Private Forest Accord
Term Sheet
October 29, 2021

All riparian measurements are in slope distance starting at the CMZ, and all length measurements are from stream junction.

Westside Riparian Prescriptions

Large Fish	110' nc
Medium Fish	110' nc
Small Fish	100' nc
Large Non-Fish	75' nc
Medium Non-Fish	75' nc

Np: All perennial streams, per agreement reached by the parties

Flowing into SSBT: 75' nc for first 500'; then 50' nc for 650' (total of 1150')

Flowing into F/non-SSBT: 75' nc for 600'.

Remainder of Np streams: 35' equipment limitation, retention of trees under 6 inches and all shrubs.

Ns: 35' equipment limitation.

Stream Adjacent Active Failures: For (1) Steep slopes (>70%) adjacent to fish streams and actively failing and delivering sediment, or (2) Unstable slope immediately adjacent to a fish stream where the toe of the unstable slope interacts directly with erosive forces of a stream, buffer 170' or slope break, whichever is less.

Seeps and springs: if occur within buffer, then extend by 35' beyond them

Eastern Oregon riparian prescriptions:

For all managed zones on all streams:

Equipment limitation zone of 30'

All managed zones will retain at least 60 sq ft of basal area

Species will be selected from naturally occurring fire resilient species such as ponderosa pine, Douglas-fir, western larch, and available hardwoods.

Where possible, based off site conditions, the trees should be spatially distributed evenly.

Basal area targets should be achieved by retaining twenty-seven trees from the largest diameter class. The remainder of the basal area target should be retained from trees 8" and greater.

All retention will be measured on a per acre basis

Fish Streams:

Large 100' total with 30' no cut, 70' managed zone
Medium 100' total with 30' no cut, 70' managed zone
Small 75' total with 30' no cut, 45 managed zone

Perennial Streams:

Large: 75' total with 30' no cut, 45' managed zone
Medium 75' total with 30' no cut, 45' managed zone
Small terminal (no fish) flowing into a Fish stream: 60' with 30' no cut, 30' managed for 500' upstream
Small lateral flowing into Fish: 30' no cut for 250'

Seasonal Streams:

30' ELZ, retain advanced regeneration up to a cap

Salvage Logging:

The parties shall in good faith attempt to negotiate an agreement within the next month on salvage logging in riparian management areas.

SFOs:

Definition: < 5000 acres and < 2 mmbf rolling average over last three years

See Exhibit A

Debris Torrent Channels: Top 50% of gummy worms; 50' total nc buffer (25' per side), all red, otherwise gummies clipped to max of 1000'.

Initiation sites:

Screen 1: 20% gummy worm basins

Screen 2: 33% of sediment targeted. No filtering out of polygons without trigger hollows.

Screen 3: > 1/4 acre polygons

Screen 4: Operability Screen. Choose at least 50% of polygons per unit to protect.

1. Harvest units with initiation site polygons will require a written plan.
2. Prioritize buffering polygons with higher susceptibility to harvest (the red blobs that contain trigger hollows).
3. Prioritize buffering larger polygons over smaller polygons.
4. Allow adjustments to distribution and location of polygons to buffer to address safety concerns.
5. Yarding through buffered polygons that contain higher susceptibility locations will be prohibited. Yarding through a polygon without a high susceptibility is allowed, but the corridors (by number, size and location) should minimize impact on the buffered polygon.

Field criteria to be implemented by ODF trained and certified landowner representatives (criteria to be discussed).

Amphibians:

The following species will be covered by the HCP: Columbia Torrent Salamander, Southern Torrent Salamander, Coastal Giant Salamander, Cope's Giant Salamander, and Coastal Tailed Frog. The Cascade torrent salamander is not part of this agreement.

Mitigation:

Industry shall pay $5 million per year for mitigation, to be matched by the State in the amount of $10 million per year for mitigation.

Beavers:

- Report all beavers (*Caster canadensis*) taken (killed) or relocated from private forestlands to jurisdictional ODFW office.
- Prioritize non-lethal strategies for addressing beaver conflicts.
    - Landowner will identify problem beaver and request ODFW remove beaver via non-lethal strategies.
        - ODFW has 30-days calendar days to initiate and complete non-lethal removal methods. After 30-days landowner, at their sole discretion, may choose to lethally remove beaver.

    - In emergency situations where beaver activities are threatening landowner infrastructure (blocking culverts), the landowner, at its sole discretion may: 1) destroy the beaver dam, or 2) lethally remove the beaver.
        - If lethally removed, the landowner must report the removal to ODFW and the justification for removal.
- Prohibit commercial trapping on private forestlands, other than small forestland owners as defined under existing State law.
- Incorporate beaver research into the adaptive management strategy.
- Participate with ODFW to develop a voluntary relocation program.

Tethered Logging

Board of Forestry will commence rulemaking on tethered logging within three years.

Narrative chapters, as agreed upon as of this date, are incorporated herein by reference, namely Roads, Compliance and Adaptive Management (CAMPE), Funding, Mitigation, Amphibians, Stream Classification, and small forestland owners.

Roads Chapter Outline for the Oregon Private Forest Accord

Review and Edits – as of 10/24/21

Reflecting input from Conservation on 10/12/21 and Timber on 10/19/21
And 10/28/21 discussions with 10/29/21 landowner recommendations and evening discussion

I. Goals

A. Overarching Goal

The overarching goal of the Private Forest Accord road management package is a balanced regulatory approach in which landowners continue to operate all roads as necessary, minimize new road construction, and build and maintain roads to achieve habitat and water quality requirements that ensure the viability of covered species.

To achieve this overarching goal, 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 aquatic organisms during all mobile life-history stages;
c. Prevent or minimize drainage or unstable sidecast in areas where mass wasting could deliver to public resources or threaten public safety;
d. Prevent or minimize hydrologic alterations;
e. Prevent or minimize impacts to stream bank stability, existing stream channel, and riparian vegetation;
f. Hydrologically disconnect forest roads and landings to the maximum extent practicable from waters of the State.
g. Avoid, minimize, and mitigate loss of wetland function.

B. HCP Goals

- Increase distribution of fish on covered lands
- Prevent or minimize delivery of sediment from forest roads to waters of the state

C. Objectives of the HCP

In addition to the overarching goal identified for forest roads under the Private Forest Accord process, specific objectives for forest roads as part of the HCP include:

- Removal of anthropogenic barriers to fish passage on active and inactive forest roads
- Removal or stabilization of unstable road fills on active and inactive roads;
- Application of revised rules designed to avoid or minimize delivery of sediment on active and inactive roads and to hydrologically disconnect forest roads and landings to the maximum extent practicable from waters of the state;

- Assessment of and select treatment of abandoned roads

II. Introduction

Forest roads have the potential to impact the proposed covered species by blocking access to habitat and by allowing sediment delivery to watercourses. Networks of forest roads can affect forest hydrology by increasing overland flow, increasing drainage density, and intercepting sub-surface flow (See Wemple et al., 2001; Trombulak and Frissell, 2000; Gucinski, 2001, Van Meerveld et al., 2014). Forest roads can increase surface runoff and alter stream flow, although these effects vary in time and space depending on how recently the road has been constructed, where the road is located on the hillslope, and the scale of analysis (Wemple, et al., 2001). Networks of forest roads can also act as a source of fine sediment to streams (NCASI, 2001); Reid and Dunne, 1984).

Forest roads can also be an area of potentially high hydrologic connectivity between the road surface and streams (La Marche and Lettenmaier, 2001). Hydrologically connected roads can deliver increased runoff, sediment, and chemicals associated with roads, including spills, tire debris, or oils generated on the road surface or cutslope. At the watershed scale, connections between roads and streams can also alter the drainage density of the watershed and change runoff frequency and magnitude (Furniss et al., 2000; Weaver et al., 2015, Wemple et al., 2001).

The proposed changes to Oregon's Forest Practice rules outlined in this chapter provide specific practices to avoid or minimize these impacts as well as systemic changes to the regulatory structure to ensure the practices are applied. It is well established through research that application of the existing and revised rules for forest roads will avoid or minimize the delivery of sediment to waters of the state (Luce and Black, 1999).

Road Location, Design and Standards: Road location is one of the most important factors that can reduce water quality impacts from roads. Therefore, state recommendations for locating roads include: (1) use existing roads whenever possible; (2) locate roads as far from streams as possible; (3) locate roads to follow the existing slope contours; (4) locate roads on well drained soils and avoid wetlands, seeps, and other wet areas; (5) avoid steep, unstable slopes to minimize potential for landsliding; (6) minimize excavation, and (7) minimize the number of stream crossings (ODF 2003a, NCASI 2009a, NCASI 2012).

Timing of Road Construction and Restricting Use: Road construction can be scheduled to avoid disturbance during wet seasons when increased sediment and delivery are most likely to occur. Controlling the timing of road use can also be used to avoid severe disturbance of forest roads. For example, in the Mediterranean climate of the West Coast, native-surface roads typically are only used in the dry summer period to avoid the types of erosion and sediment loss that would occur with winter use. Furthermore, regulations governing use of roads during wet weather in the western US have become increasingly restrictive to protect water quality (ODF 2003b, Toman and Skaugset 2011).

Road Surfacing: BMPs for forest roads in erosion-prone areas typically include surfacing with gravel, rock, asphalt, or other suitable materials to provide bearing strength and reduce deterioration and erosion from the road surface, and to achieve durable road drainage configurations. Appropriate surfacing can be combined with compaction to further increase bearing strength and resistance to erosion. For example, Swift (1984) found that 15-cm of crushed rock reduced sediment by 78% compared to a bare road surface. Kochenderfer and Helvey (1987) found an 87% reduction in sediment yield from roads with 15-cm of rock compared to bare soil roads. More recently, Coe (2006) found 16-fold greater median sediment production from unrocked forest roads than from rocked roads in the Sierra Mountains. Unfortunately, even rocked roads can produce sediment during wet weather hauling. In order to reduce sediment production, managers should design road surfaces that resist rut formation and consider the aggregates level of fine sediment (Toman and Skaugset 2011).

Mulching, Seeding, and Other Road and Stabilizing Techniques: Treatment of bare cut and fill slopes with mulch and seeding are effective BMPs to reduce erosion rates (Bethlahmy and Kidd 1965, Megahan and Kidd 1972). Burroughs and King (1989) reviewed studies from around the US where dense grass was used for erosion control of bare soils and found an 86 to 100% reduction in sediment with establishment of dense grass. On native soil roads with light traffic, Swift (1984) found 45% lower sediment yields with grass cover. Furthermore, combinations of seeding, mulching, slash application and water diversion BMPs (i.e., waterbars) provide redundancy and increase the effectiveness of erosion prevention and road stabilization practices (Wear et al. 2013, Wade et al. 2012, Sawyers et al. 2012).

Road Drainage Structures: The spacing of cross drains has been positively correlated with the length of sediment travel along and below roads (e.g., Packer 1967). Therefore, effective spacing of drainage structures is critical, particularly for steeper road gradients with lower topographic position. The closer cross drains are spaced, the lower rill erosion (50 to 97% control reported by Packer) will be for the road surface.

Road Maintenance: Road maintenance is a balancing act between using sufficient treatment to keep the road safe and minimizing berms, rutting, and too much disturbance. As noted by Sugden and Woods (2007) in western Montana, reducing the frequency of grading can significantly reduce sediment yields from roads. Road slope, time since last road grading, roadbed gravel content, and precipitation explained 68% of variability in sediment yields from native surface forest roads (Luce and Black, 2001).

Disconnecting Roads from Streams: Road drainage structures that deliver runoff directly to streams can affect sediment loads, peak flows, and transport of pollutants to streams. Furniss et al. (2000) showed that hydrologically connected roads can deliver increased runoff, sediment, and chemicals associated with roads, such as spills or oils generated on the road surface or cutslope. Connections between roads and streams can also alter the drainage density of watersheds and change runoff frequency and magnitude (Furniss et al., 2000; Jones et al., 2000).

Several older surveys documented high rates of road-stream connectivity. For example, in western Washington, Bilby et al. (1989) found that 34% of road drainage structures discharged directly to streams. In the Washington Cascades, Bowling and Lettenmaier (1997) found that 45% of culverts were connected to streams directly and 57% were connected either directly or through a gully.

Application of regulations similar to what is proposed as part of the Private Forest Accord has demonstrated that these practices are effective in disconnecting roads from streams. For example, Dubé et al. (2010) found just 11% of the road network in Washington state to be hydrologically connected. Martin (2009) reported on a survey of private forest roads covering 1,047 miles of roads in eastern and western Washington. He found that 73% of the road network had low delivery potential (roads located on ridgelines, in shallow terrain, or without crossing defined channels). About half of the road system with high delivery potential was disconnected. Based on that survey, about 12% of the road network was hydrologically connected. Both of these studies were conducted prior to all of the road network being upgraded to the current standards.

Limiting Road Use during Wet Periods: Mills et al. (2003) examined turbidity response to wet season road use by monitoring turbidities above and below road crossings. Of sites monitored, 30% showed reductions or no changes to background levels of turbidity, and 90% showed turbidity increases of less than 20 nephlometric turbidity units (NTU). The remaining 10% ranged from 20 to 520 NTU. Total precipitation greater than 1.5 – 3.0 inches over three days, the fraction of surfacing material that was silt sized or smaller, and more than 250-feet of road ditch flowing directly to the stream were factors that resulted in statistically significant increases in turbidity below road crossings. Findings from this study influenced a subsequent revision to Oregon's FPA rules.

Fish Passage and Barrier Removal:

The movement of aquatic organisms is an essential component of their distribution across the landscape and the persistence of populations and species. As life history needs shift, different movements for foraging, reproduction, growth, and refuge are required (Hoffman and Dunham, 2007). Biological corridors and habitat connectivity are critical to the survival and reproduction of covered species (Oregon Dept. of Fish and Wildlife, 2019). Naturally occurring barriers may limit movement of aquatic organisms due to physical constraints, such as channel slope or stream size, limits on food resources, or environmental disturbances (Hoffman and Dunham, 2007). However, barriers placed by humans that restrict or eliminate the movement of aquatic organisms can have multiple impacts including fragmenting and isolating populations, increasing vulnerability to disturbances, reducing habitat connectivity, and lowering genetic diversity (Hoffman and Dunham, 2007; Hotchkiss and Frei, 2007; Rolls, 2011).

Road crossings in particular can create barriers to fish passage that may result in the loss of habitat for spawning or rearing, isolated genetic populations, inability to access refuge habitats

during environmental disturbances, or extirpation (See Price et al., 2005; Bates et al.,2003; Beechie et al., 2006; Reiman and Dunham, 2000; Wofford et al. 2005; Neville et al., 2009; Reeves et al., 1995; Wofford et al., 2005). Barriers to aquatic organism passage related to culverts can include outlet or inlet drops, clogged or collapsed culverts, excessive water velocities and turbulence, loss of bank-edge area, and lack of natural substrate (U.S. Forest Service, 2008). Reducing the impacts of human-placed barriers, such as culverts, requires mitigation of the effects on ecological processes. An ecosystems-based approach to road-stream crossings, such as stream simulation, prioritizes maintaining habitat diversity and quality, the connectivity of watersheds, and key ecological processes (U.S. Forest Service, 2008). Kemp and O'Hanley (2010) state that "evaluation of habitat restoration techniques have shown that the removal or mitigation of barriers that block fish dispersal lead to some of the largest increases in fish production (Roni et al. 2002)."[8] Most recently, fish passage restoration at the watershed-scale has been utilized to increase habitat gain (Oregon Dept. of Fish and Wildlife, 2019).

III. Revisions to Current Oregon Forest Practice Rules

Oregon's regulations for forest roads offer a comprehensive suite of best management practices to ensure the protection of public resources. Clear, specific, measurable, objective, and enforceable rules are critical for proper application by practitioners and for transparency to the public. Proposed changes to Oregon's forest road rules that reflect this intent are included below. Specific rule language changes can also be found in Appendix X.

The following are short summaries of revisions. Please refer to Appendix X for the full proposed text and clarifying comments:

- **OAR 629-600-0100 Definitions:** Adds definition for "hydrologic disconnection"
- **OAR 629-625-0100 Written Plans for Road Construction**:
    - Requires written plans for all crossings for all waters of the state;
    - Requires written plans for roads in critical locations.
- **OAR 629-625-0200 Road Location:**
    - Hydrologic connectivity between roads and waters of the state must be reduced to the maximum extent practicable
    - Operators shall avoid locating roads on critical locations and highest water resource impact locations. All roads constructed in critical locations and highest water resource impact locations shall be reviewed on site and approved by the Department with consultation from a qualified professional as appropriate for the site, including but not limited to, ODF, DEQ, and ODFW.
    - All road construction in critical locations must be outlined in a written plan.

- Critical locations includes within Significant wetlands,[1] stream-associated wetlands,[2] or wetlands[3] greater than 0.25 acres in size.

- **OAR 629-625-0310 Road Prism:** Operators shall design roads to minimize impacts to covered species from new road construction. Adds maximum running surface width. Requires operators to use end haul construction and prohibits placing fill within the RMA of a stream or within 75 feet of a stream channel where an RMA is not required (except for stream crossings).
- **OAR 629-625-0320 Water Crossing Structures**
  - Requires written plan approved by ODF for all water crossings for waters of the state.
  - Permanent crossings
    - Requires design to the 100-year peak flow for non-fish streams (Type N, D). Guidance for determining the 100-year peak flow shall be updated, at a minimum, every ten years to incorporate the most recent available peak flow data.
    - Requires stream simulation design for fish streams (F, SSBT)
    - Expands culvert sizing requirements
  - Temporary crossings
    - Non fish designed to adequate flow
    - Adds additional requirements for Stormwater, Erosion, and Sediment Control; Pollution Control; In-Water Work, Worksite Isolation, and Dewatering; Maintenance; and Monitoring
- **OAR 629-625-0330 (and OAR 629-625-0420) Drainage**
  - 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.
  - Stream crossings, cross-drains and ditch-relief culverts must not have stream diversion potential.
  - Outsloping shall be used to the maximum extent practicable when site specific conditions allow for its safe and effective use.
- **OAR 629-625-0400 Road Construction:** Require end haul or over haul construction if fill is placed within riparian management areas or within 50 feet from waters of the state or where the department determines there is a potential for mass soil failure from

[1] OAR 629-600-0100 (70) "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.

[2] OAR 629-600-0100 (77) "Stream-associated wetland" means a wetland that is not classified as significant and that is next to a stream.

[3] OAR 629-600-0100 (95) "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 (93) of this rule.

overloading on unstable slopes or from erosion of side cast material that can cause damage to the public resources.

- **OAR 629-625-0410 Disposal of Waste Materials:** Operators shall place waste when constructing, maintaining, or vacating roads in stable locations outside of the RMA where those materials may not enter waters of the state or otherwise degrade aquatic resources. If other alternatives are unstable or there is a higher potential for delivery to waters of the state, operators may place waste materials within the RMA but no closer than 50 feet from a water of the state (requires a written plan). If a riparian management area is not required, operators shall place waste materials at a minimum of 50 feet from a water of the state and submit a written plan that describes site specific measures that prevent or minimize the entry of these materials to waters of the state. Exempts woody debris, rocks, or other materials placed for erosion control or for habitat restoration.
- **OAR 629-625-0440 Stabilization:** Establish effective drainage to avoid potential delivery of sediment to waters of the state and stabilize exposed material which is potentially unstable or erodible by use of seeding, mulching, riprapping, leaving light slashing, pull-back, or other effective means, as soon as practicable after completing operations or prior to the start of the rainy season. Operators shall not incorporate slash, logs, or other large quantities of organic material into road fills.
- **OAR 629-625-0600 Road Maintenance:** Active and inactive roads shall be maintained to protect water quality and ensure hydrologic disconnection of roads from waters of the state to the maximum extent practicable. 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.
- **OAR 629-625-0650 Vacating Forest Roads:** Establishes standards for vacated roads.
- **[NEW RULE SECTION] OAR 629-625-XXX Construction in Wetlands:** Establishes standards for construction in wetlands to avoid, minimize, or mitigate loss of wetland function.

IV. Inventory Processes for Forest Roads

In addition to revising existing rule language (see above Section 3), we propose several inventory processes to meet the overarching goal of the Private Forest Accord road management package to develop a balanced regulatory approach in which landowners continue to operate all roads as necessary, minimize new road construction, and build and maintain roads to achieve habitat and water quality requirements that ensure the viability of covered species. In summary, these additions include:

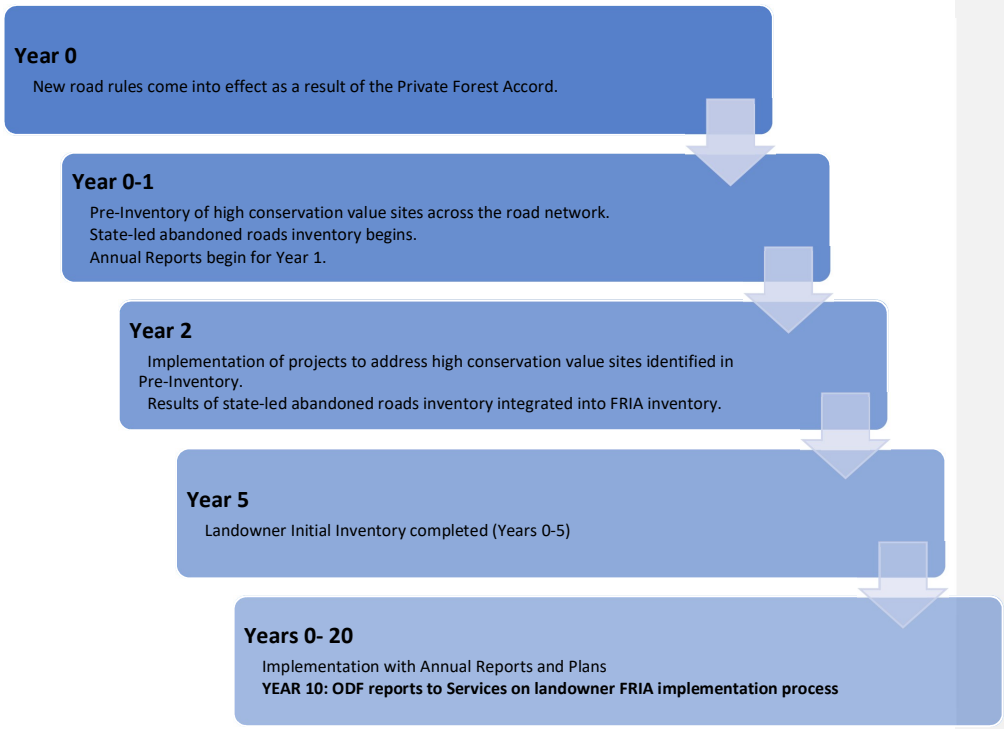
A. **Road Inventory and Assessment (FRIA) Process:** This establishes an inventory process for landowners to assess the complete road network within their ownership. The goal is to identify whether roads are meeting the most current Forest Practice

Rules (FPRs), including new standards established through the Private Forest Accord. It requires identification and implementation of high conservation value projects in the first 1-5 years. By Year 5, landowners must submit an Initial Inventory to ODF that describes the current status of the road network and a plan to bring roads into compliance with the most current FPRs. The three core documents for the Initial Inventory due by Year 5 are 1) maps, 2) work matrix, and 3) a written plan. By Year 5 through the culmination of the FRIA process (Years 0-20), landowners must bring roads into compliance with current FPRs and submit Annual Reports and Plans to ODF.

1. Pre-Existing Culverts: As part of the Initial Inventory process, landowners may categorize a culvert as "pre-existing" (also referred to as a "grandfathered culvert") if it is fully functioning with minimal risks to public resources. This section provides additional details regarding the process to determine whether or not a culvert is "pre-existing" and therefore whether it is included in the FRIA process.

B. State-Led Abandoned Roads Inventory: Under this process, the state of Oregon takes the lead in identifying abandoned roads that are not proactively identified or disclosed by landowners in the FRIA process. First, the state leads a cooperative effort to identify abandoned roads and assess risk. Then, the state prioritizes abandoned roads for potential remediation. Landowners then add identified high priority abandoned road locations into the FRIA process. Field verification to determine net benefits and practicability of remediation occurs. Finally, if conditions are met, the abandoned road is remediated as part of the FRIA process.

Figure 1. Timeline of Inventory Processes



A. The Forest Road Inventory and Assessment (FRIA)

The primary goal of the FRIA process is to determine whether forest roads meet Oregon's most current Forest Practice Rules (see OAR 629-625-000 to -0700) and technical guidance as updated in this Private Forest Accord process (See Section 3 above).

1. Forest Roads Inventoried under FRIA Process

Roads to be inventoried include Active and Inactive Forest Roads (as defined). Landowners do not need to affirmatively seek out Abandoned roads, but shall disclose any Abandoned roads within their ownership of which they are aware. To the extent known, Abandoned roads and roads vacated pursuant to OAR 629-625-0650 should be included in a FRIA inventory.

There will be four basic road categories tracked within a FRIA:

- Meets FPR standards;
- Does not meet FPR standards;
- Vacated (per OAR 629-625-0650); and

- Abandoned.

Landowners are encouraged to create distinct FRIA's for geographically distinct ownership blocks. These blocks shall be called "Road Management Blocks" (RMBs). Separate inventories will be done for distinct RMBs.

1. The FRIA Process for Each Road Management Block (RMB)

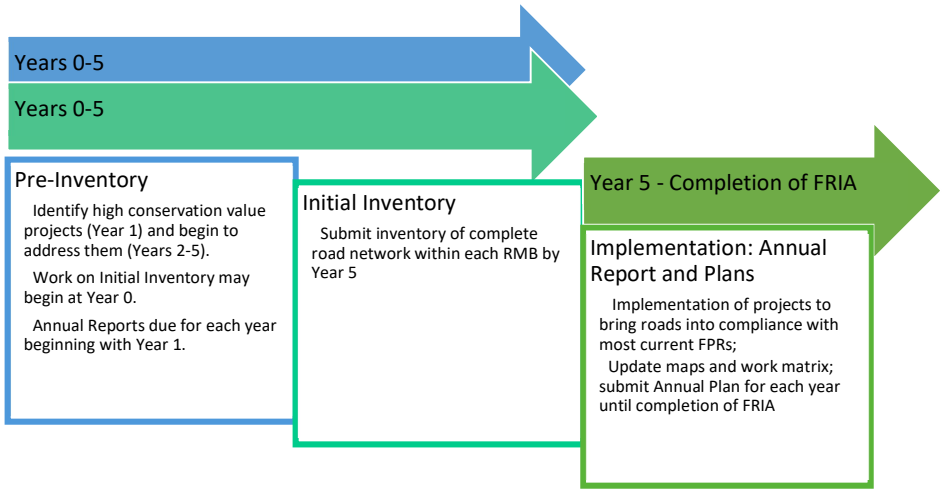
For each RMB, the FRIA process will involve three components:

(1) **A "Pre-Inventory" process** to identify and conduct very high conservation-value projects from the outset of the FRIA;

(2) **An "Initial Inventory"** where the complete road network inventory must be submitted to ODF within the initial 5-year period; and

(3) **Implementation and "Annual Report and Plan"** that must be submitted to ODF each year starting at the end of Year 1 until the culmination of the FRIA process (Year 20). The Annual Report and Plan tracks the work done and demonstrates progress toward goal.

Figure 2. Timeline for FRIA Process



a. The Pre-Inventory (Years 1-5)

Year 1: Landowner prepares a list of very high conservation value sites based on the landowner's evaluation of:

- Areas of known chronic sedimentation. Consideration will be given to areas where log hauling will occur during the 5-year inventory phase.
- Fish passage blockages known to be of significant concern.

- Ongoing stream diversions at stream crossings and areas with stream diversion potential.
- Areas of known hydrologic connectivity. ~~concerns~~.
- Submit Annual Report at end of Year 1.

Year 2: Landowner meets with ODF/ODFW to discuss the Year 1 list and to solicit feedback on the prioritization of the pre-inventory. ODF/ODFW can propose additional projects to a landowner's pre-inventory list if they believe that a high conservation value site has not been addressed.

Landowners that do not identify any high conservation value sites in the Pre-Inventory are still required to meet with ODF/ODFW to solicit feedback on the process.

Years 2-5:

- Landowners will begin to address projects following Year 2 meeting with ODF/ODFW.
- Annual Reports: Landowners will submit annual reports to ODF for Years 2-5 to confirm that pre-inventory projects are being addressed and provide status updates.

b. The Initial Inventory (Years 1-5)

The Initial Inventory occurs concurrently with the Pre-Inventory during the first five years of the FRIA process. As part of the Initial Inventory, an assessment of the complete road network for each RMB must be submitted to ODF within the initial 5-year period of the FRIA.

Years 1-5: Landowners will assess the complete road network within each RMB to develop the core documents required for the Initial Inventory submission (maps, work matrix, and written plan).

Year 5: Before the close of Year 5, landowners will submit the Initial Inventory to ODF.

The Initial Inventory Submission will include three core documents:

(1) **Maps**: Paper or electronic maps showing an RMB's road network. ODF will provide guidance on how to best orchestrate the sharing of data.
(2) **Work Matrix**: A document or table showing actions necessary to ensure that all roads are brought into compliance with current FPRs. This document will also show prioritization of work.
(3) **Plan**: A written plan describing how the landowner intends to bring its road network into compliance by the close of the FRIA period (Years 0-20). Shall include specific actions likely to be addressed in upcoming calendar year, and also a general description of how all work will occur during the FRIA period. This shall include a description of how the landowner is prioritizing the work, with the goal of optimizing the environmental benefits of projects and ongoing operations.

The information included in the Initial Inventory Submission shall include:

- **Location and Length of Forest Roads**: Inventories will show the location and estimated length of Active, Inactive, and Vacated roads in an RMB.
- **Locations of Streams**: To the extent known, an inventory will show the location of streams in an RMB. Streams shall be coded as Fish, non-fish, SSBT, fish presence unknown, and/or 303(d) listed due to sedimentation, turbidity, or temperature to assist in the prioritization of work.
- **Status of Road:** Each road segment in an inventory shall be identified as meeting FPR standards, not meeting FPR standards, vacated, or abandoned. This will include a determination of whether a road segment is complying with FPRs that are designed to hydrologically disconnect roads. Where a road is determined to not comply with FPRs, the landowner will identify the work necessary to achieve standards and prioritize the work accordingly (e.g. replace culvert, disconnect crossing, etc.). Detailed design plans will be submitted in the Annual Report and Plans.
- **Abandoned Roads:** Abandoned roads known by the landowner should be disclosed in the FRIA. Unknown abandoned roads will be addressed through the State's inventory process and integrated into the FRIA as described in that process.
- **Road-Related Fish Passage Barriers**: Each known or potential road-related fish passage barrier should be identified and prioritized. The prioritization of road-related fish passage barriers shall be described in the Initial Inventory with the goal of optimizing environmental benefits of projects and ongoing operations.
- **Locations of Stream Crossing Culverts:** The inventory shall show the location of stream crossing culverts in an RMB.
- **Status of Stream Crossing Culverts:** The inventory shall show the status of stream crossing culverts in an RMB. An assessment of the status of a stream crossing culvert shall include:
    - **Date of installation**, if known;
    - **Assessment of the culvert material used**;
    - **Assessment of whether the culvert is a "fully functioning culvert in Type F and Type SSBT stream,"** which is defined as those culverts that, at the time of FRIA inspection, meet all current requirements of the Forest Practice Rules and ODF Tech Note 4. The current effective version of Tech Note 4 is Version 1 (effective May 10, 2002).
    - **Assessment of whether the culvert is a "fully functioning culvert in Type N and D streams,"** which is defined as those culverts that, at the time of FRIA inspection, meet all requirements of the Forest Practice Rules as of January 1, 2022.
    - **Assessment of whether the culvert has "imminent risk of failure,"** which is defined as culverts in all waters of the state that:
        - Are actively diverting streams or ditchline runoff;
        - Are actively delivering sediment to waters of the state;
        - Are completely blocked, plugged, crushed, or buried;

        - Have partially or completely failed fill; and
        - Have high plugging potential as determined by the Stream Blocking Index (SBI)[4] or other comparable methodology, high magnitude of fill at risk, and high diversion potential in one or both directions.
    - **Assessment of whether the culvert has "minimal risks to public resources,"** which is defined as culverts in all waters of the state that:
        1) Provide unimpeded passage for all species of adult and juvenile fish;
        2) Avoid delivery of sediment to waters of the State;
        3) Have not diverted streams or ditchline runoff and do not have the potential to divert streams or ditchline runoff;
        4) For Type F and Type SSBT streams, ensure that all physical and biological characteristics of the natural stream channel are preserved throughout the water crossing structure, as well as the adjacent channel both upstream and downstream; and
        5) Provide opportunity for passage of expected bed load and associated large woody material likely to be transported during flood events.

    If the status of the culvert cannot be determined, it must be included and prioritized for improvement during the course of the FRIA. The status may be changed as more detailed information is gathered as part of the annual work plan and inventory update process.

c. Annual Inventory Report and Plans (Years 5 – Year 20)

After the Initial Inventory is submitted to ODF, landowners shall submit an Annual Inventory Report each year until the completion of the FRIA process (Years 0-20).

<u>The Annual Inventory Report and Plans will include three core documents</u>:

- **Updated Maps:** Mapping similar to Initial Inventory submission but updated to reflect work done over course of the prior year, additional information discovered, and potential changes in prioritization.
- **Updated Work Matrix:** Updated table or document corresponding to inventory submission showing work completed and work to be completed. May show changes in prioritization and discovery of new issues.
- **Annual Plan:** Updated plan discussing 1) work conducted in prior year, 2) work likely to be completed in upcoming calendar year, and 3) general plan to complete all necessary work by the end of the FRIA period.

[4] Flanagan, S. A., Furniss, M. J., Theisen, S., Love, M., Moore, K., and Ory, J. 1998. Methods for Inventory and Environmental Risk Assessment of Road Drainage Crossings. USDA Forest Service Technology and Development Program 9877-1809-SDTDC. 45 p.

Collectively the Annual Plans, Updated Work Matrixes, and Updated Maps for each RMB are to show/contain:

- **Total Length of Forest Roads Improved**: Both in annual period, and over course of FRIA process.
- **Total Length of Forest Roads Still Requiring Improvement**: Remaining miles of road requiring improvement.
- **Total Length of Forest Roads Planned for Improvement in Upcoming Year**: Plan to detail location and nature of the work.
- **Total Length of Forest Roads Vacated**: Both in annual period, and over course of FRIA process.
- **Total Length of Forest Roads Planned to be Vacated in the Upcoming Year**: Plan to detail location and nature of work.
- **Number of Fish Barriers Improved**: Both in annual period, and over course of FRIA process.
- **Number of Fish Barriers Still Needing Improvement**: Both in annual period, and over course of FRIA process.
- **Number of Fish Barriers to be Improved in the Upcoming Year**: Plan to detail location and nature of work.
- **Certification that Landowner Remains on Track to Complete FRIA Process**: Landowner to certify, after review of inventory, work history, and plans that they believe they will meet FRIA completion deadline. Failure to certify requires Landowner to seek immediate extension from ODF.

2. Pre-Existing Culverts Identified in FRIA Process

In the context of the FRIA process, "pre-existing culverts" refers to all fully functioning culverts in all waters of the state with minimal risks to public resources.

Pre-existing culverts require a separate category and treatment under FRIA if these culverts are fully functioning with minimal risks to public resources and therefore are a lower priority to bring into full compliance with current Forest Practice Rules. Culverts that are not fully functioning may be impassable to fish, restrict fish movement, result in loss or degradation of habitat, have diversion potential or high hydrologic connectivity, or otherwise represent a risk to public resources.

a. Definitions:

"Pre-existing culverts" are defined as fully functioning culverts with minimal risks to public resources.

"**Fully functioning culverts in Type F and Type SSBT streams"** are defined as those culverts that, at the time of FRIA inspection, meet all current requirements of the Forest Practice Rules

and ODF Tech Note 4. The current effective version of Tech Note 4 is Version 1 (effective May 10, 2002).

"Fully functioning culverts in Type N and D streams" are defined as those culverts that, at the time of FRIA inspection, meet all requirements of the Forest Practice Rules as of January 1, 2022.

Culverts with "**minimal risks to public resources**" are defined as culverts in all waters of the state that:

6) Provide unimpeded passage for all species of adult and juvenile fish;
7) Avoid delivery of sediment to waters of the State;
8) Have not diverted streams or ditchline runoff and do not have the potential to divert streams or ditchline runoff;
9) For Type F and Type SSBT streams, ensure that all physical and biological characteristics of the natural stream channel are preserved throughout the water crossing structure, as well as the adjacent channel both upstream and downstream; and
10) Provide opportunity for passage of expected bed load and associated large woody material likely to be transported during flood events.

Culverts that have "**imminent risk of failure**" are defined as culverts in all waters of the state that:

1) Are actively diverting streams or ditchline runoff;
2) Are actively delivering sediment to waters of the state;
3) Are completely blocked, plugged, crushed, or buried;
4) Have partially or completely failed fill; and
5) Have high plugging potential as determined by the Stream Blocking Index (SBI)[5] or other comparable methodology, high magnitude of fill at risk, and high diversion potential in one or both directions.

b. Conceptual Framework to Address Pre-Existing Culverts in FRIA:

During the Initial Inventory of the FRIA, landowners shall assess the status of stream crossing culverts to determine whether the culvert is:

1) "Fully functioning culverts in Type F and Type SSBT streams";
2) "Fully functioning culverts in Type N and Type D streams";
3) Culvert in all waters of the state with "minimal risks to public resources"; or
4) Undetermined status. If the status cannot be determined, the culvert must be included and prioritized for improvement during the course of the FRIA.

[5] Flanagan, S. A., Furniss, M. J., Theisen, S., Love, M., Moore, K., and Ory, J. 1998. Methods for Inventory and Environmental Risk Assessment of Road Drainage Crossings. USDA Forest Service Technology and Development Program 9877-1809-SDTDC. 45 p.

1. Pre-existing Culvert Determination:

a. **If the structure is fully functioning with minimal risk to public resources and the date of installation is known**, it shall be maintained until the end of its service life.

b**. If the structure is fully functioning with minimal risk to public resources and the date of installation is NOT known,** the culvert must be inspected at least every five years as part of the Annual Inventory Report and Plans process under the FRIA.

2. **If the structure is NOT fully functioning, or there is a risk to public resources** (e.g., fish passage barrier or high diversion potential), then it needs to be repaired or replaced as soon as practicable as part of the FRIA process. These culverts would not be considered "pre-existing culverts."

3. **If the structure has an imminent risk of failure, then it needs to be repaired or replaced as soon as practicable, but no later than two years after the structure is identified.** Repair or upgrades can include, but shall not be limited to, measures such as adding a Metal End Section (MES) at the inlet to increase capacity and debris-passing performance. If structural failure occurs, the landowner or manager must, within 90 days, submit to ODF for review and approval a plan or plans for that culvert to be repaired or replaced as soon as practicable. These culverts would not be considered "pre-existing culverts."

4. **Off ramps include:**

a. **Small forest landowners:** Small Forest Owners (SFOs) will comply with all new PFA Road rules with the following exceptions:

SFOs will not be required to complete a Forest Road Inventory Assessment (FRIA) like large forest owners. Instead, SFOs will complete a road survey specific for SFOs. Road surveys will be completed and submitted to Oregon Department of Forestry (ODF) with a notification to harvest timber. It will include all roads in the SFOs parcel. Road surveys will indicate the condition of the roads and culverts. Timing of improvements will be determined by:

- Culverts -Life of existing culverts
- Legacy and Abandoned Roads - SFOs will get state funding for repairing any Legacy Roads or Abandoned Roads identified in road survey. ODF will review Legacy and Orphaned Roads and prioritize their repair when state funding is available.
- Culverts on fish streams will be evaluated as meeting or not meeting current fish bearing culvert requirements. Any fish passage culvert needing replacement because of improper size, will be reported to ODF to determine whether it qualifies for public assistance defined in the Oregon Family Forest Fish Passage Program (OFFFPP). ODF will maintain a list of culverts requiring replacement under OFFFPP and coordinate with other

state agencies to determine prioritizing culvert replacements within state funding availability.

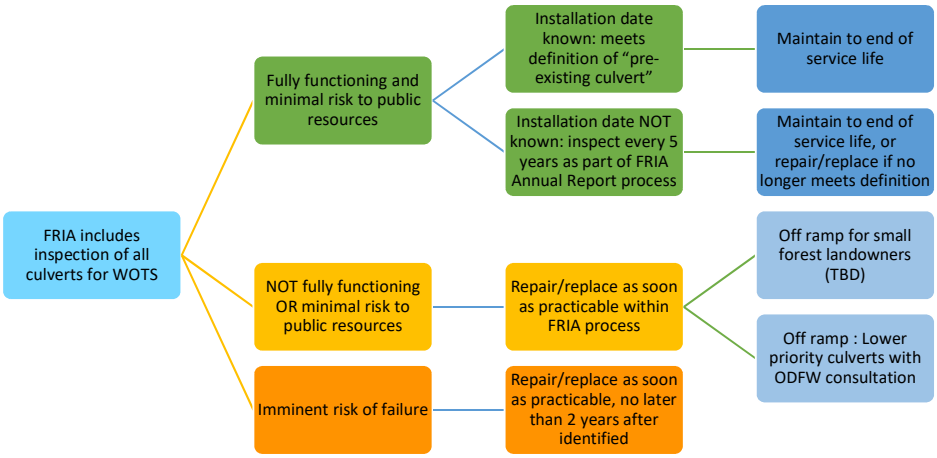
Oregon Family Forest Fish Passage Program (OFFFPP)
Details of OFFFPP

- The OFFFPP will be fashioned similar to the FFFPP in Washington, taking into consideration the big differences between Oregon and Washington.
- There will be an outreach program through the Partnership for Forestry Education to inform SFOs about the OFFFPP.
- SFOs will be encouraged to contact ODF about fish bearing culverts on their property and will then be automatically eligible for participation in the OFFFPP's priority and funding opportunities.
- SFO can work with other partners to coordinate and plan the replacement of a fish bearing culvert.
- Fish bearing culvert replacements will be funded between 75% to 100% of the cost, from state funds.
- Prioritizing projects will be determined by ODF after consulting with other state agencies and within the limits of available state funding.
- The SFO will be required to coordinate the culvert replacement project on their property with oversight from ODF through a contract with ODF. SFO will determine timing of project, hiring contractors, overseeing project, and reporting to ODF for payment to contractors.
- All completed projects will be reported with cost and miles of streams opened up for better fish use.

b. **Lower priority culverts, in consultation with ODFW, may be maintained until the end of their service life, or a maximum of 30 years:**

(i) If, in consultation with ODFW, the culvert is partially functioning to provide fish passage and the cost of repair/replacement is disproportionate to the benefits of repair/replacement; or
(ii) If, in consultation with ODFW, the culvert is providing valuable wetland or pond habitat.

Figure 2. Conceptual Framework to Address Pre-Existing Culverts in the FRIA Process



B. State-Led Abandoned Roads Inventory

1. Abandoned Roads

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. Many abandoned roads are unmapped and may be difficult to inventory. Abandoned roads present special risks to aquatic systems, as lack of regular access can result in ongoing and potential problems going unnoticed. Some of these abandoned roads have the potential to produce chronic sediment and increase risks of mass wasting and stream diversions. Gucinski et al. state that "Plugged culverts and fill-slope failures are frequent and often lead to catastrophic increases in stream channel sediment, especially on abandoned or unmaintained roads (Weaver and others 1995)" (Gucinski et al., 2001, p. 28).

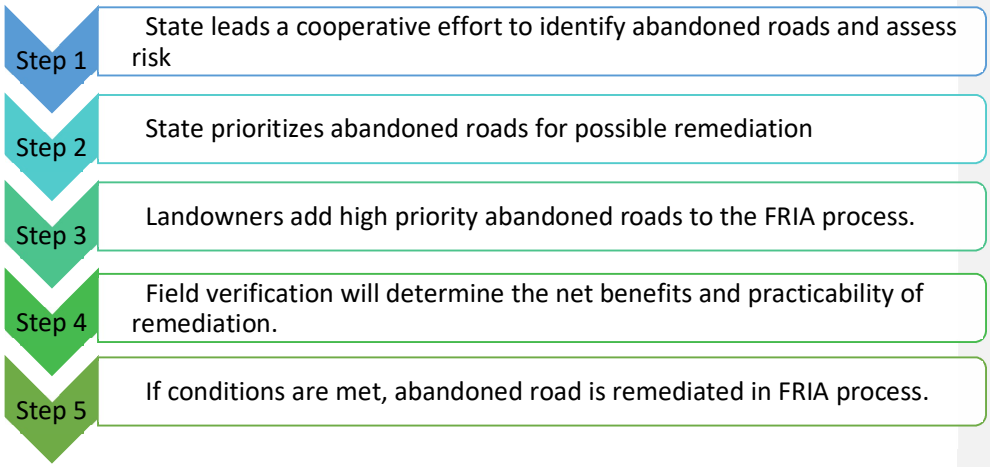
Stream diversion and diversion potential at stream crossings are critical concerns for abandoned roads. Diversion potential for a stream exists when crossing capacity may not accommodate high flows, causing the stream to back up behind the fill and flow down the road. If the stream crossing capacity is exceeded and the stream simply flows over the road fill and back into the natural channel, the stream crossing does not have diversion potential. Stream diversion may also occur due to ice and snow accumulations on the road or if debris flows deposit material across the roadway (Furniss et al., 1997, p. 1). Furniss et al. (1997) note that "In almost all cases, diversion will create a greater erosional consequence of capacity exceedance than streamflows that breach the fill but remain in the channel" (p. 1).

The number and condition of abandoned roads on private timberlands in Oregon is uncertain, but abandoned or "legacy" roads have been cited by the Environmental Protection Agency and NOAA Fisheries as an area of concern and a reason for the agencies' disapproval of Oregon's coastal nonpoint pollution control program.

2. Process to Address Abandoned Roads through State-Led Inventory

To address the risks that abandoned roads may pose to waters of the state, the following process will be implemented. This process would prioritize assessments of abandoned roads and require remediation if needed based on risk to aquatic systems and cost to remedy.

Figure 3. Summary of State-Led Abandoned Roads Inventory Process



Step 1) The state, in coordination with EPA, leads a cooperative effort to identify abandoned roads and assess risks.

ODF will identify abandoned roads through the use of LiDAR object-based classification (e.g., the methods described in Sherba et al., 2014), supplemented by existing GIS data, aerial images, landowner disclosure of known abandoned roads, inventory data, and some site visits for calibration. DEQ and US EPA will provide consulting and technical support for ODF implementation.

After identifying abandoned roads, the state and cooperators would then identify locations associated with abandoned roads with a high-level of risk to waters of the state or infrastructure.

Criteria to determine high risk locations, in order of preference, should include:

1. Ongoing stream diversions at stream crossings;
2. Diversion potential at stream crossings;
3. Likelihood of hydrologic connectivity;
4. Comparative risk of chronic sediment produced; and
5. Risk of contribution to mass wasting.
6. Other relevant criteria as determined by ODF in consultation with other state and federal agencies.

Additional criteria to determine high risk locations should consider abandoned roads located in the "critical locations" and "six highest water resources impact locations" as defined in ODF Tech Note 7:

1. High landslide hazard locations;
2. Slopes over 60 percent with decomposed granite-type soils;
3. Within RMAs, or within 50 feet of stream channels or lakes, or within wetlands; and
4. Locations cutting through the margins or toe of active or recently active deep-seated landslide deposits and where a reactivated landslide would likely enter waters of the state.

The result of this process will yield a set of potential high risk locations for further consideration for remediation.

Step 2) State prioritizes abandoned roads for possible remediation.

Following the identification of abandoned roads and ranking of risk, the state will work with landowners to develop priorities for potential remediation in a stakeholder process to .determine high priorities.

Considerations should include:

1. Importance of the watershed (HUC-6) to recovering salmonids;
2. Number of stream crossings based on full-densified stream network in GIS or LiDAR;
3. Cost and benefit of work to remediate problems and risks; and
4. Other relevant criteria as determined by ODF in consultation with other state and federal agencies developed in the stakeholder process.

Commented [AM1]: Can this be an early task for the AMAC?

The result of this process will yield a set of high priority abandoned road locations from the identified high risk locations in Step 1.

Step 3) Landowners add high priority locations to the Forest Roads Inventory and Assessment (FRIA).

Where high priority abandoned road locations are identified under Step 2, landowners shall add them to the Initial Inventory (Years 1-5) of the FRIA process.

Step 4) Field verification will determine the net benefits and practicability of remediation.

Field verification of all high priority sites will be documented through the FRIA annual implementation reporting process. ODF, in consultation with the Oregon Department of Environmental Quality and Oregon Department of Fish and Wildlife when necessary, will review landowner verifications of high priority sites and remediation plans as part of the annual work plan process.

Field verification shall include:

1) Confirmation that the high priority location is on an abandoned road.
2) Determination regarding whether the high priority location is diverting the stream or has diversion potential.
    a. The state and cooperators will develop indicators to determine whether the location is actively diverting the stream or has diversion potential. Indicators could include (See Furniss et al., 1997):
        - Gullying of the road surface, fill, and hillslopes below the road;
        - Deposition on the road and inboard ditch;
        - Roads that have a continuous climbing grade across the crossing or where the road slopes downward away from the crossing in at least one direction;
    b. Landowners should consider potential erosional consequences, the value of downstream resources, the sensitivity of downstream resources to erosion and sedimentation, and costs to repair the road if a stream diversion occurs.

3) Determination regarding whether the high priority location is actively contributing sediment or has a high risk of contributing significant quantities of sediment to waters of the state.
    a. The state and cooperators will develop indicators to determine whether the location is actively contributing or has the potential to contribute sediment to waters of the state. These indicators could include:
        - A sediment deposit that reaches the high water line of a defined channel of flood prone area.
        - A channel that extends from a road drainage structure outlet to the high water line of a defined channel or a flood prone area.
        - Evidence of surface flow between the drainage structure outlet and a defined channel or a flood prone area.
        - Observation of turbid water reaching waters of the State during runoff events.
        - 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);
        - 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.
- Native surfaced road exhibiting erosion.
- Native-surfaced road composed of erodible soil types (e.g., granitic soils).
- Rilled, gullied, or rutted road approaches to crossings.
- 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).
- 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).
- 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 located in areas of erodible soils.

4) Determination regarding whether the restoration would be a net benefit to waters of the state.
    a. To determine whether restoration would be a net benefit to waters of the state, landowners must weigh the ecological impacts of accessing and addressing the high priority location against the value of vacating the high priority locations.
    b. This analysis will be presented as part of the annual reporting process.

5) Determination regarding the practicability of restoration/remediation.
    a. To determine practicability, landowners must evaluate the financial expense and environmental benefit for a range of alternatives. These alternatives could include no action, vacating the high priority location, and any other reasonable mitigation alternatives to address identified risks, including but not limited to:
        1) Ongoing stream diversions at stream crossings;
        2) Diversion potential at stream crossings;
        3) Likelihood of hydrologic connectivity;
        4) Comparative risk of chronic sediment produced; and
        5) Risk of contribution to mass wasting.
    b. Landowners must then propose the most practicable alternative from this analysis as part of the annual reporting process.

Step 5) If conditions are met, identified problems shall be remediated in the FRIA process (Years 0-20).

In consultation with ODF, if the landowner determines that all four conditions are met, then the project will be scheduled for remediation in the FRIA process through the Annual Reports and Plans (Year 1 – Year 20).

1) the high priority location is an abandoned road;
2) the high priority location is actively contributing or has a high risk of contributing significant quantities of sediment to waters of the state;
3) the restoration would be a net benefit to waters of the state; and
4) restoration is practicable.

V. Hydrologic Connectivity in Forest Practice Rules (FPR) Revisions and Proposed Inventory Processes

A. Hydrologic Connectivity

Hydrologic connectivity occurs where road and ditch runoff is delivered to the natural stream channel system. Roads can generate overland flow due to the relatively impermeable surface of the road prism and can also intercept interflow at cutslopes, effectively converting subsurface flows to surface flows. When these surface flows have a continuous flow path between the road prism and a natural stream channel, hydrologic connectivity occurs (Furniss et al., 2000, pp. 5-6). As Furniss et al. describe, "a hydrologically-connected road becomes part of the stream network" (pp. 5-6).

Hydrologically connected roads can deliver increased runoff, sediment, and chemicals associated with roads, such as spills or oils generated on the road surface or cutslope. At the watershed scale, connections between roads and streams can also alter the drainage density of the watershed and change runoff frequency and magnitude (See Furniss et al., 2000; Weaver et al., 2015).

The following include some examples of hydrologically connected roads:

- Inboard ditches that drain to stream crossings;
- Ditch drain culverts, rolling dips, waterbreaks, lead-off inside ditches, or other drainage structures that deliver runoff to waters of the State; or
- Direct runoff from a road prism to waters of the State at a stream crossing.

Primary indicators of hydrologically connected roads include:

- Evidence of surface flow between the drainage structure outlet and a defined channel or a flood prone area;
- A channel that extends from a road drainage structure outlet to the high water line of a defined channel or a flood prone area;
- A sediment deposit that reaches the high water line of a defined channel or a flood prone area;

- Observation of turbid water reaching waters of the State during runoff events; or
- Indications of channel widening and/or incision below a drainage structure resulting from increases in flow.

The goal of disconnecting roads and streams is to minimize sediment delivery, hydrologic change, and risk of road pollutants entering waters of the State.

B. Proposed Rule Revisions to Address Hydrologic Connectivity

See Appendix X for complete text of proposed rule revisions. The requirement to hydrologically disconnect all forest roads and landings from waters of the state to the maximum extent practicable was proposed in several sections of the FPRs. The following summarizes where specific changes were made in rule.

The requirement to hydrologically disconnect all forest roads and landings to the maximum extent practicable was proposed in several sections of the FPRs including the goals, defining the term in rule, and specific revisions to OAR 629-625-0200, 629-625-320, and 629-625-320 as well as new rules pertaining to crossings.

C. Proposed Process Steps to Address Hydrologic Connectivity

Specific technical guidance, training, and monitoring for hydrologic connectivity can be found in Sections IX – XII.

VI. Data provision

VII. Small Forest Landowner Process

VIII. Updates due to natural disasters

IX. Stakeholder processes

In the proposed revisions to the FPRs summarized in Section 3 and in proposed process steps for inventorying of forest roads summarized in Section 4, there are proposed stakeholder processes. These proposed processes are summarized below for clarity:

A. Abandoned Roads:

1. High Priority and High Risk Abandoned Roads Stakeholder Process: In Step 1 of the proposed Abandoned Roads process, the state in coordination with EPA and landowners will identify locations associated with abandoned roads that have a high level of risk to waters of the state or to infrastructure (See Section 4(b)).

Concurrently, the state will convene a stakeholder process with landowners, state agencies, tribes, conservation groups, and other interested stakeholders to determine the criteria to prioritize those identified high risk abandoned roads (Step 2).

Considerations should include:

1. Importance of the watershed (HUC-6) to recovering salmonids;
2. Number of stream crossings based on full-densified stream network in GIS or LiDAR;
3. Cost and benefit of work to remediate problems and risks; and
4. Other relevant criteria as determined by ODF in consultation with other state and federal agencies [developed in a stakeholder process].

Outcomes: The result of this process will yield a set of high priority abandoned road locations from the identified high risk locations in Step 1.

X. Development of rule implementation guidance

The Oregon Department of Forestry will convene a stakeholder process to inform the development of implementation guidance for the following topics. While operators may vary from the guidance where alternative approaches are applied due to site specific conditions as allowed by rule, operations consistent with the guidance are determined to be consistent with the relevant rule. The stakeholder process will include representatives from landowners, operators, regulatory agencies, and members of the public with expertise in implementation of best management practices on forest roads.

A. Hydrologic Disconnection

Following revisions to the FPRs, ODF should create new technical guidance or revise existing guidance (e.g., ODF Tech Note 8) to provide more technical information about implementation of hydrologic disconnection standards that are referred to/incorporated by rule.

B. Abandoned Roads

Following revisions to the FPRs, ODF should create new technical guidance or revise existing guidance regarding the proposed Abandoned Roads process (See Section 4(b)).

C. Construction in Wetlands

Following revisions to the FPRs, ODF should create new technical guidance or revise existing guidance regarding construction in wetlands.

D. Review of Existing ODF Tech Notes

Following revisions to the FPRs, ODF should review and update existing technical guidance for compliance with new rules:

- ODF Tech Note 3 (2001): Replacing Stream Crossing Structures Outside Normal In-Water Working Periods
- ODF Tech Note 4 (in process) Fish Passage Guidelines for New and Replacement Stream Crossing Structures
- ODF Tech Note 5 (2002): Determining the 50-Year Peak Flow and Stream Crossing Structure Size for New and Replacement Crossings
- ODF Tech Note 7 (2003, edited 2019): Avoiding Roads in Critical Locations
- ODF Tech Note 8 (2003): Installation and Maintenance of Cross Drainage Systems on Forest Roads
- ODF Tech Note 9 (2003): Wet Weather Road Use

XI. Development of training requirements

The Oregon Department of Forestry shall provide training opportunities for forest landowners and operators on the revised rules including but not limited to;

- Hydrological disconnection
- FRIA methods and protocols

XII. Development of monitoring requirements

The Independent Research Science Team (IRST) created in these agreements shall design and oversee baseline and trend monitoring for the following topics. Compliance monitoring will be conducted through the Department's process.

- Hydrologic disconnection
  - **Baseline and Trend Monitoring** - The methodology for the monitoring shall be based off of DUBE et al and MARTIN. The purpose of the monitoring for hydrologic disconnection is to establish a baseline and to monitor and report the change in hydrologic connectivity over time as the FRIA is implemented. The overarching goal is to ensure that all forest roads and landings shall be hydrologically disconnected to the maximum extent feasible from waters of the State. Adaptive Management Program Committee shall use the results of the baseline and trend monitoring to develop regional goals consistent with that monitoring.
  - **Compliance Monitoring**: Site-specific and watershed assessments of implementation of FPRs and BMPs (e.g., have BMPs been implemented in accordance with FPR requirements?)

Commented [SMD2]: What changes are we looking at here? Compliance with FPRs? Change in water quality?

- All hydrologic connectivity data should be public and shared as it becomes available to help focus goals, identify accomplishments, and inform statewide learning.

Citations

Commented [AM3]: Need to add some

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Appendix X. Revisions to Current Oregon Forest Practice Rules

OAR 629-600-0100
Definitions

Hydrologic disconnection means the removal of direct routes of drainage or overland flow of road runoff to waters of the State.

OAR 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 or Type D streams, Type N streams, lakes or significant wetlands; or
(c) Constructing roads in riparian management areas.
(d) Operators shall consult Tech Note 4 for required information to be included in written plans for water crossings.
(e) Constructing any water crossing in all waters of the state.
(f) Constructing roads in critical locations.

(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 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.

OAR 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) Operators shall avoid locating roads on critical locations, including steep slopes, slide areas, high landslide hazard locations, and in wetlands, riparian management areas, channels or floodplains where viable alternatives exist.

(a) **Critical Locations**. Operators shall avoid locating roads in critical locations. When alternate routes that avoid critical locations are not legally feasible, physically feasible due to safety considerations, or would have a greater environmental risk, operators may locate roads in critical locations. Critical locations include:

(i) high landslide hazard locations
(ii) slopes over 60% with decomposed granite-type soils
(iii) Locations parallel to, and within an RMA or within 50 feet of stream channels or lakes, excluding crossings and approaches to crossings.

(iv) within Significant wetlands,[6] stream-associated wetlands,[7] or wetlands[8] greater than 0.25 acres in size;
(v) Any active stream channel, exclusive of stream crossings in compliance with OAR 629-625-320.
(vi) Locations parallel to, and within 50 feet of, a stream channel or within an RMA for a distance exceeding 500 feet per mile of road length, exclusive of stream crossings in compliance with OAR 629-625-320. However, the distance of 500 feet per mile can be exceeded where there are no other nearby alternatives and the road can be located far enough from the stream to not affect the minimum RMA leave tree requirements, and also to allow effective sediment filtering.
(vii) 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 should not be constructed unless the operator demonstrates that the cutslope can be stabilized by buttressing or other means.
(viii) 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.
(ix) Highly dissected, steep slopes where it is not possible to fit the road to the topography with full bench end haul construction.

(4) All road construction in critical locations shall be reviewed on site and reviewed by the Department with consultation from a qualified professional as appropriate for the site, including but not limited to, ODF, DEQ, and ODFW. Onsite review must occur within 14 days, otherwise operator may continue with operations consistent with written plan.
(5) All road construction in critical locations must be outlined in a written plan. The written plan shall include a narrative describing why alternative routes are not feasible.
(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 roads where practical. Where roads traverse land in another ownership and will adequately serve the operation, investigate options for using those roads before constructing new roads. Notifications that include new road construction shall affirm that options, if they exist, were investigated.

OAR 629-625-0310
Road Prism

[6] OAR 629-600-0100 (70) "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.
[7] OAR 629-600-0100 (77) "Stream-associated wetland" means a wetland that is not classified as significant and that is next to a stream.
[8] OAR 629-600-0100 (95) "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 (93) of this rule.

(1) Operators shall use variable grades and alignments to avoid less suitable terrain so that 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 impacts to covered species from new road construction. The running surface width should average not more than thirty-two feet for double lane roads and twenty feet for single lane roads, exclusive of ditches plus any additional width necessary for safe operations 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. Fill may be placed in the riparian management area or within 75 feet of streams where a riparian management area is not required for approaches to crossings and at crossings.

OAR 629-625-0320
Water Crossing Structures

(1) All new or reconstructed water crossings in all waters of the state require a written plan reviewed by ODF. Operators shall consult Tech Note 4 for guidance on developing written plans.

(2) In addition to the written plan requirements of OAR 629-605-0170 (Statutory Written Plans), the written plan for water crossings shall include an assessment of:

(a) Operator transportation needs, road location, road management objectives, and land ownership;
(b) The specific resource(s) 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.
(f) Additional information as determined by ODF.

(3) Operators shall design and construct all water crossing structures in all waters of the state to:
(a) Minimize excavation of side slopes near the channel.
(b) Minimize the volume of material in the fill.

Commented [SMD4]: Added these specific components back into the regulatory language, rather than leaving it to be determined in guidance.

(A) Minimizing fill material is accomplished 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) Armor fills against erosion where large fills over 15 feet deep are determined to be necessary by ODF.

(c) Prevent erosion of the fill and channel.

(d) Allow migration of adult and juvenile fish upstream and downstream during conditions when fish movement in that stream normally occurs.

(e) Minimize hydrologic connectivity for adjacent roadway.

(f) Avoid or minimize unavoidable alterations or disturbances to stream channel, bed, bank, or bank vegetation to that necessary to construct the water crossing structure. Alteration or disturbance of stream bed, bank, or bank vegetation shall be limited to that necessary to construct the project.

(g) The banks shall be revegetated with native woody species or stabilized with other erosion control techniques.

(h) Ensure that streamflow cannot be diverted out of its channel if the crossing fails.

(i) Preserve water quality and unobstructed flow;

(j) Wastewater from temporary water crossing project activities and dewatering shall be routed and deposited 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 being discharged to waters of the state.

(k) When ODF determines that installing a water crossing in a flowing stream will result in excessive siltation and turbidity, and siltation and turbidity would be reduced if stream flow were diverted, ODF shall require the stream flow be diverted using a bypass flume or culvert, or by pumping the stream flow around the work area. This may include culvert installations that are within 0.25 miles of a Type F or SSBT Water or within two miles of a hatchery intake.

(l) For water crossing structures on fish streams (Type F and SSBT), operators shall, consistent with the rules in this section:

(i) Minimize spawning and rearing habitat.

(ii) Minimize the loss of fish life during the project.

(iii) Ensure free and unimpeded fish passage at all flows when fish are expected to move through the life of the structure.

(iv) Avoid or minimize unavoidable impacts to fish.

(4) In selecting a crossing design strategy, operators constructing or reconstructing crossings in all waters of the state shall first consider vacating the water crossings. For water crossings in all fish streams (Type F and SSBT) 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.

Commented [SMD5]: Originally, we had proposed aquatic organism passage

Commented [SMD6]: This language in non-fish for slamander coverage

(5) Operators shall design and construct permanent water crossings to:

(a) Permanent water crossings in non-fish streams (Type N and D) shall be designed to pass the 100-year peak flow. Guidance for determining the 100-year peak flow shall be updated, at a minimum, every ten years to incorporate the most recent available peak flow data.

(b) Permanent water crossings in fish streams (Type F and SSBT) shall be designed using the stream simulation approach. Water crossing design in fish streams (Type F and SSBT) shall consider and incorporate the stream's geomorphic processes and anticipated changes over the life of the structure. Water crossings in fish streams (Type F and SSBT) shall be designed to allow for the movement of water, wood, sediment, and organisms to the maximum extent feasible and minimize obstacles to stream processes. Water crossings in fish streams (Type F and SSBT) shall avoid fragmentation of aquatic habitats by replicating the natural conditions of the stream being crossed. Where it is not possible to meet stream simulation, operators may propose alternatives so long as the flow can accommodate a 100 year peak flow.

(c) ODF may require a larger crossing design if it determines that the structure size designed to pass the 100-year peak flow would be inadequate to:

(i) avoid delivery of sediment to waters of the state;

(ii) avoid stream diversion potential; and

(iii) provide opportunity for the passage of expected bed load and associated large woody debris during flood events;

(e) **Permanent channel-spanning structures** span the entire bankfull width of the stream. This water crossing strategy includes long and short-span bridges and open-bottom box culverts.

(i) Permanent channel-spanning structures shall have a minimum of 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.

(ii) The bridge structure or stringers shall be placed in a manner to minimize damage to the bed.

(iii) One end of each new or reconstructed permanent log or wood bridge shall be tied or firmly anchored if any of the bridge structure is within ten vertical feet of the 100-year flood level.

(iv) When earthen materials are used for bridge surfacing, only clean sorted gravel may be used, a geotextile lining must be installed and curbs of sufficient size shall be installed to a height above the surface material to prevent surface material from falling into the stream bed.

(v) Wood removed from the upstream end of bridges will be placed at the downstream end of bridges in such a way as to minimize obstruction of fish passage and to the extent practical, while avoiding significant disturbance of sediment in connection with maintenance activities.

(vi) Abutments, piers, piling, sills, 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.

(vii) Excavation for and placement of the foundation and superstructure shall be outside the ordinary high water line unless the construction site is separated from the stream by use of an approved dike, cofferdam, or similar structure.

(xi) Wood or other materials treated with preservatives shall be sufficiently cured to minimize leaching into the water or bed. The use of creosote or pentachlorophenol is not allowed. Structures containing concrete shall be sufficiently cured prior to contact with water to avoid leaching.
(xii) **Permanent channel-spanning structures in fish streams (Type F and SSBT)** shall be designed using the stream simulation approach. For fish streams (Type F and SSBT):

(1) Channel-spanning structures shall not constrict clearly defined channels;
(2) Channel-spanning structures shall establish a low-flow channel that will allow for fish movement during low flow periods. In streams with highly variable flows, the structure shall be designed to pass high flows while maintaining a defined low flow channel similar to the natural stream bed.

(f) Permanent water crossing culverts:

(i) Culverts shall be designed and installed so they will not cause scouring of the stream bed and erosion of the banks in the vicinity of the project.
(ii) The culvert shall be designed to avoid stream diversion potential.
(iii) 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.
(iv) Wood removed from the upstream end of culverts will be placed at the downstream end of culverts in such a way as to minimize obstruction of aquatic organism passage and to the extent practical, while avoiding significant disturbance of sediment in connection with maintenance activities.
(v) Disturbance of the bed and banks shall be limited to that necessary to place the culvert and any required channel modification associated with it. Affected bed and bank areas outside the culvert and associated fill shall be revegetated with native woody species, or stabilized with other erosion control techniques. Native woody species shall be maintained one growing season

(vi) No permanent water crossing culverts shall be installed less than 18 inches.
(vii) **Permanent culverts in fish streams (Type F and SSBT)** shall be designed using the stream simulation approach. For fish streams (Type F and SSBT):

(1) For no slope culverts, the minimum culvert diameter shall be at least equivalent to the active channel width. For other culvert installations, the minimum culvert diameter shall be at least 1.2 times the active channel width, plus 2 feet.
(2) **Alignment and slope**. The alignment and slope of the culvert shall mimic the natural flow of the stream whenever possible. The slope of the reconstructed streambed within the culvert should 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.
(3) **Embedment**. If a culvert is used, the bottom of the culvert should be buried into the streambed not less than 30% and not more than 50% of the culvert height for round culverts and for pipe arch culverts not less than 15% and no more than 30%. For bottomless culverts the footings

or foundation must be designed for the deepest anticipated scour depth.

(4) Maximum length If the design for a new crossing on a new road would require a culvert longer than 150 feet, a channel spanning structure shall be utilized unless the site specific design constraints preclude the use of a channel spanning structure.

(5) **Culvert bed materials.** Culvert bed materials should have a similar composition to natural bed materials that form the natural stream channels adjacent to the road crossing in the reference reach. The culvert should be designed to deliver sufficient transported bed material to maintain the integrity of the streambed over time.

(6) **Water depth and velocity.** Water depth and velocity should simulate the conditions in the reference reach. The maximum velocity in the culvert should not exceed the maximum velocity in the narrowest channel cross-sections.

(g) **Fords**

Commented [AM7]: Check with eastsides

(i) The entry and exit points of a new ford must not be within one hundred feet upstream or downstream of another ford.

(ii) Fords shall only be used during periods of no or low stream flow (whether dry or frozen) to minimize the delivery of sediment to the stream.

(iii) Fords shall only be installed in a dry streambed or when a site is de-watered and for which sediment control and flow routing plans have been developed, reviewed, and meet the criteria outlined in written plan.

(iv) Approaches to the structure should not dam the floodplain where substantial overbank flow occurs.

(v) The structure should cross as near to perpendicular to the channel to minimize the disturbance area and reduce maintenance for post-installation.

(vi) The structure should avoid or minimize the acceleration of flow velocities through the structure.

(vi) For fish streams (Type F and SSBT) any ford structure shall

(1) be no wider than 16 feet and

(2) installed and maintained to ensure scour has not created a barrier to fish passage.

(6) Operators shall design and construct temporary water crossings to:

(a) Temporary water crossings in non-fish streams (Type N and D) shall be designed to accommodate flows expected during crossing use with a minimum culvert diameter of 18 inches.

(b) Temporary water crossings in fish streams (Type F and SSBT) shall only be used during the ODFW in water work period.

(e) Temporary water crossings must be identified on the forest practices notification and written plan, along with a vacating date.

(f) Temporary crossings on Type N and D streams shall only be used:

(i) In western Oregon if installed after June 1st and removed by September 30th of the same year;

(ii) In eastern Oregon if installed after July 1st and removed by October 15th of the same year;

(iii) At other times when ODF and applicant can agree to specific dates of installation and removal, and the extended dates result in equivalent levels of resource protection.

(g) Temporary water crossings shall be installed in the dry, or isolation from stream flow by the installation of a bypass flume or culvert, or by pumping the stream flow around the work area. Exception may be granted if siltation or turbidity is reduced by installing the culvert in the flowing stream. The bypass reach shall be limited to the minimum distance necessary to complete the project.

(h) Temporary water crossings shall be vacated to the specifications outlined in OAR 629-625-0650.

(i) ODF may waive removal of the water crossing if the applicant secures an amended written plan, and the structure and its approaches meet all of the requirements of a permanent water crossing structure.

(h) Disturbance of the bed and banks shall be limited to that necessary to place the temporary water crossing and any required channel modification associated with it.

Commented [AM8]: Deleted reference to fish since this section is for non-fish

(7) Other design strategies requiring additional approval

(a) Any alternative water crossing strategy that is not consistent with the above strategies shall be outlined in a plan for alternative practice, approved by ODF in consultation with ODFW.

(b) Alternative designs will be considered if they can be demonstrated to meet or exceed the proposed standards for the above strategies.

(8) Construction of Water Crossings

(a) Construction or reconstruction for all water crossings should comply with all relevant Forest Practice Rule (FPR) forest road requirements and ODF technical guidance before, during, and after construction. Nothing in this section affects existing requirements of ODFW.

(b) Stormwater, Erosion, and Sediment Control

(i) A site-specific erosion and sediment control plan is required as part of a written plan prior to beginning work. This plan may include but is not limited to a site plan with a description of the methods of erosion/sediment control; methods for confining, removing, and disposing of excess construction materials; or measures to disconnect road surface and ditch water from all waters of the state.

(ii) Areas of bare soil, which could deliver sediment to waters of the state, shall have effective drainage established or will be mulched and/or seeded before the start of the rainy season to reduce surface erosion. Native seed and invasive species free mulch will be applied to sites with the potential for sediment delivery to wetlands, floodplains, and waters of the State upon completion of construction. Invasive species free mulch will be applied to stay in place.

(c) Pollution Control

(i) A spill prevention plan shall be required on site during construction. For guidance on developing a spill prevention plan, refer to ODF Tech Note 4.

(ii) Uncured concrete or concrete by-products shall not be allowed to enter waters of the state at any time during construction. All forms used for concrete shall be completely sealed to prevent uncured concrete from entering waters of the state.

(iii) Operators shall take measures to ensure that all materials and equipment used for construction, monitoring, and fish salvage are free of aquatic invasive species

(iv) Wood treated with creosote or pentachlorophenol shall not be used for parts of the structure in or over the active channel, including pilings, beams, structural supports, and decking.

(v) No chemicals or any other toxic or harmful materials shall enter or leach into waters of the state.

(d) In-Water Work, Worksite Isolation, and Dewatering

(i) Water crossings in all waters of the state require an in-water work plan in the written plan that includes, but is not limited to: fish salvage, worksite isolation, and dewatering. The submitted written plan shall address in detail all in-channel construction activities and how the activities will adhere to all relevant Forest Practice Rule (FPR) forest road requirements, ODF technical guidance, and all relevant on-water work period requirements and guidelines from ODFW.

(ii) Operators shall adhere to ODFW approved in-water work timing guidelines and the stream protection rules (OAR 629-625-0430) any time that construction activity is required within the active channel width.

(iii) For all water crossings in fish streams (Type F and SSBT):

(2) **Worksite isolation.**

(a) Any work area within the width of the bankfull channel must be isolated from water in the active channel whenever fish are reasonably certain to be present in a Type F or Type SSBT stream.

(b) Water crossings in fish streams (Type F and SSBT) with any type of stream bypass 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.

(c) Prior to construction site dewatering, fish shall be captured and relocated to avoid direct mortality to the maximum extent practicable.

(d) Fish must be salvaged to the maximum extent practicable at any in-water construction site where dewatering and resulting isolation of fish may occur.

(e) All isolation features shall be removed after construction is completed. A written salvage report shall be submitted to ODF.

(3) Dewatering.

(a) Dewatering shall not be implemented in areas known to be occupied by lamprey, except where the operator submits a lamprey salvage plan to ODF in consultation with ODFW using guidance from ODF Tech Note 4.

(b) Dewatering of the isolated area shall be conducted in a manner that prevents sediment-laden water from reentering the stream.

(c) Dewatering shall be limited to the shortest linear extent of the stream as practicable.

(d) Dewatering shall be conducted over a sufficient period of time to allow species to naturally migrate out of the work area.

(8) Monitoring

(a) Landowners shall develop and implement a monitoring program for periodic inspections of all Type F and SSBT crossings.

(b)The program shall rely on visual inspection to confirm that the crossing is functional.

(c)The frequency of monitoring shall be no more than five years.

OAR 629-625-0330 (and OAR 629-625-0420)
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. This will be accomplished by locating 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 later-numbered and conflicting section shall not be implemented.
(2) Cross-drains and ditch-relief culverts must not have stream diversion potential.
(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. Best management practices to manage sediment at the outflow of the drainage structure nearest to the crossing may also be used.
(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 and/or waterbars as necessary. For new road construction, outsloping shall be used to the maximum extent practicable when site specific conditions allow for its safe and effective use.

OAR 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 waters of the state or otherwise degrade aquatic resources after construction.
(2) If other alternatives present are unstable or there is a higher potential for delivery of waste materials to waters of the state, operators may place waste materials within the riparian management area but no closer than 75 feet from a water of the state. Placement of waste materials within the riparian management area but no closer than 75 feet from a water of the state requires a written plan that describes site specific measures that prevent or minimize the entry of these materials to waters of the state.
(3) If a riparian management area is not required, operators shall place waste materials at a minimum of 75 feet from a water of the state and submit a written plan that describes site specific measures that prevent or minimize the entry of these materials to waters of the state.
(4) Temporary placement of waste materials within the riparian management area that is necessary for constructing or vacating roads and crossings requires a written plan 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.

(4) Woody debris, rocks, or other materials placed for erosion control or for habitat restoration are exempt from this provision.

OAR 629-625-0440
Stabilization

(1) Operators shall establish effective drainage to avoid potential delivery of sediment to waters of the state and stabilize exposed material which is potentially unstable or erodible by use of seeding, mulching, riprapping, leaving light slashing, 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.

OAR 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 diminish the likelihood of clogging and the possibility of washouts.
(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 are capturing 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. This standard is required only for roads constructed or reconstructed after September 1994, but is encouraged for all other roads; and
(b) As reasonably practicable, keep structures cleared of woody debris and deposits of sediment that would impair fish passage.

(9) 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.
(10) Other fish passage requirements under the authority of ORS 509.580 through 509.910 and OAR 635-412-0005 through 635-412-0040 that are administered by other state agencies may be applicable to water crossing structures, including those constructed before September 1, 1994.

OAR 629-625-0650
Vacating Forest Roads

(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 will re-establish the natural drainage with no additional maintenance required.
(4) A vacated road is a road which the forest landowner has vacated in accordance with procedures of (a) through (c) of this subsection:

(a) Roads are outsloped, water barred, storm-proofed, or otherwise left in a condition suitable to control erosion and maintain water movement within wetlands and natural drainages;
(b) Ditches are left in a suitable condition to reduce erosion;
(c) Water crossing structures and fills on waters of the state are removed, except where ODF determines other measures would provide adequate protection to public resources; and

(5) A vacated water crossing is a crossing which the forest landowner has vacated in accordance with procedures (a) through (n) of this subsection:

(a) Re-establish channel connectivity;
(b) Ensure compliance with existing in-water work periods requirements;
(c) Ensure that vacating does not result in a fish passage barrier;
(d) Completely remove the water crossing structures and all imported road fill material;
(e) Re-slope the banks to the original valley width, or at a minimum, restore the flood prone width of the stream to its natural capacity;
(f) Re-vegetate and/or replant exposed stream banks or valley walls with native trees and shrubs to help expedite development of a functioning riparian condition;
(g) Establish a natural transition to the channel upstream and downstream of the crossing;
(h) Create a channel that is similar in size and configuration to channel conditions upstream and downstream
(i) Incorporate large wood, if appropriate, to expedite restoration of the channel and fish habitat;
(j) Ensure stable side slopes that do not exceed 2:1, unless matching the natural stream bank or valley walls;
(k) Re-establish the natural streambed as close to the original location as possible so it matches the up and downstream width and gradient characteristics;
(l) Require erosion control to address sediment delivery from exposed slopes; and
(m) Place all excavated material in stable locations and outside of the floodplain.
(n) Ensure zero or near-zero hydrologic connectivity at the entire site.

(5) The landowner shall notify ODF that a road or crossing has been vacated. ODF has 30 days to determine whether the road or crossing has been vacated and to notify the landowner in writing. If ODF does not respond within 30 days, the road is presumed to be vacated.

(6) Roads and crossings are exempt from maintenance under this section only after (5) of this section is completed.

[NEW RULE SECTION]
OAR 629-625-XXX
Construction in Wetlands

(1) Avoid or minimize all road and landing construction near or within ~~significant~~ Significant wetlands,[9] stream-associated wetlands,[10] or wetlands[11] greater than 0.25 acres in size. Where impacts are unavoidable, they must be first minimized and then mitigated in the following priority order:

(a) Avoid impacts to Significant wetlands, stream-associated wetlands, and wetlands greater than 0.25 acres in size by selecting the least environmentally damaging landing location, road location and road length. Landowners must attempt to minimize road length when avoiding wetlands; or

(b) When road or landing construction in a Significant wetland, stream-associated wetland, or wetlands greater than 0.25 acres in size cannot be avoided, the operator shall build a temporary road that:

(i) minimizes impacts by reducing the subgrade width, fill acreage and spoil areas; and

(ii) removes temporary fills or road sections upon the completion of the project.

(c) Permanent road construction in a Significant wetland, stream-associated wetland, or wetlands greater than 0.25 acres in size must be mitigated by:

(i) Reducing or eliminating impacts over time by preserving or maintaining areas; or

(ii) Replacing affected areas by creating new wetlands or enhancing existing wetlands.

(iii) Filling or draining more than 0.25 acres of a Significant wetland, any stream-associated wetland, or any wetlands greater than 0.25 acres in size requires replacement by substitution or enhancement of the lost wetland functions and values at the road or landing construction site. The objective of successful replacement by substitution of lost wetland area will be generally on a two-for-one basis and of the same type and in the same general location. The objective of enhancing wetlands function is to provide for an equivalent amount of function and values to replace that which is lost.

[9] OAR 629-600-0100 (70) "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.

[10] OAR 629-600-0100 (77) "Stream-associated wetland" means a wetland that is not classified as significant and that is next to a stream.

[11] OAR 629-600-0100 (95) "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 (93) of this rule.

PFA Road Rules for Small Forestland Owners (SFO) 10-27-21

Small Forest Owners (SFOs) will comply with all new PFA Road rules with the following exceptions:

SFOs will not be required to complete a Forest Road Inventory Assessment (FRIA) like large forest owners. Instead, SFOs will complete a road survey specific for SFOs. Road surveys will be completed and submitted to Oregon Department of Forestry (ODF) with a notification to harvest timber. It will include all roads in the SFOs parcel. Road surveys will indicate the condition of the roads and culverts. Timing of improvements will be determined by:

- Culverts -Life of existing culverts
- Legacy and Abandoned Roads - SFOs will get state funding for repairing any Legacy Roads or Abandoned Roads identified in road survey. ODF will review Legacy and Orphaned Roads and prioritize their repair when state funding is available.
- Culverts on fish streams will be evaluated as meeting or not meeting current fish bearing culvert requirements. Any fish passage culvert needing replacement because of improper size, will be reported to ODF to determine whether it qualifies for public assistance defined in the Oregon Family Forest Fish Passage Program (OFFFPP). ODF will maintain a list of culverts requiring replacement under OFFFPP and coordinate with other state agencies to determine prioritizing culvert replacements within state funding availability.

<u>Oregon Family Forest Fish Passage Program (OFFFPP)</u>
Details of OFFFPP

- The OFFFPP will be fashioned similar to the FFFPP in Washington, taking into consideration the big differences between Oregon and Washington.
- There will be an outreach program through the Partnership for Forestry Education to inform SFOs about the OFFFPP.
- SFOs will be encouraged to contact ODF about fish bearing culverts on their property and will then be automatically eligible for participation in the OFFFPP's priority and funding opportunities.
- SFO can work with other partners to coordinate and plan the replacement of a fish bearing culvert.
- Fish bearing culvert replacements will be funded between 75% to 100% of the cost, from state funds.
- Prioritizing projects will be determined by ODF after consulting with other state agencies and within the limits of available state funding.
- The SFO will be required to coordinate the culvert replacement project on their property with oversight from ODF through a contract with ODF. SFO will determine timing of project, hiring contractors, overseeing project, and reporting to ODF for payment to contractors.
- All completed projects will be reported with cost and miles of streams opened up for better fish use.

Compliance Monitoring Framework
v.10.29.21

I. Introduction.

A compliance monitoring program (CMP) is fundamental to understanding whether forest practice rules identified in the Habitat Conservation Plan (HCP) are correctly implemented. Comprehensive compliance monitoring is robust and provides information without systematic bias and with sufficient precision to be representative of forest practice activities. A successful CMP provides information as a foundational element in improving training protocols, enhancing public trust in forest practices implementation, and ensuring forest operators are following the rules.

II. Goals.

a. Compliance monitoring assesses whether the rule groups identified in the HCP and broader Forest Practices Act and rules are being implemented as intended. The CMP provides feedback to the Oregon Department of Forestry (ODF), the federal Services, and stakeholders to aid in targeting specific areas for guidance, training, clarification, and/or enforcement.
b. The CMP should provide an objective assessment of rule compliance. The CMP does not report on the effectiveness of the rules.
c. The infrastructure to support the CMP will include adequate compliance monitoring, enforcement, training, education, and budget.

III. Objectives.

a. Verify compliance with the rule groups identified in the HCP.
b. Provide an informed and systematic basis for targeted training efforts to increase compliance with Forest Practices Act and rules.
c. Improve compliance with the HCP and broader Forest Practices Act and rules.
d. Provide data that can be used in reporting, including to the Board of Forestry (Board), the Oregon Legislature, and the federal services under the terms of an HCP.

The authors expect that as these objectives are met, the public's trust in the implementation of Forest Practices Act and rules will improve.

IV. Activities and Rules to Review.

a. The CMP must, at a minimum, assist in the monitoring of rule implementation related to rule groups identified in the HCP. The following rules groups should be prioritized in the CMP:
    i. [Riparian rules]
    ii. [Steep slope rules]
    iii. [Road rules]
        1. [Road rules identified for priority in the CMP during PFA negotiation are included in Appendix X.]
b. In addition to the rule groups outlined above, other rules may be evaluated in the CMP according to the process identified below.

V. Process.

a. Every two years, ODF should conduct a statistically sound, biennial compliance and performance audit and prepare a report to the Board.
b. In addition, compliance monitoring data will support other ODF reporting requirements, including the following:
    i. An annual report to the public on overall HCP performance
    ii. Rolled up, cumulative reports every 8 years
    iii. Other reports as required by the terms of the HCP
c. The CMP process should:
    i. Be informed by the recommendations of the "Oregon Forest Practices Act Implementation Study: History, Issues, and Potential Solutions" final report prepared by Mount Hood Environmental and submitted to the Board on June 15, 2021, and similar reviews of other compliance monitoring programs in nearby states (e.g., Washington and Idaho).
    ii. Explicitly define all sampling elements.
    iii. Utilize remote sensing or modifications to the FERNS notification system to identify completed activities.
    iv. Accommodate ODF, cooperating state agencies, or contractor access to land for purposes of assessing compliance with Forest Practices Act and rules. Amendments to state law will be necessary to explicitly allow ODF, cooperating state agencies, or contractor access to land for the purpose of assessing compliance with the Forest Practices Act and rules when a forest practice notification is active and some period thereafter not to exceed three years.
    v. Analyze compliance rates at the appropriate temporal and spatial scale to reduce autocorrelation, variance, and systematic bias that has impacted monitoring programs across the Pacific Northwest. Continue to pursue ODF's Key Performance Metrics, however defined, with an initial target of 95% at the 8-year roll up report.
    vi. The Board can direct the CMP to conduct analysis at the rule and unit level as appropriate to determine levels of compliance.
    vii. When identified, examine areas of noncompliance to determine if they represent a specific set of circumstances or if they are a systemic response that might warrant new training, guidance, rule clarification or other appropriate action.
    viii. Produce a rolled up report every 8 years that includes compliance trends since the beginning of the CMP.
d. ODF has discretion to identify additional rules for review according to this process.

VI. Outcomes

a. Report on the implementation of HCP-identified forest practice rules on the ground.
b. Identify opportunities to improve compliance as needed through education for landowners, regulators, consultants, and operators as suggested by non-compliance rates.
c. Provide information that revises rules and technical guidance, when appropriate.
d. Provide the report to federal services assessing compliance with the HCP.

VII. Program Administration

a. The CMP administration is led by ODF personnel. Specific monitoring field work can be conducted by ODF personnel, through hired contractors, or some mix of both.
b. ODF should hire an external, qualified statistician to aid in developing sample selection and evaluation criteria to ensure a high level of confidence in the statistical modeling and final reported compliance numbers.
c. The CMP is supported by a stakeholder group comprised of representatives that have expertise in the purpose for and implementation of the rules that are being monitored, including but not limited to agency staff, landowners, and operators.
d. The CMP is expected to require funding in the amount of $350,000 - $550,000 per biennium. This number will be influenced by the number of rules evaluated, acceptable statistical precision, and frequency of reporting.

Enforcement Framework
v.10.29.21

I. Introduction.

Enforcement of the Forest Practices Act and rules is necessary to ensure the integrity of the regulatory framework. Currently, ODF lacks staffing and statutory authority to adequately enforce laws and rules. Education for landowners and operators should be a foundational component of any enforcement program with financial penalties and stop work orders focused on egregious violations and repeat violators.

II. Goals.

a. Ensure that rules are being followed.
b. Improve training and the clarity of technical guidance so that implementation expectations are transparent and easily understood by landowners and operators.
c. Provide confidence to the public that the Forest Practices Act and rules are being followed.

III. Objectives.

a. Utilize the enforcement process as an educational tool and a training opportunity.
b. Focus penalties on egregious violations and repeat violators.
c. Ensure that the enforcement process deters future violations.

IV. Process.

a. ODF will establish a mechanism to determine the underlying cause of the violation, including to determine whether the infraction could have been avoided by:
    i. More explicit training on rule implementation.
    ii. Rule clarification or improvement in language.
    iii. Additional communication efforts for specific site conditions.
b. ODF will retain its existing statutory powers to enforce the Forest Practices Act within the following framework:
    i. Written Statements of Unsatisfactory Condition should continue to be used as a communications and corrective tool in instances where resource damage has not occurred, can be corrected, or is minor.
    ii. Civil penalties, orders prohibiting new operations, and criminal prosecution should focus on repeat violators; landowners and operators who fail to comply with corrective actions and/or pay penalties; and landowners and operators who willfully violate rules or statutes.
c. Repeat Violators – Recognizing that current enforcement actions tend to accumulate among repeat violators, ODF should focus its resources and attention on this set of landowners/operators (e.g., after training, rule clarification, and communication efforts have been attempted, as applicable).
    i. A Repeat Violator is a landowner or operator with a history of significant violations that, taken together, show a pattern of ignoring the rules or the Forest Practices Act. In evaluating a landowner's or operator's history of significant violations, ODF should take into account company organization,

assignment of operational responsibilities, and the proportion of total operations that are in violation.

ii. "Significant violations" means operating without providing proper notification of a forest practices activity (other than an unintentional operation outside of an approved boundary of such notification), the continuation of operations in breach of the terms of an ODF citation and order, or resource damage that is major in effect and self-restoration takes more than 10 years.

iii. ODF should maintain a list of Repeat Violators. The rule implementing this section must include a process and criteria for removing a Repeat Violator from the list.

d. Penalties – ODF staff report that current penalty values may not be adequate to deter noncompliance for deliberate violators. ODF and the Board should assess and if necessary, initiate rulemaking to increase penalties to adequately deter Repeat Violators, including escalating penalties for Repeat Violators, securing financial assurances, or other measures necessary to ensure deterrence.

e. ODF should ensure that its process for tracking operators and landowners that change name and location is sound.

f. Remote Sensing and Notification of Completion of a Forest Practice – Current rules require landowners and operators to notify ODF of plans to execute any forest practice activity. To aid in compliance monitoring and enforcement, ODF should do one or both of the following:

i. Require notification of completed forest practice activities within a reasonable timeframe of completion. Notification of completed activities could apply only to a subset of activity types that ODF is most concerned with tracking; and/or

ii. Use remote sensing to identify landowners who have completed forest practice activities to prioritize agency personnel time for enforcement action.

g. Access to land – Amendments to state law will be necessary to explicitly allow ODF, cooperating state agencies, or contractor access to land for the purpose of enforcing the Forest Practices Act and rules when a forest practice notification is active and some period thereafter not to exceed three years.

V. Program Administration

a. Staffing at ODF to support enforcement and training may need to be increased. To adequately administer the program, ODF needs:

i. 1.0 FTE additional Civil Penalties Administrator to ease the workload and backlog for the current administrator

ii. 1.0 FTE FPA Coordinator to be specifically dedicated to enforcement, support Stewardship Foresters in the field with enforcement issues, and act as a liaison between Stewardship Foresters and the Civil Penalties Administration office.

iii. 1.0 FTE in new training staffing. Training staffing will support internal staff (ie: Stewardship Foresters) and external stakeholders in understanding the forest practices act and rules.

b. Stewardship Foresters will continue to be an essential element in the Enforcement Program by working to better understand compliance and ways to reduce infractions.

Effectiveness Monitoring and Adaptive Management Framework
Updated 10.29.21

Purpose:
The purpose of the program is to provide science-based recommendations and technical information to assist the Board in determining if and when it is necessary or advisable to adjust rules, guidance, and training programs to achieve resource goals and objectives identified in the Habitat Conservation Plan (HCP). The Board may also use this program to adjust other rules, guidance, and training programs. There are four desired outcomes:

- Ensure effective change as needed to meet resource objectives;
- Predictability and stability of the process of change so that landowners, regulators and interested members of the public can understand and anticipate change;
- Application of best available science to decision-making; and
- Effectively meeting resource objectives with less operationally expensive prescriptions when feasible.

Effectiveness Monitoring versus Research Inquiry and Validation Monitoring (RIVM):

The adaptive management program will be driven by two primary questions:

1. Do the rules facilitating particular forest conditions and ecological processes achieve program goals and resource objectives? *(Effectiveness Monitoring)*
2. Are the resource objectives the correct ones to achieve overall program goals? What additional scientific inquiry is needed to fill in knowledge gaps that can add or prioritize resource objectives that will aid in achieving overall program goals? *(Research Inquiry and Validation Monitoring)*

Effectiveness Monitoring

Effectiveness monitoring seeks to determine if existing rules are meeting program goals and resource objectives. Studies to determine effectiveness will be most readily accomplishable when the causal link or links between a certain forest practice and its impact on the resource is well-documented. Given this fact, the feedback loop that leads to adjustments in rule and guidance should be quicker and less complicated than for validation monitoring. While the feedback loop should be responsive and efficient, research data and sample size will need to be adequate to determine the need for rule or guidance change. Research should test whether less operationally expensive alternative prescriptions can effectively meet resource objectives and/or whether more conservative prescriptions are necessary.

Research Inquiry and Validation Monitoring

Studies in this segment of adaptive management are geared at gaining a better understanding of the relationship between certain forest practices and their impact on resources. Validation monitoring is especially useful when goals and objectives are based upon hypotheses that have not received adequate testing. Careful evaluation in these instances is important to improve the monitoring program and provide feedback information into adaptive management to provide appropriate context for decision

making. Research inquiry and validation monitoring can highlight emerging areas of emphasis in the forest practices realm and/or better understand whether and to what extent there are causal links (or not) between forest practices and observed impacts on resources. Results from studies will need time to be verified and for implications to be understood. The feedback loop for validation monitoring and research inquiry will evolve more deliberately as new findings build on one another. Changes to rule or guidance coming from this segment of adaptive management will require more documentation and rigor.

Program Structure:

Oregon's adaptive management program will rely on an Adaptive Management Program Committee (AMPC) and an Independent Research and Science Team (IRST).

The AMPC will be made up of diverse stakeholders with the following primary roles:

- Set the research agenda, including budget and priorities, for the IRST and guide the overall adaptive management process
- Assess the scientific outcomes reported by the IRST and prepare a report for the Board that identifies alternatives (including no action) that could address identified problems
- Help the Board in the ongoing process of identifying and modifying resource objectives
- Review CMP and enforcement reports and prepare any recommendations to the Board for rule adjustment, guidance, or training.

The AMPC will consist of one representative from each of the following (and perhaps others) nominated by stakeholder caucuses:

- The industrial forest landowner community
- A timber operator
- Small forestland owner community
- Conservation landowner (ie: land trust)
- Tribal representative
- Conservation community
- Commercial or recreational angling community
- County government
- Oregon Department of Forestry (ex officio)
- Oregon Department of Fish and Wildlife
- Oregon Department of Environmental Quality
- NOAA Fisheries (ex officio)
- USFWS (ex officio)

The AMPC will set the scientific agenda but play no part in designing actual research projects, carrying out the inquiry, or the IRST's report of findings to the Board and AMPC.

The AMPC will be led by a program administrator – a neutral facilitator whose primary program function is to engage communication among program entities and assist forward progress in a timely manner.

The IRST will be tasked with, and adequately funded to oversee, the research projects that the AMPC prioritizes and delineates. The IRST may be, but need not be, housed at a state agency (other than ODF)

or an independent research university (like Oregon State University). The makeup of the IRST will be determined by the Board based on an evaluation of qualifications and recommendation by the AMPC to establish membership in the IRST. The IRST will be required to set up its own operating protocols emphasizing peer-review of findings, testable hypotheses, and reporting back to the AMPC and Board in lay terms that aids in the applicability of the science to questions of rule changes. Specifically, the IRST will, for each research project be required to report on the following:

- Magnitude of impact on covered species (or resource objectives) – on a sliding scale (eg: Very High, High, Modest, Low, Very Low)
- Urgency of action needed – on a sliding scale of Very Urgent, Urgent, Moderately Urgent, Mildly Urgent, Not Urgent
- Scientific uncertainty versus confidence – on a sliding scale of 1 being very uncertain and 5 being very confident

Reports from the IRST will be submitted to the Board for consideration along with a report on alternative options for possible rule changes from the AMPC.

IRST members will serve four-year terms that can be extended as described below. After the initial selection of IRST members by the AMPC and the Board, all new members and the approval of extended terms for existing members will be voted on by the existing IRST members. IRST members can be removed before the end of a term by a super majority (2/3rds vote) of IRST peers or by a vote of the Board.

IRST members must have adequate qualifications to serve on the IRST. These qualifications include demonstrated subject matter expertise in a relevant field and a graduate-level degree in a relevant natural resources-related field such as forestry, silviculture, ecology, hydrology, wildlife, fisheries, and geology.

Decision Making Structure:

Scientific inquiry aimed at understanding complex ecological relationships takes time to produce results in part because of frequent time lags in the ecological responses. Thoughtful, evidenced-based decision making is critical to ensuring stability of forest practice rules over time. However, the adaptive management process must be rigorous, not calcified.

Oregon's adaptive management process should pursue a decision-making framework that uses alternatives to full consensus. The consensus continuum model aims for full consensus at steps along the decision-making path and allows stalemates to be broken by supermajority (2/3rds) votes.

A consensus continuum model would be applied at the AMPC level where the multi-stakeholder nature of the committee may be ripe for stalemate. The consensus continuum approach would apply to decisions related to designing research agendas, setting budgets, and finalizing reports to the Board. The consensus continuum approach explicitly leaves open the ability for any stakeholder on the AMPC to put forward a minority report to the Board.

Fixed timeframes will be developed for all AMPC and IRST process stages. While all parties agree that striving for a consensus solution can provide for a more enduring regulatory system and help forge a

cooperative change management process, fixed timeframes need to be established for all process stages to avoid procedural delays in the decision-making process.

Aquatic Rulemaking and Non-Aquatic Rulemaking:

The Board is required to use the adaptive management process for all aquatic-related (HCP-covered) species issues but can also choose to use the adaptive management process for other issues. The Board must ensure that the use of the adaptive management process for non-aquatic issues does not impair the ability of the program to provide the required elements of the incidental take permit.

Access to Land –

Access to land for the purpose of conducting studies and monitoring contemplated by this section shall be encouraged. The AMPC and/or the IRST can prepare a report to the Board describing instances where access to land has been insufficient to achieve the purposes of this section. If presented with such a report the Board shall consider rulemaking to address any research and monitoring problems arising from lack of access to land. Small forestland owners that take advantage of alternative minimum practices and/or financial incentives from the state shall be required to allow access to land for effectiveness monitoring.

527.714 Types of rules; procedure; findings necessary; rule analysis. (1) The rulemaking authority of the State Board of Forestry under ORS 527.610 to 527.770 consists generally of the following three types of rules:

(a) Rules adopted to implement administration, procedures or enforcement of ORS 527.610 to 527.770 that support but do not directly regulate standards of forest practices.

(b) Rules adopted to provide definitions or procedures for forest practices where the standards are set in statute.

(c) Rules adopted to implement the provisions of ORS 527.710 (2), (3), (6), (8), (9) and (10) that grant broad discretion to the board and that set standards for forest practices not specifically addressed in statute.

(2) When considering the adoption of a rule, and prior to the notice required pursuant to ORS 183.335, the board shall determine which type of rule described in subsection (1) of this section is being considered.

(3) If the board determines that a proposed rule is of the type described in subsection (1)(a) or (b) of this section, or if the proposed rule is designed only to clarify the meaning of rules already adopted or to make minor adjustments to rules already adopted that are of the type described in subsection (1)(c) of this section, rulemaking may proceed in accordance with ORS 183.325 to 183.410 and is not subject to the provisions of this section.

(4) If the board determines that a proposed rule is of the type described in subsection (1)(c) of this section, and the proposed rule would change the standards for forest practices, the board shall describe in its rule the purpose of the rule and the level of protection that is desired. If the proposed rule would change the standard for forest practices for aquatic resource protection covered under the Private Forest Accord, the level of protection desired shall be the resource objectives defined in the Private Forest Accord HCP.

(5) If the board determines that a proposed rule is of the type described in subsection (1)(c) of this section, including a proposed amendment to an existing rule not qualifying under subsection (3) of this section, and the proposed rule would provide new or increased standards for forest practices, the board may adopt such a rule only after determining that the following facts exist and standards are met:

– (a) If forest practices continue to be conducted under existing regulations, there is monitoring or research evidence that documents that degradation of resources maintained under ORS 527.710 (2) or (3) is likely, ~~or~~ in the case of rules proposed under ORS 527.710 (10), that there is a substantial risk of serious bodily injury or death, ~~[~~or the outcome of a multi-stakeholder habitat conservation plan adaptive management process supports the need for a proposed rule under this section~~]~~;

(b) If the resource to be protected is a wildlife species, the scientific or biological status of a species or resource site to be protected by the proposed rule has been documented using best available information;

(c) The proposed rule reflects available scientific information, and, as appropriate, the results of relevant monitoring and~~, as appropriate,~~ adequate field evaluation at representative locations in Oregon;

(d) The objectives of the proposed rule are clearly defined, and the restrictions placed on forest practices as a result of adoption of the proposed rule:

(A) Are to prevent harm or provide benefits to the resource or resource site for which protection is sought, or in the case of rules proposed under ORS 527.710 (10), to reduce risk of serious bodily injury or death; and

(B) Are directly related to the objective of the proposed rule and ~~substantially~~ materially advance its purpose;

(e) ~~The proposed rule effectively meets the resource objective with less operationally expensive prescriptions when~~ The availability, effectiveness and feasibility of alternatives to the proposed rule, including nonregulatory alternatives, were considered, and the alternative chosen in the least burdensome to landowners and timber owners, in the aggregate, while still achieving the desired level of protection.

~~(f) The benefits to the resource, or in the case of rules proposed under ORS 527.710 (10), the benefits in reduction of risk of serious bodily injury or death, that would be achieved by adopting the rule are in proportion to the degree that existing practices of the landowners and timber owners, in the aggregate, are contributing to the overall resource concern that the proposed rule is intended to address.~~

(6) Nothing in subsection (5) of this section:

(a) Requires the board to call witnesses;

(b) Requires the board to allow cross-examination of witnesses;

(c) Restricts ex parte communications with the board or requires the board to place statements of such communications on the record;

(d) Requires verbatim transcripts of records of proceedings; or

(e) Requires depositions, discovery or subpoenas.

(7) If the board determines that a proposed rule is of the type described in subsection (1)(c) of this section, and the proposed rule would require new or increased standards for forest practices, as part of or in addition to the economic and fiscal impact statement required by ORS 183.335 (2)(b)(E), the board shall, prior to the close of the public comment period, prepare and make available to the public a comprehensive analysis of the economic impact of the proposed rule. The analysis shall include, but is not limited to:

(a) An estimate of the potential change in timber harvest as a result of the rule;

(b) An estimate of the overall statewide economic impact, including but not limited to change in output, employment, and income, relative to the following:

(A) ~~a change in output, employment and income~~the forest products industry;

(B) non-timber sectors such as commercial fishing, recreational fishing, and other outdoor recreation;

(C) government sectors such as public water system providers, waste treatment, and built and natural infrastructure~~; and~~

~~(D) individual source water drinking areas~~

(c) An estimate of the total economic impact on the forest products industry and common school and county forest trust land revenues, both regionally and statewide; and

(d) ~~Information derived from consultation with potentially affected landowners and timber owners and a~~An assessment of the economic impact of the proposed rule ~~under a wide~~for a variety of ~~circumstances, including varying ownership sizes and the~~ geographic locations and terrains of ~~a diverse subset of potentially~~ affected forestland parcels, derived from consultation with ~~potentially affected~~ stakeholders.

(8) The provisions of this section do not apply to temporary rules adopted by the board. [1996 c.9 §16 (enacted in lieu of 527.713); 1999 c.1103 §13; 2003 c.740 §10]

Funding Framework
October 29, 2021

Introduction:

The Private Forest Accord (PFA) final agreement envisions a remaking of the Oregon Forest Practices Act in order to achieve approval of an aquatic-oriented Habitat Conservation Plan (HCP) for all of Oregon's private forestlands. For years, the Oregon Department of Forestry (ODF) has seen budgets for key monitoring, science, and regulatory support staffing dwindle – especially as firefighting costs have strained available resources. The programs, oversight, and on-the-ground work envisioned in the PFA agreement will require a significant increase in funding for ODF to meet the task ahead.

The negotiating parties recognize that increased funding will need to come from many sources, including state general fund and] federal dollars. The PFA participants encourage state lawmakers to seize the historic opportunity that the PFA agreement provides and to recognize the enhanced financial commitment envisioned by the industry by generously allocating general fund dollars for these essential programs.

Budget Context:

ODF's current capacity to monitor, enforce, study, and improve their regulatory framework is lacking. With that in mind, it is also important to note that ODF is not starting from scratch. The funding requested as part of the PFA will be used to augment current staffing and the negotiating parties expect existing resources to be reprogrammed and integrated into the new HCP framework.

It is important to note that the authorizing federal statute for HCPs (the Endangered Species Act) requires that HCP applicants "ensure that adequate funding for the plan will be provided" (Section 10(a)(2)(B): (iii)). As the state applies for an HCP, it will have to show that the components included have a sustained funding plan for the life of the HCP.

Cost Estimates:

HCP costs can be broken down into two categories – *upfront* regulatory infrastructure costs and *ongoing* implementation costs.

Up front:	$11,750,000
Ongoing:	$18,000,000 – $36,000,000 (per biennium)

Upfront costs:

Initial costs are one-time investments in critical data gathering projects or regulatory documentation that is required to submit an HCP application. The negotiating parties urge lawmakers to fund these important foundational pieces of the HCP through general fund investments and ARPA dollars. Federal funds may be available as well, especially for HCP application costs. Upfront investments include:

- HCP application contractor: $4,000,000
- Updates to FERNS notification system: $750,000
- Steep slopes modeling: $2,000,000
- Fish modeling: $1,000,000
- Abandoned roads LiDAR: $4,000,000

Ongoing costs:

Biannual investments in ODF staff and systems will be needed on an ongoing basis to carry out the regulatory framework envisioned in the PFA. Increases in funding for certain functions at ODF may open the door for additional matching funds from federal sources such as: the USFS State and Private Forestry program; NRCS Technical Service Providers program; and USFS Emergency Forest Restoration program. Potential costs of implementing the PFA range from a basic service level to a premium service level. The following numbers assume a mid-level investment needed to meet the basic funding requirements of an HCP while also establishing a foundation for a durable framework and process to address current and future issues that arise.

Key components of ongoing costs per biennium (with projected new FTE):

	Description	**Cost per biennium**	**New FTE**	**Potential Federal Match or Support?**	**Potential Overlap w/ Existing Program**
Roads					
ODF Staff	Program support for FRIA administration and guidance.	$500,000	2.0	N	N
Compliance and Enforcement					
Compliance Monitoring	Implementing the recommendations of the MHE report and providing statistically sound assessment of compliance rates.	$550,000	1.0	N	Y
Enforcement	Boosting staffing to support enforcement, including additional training staff to increase awareness of new rules.	$750,000	3.0	N	Y
Adaptive Management					
Adaptive Management Oversight	Adding an adaptive management program administrator and supporting stakeholder participation in the adaptive management committee.	$1,000,000	1.0	N	Y
Independent Research and Science Team	Conducting effectiveness monitoring, validation monitoring, and targeted research to aide ongoing adaptive management.	$5,000,000	?	N	Y
Small Forestland Owners					

Culvert Support Program	Grant program to fund culvert and fish passage upgrades on small forestland owner property based on prioritization of impact.	$10,000,000	0.0	Y	N
SFO Field Foresters	Additional stewardship foresters specifically dedicated to supporting small forestland owners with compliance, navigating grant programs, etc. Could overlap with SFO support in SB 762.	$3,117,708	12.0	Y	Y
SFO Administrative Support	Central office administration and supervision of SFO field team. Could include GIS, grant management, etc.	$1,980,686	7.0	Y	Y
Riparian					
Field Surveying	Ongoing field verification of modeled stream layer to detect for accuracy, fish presence, etc.	$500,000	2.0	N	N
QA/QC for existing data	Quality control to assess existing stream identification data to fold into official ODF/ODFW stream layer.	$250,000	1.0	N	N
Mitigation					
State Support for Mitigation	Contribution from state for mitigation program	$10,000,000		?	?
Beavers	ODFW staff support for beaver mitigation program	$500,000	2.0	N	N
HCP Administration					
Field staff	Staff support for various elements of new regulatory program.	$1,000,000	4.0	Y	Y
TOTAL		$25,898,394	35.0		

<u>Presentation of Funding Package:</u>

The numbers provided above are a rough estimate for medium level service as it relates to accomplishing the goals of the entire PFA agreement. Some elements of the funding package are directly tied to gaining approval of a final HCP and receiving the associated incidental take permit. Other parts of the package are linked to improving ODF's ability to work with multiple stakeholders in a collaborative environment to improve OFPA administration moving forward. Both elements are important to the durability and success of the PFA.

PRIVATE FOREST ACCORDS
MITIGATION STRATEGIES

The HCP Handbook provides that "[m]itigation measures in the HCP must be based on the biological needs of covered species and should be designed to offset the impacts of the take from the covered activities to the maximum extent practicable." It goes on to suggest seven major categories of mitigation measures:

1. Restoration of degraded habitat to natural condition/function, or to a condition likely to be resilient to projected changes.
2. Land preservation.
3. Enhancement of habitat.
4. Creation of new habitat or new populations.
5. Threat reduction or elimination.
6. Translocation of affected individuals or family groups to establish new or augment existing populations.
7. Repatriation of species to formerly occupied and still suitable or enhanced habitat.

For purposes of the PFA, mitigation efforts will focus on items 1, 2, 3, and 5 above, including the following practices:

<u>Restoration or Enhancement</u>

Aquatic organism passage: Habitat connectivity is often reduced or eliminated when structures are placed instream or in stream adjacent wetlands. These structures frequently include culverts associated with road development, or dams and tidegates that are designed to divert or manage water. Investments to remove structures that block fish and aquatic organism passage that improve habitat connectivity beyond requirements of the HCP will provide mitigation for habitat loss or impacts on adjacent populations of covered species.

Wood augmentation: In reaches of the forest landscape where natural stream functions are altered by the lack of wood supply and recruitment due to legacy forest practices, large wood may be actively placed into streams as mitigation. Such placements should consider inclusion of root wads and simulate natural wood recruitment as feasible.

Beaver conservation and reintroduction: Beavers (*Castor canadensis*) are a keystone species that play a critical role in shaping our landscape. The role that beavers play in creating habitat for salmonids is well documented (e.g. page 3-3 of the Recovery Plan for Oregon Coastal Coho 2016). Conservation, active recruitment and reintroduction of beaver will restore landscapes to sustain and recover aquatic species covered by the HCP.

Wildfire resiliency: Uncharacteristically severe wildfires reduce the viability of aquatic species due to increases in fine sediment inputs, loss of riparian vegetation, and loss of wood to recruit to the system. Resiliency can be increased for aquatic species by developing and sustaining healthy riparian corridors and wet meadow complexes to reduce burn intensity during fires and protect streams from excess sediment inputs post fire. Active recruitment and/or reintroduction of beavers, installation of beaver dam analogues, and completion of Stage 0 stream restoration projects are some tools available for mitigation objectives.

Restoration Treatments in Riparian Conservation Areas: Densely stocked single-species stands of trees may provide riparian function more quickly if subjected to targeted treatments. The locations, character, and timing of such treatments needs further discussion.

Riparian thinning: Restoration treatments within the Riparian Conservation Areas that are designed and intended to enhance historic species diversity.

Land Preservation

Riparian conservation easements outside of the covered forest lands may be used to mitigate impacts associated with timber practices. Easements on covered lands may be useful to help aid small forestland owners comply with new standards.

Threat reduction or elimination

Instream flow: Alterations to instream flow conditions can impact water temperature as well as the availability of habitat for aquatic species. The acquisition and instream transfer of water rights to improve instream flow conditions where lack of flow is currently a limiting factor or projected to be a limiting factor in the future can provide mitigation for timber practices that alter hydrologic and geomorphic functions.

Grazing management: Unrestricted grazing in riparian areas can degrade water quality because the loss of streamside vegetation reduces the stability of stream banks leading to increased sediment inputs and geomorphic changes such as increases in the width to depth ratio and straightening of stream channels. These geomorphic changes along with the loss of shade normally provided by woody vegetation, may also degrade water temperature. Fencing of and grazing exclusion in riparian areas, and around seeps and springs, as well as the installation of off-stream stockwater systems or hardened watering gaps may be used to reduce the threat of grazing practices on aquatic species.

Mitigation Implementation

Mitigation will include both permittee-implementation, as well as in-lieu fee mitigation.

Permittee-Implementation may include wood augmentation, beaver reintroduction, riparian restoration, and other practices identified above on covered lands by private forestland owners.

In-Lieu Fee Mitigation may include all mitigation practices supported by money routed through Oregon Recreation and Conservation Fund.

Prioritization mechanism. In-Lieu Fee mitigation projects will be evaluated by a technical review team that consists of the Board of the Oregon Recreation and Conservation Fund, and members appointed by the Board of the Oregon Recreation and Conservation Fund, in order to assure funds are invested in the projects that will generate the highest degree of mitigation for timber practices. Funds may also be used to conduct active outreach to landowners of fish passage barriers in order to meet fish passage targets, and other landowners who may participate in the mitigation efforts identified above.

Timeline for Mitigation the HCP should endeavor to provide for implementation of mitigation such that the offset would be achieved before the impacts of the taking occur.

Annual tracking of mitigation implementation for both in-lieu free and permittee implementation should be completed, with assessments of progress completed in coordination with the jurisdictional agencies every 5 years.

Private Forest Accord Amphibian Summary

October 29, 2021

The parties agree that the Private Forest Accord will provide sufficient conservation to support coverage for the following amphibians.

- Columbia Torrent Salamander *(Rhyacotriton kezeri)*
- Southern Torrent Salamander (Rhyacotriton variegatus)
- Coastal Giant Salamander (Dicamptodon tenebrosus)
- Cope's Giant Salamander (*Dicamptodon copei)*
- Coastal Tailed Frog (*Ascaphus truei*)

Parties agree that this agreement will not cover Cascade Torrent Salamander

Term: 25 years

Specifically, the following conservation measures were agreed to in part or in whole to address amphibians.

- The riparian protections on fish streams
  - Large Fish 110' no harvest
  - Medium Fish 110' no harvest
  - Small Fish 100' no harvest
- The riparian protections on perennial streams
  - Large Non-Fish 75' no harvest
  - Medium Non-Fish 75' no harvest
  - *Small perennial Flowing into SSBT*: 75' no harvest for first 500'; then 50' no harvest for 650' (total of 1150')
  - *Small perennial Flowing into F/non-SSBT* : 75' no harvest for 600'.
- The additional protections for seeps and springs and stream adjacent wetlands within buffers for fish and perennial streams
  - An additional 35 feet no harvest for seeps and springs
  - Stream adjacent wetlands encompassed in Riparian Management Areas of streams
- 35 foot equipment limitation zones applied to all unbuffered perennial and ephemeral streams
- For perennial non fish streams there is a vegetation retention requirement within the 35 foot ELZ to retain shrubs and trees up to 6 inches
- Initiation site protections and debris torrent tracks consistent with the agreement provide some additional riparian protections as well as connectivity in the upper reaches of the watershed.
- Additional roads wetland protections including 2:1 replacement for filling or draining wetlands greater than ¼ acre
- Enlarged culvert standards for all streams (100 year)
- Implementation of stream simulation for culverts in the fish network
- Reduced sedimentation from hydrologic disconnection

The parties acknowledge uncertainty around amphibian populations, distribution, and abundance of amphibians. To address this, the parties are agreeing to prioritize adaptive management projects identified below before other adaptive management.

A. Recommend $1.5 million/ year funding
B. Effectiveness monitoring for:
    1. Presence

2. Abundance
3. Spatial distribution
4. Detectability
5. Connectivity (over ridge, between streams, culverts including “D” culverts)

C. Priority on torrent salamanders

Stream Typing Outline FINAL

Fish Use

- The parties agree that the hydrography (stream network) upon which fish distribution is determined should rely on high resolution digital elevation models where available. The hydrography will be attributed with fish distribution based on Fransen as a provisional layer in FERNS and transition to a new fish distribution model based on high resolution digital elevation models as available by region, anticipated to be not later than January 1, 2025. The parties intend to utilize the fish distribution model in development at the PNW research station once peer reviewed, but may consider other model approaches as developed through the adaptive management program in consultation with ODFW. The modeled fish/no fish network will be incorporated into the relevant ODF and ODFW layers.
- The regulatory fish distribution layer will incorporate ODF end of fish based on historic field surveys that rely on physical habitat survey or direct sampling of fish presence subject to the following review:
    1. Surveys that found an absence of fish based on e-fishing but were conducted outside of the recommended survey season will be disregarded, unless there was a valid scientific reason to use an out-of-season survey (e.g., a waterfall, pH, etc.) approved by ODFW.
    2. ODFW will contrast the modeled layer with current ODF end of fish use. ODFW will prioritize the streams with the largest deviations between ODF and model for initial analysis. Where there are large deviations, ODFW will first determine whether it's a product of a pre-2007 artificial obstruction (in which case the model will prevail absent the requisite showing), or due to an otherwise valid survey (in which case the survey would prevail). This process will follow the methodology described in 629-635-0200 (11).
    3. Surveys above artificial obstructions conducted prior to the implementation of the 2007 artificial obstruction rules will not be relied on to determine the end of fish use unless the operator can meet the post-2007 requirements showing (obstruction will persist until key piece size realized), per OAR 629-635-0200(11)(f). Otherwise, fish use will be extended above an artificial obstruction to the physical criteria, per OAR 629-635-0200(11)(b) .

- E-fishing will remain a valid method of proving fish absence, provided that the protocol will be revised to require 1,320' of continuous survey distance to demonstrate absence, not the current 150'. All e-fishing surveys are and will be conducted in accordance with NMFS electrofishing guidelines and any updates to those guidelines. The parties agree to collaborate and facilitate studies of eDNA on private, State, and federal forestlands, and incorporate those findings into the relevant modeled layers. Following a multi-stakeholder process that includes at a minimum equal representation by conservation interests, tribes, and the timber industry, should ODFW adopt a rule that requires the use of methods other than e-fishing to determine fish presence or absence for delineating fish distribution for FPA, the new requirement will be used.
- The Table 2 physical habitat criteria will be updated within three years, by January 1, 2025. The updated physical habitat criteria will rely on peer reviewed data, and incorporate an external peer review process with scientists who have expertise in stream fish habitat, fluvial processes and geomorphology, and foresters with field experience surveying for fish presence; with opportunity for public comment. The updated parameters will be elevated into rule. The physical habitat criteria will align with the stopping rules developed through model validation in the field in consultation with ODFW.

- ODFW will develop and maintain the fish habitat layer. ODFW and ODF will have a clear process for landowner certification of survey work. ODFW can object, but absent objection the certification will be final, and will be incorporated into the layer going forward.

Perennial Streams

- Mapping outputs from the PROSPER model, will be incorporated into FERNS with the joint intention that the model conforms to standard of 75% likely to be perennial. Where it is not available, NHD plus for that location will be used.
- The USGS/PNW Research Station is developing a model of flow persistence using high-resolution LiDAR-derived DEMs and field observations collected by a standard method and archived (i.e. FLOwPER). Outputs from the new model for areas west of the Cascade Crest will be incorporated as a stream layer into FERNs within one year of publication, and future layers for the eastern region if they become available at a future date. If the new modeled layer uses a probabilistic threshold, that threshold will be determined in a joint agency/stakeholder process involving the negotiating teams and the relevant state and federal agencies.
- In the interim period, industry will be obligated to buffer the perennials that require buffers, even if they are not on the mapped layer. Field validation will use the same protocol they use in Washington Board Manual Guidance. Field surveys will be conducted by foresters, and findings communicated to the stewardship forester on a pre-approved form. The stewardship forester and/or ODFW can object, but absent objection the form will control.
- Field observations will be uploaded through FLOwPER into a common database that will be utilized to make the ultimate model more robust.
- After the FLOwPER informed modeled perennial layer is incorporated into FERNS, landowners will be regulated to the FERNS layer (without an obligation to survey), provided that modeled perenniality is subject to field validation using the Washington Board Manual Guidance process.

Small Forestland Owners (SFOs)

I. Introduction.

(a) This is a program for small forestland owners. It recognizes that Oregon's small, non-industrial forestland owners value their properties for a diverse array of benefits, including but not limited to timber production. The program is designed to ensure that management of these lands achieves the objectives of the Oregon Private Forest HCP, and also addresses the potentially disparate financial impacts that an HCP will have on Oregon's small forestland owners.

(b) An estimated 3.6 million acres of Oregon's forestlands are owned by landowners who own less than 5000 acres. This equates to approximately 12% of Oregon's total forestlands, and 35% of the state's privately-owned forestlands. Compared to industrial forestland owners, most small forestland owners harvest less often. The 12% of forestlands owned by small forestland owners produce approximately 12% of the state's total harvests, while the 22% of forestlands held by private industrial owners produces approximately 66% of harvests. The spatial footprint of a harvest on a small forestland owner's property is, on average, approximately only 35% the size of the mean harvest on industrial ownerships.

(c) The lower rates of harvests found on small forestland owner properties is indicative of the diversity of values of the owners. Small forestland owners value their properties for numerous reasons beyond simply the harvesting of forest products. These values include recreation, wildlife habitat, and ecological values. Nevertheless, many small forestland owners also rely on their properties as investments and/or supplemental sources of income.

(d) Oregon would benefit by more data on key SFO issues, such as rate of compliance with the Forest Practices Act and the adequacy of culverts for fish passage. Further, it can be difficult to assess the full size of an individual's ownership if it is divided between multiple parcels or ownership entities.

II. Goals

(a) The goal of the Small Forestland Owner Program is to meet all of the objectives identified in the other chapters of this report. Given the inherent differences between small forestland owners and large industrial landowners, the Private Forest Accord framework envisions some different standards and strategies on SFOs, including differences in riparian and slope management, eligibility for incentive programs, requirements for reporting, road measures, and use of targeted outreach and educational efforts. It also proposes the establishment of a central administrative office at the Oregon Department of Forestry to work with this community.

(b) While the Private Forest Accord framework includes optional prescriptions for small forestland owners who may face disproportionate economic impact from new harvest rules, it is also a goal of the program to encourage the adoption of standard harvest and road management rules through financial and educational means.

(c) Another goal of the Small Forestland Owner Program is to minimize the conversion of timberlands to other uses.

III. Definitions for SFO Program

(a) There are multiple definitions smaller forest owners in statute, and the definitions and legal changes for the SFO Program described here only apply to this program, and do not affect statutes related to property taxes, tax credits, or other statutes with a current definition of a small forestland owner. Those definitions and statutes remain unchanged.

(b) "Small forest owner" here means an owner who:

a. owns less than 5000 acres of forestland as defined in Oregon statutes effective January 1, 2021, and

b. • Who, at the time of submission, has harvested no more than an average timber volume of two million board feet per year from their own forest lands in Oregon state during the three years prior to submitting required documentation; and

c. • Who certifies they do not expect to exceed that average timber volume for ten years after the department receives the required documentation.

(c) However, any landowner who exceeded the two million board feet annual average timber harvest threshold from their land in the three years prior to submitting documentation to the department, or who expects to exceed the threshold during any of the following ten years, shall still be deemed a "small forestland owner" if he or she establishes to the Department of Forestry's reasonable satisfaction that the harvest limits were, or will be, exceeded in order 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.

(a) Roads

1. The Forest Road Inventory Assessment (FRIA) program created by this agreement will not apply to small forestland owners, though all small forestland owners are required to assess and report on their roads as described below.

2. The road maintenance and construction standards that apply to industrial landowners will apply equally to small forestland owners, however the same timelines for replacing or maintaining road infrastructure to the standards created by this agreement will not apply to small forestland owners. Small forestland owners will ensure their roads are maintained to standard for any roads used for harvests. Required culvert replacements will be addressed when harvests occur, and/or when assistance funding is available. All new construction must satisfy the same standards that apply to all landowners.

3. In lieu of a FRIA, small landowners will be asked to fill out a small forestland owner Road Condition Assessment (RCA). The Assessment will be formulated by the Small Forestland Owners Assistance Office (SFOAO) through rulemaking, and will focus on identifying road maintenance concerns and fish passage blockages. The SFOAO will undertake programs to incentivize small forestland owners to return RCAs, with a strong focus on targeted outreach and education to small forestland owners with potentially significant fish passage barriers.

4. Small forestland owners will be required to submit a Road Condition Assessment at their initial forest practice notification after the final RCA worksheet is approved in the rulemaking process. ODF will decline forest notifications that do not contain an RCA.

5. Small forestland owner Road Condition Assessments will be used to prioritize projects that will receive Assistance Funding per agreement 10/29).

IV. Small Forestland Owner Assistance Office and Financial Incentives

(a) Primary Focus

The primary focus of the Small Forestland Owner Assistance Office (SFOAO) will be to implement the financial incentives and technical assistance programs that support the Private Forest Accord and Habitat Conservation Plan.

(b) Supporting Services

ODF already supports several programs for Small Forest Owners including the Partnership For Forestry Education, forest management planning, partnership development and program funding, outreach and education through stewardship foresters, and the Committee for Family Forestlands. Existing programs will be housed within the new SFOAO and will be leveraged to support programs associated with fish passage, barrier removal, road maintenance, and data collection associated with the HCP.

(c) Monitoring and Reporting

The SFOAO will be responsible for building and maintaining a database of small forest owners, their ownerships, forest type and condition, roads, and streams in order to support compliance with the HCP.

Issue: If too many SFOs conduct alternative minimum practices in a riparian area, functions like wood recruitment and thermal protection may not be adequately maintained. Yet if standard stream buffers, traversal path buffers, and steep slope prescriptions, as defined in the HCP (the "Standard Prescriptions"), are required on all SFO parcels, some SFO landowners will suffer disproportionate financial impact.

To address this issue:

-- Define a new level of minimum protection (the "Alternative Minimum") that describes (a) FPA streams that currently have buffers (SSBT, F) as a no cut buffer drawn at the outer edge of the RMA, (b) half the distance of standard traversal paths, and (c) no steep slopes protections (other than HLHL required by current law). For streams that currently have no RMA, the buffer would be 50% of the Standard Prescription.
-- Harvest at the Alternative Minimum would be allowed by any SFO, though the frequency of the practice would be limited, per below.
-- Compensation would be available to any SFO who filed a notice for a forest practice that included harvest in the areas included in the Standard Prescriptions not included in the Alternative Minimum, and who checked the box electing to observe the Standard Buffer. Checking the box will require a written plan reviewed by ODF. This compensation would be for 100% of the value of the trees in this area and would be provided in the form of tax credits. Costs for the calculation of the values of the trees would be borne by the landowner, in recognition of logging costs not incurred by harvest.
-- ODF would develop a method to track the condition of the stream buffers on SFOs at the fifth field level (each, a "basin") to calculate the percentage of the stream mileage exposed to harvests at the Alternative Minimum. The method would incorporate ideas provided by the SWOA proposal for tracking in this process.
-- A ceiling for the harvest in the area would be set at no more than 5% of buffered streams on SFO lands in a basin exposed to Alternative Minimum harvests in any 5 year period (rolling average).
-- If the cap were reached, landowners would not be allowed to harvest to the Alternative Minimum, and they would have two options. One would be to put their name on a waiting list to be notified when the harvest cap was no longer effective and harvest could be authorized. A second option would be to be compensated for 125% of the value of the lost harvest at the Standard Prescriptions relative to the AMB.
-- Note -- we need to ensure that this system is used for people genuinely engaged in a forest practice. For example, a notice could not be filed for harvest in a riparian area only as a pretext for getting compensation.
-- A mechanism needs to be included to encumber the title or somehow ensure that any compensation becomes a 50 year commitment to protection of the area from the date the tax credit is approved.

Other items: We are open to the emergency exception (including, but limited to, medical emergency, estate tax, court-ordered judgment), but want to work with the SWOA to make sure the need is genuine and better defined than in the current proposal.

Subsidy for road-related projects on SFOs at 100%. This program will not alter the pre-existing OWEB grant programs.