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Preliminary Research question(s) for the research topic: Requirements of baseline and trend monitoring of road rules

This draft includes all input from the AMPC workgroup on the version revised based on their first round of input. This draft of the research question package was developed by ODF staff based on AMPC input due October 26, 2023.

David Bugni input:

This looks good to me. Clearly spells out what we want up front. We can iterate on this forever, but at this point, I suggest going with it. If need be, as I suggested several times, get a run-through by an IRST member to see if it is clear to them as well and make any changes at that point.

Julie Firman input:

Purpose of this document

This document provides the following Adaptive Management Program elements from the Adaptive Management Program Committee (AMPC) regarding forest roads research:

- A. The preliminary research questions they developed; and,
- B. Contextual information for these questions, as required in rule¹. This information clarifies the basis for these questions, and what additional information the AMPC would like to see from you.

These elements will guide the Independent Research and Science Team (IRST) in developing scoping proposal(s) to answer these preliminary research questions.

Dear Members of the IRST,

We are pleased that you have agreed to participate on the IRST.

The AMPC appreciates your using this document to guide your work in the next step of the Adaptive Management Program, which includes your completing the following items per rules:

1. In consultation with the AMPC, refining these preliminary research questions into finalized research questions². The intent is for these finalized research questions to be able to be addressed via studies.
2. Developing a scoping proposal for how to address the finalized research questions. The proposals need to include³:
 - a. A literature review that specifies the need for or the type of monitoring, research, commissioned studies, or other means of scientific inquiry necessary to answer the finalized research question mentioned in #1;
 - b. A preliminary estimate of the budget for each year of the research, and a timeline to complete the research project with specific deliverables; and,
 - c. A preliminary description of research project requirements, scope of work including an estimate of the timeline and key milestones, and an estimate of the

¹ Oregon Administrative Rule (OAR) 629-603-0200(3)(a)

² Per OAR 629-603-0200(4)(b)

³ Per OAR 629-603-0200(4)(c)

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degree to which knowledge may be improved if the research proposal is implemented.

Please write this proposal such that an educated non-scientist can understand it. Additionally, please use the associated contextual information (detailed in section B, below) to guide your efforts.

Note that the IRST is not required to write more than one scoping proposal, but the AMPC would appreciate your developing at least two scoping proposals so they can have more robust decision making in developing the research agenda (see below). These proposals should span a range of study rigor, expense, and time, while defensibly answering the questions. If you complete multiple proposals, please compare their respective costs vs. knowledge benefits⁴.

3. Within 45 days of receiving this document, please provide an estimate of the time you will need to complete #1 and 2⁵.

Next steps after IRST scoping proposals: Research agenda, implementation, recommendations In summary, the next steps in the Adaptive Management Program process are:

- I. The AMPC completes preliminary research questions for the other two AMPC priority research topics (amphibians and eastern Oregon steep slopes), likely in early 2024.
- II. The IRST will complete similar scoping proposals (outlined above) for these questions.
- III. The AMPC will consider all of these scoping proposals in developing a complete research agenda⁶.
- IV. The IRST will implement the research agenda⁷, then report to this work to Oregon Board of Forestry (Board) and the AMPC⁸. The AMPC will make recommendations to the Board for Board decisions⁹.

Closing

Since this is the first time the AMPC has completed this stage of the AMP process, we welcome your feedback on how to improve the framing of the information and associated communications.

The AMPC looks forward to working with you, both in the long term, and on this particular scoping proposal. If you have any questions, please reach out to Oregon Department of Forestry's Adaptive Management Program Coordinator, W. Terry Frueh at Terry.Frueh@ODF.Oregon.gov or 503.871.2699.

Sincerely,

Members of the AMPC

⁴ Per OAR 629-603-0200(4)(d)

⁵ Per OAR 629-603-0200(4)(a)

⁶ OAR 629-603-0200(5)

⁷ OAR 629-603-0200(6)

⁸ OAR 629-603-0200(7)

⁹ OAR 629-603-0200(8)

Commented [TF1]: These are verbatim from rule (other than tweaks to have consistent internal references within this document)

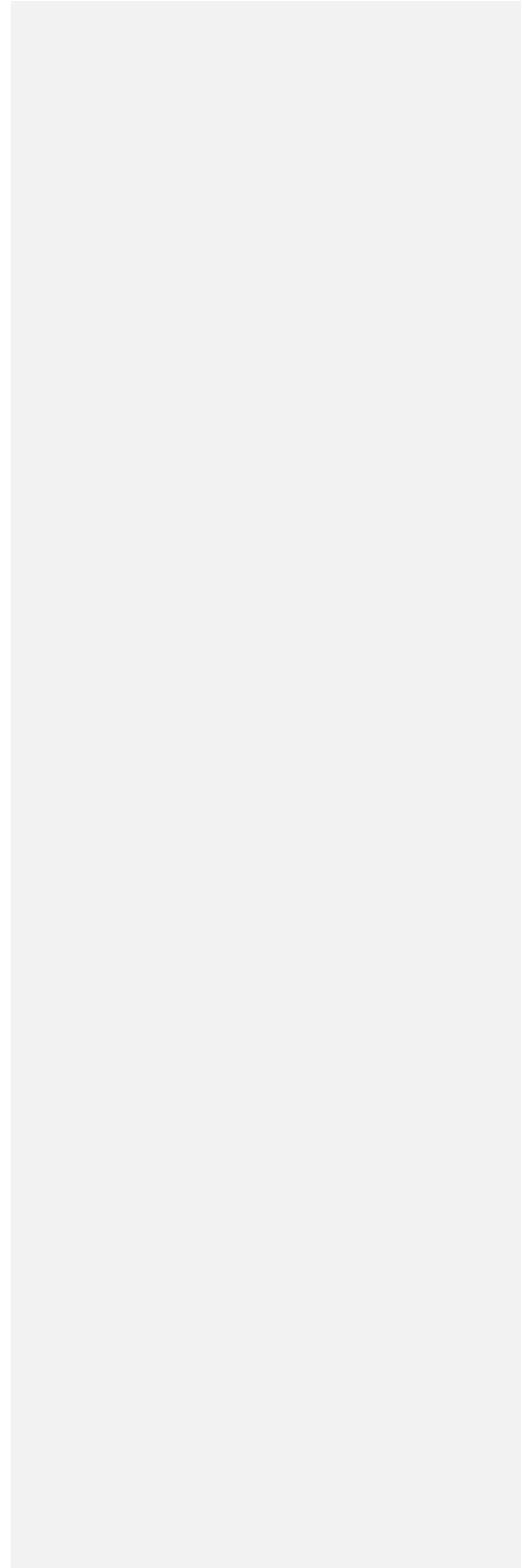
Commented [FT*O2]: David, Julie, and Casey: Do you want to make any other requests? E.g., not to exceed a particular length, or...?

Commented [FJ3R2]: No additional requests from me

Commented [FT*O4]: This is not required, but is good practice to request it

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A. Preliminary Research questions *(approved at the Oct. 23, 2023 AMPC meeting)*

These preliminary research questions were approved by the AMPC at their October 23, 2023 meeting.

1. Baseline Report.
 - a. What are the baseline levels of hydrologic connectivity¹⁰ of roads prior to the implementation of the Oregon Forest Practices Act (OFPA) road rules¹¹ effective Jan 1, 2024?
 - b. How do these levels vary based on landowner type and East/West region?
 - c. What other factors or variables within the regulatory framework of the FPA might be relevant? [E.g. stream type (F, SSBT and N), practice(s) used to disconnect the road, and variables used in Dube et al. 2010.
2. Trend Monitoring. What are the trends in these levels of hydrologic connectivity of roads over 5-year intervals? These trends should be assessed for the same variables in question 1.
3. Determination of rule effectiveness. In the long term, to what extent are road rules associated with hydrologic disconnection effective at achieving biological goals and objectives?

Commented [FT*05]: FYI - matching terminology in OAR 629-603-0200(3)

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Commented [FJ6]: This was so clear in the context of our conversation, but reading it on the page it seems vague. Perhaps add text in parentheses

B. Preliminary Research Question Package: Contextual information

The remainder of this document provides contextual information that details the context for the preliminary research questions, as required by rule¹². The following are organized per the elements in this rule. (OAR 629-603-0200(3)(a) requirements)

~~OAR 629-603-0200(3)(a) The AMPC shall succinctly specify preliminary research questions that include the following:~~

~~OAR 629-603-0200(3)(a)(A) The **type** of research and monitoring per OAR 629-603-0100(1)(a) or (b)~~

~~OAR 629-603-0100(1)(a) Conduct effectiveness monitoring by assessing the degree to which the rules facilitating particular forest conditions and ecological processes achieve the biological goals and objectives. This assessment may include evaluation of cumulative effects.~~

~~OAR 629-603-0100(1)(b) Conduct research inquiry and validation monitoring to:~~

~~(A) Determine if additional scientific inquiry is needed to fill knowledge gaps related to biological goals and objectives; and~~

~~(B) Test and improve existing and new models and methodologies used to design and implement forest practice rules intended to meet the biological goals and objectives.~~

Commented [FT*07]: From the PFA Report: "The AMPC will set the scientific agenda, but will play no part in designing actual research projects, carrying out the inquiry, or the IRST's report of findings to the Board and AMPC."

Some of draft 1 that ODF developed, and AMPC input on that draft, focused on methodological aspects of studies. However, that is the IRST decision space. I tried to translate those methods perspectives into important considerations to communicate to the IRST so they understood WHAT the AMPC wants to know, and WHY. Those are included here.

B.1 The type of research¹³ [per OAR 629-603-0200(3)(a)(A)]:

AMPC response: This research is of type OAR 629-603-0100(1)(a): "Conduct effectiveness monitoring by assessing the degree to which the rules facilitating particular forest conditions

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¹⁰ Note: "hydrologic connectivity" is not defined in rule. This term refers to the degree to which a road is hydrologically connected to a stream, where as the definition in rule ("hydrologic disconnection" [OAR 629-600-0100(71)]) focuses on the *process* for removing this connectivity.

¹¹ For the FPA rules effective starting Jan. 1, 2024.

¹² OAR 629-603-0200(3)(a)

¹³ OAR 629-603-0200(3)(a)(A)

and ecological processes achieve the biological goals and objectives. This assessment may include evaluation of cumulative effects.”

B.2 The rule, biological goals and objectives (BGOs), or other issue being studied¹⁴

AMPC response:

Note that ~~t~~he most recent version of the BGOs is in the Dec. 2022 draft HCP. The BGOs will be finalized within the HCP due Dec. 31, 2027. The relevant BGOs are:

“Overarching Goal: Forest practices that support the survival and recovery of the covered species by providing clean, cool, connected, and complex habitats.

Goal 1: Provide clean water and substrate for the covered species.

o Objective 1.1 - Forest practices near streams minimize sediment delivery.

o Objective 1.2 – Slope Retention Areas reduce episodic sediment delivery to fish-bearing streams.

o Objective 1.3 – Road runoff directly to streams is minimized.

o Objective 1.4 – Roads are not a significant source of episodic sediment delivery to streams.

Goal 3: Stream network connectivity satisfies freshwater habitat needs for covered species.

o Objective 3.1 – Road crossings on fish-bearing streams are passable by the covered fish species.

o Objective 3.2 – Forest practices maintain the hydrologic continuity of stream-associated wetlands and stream-adjacent seeps and springs to stream habitats.

o Objective 3.3 – Timber harvest maintains stream-associated connectivity in riparian areas along non-fish streams sufficient to support covered amphibians.

Goal 4: Riparian areas function to support complex habitats for the covered species.

o Objective 4.1 – Mature, complex riparian forests are fostered in no-harvest zones of RMAs.

o Objective 4.2 – Forest practices within tree retention areas of RMAs promote delivery of large wood.

o Objective 4.3 – Designated Debris Flow Traversal Areas function to deliver large wood to fish-bearing streams.

o Objective 4.4 – Forest practices maintain stream-associated wetlands and stream-adjacent seep and spring habitat for amphibians.”

The rules being studied are listed in Appendix 1.

B.3 The objective of the research¹⁵

AMPC response:

Commented [SD8]: Do we need to indicate that these will be finalized in the HCP?

Commented [FT*O9]: BGOs aren't finalized, so can't really link back to them. However, these are likely to be finalized within the next few years, i.e., before the studies on trends are very far along.

Are there other issues to be addressed, other than the rules listed?

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¹⁴ OAR 629-603-0200(3)(a)(B)

¹⁵ OAR 629-603-0200(3)(a)(C)

1. To assess the current (baseline) status and trend of roads being hydrologically connected to streams, and how those vary with practice, region, landowner type, and other relevant strata.
2. Determine the effectiveness of the relevant rules at minimizing hydrologic connectivity.

B.4 A brief description of the context of the research question¹⁶

AMPC response: The following direction was provided in the PFA Report (p. 67) and provides the foundation for these research questions:

“4.3.10 Development of Monitoring Requirements

The Independent Research Science Team (IRST) created under the PFA shall design and oversee baseline and trend monitoring for hydrologic disconnection. Compliance monitoring will be conducted through the Department’s process.

1. Baseline and Trend Monitoring for Hydrologic Disconnection: *The methodology for the monitoring shall be based off of Dube et al. (2010) and Martin (2009). 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. The Adaptive Management Program Committee shall use the results of the baseline and trend monitoring to develop regional goals consistent with that monitoring. All hydrologic connectivity data should be public and shared as it becomes available to help focus goals, identify accomplishments, and inform statewide learning.”*

B.5 Other information the AMPC deems necessary for the IRST’s work¹⁷

AMPC Response:

1. It is essential to maintain the role of the regulatory framework (the FPA) throughout the design and implementation of studies, including the following considerations:
 - a. ~~Stratifications need to be relevant to the FPA variables~~ There are two stratum classifications
 - A. ~~FPA regions, of which~~ There are two - East and West of the Cascade Mountains ~~FPA regions. Note: (There is value to studying “regional” differences in the answers to research questions, BUT too many subcategories would be impractical to implement from a regulatory approach. The AMPC acknowledges there may be value to studying “regions” more finely than regulatorily practical to help assess what might be the best framework, knowing that regulation might aggregate later.)~~
 - ~~B. There are two~~ Landowner classifications in the FPA (of which there are two, each with a different regulatory framework for roads) – 1) small forestland owners; 2) everyone else.
 - ~~C. B. Assessments should differentiate Type F, SSBT, and N streams.~~
 - b. Assessments should differentiate Type F, SSBT, and N streams, but the design need not be stratified by stream type. Additional attributes listed in Dube et al. (2010) should also be considered.

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Commented [TF10]: From Josh Seeds: "This already gets us to 2x2x3=12 categories. This is a complex factorial design that will require a lot of replication to detect significant differences between categories. I do not think we can add more stratification variables and have this be any use."

Commented [FT*O11]: The intent here with a statewide study is to not divide the state into too many subregions - imagine if you had 5 precipitation zones with lots of different geologies, slopes, road surfaces, etc. You could easily end up with 150 "regions", which would be impractical regulatorily

Commented [JF12R11]: The hydrologic landscape model includes precipitation, terrain, seasonality and soil and aquifer permeability. It might be useful for post-stratification of the data. Terrian and soil permeability are non-informative for this process as almost all timber lands are in the same category, but the other three metrics might be useful.

Commented [FJ13]: The rest of the text in this bullet was superfluous given the additional clarity that we gave in the wording of the research questions

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¹⁶ OAR 629-603-0200(3)(a)(D)
¹⁷ OAR 629-603-0200(3)(a)(E)

~~6.2.~~ Research should consider the following aspects of practices for disconnecting roads from streams:

- A. The relative frequency of use of the practices;
- B. The aspects that go into determining their site-specificity; and,
- C. The relative efficacy and risks of the practices.

~~2.~~ The intention of this monitoring is not to compare conditions or rules with previous rules. However, the AMPC acknowledges that the trend monitoring and comparison with the baseline of when the new rules come into effect (Jan. 1, 2024) will imply comparison with previous rules.

3. The AMPC wants to know how metrics of interest (e.g., sediment delivery from roads) compares with those of background levels, and when thresholds of negative impacts to covered species have been crossed, including an assessment of both likelihood and magnitude of those impacts.

4. For assessing trends, the AMPC ~~wants~~ would like reporting to occur data collection at ~~cost effective intervals (e.g., of 2-5 years) and reporting of these results on similar timeframes~~ rather than waiting for e.g., a single 20-year report.

5. Ideally, the baseline would be for the effective date for the road rules (Jan. 1, 2024); however, ~~the AMPC recognizes that~~ it will take time to refine and scope the research questions, decide on the research agenda, develop and then award the RFP.

~~6.~~ Research should focus on collecting field data rather than ~~on~~ purely model-based assessments.

~~7.6.~~ Note the phrasing in OAR 629-625-0330 Drainage (1) ["All active, inactive, and vacated forest roads and landings shall be hydrologically disconnected to the maximum extent practicable (emphasis added)..."] is a de facto acknowledgment that disconnection of roads won't be 100%, and thus the need for question #3.

~~8.7.~~ When assessing effectiveness of practices, it would be helpful to understand both individual practices and their cumulative results.

~~9.8.~~ This entire research question package would be very complex, long, and expensive to implement as a single research project. Thus, the AMPC would appreciate the IRST dividing up this research question package into discrete projects and developing scoping proposals (per OAR 629-603-0200(4)) for each one.

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Commented [SD14]: But we do want to know what changes (if anything) from Jan 1 2024 into the future (20 years of FRIA)

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Commented [SD15]: Don't think this needs to be in here

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Appendix 1. Road rules relevant for this research question package

Note: many of these rules become effective January 1, 2024.

OAR 629-625-0300 Road design

(3) The department shall publish Forest Practices Technical Guidance that explains how to avoid and prevent potential impacts to fish, wildlife, habitat resources, and waters of the state, in support of the following rules:

(g) OAR 629-625-0330(1) to explain how to implement rules to hydrologically disconnect forest roads and landings from waters of the state.

OAR 629-625-0320 Water Crossing Structures;

(10) Construction of Water Crossings. In the construction of water crossings, operators shall do the following:

(b) Runoff, Erosion and Sediment. Operators shall control runoff, erosion, and sediment through the following actions:

(A) Include a site-specific erosion and sediment control plan as part of a written plan prior to beginning work. This plan must include, but is not limited to:

(i) A site plan with a description of the methods of erosion or sediment control;

(ii) Methods for confining, removing, and disposing of excess construction materials; and

(iii) Measures to disconnect road surface and ditch water from all typed waters and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals.

OAR 629-625-0330 Drainage

(1) All active, inactive, and vacated forest roads and landings shall be hydrologically disconnected to the maximum extent practicable from waters of the state to minimize sediment delivery from road runoff and reduce the potential for hydrological changes that alter the magnitude and frequency of runoff. Operators shall locate drainage structures based on the priority listed below. When there is a conflict between the requirements of sections (2) through (7) of this rule, the lowest numbered section takes precedence and the operator shall not implement the later numbered and conflicting section.

(2) Operator shall not install cross-drains and ditch-relief culverts in a way that causes stream diversion.

(3) Operators shall not concentrate road drainage water into headwalls, slide areas, high landslide hazard locations, or steep erodible fillslopes.

(4) Operators shall not divert water from stream channels into roadside ditches.

(5) Operators shall install drainage structures at approaches to stream crossings to divert road runoff from entering the stream. If placement of a single drainage structure cannot be placed in a location where it can effectively limit sediment from entering the stream, then additional drainage structures, road surfacing, controlling haul, or other site-specific measures shall be employed so that the drainage structure immediately prior to the crossing will effectively limit sediment from entering the stream. Operators may also use best management practices to manage sediment at the outflow of the drainage structure nearest to the crossing.

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(6) Operators shall provide drainage when roads cross or expose springs, seeps, or wet areas.

(7) Operators shall provide a drainage system that minimizes the development of gully erosion of the road prism or slopes below the road using grade reversals, surface sloping, ditches, culverts, waterbars, or any combination thereof. For new road construction, operators shall use outsloping to the maximum extent practicable when site-specific conditions allow for its safe and effective use.

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.

Note: OAR 629-600-0100(71) "Hydrologic disconnection" means the removal of direct routes of drainage or overland flow of road runoff to waters of the state.

629-625-0900 Forest Road Inventory and Assessment

- (1) The purpose of the Forest Road Inventory and Assessment (FRIA) is to reduce chronic and catastrophic sediment entry to waters of the state and to ensure passage for covered species during all mobile life-history stages by identifying existing roads not meeting the forest practice rules and bring those roads into compliance with the forest practice rules.
- (2) OAR 629-625-0900 does not apply to small forestland owners, as defined in OAR 629-600-0100. Small forestland owners shall submit a road condition assessment when they submit a notification of operation for a timber harvest that will use a road to haul timber, as described in OAR 629-625-0920.
- (3) The department shall publish Forest Practices Technical Guidance for compliance with the Forest Road Inventory and Assessment process to avoid and prevent potential impacts to fish, wildlife, habitat resources, and waters of the state.
- (4) The Forest Road Inventory and Assessment rules apply to segments of roads located on a large forest landowners' property, excluding roads that are owned or controlled by a government entity, including, but not limited to, the United States, and federally recognized Indian Tribes. For the purposes of this section, both ownership and control mean any right, interest, or agreement that precludes the large forest landowner from being able to conduct road work without prior authorization.
- (5) Pre-inventory. Landowners shall submit a pre-inventory of high conservation value sites on each road management block to the State Forester no later than January 1, 2025.
 - (a) Landowners shall include high conservation value sites in the pre-inventory that address the following sites:

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- (A) *Areas of known chronic sedimentation. Consideration will be given to areas where log hauling will occur during the 5-year inventory phase.*
- (B) *Fish passage barriers known to be of significant concern. Priorities will be based on locations where fish passage would provide the greatest benefit to native migratory fish consistent with OAR 635-412-0015 and other criteria as determined by the Department of Fish and Wildlife in consultation with the department and consistent with the Oregon Fish Passage Barrier Data Standard developed by the Department of Fish and Wildlife Fish Screening and Passage Program.*
- (C) *Ongoing stream diversions at stream crossings and areas with stream diversion potential.*
- (D) *Areas of known hydrologic connectivity.*
- (b) *From the list of high conservation value sites identified, landowners shall prioritize projects on high conservation value sites within the pre-inventory submission that:*
 - (A) *Remove fish passage barriers consistent with Department of Fish and Wildlife requirements;*
 - (B) *Minimize the potential for sediment delivery to waters of the state;*
 - (C) *Minimize stream diversions at water crossings;*
 - (D) *Minimize hydrologic connectivity between roads and waters of the state; and*
 - (E) *Meet other relevant criteria as determined by the department in consultation with other state and federal agencies.*
- (c) *Landowners shall meet with the department and Department of Fish and Wildlife to review the pre-inventory list no later than January 1, 2026.*
 - (A) *The department shall meet with the Department of Fish and Wildlife to review the list and coordinate to ensure that high conservation value sites are prioritized based on habitat values, road conditions, sediment delivery to waters of the state, hydrologic connectivity, and fish passage in alignment with the barrier assessment and inventory prioritization under the Department of Fish and Wildlife Fish Passage Program.*
 - (B) *The department and the Department of Fish and Wildlife may propose additional projects to the pre-inventory list if they believe that high conservation value sites have not been addressed.*
 - (C) *The department shall coordinate with the Department of Fish and Wildlife to ensure that information collected in the pre-inventory process is standardized and is in a format consistent with the Oregon Fish Passage Barrier Data Standard.*
- (d) *Landowners shall address prioritized pre-inventory projects after review from the department and Department of Fish and Wildlife beginning no sooner than January 1, 2026, and no later than January 1, 2029.*
- (e) *Landowners shall report annually to the department and Department of Fish and Wildlife on the status and completion of pre-inventory projects through January 1, 2029.*

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- (6) *Landowners shall submit an initial inventory of all active, inactive, and known vacated or abandoned roads no later than January 1, 2029.*
- (a) *The initial inventory shall include three documents:*
- (A) *Paper or electronic maps showing the roads within each road management block;*
 - (B) *A work matrix documenting actions necessary to bring all roads into compliance with the forest practice rules. The document shall include prioritization of work; and*
 - (C) *A Forest Road Inventory and Assessment initial inventory plan describing how the landowner intends to bring the road network into compliance no later than January 1, 2044. The plan shall include:*
 - (i) *Actions likely to be addressed in the upcoming year;*
 - (ii) *A general description of how work will occur during the Forest Roads Inventory and Assessment period; and*
 - (iii) *A description of how the landowner is prioritizing work with the goal of optimizing environmental benefits.*
 - (D) *At minimum, the FRIA initial inventory submission shall include:*
 - (i) *The location and length of active roads, inactive roads, and vacated roads within each road management block.*
 - (ii) *The location of streams within the road management block, classified as:*
 - (I) *Fish;*
 - (II) *Non-fish;*
 - (III) *SSBT;*
 - (IV) *Fish presence unknown; or*
 - (V) *Streams that are 303(d) listed shall be depicted as such in addition to fish use designation.*
 - (iii) *Known or potential road-related fish passage barriers. Data collected shall be consistent with the Oregon Fish Passage Barrier Data Standard in consultation with Department of Fish and Wildlife.*
 - (iv) *Prioritization of known or potential road related fish passage barriers. Prioritization of fish passage barriers shall be done in a manner consistent with the Department of Fish and Wildlife Fish Passage Program.*
 - (v) *The location and status of all water crossing culverts including:*
 - (I) *Date of installation, if known; and*
 - (II) *Assessment of culvert material used.*
 - (vi) *Each water crossing culvert shall be classified as one of the following:*
 - (I) *A fully functioning culvert in a Type F or Type SSBT stream;*
 - (II) *A fully functioning culvert in a Type N or Type D stream;*
 - (III) *A culvert with imminent risk of failure;*

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- (IV) *A culvert with minimum risks to public resources; or*
 - (V) *Undetermined status. Culverts with undetermined status must be prioritized for improvement. The status may be changed as more detailed information is gathered.*
- (b) *The FRIA initial inventory submission shall identify each road segment as:*
- (A) *Meeting the forest practice rules;*
 - (B) *Not meeting the forest practice rules;*
 - (C) *Vacated in compliance with OAR 629-625-0650; or*
 - (D) *Abandoned.*
- (7) *In the year following submitting the initial inventory but no later than January 1, 2029, landowners shall submit annual inventory reports and plans until January 1, 2044, which shall include:*
- (a) *Updates to the maps required by OAR 629-625-0900(6)(a)(A) reflecting:*
 - (A) *Work accomplished during the prior year;*
 - (B) *Additional information discovered; and*
 - (C) *Potential changes in prioritizations.*
 - (b) *Update to the work matrix required by OAR 629-625-0900(6)(a)(B) showing:*
 - (A) *Improvements completed;*
 - (B) *Work to be completed;*
 - (C) *Additional information discovered; and*
 - (D) *Changes in prioritization.*
 - (c) *Update to the annual plan required by OAR 629-625-0900(6)(a)(C) reflecting:*
 - (A) *Work conducted in the prior year;*
 - (B) *Work likely to be completed in the upcoming year; and*
 - (C) *General plan to complete all necessary work no later than the January 1, 2044.*
- (8) *The documents required by OAR 629-625-0900(7) must contain all the following:*
- (a) *Total length of forest roads improved, including as a subset, length improved by compliance with OAR 629-625-0330(1) Drainage.*
 - (b) *Total length of forest roads still requiring improvement.*
 - (c) *Total length of forest roads planned for improvement in the upcoming year.*
 - (d) *Total length of forest roads vacated.*
 - (e) *Total length of forest roads planned to be vacated in the upcoming year.*
 - (f) *Number of fish barriers brought into compliance with OAR 629-625-0320 Water Crossing Structures.*
 - (g) *Number of fish barriers to be improved in the upcoming year.*
 - (h) *Certification by the landowner that they remain on track for completing required improvements no later than January 1, 2044.*
- (9) *Landowners shall improve all road segments identified in the initial inventory as not meeting the forest practice rules so that those segments either meet the Forest Practice Administrative Rules or are vacated no later than January 1, 2044.*
- (10) *For culverts that meet the definition of pre-existing culverts, landowners shall:*
- (a) *Inspect them every five years when the installation date is not known; and*

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- (b) *Maintain them to end of service life or until they no longer meet the definition of pre-existing culverts.*
- (11) *For culverts that do not meet the definition of pre-existing culverts, landowners shall:*
 - (a) *Prioritize them for improvement during the initial inventory;*
 - (b) *Bring them into compliance with Forest Practice Rules no later than January 1, 2044; or*
 - (c) *For culverts not meeting the definition of pre-existing, consult with the Department of Fish and Wildlife to assign them a status of low priority and maintain them to the end of their service life when they meet the following criteria:*
 - (A) *The culvert is partially functioning to provide fish passage and the cost of repair or replacement is disproportionate to the benefits of the repair or replacement; or*
 - (B) *The culvert provides valuable wetland or pond habitat.*
- (12) *For culverts meeting the definition of having imminent risk of failure, landowners shall repair or replace the culvert as soon as practicable but no later than two years after having been identified.*

629-625-0910 State-led Abandoned Roads Inventory

- (1) *The department in consultation with the U.S. Environmental Protection Agency shall lead a cooperative effort to identify abandoned roads. The purpose of this effort is to identify abandoned roads and bring them into compliance with the forest practice rules to reduce the potential of abandoned roads to produce chronic sediment and increase the risks of mass wasting and stream diversions.*
- (2) *After identifying abandoned roads, the department and cooperators shall identify abandoned roads with a high level of risk to waters of the state or infrastructure. The State Forester shall provide the results of the inventory to landowners no later than January 1, 2026. The department shall use the following criteria listed in order of importance to identify risk levels:*
 - (a) *Ongoing stream diversion at stream crossings.*
 - (b) *Diversion potential at stream crossings.*
 - (c) *Likelihood of hydrologic connectivity.*
 - (d) *Comparative risk of chronic sediment produced.*
 - (e) *Risk of contribution to mass wasting.*
 - (f) *Other criteria as determined by the department in consultation with other state and federal agencies.*
- (3) *Following the identification of high-risk abandoned road segments, the department in coordination with landowners shall identify high-priority abandoned road segments from the list of high-risk locations. Considerations for designating a segment as high priority shall include:*
 - (a) *Importance of the HUC-6 watershed to recovering salmonids;*
 - (b) *Number of stream crossings based on full-densified stream network;*
 - (c) *Cost of improvements in comparison to the benefits; and*

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- (d) *Other criteria as determined by the department in consultation with other state and federal agencies.*
- (4) *Landowners shall complete a field verification of all high priority abandoned road segments identified in section (3).*

 - (a) *The department, Department of Environmental Quality, and Department of Fish and Wildlife shall, when necessary, review landowner verifications of high priority sites and improvement plans.*
 - (b) *Landowners shall include the following information in their field verification of high priority abandoned road segments:*

 - (A) *Confirmation that the high-priority site is on an abandoned road.*
 - (B) *Determination whether the segment is diverting the stream or has diversion potential.*
 - (C) *Determination regarding whether the segment is actively contributing sediment or has a high risk of contributing significant quantities of sediment to waters of the state. Indicators of risk of contributing significant quantities of sediment may include:*

 - (i) *A sediment deposit reaching the high-water line of a defined channel of a flood prone area;*
 - (ii) *A channel that extends from a road drainage structure outlet to the high-water line of a defined channel or a flood-prone area;*
 - (iii) *Evidence of surface flow between the drainage structure outlet and a defined channel or a flood-prone area;*
 - (iv) *Turbid water reaching all typed waters, lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, and canals during runoff events;*
 - (v) *Evidence of direct sediment entry into a watercourse or a flood-prone area from road surfaces or drainage structures and facilities (e.g., ponded sediment, sediment deposits, delivery of turbid runoff from drainage structures during rainfall events);*
 - (vi) *Gullies or other evidence of erosion on road surfaces or below the outlets of road drainage facilities or structures, including ditch drain (relief) culverts, with transport or a high likelihood of transport to a watercourse;*
 - (vii) *Native-surfaced roads exhibiting erosion;*
 - (viii) *Native-surfaced roads composed of erodible soil types (e.g., granitic soils);*
 - (ix) *Rilled, gullied, or rutted road approaches to crossings;*
 - (x) *Existing ditch drain (relief) culverts or other road drainage structures with decreased capacity due to damage or impairment (e.g., crushed or bent inlets, flattened dips due to road grading);*
 - (xi) *Decreased structural integrity of ditch drain (relief) culverts, waterbreaks, or other road drainage structures (e.g., excessive pipe corrosion, breached water-breaks, or rutted road segments);*
 - or*

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- (xii) *Ditch scour or downcutting resulting from excessively long undrained ditches with infrequent ditch drain (relief) culverts or other outlet structures or facilities. This condition can also result from design inadequacies (e.g., spacing not altered for steep ditch gradient), inadequate erosion prevention practices (e.g., lack of armoring), or ditches in areas of erodible soils.*
 - (D) *Analysis of net benefit for waters of the state to improve the abandoned road segment.*
 - (E) *Determination regarding practicability of alternatives to improve the abandoned road segment and address the following risks:*
 - (i) *Ongoing stream diversions at stream crossings;*
 - (ii) *Diversion potential at stream crossings;*
 - (iii) *Likelihood of hydrologic connectivity;*
 - (iv) *Comparative risk of chronic sediment produced; and*
 - (v) *Risk of contribution to mass wasting.*
 - (F) *The alternatives may include vacating the segment, no action, and any other reasonable alternative. Landowners shall propose the most practicable alternative as part of the annual report.*
- (5) *Landowners shall add the verified high-priority abandoned road segments to the Forest Roads Inventory and Assessment initial inventory.*
- (6) *Landowners shall improve the abandoned road segment as part of the Forest Roads Inventory and Assessment process when, in consultation with the department, the following criteria are met:*
- (a) *The high-priority location is an abandoned road;*
 - (b) *The high-priority location is actively contributing or has high risk of contributing significant quantities of sediment to waters of the state;*
 - (c) *The improvements would be a net benefit to waters of the state; and*
 - (d) *Improvements are practicable.*

629-625-0920 Road Condition Assessment

- (1) *The purpose of this rule is to ensure that roads used for harvest and owned by small forestland owners, as defined by OAR 629-600-0100, comply with the standards of the forest practice rules.*
- (2) *The requirements of the Forest Road Inventory and Assessment program described in OAR 629-625-0900 do not apply to small forestland owners.*
- (3) *When a small forestland owner submits a notification including the harvest of timber using the department's reporting and notification system, they shall complete the department road condition assessment. Notifications for activities other than timber harvest shall not require completion of a road condition assessment. The small forestland owner is encouraged to complete the road condition assessment for all roads in their parcel without a planned timber harvest.*
- (4) *The road condition assessment shall include all roads in the parcel owned by the small forestland owner where the harvest will take place, including the following descriptions:*

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- (a) *The road condition that contributes to active or potential delivery of sediment to waters of the state;*
 - (b) *Water crossing's locations and the status of compliance with the forest practice rules;*
 - (c) *Potential fish passage barriers on Type F and Type SSBT streams;*
 - (d) *Abandoned roads; and*
 - (e) *Roads with a perched fill that present a significant hazard to fish-bearing streams.*
- (5) *The department, in consultation with the Department of Fish and Wildlife, shall review eligibility for state grants to improve the road conditions described in section (4)(c), (d), and (e) of this rule.*
- (6) *The small forestland owners are not required to undertake the following road improvements projects, without funding by the State of Oregon:*
 - (a) *Replacement of culverts for Type F and Type SSBT streams;*
 - (b) *Repair of abandoned roads; or*
 - (c) *Reconstructing, vacating, or relocating roads with a perched fill that present a significant hazard to fish-bearing streams.*
- (7) *If the State of Oregon, under the small forestland investment in stream habitat program described in OAR 629-607-0300, fails to fund an eligible and approved road improvement project for a small forestland owner, the non-implementation of those projects shall not prevent the small forestland owner from using the road for any purpose, except for the following conditions:*
 - (a) *The road is actively delivering sediment to waters of the state; or*
 - (b) *The road has one or more culverts with an imminent risk of failure, as defined in OAR 629-600-0100.*
- (8) *If the road condition assessment identifies necessary road repairs, other than the road conditions in section (7)(a) and (b) of this rule, there shall be no time limit in which the small forestland owner must complete those repairs, though the obligation to improve roads when used for harvest remains.*