Forest Practices Technical Guidance

Forest Road Inventory and Assessment

Effective January 1, 2024

Objective

Forest Practices Technical Guidance is advisory guidance, developed by the State Forester through a stakeholder process, to assist landowners and resource professionals to implement the Oregon Forest Practices Act and forest practices rules. The objective of this Forest Practices Technical Guidance is to assist landowners with implementing the Oregon forest practice regulations for road inventory and assessments. The Forest Road Inventory and Assessment (FRIA) is the road inventory, project planning, and reporting process required of forestland owners that do not qualify to manage forestlands under the small forestland owner minimum option. The FRIA protocol evaluates road and water crossing measurements to identify whether roads meet the Forest Practices Act (FPA). Projects identified during the FRIA process may require professional engineering and geotechnical expertise to be implemented.

Background

In 2022, Senate Bill 1501 directed the Board of Forestry to adopt rules to apply the 2022 Private Forest Accord (PFA) Report. The Report recognizes the agreements made between authors of a conservation coalition and authors of a working forest coalition. The groups negotiated to modify Oregon's forest practice regulations to develop a habitat conservation plan (HCP). The HCP provides the means to seek an Incidental Take Permit under Section 10 of the United States Endangered Species Act for the covered species identified in the Report. These modifications to Oregon's forest practice regulations include new standards for construction, reconstruction, and vacating of forest roads and water crossings. The overarching goal is 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. The PFA Report describes FRIA and the process to help landowners improve road networks to meet the new standards.

Terminology

303(d) list - a state's list of impaired and threatened waters under the Clean Water Act.

Abandoned roads – 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. (OAR 629-600-0100)

Active channel width – the stream width between the ordinary high-water lines, or at the channel bankfull elevation if the ordinary high-water lines are indeterminate. (OAR 629-600-0100).

Active roads – roads currently being used or maintained for the purpose of removing commercial forest products. (OAR 629-600-0100)

Culvert with imminent risk of failure (OAR 629-600-0100)– a culvert in all waters of the state that:

a) Is actively diverting streams or ditchline runoff;

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

Culvert with minimal risks to public resources (OAR 629-600-0100)– a culvert in all waters of the state that:

a) Minimizes delivery of sediment to waters of the state
b) Has not diverted streams or ditchline runoff and does not have the potential to divert streams or ditchline runoff; and
c) For Type F and Type SSBT streams:
    1) Provides passage for all species of adult and juvenile fish; and
    2) Provides passage of expected bed load and associated large woody material likely to be transported during flood events.

Forestland - land which is used for the growing and harvesting of forest tree species, regardless of how the land is zoned or taxed or how any state or local statutes, ordinances, rules, or regulations are applied (OAR 629-600-0100).

Forest road – a running surface built or cleared on forestland for transportation of forest products and forest management activities. This includes all active, inactive, vacated, and abandoned roads, but does not include skid trails. For the purposes of inclusion in the FRIA, any road that grants access to forestland is considered a forest road.

Fully functioning culvert in Type F or Type SSBT streams - a culvert that is located in a Type F or Type SSBT stream, at the time of FRIA inspection, that meets the requirements of the Forest Practice Rules as of January 1, 2022, and as described in the Forest Practices Technical Guidance for culverts existing prior to January 1, 2024 (OAR 629-600-0100).

Fully functioning culvert in Type N or Type D streams - a culvert that is located in a Type N or Type D stream, and that, at the time of FRIA inspection, meets all requirements of the Forest Practice Rules as of January 1, 2022 (OAR 629-600-0100).

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

High conservation value - areas where there is known hydrologic connectivity, chronic sedimentation, fish passage barriers, stream diversion or diversion potential (OAR 629-625-0900(5)(a)). High conservation value sites are areas that currently contribute significant risk to aquatic resources at a scale beyond the immediate site itself and, if resolved, would result in both ameliorating that risk and providing significant ecological benefit at a scale beyond the site itself.

Inactive roads – roads used for forest management purposes exclusive of removing commercial forest products (OAR 629-600-0100).

Landowner –any individual, combination of individuals, partnership, corporation, or association of whatever nature that holds an ownership interest in forestland, including the state and any political

subdivision thereof (OAR 629-600-0100). Landowners that do not qualify as small forestland owners are required to submit the FRIA.

Pre-existing culvert (OAR 629-600-0100) – a culvert with minimal risks to public resources that is also:

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

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

Plug potential – based on Stream Blocking Index, presence of woody material and sediment in the channel, streambank landslide potential, and/or evidence of past plugging (deposits, cleanout). Woody material is more likely to plug a culvert that has a wide basin at the inlet compared to the diameter of the pipe.

Road Management Blocks (RMBs) - geographically distinct ownership blocks for which a landowner is encouraged to conduct a Forest Road Inventory and Assessment (OAR 629-600-0100).

Type D stream– a stream that has domestic water use but no fish use (OAR 629-600-0100).

Type F stream– a stream with fish use or both fish and domestic water use (OAR 629-600-0100).

Type N stream– a stream that meets the criteria of a Type Np or Ns stream (OAR 629-600-0100).

Type SSBT stream– a stream that is classified as a Type F stream and has SSBT use (OAR 629-600-0100).

Vacated roads – roads that have been made impassable and are no longer to be used for forest management purposes or commercial forest harvesting activities (OAR 629-600-0100).

Waters of the state – includes lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, canals, and the Pacific Ocean within territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public of private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction (OAR 629-600-0100).

Overview

Roads are an essential part of Oregon's working forests for timber harvest, recreation, fighting wildfires, and general forest management. Proper construction, routine inspections, maintenance, and vacating of forest roads are all critical steps in protecting water quality and fish habitat.

The goal of the FRIA is to:

1. Inventory all road and crossing locations.
2. Evaluate site conditions of road segments and water crossings.
3. Identify road segments and water crossings that do not meet the standards in Division 625.
4. Prioritize improvements.

FRIA projects must prioritize removal of fish passage barriers and hydrological disconnection of forest roads from waters of the state to the maximum extent practicable. Drainage features along road segments should be inspected to help determine if that road segment meets the requirements in OAR 629-625-0330. Water crossings should be inspected for compliance with OAR 629-625-0320. All roads will be designed, constructed, improved, maintained, or vacated to (OAR 629-625-0000(4)):

- Prevent or minimize sediment delivery to waters of the state;

- Ensure passage for covered species during all mobile life-history stages;
- Prevent or minimize drainage or unstable sidecast in areas where mass wasting could deliver sediment to public resources or threaten public safety;
- Prevent or minimize hydrologic alterations of the channel;
- Prevent or minimize impacts to stream bank stability, existing stream channels, and riparian vegetation;
- To the maximum extent practicable, hydrologically disconnect forest roads and landings from waters of the state; and
- Avoid, minimize, and mitigate loss of wetland function.

During the assessment and inventory phase, landowners will identify road segments and water crossings that need to be improved. During FRIA implementation landowners will report annually on all segments and crossings that will be re-constructed, maintained, or vacated. The FRIA process spans a 20-year period, from 2024 to 2044, in which projects will be identified, prioritized, and completed in accordance with the Forest Practices Act. All road managers within the ownership should use the same assessment methods and common road-related language. It is most effective to conduct road assessments with a team of two or more so that complex issues can be discussed and professional judgment among the group can be shared. Pre-inventory FRIA assessments will identify projects with high conservation value and shall be submitted by January 1, 2025, annual reporting of pre-inventory projects is required until pre-inventory completion on January 1, 2029. Initial inventory, including a comprehensive road network inventory, must be submitted by January 1, 2029, See Figure 1 for a general FRIA timeline.

The FRIA requirements established in OAR 629-625-0900 apply to all landowners that do not qualify as a small forestland owner as defined in OAR 629-600-0100. Government owned and controlled roads that pass-through private forestland owners' property are not required to be included in the private landowners' FRIA (OAR 629-625-0900(4)). Roads owned and controlled by private landowners that pass-through government-controlled forestland will need to be included in the FRIA. All roads within a landowner's property that are used to access forestland are required to be included in FRIA. This includes roads that are not used for harvest activities (Table 1) and excludes roads that are owned or controlled by a government entity such as the United States, and federally recognized Indian Tribes. This technical guidance allows landowners to utilize their existing road data management system as well as other systematic methods to inspect roads and survey lands within their ownership network. The Oregon Department of Forestry (ODF) is committed to providing feedback and resources to landowners in the field. Landowners are encouraged to collaborate with ODF throughout the FRIA process.

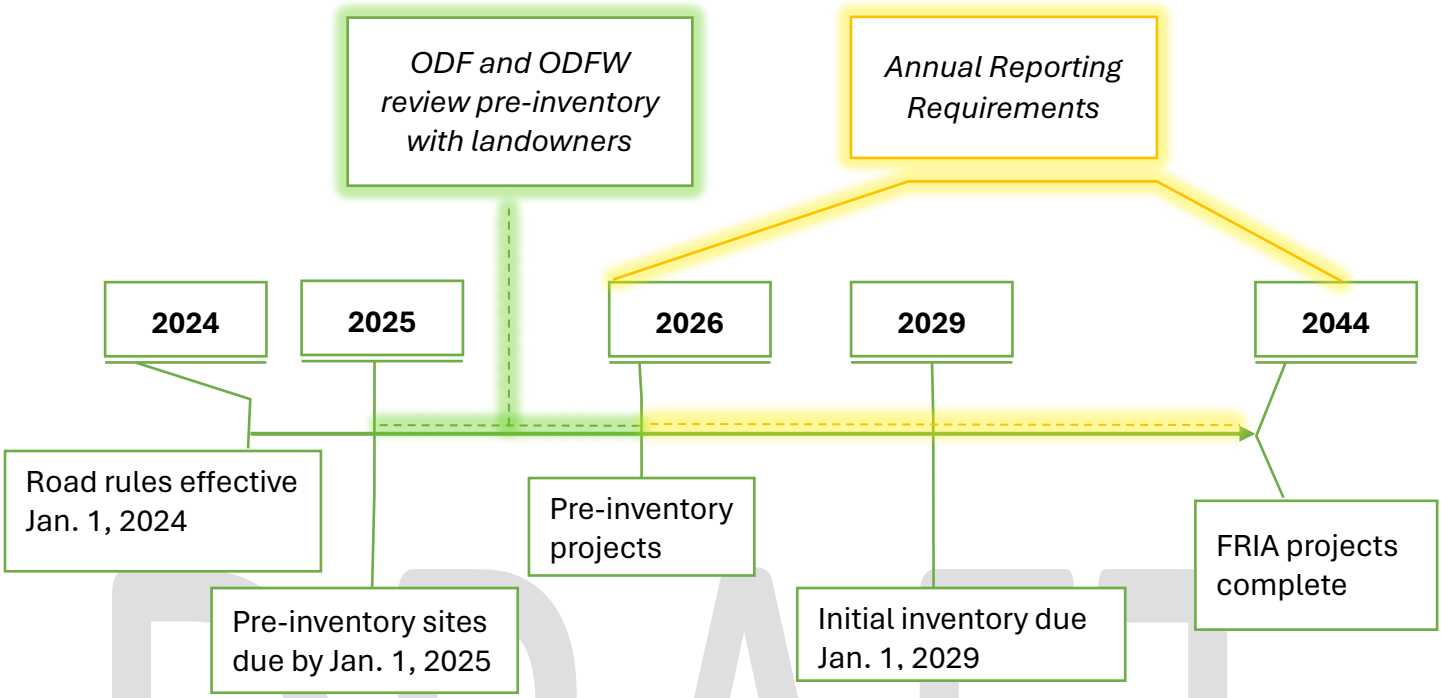

Figure 1. Overview of the FRIA timeline.

Road Type	Description	Example
Active	Currently used or maintained for the purpose of removing commercial forest products.	Mainline, connectors, and spurs on a route during active harvest and log hauling.
Inactive	Currently used for forest management purposes exclusive of removing commercial forest products.	Roads used for silvicultural activities or fire access.
Vacated	No longer in use for commercial harvest or forest management purposes, and the road has been made impassable. Vacated roads must be left in a condition that does not require maintenance and where road-related damage to waters of the state is unlikely. *Note: if a road has not been vacated according to OAR 629-625-0650, it may be defined as an abandoned road.*	All water crossing structures and fills were removed and the natural channel connectivity and drainage was re-established. The road was effectively barricaded and notified to the State Forester as vacated in compliance with OAR 629-625-0650.
Abandoned	Constructed before 1972 and does not meet the criteria of active, inactive, or vacated roads. Does not include skid trails.	Roads that have not been maintained or used. These roads can be difficult to detect due to their size and drivability. These roads may resemble trails and they often have vegetation growing in the road prism.

Table 1. Descriptions and examples of forest road types by category.

Preparation

This is a description of how a landowner is encouraged to organize and prepare for their Forest Road Inventory and Assessment. Landowners begin the FRIA process with office preparation and planning. First, the landowner divides the entire road network into geographical regions called Road Management Blocks (RMBs). The scale and spatial arrangement of land ownership will determine the best approach for organizing RMBs. Lands can be arranged into RMBs based on ownership boundaries, road density, and resource complexity. Landowners should also consider delineating RMBs with similar environmental features such as the climate of the region, dominant soil types, or watersheds. Each RMB must have FRIA pre-inventory and initial inventory (OAR 629-625-0900(5)(6)). Paper or electronic maps are required for each RMB. An example is provided in Appendix A. Digital data is the preferred format, templates available at oregon.gov/odf.

Landowners can prepare for the FRIA process by obtaining site-specific RMB information, including maps and other resources that depict the road network, topography, waters of the state, and land ownership boundaries. Other helpful information may include property documents and historical construction documents such as: culvert installation and road inspections, maintenance information, and construction plans. Landowners should utilize ODF's stream classification layer and can download other ODF natural resource data online to help with planning and prioritizing. See Table 2 for some considerations.

Developing an organization system and procedure that can be used across all RMBs will support efficiency and effectiveness. This should include how road assessments will be conducted and a general timeline within a FRIA Plan (see Core Documents section for additional information on required FRIA documents).

Road segmentation is a critical component of road assessments. Roads should be divided into segments that help landowners effectively assess hydrologic connectivity and drainage patterns. Road segmentation strategies may include using natural points such as water crossings, road junctions, drainage structures, surface material changes, grade reversals, hillslope position change, or road type change (Table 1). Segments should be as homogenous as practicable. Identify start/end stations or points on the landscape that allow for functional assessment of drainage patterns and surface runoff. Ideally, landowners will conduct assessments of hydrologic connectivity from drainage structure to drainage structure on road segments and at approaches to stream crossings. All road segments and water crossings must have a name, number, or other unique identifier. Landowners may consider a standardized naming system, see Figure 2 for an example. When possible, use naming or numbering that is consistent with any road signage in the field.

Photographs and site descriptions from field assessments can be useful when landowners are prioritizing projects. For complex sites, good descriptions and photos can invite discussion and collaboration between road managers and ODF staff. The FRIA Field Forms in Appendix B are designed to be helpful tools during this process. These tools can help landowners decide if a segment or crossing meets FPA standards. Additionally, these tools can aid in project prioritization.

Tools that are useful for road assessments:

- Range finder, 100-foot tape hip chain, or other distance measuring instrument
- Smartphone, tablet, GPS unit, camera
- Field forms, or other field data collector tool
- Flagging/stakes
- Clinometer
- Waders/boots

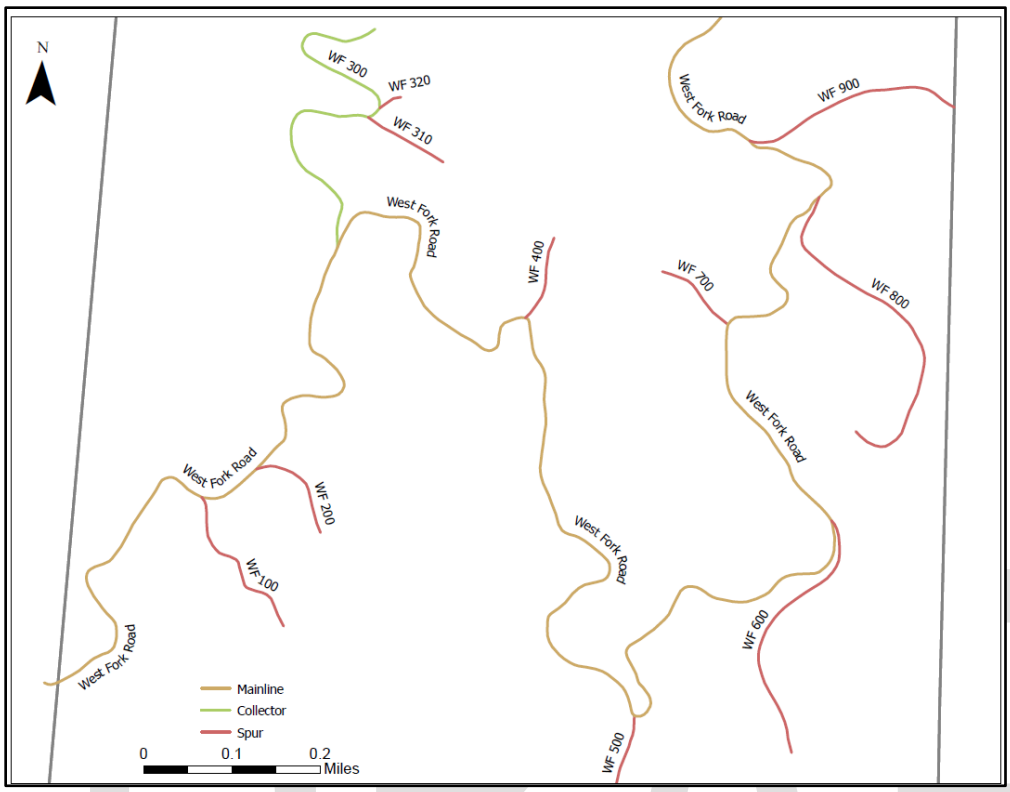

Figure 2. Example of naming schema for a road network.

Pre-Inventory

FRIA inventories are separated into two groups: pre-inventory and initial inventory. Pre-inventory is designed to address sites with the highest conservation values first. Pre-inventory for each RMB must be submitted to ODF by January 1, 2025 (OAR 629-625-0900(5)).

Landowners shall prepare a list of high conservation value sites. This list will be based on the landowner's evaluation of:

- Areas of known chronic sedimentation.
- Fish passage barriers of significant concern.
- Ongoing stream diversions at stream crossings and areas with diversion potential.
- Areas of known hydrologic connectivity.

Road density, road conditions, road proximity to waters of the state, number of water crossings, topography, and harvest schedule should also be considered when determining which locations have the highest conservation value. See Table 2 for criteria to consider while identifying high conservation value sites within each RMB.

After the list of high conservation value sites is identified, landowners shall prioritize projects that will: remove fish passage barriers, minimize the potential for sediment delivery, minimize stream diversions at water crossings, and minimize hydrologic connectivity between roads and waters (OAR 629-625-0900(5)(b)). After the prioritized pre-inventory is submitted to ODF (no later than January 1, 2025), ODF and the Oregon Department of Fish and Wildlife (ODFW) will schedule meetings with landowners to review pre-inventory lists (Figure 1). Pre-inventory sites can be addressed after review (OAR 629-625-0900(5)(d)) and

landowners shall report annually on the status and completion of pre-inventory projects through January 1, 2029 (OAR 629-625-0900(5)(e)). A tracking template for pre-inventory is available in Appendix C. Pre-inventory can be submitted electronically at Oregon.gov/odf.

Criteria	Consider:
Harvest schedule	Units planning to be harvested between 2024-2029, recently reforested units may be considered as well.
Conditions of roads/crossings	Frequency of road inspections and routine maintenance; local knowledge of fish passage barriers, stream diversion potential, surface erosion, concentration of drainage, or failing fills; routes with heavy traffic use.
Hydrologic connectivity	Roads in proximity or running parallel to streams, amount of water crossings, fish-bearing streams, size of stream, known areas of connectivity, RMBs with high storm intensity or levels of precipitation.
Specific locations	Wetlands, 303(d) listed waters, presence of threatened and endangered species, steep slopes and headwalls, historic landslide locations, and critical locations as defined in OAR 629-625-0200(3), such as High Landslide Hazard Locations (HLHL).

Table 2. Criteria to consider when evaluating potential for high conservation value.

Initial inventory

Landowners shall inventory each road segment and classify the segment type as: active/inactive, vacated, or abandoned. As shown in Table 1, inactive roads must be maintained by landowners. This means that landowners are required to conduct routine maintenance and inspections on inactive roads. 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 (OAR 629-625-0600(5)).

Landowners may choose to vacate roads during the FRIA process. In some scenarios it may be more economically and environmentally beneficial to vacate the road segment and/or crossing than to repair it. Vacating a road requires filing a notification of operations with the State Forester. Roads must be vacated in accordance with OAR 629-625-0650. For additional information on vacating forest roads refer to technical guidance ###.

FRIA initial inventory submissions will include three core documents for each Road Management Block:

1) Work Matrix
2) Maps
3) FRIA Plan

Collectively, the three core documents must include the following information (OAR 629-625-0900(6)(a)(D)(b)):

- Location and length of all active, inactive, vacated, and abandoned roads within each RMB.
- Classification of each road segment as:
    - Meeting the Forest Practices Rules
    - Not meeting the Forest Practices Rules
    - Vacated in compliance with OAR 629-625-0650

    - Abandoned
- Location of streams within each RMB, and classified as:
    - Fish
    - SSBT
    - Non-fish
    - 303 (d)
        - 303(d) listed waters will also have one of the three fish classifications above.
- Fish passage barriers and prioritization of barrier improvement projects.
- Location of all water crossing culverts, classified as:
    - Fully functioning
    - Imminent risk of failure
    - Minimum risk to public resources
    - Undetermined status
- Water crossing culvert information must also include:
    - Date of installation, if known
    - Assessment of culvert material

Core Documents

Each Road Management Block will have the three core documents: a FRIA Plan, a work matrix, and maps. All three documents must be updated annually.

The FRIA plan is where landowners may document methodology used for assessments and any standardization used for road segmentation or for naming roads/crossings.

The FRIA Plan can be developed in phases as more information is collected from the field. The plan must include (OAR 629-625-0900(6)(C)):

- Actions likely to be addressed in the upcoming year.
- A general description of how work will occur during the FRIA period.
- A description of how the landowner is prioritizing work with the goal of optimizing environmental benefits.

The work matrix must document actions necessary to bring all roads into compliance with the forest practices rules (OAR 629-625-0900(6)(a)). Details do not need to describe specific engineered solutions but may include actions such as: replace culvert, disconnect approach to crossing, install cross-drain, pull back unstable fill, grading and rocking, etc. The work matrix must also include a description of how project work will be prioritized. The work matrix should categorize projects into specific types depending on the activities that must be completed. For example, if a cross drain needs to be replaced, it can be tracked as a 'drainage project' for that road segment. It should be noted that FRIA annual reporting requires that improvement projects related to drainage specifically are tracked by road length (OAR 629-625-0900(8)(a)). See Table 3 and Table 4 for more information on annual reporting.

Digital geospatial data is preferred over analog maps for reporting on location-based information. Maps for each road management block should:

- be at a scale appropriate for viewing details (maximum preferred scale for paper maps is 1:24000);

- include the township, range, and sections within the RMB;
- use Oregon Lambert Projection;
- show the boundaries of each road management block as polygons, road segments and streams as lines, and water crossings and drainage structures as points; and
- have a scale and a legend.

Template geodatabases are available online at Oregon.gov/ODF.

Annual Reporting and Implementation

Pre-inventory and initial inventory should be submitted for each Road Management Block. Landowners can utilize the ODF templates in Appendix C for reporting and implementation. Landowners can submit inventories by uploading digital files to ODF's FRIA portal (oregon.gov/odf). Before submitting data, landowners should confirm that all required data points have been collected. The preferred digital file formats for submitting maps are geodatabases or shapefiles. Landowners should consider using the template geodatabase provided by ODF. The symbology on maps should clearly depict FPA assessments (meets, does not meet), and culvert status (Table 5). Landowners can manage FRIA information within each RMB based on project priorities, project type, cost, timing, etc. It is required that landowners report annually on FRIA projects within each RMB.

Each road segment that does not meet the Forest Practices Rule requirements will need to be improved or vacated no later than January 1, 2044 (OAR 629-625-0900(9)). Projects must be prioritized based on assessments of overall site conditions. If a landowner experiences a natural disaster the impacted area should be evaluated, and prioritization should be adjusted based on the circumstances. Landowners must prioritize (OAR 629-625-0900(5)(b)):

- Fish passage barriers;
    - Prioritization of fish passage barriers shall be done in a manner consistent with ODFW Fish Passage Program (OAR 629-625-0900(6)(D)(iv)).
- Stream diversions;
- Sites delivering sediment;
- Hydrologically connected sites.

The in-water work period will limit the types of project activities that can occur during certain times of the year. ODFW may consider variations to the work period on a project-by-project basis.

Pre-inventory and initial inventory both require annual reporting on project planning and completion. It is recommended that landowners categorize FRIA projects into the reporting groups in Table 3. These project categories may include, but are not limited to drainage, crossings, fish passage barriers, vacating roads, and abandoned roads. FRIA projects can be further categorized by project status and priority. Identifying the nature and importance of each FRIA project will help with tracking and reporting. Some project activities may require filing a notification of operations to ODF's reporting and notification system (OAR 629-605-0150).

Annual FRIA reporting must include the total length of forest roads improved and include drainage improvements as a specific subcategory (OAR 629-625-0900(8)(a)). This reporting subcategory will demonstrate hydrologic disconnection over the course of FRIA. It is important that landowners track these drainage projects because many improvements to road drainage systems are categorized as routine

maintenance and do not require filing a notification of operations (e.g., cross drain replacement and surface grading).

On February 1st of each year, landowners must report on FRIA projects and priorities by updating the core documents for each RMB. Table 3 shows the collective information and project work that must be reported annually, by category. Table 4 shows the core documents that should reflect the updated information.

Category	Description
Total length of forest roads improved	Detail the total lineal length of forest roads improved over the course of the annual period and the FRIA process.
Total length of forest roads improved by compliance with OAR 629-625-0330(1).	Detail the total lineal length of forest roads improved by drainage.
Total length of forest roads still requiring improvement	Remaining miles of road still requiring improvements.
Total length of forest roads planned for improvements in the upcoming year	Details of the upcoming year plan to improve forest roads and nature of work.
Total length of forest roads vacated	Detail the total length of roads vacated over the course of the annual period and the FRIA process.
Total length of forest roads planned to be vacated in the upcoming year	Detail the total length of roads planning to be vacated over the annual period, and nature of work.
Number of fish barriers brought into FPA compliance	Total number of culverts or other barriers fixed to be compliant with OAR 629-625-0320 over the course of the annual period and the FRIA process.
Fish barriers to be addressed in the upcoming year	Total number and location of fish barriers to be improved in the annual period.
Certification that landowner remains on track to complete required improvements by January 1, 2044	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.

Table 3. Categories and descriptions of annual reporting requirements for each Road Management Block (OAR 629-625-0900(8)).

	Work Matrix	Maps	FRIA Plan
Work accomplished during calendar year	X	X	X
Upcoming work scheduled for calendar year	X		X
Additional information discovered	X	X	
Changes in prioritization	X	X	
Certification and general plan to complete all improvements by 01/01/2044			X

Table 4. The three FRIA core documents must be updated during annual reporting. Some annual updates will be displayed in two or more core documents (OAR 629-625-0900(7)).

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. The age of a forest road is often unknown and difficult to estimate in the field, therefore, roads of unknown age may still be considered abandoned roads (also termed "legacy" roads). Abandoned roads are challenging to identify because they are usually hidden and fragmented. These old, unmaintained roads can pose chronic problems and may present a high risk for resource damage depending on their location. Additionally, some inactive roads with maintenance needs that have been neglected may look like abandoned roads. It is good practice to evaluate each Road Management Block using LiDAR to identify potential abandoned roads, where available. See Appendix A for an example.

Landowners must disclose all known abandoned roads during FRIA initial inventory (OAR 629-625-0900(6)). ODF is leading a cooperative effort to identify high-risk abandoned roads on the landscape. Abandoned roads that meet the criteria for high priority shall be field verified by landowners (OAR 629-625-0910(4)). When an abandoned road segment is incorporated into FRIA, the landowner will report on field verification and/or repairs during annual reporting. During annual reporting, landowners shall include the following information from field verification (OAR 629-625-0910(4)(b)(A through F):

- Confirmation that the site is an abandoned road.
- Determination whether the segment is diverting a stream or has diversion potential.
- Determination whether the segment is actively contributing sediment or has a high risk of contributing significant quantities of sediment to waters of the state.
- Analysis of net benefit for waters of the state if the abandoned road segment is improved.
- Determination regarding the practicability of improvements and/or alternatives to improve the abandoned road segment. Alternatives may include vacating the segment, no action, or other reasonable alternatives. Landowners shall propose the most practicable improvement or alternative as part of annual reporting.

Landowners shall add the verified high-priority abandoned road segment to the FRIA initial inventory (OAR 629-625-0910(5)). Landowners shall improve the abandoned road segment as part of FRIA when, in consultation with ODF, the following criteria are met (OAR 629-625-0910(6)):

- The high priority location is an abandoned road;
- The high priority location is actively contributing or has high risk of contributing significant quantities of sediment to waters of the state;
- The improvements would be a net benefit to waters of the state; and
- Improvements are practicable.

Road System Assessments

The primary goal of FRIA assessments is to identify whether roads are meeting forest practices rules and to bring roads into compliance. Landowners shall report on the functionality of each road segment and water crossing. Each road segment must be classified as (OAR 629-625-0900(6)(b)):

- Meets Forest Practices Act
- Does not meet Forest Practices Act
- Vacated *(in compliance with OAR 629-625-0650)*
- Abandoned

Each water crossing culvert must be classified as (OAR 629-625-0900(6)(a)(D)(vi)):

- Fully functioning
- Culvert with minimal risk to public resources
- Culvert with imminent risk of failure
- Undetermined

Landowners must improve or vacate all segments that do not meet the Forest Practices Act by January 1, 2044 (OAR 629-625-0900(9)).

FRIA inspections require assessments of water crossings, drainage patterns, and the road prism to determine compliance with the Oregon Forest Practices Act. See Figure 3 for elements of the road prism. Appendix B contains forms to help landowners with field assessments and prioritization of work. Appendix C contains templates for FRIA reporting.

The road segment and/or water crossing does not meet the Forest Practices Act if there are any concerns about the following:

- Fish passage
- Stream or drainage diversions
- Hydrologic connectivity
- Direct sediment delivery to waters of the state
- Chronic and substantial road prism erosion, including cut and fillslopes

Important elements to assess include:

- Water crossing locations and conditions
- Surface type and condition
- Road shape and grade
- Cut and fillslope conditions
- Locations and performance of all drainage structures
- Hillslope conditions

Road Drainage

The primary factor to consider when conducting road assessments is where surface water flows, where water concentrates, or is redirected. It is good practice to assess forest roads during the wet season or after a storm event so that overland flow and road surface drainage can be observed. Routine assessments may also be done during the drier months when sediment deposits can be detected. Always conduct road inspections and address maintenance needs before any timber harvests or log hauling activities.

Minimizing the hydrologic connectivity of forest roads is a best management practice to reduce potential sediment delivery to waters of the state. Hydrologic connectivity is highly variable and depends on site-specific factors including, but not limited to: road density and proximity to streams and the types, amount, and locations of drainage structures, slopes, soil, and vegetation. Reconstruction of drainage features may be high priority if there are signs of severe erosion, stream diversions, or hydrologic connectivity.

Indicators that the road drainage system is not functioning properly include signs of erosion, water turbidity, or evidence of direct flow into channels. Specific indicators may include:

- Scour at the cross-drain outlets
- Ditch scour or downcutting
- Arc-shaped cracks in the road prism
- Rills, gullies, or other evidence of erosion
- Exposed soils
- Instability of cutslopes and fillslopes
- Sediment deposits
- Decreased capacity or structural integrity of relief culverts or other drainage structures
- Turbid water entering waters of the state during rainfall events

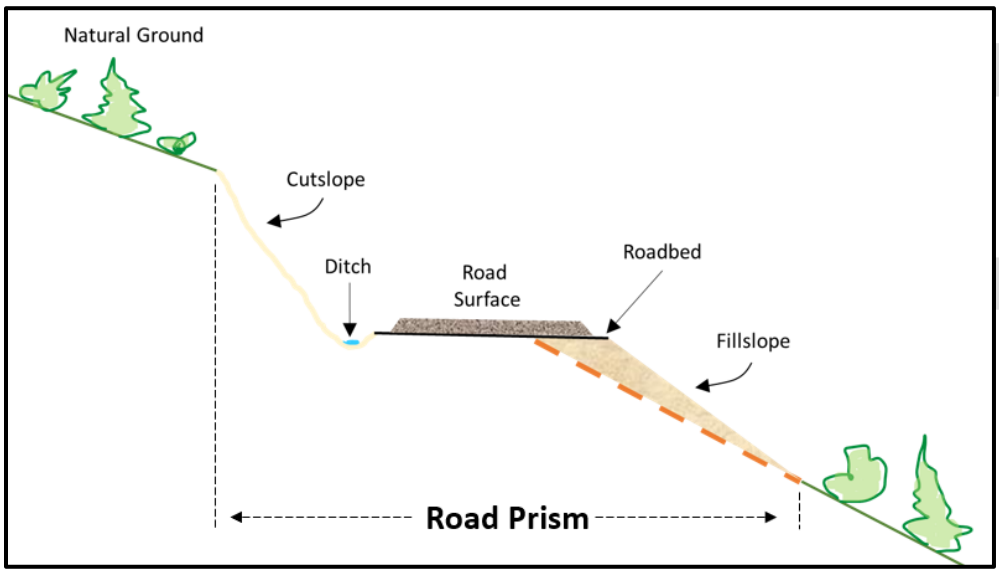

Figure 3. Terms for parts of the road prism. All elements of the road prism must be assessed.

There are distinct points in a road drainage system where potential for connection between roads and streams is high and includes: water crossings and drainage structures such as relief culverts, cross drains, waterbars, steep grades, and ditchouts (Figure 4). FRIA assessments should include a measure of hydrologic connectivity for both road segments (high/low delivery potential) and water crossings (distance connected). To determine the potential for hydrologic connectivity and the potential distance connected, landowners should assess:

- Ditch condition
- Road grade and road prism condition
- Drain inlet and outlet
- Cutslope and fillslope conditions and stability
- Erosion control techniques utilized at the site and the effectiveness of those techniques

The probability of hydrologic connectivity increases as distance between the road system and waters of the state decreases. The greater the length of road traveling along a stream, the more opportunities for contributing sediment to waters of the state. Water crossings and roads paralleling streams have the highest connectivity potential, but ineffective drainage on roads located further upslope can still be diverted or form gullies and deliver sediment to waters of the state. Drainage structures must be used at approaches to stream crossings to divert road runoff from entering the stream. Best management practices and additional site-specific measures nearest to the water crossing shall be employed when necessary to effectively limit sediment from entering the stream (OAR 629-625-0330(5)). Landowners may note what techniques, if any, are being utilized to minimize connectivity.

Landowners should evaluate drainage along the road segment being assessed. The slope and distance from the drain outlet to waters of the state will determine the potential for sediment delivery. Appropriate erosion control techniques and spacing of drainage points are important. 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 (OAR 629-625-0600(8)). To evaluate the drainage along the road segment being assessed, landowners should:

- Inspect the inlet and outlet of each cross drain.
- Assess the structural integrity, stability, and effectiveness of road runoff diverting away from the road prism and waters of the state.
- Note if the drain inlet is crushed, plugged, or buried, and to what degree.
- Inspect the drain outlet and note if the outlet is forming channels below the road, and to what degree.
- Examine cut slopes and fill slopes for evidence of erosion and hydrologic connectivity.
- Inspect ditches for standing water. Operators shall install drainage structures on ditches that capture groundwater (OAR 629-625-0600(7)).

Landowners should note if sidecast material is present, describe the condition of the cut/fill slopes, and determine the severity of erosion and downslope risk to public resources. Operators shall design cut and fill slopes to minimize the risk of landslides (OAR 629-625-0310(4)). Operators shall stabilize road fills as needed to prevent fill failure (OAR 629-625-0310(5)), and shall not incorporate slash, logs, or other large quantities of organic material into road fills (OAR 629-625-0440(3)).

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 (OAR 629-625-0330(1)). Landowners should inspect all drainage points along road segments for evidence of overland flow and hillslope erosion above and below the road. Landowners and operators shall locate drainage structures based on the priorities listed below. When there is a conflict between the requirements, the lower number section takes precedence and the operator shall not implement the later numbered and conflicting section.

1. Operators shall not install cross-drains and ditch-relief culverts in a way that causes stream diversion (OAR 629-625-0330(2)).
2. Operators shall not concentrate road drainage water into headwalls, slide areas, high landslide hazard locations, or steep erodible fillslopes (OAR 629-625-0330(3)).
3. Operators shall not divert water from stream channels into roadside ditches (OAR 629-625-0330(4)).

4. 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 the crossing (OAR 629-625-0330(5)).
5. Operators shall provide drainage when roads cross or expose springs, seeps, or wet areas (OAR 629-625-0330(6)).
6. 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 (OAR 629-625-0330(7)).

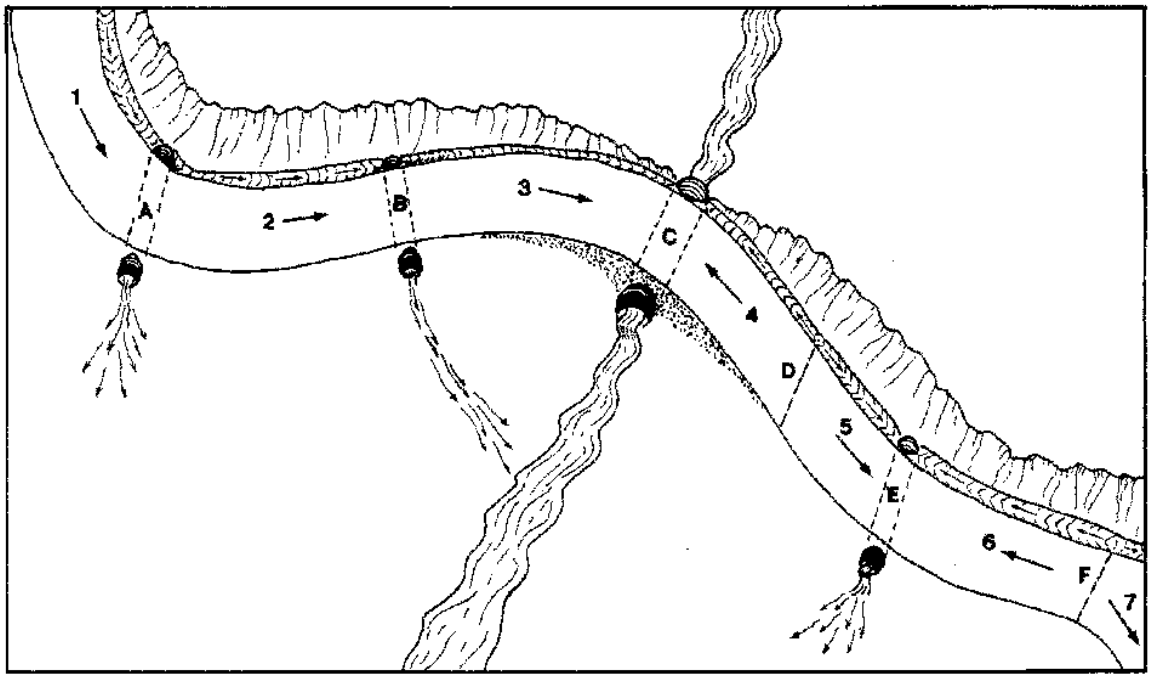

Figure 4. Road segments (numbered 1-7) and drainage features (A-F). Segments 3 and 4 are hydrologically connected. Segment 2 delivers sediment directly to the stream from cross-drain B without enough distance for filtration. Segment 4 is hydrologically connected but mitigated by a rolling dip, this helps to minimize the distance of road directly draining towards the crossing. Drainage features D and F are grade reversals which divide the drainage.

Water Crossings

Each water crossing location must be shown as a point on FRIA maps. Landowners should examine each water crossing and complete an assessment of the structure and the channel. Water crossing assessments must report on the structural integrity of the crossing, hydrologic connectivity, and the ability of the structure to pass fish and debris. Permanent water crossing culverts shall be installed so they will not cause scouring of the stream bed and erosion of the banks (OAR 629-625-0320(5)(a)).

Landowners should examine water crossing inputs at the site (Figure 5) which may include downed logs, woody debris, sediment sources, and other site-specific resources. Assessments should determine whether the structure can adequately pass these inputs and the plugging potential of the culvert. The

structural integrity, stability, and fill conditions should be inspected at the crossing inlet and the outlet. All water crossing structures shall be constructed to prevent erosion of the fill and channel (OAR 629-625-0320(1)(c)).

Diversion potential for a stream exists when the capacity of a water crossing may not accommodate high flows, which causes the stream to back up behind the fill and flow down the road. Water crossing structures shall be designed and constructed to ensure that streamflow is not likely to be diverted out of the channel if the crossing fails (OAR 629-625-0320(1)(g)). In some scenarios the stream can flow over the road and back into the channel which would indicate low diversion potential. Diversion potential is high on roads with long climbing sections or numerous stream crossings.

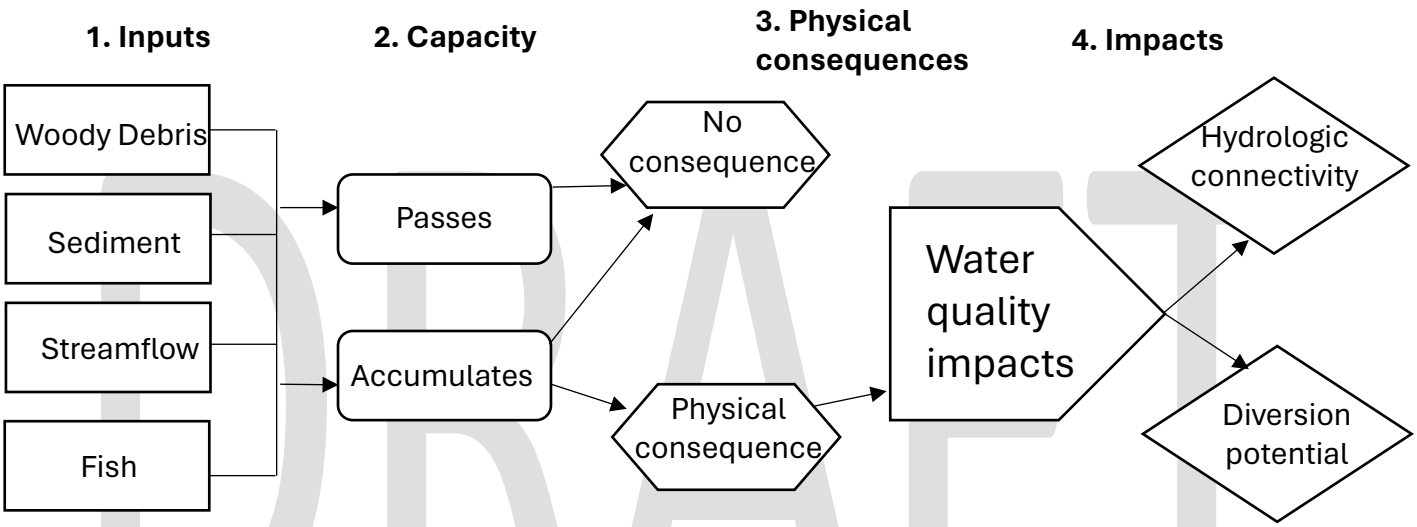

Figure 5. Risk assessments for water crossings, modified from Flanagan et al. (2003) Severity of impacts can vary depending on the typed waters of the state and site-specific resources. Prioritization of work should consider these potential impacts.

At some discrete point the road prism diverts water towards the crossing and/or away from the crossing and down to the next crossing or relief culvert. Water crossings must minimize hydrologic connectivity for the adjacent roadway (OAR 629-625-0320(1)(d)). During water crossing assessments, landowners should assess direct routes of drainage and determine the distance hydrologically connected at the crossing. Identify the points on the road that disconnect road drainage from the water crossing. These points can be cross-drains, water bars, crests, etc. The total length of the road sections that have the potential to drain to waters of the state is the distance connected. The total length of road sections minimizing hydrologic connectivity using best management practices is the distance disconnected.

Water crossing culverts meet the definition of pre-existing if they are fully functioning with minimal risks to public resources (Table 5). Pre-existing culverts can be maintained until the end of service life or until the risk of failure increases (OAR 629-625-0900(10)). If the pre-existing culvert installation date is not known, landowners shall inspect them every five years as part of the FRIA annual reporting process. For all culverts that meet the definition of imminent risk of failure, landowners shall repair or replace the culvert as soon as practicable but no later than two years after being identified (OAR 629-625-0900(12)). For culverts that do not meet the definition of pre-existing, landowners shall prioritize them for improvement during the FRIA process (OAR 629-625-0900(11)).

Culvert inlets and outlets, drainage structures, and ditches must be inspected before and after the rainy season as necessary to minimize the likelihood of impeding flow and possibility of structure failure (OAR 629-625-0600(2)). The Forest Practices Act requires all new and reconstructed permanent water crossings to convey, at minimum, the 100-year peak flow.

Fully Functioning	Minimal Risk	Imminent Risk
No active stream diversions and no evidence of potential to divert.	Has not diverted streams or ditchline runoff and does not have the potential to divert.	High diversion potential or is actively diverting streams out of the channel or diverting ditchline runoff directly to stream.
No signs of erosion along the road prism or stream bank and channel. Adequate erosion control practices are in place.	Minimizes sediment delivery.	Erosion present in road prism or stream channel showing increased risk to structure.
Provides fish passage for all adult and juvenile fish for Type F and Type SSBT streams.	Provides fish passage for all adult and juvenile fish for Type F and Type SSBT streams.	High plugging potential.
Meets 50-year peak flow criteria*	Meets 50-year peak flow criteria*	Does not meet 50-year peak flow criteria*
Is open and flow is not impeded.	Flow is not impeded, or a quick debris clean allows open flow. *Note: if the culvert needs frequent cleaning to function then it is imminent risk.*	Is completely blocked, plugged, crushed, or buried; has partially or completely failed fill.
Meets the definition of pre-existing culvert. *If the installation date is not known, landowners shall inspect the culvert every five years and maintain it until the end of service life or until they are no longer fully functioning.*	Does not meet the definition of pre-existing. *Culvert must be prioritized for improvement. Landowners can consult with ODFW to assign the culvert a low priority and maintain to the end of service life (OAR 629-625-0900(11)).*	Does not meet the definition of pre-existing. *Landowners shall repair or replace the culvert as soon as practicable but no later than two years after being identified (OAR 629-625-0900(12)).*

Table 5. Risk assessments must be completed for every water crossing culvert in the road network. The risk level will vary depending on the degree of risk and proximity to public resources. A water crossing culvert is defined as pre-existing if it is fully functioning. **All newly constructed water crossings must meet 100-year peak flow.*

Fish Passage Assessments

In addition to structural and functional crossing assessments, landowners must complete a fish passage assessment for water crossings on fish-bearing streams (Figure 6). Landowners can include helpful information such as the fish passage strategy used at the time of installation, if available. When fish passage criteria are met, the water crossing culvert will meet the definition of pre-existing. Important fish passage measurements and information for FRIA field assessments include:

- Active channel width

- Channel and streambed conditions
- Channel gradient, measured outside the influence of the structure
- Outlet drops
- Culvert slope and alignment
- Culvert length and diameter
- Degree of embedment

The active channel width corresponds to a peak streamflow that occurs on average once every one to two years. Active channel width can be determined by measuring from one stream bank to the other where abrupt changes in vegetation or bank texture occur. Landowners should take an average of three measurements spaced one to two channel widths apart upstream and downstream of the structure, beyond the point where the structure is influencing the channel characteristics. For the purposes of FRIA assessments, an abridged active channel width measurement is acceptable. For more information on active channel width see Forest Practices Technical Note 4: Stream Crossing Fish Passage.

Landowners should estimate and record the degree of culvert embedment by how deep it is sunk into the streambed. For round culverts, embedment should be 30- 50% of the culvert height and for pipe arch culverts embedment should be between 15-30% of the culvert height (OAR 629-625-0320(6)(c)). Landowners should estimate the amount of natural streambed material within the culvert. The material should be continuous throughout the culvert, this helps simulate natural stream characteristics and channel roughness. Culvert bed materials shall have a similar composition to natural bed materials that form the natural stream channels adjacent to the road crossing in the reference reach (OAR 629-625-0320(6)(e)). There should be a diverse and sufficient amount of streambed material to embed the culvert and remain stable over time. For bottomless culverts, landowners should inspect the foundation or footings and note any scour.

The alignment and slopes of the culvert shall mimic the natural flow of the stream when possible (OAR 629-625-0320(6)(b)). The maximum water velocity in the culvert shall not exceed the maximum water velocity in the narrowest channel cross-sections (OAR 629-625-0320(6)(f)).

Common barriers to fish passage related to culverts include:

- Outlet or inlet drops
- Sediment or debris clogging the culvert
- Collapsed culvert walls or other material failure
- Lack of natural substrate throughout the culvert
- Increase in water velocity through the culvert

For more information on fish passage see Technical Note 4 or contact the ODFW Fish Passage Program.

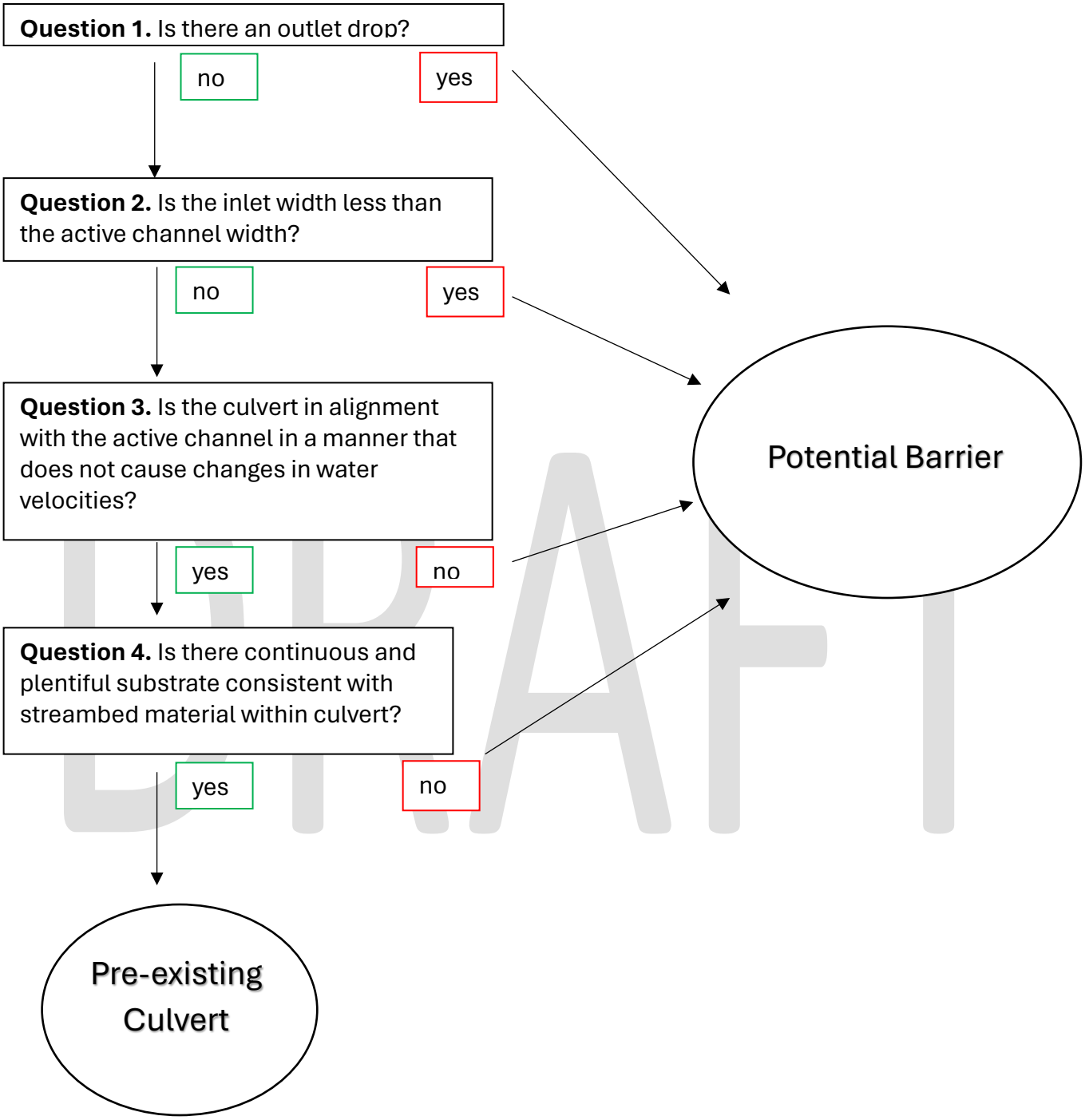

Figure 6. Field assessments for water crossings on Type F and Type SSBT streams must include a fish passage assessment. These four questions will help determine if a culvert is a potential fish barrier or if it meets the definition for pre-existing culvert in a Type F or Type SSBT stream.

Sources and Additional Resources

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Oregon Department of Forestry. 2003. Forest Practices Technical Note Number 2. High Landslide Hazard Locations, Shallow, Rapidly Moving Landslides and Public Safety: Screening and Practices

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Oregon Department of Forestry. 2003. Forest Practices Technical Note Number 5. Determining the 50-year Peak Flow and Stream Crossing Structure Size for New and Replacement Crossings

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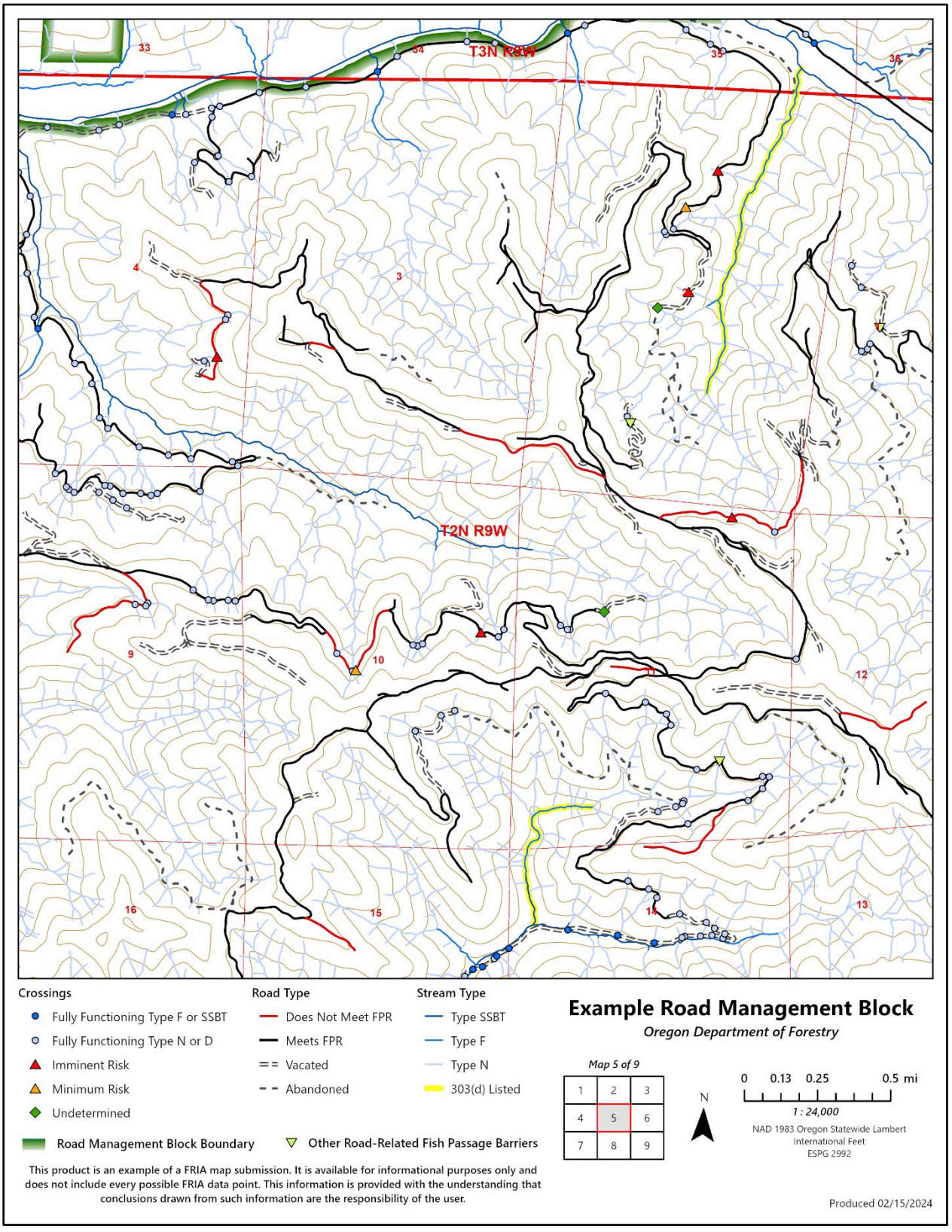
Appendix A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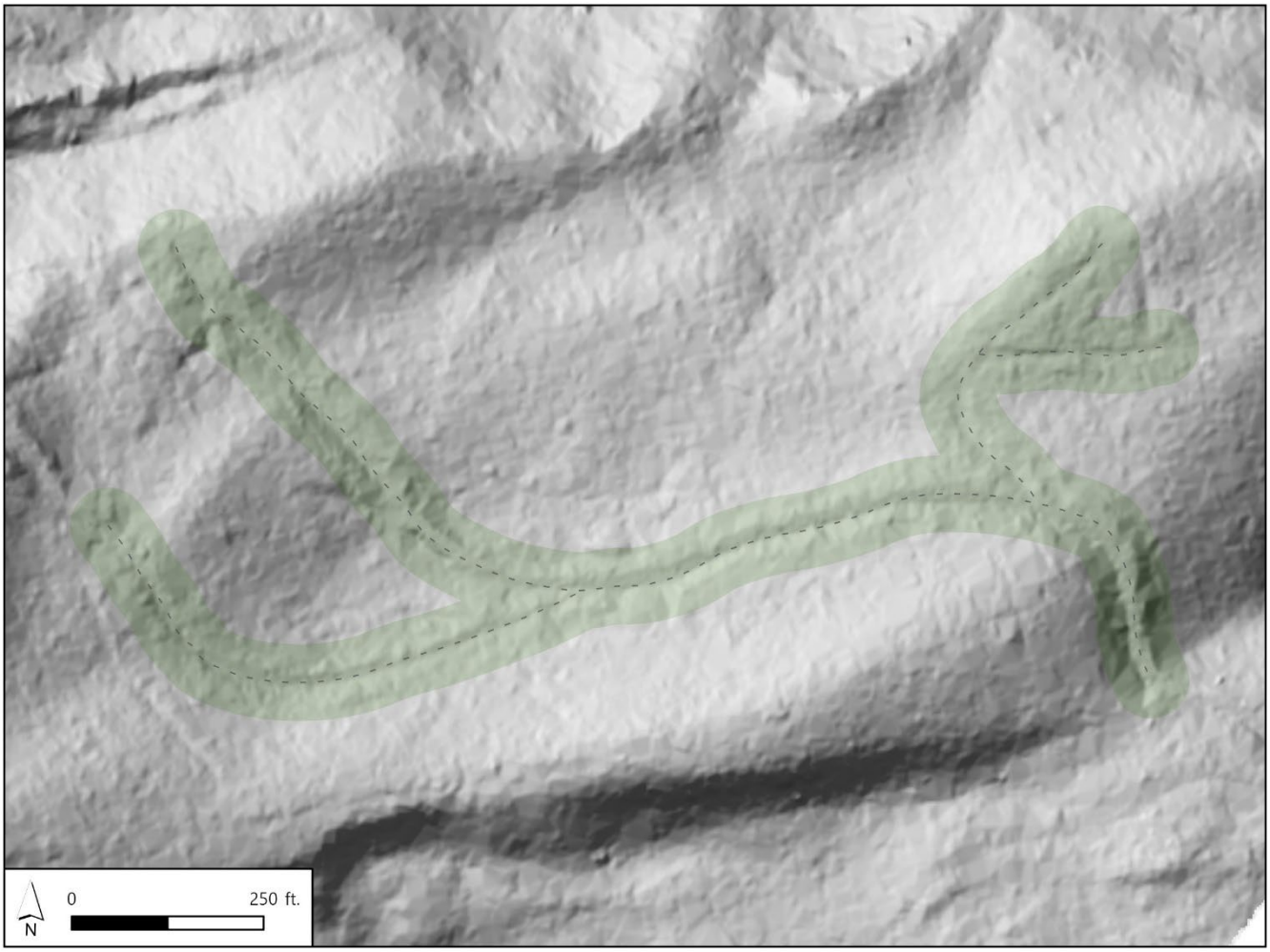
16
Crossings
Fully Functioning Type F or SSBT
Fully Functioning Type N or D
Imminent Risk
Minimum Risk
Undetermined
Road Type
Does Not Meet FPR
Meets FPR
Vacated
Abandoned
Stream Type
Type SSBT
Type F
Type N
303(d) Listed
Road Management Block Boundary
Other Road-Related Fish Passage Barriers
This product is an example of a FRIA map submission. It is available for informational purposes only and does not include every possible FRIA data point. This information is provided with the understanding that conclusions drawn from such information are the responsibility of the user.
Example Road Management Block
Oregon Department of Forestry
Map 5 of 9
1 2 3
4 5 6
7 8 9
N
0 0.13 0.25 0.5 mi
1 : 24,000
NAD 1983 Oregon Statewide Lambert International Feet
ESPG 2992
Produced 02/15/2024



This is an example map of what an abandoned road could look like using LiDAR. This example map is designed for informational purposes only, the potential abandoned road has not been field verified.

Appendix B

SEGMENTS			
Attribute	**Description**	**Value**	
Assessor Name	Name of person(s) assessing the segment.		
Date	Date of assessment.		
RMB	Road Management Block identifier.		
Segment ID	Identifier for specific road segment. (e.g., WF 300)		
Road Type	Type of road as determined by OAR 629-600-0100. Choose one.	☐ Active/Inactive ☐ Vacated ☐ Abandoned	
Road Age	Year the road was constructed. If known, report the date or decade the road was built in box B.	**A.** ☐ 1972 or earlier ☐ After 1972 ☐ Within the last five years ☐ Unknown	**B.** Date/decade the road was constructed, if known:
Start Station	GPS/point of starting assessment location.		
End Station	GPS/point of ending assessment location.		
Length	Length of segment between stations (miles).		
Road Shape	Shape of the road surface.	☐ Outslope ☐ Inslope ☐ Crowned ☐ Through-cut ☐ Undetermined	
Road Grade	Average gradient of segment. Record section A or B.	**A.** If measured, record as a percent:	**B.** *OR* choose a range: ☐ 0-8% ☐ 8-15% ☐ >15%
Surface Material	Type of surface material for segment.	☐ Native ☐ Gravel ☐ Paved	
Surface Condition	Condition of the road surface. Check all that apply for the segment.	☐ Gullies ☐ Rills ☐ Washboarding ☐ Rutting ☐ Cracks ☐ Sinkholes ☐ Standing/flowing water	

SEGMENTS			
Ditch Condition	Description of the average ditch condition along the segment. Inspect ditch stability, evidence of erosion, hydrologic connectivity, diversion potential. Check one from A and one from B.	**A.** *Condition* ☐ Good ☐ Fair ☐ Poor	**B.** *Is there standing water?* ☐ Yes ☐ No
Ditch Outlet	Assessment of the ditchline outlet for erosion, hydrologic connectivity, and diversion potential. Check one from A and one from B	**A.** *Is the ditchline connected to waters of the state?* ☐ Yes ☐ No	**B.** *Is there evidence of erosion (rills, gullies) forming at the ditch outlet?* ☐ Yes ☐ No
Hydrologic Connectivity	Assessment of direct routes of drainage to waters of the state along the road segment. Check one from A and one from B.	**A.** *Evidence of connectivity?* ☐ Yes ☐ No	**B.** *Sedimentation* ☐ High delivery potential ☐ Low delivery potential ☐ Undetermined
Diversion Potential	Assessment of diversion potential for ditches and drainage features along road segment. Check one from A and one from B	**A.** *Actively diverting?* ☐ Yes ☐ No	**B.** *Potential to divert?* ☐ High ☐ Low ☐ Undetermined
Cutslope Condition	Description of average cutslope condition along segment. Inspect cutslope stability, presence of sidecast material, soil movement, vegetation, evidence of erosion, presence of seeps or springs. Check one from A and one from B	**A.** *Condition* ☐ Excellent ☐ Good ☐ Fair ☐ Poor	**B.** *Presence of sidecast?* ☐ Yes ☐ No
Fillslope Condition	Description of average fillslope condition along segment. Inspect fillslope stability, presence of sidecast material, soil movement, vegetation, evidence of erosion, presence of seeps or springs. Check one from A and one from B	***A.*** *Condition* ☐ Excellent ☐ Good ☐ Fair ☐ Poor	**B.** *Presence of sidecast?* ☐ Yes ☐ No
Erosion Control Techniques	Description of techniques used along the road prism, ditchline, cut/fillslopes of the segment.	☐ Compaction ☐ Buttressing ☐ Subsurface drainage structures ☐ Rock facing ☐ Vegetation/seeding ☐ Other ☐ None	
Segment Classification	OAR 629-625-0900(6)(b)	☐ Meets Forest Practices Act ☐ Does Not Meet Forest Practices Act ☐ Vacated in accordance with OAR 629-625-0650 ☐ Abandoned ☐ Additional review requested	

CROSSINGS			
Attribute	**Description**	**Value**	
Assessor Name	Name of person(s) assessing the crossing.		
Date	Date of assessment.		
RMB	Road Management Block identifier.		
Crossing ID	Identifier for specific crossing.		
Location	GPS/point of crossing location.		
Date of installation	Year that the crossing was installed, if known. OAR 629-625-0900(6)(a)(D)(ii)		
Stream Classification	Classification of the stream being crossed. OAR 629-625-0900(6)(a)(D)(ii)	☐ Type F ☐ Type SSBT ☐ Type D ☐ Type N	☐ *Check this box if the stream is 303(d) listed.*
Type	Type of crossing. Choose one.	☐ Pipe-arch culvert ☐ Open bottom culvert ☐ Box culvert ☐ Circular culvert ☐ Double barrel culvert ☐ Ford ☐ Bridge ☐ Other	
Material	Dominant material type of the crossing.	☐ Plastic ☐ Corrugated metal pipe ☐ Structural steel pipe ☐ Aluminum ☐ Concrete ☐ Wood ☐ Other	
Diameter	Diameter of culvert inlet/outlet (provide units).		
Length	Length of crossings (provide units).		
Culvert Slope	Slope of the culvert (as a percentage).		
Inlet Condition	Assessment of the structure end upstream of the crossing. Inspect: structural integrity, stability, evidence of erosion, sediment deposits, fill condition, inputs for potential plugging (OAR 629-625-0900(6)(a)(D)(v)(II)). Check one from A and one from B.	**A.** *Condition* ☐ Good ☐ Fair ☐ Poor	**B.** *Plugging potential* ☐ Severe ☐ High ☐ Moderate ☐ Low

CROSSINGS			
Outlet Condition	Assessment of the structure end downstream of crossing. Inspect: structural integrity, stability, evidence of erosion, sediment deposits, fill condition. (OAR 629-625-0900(6)(a)(D)(v)(II)) Check one from A and one from B.	***A.*** *Condition* ☐ Good ☐ Fair ☐ Poor	**B.** *Is there an outlet drop?* ☐ Yes ☐ No
Diversion Potential	Assessment of stream diversion potential at the crossing. Check one from A and one from B.	**A.** *Actively diverting?* ☐ Yes ☐ No	**B.** *Potential to divert?* ☐ High ☐ Low ☐ Undetermined
Hydrologic Connectivity	Assessment of direct routes of drainage to waters of the state at the crossing location. Check one from A. In section B estimate the lineal feet connected.	**A.** ☐ Connected, requires attention ☐ Connected, but minimized ☐ Disconnected	**B.** *Distance connected, if applicable (feet)* ☐
Erosion Control Techniques	Description of erosion control techniques used at the crossing.	☐ Compaction ☐ Buttressing ☐ Subsurface drainage ☐ Rock facing ☐ Vegetation/seeding ☐ Other ☐ None	
Delivery Potential	Assessment of potential sediment delivery at crossing.	☐ Low ☐ Moderate ☐ High	
Active Channel Width	Measurement of the active channel width (provide units).		
Peak Flow	Does the crossing meet 50-year or 100-year peak flow?	☐ 50-year peak flow ☐ 100-year peak flow ☐ Does not meet 50-year or 100-year peak flow ☐ Undetermined	
Embedment Depth	Refer to Figure 6 for FRIA fish passage assessments on Type F and Type SSBT.	*Provide an estimate of percent embedment:* ☐ Undetermined ☐	
Fish Passage Assessment	Refer to Figure 6 for FRIA fish passage assessments on Type F and Type SSBT.	**A.** FRIA crossing assessment ☐ Pre-existing ☐ Potential barrier ☐ Undetermined ☐ Additional review requested	**B.** *If the crossing is a potential barrier, which question(s) (1-4) are the cause of the barrier?* ☐ 1 ☐ 2 ☐ 3 ☐ 4

CROSSINGS		
Fish Passage Strategy	Intended strategy when the crossing was installed, if known.	☐ Channel-spanning structure ☐ Ford ☐ Streambed simulation ☐ Bare culvert at zero grade ☐ Hydraulic design ☐ Other ☐ Unknown
General comments		
Water Crossing Classification	OAR 629-625-0900(6)(a)(D)(vi) Check one.	☐ Fully functioning ☐ Minimal risk ☐ Imminent risk ☐ Undetermined

Appendix C

Pre-inventory FRIA template Feb 2024.x