to customer calls and respond to questions with information provided by Corporate Communications
- Ensure customer service representatives are trained to manage customer interactions during a PSPS event

9.15. Communication Systems (Stations)

- Provide monitoring and on-call presence for the following:
  - Radio communications and infrastructure
  - Network infrastructure and connectivity
  - SCADA communications
- Ensure readiness to deploy mobile 2-way radio trailer during a PSPS event
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.16. Customer Operations Support

- May lead AARs to ensure modifications to PSPS protocol are implemented as necessary

9.17. Legal

- Provide legal guidance in evaluating a potential PSPS event
- May direct AARs after a PSPS event (or potential event in which the PSPS Team is activated)
- May be involved in reviewing communications to customers, public safety partners and critical facilities

9.18. Regulatory

- May provide regulatory guidance in evaluating a potential PSPS event
- May be involved in reviewing communications to customers, public safety partners and critical facilities
- Assist in/direct regulatory reporting/filing activities

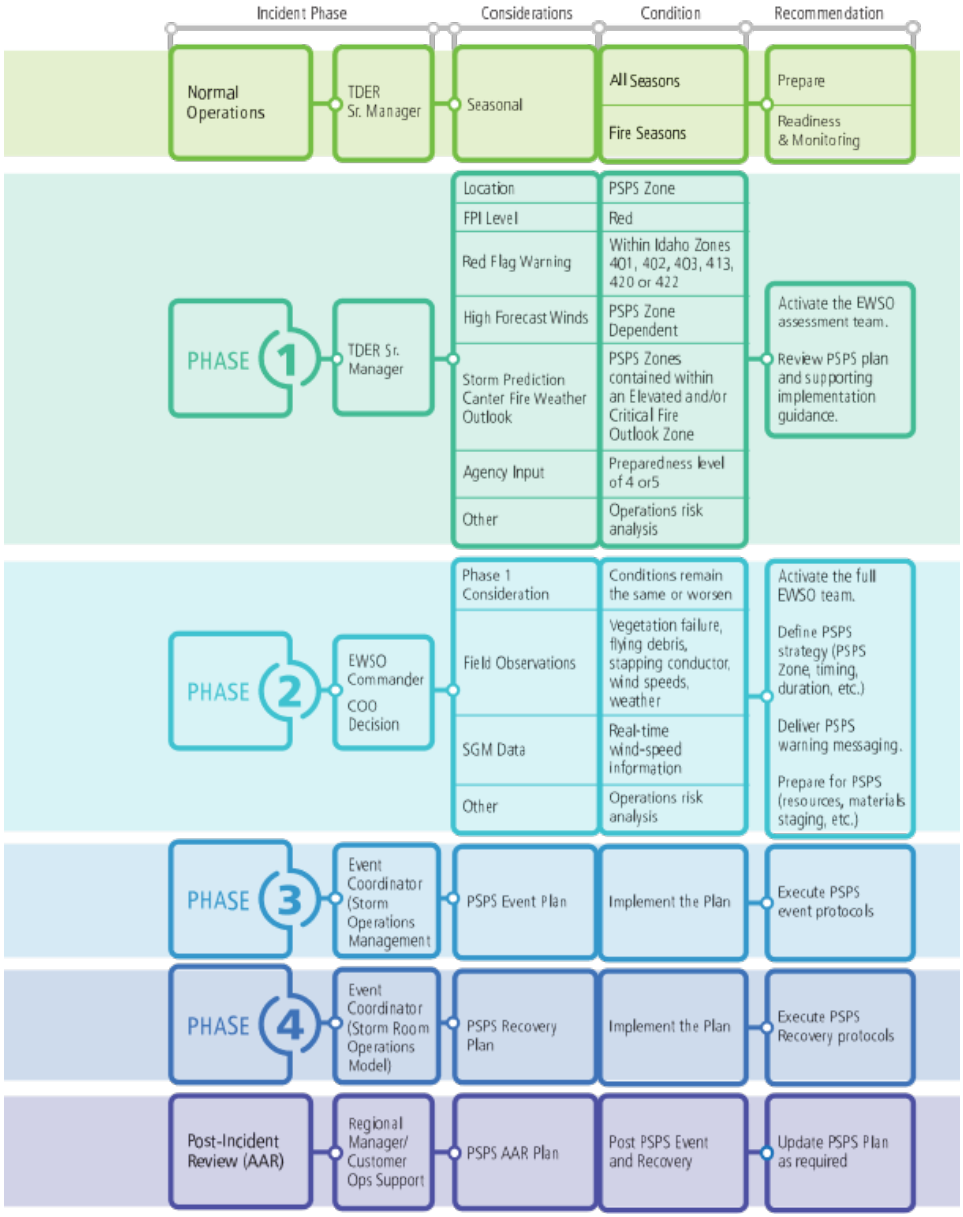
10. PSPS OPERATIONS

10.1. General

Section 11 details the phases, and protocol within each phase, of a PSPS event. Additional procedures are found in plans linked below and the attached Appendices as referenced herein.

Table 2 below summarizes the PSPS phases.

Table 1
Incident phase decision triggers



10.2. PSPS Preparedness

PSPS preparedness is a cyclical effort involving Idaho Power, public safety partners, state and local governments, communities and customers. Idaho Power's main objectives of preparedness are: 1) performing wildfire prevention and mitigation activities; and 2) engaging with external public safety partners, critical facilities and communities to develop relationships and provide education to safely and effectively implement this plan. The TDER senior manager coordinates and facilitates activities of multiple Idaho Power business units for wildfire prevention and mitigation activities while Customer Operations and Corporate Communications facilitates public outreach and coordination efforts with external stakeholders.

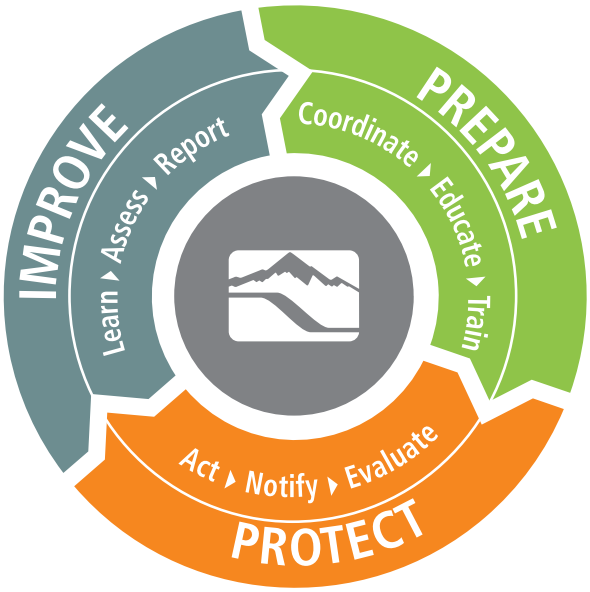


Figure 1
PSPS Preparedness Cycle

Idaho Power's goal is to take a community approach to wildfire preparedness by educating and encouraging individual preparedness and relying on existing protocols and procedures currently available through local governments and emergency response professionals.

10.2.1. Idaho Power Programs

Idaho Power's WMP facilitates PSPS preparedness through vegetation management protocol specific to wildfire season, distribution and transmission hardening efforts, situational awareness coinciding with wildfire operational protocol, training programs, communications strategies and coordinated planning with both internal and external stakeholders. This PSPS Plan and emergency response protocol correspond with Idaho Power's WMP preparedness measures in an effort to further reduce wildfire risk consistent with industry best practices and regulatory requirements.

10.2.2. Coordination with Government Entities

Coordination with local government and emergency response entities is critical to Idaho Power's reliance on existing protocols and procedures developed by these external stakeholders. Customer Operations engages in these coordination efforts through ongoing communications and additional activities as required by this Plan. Activities include, without limitation:

- Being a trusted energy advisor to mayors, city managers, county leaders, elected officials and other stakeholders
- Educating and encouraging individual preparedness
- Educating stakeholders about Idaho Power wildfire preparedness and mitigation efforts, PSPS planning and capabilities
- Enhancing relationships with external stakeholders for improving interoperability and wildfire coordination
- Enhancing relationships with community services partnerships

10.2.3. Community Preparedness

Engage with public sector agencies and communities where PSPS events are likely to leverage existing emergency response plans and resources to increase the effectiveness of PSPS communications.

10.2.4. Information Sharing

Coordinate with public safety partners in advance of a PSPS event to prepare information needed by these partners and establish communication protocols for critical decision-making before and during a PSPS event, including restoration activities.

10.2.5. Notifications and Emergency Alerts

Collaborate with agencies in advance of PSPS events to allow for use of existing notification methods to communicate effectively during PSPS events.

10.2.6. Training and Exercises

Coordinate and participate in tabletop exercises with public safety partners to enhance knowledge of each other's emergency operations for smooth interactions during PSPS events.

10.3. Proactive Communications

Although the size of Idaho Power's service area, geographic and environmental diversity, and unpredictable nature of Idaho and Oregon weather make it challenging, Idaho Power is committed to providing as much advance notice as reasonably possible in preparation for a PSPS event. Table 3 provides Idaho Power's optimal communication timeline for PSPS events, circumstances permitting.

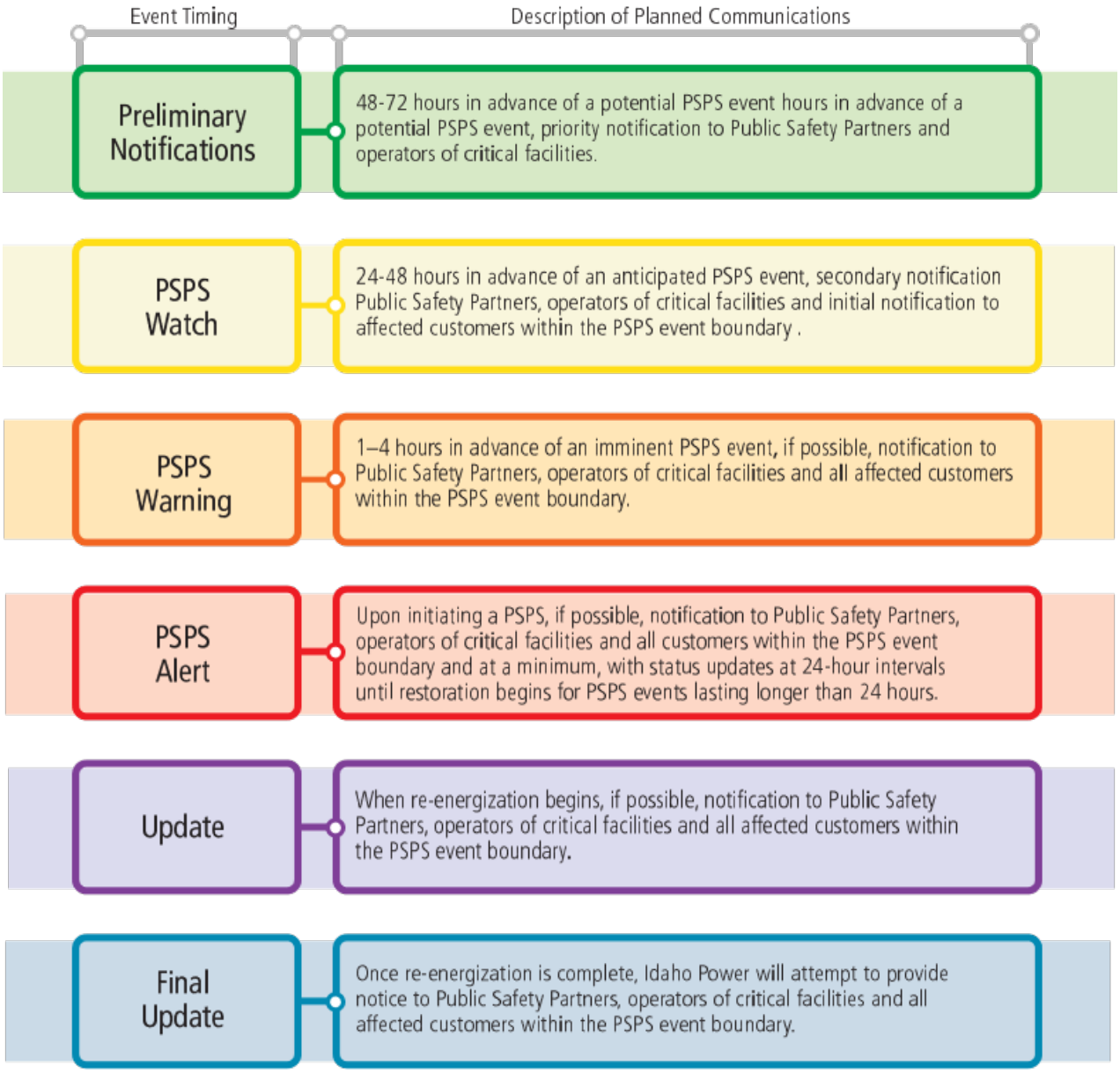


Figure 2
PSPS Event Communication Timeline

10.4. Wildfire Season Operations

As described here and in Idaho Power's WMP, normal operations during wildfire season differs from normal operations during the rest of the year based on heightened requirements specifically targeted at predicting and reducing wildfire risk.

10.4.1. Situational Awareness Activities

During wildfire season, Idaho Power closely monitors fire conditions and weather patterns. Idaho Power's Atmospheric Science team prepares a monthly "Seasonal Wildfire Outlook" report beginning in April and continuing through wildfire season containing information on regional drought conditions obtained from the National Drought Monitor, weather and climate outlook, seasonal precipitation and temperature outlooks from NOAA and the NWS, and a regional wildfire outlook.

During wildfire season, the Atmospheric Scientists will determine a daily FPI as described in Section 5.2 of the WMP describing shorter-term weather and fire conditions specific to WMP risk zones across Idaho Power's service territory and in identified risk zones where transmission facilities extend beyond service territory boundaries.

10.4.2. GIS Wildfire Information

Idaho Power's GIS team pulls regional wildfire information from a feature layer sourced by the GIS mapping software company ESRI, which pulls the data from the Integrated Reporting of Wildland-Fire Information (IRWIN) and the National Interagency Fire Center (NIFC). This information is added to multiple GIS viewers utilized by Idaho Power employees. These viewers also overlay current wildfire information to geospatially show physical relationships to transmission and distribution lines which provides valuable situational awareness in understanding wildfire activity near Idaho Power's T&D systems. This information is updated near real-time.

10.4.3. Key Grid Interdependent Utilities and Agencies

Idaho Power exchanges dispatch information with key grid interdependent utilities and energy providers to expedite communication and coordination during wildfire events. These contacts include Avista, Bonneville Power Administration, Northwestern Energy, NVEnergy, Oregon Trail Electric Cooperative, PacifiCorp, Raft River Electric, Seattle City Light and U.S. Bureau of Reclamation. Idaho Power also exchanges dispatch information with NIFC, BLM Fire Dispatch and various National Forest Service District Offices—including Idaho Power dispatch receiving BLM and US Forest Service incident command information during wildfire events—to improve communication and coordinate fire-related activities.

10.5. Phase 1

The decision to implement a PSPS event will be based on the best available data for weather and other fire-related conditions as detailed above in Section 8—PSPS Implementation Considerations. Multiple events may require simultaneous management such as other storm-related outages or other PSPS events.

10.5.1. PSPS Assessment Team Activation

Idaho Power will transition from normal wildfire season operations to Phase 1 of a PSPS event at the direction of the TDER senior manager. During Phase 1, Idaho Power will activate the PSPS Assessment Team, which includes the TDER senior manager, a regional senior manager of the area potentially impacted, Load Serving Operations (LSO) senior manager, a documentation subject matter expert (SME), and representatives from the Atmospheric Science team and Corporate Communications. The PSPS Assessment Team will hold conference calls as needed to discuss current and forecasted weather conditions and other critical information regarding a potential PSPS event. The TDER senior manager will facilitate PSPS Assessment Team meetings and conference calls and the PSPS Assessment Team will be responsible for determining whether to recommend maintain Phase 1, escalate to Phase 2, or de-escalate to normal operations. The PSPS Assessment Team will decide if Idaho Power will issue a preliminary notification of a potential PSPS event to public safety partners, critical facilities operators and ESF-12 as described in Table 3 above. During Phase 1, the PSPS Assessment Team will review the PSPS Plan and supporting documents. An operational risk assessment will be performed as well to determine current operational factors (existing outages, facilities under construction, personnel availability, etc.), risks and vulnerabilities. Ultimate determination will be made whether to escalate to Phase 2 by the TDER senior manager. Within one hour of Phase 2 notification, the full PSPS team will be placed on stand-by and team member availability will be determined. The full PSPS team is the PSPS Assessment Team plus the VP of Planning, Engineering and Construction, the Customer Operations VP and VP of Power Supply or their assigns.

10.5.2. Community Notifications

Depending on the situation and timing, public safety partners and critical facility operators may be notified during this phase. These notifications may include emails, text messages and/or phone calls as described in Idaho Power internal processes and procedures.

10.6. Phase 2

Phase 2 actions are determined by additional situational awareness activities, timing of forecasted weather events and risk tolerance. Upon transitioning to Phase 2, Idaho Power will provide external notifications as called out in Table 3 above with specific roles and responsibilities as described in internal process and procedure documents.

10.6.1. Activate Event Coordinator

Idaho Power will assign an Event Coordinator as outlined in Wildfire Mitigation and PSPS Plan. The event coordinator's main role is to coordinate activities across the region associated with PSPS implementation and restoration.

10.6.2. Conduct Operational Risk Analysis

The PSPS Assessment Team will present its operational risk analysis recommendation to the VP of PEC, VP of Customer Operations and the COO who will then evaluate the PSPS Assessment Team's recommendation, and the COO will make the final determination of whether to proceed to Phase 3 implementation of a PSPS event.

10.6.3. Request to Delay a PSPS Event

There may be requests to delay proactive de-energization from the public safety partners. This may occur for several reasons, with the most anticipated being loss of power for pumping water to fight wildfires. Delay requests should be routed through dispatch and sent to the PSPS Team for evaluation. The PSPS Team will provide the COO a recommendation on whether to approve the proactive de-energization delay and the COO will make the final decision. As soon as practicable after receiving the request, Idaho Power will notify the ESF-12 liaison of the delay request and basis of such request, as well as the final determination and the underlying justification.

10.6.4. PSPS Event Strategy

Regional operations personnel developed action plans and switching orders as part of their preparedness activities. These plans and switching orders will be reviewed and refined as necessary based on the current and forecasted conditions and will include situation-specific tactics and detailed instructions.

10.6.5. Field Observations and Response Teams

Regional Operations will coordinate field personnel to be mobilized and dispatched to strategic locations, including areas with limited weather and system condition visibility, to perform field observations for on-the-ground, real-time information critical to inform decisions on proactive de-energization. Field observations include—without limitation—conditional assessments of system impacts from wind and vegetation, flying debris and slapping conductors.

10.6.6. Customer and Community Notifications

Depending upon the timing and situation, Idaho Power may use various forms of communication (including media outreach) to provide information and updates to public safety partners, critical facility operators, and customers, particularly those impacted by the PSPS event. Information and updates will include the reason for the potential de-energization, where to find

real-time updates on outage status and other relevant safety and resources. Internal processes and procedures will be followed to ensure accurate, up-to-date communication is provided.

10.7. Phase 3

Upon the COO making a determination to proactively de-energize, the LSO representative of the PSPS Team will inform System and Regional Dispatch Operations and request coordination of the estimated time to begin the PSPS. The regional manager, or their assigned representative of the region in which the PSPS will take place, will coordinate with the event coordinator to pre-position field personnel where manual de-energization is required and to stand by for orders to de-energize. System and Regional Dispatch Operations will implement the PSPS according to their established processes. Stations and communications system operations personnel will be prepared to support PSPS activities as needed. Idaho Power will take the following community-centered actions as soon as safely possible. Regional teams will follow internal processes and procedures to safely and effectively implement a PSPS event.

10.7.1. Customer and Community Notification

Relying on internal processes and procedures, Idaho Power will use various forms of communication (including media outreach) to provide information and updates to customers and other stakeholders, particularly those impacted by the PSPS event. Information and updates will include the reason for the de-energization, where to find real-time updates on outage status and other relevant safety and resource information regarding the PSPS. Specific protocols may be included in individual work group plans.

10.8. Phase 4

10.8.1. System Inspections

When it is safe to do so, Idaho Power will begin line patrolling activities to inspect T&D circuits and other potentially impacted Idaho Power facilities. Patrol personnel will report system conditions back to System and Regional Dispatch Operations for coordination with field crews. Patrols will be performed as required to ensure conditions and equipment are safe to re-energize.

10.8.2. Repair and Recovery

Line crews will repair T&D facilities as coordinated with System and Regional Dispatch Operations, replacing damaged equipment and performing other actions to support safe re-energization of the T&D system.

10.8.3. Incident Management Support

Support throughout the PSPS event will continue as described in Idaho Power's Wildfire Mitigation and PSPS Operational Plan. The PSPS Team will continue to monitor fire and weather conditions. Logistics and mutual assistance requirements will be determined and acted upon per existing plans and processes. If timely re-energization is not possible based on the magnitude of the event, the EMT will be notified for additional support.

10.8.4. Communicate PSPS Event Conclusion

Idaho Power will use various forms of communication (including media outreach) to inform customers and other stakeholders, particularly those impacted by the PSPS event, when repairs are complete and it is safe to re-energize the system. This may occur in stages as different feeders or feeder sections are repaired and safe to re-energize. This will be viewable on the outage map on Idaho Power's website during the event. Idaho Power will also leverage existing public agency outreach and notification systems as done at other points in the PSPS process.

10.8.5. Re-energization

Once re-energization activities are completed and service is restored, crews and support staff will demobilize and return to normal fire season operations as described in internal process and procedure documents.

10.9. Post-incident Review

During the PSPS phases the documentation SME will collect and maintain in the Regional Dispatch Operations logs incident information required for reporting purposes.

Following conclusion of a PSPS event, the Regional Manager or their assigned representative will conduct informal, high-level debriefs to identify potential modifications to PSPS protocol based on lessons learned during the event. The regional manager or assigned representative will consolidate the feedback and provide to the documentation SME.

Also following the PSPS event, the TDER senior manager will conduct an AAR with the PSPS Team to identify potential modifications to PSPS protocol based on lessons learned during the event. The TDER senior manager will consolidate the feedback and provide to the documentation SME.

After wildfire season, the Customer Operations support leader may conduct an AAR focusing on operational processes, communications, customer support as well as emergency response and restoration. Idaho Power may also request feedback from external stakeholders on coordination efforts, communications and outreach effectiveness for integration into the AAR report.

11. FINANCIAL ADMINISTRATION

Idaho Power will track expenses related to PSPS events for OPUC and IPUC reporting and potential recovery. Expense should be tracked for the entire PSPS event (Phase 1 through conclusion of the Post-Incident Review and filing the PSPS event report with the OPUC) to include, without limitation, time reporting, equipment and supplies used to set up customer resource centers and provided to customers (e.g., water, ice, etc.)

12. REPORTING

Employees are required to manage information regarding PSPS events pursuant to Idaho Power's Information Retention Policy and underlying standards. Idaho Power will submit reports to the IPUC and OPUC as required.

13. AFTER-ACTION REPORT

An AAR is a structured review or de-brief process used to evaluate the effectiveness of the Plan and potential areas for improvement. This process may be performed after a PSPS event and may be confidential at the direction of Legal to improve the PSPS processes and procedures.

14. TRAINING

Idaho Power will strive to provide annual training, prior to or shortly after the beginning of wildfire season, to relevant employees on their respective roles in performing this PSPS Plan.

15. EXERCISES

Idaho Power will exercise this PSPS Plan at least annually using various scenarios and testing all or any portion(s) of the Plan which may include:

- Testing text and/or phone alerts with a test group of public safety partners
- Testing tactical operational plans such as reporting field observations or positioning employees at manually operated disconnects to test timing for de-energization and field inspections of T&D assets
- Discussing and/or practicing roles and responsibilities of both strategic and tactical operations, including decision-making handoffs and hypothetical scenarios
- Discussing and/or developing re-energization plans
- Testing capacity limits on incoming and outgoing communications systems

WILDFIRE Mitigation Plan 2022

(V23.0)
Updated ~~March 17~~June 28, 2022

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Appendix A
The Wildland Fire Preparedness and Prevention Plan.

Appendix B
The Public Safety Power Shutoff (PSPS) Plan.

Review/Revision History

This document has been approved and revised according to the revision history recorded below.

Review Date	Revisions
Jan. 22, 2021	WMP Version 1 was filed with the Idaho Public Utilities Commission and posted to the Idaho Power website.
Dec. 29, 2021	Modifications including expanded cost-benefit discussion, plan progress and updates, and inclusion of Idaho Power's Public Safety Power Shutoff plan.
March 18, 2022	Added Appendix C.
June 28, 2022	Added information to comply with the Public Utility Commission of Oregon's conditions of approval of Idaho Power's 2022 Wildfire Mitigation Plan.

REGULATORY CONTEXT

As part of Idaho Power Company's (Idaho Power or company) commitment to deliver safe, reliable, and affordable energy, the company developed a comprehensive Wildfire Mitigation -Plan (WMP) to reduce wildfire risk associated with its facilities. The WMP has three core objectives:

1. Reducing wildfire risk for the safety of Idaho Power's customers and the communities in which it operates.
2. Ensuring the continued and reliable delivery of electricity to more than 600,000 retail customers in s~~S~~outhern Idaho and e~~E~~astern Oregon.
3. Furthering the company's good stewardship of the beautiful and natural lands within Idaho Power's service area and beyond.

Idaho Power released its inaugural WMP in January 2021. The company's WMP is a living document that will evolve over time. Idaho Power will seek to review, modify, and expand the WMP in the coming years to reflect shifts in industry best practices and to ensure the company is following procedures and requirements established by its regulators. Given that Idaho Power operates in both Oregon and Idaho, below is a description of recent wildfire-related regulatory activities by state.

Idaho

On January 22, 2021, Idaho Power proactively filed its first WMP with the Idaho Public Utilities Commission (IPUC). The company's application provided a narrative of Idaho Power's effort to develop the WMP, including discussion of risk analysis across its service area and evaluation of specific wildfire mitigation activities (e.g., enhanced vegetation management and system hardening) the company would undertake in the coming fire season. Idaho Power asked the IPUC for authority to defer the Idaho jurisdictional share of incremental operations and maintenance expenses and capital depreciation expenses related to implementing the measures in the WMP, as well as incremental insurance costs.

On June 17, 2021, the IPUC issued Order No. 35077, granting the company's application and allowing cost deferral of all incremental wildfire mitigation and insurance expenses identified in Idaho Power's application.

Oregon

In August 2020, the Public Utilities Commission of Oregon (OPUC) opened an informal rulemaking related to mitigating wildfire risks to utilities, utility customers, and the public. The -scope of this docket (AR 638) shifted following the 2020 wildfire season, splitting into two tracks—a temporary wildfire rulemaking to govern the 2021 wildfire season and a secondary track to establish replacement permanent rules for the 2022 fire season.

On July 19, 2021, Oregon Governor Kate Brown signed into law Senate Bill 762 (SB 762), a wildfire bill that, among other actions, established minimum requirements for utility wildfire protection (or mitigation) plans. The bill required that utilities file inaugural plans no later than December 31, 2021.

In response to the passage of SB 762, the OPUC halted the permanent wildfire rulemaking in AR 638 and opened docket AR 648 to develop interim permanent rules adhering to the requirements and timing of the new law. The permanent rulemaking docket remains open to establish rules related to wildfire mitigation plan requirements for the 2023 wildfire season, as well as Public Safety Power Shutoff rules.

Below is a mapping of wildfire mitigation plan rules established in AR 648, per OPUC Order 21-440, to corresponding sections within Idaho Power's WMP.

Oregon Requirement	**Corresponding Location in WMP**
(1) Wildfire Protection Plans and Updates must, at a minimum, contain the following requirements as set forth in Section 3(2)(a)-(h), chapter 592, Oregon Laws 2021 and as supplemented below: *(a) Identified areas that are subject to a heightened risk of wildfire, including determinations for such conclusions, and are:*	See Section 3: Quantifying Wildland Fire Risk See Idaho Power website for details of wildfire risk zones outside of service territory
(A) Within the service territory of the Public Utility, and *(B) Outside the service territory of the Public Utility but within the Public Utility's right-of-way for generation and transmission assets.*	See Section 3.2.2: Wildfire Risk Areas See Figure 3: B2H Proposed Route Risk Zones
(b) Identified means of mitigating wildfire risk that reflects a reasonable balancing of mitigation costs with the resulting reduction of wildfire risk.	See Section 4: Costs and Benefits of Wildfire Mitigation
(c) Identified preventative actions and programs that the Public Utility will carry out to minimize the risk of utility facilities causing wildfire.	See Section 5: Situational Awareness; Section 6: Mitigation—Field Personnel Practices; Section 7: Mitigation—Operations; Section 8: Mitigation—T&D Programs; and Section 8.3: T&D Vegetation- Management
(d) Discussion of outreach efforts to regional, state, and local entities, including municipalities regarding a protocol for the de-energization of power lines and adjusting power system operations to mitigate wildfires, promote the safety of the public and first responders and preserve health and communication infrastructure.	See Section 10.2 Idaho Power External Communications and Section 10.2.1: Community Engagement See Appendix B: Idaho Power's Public Safety Power Shutoff Plan, Section 10.2.1: Coordination with Government Entities and Section 10.2.2: Community Preparedness
(e) Identified protocol for the de-energization of power lines and adjusting of power system operations to mitigate wildfires, promote the safety of the public and first responders and preserve health and communication infrastructure.	See Section 7.4: Public Safety Power Shutoff and Appendix B: Idaho Power's Public Safety Power Shutoff Plan
(f) Identification of the community outreach and public awareness efforts that the Public Utility will use before, during and after a wildfire season.	See Section 10: Communicating the Plan

Oregon Requirement	Corresponding Location in WMP
(g) Description of procedures, standards, and time frames that the Public Utility will use to inspect utility infrastructure in areas the Public Utility identified as heightened risk of wildfire.	For Transmission, see Section 8.2.1: Transmission Asset Management Programs (with information on aerial, ground, detailed visual, pole, and other protection programs) For Distribution, see Section 8.2.2: Distribution Asset Management Programs (with information on visual, pole, and line equipment inspection programs)
(h) Description of the procedures, standards, and time frames that the Public Utility will use to carry out vegetation management in in areas the Public Utility identified as heightened risk of wildfire.	See Section 8.3.2: Transmission Vegetation Management and Section 8.3.3: Distribution Vegetation Management
(i) Identification of the development, implementation, and administrative costs for the plan, which includes discussion of risk-based cost and benefit analysis, including consideration of technologies that offer co-benefits to the utility's system.	See Section 4: Costs and Benefits of Wildfire Mitigation, specifically Section 4.3: Wildfire Mitigation Cost Summary and Section 4.4: Mitigation Activities
(j) Description of participation in national and international forums, including workshops identified in Section 2, chapter 592, Oregon Laws 2021, as well as research and analysis the Public Utility has undertaken to maintain expertise in leading edge technologies and operational practices, as well as how such technologies and operational practices have been used develop implement cost effective wildfire mitigation solutions.	See Section 2: Government, Industry, and Peer Utility Engagement

1. INTRODUCTION

1.1. Background

In recent years, the Western United States has experienced an increase in the frequency and intensity of wildland fires (wildfires). A variety of factors have contributed in varying degrees to this trend including climate change, increased human encroachment in wildland areas, historical land management practices, and changes in wildland and forest health, among other factors.

While Idaho Power ~~Company (Idaho Power or company)~~ has not experienced catastrophic wildfires within its service area at the same level experienced in other western states, such as California and more recently certain areas in Oregon, millions of acres of rangeland and southern Idaho forests have burned in the last 30 years.[1] In that same time period, the wildfire season in Idaho has expanded by 70 days.[2] Idaho's wildfire season is defined by Idaho Code § 38-115 as extending from May 10 through October 20 each year, or as otherwise extended by the Director of the Idaho Bureau of Land Management (BLM). Oregon's wildfire season is designated by the State Forester each year pursuant to Oregon Revised Statute § 477.505 and typically begins in June. Idaho Power's operational practices account for the differences between Idaho and Oregon's wildfire seasons and requirements.

~~In light of changing wildfire conditions in the west, Idaho Power continues to evaluate weather conditions and wildfire risks across its service area – as well as existing and proposed transmission corridors – to assess and potentially expand existing mitigation practices while also evaluating implementation of new mitigation protocol.~~

1.2. Idaho Power Profile and Service Area

Idaho Power is an investor-owned utility headquartered in Boise, Idaho, engaged in the generation, transmission, and distribution of electricity. Idaho Power is regulated by the Federal Energy Regulatory Commission (FERC) and the state regulatory commissions of Idaho and Oregon. Idaho Power serves approximately 600,000 retail customers throughout a 24,000 square mile area in southern Idaho and eastern Oregon (see Figure 1).

[1] Rocky Barker, *70% of S. Idaho's Forests Burned in the Last 30 Years. Think That Will Change? Think Again.*, Idaho Statesman, October 4, 2020.

[2] Ibid.

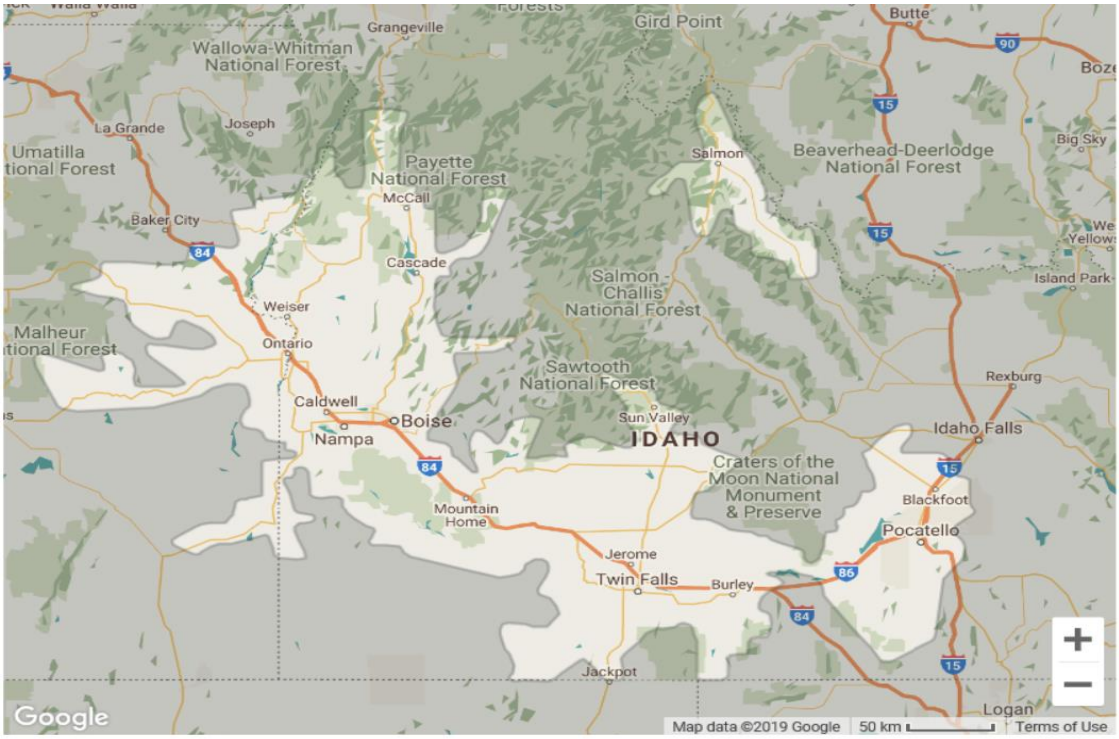


Figure 1
Idaho Power service area

Of Idaho Power's 24,000 square mile service territory, approximately 4,745 square miles are located in Oregon and 19,255 in Idaho. Approximately 20,000 customers are served in Oregon and 580,000 in Idaho.

1.3. Asset Overview

Idaho Power delivers electricity to its customers via more than 310 substations, 4,800 miles of overhead transmission lines, and 19,300 miles of overhead distribution lines. Table 1 summarizes the overhead powerline asset information by state.

Of Idaho Power's 24,000-square mile service territory, approximately 4,745 square miles are located in Oregon and 19,255 in Idaho.- With regard to overhead powerlines, approximately 2,871 pole miles (12%) are located in Oregon and 21,042 (87%) are in Idaho.

Table 1
Overhead transmission voltage level and approximate line mileage by state (Dec. 31, 2021~~0~~)

ASSET	TOTAL	IDAHO		OREGON		MONTANA		NEVADA		WYOMING	
	Pole Miles	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%
46 kV Transmission Lines	383	383	100								
69 kV Transmission Lines	1,136	743	65	344	30	50	4				
115 kV Transmission Lines	3			3	100						
138 kV Transmission Lines	1,448	1,242	86	141	10			65	4		
161 kV Transmission Lines	84	84	100								
230 kV Transmission Lines	1,148	927	81	219	19						
345 kV Transmission Lines	473	364	77							110	23
500 kV Transmission Lines	103	53	51	50	49						
Total OH Transmission Lines	4,778	3,796	80	757	16	50	1	65	1	110	2
Total OH Distribution	19,297	17,183	89	2,114	11						
Total OH Pole Miles	24,075	20,979	87	2,871	12	50	0.21	65	0.27	110	0.46

~~Transmission Voltage~~	~~Line Miles~~
~~46 kV~~	~~384~~
~~69 kV~~	~~1,136~~
~~115 kV~~	~~3~~
~~138 kV~~	~~1,440~~
~~161 kV~~	~~84~~
~~230 kV~~	~~1,144~~
~~345 kV~~	~~473~~
~~500 kV~~	~~103~~

~~**Table 2**~~
~~Overhead distribution voltage level and approximate line mileage (Dec. 31, 2020)~~

~~**Distribution Voltage**~~	~~**Pole Miles**~~
~~12.5 kV~~	~~14,275~~
~~25 kV~~	~~468~~
~~34.5 kV~~	~~4,540~~

1.4. Objectives of this Wildfire Mitigation Plan

The primary objectives of this ~~Wildfire Mitigation Plan (~~WMP~~)~~ are to identify and implement strategies to accomplish the following:

1. Reduce wildfire risk associated with Idaho Power's transmission and distribution (T&D) facilities and associated field operations.

2. Improve the resiliency of Idaho Power's T&D system in a wildfire event, independent of the ignition source.

3. Comply with all wildfire mitigation requirements established by its regulators.[3]

Idaho Power's approach to achieving these objectives includes the following actions:

- Engage with government and industry entities and electric utility peers to ensure understanding and commonality of wildfire mitigation plans.

- Utilize a risk-based approach to quantify wildland fire risk that considers *wildfire probability* and *consequence* to identify areas of elevated wildfire risk within Idaho Power's service area. These identified areas are then incorporated in Idaho Power's geographic information system (GIS) mapping.

- Create specific and targeted operations and maintenance practices, system hardening programs, vegetation management, and field personnel practices to mitigate wildfire risk.

- Incorporate information regarding current and forecasted weather and field conditions into operational practices to increase situational awareness.

- Determine public safety power shutoff (PSPS) protocols for Idaho Power's service area and transmission corridors.

- Evaluate the performance and effectiveness of strategies identified in this WMP through metrics and monitoring. The WMP and all its components will be reviewed prior to wildfire season each year.

[3] The OPUC established docket AR 648, the interim permanent wildfire rulemaking, after the Oregon legislature passed Senate Bill 762. The bill created a requirement for public utilities in Oregon to submit "wildfire protection plans" to the OPUC by December 31, 2021.

2. GOVERNMENT, INDUSTRY, AND PEER UTILITY ENGAGEMENT

2.1. Objective

Idaho Power recognizes the importance of engaging with federal, Idaho and Oregon State governments, and local governments as an integral part of mitigating wildfire risk. Idaho Power also recognizes the importance of engagement and outreach with respect to potential future PSPS events to minimize customer impact.

Idaho Power's wildfire mitigation plan and outage preparedness strategy includes specific activities to engage with key stakeholders to share information, gain feedback, and incorporate lessons learned. Peer utility engagement is crucial to ensure the company's efforts are informed by the best practices of its peers in Idaho and Oregon.

2.2. Government Engagement

Much of Idaho Power's service area extends over land managed by the BLM and U.S. Forest Service. Idaho Power engages with both agencies to share information and identify areas and activities that are mutually beneficial. For example, Idaho Power allowed for an extended firebreak along Highway 93 in Jerome County, Idaho, on its property to help with BLM wildfire mitigation initiatives.

Idaho Power is also a member of the Idaho Fire Board, which was initiated by the U.S. Forest Service. Membership is voluntary and currently includes the Forest Service, BLM, Federal Emergency Management Agency (FEMA), Idaho State Lands Department, Idaho Department of Insurance, Idaho Military Division, City of Lewiston, Idaho Power, and The Nature Conservancy in Idaho.

Idaho Power is actively engaged with both the ~~Idaho Public Utilities Commission (~~IPUC~~)~~ and the ~~Oregon Public Utility Commission (~~OPUC~~)~~ with respect to wildfire mitigation activities. Idaho Power filed its WMP with the IPUC in 2021 and submitted the plan to the OPUC as part of the temporary wildfire rulemaking in AR 638. Idaho Power continues to participate in the OPUC's Oregon Wildfire and Electric Collaborative (OWEC) and in the ongoing permanent wildfire rulemaking (docket AR 638).

2.3. Industry and Peer Utility Engagement

Although Idaho Power relied on plans developed by several California utilities in drafting its own WMP, modifications were made to account for Idaho Power's considerably different risk profile. Additionally, Idaho Power participated in multiple workshops with San Diego Gas and Electric, Southern California Edison, Pacific Gas and Electric, Sacramento Municipal Utility District, and PacifiCorp. The company continues to engage with these utilities to learn about California's evolving practices.

In the Pacific Northwest, many utilities work collaboratively to understand and ensure commonality of their various wildfire mitigation plans, while accounting for the variation in each utility's unique service area. These utilities include Idaho Power, Avista Utilities, Portland General Electric, Rocky Mountain Power, Pacific Power, Chelan County Public Utility District, Puget Sound Energy, NV Energy, Bonneville Power Administration (BPA), and Northwestern Energy.

Idaho Power is also a member of both the Edison Electric Institute (EEI) and the Western Electric Institute (WEI). The company participated in multiple workshops and conferences with both entities and member utilities to evaluate the strength and effectiveness of Idaho Power's WMP in comparison to other members' plans. Additionally, Idaho Power's CEO and President is an active member of the EEI Electricity Subsector Coordinating Council Wildfire Working Group. This working group has been partnering with the U.S. Department of Energy and other government agencies to collectively minimize wildfire threats and potential impacts.

These workshops continue to prove valuable for sharing wildfire mitigation best practices and discussing new and existing technology related to wildfire mitigation. For example, EEI and WEI workshops, as well as independent investigations, led Idaho Power to expand its use of Unmanned Aircraft Systems ([UAS] also known as drones) during line patrols, replace expulsion fuses with energy limiting fuses, and add mesh wraps to wood poles in wildfire risk zones. Idaho Power has also enlisted a team of employees to focus on wildfire mitigation technologies by identifying opportunities to incorporate new and innovative technologies into Idaho Power's wildfire mitigation efforts.

3. QUANTIFYING WILDLAND FIRE RISK

3.1. Objective

Idaho Power's approach to quantifying wildland fire risk is to identify geographic areas of elevated wildfire risk if a wildfire ignites near a power line. Mitigation actions and programs are prioritized in those areas identified as elevated wildfire risk areas.

3.2. Identifying Areas of Elevated Wildfire Risk

Idaho Power hired an external consultant that specializes in assessing and quantifying the threat of wildfire through a risk-based methodology that leverages weather modeling, wildfire spread modeling, and Monte Carlo simulation. This methodology is not unique to Idaho Power's WMP. The California Public Utilities Commission (CPUC) used the same modeling approach (and in fact, the same consultant) in developing its CPUC Fire Threat Map. In addition, other utilities in Oregon, Idaho, Nevada, and Utah have utilized similar modeling to identify and quantify wildfire risk.

This methodology is consistent with conventional definitions of *risk*, which is usually taken as an event's *probability* multiplied by its potential negative *consequences* or impacts should that event occur. For Idaho Power's wildfire risk assessment, this formula is:

Wildfire Risk = Fire Probability x Consequence

The definition of each component is as follows:

Fire Probability. Fire volume (i.e., spatial integral of fire area and flame length) is used as Fire Probability because rapidly spreading fires are more likely to escape initial containment efforts and become extended fires than slowly developing fires. Data inputs used in the fire spread model to determine the fire volume (Fire Probability) include:

- Historical weather (temperature, wind speed/direction, relative humidity)
- Topography
- Fuel types present
- Fuel moisture content (both dead and live fuels)

Consequence. Number of structures (i.e., homes, businesses, other man-made structures) that may be impacted by a wildfire.

Wildfire Risk. Fire Probability multiplied by the Consequence. The highest Wildfire Risk areas are those where both the Fire Probability and Consequence are elevated. Conversely, combinations of low Fire Probability and elevated Consequence, or elevated Fire Probability and low Consequence typically indicate lower Wildfire Risk.

3.2.1. Wildfire Risk Modeling Process

The wildfire risk modeling process incorporated the following major steps:

1. A 20-year (2000–2019) fire weather climatology was developed utilizing the Weather Research and Forecasting (WRF) model to recreate historical days of fire weather significance across Idaho Power's service territory. This analysis generated high-resolution hourly gridded fields of relative humidity, temperature, dead fuel moisture, and wind speed/direction that was used as input to a Monte Carlo-based fire modeling analysis.

2. Estimates of seasonal variation in live fuel moisture across Idaho Power's service territory were developed. This was accomplished by analyzing historical fuel measurements and/or weather station observations. This step was necessary because live fuel moisture data is needed for fire spread modeling, but the WRF weather model does not provide live fuel moistures.

3. The federal LANDFIRE program was utilized to provide high-resolution (approximately 100 feet) fuel rasters for use in fire spread modeling.[4]

4. The data developed above (WRF climatology, live fuel moisture, and LANDFIRE data) was used to drive a Monte Carlo[5] fire spread modeling analysis. This Monte Carlo simulation was accomplished by randomly selecting an ignition location and a randomly selected day from the fire weather climatology developed in step 1 above. Ignition locations were limited in the model to be within a two-kilometer buffer surrounding Idaho Power's overhead T&D lines (i.e., 1 kilometer on either side). Note that transmission lines jointly owned by Idaho Power and PacifiCorp were included in the analysis. Furthermore, the proposed Boardman-to-Hemingway (B2H) 500 kilovolt (kV) line route was also included in this analysis. For each combination of ignition location and time of ignition, fire progression was then modeled for 6 hours. For each modeled fire, potential fire impacts to structures were quantified using structure data. This was repeated across Idaho Power's service territory for millions of combinations of ignition location and time of ignition.

5. The Monte Carlo results were processed, and GIS based data depicting fine grained wildfire risk was developed. This risk was then visually depicted on GIS based wildfire risk maps.

[4] Chris Lautenberger, Mapping areas at elevated risk of large-scale structure loss using Monte Carlo simulation and wildland fire modeling. IAFSS 12th Symposium 2017.

[5] Ibid.

3.2.2. Wildfire Risk Areas

Based on the previously described modeling, draft risk tiers were generated algorithmically[6] by establishing threshold values which, if exceeded, would classify an area as Tier 2 or Tier 3. To aid in customer and public understanding, Idaho Power also color-coded the tiers to reflect relative risk—Yellow Risk Zones (YRZ) for Tier 2 and Red Risk Zones (RRZ) for Tier 3. This was accomplished by manually setting threshold values at naturally occurring breaks. Consequently, the resulting risk tiers reflect risk relative to Idaho Power's service territory only and not absolute risk. As set forth later in this plan, Idaho Power's risk profile is significantly lower than utilities serving California.

An integral part of the consultant's mapping process involved reviewing the tiers and making necessary adjustments to account for unique aspects of certain areas, including factors that may increase or decrease risk, which would not be accounted for in the computer modeling. Several factors were considered, including the following:

- Topography and resistance to fire control
- Means of ingress and egress
- Presence/absence of defensible space
- Vulnerable populations
- Cell phone coverage
- Non-burnable land cover such as built-up urban areas

Below, Table 2 provides a breakdown of pole miles in risk zones on a system-wide basis and by state. Across Idaho Power's service area, 8% of pole miles exist in elevated risk zones (either RRZs or YRZs). In Idaho, 5% of pole miles exist in YRZs and 3% exist in RRZs. In Oregon, less than 1% of pole miles exist in YRZs. The company has no RRZs in Oregon.

Table 2
Idaho Power's Transmission and Distribution Lines by Risk Zone in Idaho and Oregon

ASSET	TOTAL	TOTAL IN WILD-FIRE RISK ZONES		YELLOW RISK ZONES - IDAHO		RED RISK ZONES - IDAHO		YELLOW RISK ZONES - OREGON		RED RISK ZONES - OREGON	
	Pole Miles	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%
Transmission Lines	4,841	511	11	371	8	110	2	21	0.43	0	0
Distribution Lines	19,297	1,414	7	808	4	577	3	29	0.15	0	0
Total Pole Miles	24,138	1,925	8	1,179	5	687	3	50	0.21	0	0

[6] Ibid.

The final two-tier risk map reflecting relative increased risk in ~~—Yellow Risk Zones (YRZ)— and higher risk—Red Risk Zones (RRZ)~~YRZs and RRZs ~~—~~is shown in Figure 2. The map is the foundation of Idaho Power's wildfire mitigation and risk reduction strategies. It is used to determine and prioritize targeted investments, inspection activities, and increase situational awareness for field personnel.

The risk zone map can be viewed in detail on Idaho Power's website. Individual addresses can be entered on the map to determine proximity to identified risk zones.

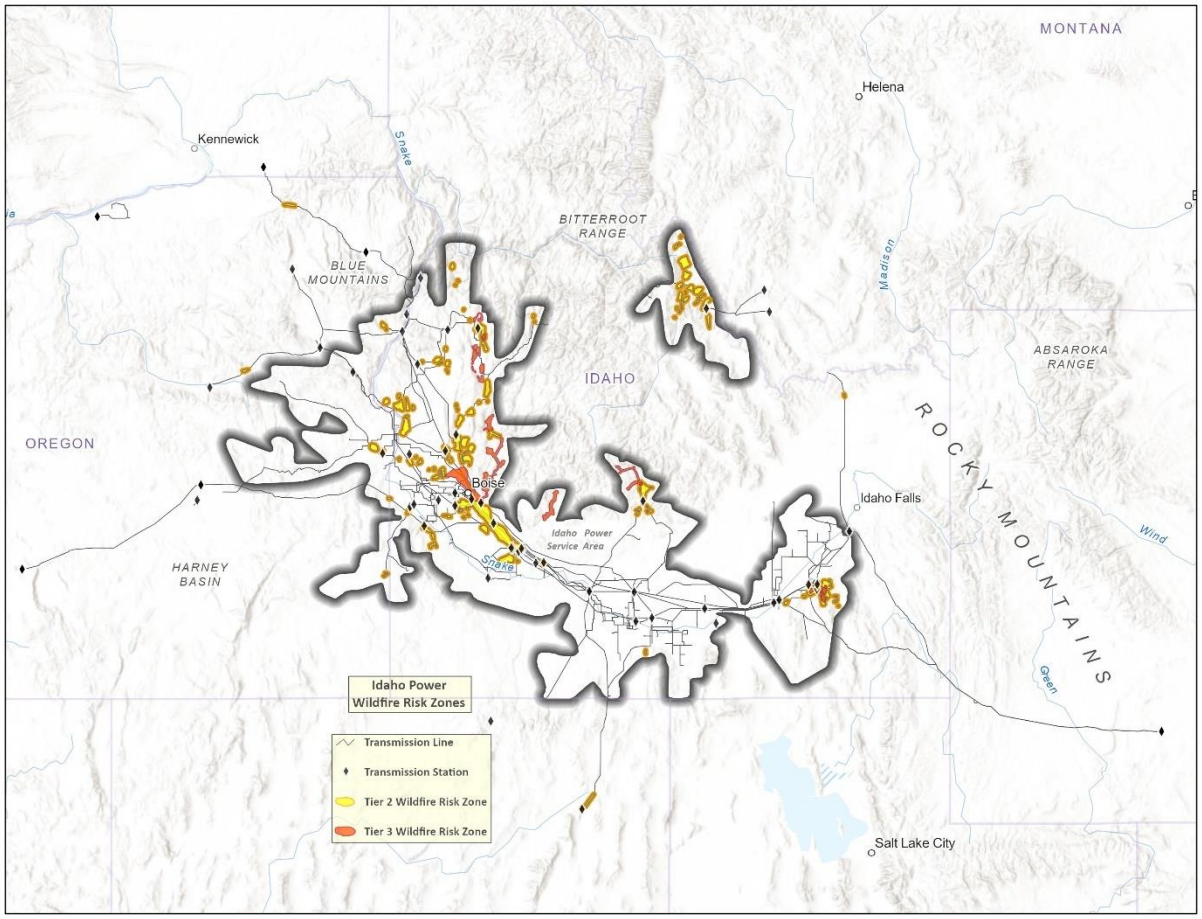


Figure 2
Wildfire Mitigation Plan—Risk Map

~~Idaho Power's assets are located within Tier 2 and Tier 3 risk zones as well as non-tiered areas located outside of Yellow and Red risk zones. The following table summarizes Idaho Power's overhead line assets located in Tier 2 and 3 risk zones.~~

Additionally, Figures 3 through 6 ~~below dilineate~~delineate risk zones in Idaho and Oregon. ~~The following maps delineate the risk zones between Idaho and Oregon.~~

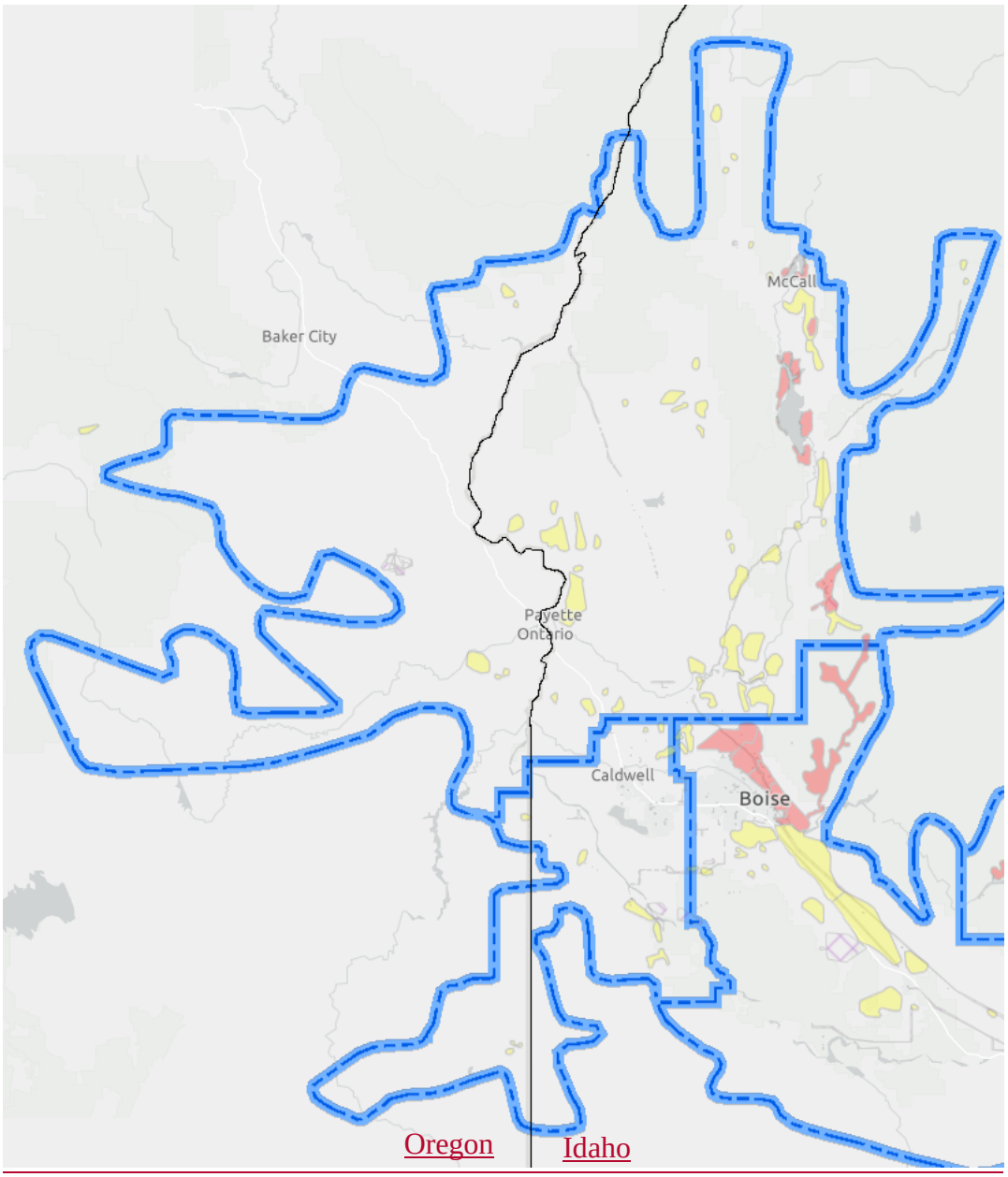
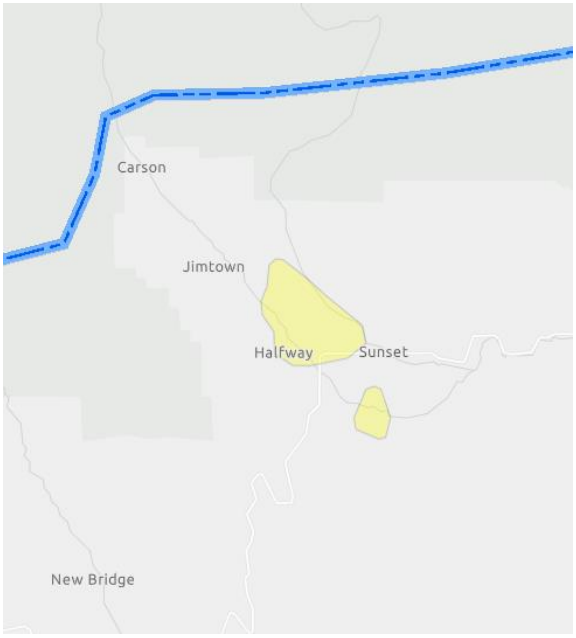
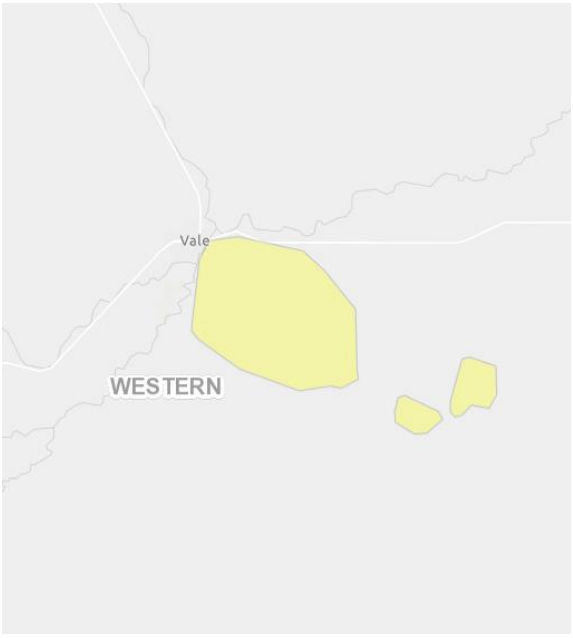


Figure 3
Wildfire Risk Map—western Idaho and eastern Oregon

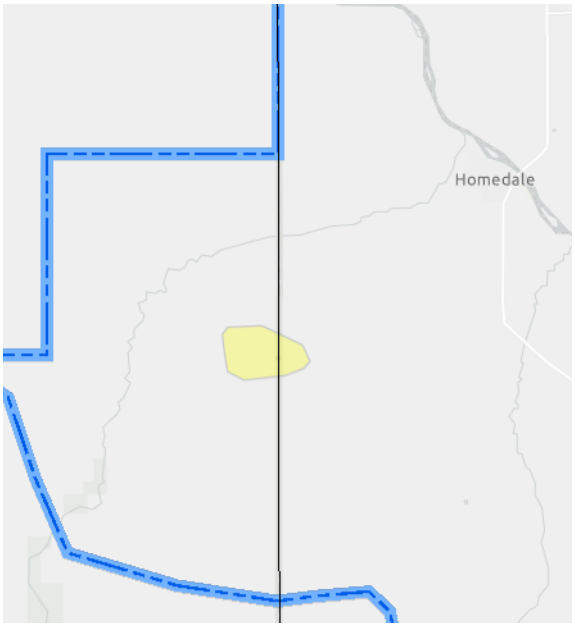
Halfway



Vale



Idaho-Oregon Boarder



Jordan Valley

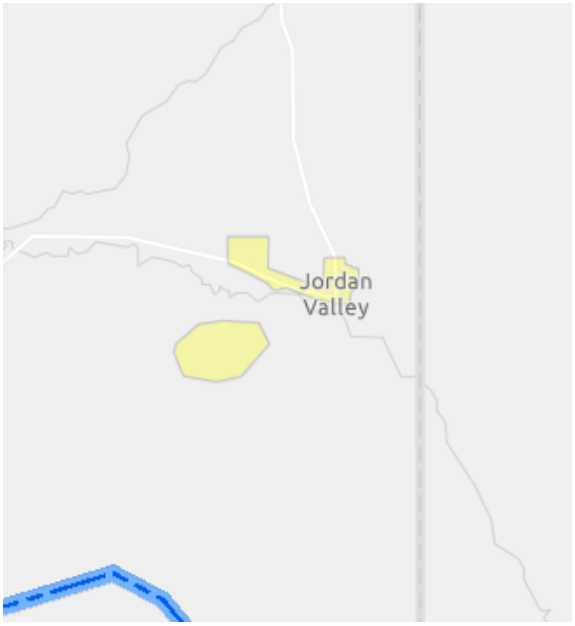


Figure 4
Oregon-specific zones

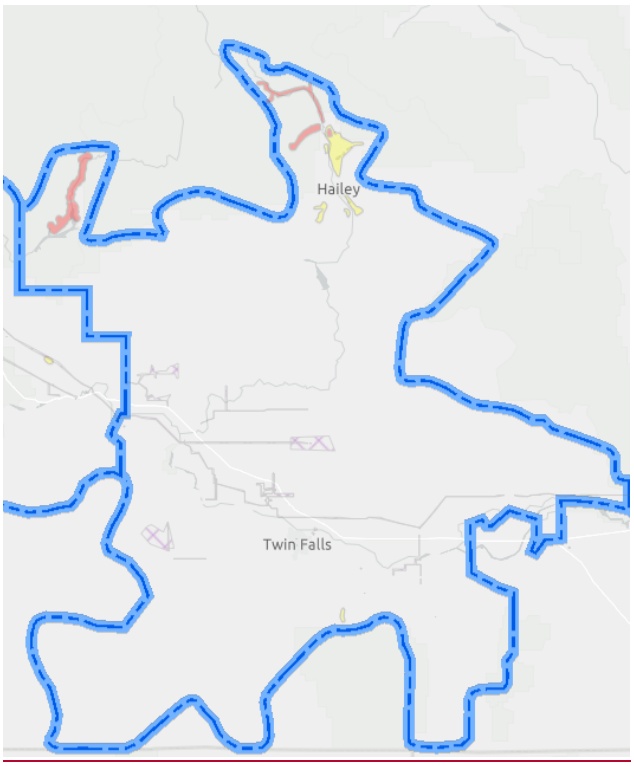
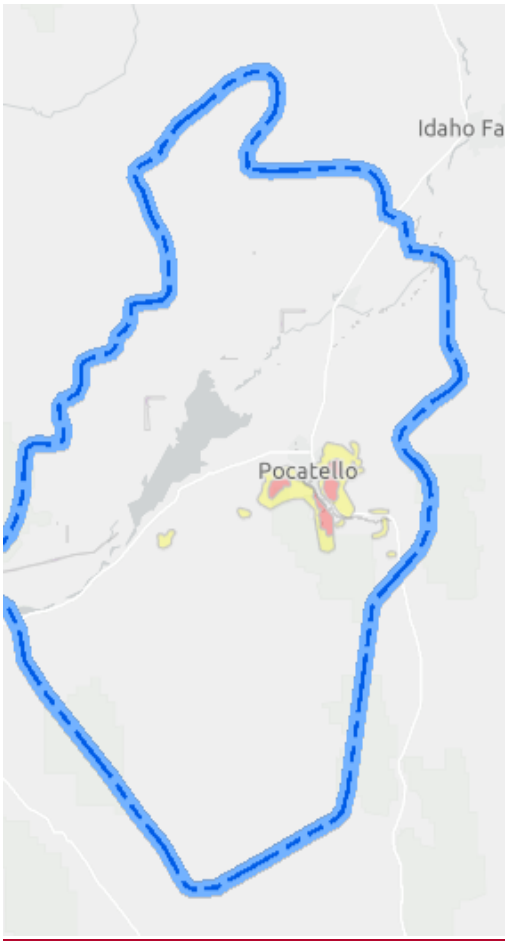


Figure 5
Wildfire Risk Map—southern Idaho

Pocatello



Salmon

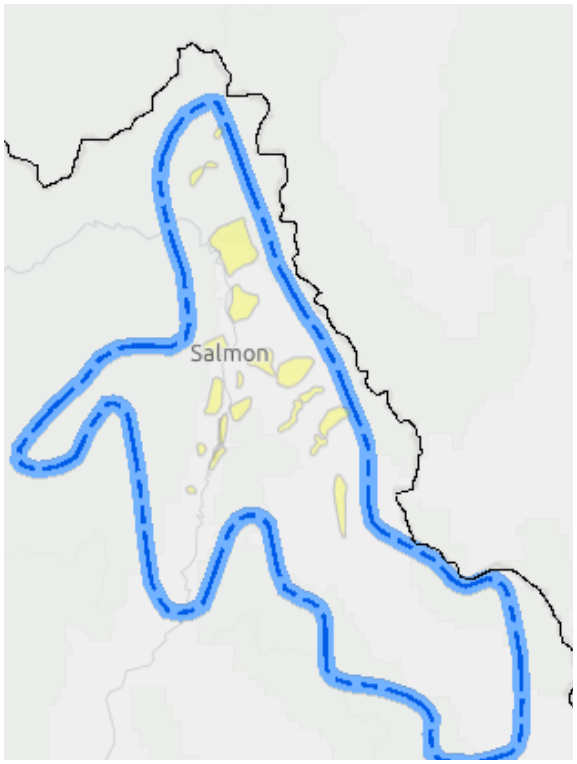


Figure 6
Wildfire Risk Map—eastern Idaho

3.2.2.1. Boardman to Hemingway Proposed Transmission Line

Idaho Power specifically considered the proposed route of the B2H 500 kV transmission line as part of the WMP. The proposed B2H route was included in the wildfire risk assessment and associated map analysis (see Figure 3). Two locations are identified along the route as having increased wildfire risk (YRZs), and there were no areas of higher risk (RRZs). Although the B2H transmission line has not been constructed as of the publication of this 2022 WMP, Idaho Power intends this WMP (as it will be reviewed annually) will apply to B2H. Additionally, Idaho Power will continue to update its fire risk mapping periodically and address the locations with elevated risk consistent with the mitigation strategy for transmission lines as described in sections 5–9 of this WMP.

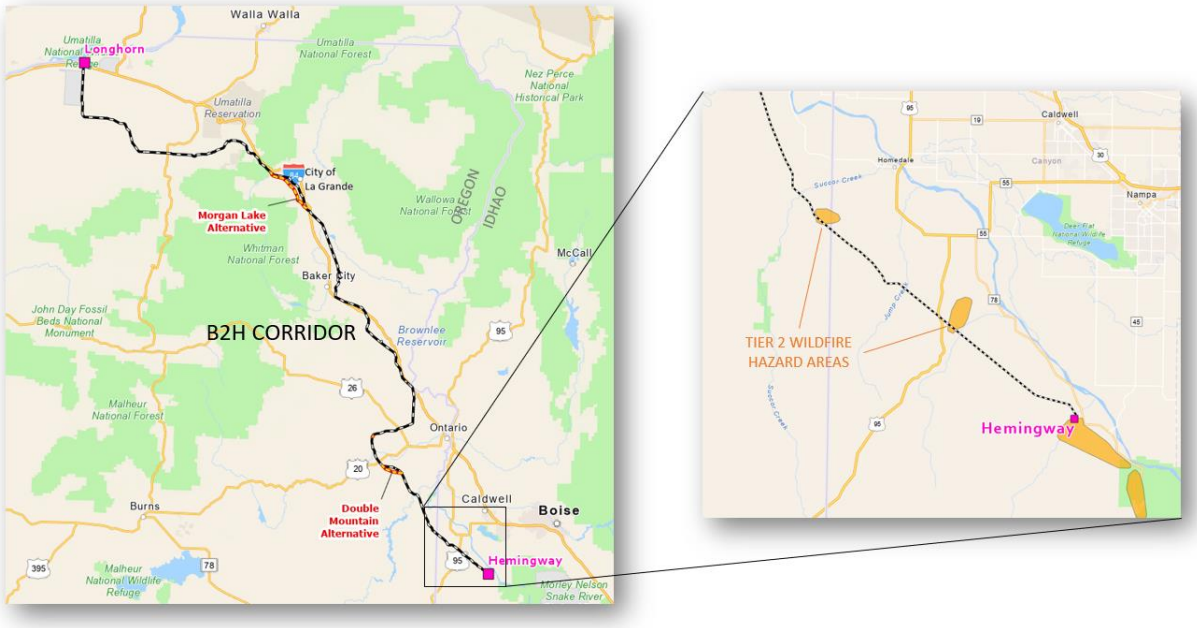


Figure ~~3~~7
B2H proposed route risk zones

4. ~~Benefits of Wildfire Mitigation Activities~~Costs and Benefits of Wildfire Mitigation

4.1. Objective

~~Following efforts to quantify wildland fire risk, Idaho Power researched, assessed, and determined specific actions and measures to proactively mitigate wildfire risk. These measures are grouped into categories, each addressed within different sections of this WMP: Situational Awareness (Section 5); Mitigation – Field Personnel Practices (Section 6); Mitigation – Operations (Section 7); and Mitigation – T&D Programs (Section 8).~~

This section details Idaho Power's assessment of high-level risk with respect to undertaking wildfire mitigation activities. This assessment provides a framework for understanding the potential consequences of wildfire damage and the possibility of diminishing those consequences through targeted mitigation activities.

To that end, Section 4.3 identifies selected mitigation activities and the estimated costs of those activities on a system level. In Section 4.4, each mitigation activity is discussed in detail, with an assessment of why it was selected, what alternatives (if any) may be available, and any additional benefits (referred to as "co-benefits") the company believes may result from pursuing it. For each mitigation activity, costs have been estimated for Idaho and Oregon.

4.2. ~~Assessing the Costs and Benefits of Wildfire Mitigation~~Risk-Based Cost and Benefit Analysis of Wildfire Mitigation

In assessing the probability and consequence of wildfire risk, and to identify benefits of various wildfire mitigation efforts, Idaho Power engaged with its external consultant and considered several sources of empirical data on the costs of major wildfires—both in terms of fires that burn into Idaho Power's facilities or that originate from electric infrastructure. These costs can include replacement costs of the company's property; the cost of fire suppression and environmental damage; third-party claims for property damage; employee and public injuries and fatalities; and other economic losses.

Through its research, Idaho Power found that obtaining a precise calculation of the potential costs of future wildfires is not realistic. The damage that any fire may cause depends on factors such as wind and weather, vegetation, fire risk levels, location, and population and structure density.

Idaho Power's assessment of the potential costs of wildfires—used in developing the WMP and the scope of proposed updates to practices—involved a review of prior major fires in other states, as well as calculations by other western utilities. While this assessment did not yield a precise

quantification of potential benefits specific to Idaho Power, it provides a helpful illustration of the potential costs of not taking actions aimed at reducing wildfire risk.

Idaho Power reviewed and considered calculations analyzing the potential reduction in probability of igniting wildfires based on risk-mitigating activities. For instance, in a June 2020 filing before the IPUC, Avista Corporation (Avista) stated that its "analysis indicates a 10-year inherent potential risk exposure of at least $8 billion dollars," though noted the figure should not be interpreted as a precise financial estimate.[7] Avista further noted that the actions it proposes in its own wildfire resiliency plan result in an average percentage of risk mitigation of 89% for the overall plan.[8]

In California, costs and damages associated with wildfires in recent years have exceeded $10 billion per year, with those associated with the 2020 fires alone potentially set to exceed $20 billion.[9] This increase[10] is consistent with the fact that, with few exceptions, the prevalence, intensity, and impact of wildfires continues to escalate year after year as evidenced by information compiled by the California Department of Forestry and Fire Protection (CAL FIRE) and detailed in Table 3.

Table 3
CAL FIRE Wildfire Data by Year

Year	Estimated Acres Burned	No. of Wildfires	No. of Confirmed Fatalities	No. of Structures Damaged or Destroyed
2020	4,197,628	9,279	31	10,488
2019	259,823	7,860	3	732
2018	1,975,086	7,948	100	24,226
2017	1,548,429	9,270	47	10,280
2016	669,534	6,954	6	1,274

The data compiled by peer utilities, historic fire costs, and known damage from prior fires are instructive. Considering peer metrics and analyses on probability and magnitude, as well as Idaho Power's own empirical review of wildfire events such as those in California and Oregon—and the resulting loss of lives—it is reasonable to conclude that the potential human and capital

[7] *In the Matter of Avista Corporation's Application for an Order Authorizing Accounting and Ratemaking Treatment of Costs Associated with the Company's Wildfire Resiliency Plan,* Case No. AVU-E-20-05, Application at 17.

[8] Ibid.

[9] Jill Cowan, *How Much Will the Wildfires Cost?*, The New York Times, Sept. 16, 2020, at https://www.nytimes.com/2020/09/16/us/california-fires-cost.html.

[10] Idaho Power believes that its system is in notably better condition than some utilities in California. Nevertheless, these figures illustrate the destruction that can occur from vegetation contact if vegetation is not actively managed.

costs and damage from wildfire events vastly exceed any incremental costs of wildfire mitigation efforts identified in this WMP.

2023 Wildfire Mitigation Analysis Framework

Idaho Power plans to continue advancing its analytical approach to balancing cost and risk mitigation in its 2023 WMP. The company will evolve its risk analysis framework by building on the risk modeling detailed in its 2022 WMP and expanding its evaluation of risk reduction associated with present and future mitigation activities. The company's risk framework will seek to accomplish the following:

- Weigh the costs and potential benefits of alternative strategies to determine the most cost-effective wildfire mitigation solutions;
- Evaluate the effectiveness of current mitigation activities to determine whether those activities should be continued, refined, or replaced (e.g., analysis to determine circumstances in which underground line and facility conversions may be the optimal mitigation strategy compared to hardening overhead power lines); and
- Explore a range of risk management methodologies and expand the use of outage and fault analytics to further identify and refine areas for ignition reduction.

The company's cost and risk balancing framework will evolve over time and ultimately guide how it will identify, analyze, monitor, and address wildfire-related risk.

4.3 Wildfire Mitigation Cost Summary

From 2022–2025, Idaho Power estimates investing $46.8 million in incremental operations and maintenance (O&M) expenses to further wildfire mitigation measures. -The following table summarizes the company's planned expenditures associated with executing its WMP through 2025. -Estimated amounts reflect the company's best estimates and plans as of the 2022 WMP. These estimates will likely change in the future as the company reviews and refines its WMP and -associated mitigation activities. For the 2022 WMP, each wildfire mitigation category—and -associated estimated expenditures in Oregon and Idaho—is discussed in Section 4.4.

Table 4

Estimated system-wide incremental O&M expenses for wildfire mitigation (2022–2025) [11]

Forecast of Idaho Power System Incremental O&M Expenditures ($000s)					
	2022	2023	2024	2025	2022 - 2025
Quantifying Wildland Fire Risk					
Risk Map Updates	$ -	$ 67	$ -	$ 69	$ 136
Situational Awareness					
Weather Forecasting - Fire Potential Index (FPI) and Public Safety Power Shutoff (PSPS) Personnel	$ 210	$ 220	$ 230	$ 241	$ 901
Weather Forecasting - System development and support	$ 10	$ 29	$ 55	$ 55	$ 149
Pole Loading Modeling & Assessment (Contract service)	$ 25	$ 75	$ -	$ -	$ 100
Cameras	$ 50	$ 55	$ 113	$ 50	$ 268
Mitigation - Field Personnel Practices					
Mobile Weather Kits for Field Observers	$ 20	$ -	$ -	$ -	$ 20
Tools/Equipment	$ 5	$ 5	$ 5	$ 5	$ 20
Mitigation - Transmission & Distribution Programs					
Wildfire Mitigaton Program Manager	$ 180	$ 185	$ 190	$ 195	$ 750
O&M Component of Capital Work	$ 54	$ 61	$ 60	$ 54	$ 229
Annual O&M T&D Patrol Maintenance Repairs	$ 50	$ 50	$ 50	$ 50	$ 200
Environmental Management Practices	$ 25	$ 25	$ 25	$ 25	$ 100
Transmission Thermography Inspection Mitigation - Red Risk Zones	$ 20	$ 20	$ 20	$ 20	$ 80
Distribution Thermography Inspection Mitigation - Red Risk Zones	$ 30	$ 30	$ 30	$ 30	$ 120
Thermography Technician Personnel	$ 155	$ 160	$ 165	$ 170	$ 650
Transmission Wood Pole Fire Resistant Wraps - Red Risk Zone	$ 88	$ 88	$ -	$ -	$ 176
Transmission Wood Pole Fire Resistant Wraps - Yellow Risk Zone	$ 163	$ 163	$ 163	$ 163	$ 652
Covered Wire Evaluation - Pilot Program in PSPS Zones	$ 25	$ 50	$ 50	$ -	$ 125
Vegetation Management					
Vegetation Mgmt Incremental Expense to Transition to/Maintain 3-yr cycle Line Clearing Program	$ 8,087	$ 8,796	$ 9,547	$ 8,372	$ 34,802
Vegetation Distribution Red & Yellow Risk Zone: Pre-Fire Season Patrols/Mitigation, Pole Clearing, Removals, Work QA	$ 1,223	$ 1,284	$ 1,349	$ 1,416	$ 5,272
Line Clearing Personnel	$ 155	$ 159	$ 164	$ 169	$ 647
Communications					
Wildfire/Wildfire Mitigation Communications - Advertisements/Meetings/Other	$ 100	$ 100	$ 100	$ 100	$ 400
PSPS Customer Education/Communication - Advertisements, Bill Inserts/Other	$ 71	$ 71	$ 71	$ 71	$ 284
Information Technology					
Communication/Alert Tool development (System set up, outage maps, critical facilities identification)	$ 163	$ -	$ -	$ -	$ 163
Communication/Alert Tool for PSPS Customer Alerts/Extended Use	$ 141	$ 129	$ 129	$ 129	$ 528
Forecast Incremental O&M Expenditures Total	**$ 11,050**	**$ 11,822**	**$ 12,516**	**$ 11,384**	**$ 46,772**

[11] As of December 30, 2021.

4.4 Mitigation Activities

Idaho Power selected individual wildfire risk mitigation activities based on a variety of factors, including assessment of industry best practices in wildfire mitigation; discussions with peer utilities; consultation with government entities and agencies; and with consideration of alternatives that could be pursued.

Below is a narrative of each mitigation activity, its purpose, estimated near-term cost in Idaho and Oregon, potential co-benefits of the activity to Idaho Power and its customers, and potential alternatives.

With respect to Idaho and Oregon cost estimates, the estimated costs identified below are grounded in cost assignment between the company's Idaho and Oregon service areas and further informed by anticipated work in the two service areas.

4.4.1 Quantifying Wildland Fire Risk

Idaho Power's assessment of wildland fire risk is discussed in Section 3 of this WMP.

The first step in developing Idaho Power's WMP was to conduct a comprehensive assessment of the company's service area and transmission corridors. -The company worked with Reax Engineering, a consulting firm that specializes in wildfire risk modeling and fire science, to conduct Idaho Power's wildfire risk analysis. -The company determined that hiring an external consultant was beneficial for two reasons: (1) an external consultant was more cost effective than hiring additional resources within Idaho Power to perform the modeling, and (2) an outside consultant helped ensure Idaho Power's risk analysis approach was similar to its peer utilities.

An additional co-benefit of hiring an external consultant is aligning risk analysis with other utilities' practices to create a basis for comparison of risk and also a standard terminology and methodology in discussing risk. Idaho Power deemed Reax Engineering a qualified consultant to perform wildfire risk analysis based on the work it performed for the CPUC in developing the CPUC Fire Threat Map. Other utilities in Oregon, Idaho, Nevada, and Utah have utilized similar modeling approaches to identify and quantify wildfire risk.

Cost Estimate for Quantifying Wildland Fire Risk (2022–2025)

Idaho Power intends to re-evaluate its risk analysis using an external consultant on two more occasions between 2022 and 2025. Idaho Power estimates system-wide expenditure for these services to be approximately is $136,000. To determine state-specific estimates, the company assigned a share based on the number of line miles in each jurisdiction.

- Idaho estimated cost: $119,000
- Oregon estimated cost: $17,000

4.4.2 Situational Awareness—Fire Potential Index & Weather Forecasting

Idaho Power discusses specific situational awareness practices in Section 5 of this WMP.

In developing the WMP, Idaho Power created a new Fire Potential Index (FPI) tool to support operational decision-making to reduce wildfire threats and risks. The tool takes data on weather, prevalence of fuel (i.e., trees, shrubs, grasses), and topography, and converts that data into an easily understood forecast of the short-term fire threat for different geographic regions in Idaho Power's service area. Additionally, Idaho Power plans to continue to enhance meteorological and weather forecasting capabilities to further improve FPI forecasting and help determine when a Public Safety Power Shutoff may be necessary in Idaho Power's service area.

The benefits of developing the FPI and enhancing the company's meteorological forecasting capabilities is greater situational awareness of Idaho Power's system during critical peak summer months. To continue to generate useful information and system benefits, Idaho Power's situational awareness activities will be evaluated and updated annually as necessary to support the company's wildfire preparedness.

The company considers the FPI and related efforts an essential part of reducing the risk of ignition from work activities. This provides Idaho Power field personnel ~~would not have~~ a tool to assess the fire potential on a consistent basis. Given the distinct benefits that result from the FPI and enhanced foresting capabilities, Idaho Power did not consider alternatives to the development of these critical tools.

Cost Estimate for Situational Awareness—FPI and Weather Forecasting (2022–2025)

The estimated expenditure for the FPI tool is $901,000 and an additional $149,000 for enhanced weather forecasting capabilities, for a system-wide total of $1.1 million between 2022 and 2025. To determine state-specific estimates, the company applied its traditional jurisdictional separation amounts of 95% for Idaho and 5% for Oregon.

- Idaho estimated cost: $998,000
- Oregon estimated cost: $53,000

4.4.3 Situational Awareness—Advanced Technologies

Beginning in 2022, Idaho Power created a Technology Strategy Initiative team aimed at determining how new technologies and innovative practices can be incorporated into the company's wildfire mitigation practices to further decrease wildfire risk. Technology-based practices being considered include—amongst others—strategic use of cameras, satellite, and aerial imagery to detect vegetation hazards, pole loading modeling (to assess the structural integrity of poles), as well as covered conductors. -With regard to cameras, the company is evaluating a pilot to test placement of cameras in strategic, high-risk locations to enhance situational awareness. Additionally, the company is learning more about artificial intelligence and how it can be leveraged to detect wildfire ignitions. -Multiple camera and analytics

companies are being considered to determine potential cost-effective solution(s). -The company is also working with local agencies to explore the possibility of partnering on the installation and ongoing use of cameras which may lead to reduced cost.

Cost Estimate for Situational Awareness—Pole Loading Modeling and Assessment (2022–2025)

The estimated system-wide expenditure to conduct pole loading modeling and assessment, which includes LIDAR assessment, is $100,000 for 2022 through 2025. -Idaho Power plans to conduct the assessment in its highest risk zones, which are located exclusively in Idaho as set forth in Table 2. Because there are no Red Risk Zones in the company's Oregon service area, all expenditures will occur in Idaho at this time.

- Idaho estimated cost: $100,000
- Oregon estimated cost: $0

Cost Estimate for Situational Awareness—Cameras (2022–2025)

The estimated system-wide expenditure for the pilot evaluation installation of cameras in high-risk areas is $268,000 for 2022 through 2025. Idaho Power plans to prioritize the use of cameras in its highest risk zones, which are located exclusively in Idaho as detailed in Table 2. Because there are no Red Risk Zones in the company's Oregon service area, there are no current estimated expenditures for cameras in Oregon.

- Idaho estimated cost: $268,000
- Oregon estimated cost: $0

4.4.4 Field Personnel Practices

Idaho Power discusses its field personnel practices in Section 6 of this WMP.

Idaho Power's wildfire mitigation strategy includes procedural measures to reduce potential ignition and spread of wildfires. Idaho Power developed a *Wildland Fire Preparedness and Prevention Plan* (included as Appendix A to this WMP) to provide guidance to Idaho Power employees and contractors. The plan includes information regarding fire season tools and equipment available on the job site; daily situational awareness relative to areas with heightened fire conditions; expected actions and mechanisms for reducing on-the-job wildfire risk as well as reporting requirements in the event of an ignition; and training and compliance requirements.

All Idaho Power crews, and certain field personnel and contractors performing work on or near Idaho Power's facilities are required to operate in accordance with the provisions of the *Wildland Fire Preparedness and Prevention Plan* and expected to conduct themselves in a fire-safe manner. They should be prepared for wildfire by carrying specific tools, including but not

limited to, shovels, Pulaskis,[12] and water for initial suppression. Additionally, Idaho Power's PSPS program (included as Appendix B to this WMP) includes employees acting as Field Observers to report on site conditions as part of the de-energization process. -Field Observers are equipped with mobile weather kits that include wind meters, compasses, and satellite communication devices to report real-time conditions.

The preparedness of Idaho Power crews and contractors is critical to comprehensive wildfire risk reduction practices. The incremental investment in field personnel equipment is focused on additional tools carried by employees working in elevated risk zones.

Cost Estimate for Field Personnel Equipment (2022–2025)

The estimated system-wide expenditure for field personnel equipment (tools and mobile weather kits) is $40,000 between 2022 and 2025. To determine state-specific estimates, the company applied its traditional jurisdictional separation amounts of 95% for Idaho and 5% for Oregon.

- Idaho estimated cost: $38,000
- Oregon estimated cost: $2,000

4.4.5 Transmission and Distribution (T&D) Programs for fWildfire Mitigation

Idaho Power's T&D-related wildfire mitigation activities primarily involve expanded asset management programs and system hardening efforts, discussed in detail in Section 8.2 of this WMP. The narratives below provide insight into Idaho Power's consideration and selection of certain mitigation and hardening practices.

4.4.5.1 Annual T&D Patrol, Maintenance, and Repairs

Visual inspections are a critical component of T&D line-related wildfire mitigation efforts. On an annual basis, Idaho Power uses helicopters for visual aerial inspection of transmission lines that are Western Electricity Coordinating Council (WECC) path lines. Under the WMP, Idaho Power will continue to use this method of line inspection for all transmission lines located in Red Risk Zones. Idaho Power strives to complete these inspections prior to the start of the wildfire season.

Distribution lines that are located within RRZs are inspected on an annual basis through detailed visual inspections. -Helicopters are not practical for carrying out all distribution patrols due to greater population, structural, and vegetation density, so unmanned aerial vehicles (UAV) with high-definition cameras are used to aid in these inspections in certain situations. These inspections allow personnel to look for potential line defects that may not be obvious from

[12] A Pulaski is a hand tool specifically used for fighting fires that combines an axe and an adze atop a single handle. The tool is the invention of Edward Crockett Pulaski, a ranger with the U.S. Forest Service who was based in Wallace, Idaho, in the early 1900s.

the ground.- "Priority 1" defects, or conditions that may result in an outage or potential ignition, are immediately reported and repaired as soon as possible.

The company will continue to explore the expanded use of UAVs, as the detailed images and data collected through high-resolution aerial inspections can provide several co-benefits, including more granular data on vegetation growth and line and facility conditions.

Cost Estimate for Annual T&D Patrol, Maintenance, and Repairs (2022–2025)

The estimated system-wide incremental expenditure for annual T&D patrols, maintenance, and -repairs is $200,000 from 2022 to 2025. To determine state-specific estimates, the company applied its traditional jurisdictional separation amounts of 95% for Idaho and 5% for Oregon.

- Idaho estimated cost: $190,000
- Oregon estimated cost: $10,000

4.4.5.2 Thermography Inspections

While Idaho Power periodically conducts infrared thermography inspections as part of reliability and maintenance programs, the company is expanding these inspections in Red Risk Zones on an annual basis. -These inspections are conducted using hand-held and drone-mounted cameras with thermal-sensing technology and can help identify defects associated with the overheating of equipment, connections, splices, or conductors.

As part of the thermography inspections, temperature gradients are analyzed to detect potential problems and issues found are prioritized based on their severity and repaired. –Idaho Power recently created a new Thermography Technician position to carry out the inspections and coordinate repair activities, and additional resources may be added to perform this function across more of Idaho Power's service area if a single technician proves insufficient. To prioritize the use and information gained from this technology, it will initially be employed only in RRZs. 2022 is the test year to determine how many inspections can be performed, and the overall cost-benefit of the technology to help evaluate the possibility of expanding use and adding more resources.

Thermography inspections are uniquely valuable in that they are able to uncover problems undetectable to the naked eye. -From the company's perspective, there is not a viable alternative to this practice. The technology enables more proactive identification of potential issues than would otherwise be possible.

Cost Estimate for Thermography Inspections (2022–2025)

The estimated system-wide expenditure for thermography inspections is $850,000 from 2022 to 2025. Idaho Power currently plans to prioritize the use of this mitigation practice in its highest risk zones. Because the company's Oregon service area does not have any Red Risk Zones, there is no estimated expenditure on thermography inspections there at this time.

- Idaho estimated cost: $850,000

- Oregon estimated cost: $0

4.4.5.3 Wood Pole Fire-Resistant Wraps

To help improve the resiliency of the company's wood transmission poles, Idaho Power now wraps them with a fire-resistant mesh in Red and Yellow Risk Zones. -The mesh wrap helps protect the integrity of the pole if it is exposed to fire and improves the resiliency of Idaho Power's transmission system. -An alternative to installing fire-proof mesh wrap is to replace wood poles with structures made of non-combustible material, such as steel. -With 3,863 existing wood transmission poles in Idaho Power's Red and Yellow Risk Zones, the cost of replacing all wood poles is much higher than the cost of covering with a fire-resistant mesh.

Prior to developing the WMP, Idaho Power evaluated different products to determine the most cost-effective approach for protecting existing wood poles from fire. -Several products were considered and trialed, including short-term spray-on and paint-on fire retardants, long-term retardants, and steel wraps. -In 2020, the company evaluated a protective mesh wrap and compared the cost and performance to the alternatives. -The evaluation found that the mesh wrap was approximately 53% less costly than the alternatives and offered the same level of risk reduction. -The decision to use a mesh wrap product was not based solely on cost; other criteria were considered, including availability of the product, ease of installation, expected protective life span, and performance when exposed to fire. -By all these measures, fire-resistant mesh was the best solution.

Cost Estimate for Wood Pole Fire-Resistant Wraps (2022–2025)

The estimated system-wide expenditure for applying fire-resistant mesh wraps to transmission poles in Red and Yellow Risk Zones is $828,000 between 2022 and 2025. To determine state-specific estimates, the company assigned a share based on the number of wood poles in each jurisdiction that are in elevated risk zones.

- Idaho estimated cost: $789,000
- Oregon estimated cost: $39,000

4.4.5.4 Covered Conductor Pilot

Idaho Power's Technology Strategy Initiative identified covered conductor as a potential mitigation measure to pilot. -Benchmarking and feedback from other utilities highlighted the potential benefit of covered conductor as a mitigation measure. -The company will conduct a pilot of covered conductor in 2022 through 2024 to explore the benefits, tooling requirements for field personnel, and design parameters. -While covered conductor may reduce the risk of wildfire, the company will analyze potential co-benefits, including improved reliability outside of wildfire season and reduced outage restoration costs.

Cost Estimate for the Covered Conductor Pilot (2022–2024)

The estimated cost of the pilot is $125,000 from 2022–2024. To determine state-specific estimates, the company applied its traditional jurisdictional separation amounts of 95% for Idaho and 5% for Oregon.

- Idaho estimated cost: $119,000
- Oregon estimated cost: $6,000

4.4.6 Enhanced Vegetation Management

Idaho Power's enhanced vegetation management practices are discussed in detail in Section 8.3 of this WMP.

In the initial stage of developing its WMP, Idaho Power conducted an analysis to determine the most likely sources of ignition across the company's service area. -Reliability data revealed vegetation contact as one of the most common causes of outages on Idaho Power's system. With -the goal of eliminating potential ignition sources and to reduce risk, enhanced vegetation management was recognized as a critical aspect of Idaho Power's WMP.

To prioritize risk reduction from vegetation contact, Idaho Power determined it would move to a three-year pruning cycle and apply enhanced vegetation management practices in Red and Yellow Risk Zones. These enhanced practices include pre-fire season vegetation patrols, more targeted pole clearing and vegetation removal, and additional quality assurance for vegetation management practices.

The company considered other vegetation management alternatives, including shorter trimming cycles, longer trimming cycles, and strategies that evaluate each tree individually and only trim it once it has nearly grown back to the power line (known as "just-in-time trimming"). Each alternative presented challenges or resulted in negative impacts that undermined any potential benefits.

While shorter trimming cycles result in less vegetation being removed during each trimming cycle, this practice costs more due to the need for more resources and more frequent trimming of trees near the power lines. In contrast, longer cycles result in less frequent trimming of each tree but larger amounts of vegetation that must be removed to maintain larger clearance envelopes around the power lines to accommodate additional years of vegetative growth. Further, longer trimming cycles create logistical challenges that are exacerbated by tree biology. Some trees simply grow faster than a given trimming cycle and the longer the trimming cycle, the more pervasive this issue becomes. Longer cycles that call for heavy pruning also lead to hormonal imbalances between a tree's canopy and its root system. To correct this imbalance, the tree aggressively re-grows new sprouts to quickly replace its lost canopy. In this regard, heavier pruning results in a faster rate of tree regrowth than normal, making it even more difficult to consistently maintain longer trimming cycles. Finally, "just-in-time trimming" is primarily a reactive strategy that ultimately leads to challenges associated with securing qualified tree-trimming crews, as this ad hoc approach involves hiring crews on an as-needed basis rather than on a consistent schedule. After evaluating these alternative approaches, Idaho Power concluded that the goal of maintaining a consistent three-year trimming cycle is the most

cost-effective and sustainable strategy to keep vegetation away from the power lines in a proactive manner.

Moving forward with a three-year cycle and performing the additional activities detailed above will involve a sizeable increase in incremental O&M expenditure: approximately $8 million annually. -An alternative to enhancing Idaho Power's vegetation management program is to convert overhead distribution circuits to underground. -While undergrounding is used in certain circumstances, undergrounding has generally not been determined to be a cost-effective expense relative to enhanced vegetation management. -That said, the company continues to evaluate and implement underground solutions, as appropriate, as part of its WMP hardening efforts detailed below.

Although vegetation management is a sizeable increased wildfire mitigation expense, performing this work is expected to have notable co-benefits, including reduced vegetation-caused outages in Red and Yellow Risk Zones. -Idaho Power plans to monitor performance and outage metrics to confirm the success of the enhanced program.

Decreasing vegetation outages was considered one of the most important, cost-effective measures Idaho Power could take to reduce the likelihood of an ignition event and protect utility infrastructure. -Shifting vegetation management practices was deemed a prudent course of action based on the number of potential outages or ignition sources that may be eliminated. -It is also the approach that has been adopted by many of Idaho Power's peer utilities.

Cost Estimate for Enhanced Vegetation Management (2022–2025)

The estimated system-wide expenditure for enhanced vegetation management is $40.7 million from 2022 to 2025. Because vegetation management contracts are based on the company's system-wide needs and not separated by state, the company determined state-specific vegetation management estimates by applying its traditional jurisdictional separation amounts of 95% for Idaho and 5% for Oregon.

- Idaho estimated cost: $38.7 million
- Oregon estimated cost: $2 million

4.4.7 Communications and Customer Notification Enhancements

Idaho Power's efforts to communicate with customers and the public about wildfire and mitigation are discussed in detail in Section 10 of this WMP.

Idaho Power considers communication a vital part of its wildfire mitigation efforts. Customer and public awareness and education are a vital part of ensuring that the communities that Idaho Power serves are protected and safe from the threat of wildfire. -New communication expenses related to customer and community educational outreach include advertisements, printed media, social media, and public meetings. The purpose of these communications is to keep customers aware of mitigation and fire-related activities before, during, and after fire season. Additionally, the company is building out communication systems to be able to alert

customers more quickly and easily about wildfire events and outages, including potential PSPS events.

Cost Estimate for Communication and Customer Notification Enhancements (2022–2025)

The estimated system-wide expenditure for communication expenses is $400,000 and $691,000 for customer notification system enhancements, totaling $1.1 million from 2022 to 2025. To -determine state-specific estimates, Idaho Power applied its traditional jurisdictional separation amounts of 95% for Idaho and 5% for Oregon.

- Idaho estimated cost: $1.04 million
- Oregon estimated cost: $54,600

4.4.8 Incremental Capital Investments

Idaho Power's wildfire mitigation efforts include capital investments in system hardening practices including approaches deployed after internal testing and analysis, many of which also provide co-benefits to the company.

Idaho Power's capital investments for wildfire mitigation are discussed in detail in Section 8.2 (T&D Asset Management Programs) of this WMP.

4.4.8.1 Circuit Hardening and Infrastructure Upgrades

Idaho Power estimates spending $5.1 million annually through 2025 on circuit hardening and infrastructure upgrades across its system.

Idaho Power's WMP includes an overhead distribution hardening program for Red Risk Zones. The program includes systematic replacement of hardware, equipment, and materials to improve safety and reliability and reduce ignition risk. -The first five years of the program are focused on circuits in Red Risk Zones, but it may be expanded to Yellow Risk Zones in the future. The -company will review hardening outcome metrics annually to determine the benefit of the program and to determine whether to expand the program after 2025.

Prior to developing its WMP, Idaho Power successfully implemented many of the same hardening measures detailed below as part of the company's reliability program. -Outage data and analytics showed that customer outages were reduced by approximately 38% in areas where hardening projects were carried out. -With the success of reducing outages, some of these same activities to increase reliability were chosen to be part of the WMP to help reduce ignition potential in Red Risk Zones. -Enhanced system hardening efforts include installation of fire safe fuses, Spark Prevention Units, and fiberglass crossarms.

All the hardening activities and equipment identified in this program were evaluated by patrolmen, troublemen, reliability engineers, and the company's Methods and Materials department to determine cost-effective solutions that balance overall costs with expected risk -reduction.

As an alternative to conducting circuit hardening upgrades, the company considered converting overhead distribution circuits to underground. -While underground conversions are used in certain circumstances, the cost is estimated to be 2–10 times higher than the cost of carrying out hardening work. -In general, overhead hardening efforts provide the benefit of being able to impact a greater number of circuit miles and customers in a shorter time horizon with less investment than undergrounding. -Idaho Power will continue to evaluate underground opportunities as part of overall system hardening efforts.

The following summarizes the incremental capital investments the company is making to harden its system and further reduce wildfire risk:

- **Wood Pole Replacement—**The company will replace wood poles if field evaluations determine that significant deterioration or damage has occurred since the last inspection or treatment. -Poles are inspected above the groundline to determine strength and climbability. -Poles identified as "rejects" will be replaced on an expedited basis. Furthermore, poles having wood stubs/structural reinforcements are changed out pursuant to current practices.

- **Fuse Replacements—**Expulsion fuses located in Red Risk Zones will be changed out with energy-limiting and power fuses. -Fuse applications include overhead transformers, line taps, risers, and capacitor banks. -In 2018, Idaho Power began exploring different fusing technology to replace expulsion fuses with non-expulsion fuses. -Three different fuse types were considered and subsequently piloted. -The pilot was used to determine the performance of each fuse type, installation requirements, and -coordination characteristics. -Financial analysis included the cost of each fuse along with associated cutout and hardware and helped determine the most cost-effective option. This information was used to evaluate non-expulsion fuses. *-Replacement of all expulsion fuses in Red Risk Zones is expected to take approximately three years at a cost of approximately $1.9 million. Because this work will be conducted in Red Risk Zones, the company does not anticipate replacing fuses in Oregon at this time.*

- **Spark Prevention Units—**Porcelain arresters used for overvoltage protection will be changed out with arresters utilizing Spark Prevention Units (SPU). -The SPU acts to eliminate the potential of catastrophic failure during arrester operation. -This work includes all distribution arresters located on primary distribution lines in Red Risk Zones. In 2019, Idaho Power piloted new arrester technology to determine performance characteristics, installation requirements, and potential benefits in reducing ignition risk. As part of the pilot, Idaho Power compared different manufacturers with similar technology and conducted performance analysis to determine the most cost-effective solution. *-Replacement of the arresters is expected to take approximately three years to complete and will cost approximately $1.7 million. -Because this work will be conducted in Red Risk Zones, the company does not anticipate replacing arrestors in Oregon at this -time.*

- **Fiberglass Crossarms—**Idaho Power began piloting fiberglass crossarms in 2018 to determine potential cross-functional benefits associated with fiberglass. -The pilot

focused on cost, ease of installation, strength, supply availability, and reduced potential for tracking of electrical current. -Tracking is known as the flow of current over an insulator, which can generate heat. -The company compared different crossarm types and manufacturers and determined that fiberglass was most cost effective when considering up-front capital and installation costs. -The pilot program, along with benchmarking of peer utilities, helped determine that fiberglass crossarms provided a number benefits relative to improved safety and reliability. -Therefore, Idaho Power's hardening program includes the installation of both tangent and dead-end fiberglass crossarms in Red Risk Zones. However, Idaho Power does not intend to replace all wood crossarms with fiberglass immediately. -As part of the fielding phase, company distribution designers will assess wood crossarms and initially change those showing signs of defects or damage. -Identified crossarms utilizing wood pins will also be replaced with fiberglass. This approach will spread the cost out over time and help reduce the upfront cost of the -program.

- **Small Conductor**—In the early stages of developing the WMP, Idaho Power considered the possible risk associated with small conductor and the potential for breakage. –As a result of this exercise, the company's WMP hardening program includes the replacement of overhead distribution conductor that meets certain criteria which includes approximately 60 miles in Red Risk Zones. -Conductor losses were analyzed and showed that replacing the conductor will result in an approximately 50% reduction of line losses, resulting in co-benefits for the company and customers in terms of greater reliability and line loss improvements.

- **Porcelain Switches**—Idaho Power's Outage Management System and feedback from field personnel revealed potential benefits of switches made of material other than porcelain. -Therefore, porcelain switches installed in Red Risk Zones will be changed out with cutouts featuring Ethylene Propylene Diene Monomer Rubber (EPDM). Idaho -Power's Methods and Materials Department trialed different cutout switches made -up of different material, including silicone and polymer, to determine the most cost-effective solution. -The results of the trial highlighted the potential for avian issues with silicone (i.e., ravens tended to eat the silicone), and the cost of EPDM versus polymer was nearly equivalent. -The financial analysis determined that EPDM would preserve the integrity of the insulator body, prevent outages, and provide an estimated savings of $10,798 per year over silicone.

- **Avian Protection**—Idaho Power employs several different protection measures to protect wildlife on existing structures including but not limited to covers, insulated -conductor, diverters, perches, nesting platforms, and structural modifications. The company has an extensive history working with manufacturers of animal guards/covers and regularly seeks new solutions for avian issues to prevent mortalities, increase reliability, and eliminate other risks. -The company's Avian Protection Plan (APP) was developed in the mid-2000s and many of the practices identified in the APP are used for wildfire mitigation in Red and Yellow Risk Zones. -For example, new -wildlife guards were recently developed and installed in conjunction with the installation of new power fuses and SPUs. -Idaho Power consulted with different

manufacturers to develop new products that would accomplish the dual goals of avian protection and wildfire mitigation. The best solution is determined on a case-by-case basis depending on the specific location, the type and extent of avian presence, and other relevant factors.

4.4.8.2 Overhead to Underground Conversions

Another aspect of Idaho Power's system hardening program is the select conversion of overhead to underground distribution lines in Red Risk Zones. -In 2022, the company will convert 1.5 -miles of overhead distribution lines to underground lines. In 2023 and beyond, the company will work to build a strategic undergrounding program to weigh the cost-benefit of undergrounding versus other circuit hardening measures. -While underground distribution lines offer benefits associated with being less exposed to the elements and external forces, conversion -may not be possible, advisable, or economical in certain situations. -The company will continue to evaluate the feasibility of underground conversions as well as the relative value and cost effectiveness as part of the WMP.

4.4.8.3 Transmission Steel Poles

In 2021 and as part of its WMP, Idaho Power revised its transmission construction standards to utilize steel poles and structures for new line construction built to 138 kV and above in elevated wildfire risk zones. -This change is intended to minimize the potential for wildfire damage, improve transmission line resiliency, and increase reliability for customers. -Wood poles continue to be accepted and used in the industry, and the company will still utilize wood poles in many transmission system applications in consideration of the specific engineering, right-of-way, permitting, and scheduling requirements for each project.

In addition, wood poles will continue to be the standard construction practice for transmission line voltages below 138 kV unless a different material is needed to meet specific engineering or planning requirements. As discussed above, Idaho Power will wrap wood poles located in Red and Yellow Risk Zones with fire-proof mesh.

5. SITUATIONAL AWARENESS

5.1. Overview

Visibility and readily available access to current and forecasted meteorological conditions and fuel conditions is a key aspect of Idaho Power's wildfire mitigation strategy. Meteorological and fuel conditions can vary significantly across Idaho Power's service territory. Idaho Power leverages its internal atmospheric science department's modeling/forecasting capabilities, its existing field weather stations, and publicly available weather/fuel data to develop projections of current and future wildfire potential across Idaho Power's service territory. This wildfire potential information is then available to operations personnel to factor into their operational decision-making.

5.2. Fire Potential Index

Idaho Power has developed an ~~Fire Potential Index (~~FPI~~)~~ tool based upon original work completed by San Diego Gas and Electric, the National Forest Service, and the National Interagency Fire Center and modified for Idaho Power's Idaho and Oregon service territory. This tool is designed to support operational decision-making to reduce fire threats and risks. This tool converts environmental, statistical, and scientific data into an easily understood forecast of the short-term fire threat which could exist for different geographical areas in the Idaho Power service territory. The FPI is issued for a seven-day period to provide for planning of upcoming events by Idaho Power personnel.

The FPI reflects key variables, such as the state of native vegetation across the service territory ("green-up"), fuels (ratio of dead fuel moisture component to live fuel moisture component), and weather (sustained wind speed and dew point depression). Each of these variables is assigned a numeric value and those individual numeric values are summed to generate a Fire Potential value from zero to sixteen, each of which expresses the degree of fire threat expected for each of the 7 days included in the forecast. The FPI scores are grouped into the following index levels:

- **Green**: FPI score of 1 through 11 indicates low potential for a large fire to develop and spread as there is normal vegetation and fuel moisture content as well as weak winds and high relative humidity.

- **Yellow**: FPI score of 12 through 14 indicates an elevated potential for a large fire to develop and spread as there are lower than normal vegetation and fuel moisture content as well as moderate winds and lower than normal relative humidity.

- **Red**: FPI score of 15 through 16 indicates a higher potential for a large fire to develop and spread as there are well below normal vegetation and fuel moisture content as well as strong winds and low relative humidity.

Fire Potential Index (FPI) Category			
	Normal	Elevated	High
FPI Range	1 to 11	12 to 14	15 - 16

The state of native grasses and shrubs, or **Green-Up Component**, of the FPI is determined using satellite data for locations throughout the Idaho Power areas of interest. This component is rated on a 0-to-5 scale ranging from very wet (or "lush") to very dry (or "cured"). The scale is tied to the Normalized Difference Vegetations Index (NDVI), which ranges from 0 to 1, as follows:

Green-Up Component						
NDVI	Very Wet/Lush: 1.00 to 0.65	0.64 to 0.60	0.59 to 0.55	0.54 to 0.50	0.49 to 0.40	Very Dry/Cured 0.39 to 0.00
Score	0	1	2	3	4	5

The **Fuels Component (FC)** of the FPI measures the overall state of potential fuels which could support a wildfire. Values are assigned based on the overall state of available fuels (dead or live) for a fire using the following equation:

FC = FD / LFM

Where FC represents Fuels Component in the scale below, FD represents 10-hour Dead Fuel Moisture (using a 1-to-3 scale), and LFM represents Live Fuel Moisture (percentage). This data will be collected from satellite sources and regional databases supported by state and federal agencies.

The product of this equation represents the fuels component that is reflected in the FPI as follows:

Very Wet					Very Dry
0	1	2	3	4	5

The **weather component** of the FPI represents a combination of sustained wind speeds and dew-point depression as determined using the following scale. Regional adjustment to criteria limits for the upper wind speeds may occur after further discussion with subject matter experts from each of the regional operations. This data will be sourced from the weather, research and forecasting (WRF) products produced by Idaho Power using its High-Performance Computing (HPC) system. In addition to the HPC system produced WRF data, several national level

meteorological products will be used. These products will include regional weather observations used to validate model information.

Dewpoint Depression/Wind	≤5 mph	6 to 11 mph	12 to 18 mph	19 to 25 mph	26 to 32 mph	≥33 mph
≥50ºF	4	4	4	5	5	6
40ºF to 49ºF	3	3	4	4	5	5
30ºF to 39ºF	3	3	3	4	4	5
20ºF to 29ºF	3	3	3	3	3	4
10ºF to 19ºF	2	2	2	2	2	3
<10ºF	0	1	1	1	1	2

5.3. FPI Annual Process Review

The FPI process will be reviewed annually after completion of the fire season and, with consultation of interested parties (e.g., Load Serving Operator, Line Crews, and others), will be updated to enhance Idaho Power's wildfire preparedness.

6. MITIGATION—FIELD PERSONNEL PRACTICES

6.1. Overview

A component of Idaho Power's wildfire mitigation strategy is to prevent the accidental ignition and spread of wildfires due to employee work activities. Idaho Power developed the *Wildland Fire Preparedness and Prevention Plan* (Appendix A) to provide guidance to Idaho Power employees and contractors to help prevent the accidental ignition and spread of wildfires due to company work activities in locations and under conditions where wildfire risk is heightened. All Idaho Power crews and certain field personnel performing work on or near Idaho Power's facilities are expected to operate in accordance with the Plan and continue to conduct themselves in a fire-safe manner.

6.2. Wildland Fire Preparedness and Prevention Plan

The *Wildland Fire Preparedness and Prevention Plan* informs Idaho Power personnel and its line construction contractors about the following factors:

- Annual fire season tools and equipment to be available when on the job site
- Daily situational awareness regarding locations of heightened potential for fire risk and weather conditions in those areas
- Expected wildfire ignition prevention actions while working and reporting instructions in the event of fire ignition
- Training and compliance requirements

7. MITIGATION—OPERATIONS

7.1. Overview

A component of Idaho Power's wildfire mitigation strategy is to continue safe and reliable operation of its T&D lines while also reducing wildfire risk. These operational practices primarily center around the following:

- Temporary operating procedures for transmission lines during the fire season[13]
- An operational strategy for T&D lines during time periods of elevated wildfire risk during the fire season
- A PSPS strategy for Idaho Power's service area and transmission corridors

7.2. Transmission Line Operational Strategy

7.2.1. Fire Season Temporary Operating Procedure for Transmission Lines

Each year, typically in May, leadership within Idaho Power's Load Serving Operations (LSO) department updates and issues its Fire Season Temporary Operating Procedure. The purpose of this temporary operating procedure is to provide LSO employees with guidelines for operating transmission lines during the summer fire season. The procedure aims to reduce wildfire risk through practices relating to information collection, notification, and procedures for testing/closing in on locked-out transmission lines.

7.2.2. Red Risk Zone Transmission Operational Strategy

During wildfire season, Idaho Power determines a daily FPI as described in Section 5 of this WMP. The FPI informs the transmission line operational strategy for those lines owned, operated, and located in RRZs. These lines will be operated in normal settings mode but with no "testing"[14] of a line that may have "locked out" during the time of a red FPI. Essentially, in the event of a fault on the specified transmission line(s) during a red FPI, the line will operate as normal and may "lock out," at which time the line(s) will either need to be patrolled before "testing" or wait until the FPI level drops out of the red category prior to being reenergized.

[13] The duration of the fire season will be reviewed and defined annually.

[14] Transmission line "testing" refers to the human act of re-energizing a line without completing a physical field patrol or observation of a line.

7.3. Distribution Line Operational Strategy

7.3.1. Red Risk Zone Distribution Operational Strategy

During wildfire season, Idaho Power determines a daily FPI as described in Section ~~4~~ 5 of this WMP. The FPI informs the distribution line operational strategy for those lines located in the wildfire RRZs. These lines will be operated in a non-reclosing[15] state during the time of red FPI. Essentially, in the event of a fault on the specified distribution line(s) during the red FPI, the line(s) will be automatically de-energized with no reclosing attempts until either the line(s) has been patrolled or the FPI level drops out of the red category.

7.4. Public Safety Power Shutoff

7.4.1. PSPS Definition

PSPS, as used in this WMP, is defined as the proactive de-energization of electric transmission and/or distribution facilities during extreme weather events to reduce the potential of those electrical facilities becoming a wildfire ignition source or contributing to the spread of wildfires. The concept is as follows: if significant weather events can be predicted far enough in advance, the resulting proactive line de-energization before the forecasted weather conditions materialize could mitigate the risk of a wildfire. A PSPS event has significant customer impact and requires significant planning.

PSPS is not the practice of de-energizing lines in the following types of situations:

- Unplanned de-energization of lines required for emergencies and during outage restoration situations.
- Planned line or station work activities that require a planned outage (Idaho Power currently has a planned outage customer notification process in place for this).
- Reactive de-energization of electric transmission and/or distribution facilities, which may be either at Idaho Power's determination or at the request of fire managers (e.g., BLM, U.S. Forest Service, or other fire-fighting managers) in response to existing/encroaching wildfire threatening to burn into such facilities.
- Automated de-energization of electric transmission and/or distribution facilities due to smoke/fire from an existing fire causing a fault on the line.

[15] Distribution line "non-reclosing" refers to the deactivation of automatic re-energization of a distribution line or use of a non-reclosing device such as a fuse.

Idaho Power will continue its current de-energization practices in the above referenced, and comparable situations. Such outage situations are not defined as PSPS events in the context used here and, as a result, would not trigger PSPS protocols.

7.4.2. PSPS Plan

Idaho Power developed a PSPS Plan (see Appendix B) that operates in parallel with its wildfire mitigation strategy. Although the wind patterns in Idaho Power's service area are generally of a much lower sustained velocity and often less predictable (i.e., micro-bursts) than other utilities' service areas where PSPS has most frequently been utilized (i.e., California), the company's PSPS Plan generally follows industry best practices by considering other utilities' PSPS plans and incorporating input from Idaho Power's external consultant, discussed in 3.2 above, which developed the company's WMP risk maps.

8. MITIGATION—T&D PROGRAMS

8.1. Overview

Idaho Power's wildfire mitigation strategy relies in part on its various asset management programs and vegetation management program to maintain safe and reliable operation of its T&D facilities in reducing wildfire risk.

8.2. T&D Asset Management Programs

In addition to maintaining a number of existing and newly implemented robust asset management programs intended to reduce wildfire risk, Idaho Power continues to research, monitor, and pilot emerging technologies and strategies to manage its T&D infrastructure.

Idaho Power's key asset management programs supporting wildfire prevention and mitigation are summarized in the table below.

Table 54
Summarized T&D asset management programs (associated with the WMP)

Transmission
Aerial Visual Inspection Program
Ground Visual Inspection Program
Detailed Visual (High Resolution Photography) Inspection Program
Wood Pole Inspection and Treatment Program
Cathodic Protection and Inspection Program
Wood Pole Wildfire Protection Program (enhanced)
Steel Pole (Structures) (enhanced)
Distribution
Ground Detail Inspection Program (enhanced)
Wood Pole Inspection and Treatment
Wood Pole Fire Protection Program (enhanced)
Line Equipment Inspection Program
Overhead Primary Harden Program
Replace "small conductor" with new 4acsr or larger conductor (new)
Replace or repair damaged conductor
Re-tension loose conductors including "flying taps" and slack spans as required
Replace wood-stubbed poles with new wood poles (enhanced)

Replace white and yellow square tagged poles with new wood poles

Replace wood pins/wood crossarm with new steel pins/fiberglass crossarms

Replace steel insulator brackets with new steel pins/fiberglass crossarms (new)

Replace wedge deadends on primary taps with new polymer deadend strain insulators

Replace aluminum deadend strain insulators with new polymer deadend strain insulators (new)

Replace porcelain switches with new polymer switches

Replace hot line clamps

Replace aluminum stirrups

Install avian cover

Relocate arresters

Install bird/animal guarding

Update capacitor banks

Replace swelling capacitors

Replace oil-filled switches with vacuum style

Replace porcelain switches with polymer switches

Install disconnect switches on CSP transformers

Install avian cover

Update down guys

Replace/Install down-guy insulators with fiberglass insulators

Tighten down guys

Tighten hardware

Correct 3rd party pole attachment clearances (report to Joint Use Department)

8.2.1. Transmission Asset Management Programs

Several of Idaho Power's transmission management programs have been in place for decades and include condition-based aerial visual inspections, ground visual inspections, detailed visual (generally using high-resolution photography) inspections, transmission wood pole inspection and treatment, and cathodic protection. Additionally, Idaho Power has used various methods and materials to prevent wildfire from damaging wood structures and now intends to use a fire-resistant mesh wraps installed on structures located in the RRZ and YRZs.

8.2.1.1. Aerial Visual Inspection Program

Annually, Idaho Power uses helicopters to assist Idaho Power qualified personnel in the visual aerial inspection of transmission lines identified as ~~Western Electricity Coordinating Council (~~WECC~~)~~ Path Lines. This method of line inspection is now used for transmission lines located in the RRZs. In addition, unmanned aerial vehicles with high-definition cameras are now used in certain situations to inspect facilities on these lines. These inspections allow personnel to look for potential line defects, which, if found, are noted and scheduled for repair.

All noted defects are prioritized as Priority 1, Priority 2, or Priority 3, based on the criteria listed below:

- **Priority 1**: Defects that, depending on the circumstances, require reporting and repair as soon as reasonably possible.

- **Priority 2**: Defects that, depending on the circumstances, generally require reporting and correction within 24 months of identification. The correction of these defects should be scheduled during crews' normal work schedules. Priority 2 defects not assigned a corrective plan within 24 months will be reviewed by the T&D vegetation and maintenance engineering leader.

- **Priority 3**: Potential issues that may need correction but do not pose a threat to the system and should be monitored. A Priority 3 designation may also be used by Idaho Power personnel for tracking of certain line construction practices.

Corrective action plans for Priority 1 and 2 defects are determined by engineering personnel for each prioritized defect and are scheduled and repaired.

8.2.1.2. Ground Visual Inspection Program

Annually, Idaho Power qualified personnel (i.e., trained in transmission line inspection procedures and experienced in transmission line construction) complete ground visual inspections of all transmission lines. Ground patrols are completed using four-wheel-drive vehicles, all-terrain vehicles, utility terrain vehicles, and/or on foot. These inspections identify potential line defects that are noted and scheduled for repair following the same process as described in 8.2.1.1.

8.2.1.3. Detailed Visual (High-resolution Photography) Inspection Program

In addition to the annual inspections and associated maintenance, Idaho Power also completes detailed visual inspections generally utilizing high resolution photography. This detailed inspection is typically completed using helicopters, unmanned aerial vehicles, and contracted professionals operating high definition cameras and, if potential line defects are noted, they are scheduled for repair following the same process as described in 8.2.1.1. The detailed inspections are completed on a 10-year cycle in conjunction with the 10-year cycle of wood pole ground line inspection and treatment (see 8.2.1.4).

8.2.1.4. Wood Pole Inspection and Treatment Program

All wood poles are visually inspected, sounded, and bored for defects and decay on a 10-year cycle. The poles are categorized according to the following:

- **Reported**: Any wood pole inspected and found to be installed within 10 years of the manufactured date or last inspection date.

- **Treated**: Any wood pole inspected and found to be installed 11 years or more prior to the inspection date and is determined to be in sound enough condition to warrant treatment.

- **Rejected**: Any wood pole determined to fit the following criteria:

- Have less than 4 inches of shell at 48 inches above the ground line; and/or
- Less than 2 inches of shell at 15 inches above the ground line; and/or
- Less than 2 inches of shell at the ground line; or
- Is deteriorated and does not meet minimum strength criteria; or
- Fails a visual inspection.

Rejected poles are categorized as: reinforceable with steel, non-reinforceable and are to be replaced.

- **Visually Rejected**: Any wood pole that has been damaged (i.e., burned, split, broken, hit by a vehicle, damaged by animals, etc.) above the ground line to such an extent as to warrant rejection and that cannot be further tested to determine priority status.
- **Sounded, Bored, and Treated**: Any wood pole set in concrete, asphalt, or solid rock 11 years or more prior to the inspection date is internally treated. Internal treatment involves fumigating the good wood and flooding the voids with fumigant.

8.2.1.5. Cathodic Protection and Inspection Program

Cathodic protection systems are employed on select steel transmission towers. These systems use either an impressed current corrosion protection system (ICCP) or direct-buried sacrificial magnesium anodes. Included in Idaho Power's tower maintenance plan, every 10 years, structure-to-soil potential testing is performed on select towers with direct-buried anodes. For ICCP systems, rectifiers and ground-beds are tested to ensure they are functioning properly. Based on test results repairs and adjustments are completed. Each year all rectifiers are inspected, and direct current (DC) voltage and DC current readings noted.

8.2.1.6. Thermal Imaging (Infra-red) Inspections

Idaho Power will complete annual inspections of lines and equipment using thermal imaging (infra-red) cameras. This inspection methodology, although not new to Idaho Power, is being expanded to specifically include the RRZs. Compromised electrical connections and overloaded equipment may be identified using thermal imagery. Identified risks will be prioritized and mitigated using the prioritization methodology noted in 7.2.1.1 of this WMP.

8.2.1.7. Wood Pole Wildfire Protection Program

Idaho Power has utilized numerous technologies to minimize the damage to wood poles that have been exposed to wildfires. The current technology of "mesh wraps" is utilized on transmission wood poles located in the RRZs and YRZs.

8.2.1.8. Transmission Steel Poles

Idaho Power will utilize steel poles or structures for new transmission line construction projects built to 138 kV standards and above in an attempt to minimize wildfire damage and improve transmission line resilience. Wood poles may be used on 138 kV structures for emergency and maintenance replacements based on the specific engineering, right-of-way, permitting, and scheduling requirements for each project. Wood construction is used for voltages below 138 kV unless a different material is needed to meet specific engineering or planning requirements.

8.2.2. Distribution Asset Management Programs

Idaho Power has several distribution asset management programs that are mature, have been implemented for decades, and will continue to be utilized in the RRZs. These programs include condition-based, detailed, and ground visual inspection; distribution wood pole inspection and treatment; and line equipment inspection.

Idaho Power also has an enhanced overhead distribution "hardening" program to implement in the RRZs. Examples of specific work include replacement of small conductors and associated hardware and replacement of wooden pins and associated wooden crossarms.

8.2.2.1. Ground Detailed Visual Inspection Program

Annually, qualified line patrol personnel (trained in distribution line inspection procedures and experienced in distribution line construction) complete detailed ground inspections of the distribution lines located in the RRZs. The ground patrols are completed using four-wheel-drive vehicles, all-terrain vehicles, utility terrain vehicles, or on foot. These inspections identify potential line defects that are noted and scheduled for repair.

All noted defects are prioritized as Priority 1, Priority 2, or Priority 3, based on the criteria listed below:

- **Priority 1**: Defects that, depending on the circumstances, require reporting and repair as soon as reasonably possible.

- **Priority 2**: Defects that, depending on the circumstances, generally require reporting and correction within 24 months of identification. The correction of these defects should be scheduled during crews' normal work schedules. Priority 2 defects not assigned a corrective plan within 24 months will be reviewed by the T&D Vegetation and maintenance engineering leader.

- **Priority 3**: Potential issues that may need correction but do not pose a threat to the system and should be monitored; or tracking of certain line construction practices.

Corrective action plans for Priority 1 and 2 defects are determined by engineering personnel for each prioritized defect and are scheduled and repaired.

8.2.2.2. Wood Pole Inspection and Treatment Program

All wood poles are visually inspected, sounded, and bored for defects and decay. The procedure is noted in 8.2.1.4.

8.2.2.3. Line Equipment Inspection Program

Line equipment, particularly distribution system protection line equipment, is inspected annually by line operations technicians. The inspection includes a visual inspection and, when electronic reclosers are present, data is retrieved from controls and analyzed for proper operation.

8.2.2.4. Overhead Primary Hardening Program

Overhead distribution infrastructure located in the RRZs will be analyzed and may be inspected and hardened depending upon proximity to fuels conducive to wildfires in the unlikely event of failure of the line infrastructure. It is expected to take multiple years to inspect and harden all applicable overhead distribution lines.

The Overhead Primary Hardening program is intended to upgrade or repair certain overhead distribution infrastructure. Criteria as outlined in Table 54 drives the program work. Notable criteria are further explained in the following sections of this WMP.

8.2.2.4.1. Conductor "Small" Replacement

Idaho Power is implementing replacement of small conductors in the RRZs. Small conductors are those in sizes less than that of 4ACSR conductor. Examples of small wires include 6Cu, 6-3SS, 8A, 8A CW, 9IR, etc. These small conductors will be replaced with standard larger conductors, primarily with 4ACSR conductor.

8.2.2.4.2. Wood Pin and Crossarm Replacement

Wooden crossarms installed with wooden pins will continue to be replaced with fiberglass crossarms and steel pins. This work will be coordinated and included in the overhead primary hardening program. And, whenever work is being completed on a structure that requires replacement of wooden crossarms, Idaho Power will, generally, install fiberglass crossarms.

8.2.2.4.3. Porcelain Switch Replacement

Porcelain switches located in the RRZs will continue to be replaced with polymer switches. Additionally, associated hot clamps and stirrups will be replaced. This work will be coordinated and included in the overhead primary hardening program.

8.2.2.4.4. Fuse Options

Idaho Power investigated reasonable alternatives to replace certain expulsion fuses and expulsion arrestors. A pilot program was initiated in 2020 to replace several expulsion fuses with non-expulsion fuses in the vicinity of the Boise foothills. This pilot program was successful and Idaho Power implemented a subsequent program to replace expulsion fuses with non-expulsion fuses in RRZs as a part of its distribution overhead primary wildfire hardening program.

8.2.2.4.5. Thermal Imaging (Infra-red) Inspections

Idaho Power will complete annual inspections of lines and equipment using thermal imaging (infra-red) cameras. This inspection methodology, although not new to Idaho Power, is being expanded to specifically include the RRZs. Compromised electrical connections and overloaded equipment may be identified using thermal imagery. Identified risks will be prioritized and mitigated using the prioritization methodology noted in 8.2.2.1 of this WMP.

8.2.2.4.6. Wood Pole Wildfire Protection Program

Idaho Power has utilized numerous technologies to minimize the damage to wood poles that have been exposed to wildfires. The current technology of "mesh wraps" is utilized on certain distribution wood poles located in the RRZs.

8.3. T&D Vegetation Management

Idaho Power's T&D vegetation management program (VMP) addresses public safety and electric reliability and helps to safeguard T&D lines from trees and other vegetation that may cause an outage or damage to facilities. Specifically, the lines are inspected periodically, and trees and vegetation are cleared away from the line while certain trees are removed entirely. In addition, the VMP addresses the clearing of vegetation near the base of certain poles and line structures. The responsibilities of the VMP include the planning, scheduling, and quality control of VMP associated work. The VMP is active year-round and complies with applicable NESC, federal, and state requirements. Additional vegetation monitoring tools are in various stages of development, and Idaho Power will evaluate such tools for potential future implementation.

Idaho Power's key components of its VMP, relative to the WMP, are summarized in the table below.

Table ~~6~~5
VMP summary

Vegetation Management
Pre-Fire Season Inspection and Mitigation
Line Clearing Cycle Goal: 3-year cycle for valley areas & 6-year cycle for mountain areas
Tree Removals - Hazard Trees
Targeted Pole Clearing
100% Quality Assurance/Quality Control Auditing in RRZs and YRZs
Pre-Fire Season Inspection and Mitigation
Line Clearing Cycle Goal: 3-year cycle in all areas with mid-cycle pruning occurring in 2nd year in RRZs and YRZs*
Tree Removals - Cycle Busters/Hazard Trees
Targeted Pole Clearing
100% Quality Assurance/Quality Control Auditing in RRZs and YRZs

*Distribution line clearing cycles vary by utility. Idaho Power has set a goal of achieving a 3-year cycle of distribution line clearing.

8.3.1. Definitions

Applicable Transmission Lines—Each overhead transmission line operated within the WMP RRZ at 46 kilovolts (kV) or higher.

Cycle Buster—Trees that grow at a rapid rate, requiring a more frequent trimming schedule than the normal trim cycle.

Hazard Tree—Any vegetation issue that poses a threat of causing a line outage but has either a low or medium risk of failure in the next month. Hazard trees will be further defined as posing either a medium hazard or low hazard.

High-Priority Tree—Any vegetation condition likely to cause a line outage with a high risk of failure in the next few days or weeks. High-priority trees could also be vegetation that is in good condition but has grown so close to the lines that it could be brought into contact with the line through a combination of conductor sag and/or wind-induced movement in the conductor or the vegetation.

Line Clearing Cycles—T&D clearing of lines defined on a periodic basis.

8.3.2. Transmission Vegetation Management

Maintaining a zone near transmission lines that is free of vegetation has long been a priority for Idaho Power. The clearance zone is voltage-level dependent and defined by federal and state regulations.

8.3.2.1. Transmission Vegetation Inspections

Utility arborists annually conduct aerial and/or ground patrols on each applicable transmission line to identify and mitigate vegetation hazards. In addition, transmission patrol personnel inspect all applicable transmission lines once a year to identify any transmission defects and vegetation hazards. During these inspections, the patrol personnel will identify hazardous vegetation, within or adjacent to the Right of Way (ROW), that could fall in or onto the transmission lines or associated facilities. The patrol personnel will evaluate the hazardous vegetation as to the level of threat posed by categorizing the vegetation as a *high priority*, *medium hazard*, or *low hazard*. Any hazardous vegetation found is reported to the utility arborist and documented. Any hazardous vegetation categorized as a *high priority* and that presents a risk to cause an outage at any moment shall also be reported without any intentional time delay to the grid operator. The utility arborist will conduct a follow-up inspection if potential hazard trees or grow-ins are identified. The utility arborist prioritizes and schedules any remedial action for all reported vegetation issues.

8.3.2.2. Transmission Line Clearing Cycles

Transmission lines will be cleared on long-term cycles based on 3 years for urban and rural valley areas and 6 years for mountain areas. However, shorter clearing cycles may occur if conditions dictate out-of-cycle trimming. In most cases, vegetation is cleared primarily through manual cutting of targeted trees and tall shrubs. However, when appropriate and in compliance and permission with federal and state requirements, tree-growth regulators and spot herbicide treatments are applied as effective techniques for reducing re-growth of sprouting deciduous shrubs and trees and extending maintenance cycles.

8.3.2.3. Transmission Line Clearing Quality Control and Assurance

When line clearing work is required, either a utility arborist or a contracted notifier completes field inspections to make sure the clearing work meets requirements. A line clearing audit form is completed and retained.

8.3.3. Distribution Vegetation Management

Idaho Power is actively working to clear distribution lines throughout Idaho Power's service territory on a three-year cycle.[16] Additionally, in the RRZs and YRZs, Idaho Power completes annual vegetation line inspections and mid-cycle clearing of the lines in the second year,

[16] Idaho Power will test a three-year cycle for a period of 4 or 5 years to verify that such a cycle can be maintained and that the expected benefits are realized.

is increasing the number of trees removed, and is completing 100% quality control reviews of contractor line clearing work by certified arborists.

8.3.3.1. Distribution Line Clearing Cycles

Idaho Power is actively working to clear distribution lines on a three-year cycle. In RRZs and YRZs, Idaho Power's goal is to perform mid-cycle pruning in the second year to remove faster growing vegetation to ensure the lines are clear of vegetation for the full pruning cycle. In addition, Idaho Power clears lines based upon "special request" in the situations that fast growing, unexpected growth occurs and is reported by any employee or customer.

8.3.3.2. Distribution Vegetation Inspections

In addition to regular cycle pruning activities, utility arborists are annually conducting ground patrols to identify potential vegetation hazards of each distribution line identified in the RRZs and YRZs. In addition, distribution patrol personnel also inspect the lines in the RRZs annually. During these inspections, patrol personnel identify infrastructure defects and hazardous vegetation, within or adjacent to the ROWs, that could fall in or onto the distribution lines or associated facilities. The patrol personnel then evaluate the hazardous vegetation as to the level of threat posed by categorizing the vegetation as a *high priority*, *medium hazard*, or *low hazard*. Any hazardous vegetation found is reported to the utility arborist and documented.
Any hazardous vegetation categorized as a *high priority* and that presents a risk to cause an outage at any moment shall also be reported without any intentional time delay to the Grid Operator. The utility arborist will conduct a follow-up inspection if potential hazard trees or grow-ins are identified. The utility arborist prioritizes and schedules any remedial action for all reported vegetation issues.

8.3.3.3. Distribution Line Clearing Procedures

In most cases, vegetation is cleared as scheduled work and includes, but is not limited to, the removal of dead branches overhanging power lines, weak branch attachments, damaged root base or dead or dying trees leaning toward Idaho Power facilities. Vegetation clearing methods include crews using chain saws or specialized pruning machines. Trees are cleared using a pruning procedure called directional or natural pruning, a method recommended by the International Society of Arboriculture, and the ANSI A300 standards.

However, when appropriate and in compliance and permission with federal and state requirements, tree-growth regulators and spot herbicide treatments are applied as effective techniques for reducing re-growth of sprouting deciduous shrubs and trees and extending maintenance cycles.

Through its vegetation management program, Idaho Power has a target to maintain clearance distance between vegetation and conductors as follows:

- Five feet for conductors energized at 600 through 50,000 volts.
- Clearances may be reduced to three feet if the vegetation is not considered to be readily climbable because the lowest branch is greater than eight feet above ground level.

- New tree growth that is no larger than ½ inch in diameter may intrude into this minimum clearance area provided it does not come closer than six inches to the conductor. This new growth is identified during line patrols and removed.

- For conductors energized below 600 volts, vegetation is pruned to prevent the vegetation from causing unreasonable strain on electric conductors.

8.3.3.4. Distribution Line Clearing Quality Control and Assurance

When line clearing work is required, either a utility arborist or a contracted notifier completes field inspections to make sure the clearing work meets requirements. A line clearing audit form is completed and retained.

8.3.4. Pole Clearing of Vegetation

Idaho Power has historically cleared vegetation from the base of certain transmission wood poles and a limited number of distribution wood poles in Idaho. These vegetation clearing practices have been deemed an effective method of minimizing wildfire damage to existing wood poles. Where acceptable and permissible, Idaho Power removes or clears vegetation in a 20-foot radius surrounding the wood poles and applies a 10-year weed-control ground sterilant (SpraKil SK-26 Granular). Idaho Power submitted an SF-299 application with the Oregon BLM Vale District Office to prepare an Environmental Assessment to use the same ground sterilant on transmission and distribution facilities in Oregon. The schedule provided to Idaho Power by the BLM for this work shows it to be completed by June 2022 and implemented in July 2022 pending no appeals.

9. WILDFIRE RESPONSE

9.1. Overview

Idaho Power responds to wildfires involving or impacting its facilities and/or resulting in a system outage; depending on the specific circumstances, Idaho Power may also respond to wildfires with the potential to result in an outage. Idaho Power's actions include without limitation:

- Taking appropriate steps, where safe to do so, to protect Idaho Power-owned facilities from fire damage;
- Restoring electrical service following an outages; and,
- Communicating with and informing customers.

These actions are taken on a 24-hour basis.

9.2. Response to Active Wildfires

Idaho Power field crews are trained to respond to active wildfires to monitor the situation regarding Idaho Power's facilities. Although they carry certain fire suppression equipment for use on very small fires in limited situations, Idaho Power's crews are not professionally trained firefighters and are instructed not to place themselves in a hazardous position when responding to wildfires. When responding to an active wildfire, Idaho Power personnel immediately report to, and take appropriate direction from, the Incident Commander (IC) or other fire response entity official with jurisdiction over the incident.

9.3. Emergency Line Patrols

At certain times, unplanned de-energization of lines requires qualified line personnel to conduct "emergency" patrols (inspections) of the de-energized lines. These patrols identify outage causes, damaged facilities, ingress/egress routes, and restoration requirements (number of crews, crew sizes, and necessary materials).

9.4. Restoration of Electrical Service

Idaho Power personnel restore electrical service when it is safe to do so following a wildfire. Trained field crews report to the site where damage has occurred with equipment and new materials and develop a plan to remove and rebuild damaged facilities. Depending on the situation, contracted field crews—such as line crews and vegetation management crews—are also deployed to assist in restoration efforts. Restoration work may take hours or, in some rare cases, days to complete. Depending on the extent of damage, customers may need to

perform repairs on their facilities and pass inspections by local agencies prior to having full electric service restored.

Due to the unique construction, need for specialized equipment, and—in many cases—remote location of many of Idaho Power's transmission lines, Idaho Power developed a *Transmission Emergency Response Plan*. This plan includes restoration processes related to all transmission voltage classes from 46 through 500 kV. The plan outlines the basic approach and certain details about notification, materials, damage assessment, coordination, and preparedness.

9.4.1. Mutual Assistance

Idaho Power is a member of the Western Region Mutual Assistance Agreement (WRMAA), of which the majority of western United States electric utilities are also members. Member utilities provide emergency repair and restoration assistance to other member utilities requesting assistance when dealing with damaged electric facilities following a significant wildfire or weather event. In the event of a catastrophic wildfire that causes widespread damage to Idaho Power's system, Idaho Power may request restoration assistance via the WRMAA as a last resort option after utilizing available internal personnel and contracted entities.

9.5. Public Outreach and Communications

Idaho Power maintains an *Emergency Response Communication Plan*. The intent of this communication plan is to provide consistent and reliable internal and external communication in large outage or emergency situations, including wildfires, that have wide-ranging impacts on Idaho Power's service areas. Internal and external communications precipitated by a wildfire will be performed in accordance with this emergency response plan, which is reviewed and updated annually.

10. COMMUNICATING THE PLAN

10.1. Objective

Idaho Power communicates about this WMP internally to employees and externally to the public. The company provides related fact sheets and maps depicting areas of elevated wildfire risk as well as online resources (some of which are continuing to be developed) aimed at:

- Demonstrating Idaho Power's focus on system integrity and reliability and potential impacts on the public
- Demonstrating Idaho Power is proactively, reasonably, and responsibly addressing wildfire risk, including meeting requirements of its state regulators
- Furthering Idaho Power's collaboration and information sharing with federal, state, and local government and agencies
- Keeping Idaho Power customers informed
- Informing and guiding Idaho Power employee and contractor

10.2. Idaho Power External Communications

10.2.1. Community Engagement

Idaho Power presents and distributes information regarding its WMP to a wide variety of stakeholders including without limitation the BLM, U.S. Forest Service, and county and city officials.

Idaho Power engages with various Public Safety Partners, including local governments, emergency response management and Idaho's and Oregon's ESF-12 and social service and welfare agencies (e.g., Oregon's Department of Human Services). These engagements focus on wildfire awareness, prevention and outage preparedness outreach and opportunities for collaboration. For example, the company worked collaboratively with the Boise City Fire Department in developing certain portions of the Boise City Fire Code–043019. Idaho Power may also include tabletop exercises with Public Safety Partners prior to wildfire season, designed to mimic fire emergency events, including PSPS events, to assist with wildfire preparedness.

10.2.2. Idaho Power Customers

Safety is Idaho Power's most important value. Attention to the detail of safe operations permeates our workplace culture and interactions with customers. This standard is applied to protecting Idaho Power's equipment from wildfire, reducing the likelihood of wildfire and informing the public about the likelihood of wildfire and ways customers should respond.

Idaho Power distributes information regarding its WMP to its customers via the following tools:

- Fact sheets
- Mass media articles/videos
- Community and/or individual presentations/discussions
- Social media
- Idaho Power online website
- Customer email/mailings
- Public education campaigns

10.2.2.1 Prior to Wildfire Season

Idaho Power communicates to customers and the public what steps the company is taking, such as vegetation management and equipment maintenance, to reduce the likelihood of wildfires. Various communication mediums include:

- *Connections* (This monthly newsletter is an effective way to give customers nuanced information about the work Idaho Power does, but its planning and development takes months, so it is not an effective way to communicate urgent information.)
- eNews (video stories about a variety of topics, such as vegetation management)
- Emails
- Social media
    - Posts on Facebook, Instagram, Twitter and other platforms are an efficient way to reach large numbers of customers and the public. They are less intrusive than newsletters or phone calls.

Each fire season Idaho Power conducts wildfire awareness, prevention, and outage preparedness outreach to customers. Outreach content may include the following: wildfire prevention tips, Idaho Power fire mitigation efforts, PSPS considerations, emergency and outage preparedness tips and checklists, where to find outage information and Idaho Power's WMP or PSPS Plans, and recommendations to sign up for alerts and update contact information.
Annually, Idaho Power will hold at least one public meeting in Oregon and Idaho, offering a virtual meeting with additional access and functionality options. Feedback opportunities are also provided during and after the meetings.

Idaho Power also monitors long-term weather forecasts and fuel conditions and communicates to customers and the public the company's wildfire outlook using a combination of some or all of the following communication mediums:

- Idaho Power's website
- *Connections* (a monthly newsletter Idaho Power includes in customer electric bills to keep customers informed about topics such as affordable, reliable and clean energy, the company's efforts to protect the environment including wildfire mitigation, energy efficiency programs and customer options for doing business with Idaho Power.)
- Emails telling customers how to prepare for wildfires, the potential loss of power and potential evacuation.
- Social media
- News media (news releases, appearances on broadcast TV and radio shows, interviews, etc.)

10.2.2.2 During Wildfire Season

Idaho Power monitors weather forecasts and fuel conditions near Idaho Power equipment and communicates to customers and the public plans for reducing wildfire risk and protecting company equipment should a wildfire occur. Various communication mediums include:

- Idaho Power's website (The company's website provides wildfire safety information, such as videos, safety tips, and the latest version of the WMP.)
- Emails (If the likelihood of wildfire is elevated, these messages would take on greater urgency, though they would contain much of the same information as pre-wildfire season messages.)
- Social media (This is the quickest way to spread word of safety concerns, potential loss of power, evacuations, etc. Communication likely would contain up-to-date information from organizations like National Interagency Fire Center, USFS, and/or BLM.)
- News media
- Phone calls and text messages to customers

10.2.2.3 After Wildfire Season

Idaho Power will communicate to customers and the public the scope of wildfires that approached Idaho Power equipment, how Idaho Power communicated safety messages to customers and the public, measures Idaho Power took to keep power lines safe, and the status of any ongoing recovery measures, such as replacement of poles, lines, and other equipment. Various communications mediums include:

- *Connections*
- eNews

- Social media
- News media
- Idaho Power website

10.3. Idaho Power Internal Communications—Employees

Idaho Power communicates with its employees in a variety of ways:

- *News Scans* for all employees
- Emails
- Leader communications
- GIS-based visual communication of risk zones and affected overhead lines
- Online training for employees influenced by the WMP
- In-person, hands-on, training for certain field employees

11. PERFORMANCE MONITORING AND METRICS

11.1. Wildfire Mitigation Plan Compliance

The Chief Operating Officer (COO) is the designated oversight officer for the Idaho Power WMP. The Vice President of Planning, Engineering and Construction (VP) is responsible for compliance monitoring, necessary training, and annual review of this WMP.

11.2. Internal Audit

Idaho Power's internal audit department, Audit Services, will periodically conduct an independent and objective evaluation of the WMP to assess compliance with policies and procedures and evaluate achievement of the Plan's objectives. Idaho Power's Compliance department will also periodically review Idaho Power's compliance with federal reliability standards regarding vegetation management practices.

11.3. Annual Review

Idaho Power will conduct an annual review of its WMP and incorporate necessary updates prior to wildfire season.

11.4. Wildfire Risk Map

The Wildfire Risk Map was established in 2020 by an external consultant. As noted in Section 2 of this report, the 2020 analysis was based, in part, on population census data from 2010. Considering the national census was conducted in 2020, Idaho Power is working with its external consultant to update the Wildfire Risk Map, which the company will continue to update periodically based on similar factors and other changing circumstances.

11.5. Situational Awareness

Idaho Power will share its FPI regularly and broadly with Idaho Power personnel and contractors during wildfire season to ensure condition-specific operating requirements are met.

11.6. Wildfire Mitigation—Field Personnel Practices

Idaho Power crews and certain personnel are required to follow the *Field Personnel Practices* when working on lines in the RRZs and YRZs during a red FPI. Specific requirements are found in Idaho Power's *Field Personnel Practices* which is consulted by such crews working in these areas.

11.7. Wildfire Mitigation—Operations

Each year in preparation for the fire season, Idaho Power reviews and establishes:

- Temporary operating procedures for transmission lines during the fire season
- An operational strategy for distribution lines during time periods of elevated wildfire risk during the fire season
- Use of PSPS as a tool of last resort to prevent Idaho Power T&D facilities from becoming a wildfire ignition source or contributing to the spread of wildfires

11.8. Wildfire Mitigation—T&D Programs

This section lists metrics used to evaluate Idaho Power's asset management and vegetation management programs. Work is identified and prioritized each year and approved by executive management. Idaho Power's goal is to complete 100% of the work plan each year; however, emergencies or other unplanned events can occur and disrupt the annual work plan. All work is completed in accordance with safety and applicable requirements and industry standards.

Table ~~6~~7
T&D programs metrics

Transmission	
Transmission Asset Management Programs	**Description**
Aerial Visual Inspection Program	Perform annual patrols and document identified defects according to priority. Complete repairs according to priority definition.
Ground Visual Inspection Program	Perform annual patrols and document identified defects according to priority. Complete repairs according to priority definition.
Detailed Visual (High Resolution Photography) Inspection Program	Perform 10-year cycle patrols and document identified defects according to priority. Complete repairs according to priority definition.
Wood Pole Inspection and Treatment Program	Perform 10-year cycle patrols and document identified defects according to priority. Complete repairs according to priority definition.
Cathodic Protection and Inspection Program	Perform 10-year structure-to-soil potential testing on select towers with direct-buried anodes. Perform 10-year rectifier and ground-bed testing on ICCP systems. Annually inspect and record DC voltage and current readings of rectifiers. Complete repairs and adjustments.
Wood Pole Wildfire Protection Program	Inspect and install wraps on selected poles.
Distribution	
Distribution Asset Management Programs	**Description**
Wood Pole Inspection and Treatment Program	Perform 10-year cycle patrols and document identified defects according to priority. Complete repairs according to priority definition.
Line Equipment Inspection Program	Complete annual inspections and data analysis and mitigate defects
Ground Detailed Inspection Program	Perform annual patrols and document identified defects according to priority. Complete repairs according to priority definition.
Distribution Infrastructure Hardening Program	Complete annual work plan

Replace "small conductor" with new 4acsr or larger conductor

Replace or repair damaged conductor

Re-tension loose conductors including "flying taps" and slack spans as required

Replace wood-stubbed poles with new wood poles

Replace white and yellow square tagged poles with new wood poles

Replace wood pins/wood crossarm with new steel pins/fiberglass crossarms

Replace steel insulator brackets with new steel pins/fiberglass crossarms

Replace wedge deadends on primary taps with new polymer deadend strain insulators

Replace aluminum deadend strain insulators with new polymer deadend strain insulators

Replace porcelain switches with new polymer switches
- Replace hot line clamps
- Replace aluminum stirrups
- Install avian cover
- Relocate arresters

Install bird/animal guarding

Update capacitor banks
- Replace swelling capacitors
- Replace oil-filled switches with vacuum style
- Replace porcelain switches with polymer switches

Replace certain expulsion arrestors

Install disconnect switches on CSP transformers
- Install avian cover

Update down guys
- Replace/Install down-guy insulators with fiberglass insulators
- Tighten down guys

Tighten hardware

Correct 3rd party pole attachment violations (report to Joint Use Department)

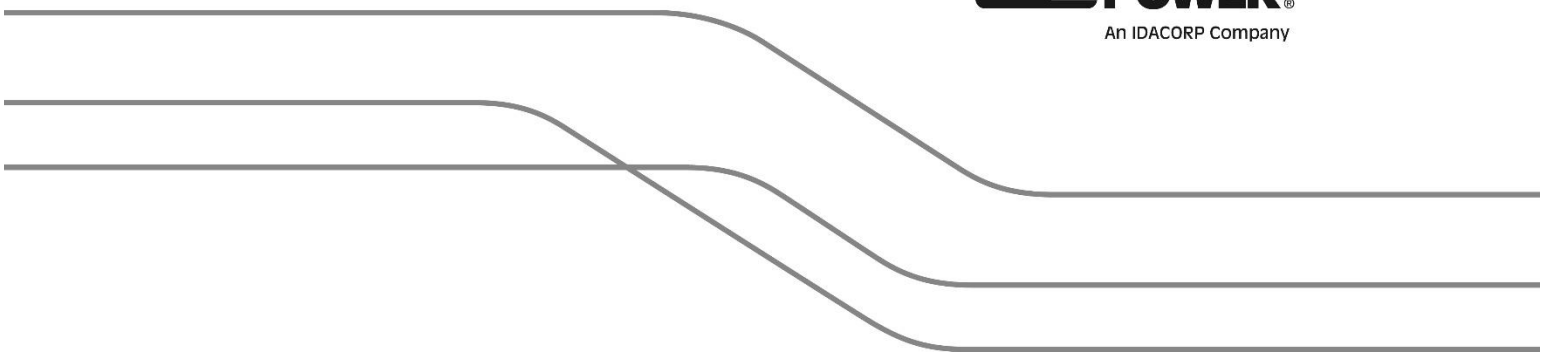
Replace certain expulsion fuses

Vegetation Management

Transmission	Description
Pre-Fire Season Inspection and Mitigation	Perform annual pre-fire season inspections and mitigate noted "hot spots"
Line Clearing Cycles: Strive to maintain 3-year cycle for valley areas & 6-year cycle for mountain areas	Complete annual cycle pruning work plan
Tree Removals - Hazard Trees	Remove targeted hazard trees
Targeted Pole Clearing	Complete annually targeted structures
100% QA/QC Audits in RRZs and YRZs	Complete annually QA/QC audits

Distribution	Description
Pre-Fire Season Inspection and Mitigation	Perform annual pre-fire season inspections in RRZs and YRZs and mitigate noted "hot spots"
Line Clearing Cycle: Strive to maintain 3-year cycle	Complete annual cycle pruning work plan
Mid-Cycle Pruning in RRZs and YRZs	Complete annual mid-cycle pruning work plan in RRZs and YRZs
Tree Removals - Cycle Busters/Hazard Trees	Complete annual cycle pruning work plan
Targeted Pole Clearing	Complete annually targeted structures
100% QA/QC Audits in RRZs and YRZs	Complete annually QA/QC audits

Appendix A
The Wildland Fire Preparedness and Prevention Plan.



Wildland Fire Preparedness and Prevention Plan

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1. Plan Overview

A. Intent of Plan

The purpose of this Wildland Fire Preparedness and Prevention Plan (Plan) is to provide guidance to Idaho Power Company (IPC) employees to help prevent the accidental ignition and spread of wildland fires (wildfires) due to employee work activities in locations and under conditions where wildfire risk is heightened. It is expected that all IPC employees be aware of the provisions of this Plan, operate in accordance with the Plan and conduct themselves in a fire-safe manner.

B. Scope of Plan

The scope of this Plan includes tools, equipment, and field behaviors IPC employees incorporate when working in locations and under conditions where wildfire ignition is heightened.

Operations of Transmission and Distribution (T&D) lines facilities, vegetation management, and T&D lines programs that mitigate wildfire risks are not included in this Plan; they are referenced in the separate Wildfire Mitigation Plan.

2. Situational Overview and Applicability

A. Wildfire Season

The provisions of this Plan shall be applicable during wildfire season. Within IPC's service area, wildfire season is defined as the closed fire season of May 10 through October 20 of each year, as established by Idaho State Law, Title 38-115.

Should any local, state, or federal government land management agency (i.e., the BLM, U.S. Forest Service, Oregon Department of Forestry, Idaho Department of Lands, etc.) issue any wildfire related order that extends wildfire season beyond that specified above, then compliance with that agency's order shall govern.

Many variables—such as drought conditions, weather, and fuel moisture—can cause the wildfire season to begin and/or end earlier or later. In summary, flexibility, judgment, attention to current and forecasted field conditions, and attention to governmental agency issued wildfire orders are necessary such that operational practices can be adjusted accordingly.

B. Wildfire Risk Zones

IPC's Wildfire Mitigation Plan includes a Wildfire Risk Map of IPC's service area. This Wildfire Risk Map may be accessed at the Idaho Power SharePoint site. All lands in the vicinity of IPC facilities are mapped as Red Zone, Yellow Zone or areas of minimal wildfire risk (i.e., not within a Red or Yellow Zone). Red and Yellow Zones are designated as Wildfire Risk Zones (WRZ). The provisions of this Plan shall apply to work activities taking place during wildfire season in these WRZs.

Should any local, state, or federal government land management agency (i.e., BLM, U.S. Forest Service, Oregon Department of Forestry, Idaho Department of Lands, etc.) issue any wildfire related order, then compliance with that agency's order shall govern if their order is more restrictive than that set forth in this Plan.

C. Fire Potential Index

Idaho Power's Atmospheric Science department has developed an ~~Fire Potential Index (~~FPI~~)~~ rating system that forecasts wildfire potential across IPC's service territory. The FPI considers many current and forecasted elements such as meteorological (winds-surface and aloft, temperatures, relative humidity, precipitation, etc.) and fuel state (both live and dead). The FPI is designed and calibrated for IPC's service area; specifically, those areas in proximity to IPC transmission, distribution, and generation facilities.

The FPI consists of a numerical score ranging from 1 (very green, wet fuels with low to no wind and high humidity) to 16 (very brown and dry, both live and dead dry fuels with low humidity and high temperatures). The FPI scores are grouped into the following 3 index levels:

- **Green:** FPI score of 1 through 11
- **Yellow:** FPI score of 12 through 14
- **Red:** FPI score of 15 through 16

During wildfire season, Idaho Power will determine a daily FPI as described in Section 5 of the WMP. This weather forecast and FPI dashboard is contained within IPC geographic information system (GIS) viewers available to all IPC employees.

D. Decision Making for Field Work Activities

Employees working in the field shall be cognizant of current and forecasted weather and field conditions. Awareness of these conditions, and exercising appropriate judgment, is essential when considering whether to undertake work activities when combinations of high temperatures, low humidity, dry fuels, and/or wind are present or forecasted to be present.

The following process steps shall apply to employees and crews contemplating field work during wildfire season:

Planned or Scheduled Work Activities:

1. Fire Potential Indices:

    a) Employees working in the field—NOT working on transmission or primary distribution lines should:

i. Be aware of the current and forecasted weather and the FPI level for the area in which the work will be performed, through the FPI dashboard.

ii. Once the FPI level for the work zone is identified, proceed with work but consider utilizing Prevention—Practices of Field Personnel (see Section ~~4~~ 6 of this Plan).

b) Employees working in the field—working on transmission or primary distribution lines should:

i. Be aware of the current and forecasted weather and the FPI level for the area in which the work will be performed.

ii. Once the FPI level for the work zone is identified, proceed as follows for each FPI level:

1. **Green FPI in All Zones:** Proceed with the work. Consider utilizing Prevention—Practices of Field Personnel (see section 4 of this Plan)

2. **Yellow FPI in All Zones:** Proceed with the work. Consider utilizing Prevention—Practices of Field Personnel (see section 4 of this plan)

3. Red FPI

a) **In Normal Zone:** Proceed with the work. Consider utilizing Prevention—Practices of Field Personnel (see section ~~4~~ 6 of this plan)

b) **In Medium Zone:** Proceed with the work. However, it is a requirement to follow the Prevention—Practices of Field Personnel (see Section ~~4~~ 6 of this plan)

c) **In High Zone: STOP.** No planned work activities shall take place unless approved by operations level manager. Work consideration will be restoration of electric service or work deemed critical to providing safe, reliable electric service. If work is approved to proceed it is a requirement to follow the Prevention—Practices of Field Personnel (see Section ~~4~~ 6 of this plan).

Fire Potential Index (FPI)	High	15 to 16 (Red)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel REQUIRED	STOP/NO WORK
	Elevated	12 to 14 (Yellow)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)
	Normal	1 to 11 (Green)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)
			None	Yellow (Tier 2)	Red (Tier 3)

2. Land Management Agency Restrictions: Follow the requirements and restrictions of any wildfire restrictions related order that is issued by local, state, or federal land management agencies.

    a) Immediately upon receiving knowledge of an order, The Environmental Services department will notify, via email, operations leadership within Power Supply, Customer Operations and Business Development, and T&D Engineering and Construction of wildfire related requirements and restrictions orders that are issued by local, state, or federal land management agencies.

Emergency Response and Outage Restoration Work Activities:

Follow the same steps as identified above for planned work activities. However, it is recognized that the nature of emergency response and outage restoration situations will often require exceptions to the above. In these situations, leadership should be consulted, and appropriate judgment should be used given the nature of the emergency or outage at hand.

3. Preparedness—Tools and Equipment

A. Required Personal Protective Equipment

Standard IPC Personal Protective Equipment (PPE) shall be worn in accordance with the IPC Safety Standard.

When entering a designated fire area being managed by the BLM or the U.S. Forest Service, additional PPE requirements may be in force by those agencies. These typically include:

- Hardhat with chinstrap
- Long sleeve flame-resistant (FR) shirt and FR pants
- Leather gloves
- Exterior leather work boots, 8" high, lace-type with Vibram type soles
- Fire shelter

B. Required Tools and Equipment

Employees NOT working on transmission or distribution lines: Standard tools and equipment in accordance with the IPC Safety Standard and Fleet Services.

Employees working on transmission or distribution lines: IPC and the State of Idaho BLM entered into a March 2019 Master Agreement that governs various IPC and BLM interactions, including wildfire prevention related provisions. In addition to State of Idaho BLM lands, IPC has elected to apply these requirements to all work activities taking place on all WRZ in Idaho, Nevada, Montana, and Oregon. These requirements include:

- During the wildfire season (May 10–October 20) or during any other wildfire season ordered by a local, state, or federal jurisdiction, IPC, including those working on IPC's behalf, will equip at least 1 on-site vehicle with firefighting equipment, including, but not limited to:

    a) Fire suppression hand tools (i.e. shovels, rakes, Pulaski's, etc.),
    b) a 16-20-pound fire extinguisher,
    c) a supply of water, sufficient for initial attack, with a mechanism to effectively spray the water (i.e. backpack pumps, water sprayer, etc.). This requirement to carry water is dependent on the vehicle type and weight restrictions. For example, a mini-excavator would not be required to carry water since there is no safe way to do so, or a loaded bucket truck may not be required to carry water because of weight limitations.

- At a minimum, equip each truck that will be driven in the WRZs during wildfire season with at least:
    a) One round, pointed shovel at least 8-inches wide, with a handle at least 26 inches long
    b) One axe or Pulaski with a 26-inch handle or longer
    c) A combination of shovels, axes, or Pulaskis available to each person on the crew

d) One fire extinguisher rated no less than 2A:10BV (5 pounds)
e) 30-200 gallons of water in a fire pumper and 5-gallon back packs

IPC personnel will be trained to use the above tools and equipment to aid in extinguishing a fire ignition before it gets out of control and take action that a prudent person would take to control the fire ignition while still accounting for their own personal safety.

C. Land Management Agency Restrictions and Waivers

The Environmental Services department will notify operations leadership within Power Supply, Customer Operations and Business Development, and T&D Engineering and Construction of any wildfire related requirements and restrictions orders that are issued by local, state, or federal land management agencies. Typical orders issued each fire season include:

- BLM. During BLM's Stage II Fire Restrictions, IPC's Environmental Services department will obtain an appropriate waiver. Field personnel shall take appropriate precautions when conducting work activities that involve an internal combustion engine, involve generating a flame, involve driving over or parking on dry grass, involve the possibility of dropping a line to the ground, or involve explosives. Precautions include a Fire Prevention Watch Person who will remain in the area for 1 hour following the cessation of that activity. Also, IPC personnel will not smoke unless within an enclosed vehicle, building, or designated recreation site or while stopped in an area at least 3 feet in diameter that is barren or cleared of all flammable materials. All smoking materials will be removed from work sites. No smoking materials are to be discarded.
- State of Oregon Department of Forestry (ODF). Prior to each summer fire season, the ODF issues a "Fire Season Requirements" document that specifies required tools, equipment, and work practices. In addition to State of Oregon lands, IPC has elected to apply these requirements to all work activities taking place on all WRZ, BLM lands, and Forest Service lands within the State of Oregon. Go to https://www.oregon.gov/ODF/Fire/Pages/Restrictions.aspx for ODF's Fire Season Requirements order.

- Other sites for reference that contain fire restriction orders include:
  - Oregon— Blue Mountain Interagency Fire Center at http://bmidc.org/index.shtml
  - Nevada—Fire Information at https://www.nevadafireinfo.org/restrictions-and-closures
  - Montana—https://firerestrictions.us/mt/

4. Prevention—Practices of Field Personnel

A. General Employee Practices

The below listing includes, but is not limited to, practices and behaviors employees shall incorporate depending on the FPI and level of WRZs during fire season.

1. Daily tailboards must include discussion around fire mitigation planning. Discussion topics include, but are not limited to:
    a. Items 2 through 7 below
    b. Water suppression
    c. Hand tools
    d. Welding blankets
    e. Mowing high brush areas (weed wacker)
    f. Watering down the worksite before setting up equipment

2. Weather conditions and terrain to be worked shall be considered and evaluated. Items to be considered include, but are not limited to:
    a. Identify the FPI for the area being worked (see Section ~~3.C~~3.2.2)
    b. Monitor weather forecasts and wind and humidity conditions
    c. Identify surroundings. i.e., wildland-urban interface, BLM lands, Forest Service lands, proximity to any homes and structures, etc.
    d. Identify local fire departments and locations
    e. Evaluate the terrain you are working in (steep or flat)
    f. Consider whether the work will occur during the day or at night

3. Work procedures and tools that have potential to cause a spark or flash shall be considered and evaluated. Items to be considered include, but are not limited to:
    a. Performing energized work
    b. Grinding or welding
    c. Trees contacting electrical conductors
    d. Hot saws
    e. Chainsaws
    f. Weed wackers
    g. Sawzalls

4. Monitoring the worksite throughout the project.
    It is imperative that all crews and equipment working in the WRZs areas are continuously monitoring and thoroughly inspecting the worksite throughout the project. This includes prior to leaving the work area for the night or before moving on to the next structure.

5. Employee cooking stoves.
    When working in remote locations, often employees bring food that needs to be cooked. Open flames should not be allowed. Cook stoves may be permitted by leadership but special precautions must be followed to use:
    a. The stove or grill must be in good repair and of sturdy construction
    b. Stoves must be kept clean, grease build up is not allowed
    c. Fueling of the stove must follow the fueling procedures when liquid fuels are used
    d. Cooking must be in areas free of combustible materials

6. Smoking on the job site.
   Carelessly discarded smoking materials can result in wildfire ignition. The following practices shall be followed:
   a. Do not discard any tobacco products from a moving vehicle.
   b. Smoking while standing in or walking through forests or other outdoor areas when IPC's FPI rating is above a Green level is prohibited.
   c. All employees must smoke **only in designated areas** and smoking materials must be disposed of in half filled water bottles or coffee containers half filled with sand. Smoking materials shall not be discarded on any site.

7. Post job site inspection.
   Final inspection or post-checking the work site for any ignition hazards that may remain is essential to the proper completion of the work and true mitigation of the hazards. Post-checking the work will help ensure the hazards were mitigated and provide a final chance to see if any new hazards or hot spots exist before leaving the work site.

B. Behaviors Relating to Vehicles and Combustion Engine Power Tools

It is important to consider work procedures, equipment conditions, employee actions, potential causes, and other sources that could lead to fire ignition. Some work practices may be performed on roadways that have little to no risk of fire ignition. Leadership should consider scheduling off-road equipment use during times of green fire risk. Employees should also consider alternative tools, work methods or enhanced suppression tools to reduce the risk or spread of fire.

1. Additional heat may bring vegetative materials to an easier point of ignition.
   This includes, but is not limited to, the following vehicles:
   a. Pickups, crew cabs, line-beds, buckets trucks (large and small), backhoes, excavators and rope trucks, and any other motorized equipment.

2. Vehicle Procedures:
   a. Inspect all engine exhaust, spark arresters and electrical systems of vehicles used off road, daily for debris, holes or exposed hot components and to ensure that heat shields and protective components are in place.
   b. Conduct inspections of the vehicle undercarriage before entering or exiting the project area to clear vegetation that may have accumulated near the vehicle's exhaust system.
   c. Vehicles shall be parked overnight in areas free from flammable vegetation at a minimum distance of 10 feet.
   d. Vehicles and equipment will not be stationary or in use in areas where grass, weeds or other flammable vegetation will be in contact with the exhaust system.
   e. If there is no other workable option for the location that doesn't include weeds, grass or other flammable vegetation, the vegetation and debris will need to be removed.

f. Consider using a fire-resistant material such as a welding blanket to cover flammable material to act as a heat shield; fire blankets may be a suitable option to avoid removal of vegetation.

3. Hot brakes on vehicles and equipment:
    a. Park vehicles in areas free of combustible materials.
    b. Hot brake emergency parking, during times of yellow or red FPI shall be cleared of combustible materials for a distance of at least 10 feet from the heat source.

4. Fueling procedures:
    a. Tools or equipment should NOT be fueled while running.
    b. Cool down period must be given to allow equipment time to no longer be considered a fire risk.
    c. Allow for a ten-foot radius from all ignition sources.
    d. Any combustible debris should be cleared from the immediate area.
    e. Never smoke while fueling.
    f. Designate fueling areas for all gas-powered tools.

5. Combustion engine power tools:
    Poorly maintained or missing spark arrester screens may allow sparks to escape and cause ignition of vegetation. Ensure proper spark arrester screens are in place for the following tools:
    a. Generators
    b. Pony motors
    c. Pumps
    d. Chain saws
    e. Hot saws
    f. Weed eaters
    g. Brush hog

    Inspect spark arresters daily; clean or replace when clogged, damaged or missing or remove from service until repaired.

5. Reporting

A. Fire Ignition

All fire ignitions shall be immediately reported to regional or system dispatch. Dispatch will notify local fire authorities. All work shall immediately stop and necessary steps taken to extinguish the fire with available tools, water, and equipment. If the fire gets too large to safely contain or extinguish, ensure all employees are accounted for and get to a safe location.

B. Fire Reporting

When reporting a fire ignition to regional or system dispatch provide the following information:

1. Your name
2. Location-reference points including an address, road or street name, cross streets, mountain range, GPS coordinates, as applicable
3. Fire information
4. Size and behavior of the fire
5. Weather conditions

6. Training

Each employee who performs work in wildland fire designated zones shall be trained on the content of this document and be required to complete annual refresher courses through the Workday system. Employees are required to complete fire extinguisher and fire shelter training annually as part of the lineman safety compliance. Documentation of all training shall be retained in Workday.

7. Roles and Responsibilities

Employee	1. Be familiar with the requirements specified in this Plan and operate in accordance with this Plan. 2. Be aware of daily weather forecast and FPI level. 3. Be aware of whether field work will be performed in a WMZ.
Crew Foreman and Front-Line Leaders	1. Establish expectations to direct report employees they are to be familiar with, and follow, Plan requirements. 2. Ensure the crew or team conducts field operations in accordance with this Plan. 3. Be aware of daily weather forecast and FPI level (by viewing the FPI dashboard or by calling into dispatch or a leader): a) Ensure employees are aware of the FPI level. b) Ensure work practices comply with this Wildland Fire Preparedness and Prevention Plan when the FPI is “Red” and the WMZ is Yellow. c) Ensure no work takes place when FPI is “Red” and the WMZ is Red. Any exceptions to be discussed with manager. 4. Ensure annual training of employees is completed prior to wildfire season. 5. Ensure required tools and equipment are in place prior to wildfire season.
Manager (Regional Operations Manager, Area Manager, T&D Construction Manager)	1. Establish expectations to Crew Foremen and Front-Line Leaders they are to operate in accordance with Plan requirements. 2. Support Crew Foremen and Front-Line Leaders in scheduling training and making required tools and equipment available. 3. View daily weather forecast and FPI dashboard: a) Authorize any exceptions to working when FPI is “Red” and the WRZ is Red. b) Ensure specified audits are timely completed.
Meteorology Department	1. Provide daily weather forecast and update the FPI dashboard contained within the IPC Enviro Viewer.
Environmental Services Department	1. Monitor local, state, and federal land management agencies for any wildfire restriction orders that are issued. 2. Communicate content of any orders issues to Power Supply, COBD, and PEC operations leadership.
Operations Procurement Department	1. Ensure contractors have a copy of this Plan and that contractual requirements are in place to ensure adherence to the Plan.
Vice-President of Planning, Engineering and Construction (VP of PEC)	1. Ensure annual review/update of this Plan is conducted following the completion of each wildfire season.

8. Audit

Prior to the start of wildfire season (May 10), all vehicles will be audited by leadership to ensure that those working in WRZs are properly equipped with firefighting equipment. The following checklist must be completed, dated, and signed by a member of leadership (front-line supervisor or above) and kept with the crew or individual until fire season has ended (Oct 20). A copy of each audit checklist shall be sent to the respective manager and senior manager.

Wildland Fire Preparedness Audit Checklist:

Inspector: _____

Signature: _____

Date: _____

Crew: _____

Crew:

At least 1 vehicle will be equipped with the following:

- Fire suppression hand tools (shovels, Pulaski, axes, etc.) for each member of the crew
- A 16–20-pound fire extinguisher (2-10-pound fire extinguishers)
- A supply of water, sufficient for initial attack, with an effective spraying mechanism (i.e., backpack pumps, water sprayer, etc.)
- 30–75-gallon mechanical fire pumper

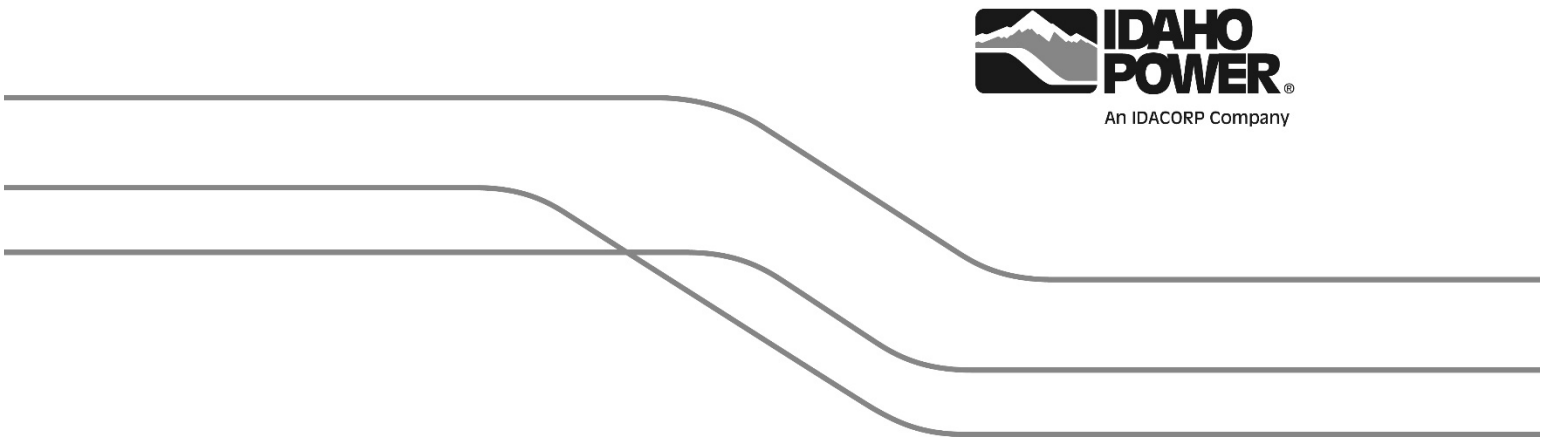
Individual Truck:

- One round, pointed shovel at least 8-inches wide, with a handle at least 26 inches long
- One axe or Pulaski with a 26-inch handle or longer
- A combination of shovels, axes, or Pulaskis to each person on the crew
- One fire extinguisher rated no less than 2A:10BV (5 pounds)
- 30-200 gallons of water in a fire pumper and 5-gallon back packs

Personal protective equipment (PPE) IPC and BLM standards: Each employee will be required to have the following PPE:

- Hard hat with a chin strap
- Safety glasses
- Hearing protection
- Long sleeve FR shirt FR pants
- Leather gloves
- Exterior leather work boots 8″ high lace type with Vibram type soles
- Fire shelter

Appendix B
The Public Safety Power Shutoff (PSPS) Plan.



Idaho Power Company's Wildfire Public Safety Power Shutoff Plan

December 2021

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1. INTRODUCTION

Wildfires in the Pacific west have increased in their intensity in recent years. In an effort to keep Idaho Power's customers and the communities it serves safe and continue improving the resiliency of Idaho Power's transmission and distribution facilities, Idaho Power implemented a Wildfire Mitigation Plan in 2021, focused on situational awareness, field personnel safety practices and operational wildfire mitigation strategies to prevent the accidental ignition of wildfires. As part of its operational mitigation practices, Idaho Power has developed this Public Safety Power Shutoff Plan (PSPS Plan or Plan) to proactively de-energize electrical facilities in identified areas of extreme wildfire risk to reduce the potential of those electrical facilities becoming a wildfire ignition source or contributing to the spread of wildfires. This Plan identifies the relevant considerations, process flow and implementation protocol before, during and after a PSPS event. The Plan will be active during wildfire season and reviewed annually and updated as necessary prior to the start of the next wildfire season.

This Plan identifies PSPS implementation considerations and responsibilities for different Idaho Power departments before, during and after PSPS events. Table 2 describes the different phases Idaho Power will use during PSPS events and Figure 7 depicts the communication audiences and timeline Idaho Power will ideally follow during an event. Finally, this Plan describes activities Idaho Power will undertake to prepare and improve the Plan over time, including interactions with local emergency agencies, and briefly describes the financial administration of the Plan.

2. LIST OF ACRONYMS

AAR—After Action Review

BLM—Bureau of Land Management

COO—Chief Operations Officer

ECMWF—European Centre for Medium-Range Forecasts

EMT—Emergency Management Team

ERC—Energy Release Component

F100—100-Hour Fuel Moisture

FPI—Wildfire Mitigation Plan Fire Potential Index

FWW—Fire Weather Watch

GBCC—Great Basin Coordination Center

GIS—Geographic Information System

IPUC—Idaho Public Utility Commission

IRWIN—Integrated Reporting of Wildland-Fire Information

LSO—Load Serving Operations

NIFC—National Interagency Fire Center

NOAA—National Oceanic and Atmospheric Administration

NWS—National Weather Service

OPUC—Oregon Public Utility Commission

PEC—Planning, Engineering and Construction

PSPS—Public Safety Power Shutoff

RFW—National Weather Service issued Red Flag Warning

SGM—Smart Grid Meter

SME—Subject Matter Expert

T&D—Transmission & Distribution

TDER—Transmission & Distribution Engineering and Reliability

UKMET—United Kingdom Meteorological Office

WMP—Wildfire Mitigation Plan

WRF—Weather Research and Forecasting

3. DEFINITIONS

(1) Critical Facilities—Refers to the facilities identified by Idaho Power that, because of their function or importance, have the potential to threaten life safety or disrupt essential socioeconomic activities if their services are interrupted.

(2) ESF-12—Refers to Emergency Support Function-12 and is the Idaho Power Company liaison from the State Office of Emergency Management for energy utilities issues during an emergency for both Idaho and Oregon.[1]

(3) Exercise—Refers to planned activities and assessments that ensure continuity of operations, provide and direct resources and capabilities and gather lessons-learned to develop core capabilities needed to respond to incidents.

(4) Community—Refers to a group of people that share goals, values and institutions.[2]

(5) Local Emergency Manager—Refers to a jurisdiction's role that oversees the day-to-day emergency management programs and activities.[3]

(6) Public Safety Partners—As defined by Idaho Power refers to ESF-12, Local Emergency Management and Idaho's and Oregon's Department of Human Services (or equivalent).

(7) Public Safety Power Shutoff or PSPS—A proactive de-energization of a portion of an Electric Utility's electrical network, based on the forecasting of and measurement of extreme wildfire weather conditions.

[1] Federal Emergency Management Institute (FEMA) National Response Framework (NRF) Emergency Support Functions (ESF) National Response Framework | FEMA.gov.

[2] FEMA definition under "Communities" (pg. 26) National Response Framework (fema.gov).

[3] FEMA definition under "Local Government" (pg. 29) National Response Framework (fema.gov).

4. PUBLIC SAFETY POWER SHUTOFF OVERVIEW

In recent years, the western United States (U.S.) has experienced an increase in the intensity of wildland fires (wildfires). A variety of factors have contributed in varying degrees to this trend, including climate change, increased human encroachment in wildland areas, historical land management practices and changes in wildland and forest health. Recent events in western states have increased awareness of electric utilities' role in wildfire prevention and mitigation.

In an effort to keep Idaho Power's customers and the communities it serves safe and continue improving the resiliency of Idaho Power's transmission and distribution (T&D) facilities, Idaho Power implemented a Wildfire Mitigation Plan (WMP) in 2021 focused on situational awareness, field personnel safety practices and operational wildfire mitigation strategies. As part of its operational mitigation practices, Idaho Power developed this Wildfire Public Safety Power Shutoff Plan (PSPS Plan or Plan) to proactively de-energize electrical facilities in identified areas of extreme wildfire risk to reduce the potential of those electrical facilities becoming a wildfire ignition source or contributing to the spread of wildfires. Based on the inherently disruptive nature of power outages, Public Safety Power Shutoff (PSPS) events must be carefully evaluated under this Plan to balance wildfire risk with potential PSPS impacts on Idaho Power customers and the communities it serves.

The unpredictable nature of wildfire and weather patterns create significant challenges with forecasting PSPS events. Real-time evaluations and decision-making are therefore critical in making PSPS determinations and, depending on the associated wildfire risk, those determinations may result in proactive de-energization in areas not originally anticipated.

5. SCOPE

This PSPS Plan identifies the relevant considerations, process flow and implementation protocol before, during and after a PSPS event. The Plan will be active during wildfire season and reviewed and updated annually as necessary prior to the start of the next wildfire season. Wildfire season (also known as "closed season") is defined by Idaho Code § 38-115 as extending from May 10 through October 20 each year, or as otherwise extended by the Director of the Idaho Bureau of Land Management (BLM). Oregon's wildfire season generally aligns with Idaho's wildfire season and is designated by the State Forester each year pursuant to Oregon Revised Statute 477.505.

6. KEY TENETS

- Advancing the safety of Idaho Power employees, customers and the general public
- Collaborating with key external stakeholders (agencies, counties, local governments, public safety partners, first responders)

- Minimizing both potential wildfire risk and power outage impacts on communities and customers
- Maintaining reliable electric service

7. WILDFIRE ZONES

Idaho Power's WMP identifies areas of heightened wildfire risk within its service territory reflected by the following risk zones:

- Tier 2 Yellow Risk Zones are deemed increased risk areas.
- Tier 3 Red Risk Zones are deemed higher risk areas.

In its WMP, Idaho Power identifies operational practices specific to these zones of heightened wildfire risk for purposes of (1) reducing potential wildfire risk associated with Idaho Power's T&D facilities and field operations, and (2) improving the resiliency of the Idaho Power's T&D system impacted by wildfire. This PSPS Plan sets forth Idaho Power's PSPS evaluation criteria and processes, including operational and communication protocol, for implementing a PSPS.

8. PSPS IMPLEMENTATION CONSIDERATIONS

Idaho Power will initiate a PSPS if the company determines a combination of critical conditions indicate the T&D system at certain locations is at an extreme risk of being an ignition source and wildfire conditions are severe enough for the rapid growth and spread of wildfire. Idaho Power will evaluate as a whole (not relying on one single factor but a combination of all factors), without limitation, the criteria set forth in 9.1–9.17 below.

8.1. Fire Potential Index

In addition to the Risk Zone designations in its WMP, Idaho Power developed a Fire Potential Index (FPI) to forecast wildfire potential across Idaho Power's service area. The FPI converts data on weather; prevalence of fuel (shrubs, trees, grasses); and topography into a numerical FPI score to forecast the short-term wildfire threat in geographical areas throughout Idaho Power's service area. FPI scores range from 1 (very green, wet fuels with low to no wind and high humidity) to 16 (very brown and dry, both live and dead dry fuels with low humidity and high temperatures). FPI scores are grouped into the following 3 index levels:

1) Green—lower fire potential: FPI score of 1 through 11
2) Yellow—elevated fire potential: FPI score of 12 through 14
3) Red—highest fire potential: FPI score of 15 and 16

The FPI supports operational decision-making to reduce potential wildfire risk. During wildfire season, Idaho Power will determine a daily FPI as described in Section 5.2 of the WMP. The FPI

forecast is broken into four 6-hour time periods throughout each seven-day forecast. FPI information is provided via email, certain Geographic Information System (GIS) viewers and an FPI dashboard accessible to both Idaho Power employees and contractors from Idaho Power's website. The WMP details operational mitigation efforts in Red Risk Zones when the FPI score in that Red Risk Zone is also Red, including stopping planned work and changing distribution protection operations. A Red FPI score will be a consideration in Idaho Power's determination of whether to initiate a PSPS.

8.2. National Weather Service Red Flag Warning

A Red Flag Warning (RFW) is a forecast warning issued by the National Weather Service (NWS) to inform the public, firefighters and land management agencies that conditions are ideal for wildland fire combustion and rapid spread. RFWs are often preceded by a Fire Weather Watch (FWW), which indicates weather conditions that could occur in the next 12–72 hours. The NWS has developed different zones across the nation for providing weather alerts (such as RFWs) to more discrete areas. These zones are shown on this NWS webpage: Fire Weather. RFWs for Idaho Power's service territory include Idaho Zones (IDZ) 401, 402, 403, 413, 420 and 422; and Oregon Zones (OR) 636, 637, 642, 634, 644, 645 and 646; and are monitored and are factored into Idaho Power's determination of whether to initiate a PSPS. Boise and Pocatello NWS offices will not issue RFWs if fuels are moist and fire risk is low. The following thresholds are used by most NWS offices:

- Daytime:
    - Relative humidity of 25% or less
    - Sustained winds greater than or equal to 10 miles per hour (mph) with gusts greater than or equal to 20 mph over a four-hour time period
- Nighttime:
    - Relative humidity of 35% or less
    - Sustained winds greater than or equal to 15 mph with gusts greater than or equal to 25 mph over a three-hour time period
- Lightning:
    - The NWS rarely issues RFWs for lightning in the western United States. For this to occur, the Lightning Activity Level—a measure of lightning potential specifically as it relates to wildfire risk—needs to be at 3 or higher.

8.3. NWS Fire Weather Forecasts

The NWS provides detailed forecasts for the different weather zones with an emphasis on fire weather indicators (wind speed, relative humidity, lightning potential). A discussion

summarizing the weather patterns and highlighting fire threats is included in their extended forecast.

8.4. Publicly Available Weather Models

Idaho Power's Atmospheric Science department uses the following weather models to predict weather timing, duration and intensity:

- Pivotal Weather Link (pivotalweather.com/model.php): Provides numerical weather data, including a NWS blend of models, European Centre for Medium-Range Weather Forecasts (ECMWF), United Kingdom Meteorological Office weather service information and GOES-16 satellite information.

- Graphical Weather Link (graphical.weather.gov/sectors/conusFireWeek.php): A NWS website providing weather, water and climate data, forecasts and warnings for the United States for the protection of life and property. The Fire Weather page provides a daily and weekly view of multiple weather and environmental conditions influencing wildfire activity.

8.5. Idaho Power Weather Model

Idaho Power maintains its own Weather Research and Forecasting (WRF) model using high-resolution data from Idaho Power's weather stations across its service area. This model, along with publicly available weather models, helps develop weather forecasts that include timing, duration and intensity of weather systems. An Idaho regional WRF low-resolution map view is available to the public at atmo.boisestate.edu/view/.

8.6. Storm Prediction Center Fire Weather Outlooks

The Storm Prediction Center's Fire Weather Outlook provides a current, one-day-ahead and three- to eight-day forecast for wildfires over the contiguous United States. This forecast takes into account pre-existing fuel conditions combined with predicted weather conditions that result in a significant risk of wildfire ignition or spread.

8.7. Current Weather Observations

Identifying real-time wildfire weather and associated risks requires predicting conditions that could trigger a PSPS based on observing current weather conditions. Resources available for observing current weather conditions include direct, real-time data from Idaho Power's network of weather stations, available real-time wind speed information from Idaho Power's network of Smart Grid Meters (SGM), as well as Windy: Wind Map and Weather Forecast and the National Weather Service National Oceanic and Atmospheric Administration's (NOAA) Weather and Hazards Viewer.

8.8. National Significant Wildland Fire Potential Forecast Outlook

The National Significant Wildland Fire Potential Forecast Outlook provides wildland fire expectations for the current month, the following month and a seasonal look at the two months beyond that. The main objective of this tool is to provide information to fire management decisionmakers for proactive wildland fire management, reducing firefighting costs and improving firefighting efficiency.

8.9. Great Basin Coordination Center Morning Briefing

The Great Basin Coordination Center (GBCC) is the focal point for coordinating the mobilization of resources for wildland fire and other incidents throughout the Great Basin Geographic Area, which encompasses Utah, Nevada, Idaho south of the Salmon River, the western Wyoming mountains and the Arizona Strip. The GBCC hosts a morning briefing (around 10 a.m. most mornings) that provides situational awareness for Idaho Power's service area.

8.10. GBCC Current and Predicted ERC and F100

The GBCC as described above also provides day-ahead Energy Release Component (ERC), 100-Hour Fuel Moisture (F100) and other fuels conditions information that helps Idaho Power understand wildfire potential in the service area.

8.11. Agency Input

Idaho Power works with Boise NWS Fire Forecasters through daily briefings and NIFC Predictive Service Forecasters on an as-needed basis, generally regarding data clarification, to streamline the transfer of data, information and communications about wildland fire critical to Idaho Power's service area.

Idaho Power works with other agencies, including the U.S. BLM and U.S. Forest Service, as wildland fires approach and impact Idaho Power T&D facilities.

8.12. De-Energization Windspeed Considerations

Idaho Power’s service area covers 24,000 square miles across southern Idaho and eastern Oregon. The environmental factors across this area vary drastically from high desert landscape to mountainous terrain. Weather and environmental conditions also vary greatly within this area. Regional vegetation becomes “conditioned” to withstand different environmental conditions, which also influences de-energization thresholds. Idaho Power developed windspeed considerations, which it will continue to refine with additional data and weather technology based on historic wind conditions compared to system outage information.

8.13. Engineering Assessment

Idaho Power follows robust transmission and distribution maintenance and inspection practices. When a potential PSPS event is identified, Idaho Power's T&D Maintenance and Engineering department will evaluate potential impacts to current or planned maintenance activities.

8.14. Alternative Protective Measures

Considering the significant potential impact of a PSPS to customers, Idaho Power will thoroughly evaluate other potential alternatives for reducing wildfire risk prior to implementing a PSPS.

8.15. Real-time Field Observations

Idaho Power uses SGMs for various purposes on its the distribution systems, including communication (where available) to provide near real-time information and to detect wind speed with anemometers. This information is displayed on a GIS viewer and used to inform Idaho Power's evaluation and decision-making during storm events.

Idaho Power may also deploy field personnel to evaluate if a PSPS event should be initiated.

8.16. Other

Idaho Power plans to evaluate expanding existing capabilities to enhance weather forecasting and add new capabilities to detect fires.

9. RESPONSIBILITIES

Developing and implementing PSPS protocol involves various groups throughout the company. Below is a non-exhaustive list of responsibilities by department, representatives of which will work together to promote organized, consistent and safe implementation of PSPS events.

9.1. Load Serving Operations

- Develop and implement safe and reliable power shutoff protocols and procedures
- Ensure System and Regional Dispatch employees are appropriately trained to perform relevant responsibilities under this PSPS Plan, and that such employees receive timely information regarding wildfire risk and weather conditions for purposes of performing those responsibilities in the event of a PSPS
- Assist with PSPS evaluation and decision-making

- Safely restore service to PSPS areas when notified by Customer Operations it is safe to re-energize
- Provide required notifications to public safety partners to enhance public safety
- Participate in After-Action Reviews (AAR) (further discussed in Section 13 below) and ensure modifications to PSPS protocol are implemented as necessary

9.2. Atmospheric Science

- Monitor daily, weekly and long-term weather forecasts
- Monitor fuels conditions and trends
- Monitor Fire Weather Watches, Red Flag Warnings and High Wind Watches and Warnings
- Communicate with external agencies for increased situational and conditional awareness. Increase communications as conditions require
- Communicate internally to Idaho Power's Transmission & Distribution Engineering and Reliability (TDER) senior manager when extreme conditions indicate a PSPS event is likely
- Support PSPS activities such as planning, training and exercises
- Assist in PSPS information-gathering, evaluation and decision-making
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.3. TDER Senior Manager

- Oversee wildfire mitigation program and support cross-departmental collaboration
- Monitor daily, weekly and long-term weather and wildfire forecasts
- Monitor Fire Weather Watches, Red Flag Warnings and High Wind Watches and Warnings
- Develop and lead training modules for PSPS implementation
- Activate the PSPS Assessment Team if a PSPS is likely
- Communicate with Oregon and Idaho ESF-12

- Ensure PSPS activities such as operations planning, training and exercises occur annually
- Ensure a coordinated and cohesive external and internal communication and notification plan is in place and reviewed annually
- Coordinate with Atmospheric Science to continue evaluating enhancements to situational awareness capabilities
- Participate in AARs and provide input on, and monitor as necessary, modifications to PSPS protocol

9.4. Customer Operations and T&D Construction

- Develop and implement safe and reliable power shutoff protocols and procedures
- Ensure field personnel are appropriately trained to perform all relevant responsibilities under this PSPS Plan
- Assist in PSPS information-gathering, evaluation and decision-making
- Ensure crews and equipment are available to support PSPS events
- Perform field observations, line patrols and other PSPS tasks as necessary
- Perform required repairs to safely re-energize the system after a PSPS event
- Request/obtain air patrol contractors for line inspections as required
- Participate, with assistance from Corporate Communications, in Idaho Power's general external education campaign
- Develop, with assistance from Corporate Communications, a cohesive notification framework with public safety partners while consistently evaluating ways to increase communication and outreach effectiveness
- Engage with public safety partners and critical facilities before, during and after a PSPS event
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.5. Supply Chain/Stores

- Ensure preparedness for wildfire season with materials readily available for restoration purposes

- Work with Customer Operations and T&D Construction in response to a PSPS event, which could include pre-event activities such as staging materials and supplies
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.6. Fleet/Equipment Resource Pool

- Ensure employees are appropriately trained to perform all relevant responsibilities under this PSPS Plan
- Ensure readiness of employees and resource pool equipment for a PSPS event
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.7. Supply Chain Contracting

- Ensure contract resources are appropriately trained to perform all relevant responsibilities under this PSPS Plan
- Work with Customer Operations to provide contracting resources as required
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.8. Substation Operations

- Monitor substations and perform actions to support PSPS operations
- Coordinate activities with Dispatch and Customer Operations
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.9. Corporate Communications

Corporate Communications will develop and execute PSPS communications to Idaho Power customers and employees and support other business units in their communication efforts with regulators, critical facility operators, public safety partners and other stakeholders.

Corporate Communications will:

- In coordination with Customer Operations and Regulatory Affairs, work with public safety partners, critical facilities, regulators and other stakeholders to develop a comprehensive, coordinated and cohesive customer notification framework.
- With input from public safety partners, develop and implement a wildfire education and awareness campaign focused on wildfire prevention and mitigation, PSPS awareness and outage preparedness for customers.
- In the event of a PSPS:
    - To the extent possible and in coordination with Customer Service and IT, notify customers before, during and after a PSPS event with the following information:
        - Expected timing and duration of the PSPS event
        - 24-hour contact information and website resources
    - Provide up-to-date information on a dedicated Idaho Power PSPS webpage prominently linked on the Idaho Power homepage.
    - Distribute information via media and social media channels.
- Participate in AARs and modify communication practices as necessary.

9.10. Distribution Engineering and Reliability

- Support Dispatch and Customer Operations in developing de-energization and re-energization plans for PSPS events
- Monitor and verify the protection system operated correctly after any device operations caused by events on the circuit as appropriate
- Evaluate and enact protective device setting changes as required.
- Support rapid repairs of damaged infrastructure as needed.
- Support Load Serving Operations in planning improvements to PSPS operational capabilities
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.11. Safety

- Ensure the safety professionals are appropriately trained to perform all relevant responsibilities under this PSPS Plan
- Provide PSPS training for field personnel
- Assist in AARs after a PSPS event (or potential event in which the PSPS Team is activated)

9.12. Vegetation Management

- Following de-energization, and when it is safe to do so, Customer Operations will report impacts to infrastructure and assets from vegetation, as appropriate. Vegetation Management will then work toward removing vegetation debris necessary for re-energization.
- Ensure contractors and field personnel are appropriately trained to perform all relevant responsibilities under this PSPS Plan.
- Use reasonable efforts to ensure contract resources are available and prepared for PSPS events.
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary.

9.13. Geographic Information Systems

- Work with Customer Operations and Corporate Communications to develop PSPS boundary information for PSPS GIS maps required for the PSPS website
- Before wildfire season and during preliminary notifications of a potential PSPS event, provide relevant GIS data within the confines of applicable law to public safety partners

9.14. Customer Service

- Respond to customer calls and respond to questions with information provided by Corporate Communications
- Ensure customer service representatives are trained to manage customer interactions during a PSPS event

9.15. Communication Systems (Stations)

- Provide monitoring and on-call presence for the following:
  - Radio communications and infrastructure
  - Network infrastructure and connectivity
  - SCADA communications
- Ensure readiness to deploy mobile 2-way radio trailer during a PSPS event
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.16. Customer Operations Support

- May lead AARs to ensure modifications to PSPS protocol are implemented as necessary

9.17. Legal

- Provide legal guidance in evaluating a potential PSPS event
- May direct AARs after a PSPS event (or potential event in which the PSPS Team is activated)
- May be involved in reviewing communications to customers, public safety partners and critical facilities

9.18. Regulatory

- May provide regulatory guidance in evaluating a potential PSPS event
- May be involved in reviewing communications to customers, public safety partners and critical facilities
- Assist in/direct regulatory reporting/filing activities

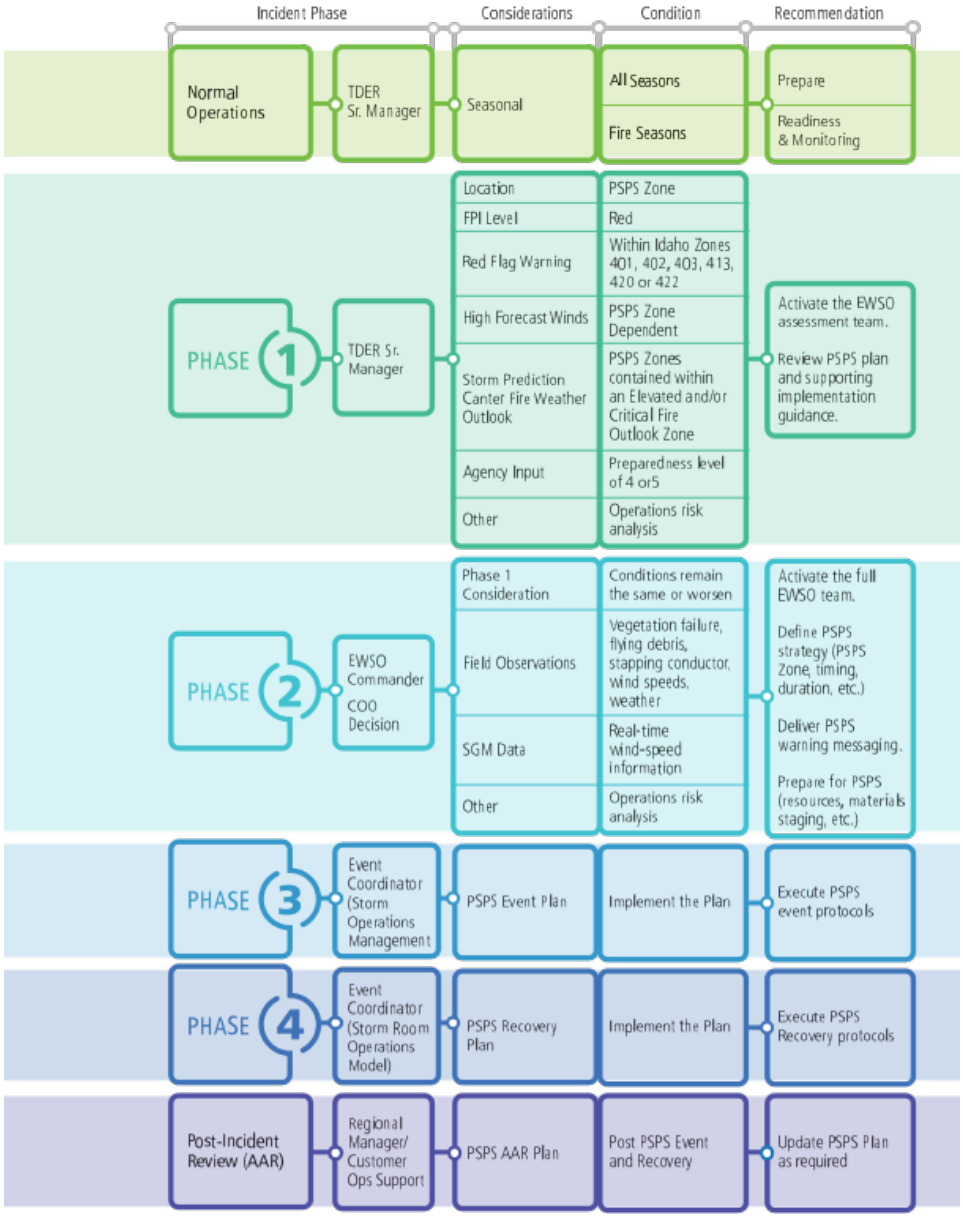
10. PSPS OPERATIONS

10.1. General

Section 11 details the phases, and protocol within each phase, of a PSPS event. Additional procedures are found in plans linked below and the attached Appendices as referenced herein.

Table 2 below summarizes the PSPS phases.

Table 1
Incident phase decision triggers



10.2. PSPS Preparedness

PSPS preparedness is a cyclical effort involving Idaho Power, public safety partners, state and local governments, communities and customers. Idaho Power's main objectives of preparedness are: 1) performing wildfire prevention and mitigation activities; and 2) engaging with external public safety partners, critical facilities and communities to develop relationships and provide education to safely and effectively implement this plan. The TDER senior manager coordinates and facilitates activities of multiple Idaho Power business units for wildfire prevention and mitigation activities while Customer Operations and Corporate Communications facilitates public outreach and coordination efforts with external stakeholders.

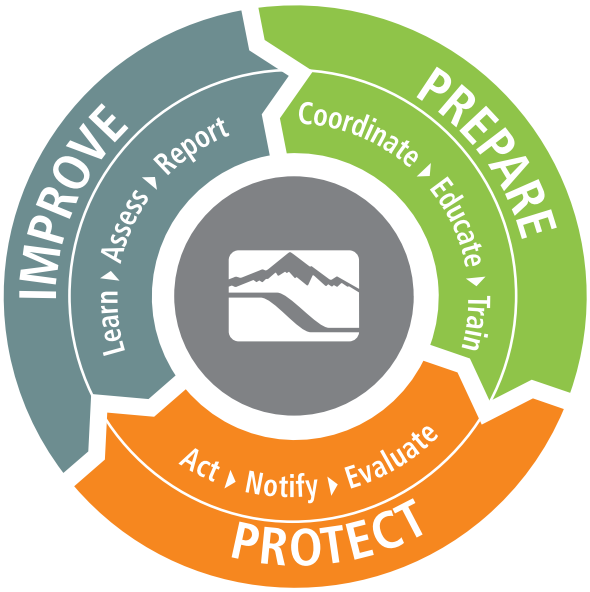


Figure 1
PSPS Preparedness Cycle

Idaho Power's goal is to take a community approach to wildfire preparedness by educating and encouraging individual preparedness and relying on existing protocols and procedures currently available through local governments and emergency response professionals.

10.2.1. Idaho Power Programs

Idaho Power's WMP facilitates PSPS preparedness through vegetation management protocol specific to wildfire season, distribution and transmission hardening efforts, situational awareness coinciding with wildfire operational protocol, training programs, communications strategies and coordinated planning with both internal and external stakeholders. This PSPS Plan and emergency response protocol correspond with Idaho Power's WMP preparedness measures in an effort to further reduce wildfire risk consistent with industry best practices and regulatory requirements.

10.2.2. Coordination with Government Entities

Coordination with local government and emergency response entities is critical to Idaho Power's reliance on existing protocols and procedures developed by these external stakeholders. Customer Operations engages in these coordination efforts through ongoing communications and additional activities as required by this Plan. Activities include, without limitation:

- Being a trusted energy advisor to mayors, city managers, county leaders, elected officials and other stakeholders
- Educating and encouraging individual preparedness
- Educating stakeholders about Idaho Power wildfire preparedness and mitigation efforts, PSPS planning and capabilities
- Enhancing relationships with external stakeholders for improving interoperability and wildfire coordination
- Enhancing relationships with community services partnerships

10.2.3. Community Preparedness

Engage with public sector agencies and communities where PSPS events are likely to leverage existing emergency response plans and resources to increase the effectiveness of PSPS communications.

10.2.4. Information Sharing

Coordinate with public safety partners in advance of a PSPS event to prepare information needed by these partners and establish communication protocols for critical decision-making before and during a PSPS event, including restoration activities.

10.2.5. Notifications and Emergency Alerts

Collaborate with agencies in advance of PSPS events to allow for use of existing notification methods to communicate effectively during PSPS events.

10.2.6. Training and Exercises

Coordinate and participate in tabletop exercises with public safety partners to enhance knowledge of each other's emergency operations for smooth interactions during PSPS events.

10.3. Proactive Communications

Although the size of Idaho Power's service area, geographic and environmental diversity, and unpredictable nature of Idaho and Oregon weather make it challenging, Idaho Power is committed to providing as much advance notice as reasonably possible in preparation for a PSPS event. Table 3 provides Idaho Power's optimal communication timeline for PSPS events, circumstances permitting.

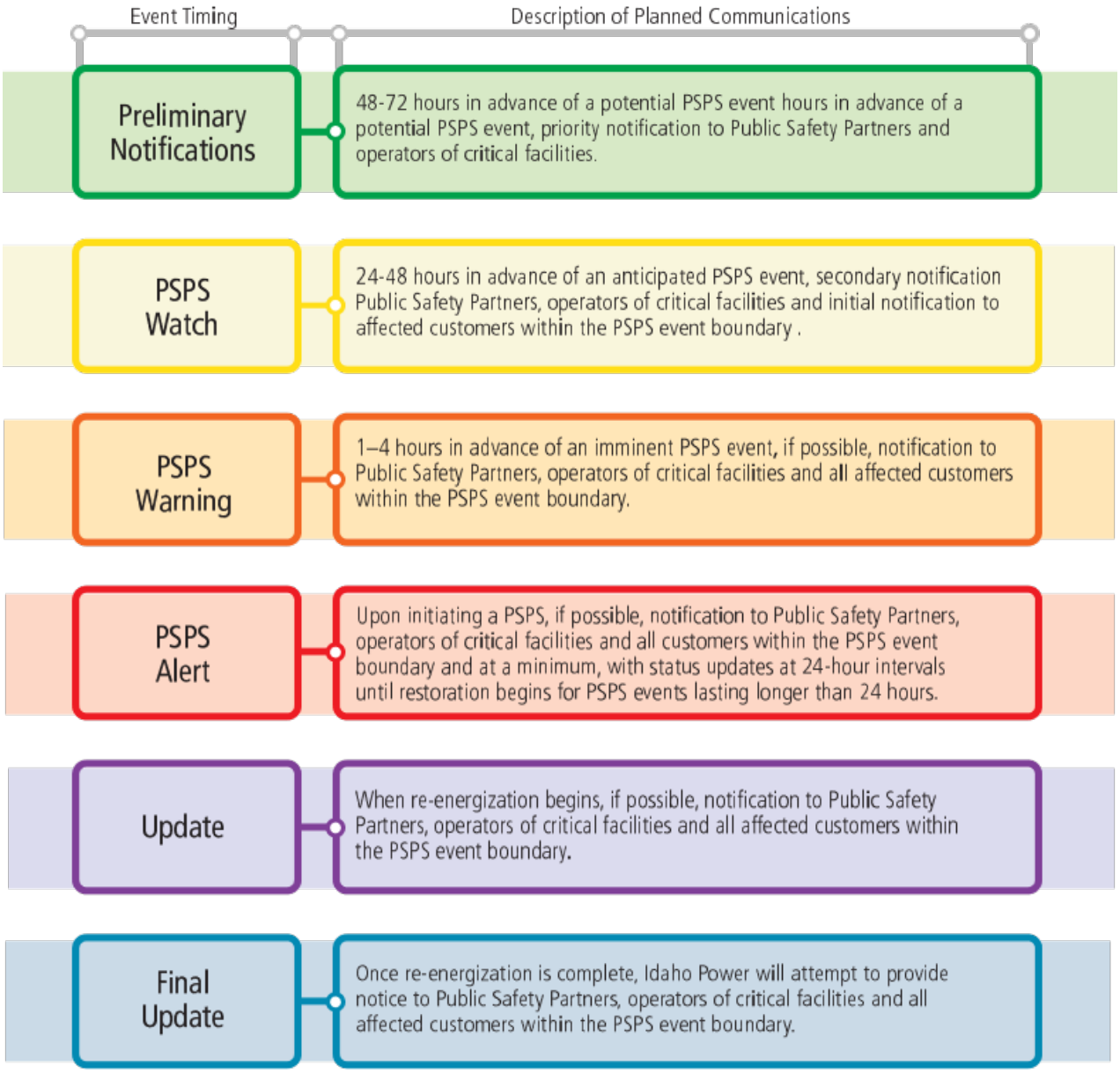


Figure 2
PSPS Event Communication Timeline

10.4. Wildfire Season Operations

As described here and in Idaho Power's WMP, normal operations during wildfire season differs from normal operations during the rest of the year based on heightened requirements specifically targeted at predicting and reducing wildfire risk.

10.4.1. Situational Awareness Activities

During wildfire season, Idaho Power closely monitors fire conditions and weather patterns. Idaho Power's Atmospheric Science team prepares a monthly "Seasonal Wildfire Outlook" report beginning in April and continuing through wildfire season containing information on regional drought conditions obtained from the National Drought Monitor, weather and climate outlook, seasonal precipitation and temperature outlooks from NOAA and the NWS, and a regional wildfire outlook.

During wildfire season, the Atmospheric Scientists will determine a daily FPI as described in Section 5.2 of the WMP describing shorter-term weather and fire conditions specific to WMP risk zones across Idaho Power's service territory and in identified risk zones where transmission facilities extend beyond service territory boundaries.

10.4.2. GIS Wildfire Information

Idaho Power's GIS team pulls regional wildfire information from a feature layer sourced by the GIS mapping software company ESRI, which pulls the data from the Integrated Reporting of Wildland-Fire Information (IRWIN) and the National Interagency Fire Center (NIFC). This information is added to multiple GIS viewers utilized by Idaho Power employees. These viewers also overlay current wildfire information to geospatially show physical relationships to transmission and distribution lines which provides valuable situational awareness in understanding wildfire activity near Idaho Power's T&D systems. This information is updated near real-time.

10.4.3. Key Grid Interdependent Utilities and Agencies

Idaho Power exchanges dispatch information with key grid interdependent utilities and energy providers to expedite communication and coordination during wildfire events. These contacts include Avista, Bonneville Power Administration, Northwestern Energy, NVEnergy, Oregon Trail Electric Cooperative, PacifiCorp, Raft River Electric, Seattle City Light and U.S. Bureau of Reclamation. Idaho Power also exchanges dispatch information with NIFC, BLM Fire Dispatch and various National Forest Service District Offices—including Idaho Power dispatch receiving BLM and US Forest Service incident command information during wildfire events—to improve communication and coordinate fire-related activities.

10.5. Phase 1

The decision to implement a PSPS event will be based on the best available data for weather and other fire-related conditions as detailed above in Section 8—PSPS Implementation Considerations. Multiple events may require simultaneous management such as other storm-related outages or other PSPS events.

10.5.1. PSPS Assessment Team Activation

Idaho Power will transition from normal wildfire season operations to Phase 1 of a PSPS event at the direction of the TDER senior manager. During Phase 1, Idaho Power will activate the PSPS Assessment Team, which includes the TDER senior manager, a regional senior manager of the area potentially impacted, Load Serving Operations (LSO) senior manager, a documentation subject matter expert (SME), and representatives from the Atmospheric Science team and Corporate Communications. The PSPS Assessment Team will hold conference calls as needed to discuss current and forecasted weather conditions and other critical information regarding a potential PSPS event. The TDER senior manager will facilitate PSPS Assessment Team meetings and conference calls and the PSPS Assessment Team will be responsible for determining whether to recommend maintain Phase 1, escalate to Phase 2, or de-escalate to normal operations. The PSPS Assessment Team will decide if Idaho Power will issue a preliminary notification of a potential PSPS event to public safety partners, critical facilities operators and ESF-12 as described in Table 3 above. During Phase 1, the PSPS Assessment Team will review the PSPS Plan and supporting documents. An operational risk assessment will be performed as well to determine current operational factors (existing outages, facilities under construction, personnel availability, etc.), risks and vulnerabilities. Ultimate determination will be made whether to escalate to Phase 2 by the TDER senior manager. Within one hour of Phase 2 notification, the full PSPS team will be placed on stand-by and team member availability will be determined. The full PSPS team is the PSPS Assessment Team plus the VP of Planning, Engineering and Construction, the Customer Operations VP and VP of Power Supply or their assigns.

10.5.2. Community Notifications

Depending on the situation and timing, public safety partners and critical facility operators may be notified during this phase. These notifications may include emails, text messages and/or phone calls as described in Idaho Power internal processes and procedures.

10.6. Phase 2

Phase 2 actions are determined by additional situational awareness activities, timing of forecasted weather events and risk tolerance. Upon transitioning to Phase 2, Idaho Power will provide external notifications as called out in Table 3 above with specific roles and responsibilities as described in internal process and procedure documents.

10.6.1. Activate Event Coordinator

Idaho Power will assign an Event Coordinator as outlined in Wildfire Mitigation and PSPS Plan. The event coordinator's main role is to coordinate activities across the region associated with PSPS implementation and restoration.

10.6.2. Conduct Operational Risk Analysis

The PSPS Assessment Team will present its operational risk analysis recommendation to the VP of PEC, VP of Customer Operations and the COO who will then evaluate the PSPS Assessment Team's recommendation, and the COO will make the final determination of whether to proceed to Phase 3 implementation of a PSPS event.

10.6.3. Request to Delay a PSPS Event

There may be requests to delay proactive de-energization from the public safety partners. This may occur for several reasons, with the most anticipated being loss of power for pumping water to fight wildfires. Delay requests should be routed through dispatch and sent to the PSPS Team for evaluation. The PSPS Team will provide the COO a recommendation on whether to approve the proactive de-energization delay and the COO will make the final decision. As soon as practicable after receiving the request, Idaho Power will notify the ESF-12 liaison of the delay request and basis of such request, as well as the final determination and the underlying justification.

10.6.4. PSPS Event Strategy

Regional operations personnel developed action plans and switching orders as part of their preparedness activities. These plans and switching orders will be reviewed and refined as necessary based on the current and forecasted conditions and will include situation-specific tactics and detailed instructions.

10.6.5. Field Observations and Response Teams

Regional Operations will coordinate field personnel to be mobilized and dispatched to strategic locations, including areas with limited weather and system condition visibility, to perform field observations for on-the-ground, real-time information critical to inform decisions on proactive de-energization. Field observations include—without limitation—conditional assessments of system impacts from wind and vegetation, flying debris and slapping conductors.

10.6.6. Customer and Community Notifications

Depending upon the timing and situation, Idaho Power may use various forms of communication (including media outreach) to provide information and updates to public safety partners, critical facility operators, and customers, particularly those impacted by the PSPS event. Information and updates will include the reason for the potential de-energization, where to find

real-time updates on outage status and other relevant safety and resources. Internal processes and procedures will be followed to ensure accurate, up-to-date communication is provided.

10.7. Phase 3

Upon the COO making a determination to proactively de-energize, the LSO representative of the PSPS Team will inform System and Regional Dispatch Operations and request coordination of the estimated time to begin the PSPS. The regional manager, or their assigned representative of the region in which the PSPS will take place, will coordinate with the event coordinator to pre-position field personnel where manual de-energization is required and to stand by for orders to de-energize. System and Regional Dispatch Operations will implement the PSPS according to their established processes. Stations and communications system operations personnel will be prepared to support PSPS activities as needed. Idaho Power will take the following community-centered actions as soon as safely possible. Regional teams will follow internal processes and procedures to safely and effectively implement a PSPS event.

10.7.1. Customer and Community Notification

Relying on internal processes and procedures, Idaho Power will use various forms of communication (including media outreach) to provide information and updates to customers and other stakeholders, particularly those impacted by the PSPS event. Information and updates will include the reason for the de-energization, where to find real-time updates on outage status and other relevant safety and resource information regarding the PSPS. Specific protocols may be included in individual work group plans.

10.8. Phase 4

10.8.1. System Inspections

When it is safe to do so, Idaho Power will begin line patrolling activities to inspect T&D circuits and other potentially impacted Idaho Power facilities. Patrol personnel will report system conditions back to System and Regional Dispatch Operations for coordination with field crews. Patrols will be performed as required to ensure conditions and equipment are safe to re-energize.

10.8.2. Repair and Recovery

Line crews will repair T&D facilities as coordinated with System and Regional Dispatch Operations, replacing damaged equipment and performing other actions to support safe re-energization of the T&D system.

10.8.3. Incident Management Support

Support throughout the PSPS event will continue as described in Idaho Power's Wildfire Mitigation and PSPS Operational Plan. The PSPS Team will continue to monitor fire and weather conditions. Logistics and mutual assistance requirements will be determined and acted upon per existing plans and processes. If timely re-energization is not possible based on the magnitude of the event, the EMT will be notified for additional support.

10.8.4. Communicate PSPS Event Conclusion

Idaho Power will use various forms of communication (including media outreach) to inform customers and other stakeholders, particularly those impacted by the PSPS event, when repairs are complete and it is safe to re-energize the system. This may occur in stages as different feeders or feeder sections are repaired and safe to re-energize. This will be viewable on the outage map on Idaho Power's website during the event. Idaho Power will also leverage existing public agency outreach and notification systems as done at other points in the PSPS process.

10.8.5. Re-energization

Once re-energization activities are completed and service is restored, crews and support staff will demobilize and return to normal fire season operations as described in internal process and procedure documents.

10.9. Post-incident Review

During the PSPS phases the documentation SME will collect and maintain in the Regional Dispatch Operations logs incident information required for reporting purposes.

Following conclusion of a PSPS event, the Regional Manager or their assigned representative will conduct informal, high-level debriefs to identify potential modifications to PSPS protocol based on lessons learned during the event. The regional manager or assigned representative will consolidate the feedback and provide to the documentation SME.

Also following the PSPS event, the TDER senior manager will conduct an AAR with the PSPS Team to identify potential modifications to PSPS protocol based on lessons learned during the event. The TDER senior manager will consolidate the feedback and provide to the documentation SME.

After wildfire season, the Customer Operations support leader may conduct an AAR focusing on operational processes, communications, customer support as well as emergency response and restoration. Idaho Power may also request feedback from external stakeholders on coordination efforts, communications and outreach effectiveness for integration into the AAR report.

11. FINANCIAL ADMINISTRATION

Idaho Power will track expenses related to PSPS events for OPUC and IPUC reporting and potential recovery. Expense should be tracked for the entire PSPS event (Phase 1 through conclusion of the Post-Incident Review and filing the PSPS event report with the OPUC) to include, without limitation, time reporting, equipment and supplies used to set up customer resource centers and provided to customers (e.g., water, ice, etc.)

12. REPORTING

Employees are required to manage information regarding PSPS events pursuant to Idaho Power's Information Retention Policy and underlying standards. Idaho Power will submit reports to the IPUC and OPUC as required.

13. AFTER-ACTION REPORT

An AAR is a structured review or de-brief process used to evaluate the effectiveness of the Plan and potential areas for improvement. This process may be performed after a PSPS event and may be confidential at the direction of Legal to improve the PSPS processes and procedures.

14. TRAINING

Idaho Power will strive to provide annual training, prior to or shortly after the beginning of wildfire season, to relevant employees on their respective roles in performing this PSPS Plan.

15. EXERCISES

Idaho Power will exercise this PSPS Plan at least annually using various scenarios and testing all or any portion(s) of the Plan which may include:

- Testing text and/or phone alerts with a test group of public safety partners
- Testing tactical operational plans such as reporting field observations or positioning employees at manually operated disconnects to test timing for de-energization and field inspections of T&D assets
- Discussing and/or practicing roles and responsibilities of both strategic and tactical operations, including decision-making handoffs and hypothetical scenarios
- Discussing and/or developing re-energization plans
- Testing capacity limits on incoming and outgoing communications systems

~~Appendix C~~

~~Forecast of Idaho Power System Incremental Operations and Mainenance (O&M) and capital expenditures for Wildfire Mitigation and Public Safety Power Shutoff (PSPS) Expenditures (2022–2025).~~

~~Idaho Power's forecast of incremental O&M and capital expenditures for wildfire mitigation and PSPS activities are based on total system estimates. Cost assignment between the company's Idaho and Oregon service areas will be based on work performed that may be specific to one of the two service areas and an allocation of system costs based on the company's jurisdictional separation amounts as determined through its Jurisdictional Separation Studies.~~

Forecast of Idaho Power System Incremental O&M Expenditures ($000s)

	2022	2023	2024	2025	2022 - 2025
Quantifying Wildland Fire Risk					
Risk Map Updates	$ -	$ 67	$ -	$ 69	$ 136
Situational Awareness					
Weather Forecasting - Fire Potential Index (FPI) and Public Safety Power Shutoff (PSPS) Personnel	$ 210	$ 220	$ 230	$ 241	$ 901
Weather Forecasting - System development and support	$ 10	$ 29	$ 55	$ 55	$ 149
Pole Loading Modeling & Assessment (Contract service)	$ 25	$ 75	$ -	$ -	$ 100
Cameras	$ 50	$ 55	$ 113	$ 50	$ 268
Mitigation - Field Personnel Practices					
Mobile Weather Kits for Field Observers	$ 20	$ -	$ -	$ -	$ 20
Tools/Equipment	$ 5	$ 5	$ 5	$ 5	$ 20
Mitigation - Transmission & Distribution Programs					
Wildfire Mitigaton Program Manager	$ 180	$ 185	$ 190	$ 195	$ 750
O&M Component of Capital Work	$ 54	$ 61	$ 60	$ 54	$ 229
Annual O&M T&D Patrol Maintenance Repairs	$ 50	$ 50	$ 50	$ 50	$ 200
Environmental Management Practices	$ 25	$ 25	$ 25	$ 25	$ 100
Transmission Thermography Inspection Mitigation - Red Risk Zones	$ 20	$ 20	$ 20	$ 20	$ 80
Distribution Thermography Inspection Mitigation - Red Risk Zones	$ 30	$ 30	$ 30	$ 30	$ 120
Thermography Technician Personnel	$ 155	$ 160	$ 165	$ 170	$ 650
Transmission Wood Pole Fire Resistant Wraps - Red Risk Zone	$ 88	$ 88	$ -	$ -	$ 176
Transmission Wood Pole Fire Resistant Wraps - Yellow Risk Zone	$ 163	$ 163	$ 163	$ 163	$ 652
Covered Wire Evaluation - Pilot Program in PSPS Zones	$ 25	$ 50	$ 50	$ -	$ 125
Vegetation Management					
Vegetation Mgmt Incremental Expense to Transition to/Maintain 3-yr cycle Line Clearing Program	$ 8,087	$ 8,796	$ 9,547	$ 8,372	$ 34,802
Vegetation Distribution Red & Yellow Risk Zone: Pre-Fire Season Patrols/Mitigation, Pole Clearing, Removals, Work QA	$ 1,223	$ 1,284	$ 1,349	$ 1,416	$ 5,272
Line Clearing Personnel	$ 155	$ 159	$ 164	$ 169	$ 647
Communications					
Wildfire/Wildfire Mitigation Communications - Advertisements/Meetings/Other	$ 100	$ 100	$ 100	$ 100	$ 400
PSPS Customer Education/Communication - Advertisements, Bill Inserts/Other	$ 71	$ 71	$ 71	$ 71	$ 284
Information Technology					
Communication/Alert Tool development (System set up, outage maps, critical facilities identification)	$ 163	$ -	$ -	$ -	$ 163
Communication/Alert Tool for PSPS Customer Alerts/Extended Use	$ 141	$ 129	$ 129	$ 129	$ 528
Forecast Incremental O&M Expenditures Total	**$ 11,050**	**$ 11,822**	**$ 12,516**	**$ 11,384**	**$ 46,772**

Forecast of Idaho Power System Estimated Capital Expenditures ($000s)					
Capital Expenditures	**2022**	**2023**	**2024**	**2025**	**2022 - 2025**
Distribution	$ 5,017	$ 5,632	$ 5,589	$ 5,005	$ 21,243
Transmission Projects	$ 122	$ 3,385	$ 193	$ 4,233	$ 7,933
Forecast Incremental Capital Expenditures Total	**$ 5,139**	**$ 9,017**	**$ 5,782**	**$ 9,238**	**$ 29,176**

ITEM NO. CA7

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: August 23, 2022

REGULAR ____ **CONSENT** X **EFFECTIVE DATE** August 23, 2022

DATE: August 23, 2022

TO: Public Utility Commission

FROM: Yassir Rashid

THROUGH: Bryan Conway and Heide Caswell **SIGNED**

SUBJECT: IDAHO POWER COMPANY:
(Docket No. UM 2209)
Idaho Power's Supplemental 2022 Wildfire Mitigation Plan.

STAFF RECOMMENDATION:

Staff recommends the Public Utility Commission of Oregon (Commission) approve Power Company's (Idaho Power or the Company) Supplemental 2022 Wildfire Mitigation Plan.

DISCUSSION:

Issue

Whether the Commission should approve Idaho Power's Supplemental 2022 Wildfire Mitigation Plan.

Applicable Rule or Law

On April 28, 2022, the Public Utility Commission of Oregon (Commission) entered Order No. 22-133 (Docket No. UM 2209) approving, with conditions, Idaho Power's 2022 Wildfire Mitigation Plan (WMP). The Commission required Idaho Power to supplement its plan with the following:

1. A narrative discussion of their cost and risk mitigation balancing assumptions that went into the 2022 WMP.
2. A strategy for maturing their analytical approach to cost and risk mitigation balancing in the 2023 WMP.

3. Data delineating Oregon risk areas and Oregon projects with associated costs.

On June 28, 2022, Idaho Power filed its revised 2022 WMP with the additional information requested by the Commission. Staff has reviewed the supplemental plan and concluded that, although Staff does not support some of the narrative that the company included in its revised plan, Idaho Power has met the conditions set out in Order No. 22-133.

Analysis

Staff addresses each of the Commission's conditions set forth in Order No. 22-133 separately.

Cost and Risk Mitigation Assumptions

The Commission's Order calls on Idaho Power to include in its revised WMP, "[A] narrative discussion of their cost and risk mitigation balancing assumptions that went into the 2022 plan..." To address this requirement, Idaho Power added Section 4.4 to its plan and titled it "Mitigation Activities." In this section, Idaho Power provided narrative descriptions of various programs that it proposes to implement to address the risk of wildfire, as well as justification for those programs. Idaho Power also provided the assumptions underlying how the costs of these programs are split between Idaho and Oregon.

Staff finds that Idaho Power's supplemental information in Section 4.4 meets the Commission's first condition, as the Company has provided assumption for cost allocation. For purposes of future plans, however, Staff notes that Idaho Power did not provide reasonable justification for all those cost allocation assumptions, nor did the cost allocation assumptions align logically against the areas for which elevated risk occur. For example, in allocating cost for quantifying wildland fire risk, Idaho Power used the number of line miles as a driver to allocate 12.5 percent of the cost to Oregon, while it used the percentage of "traditional jurisdictional separation" as a driver to allocate five percent of the cost to Oregon in the cases of Fire Potential Index development; field personnel equipment; annual transmission and distribution patrol, maintenance, and repair; enhance vegetation management; and communication and customer notification.

In the case of the covered conductor pilot program, Idaho Power used the traditional jurisdictional separation as a driver for cost allocation without specifying the location of the pilot program. Should this pilot not be located in Oregon, such cost allocation would seem inappropriate. Additionally, although none of the Red Risk Zones is located in Oregon, Idaho Power allocated five percent of the annual transmission and distribution

patrol, maintenance, and repair program, which will be conducted in Red Risk Zones to Oregon. Since overhead pole miles located in wildfire risk zones in Oregon comprise approximately two percent of the total overhead pole miles in wildfire risk zones, suggesting the traditional jurisdictional separation as basis for cost allocation in this case exceeds what might be an alternate and still reasonable approach for this program's cost allocation.

Staff believes that Idaho Power should provide more details and better reasoning and justification for its assumptions when it presents future WMPs. Staff further believes that clear distinction between transmission and distribution patrol, maintenance, and repair program costs needs to be outlined distinctly.

Analytical Strategy
In discussing the Commission's requirement for providing a strategy for maturing their analytical approach to cost and risk mitigation balancing in the 2023 WMP, Idaho Power amended Section 4.2 to indicate that it "plans to continue advancing its analytical approach to balancing cost and risk mitigation in its 2023 Wildfire Mitigation Plan. The Company will evolve its risk analysis framework by building on the risk modeling detailed in its 2022 Wildfire Mitigation Plan and expanding its evaluation of risk reduction associated with present and future mitigation activities."

Idaho Power added that it would seek to accomplish three deliverables to fulfill its risk analysis framework:

- Determining the most cost-effective wildfire mitigation solution by conducting cost-benefit analyses of different strategies.
- Analyzing the current wildfire mitigation activities to determine their effectiveness and decide whether to continue, refine, or replace them.
- Further identify and refine ignition reduction mechanisms by expanding the use of outage and fault analytics.

Staff's assessment is that Idaho Power provided a broad framework for what it envisions implementing to accomplish this Commission's requirement. Staff would like Idaho Power to include more details about this strategy in its 2023 WMP.

Delineating Oregon Risks
Order No. 22-133 further required Idaho Power to provide "data delineating Oregon risk areas and Oregon projects with associated costs." To address this requirement, Idaho Power, starting on Section 1.3, Asset Overview, replaced Table 1 that listed its overall transmission assets with another table that broke down transmission assets by state. Consistent with its classification of wildfire risk areas as Tier 2, or Yellow Risk

Zones (YRZ), and Tier 3, or Red Risk Zone (RRZ), Idaho Power also introduced Table 2 in Subsection 3.2.2, which provided a breakdown of transmission and distribution pole miles in risk zones in Idaho and Oregon. That table shows that there is a total of 21 transmission pole miles and 29 distribution pole miles in YRZ in Oregon. No transmission or distribution pole miles in RRZ lie in Oregon. In addition, Idaho Power introduced Figures 3 through 6, which are maps delineating and providing more details about wildfire risk zones in Oregon and Idaho. None of the maps shows RRZs in Oregon.

In Section 4.4, Idaho Power provided the cost of each program that it would implement to mitigate wildfires. Idaho Power provided breakdown of the cost of most of the programs but did not provide sufficient information to verify the validity of some of the assumptions. In Subsection 4.4.8, Idaho Power presented the overall cost of the incremental capital investment to be $5.1 million, but did not provide a sufficient cost break down. Idaho Power estimated that the cost of the fuse replacements and spark prevention programs was $1.9 million and $1.7 million, respectively, but did not provide the cost for other capital programs. Idaho Power did not provide details on how it would use the remaining $1.5 million.

Staff finds these changes meet the Commission's condition. Staff notes two items, however. First, Table 2 contains a discrepancy that Idaho Power should explain. Table 2 indicates that the total transmission pole miles in wildfire risk zones in both Idaho and Oregon is 511 miles. However, when the number of transmission pole miles in Idaho's RRZ (110) is added to the number of transmission pole miles in Idaho's YRZ (371), and to the number of transmission pole miles in Oregon's RRZ (zero), and to the number of transmission pole miles in Oregon's YRZ (21), the sum results in 502 (not 511) pole miles. Second, Idaho Power has not clarified whether and to what extent the company will seek rate recovery in Oregon for costs associated with the capital investment programs. Idaho Power should clarify that in its future WMPs.

Staff notes that these issues do not need to be resolved to approve the plan, nor does the approval of the plan imply agreement to the Company's proposed allocation. The Commission will reserve judgment on the reasonableness for ratemaking purposes of the Company's capital costs, capital structure, and the commissions and expenses incurred for security issuance and related activities, and may address the same at any subsequent rate case or other Commission proceeding.

Conclusion

Staff concludes that Idaho Power's supplemental WMP complies with applicable laws and the requirements in Order No 22-133. Staff commends Idaho Power for the additional analysis performed, and revisions incorporated into its 2022 WMP.

Staff looks forward to its engagement with Idaho Power in the further development of its 2023 WMP. Staff emphasizes that the Commission, in Order No. 22-133, directed Idaho Power "*to engage with Staff and stakeholders through a workshop process prior to filing its 2023 Plan to allow for consideration, with ample time, of each of Staffs recommendations outlined in the memo.*"[1]

PROPOSED COMMISSION MOTION:

Approve Idaho Power's Supplemental 2022 WMP and direct Idaho Power to address, in addition to Staff's recommendations set forth in Order No. 22-133, the following in its 2023 WMP:

1. Provide detailed cost allocation assumptions of the transmission and distribution patrol, maintenance, and repair program, separated by transmission and distribution, as well as any associated maintenance and repair program including justification and reasoning for the cost allocation between Idaho and Oregon.
2. Provide detailed explanation of the strategy pertaining to its risk analysis framework.
3. Provide details explaining the proposed cost allocation between Idaho and Oregon associated with wildfire mitigation program capital investments.

[1] Staff's twenty-five recommendations for Idaho Power's 2023 WMP are outlined in Appendix A of Commission Order No. 22-133: https://apps.puc.state.or.us/orders/2022ords/22-133.pdf.

IPC Response to RFA1 Request for Additional Information – Wildfire Mitigation Plan

Attachment 1 to RAIs re RFA1 - Wildfire Mitigation Plan

In accordance with OAR 345-022-0115(1) ("Subsection (1)"), the Energy Facility Siting Council must find that the applicant adequately characterized wildfire risk within the analysis area and that the proposed facility will be designed, constructed, and operated in compliance with a Wildfire Mitigation Plan ("WMP") approved by the Council. However, OAR 345-022-0115(2) ("Subsection (2)") provides that if the facility is subject to a Wildfire Protection Plan[1] that has been approved in compliance with the Public Utility Commission of Oregon rules in OAR Chapter 860, division 300, the Council may issue the site certificate without making the specific findings detailed in Subsection (1). In its evaluation of Request for Amendment 1 ("RFA1"), the Council should apply Subsection (2) for three reasons:

- ***First,*** the OPUC's rules in OAR Chapter 860, division 300 apply to Idaho Power Company ("Idaho Power"), and Idaho Power has filed WMPs with the OPUC. Most recently Idaho Power filed its 2023 WMP with the OPUC in Docket UM 2209.[2] The Commission is currently reviewing the Company's 2023 WMP and it must issue a decision approving, or approving with conditions, the plan within 180 days of filing—or by June 30, 2023.[3] Under its statutory and rule-based authority, the OPUC has ongoing jurisdiction to review Idaho Power's WMPs, and will continue to review Idaho Power's WMP as it may evolve in the future in response to changing industry and/or regulatory standards.[4] The WMP, as it may be amended from time to time, will apply to B2H.[5]

- ***Second,*** Public Services Condition 7(d) in the Final Order (and Site Certificate) contemplates that the Public Services Condition 7 "shall" be satisfied by a WMP approved by the OPUC:

  > *Any Wildfire Mitigation Plan required by the Oregon Public Utilities Commission shall be considered by EFSC as meeting the requirements of this condition.*[6]

  Importantly, the condition language is mandatory ("shall"), even if the language in Subsection (2) is permissive ("may"). This condition language is mandatory and binding between Idaho Power and EFSC.[7]

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[1] Oregon Senate Bill 762, which established wildfire plan requirements for Oregon utilities, referred to such plans as Wildfire Protection Plans. Subsequently, the OPUC renamed utility wildfire plans as Wildfire Mitigation Plans ("WMP"). Any references to a utility's Wildfire Protection Plan should be understood as referencing its WMP.

[2] *In re Idaho Power, Wildfire Protection Plan*, Docket UM 2209, Idaho Power's 2023 Wildfire Mitigation Plan (Dec. 29, 2022).

[3] OAR 860-300-0020(3).

[4] ORS 757.963(2) ("A public utility that provides electricity shall regularly update a risk-based wildfire protection plan on a schedule determined by the [OPUC].").

[5] ORS 757.963(2)(a)(B) ("The [WMP] must, at a minimum: Identify areas that are subject to a heightened risk of wildfire and are: . . . Outside the service territory of the public utility but within a reasonable distance, as determined by the commission, of the public utility's generation or transmission assets.").

[6] *In re Application for Site Certificate for the Boardman to Hemingway Transmission Line*, Final Order on Application for Site Certificate at 617 (Sept. 27, 2022) [hereinafter "Final Order"].

[7] ORS 469.300(26) (the site certificate is a "binding agreement between the State of Oregon and the applicant").

- ***Finally,*** Idaho Power, the Oregon Department of Energy ("ODOE"), and limited parties to the contested case for the Boardman to Hemingway transmission line project ("B2H" or the "Project") Application for Site Certificate ("ASC") exhaustively litigated issues concerning wildfire risk assessment, Idaho Power's WMP, and the B2H-specific Fire Prevention and Suppression Plan.[8] Considering the same approach to risk assessment as is presented in RFA1 and considering the Company's 2022 WMP, the Hearing Officer concluded that Idaho Power had adequately characterized wildfire risk and the plans would appropriately mitigate risk.[9] Since the underlying analysis has not changed as part of RFA1 and these issues were thoroughly vetted in the contested case proceeding, there is no basis to disturb the Hearing Officer's conclusions and the findings included as part of the Council's Final Contested Case Order.

1. Overview of OPUC Authority For WMPs

In August 2020, the OPUC opened an informal rulemaking related to mitigating wildfire risks to utilities, utility customers, and the public.[10] The scope of that docket (AR 638) shifted following the 2020 wildfire season, splitting into two tracks—a temporary wildfire rulemaking to govern the 2021 wildfire season and a secondary track to establish replacement permanent rules to take effect beginning in the 2022 fire season.[11] On July 19, 2021, Governor Kate Brown signed into law Senate Bill 762 ("SB 762"), a wildfire bill that, among other actions, established minimum requirements for utility wildfire protection (or mitigation) plans.[12]

The bill required that utilities file inaugural plans no later than December 31, 2021.[13] In response to the passage of SB 762, the Commission opened docket AR 648 to develop interim permanent rules adhering to the requirements and timing of the new law, which were in effect only for the 2021 fire season and expired in November 2021.[14] The permanent rulemaking in AR 638 concluded on September 8, 2022, when the OPUC issued Order No. 22-335 finalizing requirements for utility WMPs. Thus, in accordance with SB 762 and OAR 860, Chapter 300, Idaho Power must prepare and file a WMP with the OPUC.

Per the interim wildfire rules established in AR 648, the Company submitted its 2022 WMP in December 2021,[15] which the OPUC reviewed and approved in Docket UM 2209.[16] The

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[8] Final Order at 33-34; *see also* Final Order, Attachment 6 at 233 ("Council may rely on Public Services Condition 7 and the OPUC-approved Wildfire Mitigation Plan, along with conditions requiring implementation of other mitigation and management plans, to find that that construction and operation of the facility are not likely to result in significant adverse impact to fire protection services within the analysis area.").

[9] Final Order, Attachment 6 at 235 ("In summary, a preponderance of the evidence establishes that Idaho Power adequately analyzed both the risk of wildfire arising out of operation of the proposed facility and the ability of local firefighting service providers to respond to fires in or near the project area.").

[10] *In re Rulemaking for Risk-Based Wildfire Protection Plans and Planned Activities Consistent with Executive Order 20-04*, Docket AR 638, Order No. 20-272 (Aug. 26, 2020).

[11] Docket AR 638, Scope and Schedule Announcement at 2 (Mar. 24, 2021).

[12] Codified at ORS 757.963.

[13] Or. Laws 2021, Ch. 592, § 5.

[14] *Wildfire Mitigation Rulemaking - Phase I*, Docket AR 648, Order No. 21-299, Appendix A at 1 (Sept. 7, 2021).

[15] Docket UM 2209, Idaho Power Company's 2022 Wildfire Mitigation Plan (Dec. 30, 2021).

[16] Docket UM 2209, Order No. 22-312.

Company's 2023 WMP was filed with the OPUC, also in UM 2209, in December 2022.[17] The Commission must issue an order on the 2023 WMP within 180 days of filing—or by June 30, 2023.[18]

Under the pertinent statutes and rules, the Commission has ongoing authority for review of the Company's WMPs.[19] Because the WMP is subject to ongoing review, Idaho Power views it as a "living and breathing document"—and subject to further changes as industry and regulatory standards may continue to evolve into the future.[20]

Moreover, unlike the OPUC, EFSC does not have express statutory authority over WMPs. In the rulemaking analysis, ODOE Staff specifically noted that the Council's authority to adopt WMPs was part of EFSC's general grant of authority for the protection of public health and safety:

> *While the Council was not specifically mandated to adopt wildfire standards or rules, the legislature has explicitly authorized the Council to adopt standards for the protection of public health and safety, including the establishment of requirements for necessary safety devices and procedures.*[21]

When discussing the need for a wildfire protection standard, ODOE Staff noted that there were gaps that may not be addressed by an OPUC-approved WMP, which related to generation facilities proposed by investor-owned utilities and facilities developed by independent power producers, which are not subject to the jurisdiction of the OPUC.[22] Neither of these regulatory gaps apply to B2H, since B2H is included in the Company's WMP, and the Company's WMP is subject to the jurisdiction of the OPUC.

Finally, from a practical perspective, if ODOE were to recommend a new EFSC-specific WMP in accordance with Subsection (1), Idaho Power could potentially end up with multiple WMPs with duplicative or conflicting requirements. This possibility is particularly problematic when viewed in terms of implementation during wildfire season, when time and resources may be constrained and should appropriately be focused on the work of mitigating wildfire risk and not on managing conflicting or unnecessarily duplicative regulatory requirements. Idaho Power urges ODOE to avoid this result by instead relying on the OPUC-approved WMP in accordance with Subsection (2).

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[17] Docket UM 2209, Idaho Power's 2023 Wildfire Mitigation Plan.

[18] OAR 860-300-0020(3).

[19] ORS 757.963(2); OAR 860-300-0020(2) ("Wildfire Mitigation Plans must be updated annually and filed with the Commission no later than December 31 of each year.").

[20] Docket UM 2209, Idaho Power's 2023 Wildfire Mitigation Plan at 13.

[21] Wildfire Prevention and Response Rulemaking, Staff Report at 4 (May 13, 2022) (available at https://www.oregon.gov/energy/facilities-safety/facilities/Council%20Meetings/2022-05-26-27-Item-G-Wildfire-Mitigation-Rulemaking-Staff-Report.pdf) (last visited Apr. 30, 2023).

[22] *Id.*

2. Public Services Condition 7

As detailed in the Final Order and Site Certificate, Public Services Condition 7(d) also defers to the OPUC:

> *Public Services Condition 7: The certificate holder shall:*
>
> *a. Prior to operation, provide a copy of its Wildfire Mitigation Plan to the Department and each affected county which provides a wildfire risk assessment and establishes action and preventative measures based on the assessed operational risk from and of wildfire in each county affected by the facility.*
>
> *b. During operation, the certificate holder shall update the Wildfire Mitigation Plan on an annual basis, or frequency determined acceptable by the Department in consultation with the Oregon Public Utilities Commission.*
>
> *c. During operation, for the service territories the facility would be located within, the certificate holder shall provide to each of the fire districts and rural fire protection a contact phone number to call in the event a district needs to request an outage as part of a fire response.*
>
> *d. Any Wildfire Mitigation Plan required by the Oregon Public Utilities Commission shall be considered by EFSC as meeting the requirements of this condition.*[23]

As described in ORS 469.300(26), the "site certificate" is a "binding agreement between the State of Oregon and the applicant, authorizing the applicant to construct and operate a facility on an approved site, incorporating all conditions imposed by the council on the applicant." If ODOE were to take a different approach in RFA1 and require a new WMP, it would be contrary to the terms of the Final Order and Site Certificate—which are binding on both Idaho Power and the Council. Importantly, there is no aspect of the Company's analysis regarding wildfire that has changed as part of RFA1, and Idaho Power does not seek to modify the approved condition language. For these reasons, the Company urges ODOE to harmonize this mandatory condition language with Subsection (2) and determine compliance through consideration of the WMP approved by the OPUC.

3. Issues Already Litigated in Contested Case on ASC

Finally, as part of the Council's review of the Company's ASC, issues concerning wildfire risk and mitigation were thoroughly litigated in the contested case proceeding. In the Company's ASC—including the Fire Prevention and Suppression Plan, Right of Way Clearing Assessment, and Vegetation Management Plan[24]—and in the contested case proceeding before EFSC, Idaho Power conducted extensive analysis of the potential wildfire risk associated with the construction and operation of B2H. Idaho Power provided expert witness testimony from Dr. Christopher Lautenberger in the contested case proceeding addressing wildfire risks and provided evidence demonstrating that the wildfire risks arising during construction are vastly different from the risks

[23] Final Order at 617.
[24] Final Order, Attachments U-3, K-2, and P1-4, respectively.

during operation.[25] Dr. Lautenberger's analysis demonstrated that there is a low probability of ignition associated with a 500 kilovolt transmission line like B2H.[26] Despite the low probability of a transmission line-related ignition, Idaho Power also committed to extensive measures to address risks during both construction and operation of the Project.[27]

Several limited parties raised issues concerning wildfire risk and wildfire mitigation in connection with the Public Services Standard, OAR 345-022-0110—including the precise issue of whether the Council should defer to the OPUC for approval of the WMP.[28] On that issue, the Hearing Officer observed that the WMP is applicable to the Company's entire transmission and distribution system, but also includes analysis specific to B2H, and was adequate to determine compliance with the Public Services Standard:

> *Mr. Carbiener is correct that the Wildfire Mitigation Plan is general and nature and not specific to the project (although the 2022 Plan discussed the wildfire risk along the proposed project route). However, that is because the Plan's objective is to reduce wildfire risk for Idaho Power's entire transmission and distribution system, and not just the proposed project. For purposes of the proposed project, the evidence in the record, coupled with the recommended conditions requiring implementation of the Fire Prevention and Suppression Plan, the Vegetation Management Plan, the Right of Way Clearing Assessment and Wildfire Mitigation Plan provide a preponderance of evidence to support a Council finding of compliance with the Public Services standard. In other words, the Council may rely on Public Services Condition 7 and the OPUC-approved Wildfire Mitigation Plan, along with conditions requiring implementation of other mitigation and management plans, to find that [] construction and operation of the facility are not likely to result in significant adverse impact to fire protection services within the analysis area.*[29]

The Hearing Officer concluded that Idaho Power's analysis, including the OPUC-approved WMP, resolved these issues as follows (summaries below are excerpted from the Final Order, Table b: Contested Case issues, Parties, and Disposition)[30]:

Issue	Resolution
PS-2: Whether the site certificate should require that the public have the opportunity to review and comment on the final Wildfire Mitigation Plan; whether the Wildfire Mitigation Plan should include remote cameras to detect wildfire, safety procedures during red flag conditions, and the requirement that firefighting equipment be present on-site during construction.	In the PCCO, Hearing Officer found further public review and comment on the Wildfire Mitigation Plan is unnecessary for purposes of approving the site certificate. Furthermore, there is no requirement under the Council's rules that the Wildfire Mitigation Plan include specific fire protection or suppression tools, such as remote cameras, a shut off plan, and on-site firefighting equipment and personnel during construction. PCCO, pg. 140. No exceptions filed.

[25] Final Order, Attachment 6 at 102-03.
[26] *Id.*
[27] *Id.* at 234.
[28] *Id.* at 232-33.
[29] *Id.* at 233.
[30] Final Order at 32-35.

Issue	Resolution
PS-3: Whether Council's reliance on the Wildfire Mitigation Plan (Public Services Condition 7) prepared by Applicant for the Oregon Public Utility Commission (OPUC) is adequate to address wildfire response consistent with the Public Services standard.	In the PCCO, Hearing Officer found the Council's reliance on Public Services Condition 7 and the OPUC-approved Wildfire Mitigation Plan is adequate to address wildfire response consistent with the Public Services standard. PCCO, pg. 140- 141. No exceptions filed.
PS-4: Whether Applicant adequately analyzed the risk of wildfire arising out of operation of the proposed facility and the ability of local firefighting service providers to respond to fires.	In the PCCO, Hearing Officer found that applicant adequately analyzed the risk of wildfire arising out of operation of the proposed facility and the ability of local firefighting service providers to respond to fires in the project area. PCCO, pg. 141. Mr. Cooper timely filed exceptions to the PCCO on this issue. After hearing argument, the Council agreed with the findings of facts, conclusions of law and conditions of approval in the PCCO, with the modification that Public Services Condition 6 require review and approval by the Department.
PS-5: Whether the Wildfire Mitigation Plan is adequately developed and includes sufficient detail to allow for public participation.	In the PCCO, Hearing Officer found Ms. Gilbert had presented no evidence or argument in support of this issue. A preponderance of the evidence establishes the sufficiency of the Wildfire Mitigation Plan as it relates to compliance with the Public Services standard. PCCO, pg. 141. No exceptions filed.
PS-8: Whether Department-proposed revisions to Public Services Condition 7 are redundant with Attachment U-3 and existing condition requirements.	In the PCCO, Hearing Officer found the Department's proposed revisions to Public Services Condition 7 are redundant with Attachment U-3 (the FPS Plan) and existing condition requirements. PCCO, pg. 141. No exceptions filed.
PS-9: Whether Department-proposed revisions to the Fire Prevention and Suppression Plan (Public Services Condition 6, Proposed Order Attachment U-3) incorrectly reference applicability to facility operations.	In the PCCO, Hearing Officer found a preponderance of the evidence supports applicant's proposed revisions to draft FPS Plan and the Department's proposed revisions to Recommended Public Services Condition 6. PCCO, pg. 141. No exceptions filed.
PS-10: Whether the Draft Fire Suppression Plan (Attachment U-3) is adequate and whether local service providers would be able to respond to a facility-related fire.	In the PCCO, Hearing Officer found the draft FPS Plan (Attachment U-3) is adequate to establish compliance with the Public Services standard in terms of fire protection. The evidence also demonstrates that local service providers would be able to respond to a facility-related fire. PCCO, pg. 141. No exceptions filed.

Additionally, as part of the Contested Case Order, the Hearing Officer included detailed findings regarding the risk of fire associated with B2H and Idaho Power's fire mitigation measures.[31]

[31] *See* Final Order, Attachment 6 at 93-103.