



Oregon Department of Forestry
Upper Yaquina Watershed Dissolved Oxygen TMDL
Implementation Plan

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Water Quality and Monitoring Unit
Forest Resources Division
Salem, Oregon

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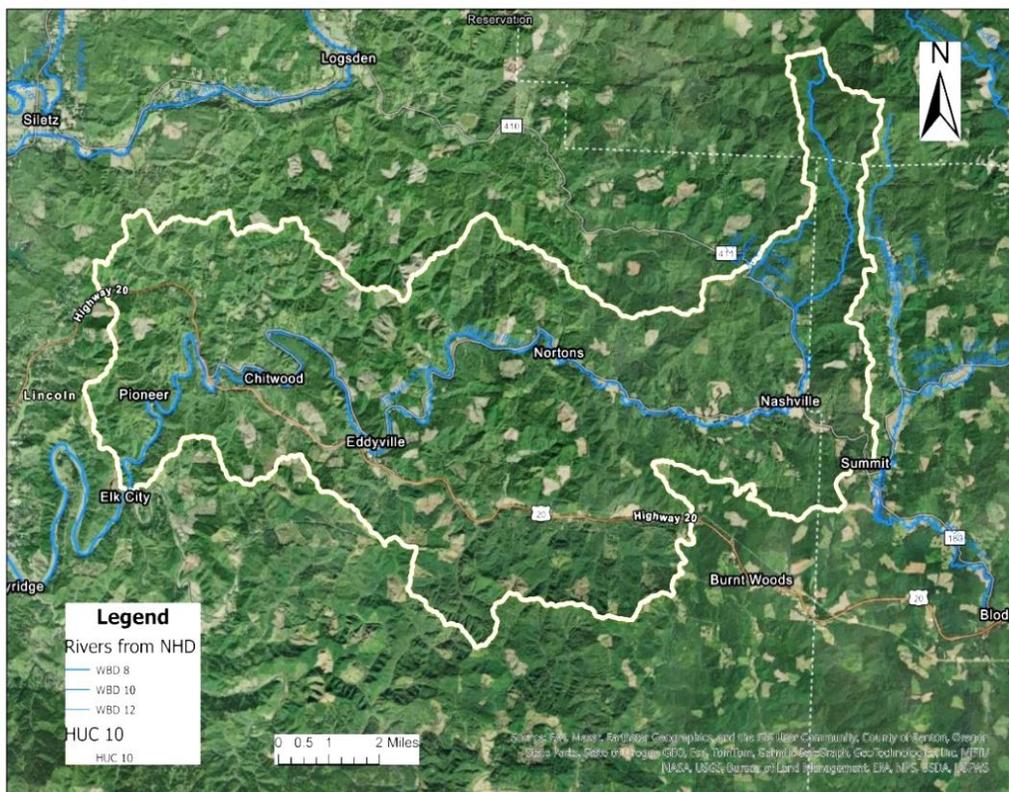
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Section 1. Introduction

The Federal Clean Water Act requires a total maximum daily load (TMDL) to be established for Oregon's list of impaired waters under the Clean Water Act §303(d). A TMDL, or clean water plan, is a science-based approach to cleaning up polluted water so that it meets state water quality standards. More specifically, a TMDL is a numerical value that represents the highest amount of pollutant a surface water body can receive and still meet the water quality standards. Every two years, Oregon Department of Environmental Quality (ODEQ) is required to assess water quality and report to the U.S. Environmental Protection Agency (EPA) on the condition of Oregon's waters. ODEQ prepares an Integrated Report that meets the requirements of the federal Clean Water Act for Sections 305(b) and 303(d)(ODEQ 2023). ODEQ is the agency responsible for developing TMDLs in Oregon.

In September of 2023, the DEQ Upper Yaquina River Watershed TMDL and resulting Water Quality Management Plan (WQMP) were adopted by ODEQ's Environmental Quality Commission (EQC), by reference, into rule as OAR 340-042-0090(1). Multiple freshwater assessment units in the Upper Yaquina River Watershed are listed as category 5 (impaired) for bacteria (*E.coli*) and dissolved oxygen (designated spawning period) in Oregon's 2022 EPA-approved Integrated Report.

Map 1. Upper Yaquina River Watershed, Mid-Coast, Oregon



The ODEQ WQMP identified Oregon Department of Forestry (ODF) as the Designated Management Agency (DMA) for forestry activities within the watershed. As a DMA under OAR 340-042-0080(2), ODF is responsible for protecting water quality from nonpoint source discharges or pollutants resulting from forest operations on non-federal forestlands within the state. As a DMA, ODF is responsible for developing a TMDL implementation plan to ensure the forestry sector meets the Upper Yaquina River watershed TMDL allocations for solar radiation and phosphorus, which contribute to impairments of dissolved oxygen criteria during the year-round (salmonid rearing and migration) period.

This TMDL implementation plan identifies the management strategies ODF will employ to prevent or reduce potential nonpoint sources of pollutants contributing to the depletion of dissolved oxygen, resulting from forest operations, on private and state forestlands within the Upper Yaquina River Watershed. This implementation plan is organized into the following required sections:

- Section 1. Introduction
- Section 2. Upper Yaquina River Watershed TMDL for Dissolved Oxygen
- Section 3. Upper Yaquina Watershed: Private & State Forestland
- Section 4. Implementation Strategies
- Section 6. Matrix - Relevant Goals and Targets
- Section 7. Monitoring, Performance & Timeline
- Section 8. Adaptive Management
- Section 9. Fiscal Analysis
- Section 10. Legal Authority

Section 2. Upper Yaquina River Watershed TMDL for Dissolved Oxygen

ODEQ led the development of a WQMP to describe the overall framework for addressing the bacteria and dissolved oxygen impairments in the Upper Yaquina River Watershed. The WQMP describes activities, programs, legal authorities, and other measures for which ODEQ, and other DMAs have regulatory responsibilities. Given that forest operations regulated by ODF do not contribute to *E. coli* bacteria, ODF will only address implementation strategies addressing dissolved oxygen impairments. Factors known to impact the amount of dissolved oxygen in a water body include but not limited to the following (ODEQ 2023 UY TSD):

- Temperature: Colder water holds more dissolved oxygen than warmer water.
- Flow Rate and turbulence: Faster flowing and turbulent mixing of water allows for better oxygen absorption.
- Aquatic plants and algae: Photosynthesis increases oxygen concentration whereas plant respiration at night can deplete dissolved oxygen.
- Organic matter: Organic matter decomposition by microorganisms' oxygen consumption.

- Salinity: Higher salinity reduces the amount of oxygen water can hold.
- Atmospheric pressure: Higher atmospheric pressure allows more oxygen to dissolve in water.
- Weather conditions: Factors like wind, rain, and cloud cover can affect oxygen levels by influencing surface mixing and plant growth.
- Chemical pollution: Certain chemicals consume oxygen in natural waters

The 2023 *Upper Yaquina River Watershed TMDL’s Mid-Coast Watershed Technical Support Document* details the water quality data collection, analysis, and modeling efforts ODEQ conducted as part of the TMDL development process. Looking at the various factors impacting dissolved oxygen levels, ODEQ determined:

“solar radiation and total phosphorus loading were the two pollutants contributing to violations of the cold-water and salmonid spawning criteria for dissolved oxygen during the critical periods in the Upper Yaquina River Watershed.” (46)

Low dissolved oxygen levels in aquatic habitats can have significant negative impacts, including fish kills, reduced growth rates, altered species composition, and even the complete collapse of ecosystems. Different aquatic organisms have varied dissolved oxygen tolerance levels. Native cold-water species like coastal salmon, steelhead, and trout are most affected by low oxygen levels, requiring dissolved oxygen levels ranging from 6.0 mg/L to 11.0 mg/L depending on the time of year and life cycle stage (rearing and migration, spawning). ODEQ’s standards for dissolved oxygen can be found in Table 21 for the numeric criteria [OAR 340-041-0016](#).

According to OAR 340-042-0040(5)(b), ODEQ may use surrogate measures to estimate allocations for pollutants addressed in a TMDL. Surrogates may be used for a pollutant that is difficult to measure or is highly variable. ODEQ used effective shade as a surrogate measure for solar radiation and measured concentrations of total phosphorus (all forms of phosphorus) as a surrogate for phosphorus in determining nonpoint source loading capacities and load allocations for the Upper Yaquina River dissolved oxygen TMDL.

Using a calibrated linked HSPF-QUAL2Kw model, ODEQ was able to determine the loading capacities and excess loads of solar radiation and phosphorus during the critical period from mid-July to mid-November during medium to low flows (ODEQ 2023 UY TSD). Table 1 displays the ODEQ modeling results. For more information on the TMDL analysis see ODEQ’s 2023 UY TSD.

Table 1. Yaquina River loading capacities and excess loads of solar radiation and phosphorus

Pollutant	Loading Capacity	Excess Load	Reduction Needed	Area Applied
Solar Radiation	8,197,207,223 kcal/day	25,957,846,948 kcal/day	76%	Upper Yaquina Mainstem & Little Elk Creek

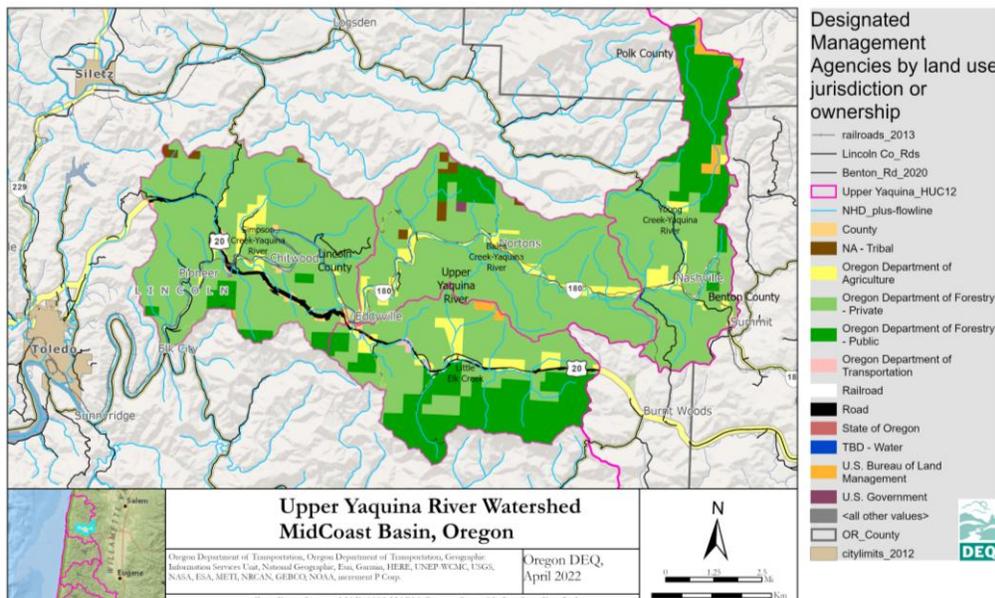
Phosphorus	2.13 lbs./day	2.16 lbs./day	50%	Upper Yaquina - Watershed Wide
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Effective Shade Surrogate for Solar Radiation - Dissolved Oxygen Impairment

ODEQ’s TMDL water quality analysis and modeling concluded riparian vegetation planting and stand management are the strategies necessary to improve dissolved oxygen levels and meet water quality criteria in the impaired sections of the Yaquina River. Mature streamside overstory vegetation reduces solar radiation loads to the streams by providing the effective shade necessary to achieve the TMDL surrogate measure allocations. ODEQ defines effective shade “as the amount of solar flux blocked from reaching the surface of waterbody by vegetation and topography” (ODEQ 2023 UY TSD).

ODEQ modeled the effective shade along the Upper Yaquina using LiDAR data collected in the Mid-Coast region in 2011 and 2012. Using the available data provided, ODEQ compared the results to the potential maximum shade that could be achieved if the vegetation was restored to “site potential vegetation” conditions or optimized at given locations. The difference in effective shade between the current conditions and the restored conditions is called the “shade gap.” ODEQ conducted a vegetation height and shade gap analysis within approximately 100 feet of each bank of the Yaquina River from Clem Road to Trapp Creek, as detailed in Section 6.1 of the ODEQ 2023 UY TSD. Results from the analysis are summarized in Table 2. The analysis shows the minimum acreages of riparian vegetation (three feet in height or less) are where increases in effective shade are needed to attain the TMDL shade allocation. ODEQ separated out the resulting acres and stream miles by DMA. More information about the variables influencing effective shade is in Section 6.1 of the ODEQ 2023 UY TSD.

Figure 1.* Designated Management Agencies by land use jurisdiction or ownership in the Upper Yaquina River Watershed.



*Figure 1. above taken from 2023 ODEQ Upper Yaquina WQMP - Figure 5.

Table 2. Designated Management Agency estimated jurisdictional acreages and stream miles with deficient riparian vegetation*

Yaquina River Designated Management Agency or responsible person	Estimated acres of vegetation height ≤ 3 ft	Estimated stream miles adjacent to vegetation height ≤ 3 ft
Oregon Department of Agriculture	121.0	10.2
Oregon Department of Forestry - Private Forestland	63.0	6.1
Lincoln County	39.4	2.8
Portland & Western Railroad	14.9	1.0
Oregon Department of Transportation	6.9	0.3
U.S. Bureau of Land Management	2.8	<0.1
Total	247.9	20.4

*Data from 2023 ODEQ Upper Yaquina WQMP - Table 5.1b

Total Phosphorus as a Surrogate for Dissolved Oxygen Impairment

ODEQ has determined through its TMDL assessment process that excess phosphorus is a pollutant contributing to the reduction of dissolved oxygen levels in the Upper Yaquina. ODEQ states in the 2023 UY TSD that sources of total phosphorus inputs for this area include: “weathering from geologic source material, input of organic matter from forestlands, input from wildlife, input from livestock management, silvicultural chemical applications and input from septic systems.” ODEQ evaluated silvicultural pesticide application as one possible source of phosphorus. However, ODEQ stated they had insufficient data available to estimate nonpoint source inputs to water through runoff or direct deposition. The phosphorus load allocation reductions values in Table 1. apply to the entire Upper Yaquina watershed.

Section 3. ODF Jurisdiction: Private & State Nonfederal Forestland

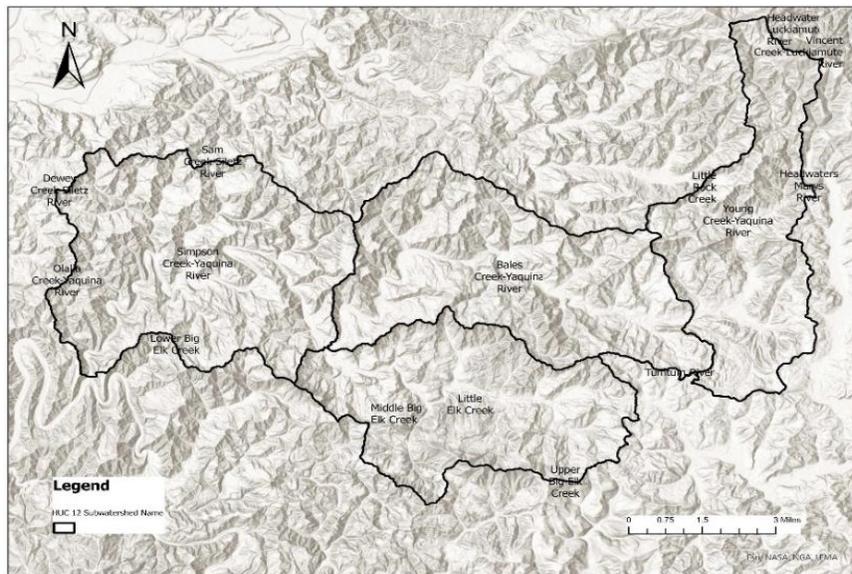
The Upper Yaquina River watershed accounts for the headwaters of the Yaquina River, draining a significant portion of the Central Oregon Coast Range flowing directly into the Pacific Ocean through Yaquina Bay at Newport, Oregon. The four Hydrological Unit Codes (HUC) at the 12-digit subbasin scale that make up the Upper Yaquina include: Young Creek -Yaquina River, Bales Creek-Yaquina Little Elk Creek, and Simpson Creek- Yaquina River (Table 3). The watershed is located within Benton and Lincoln counties, with a small portion extending into Polk County, Oregon. The major roads in the Upper Yaquina River watershed include US-20 and OR-180, along with many secondary private and county roads located throughout the watershed. The majority of the landcover in the Upper Yaquina consists of private or state forestland.

Table 3. Upper Yaquina River subwatersheds

HUC12 Code	Subwatershed Name
171002040101	Young Creek-Yaquina River

171002040102	Bales Creek-Yaquina River
171002040103	Little Elk Creek
171002040104	Simpson Creek-Yaquina River

Map 2. Upper Yaquina River Watershed Subwatersheds (HUC12)



Streamside Effective Shade

According to ODEQ’s 2023 UY TSD, the Upper Yaquina effective shade model, which utilized 2011 and 2012 field data, estimated that approximately 63 acres (0.41%) of riparian vegetation within ODF jurisdiction along the mainstem Yaquina River is 3 feet or shorter. Across the entire modeled area of the Upper Yaquina, the model estimates that 6.1 miles (30%) of the 20.4 total stream miles have riparian vegetation heights of 3 feet or less.

Figures 2 - 4 show the modeled shade gap percent ranges ODEQ determined to be within ODF’s jurisdictional responsibility along the Yaquina River. Segment 1, approximately 11 river miles, shown in Figure 2, displays only the shade gap results where ODF is the DMA. Segment 1 lies between Yaquina River at Clem Road bridge and Yaquina Mainstem at Nashville Road Hwy 180 (downstream of confluence with Trout Creek). Segment 2 is approximately 2.8 miles and lies between Yaquina Mainstem at Nashville Road Hwy 180 (Downstream of confluence with Trout Creek) and Yaquina River at Eddyville. Segment 3, displayed in Figure 4 above, is approximately 7.2 river miles. This reach lies between Yaquina River at Eddyville and Yaquina River at Trapp Road (Chitwood).

Figure 2. Yaquina River Segment 1: ODEQ modeled shade gap percentages for ODF jurisdiction (private forestlands)

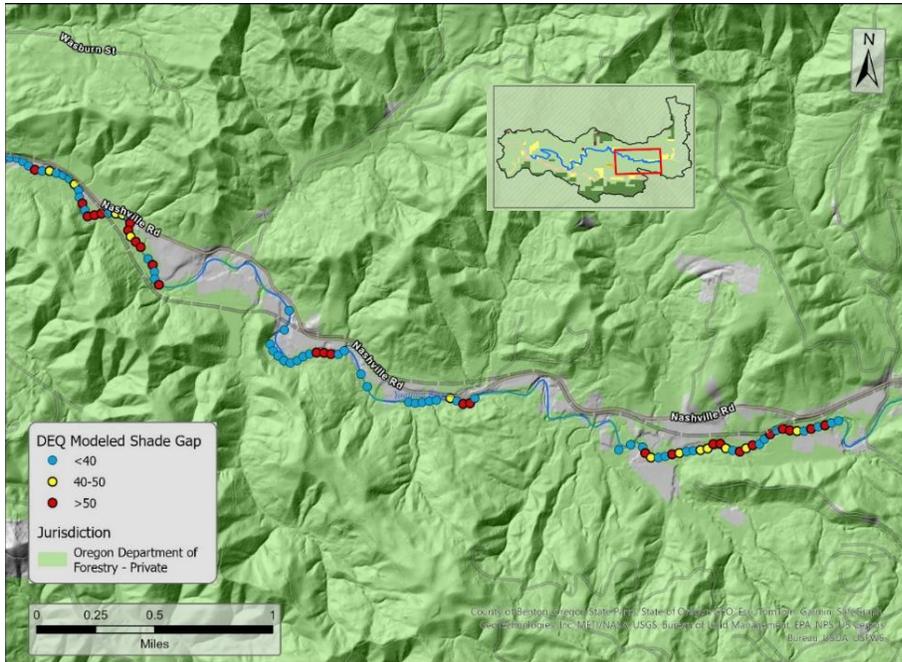


Figure 3. Yaquina River Segment 2: ODEQ modeled shade gap percentages for ODF jurisdiction (private forestlands)

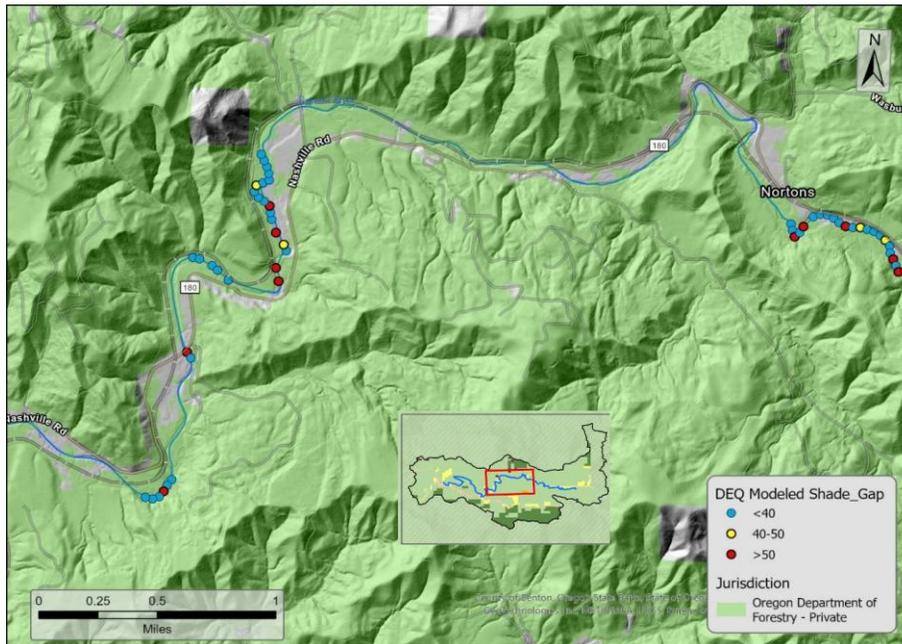
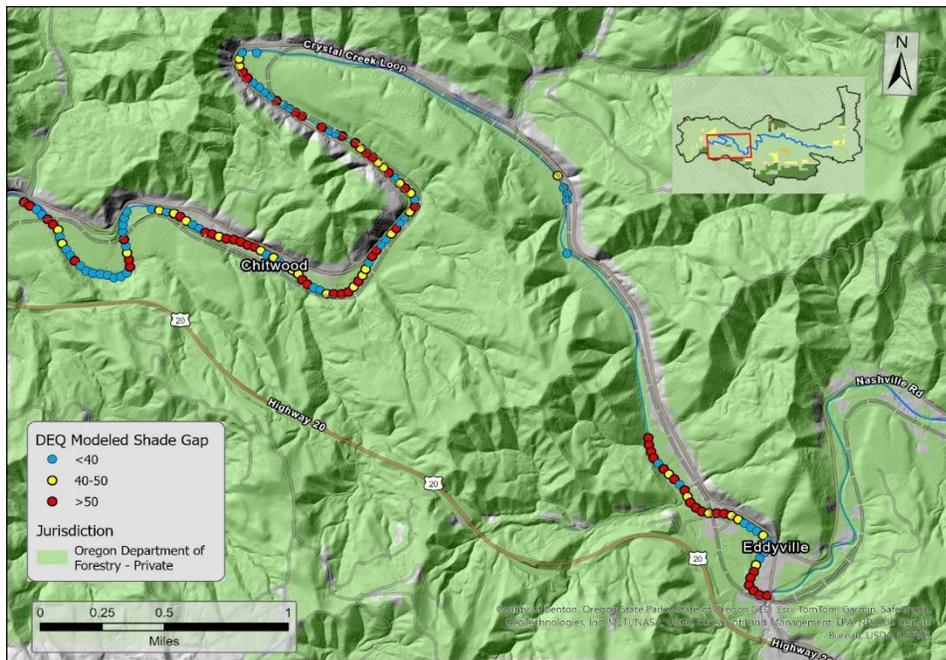


Figure 4. Yaquina River Segment 3: ODEQ modeled shade gap percentages for ODF jurisdiction (Private Forestlands)



Little Elk Creek, a tributary to the Yaquina River was identified as deficient in providing effective shade. ODEQ did not model effective shade on Little Elk Creek but provided effective shade curves in the 2023 UY TSD, for DMAs to reference when conducting their streamside assessments. ODF will use shade curve tables and methods described in Section 4, Strategy 11. A. to identify areas along Little Elk Creek deficient in shade.

Reassignment of DMA shade gap nodes may be necessary in areas where forestry and agricultural lands are adjacent. ODF's jurisdiction in these areas applies only if the landowner has conducted commercial forestry activities in the past or plans to do so in the future.

Total Phosphorus – Roads & Chemical Application

The ODEQ's 2023 Upper Yaquina TMDL WQMP identifies elevated phosphorus from nonpoint sources in the silviculture sector, primarily due to soil erosion and runoff from roads, commercial harvest activities, and forestry chemical applications (pesticides and fertilizers). Figure 1 outlines the areas under ODF jurisdiction, including both state and private lands. The ODEQ's 2023 UY TSD noted "insufficient data... to estimate nonpoint source inputs to water through runoff or direct deposition"(16). To address this gap, ODF will collaborate with ODEQ to collect additional data using the strategies outlined in this implementation plan.

Section 4. Implementation Strategies

TMDL implementation plans must specify where and when priority strategies and other practices will be applied, along with measurable objectives and milestones to document implementation and effectiveness toward meeting the TMDL target load allocations. The following section includes ODF FPA implementation strategies and ODEQ 2023 WQMP ODF specified strategies for protecting and increasing dissolved oxygen levels in the Upper Yaquina watershed.

FPA Implementation Strategies

ODF administers Oregon Administrative Rules, agency processes, and agency programs to protect water quality from nonpoint source discharges or pollutants resulting from forest operations on non-federal forestlands within the state. The following strategies are used by ODF to protect riparian management areas and prevent forestry-related soil erosion and stream sedimentation. These strategies directly target streamside shade and nutrient loading, factors ODEQ identified as impacting dissolved oxygen levels in the Upper Yaquina.

- Strategy 1. Forest Practices Act Rule Implementation
- Strategy 2. Western Oregon Stream Riparian Management Areas
- Strategy 3. Road Assessments
- Strategy 4. Statewide Abandoned Road Inventory
- Strategy 5. Forest Management Chemical Application
- Strategy 6. Incentive Programs
- Strategy 7. Rule Compliance & Adaptive Management
- Strategy 8. ODF Internal Trainings
- Strategy 9. Partnerships, Education & Outreach
- Strategy 10. State Forest Voluntary Measures
- Strategy 11. ODEQ WQMP ODF Specified Strategies

Strategy 1: Forest Practices Act Rule Implementation

Oregon's nonpoint source program for non-federal forestlands is primarily administered by the Oregon Department of Forestry (ODF) through the Oregon Forest Practices Act (FPA). Under ORS 468B.110(2), ORS 527-610 to 527.770, 527.990(1) and 527.992, the FPA sets standards for all commercial activities involving the establishment, management, or harvesting of trees on Oregon's forestlands.

With the publication of the Private Forest Accord Report in February 2022 (Stevens S., et al.) and subsequent passage of Senate Bill 1501, SB 1502 and HB 4055, substantial Forest Practices Act rule revisions were adopted by the Board of Forestry in October 2022. The new rules stem from negotiations and an agreement reached in October 2021 between timber industry advocates and conservation groups (i.e., Private Forest Accord). The resulting new and revised FPA rules and programs provide an increase in protection of Oregon's water resources and provide incentives and technical assistance for small forestland owners. Senate Bill 1501

requires ODF to develop an aquatic Habitat Conservation Plan (HCP) and apply for Incidental Take Permits (ITP) covering aquatic species on non-federal lands. An HCP is a planning document prepared to meet the rules of the federal Endangered Species Act (ESA). ODF is developing an HCP as part of the application for ITPs. ODF will hold the permits on behalf of the Oregon private and local government forestland owners, as well as any individual Oregon Tribes that wish to opt-in to the permits. Covered landowners will obtain regulatory assurances under the ESA protecting them against incidental take that may occur while conducting forest operations and activities covered under the HCP. ODF staff are currently working with consultants and a stakeholder group on the development of a draft non-federal forest aquatic HCP.

FPA rules require landowners to leave forested buffers and other vegetation along streams, wetlands, and lakes to protect water quality and fish and wildlife habitat. Riparian Management Areas (RMA) for certain streams were expanded by 2022 BOF rulemaking subsequent to issuance of the Upper Yaquina TMDLs. As the new RMA areas that were previously harvested regenerate, vegetation will be on a trajectory to attain site potential effective shade conditions. Forestland owners/operators are also required by rule to harvest timber and manage forest roads to protect Oregon’s waterways and prevent soil erosion and stream sedimentation. ODF rules relevant to protection of water quality and erosion control are found in the Oregon Administrative Rules (OARs) referenced in Table 4.

Table 4. ODF Rules Related to Water Quality Protection and Erosion Control

Forest Practices Act Rule Divisions*	Rule Reference
Adaptive Management Program (Division 603)**	OAR 629-603-0000 through 629-603-0600
Planning Forest Operations (Division 605)	OAR 629-605-0150 through 629-605-0170
Small Forestland Owner (Division 607)	OAR 629-607-0000 through 629-607-0800
Forest Practices Reforestation Rules (Division 610)	OAR 629-610-000 through 629-610-0100
Treatment of Slash (Division 615)	OAR 626-615-000 through 629-615-0300
Chemical and Other Petroleum Product Rules (620)	OAR 629-620-0000 through 629-620-0800
Forest Road Construction and Maintenance (Division 625)	OAR 629-625-0000 through 629-625-0920
Harvesting (Division 630)	OAR 629-630-0000 through 629-630-0925
Water Protection Rules (Division 635, 643, 655)	OAR 629-635-0000 through 629-655-0000
Enforcement & Civil Penalties (Division 670)	OAR 629-670-0000 through 629-670-0350
Compliance Monitoring (Division 678)	OAR 629-678-0000 through 629-678-0200

* New and revised rules went into effect January 1, 2024.

Note: Water Protection Rules for landowners who own over 5k acres and do not qualify as Small Forestland owners went into effect July 1, 2023.

**Adaptive Management Program went into effect November 15, 2022.

The FPA rules and programs associated with Water Protection, Chemical and Other Petroleum Products, Forest Road Construction and Maintenance, and Harvesting on Steep Slopes are the implementation strategies directly addressing activities to prevent the lowering of dissolved

oxygen levels. The ODF Monitoring Unit will document annual metrics for the rules and programs designed to both directly and indirectly provide stream shade, reduce soil erosion, and prevent stream sedimentation from occurring because of forest operations.

To better explain ODF's FPA rule implementation strategy related to forest operations we have broken activities out chronologically: Pre-Operation, Active Operation, and Post-Operation.

A. Pre-Operation

The following outlines the pre-operation processes and associated rules ODF utilizes to ensure protection of Oregon's waterways:

1. E-Notification & Written Plans - OAR Rule Division 605

Before beginning a forest operation, landowners/operators are required to submit to ODF's online E-notification system 15 days before starting a forest operation. Based on the area of the activity, the E-Notification system and State Forester or their designee will inform the landowner/operator of any protected resources located in and/or near the area of their proposed operation. Protected resources flagged in ODF's E-notification system include the following: streams, wetlands, domestic points of diversion, high landslide hazard areas (as related to public safety), steep slopes, lakes, scenic highways, and wildlife sites including known nesting sites of bald eagles, northern spotted owls, great blue heron, and osprey, and certain other sites that may be protected under the FPA including mineral springs used by band-tailed pigeons, nesting sites of golden eagles, and known sites occupied by Marbled Murrelets. If one or more of the listed resources are present within or near (for wildlife sites) a notified operation boundary the State Forester will conduct an initial review of the submitted notification. When reviewing the notifications the State Forester may consult, as needed, with ODF field specialists (Wildlife Biologist, Water Quality Specialist, Geotechnical Specialist, and/or Field Coordinator). The E-Notification system and the State Forester will provide the landowner/operator with information and activity alerts notifying them of the specific rules they need to follow including if a written plan is required to be submitted.

Landowner/operators are required to submit written plans with their E-Notification when their forest operation is associated with the following soil disturbing activities: road construction, harvesting near waterways (Type F or SSBT, and specific Type N scenarios) and steep slopes near fish bearing streams and/or streams used for domestic use. For the full list of forest operation activities requiring written plans see OAR 629-605-170 (1-15). Regulations for aerial pesticide applications from helicopters have substantive notification requirements OAR 629-605-0140 through 629-605-0500.

A "complete" written plan describes how a forest operation will be conducted to meet the standards for resource protection prescribed by the FPA rules. A written plan specifically describes how a forest operation will be conducted to meet the minimum standards for resource protection prescribed by the forest practice rules and detailed information about how the operation will be completed. The State Forester will review the written plans to ensure all

the elements are included and the proposed actions will provide adequate resource protection for the specific operation. The State Forester may provide comments on the written plan but does not provide formal approval. The written plan is one tool to help the landowner/operator and the State Forester to communicate what proposed activities will occur and the specific requirements involved under the applicable FPA rules.

Action Item: The ODF Monitoring Unit will use data from the ODF's E-notification system, also known as the Forest Activity Electronic Reporting and Notification System (FERNs) database. The total number of notified completed E-Notifications and any associated required written plan received will be tallied. Totals will be reported annually by activity type: harvesting near waterways, and/or on steep slopes, road construction and aerial spray notifications for the Upper Yaquina Subbasin. See Appendix A. Implementation Matrix.

2. Pre-Operation Planning & Inspections - OAR Rule Division 605 & 607

The State Forester is notified electronically when landowners/operators submit E-notifications. Once notified the State Forester will review the notification, submitted maps and written plan, and will reach out to the landowner/operator to ask questions and/or discuss any specific concerns. The State Forester will then provide any necessary recommendations to the landowner/operator before the operation begins. If needed, the State Forester will arrange a site visit to better understand the site conditions and to provide additional feedback. The State Forester documents correspondence and site visit outcomes in ODF's E-Notification system.

Action Item: The ODF Monitoring Unit will provide a summary of the total pre-operation inspections implemented for all completed E-notifications received within or by the end of the reporting year. Total pre-operation inspections documented in the E-Notification system will be reported by completed activity type: road work, harvesting near waterways, and/or on steep slopes, by HUC 12. See Appendix A. Implementation Matrix.

3. Harvesting on Western Oregon Steep Slopes - FPA & Certified Steep Slopes Training - OAR Rule Division 630

As stated in OAR 629-630-0000(4) & (5), the purpose of the FPA harvesting rules is to reduce the potential for sediment delivery to waters of the state from ground disturbance and drainage alterations that may be caused by harvesting. More specifically, the purpose of the steep slope rules is to retain trees in designated areas to provide the beneficial elements of naturally occurring landslides while mitigating the potential negative effects of forest management activities on unstable slopes. The new steep slopes rules require the retention of trees in designated areas on hillslopes and along non-fish streams that are most likely to deliver landslide and debris flow-material to fish-bearing streams. The retention of trees helps reduce the number of landslides occurring in timber harvest areas. In addition, when debris flows do occur in these areas, it would include the trees and large debris which help benefit fish and wildlife by providing wood and coarse sediment for their habitat. The State Forester will work

closely with forestland owners/operators who have submitted E-notifications that contain modeled steep slopes features in their proposed harvest units.

The steep slopes model was developed to help operators understand where to retain trees in their unit in accordance with the FPA rules. The model identifies designated debris flow traversal areas (DDFTA's) and designated sediment source areas (DSSA's) on a map. The E-notification system will identify and prompt the notifier of any sediment source areas or traversal areas within or adjacent to the notified timber harvest areas. Designated debris flow traversal areas are the top 50% of non-fish streams capable of delivering debris flows to Type F or SSBT streams. Operators are required to retain trees along DDFTAs within 25 feet slope distance from either side of the active channel or center of the draw. The DSSAs were modeled in sub-basins that contain the top 20% of DDFTA's. These are areas identified by the model that provide the top 33% of landslide derived sediment to Type F or SSBT streams within the sub-basins. Operators are required to retain trees in 50% of the DSSA's within their unit, these are called slope retention areas. The State Forester will be available to assist the landowner with implementing the steep slope rules and a technical guidance document is available on ODF's website. Link: <https://www.oregon.gov/odf/documents/workingforests/fp-technical-guidance-identifying-slope-retention-areas.pdf>.

Under OAR 629-630-0910(5), the person determining the final boundaries for slope retention areas on forestland harvests with designated sediment source areas must have completed ODF Certified Steep Slopes training. This could be the forestland owner or a landowner representative. ODF Steep Slopes certification training is available online for forestland owners and landowner representatives to access at any time. Link: [certified-steep-slopes-training.pdf](#)

Small Forestland Owners (SFOs) who qualify to manage their forestlands under the SFO minimum option for harvesting are exempt from the rules and Technical Guidance for timber harvesting on DSSAs and SRAs (OAR 629-630-0920(6)). For more information on the specific requirements for SFOs who take the SFO minimum option and plan to harvest on features identified in the slopes model, see OAR 629-630-0920 (1-12).

The steep slopes rules and Technical Guidance do not replace division 623 rules or Technical Notes for harvesting on high landslide hazard locations that have downslope public safety risk.

For more information on the steep slopes model, see Chapter 3 and Appendix B of the 2022 Private Forest Accord Report: *Delineating Landslide and Debris Flow Susceptibility in Western Oregon in Support of the Private Forest Accord*, TerrainWorks, May 8, 2022.

Action Item: The ODF Monitoring Unit will report annually the number of training courses held and number of landowners/operators who have received the training during the reporting year. A summary of completed E-notifications with activities occurring on Steep Slopes and total number of written plans submitted for those activities will also be reported annually by HUC 8 watersheds. See Appendix A. Implementation Matrix.

4. Wet Weather Hauling - OAR Rule Division 625

As noted in OAR 629-625-0700 (1-3), the purpose of ODF's wet weather road use rules are to reduce delivery of fine sediment to streams caused by the use of forest roads during wet periods that may adversely affect downstream water quality in Type F, Type SSBT or Type D streams. Operators are to use durable surfacing or other effective measures that resist deep rutting or development of a layer of mud on top of the road surface. More specifically, operators are to use durable surfacing on road segments that may be hydrologically connected to streams that are actively being used for log hauling during wet periods. Operators are to cease active road use when road surfaces become deeply rutted or covered by a layer of mud and where runoff from that road segment is causing a visible increase in the turbidity of Type F, Type SSBT or Type D streams as measured above and below the effects of the road.

The State Forester takes a proactive approach throughout the year when conducting inspections to help ensure landowners/operators have their roads prepared for the wet weather season. ODF has a guidance document available to assist landowners/operators with this issue titled *Forest Practices Technical Note Wet Weather Road Use April 2024*. Link: <https://www.oregon.gov/odf/documents/workingforests/fp-technical-guidance-wet-weather-road-use.pdf>

The State Forester sends out pre-wet weather season communication reminders regarding prepping roads for the rainy season via email, text, or other methods. Reminders include reference to the FPA rule and with a link to the ODF Technical Note. If the State Forester identifies roads where there is evidence of stream sedimentation, they will issue a statement of unsatisfactory condition and will issue a citation if corrective action is not taken within a designated time frame.

Action Item: The ODF Monitoring Unit will reach out to ODF field offices and request dates of wet weather notifications/reminders including information on how those notifications were delivered to landowners/operators. The information collected will be included in the annual report. See Appendix A. Implementation Matrix.

B. Active Operation

According to OAR 629-670-0100, during active operations the State Forester may conduct inspections to provide technical assistance, observe and evaluate forestland conditions, and/or forest operations. Site visits and inspections occur to ensure the proper implementation of the statutes, administrative laws, rules, policies, and programs associated with the prevention of soil erosion and stream sedimentation. The State Forester works with the landowner/operators to ensure the FPA rules are properly followed. When applicable, the State Forester has the

authority to issue written statements of unsatisfactory conditions or citations with an Order to Cease and Order to Repair depending on the degree of damage and other factors.

Action Item: Total number of active operation inspections documented in the E-Notification system will be reported annually by activity type: road work, harvesting near waterways, and/or on steep slopes for completed notifications in the Upper Yaquina. See Appendix A. Implementation Matrix.

C. Post-Operation

Beginning in 2024, in accordance with OAR 629-605-0150(10) any landowner/operator who filed an E-Notification will be required to inform the State Forester of the completion of each activity for which they notified. The State Forester will use these notifications to help identify, in a timely manner, operations ready for post-operation inspections including the activities covered in this implementation plan: road work, harvesting near waterways and harvesting on steep slopes.

Action Item: Using the inspection information reported in the E-notification system, the ODF Monitoring Unit will provide an annual summary of the post-operation inspections for completed notifications in the Upper Yaquina. See Appendix A. Implementation Matrix.

Strategy 2: Western Oregon Stream Riparian Management Areas

Under OAR 629-635-0100 5(a, b), the goal of ODF's water protection rules is to provide resource protection during operations adjacent to and within streams, lakes, wetlands, and riparian management areas so that, while continuing to grow and harvest trees, the protection goals for fish, amphibians, other wildlife, and water quality are met. As prescribed in ORS 527.765, ODF is to ensure that through the implementation of the FPA rules, to the maximum extent practicable, non-point source discharges of pollutants resulting from forest operations do not impair the achievement and maintenance of the water quality standards. Retaining and establishing vegetation along waterways is one of the main forest practices ODF enforces to maintain, enhance and/or restore water quality.

ODF's Western Oregon standard practice prescriptions for Riparian Management Areas (RMA) mostly provide for no-touch tree retention areas that range from 75 to 110 feet on streams with fish use and the larger non-fish use (type N) streams. Table 5. Western Oregon Stream RMA Matrix breaks out the FPA riparian management area rules associated with each stream size (large, medium, small) and stream type (Type F -has fish); (Type SSBT - Small or medium Type F stream with salmon, steelhead, or bull trout (SSBT) use); (Type D - used for domestic water, no fish use); (Type N -neither fish nor domestic use).

As shown in Table 5., small streams include tree retention for portions of perennial small type N streams that flow into fish use streams. Depending on the identification of the end of perennial flow, a combination of tree retention and an Equipment Limitation Zone (ELZ) upstream will apply to the entire stream. On small type N streams in which no vegetation retention

requirements are in place, the ELZ protections apply to a 35-foot area beginning at the edge of the stream and extending out.

Action Item: The ODF Monitoring Unit will report annually on the number of E-notifications with harvest activity near waterbodies with RMA's per HUC 10 or 12 (For "completed" notifications only). See Appendix A. Implementation Matrix.

Table 5. Western Oregon Stream RMA Matrix



Western Oregon Stream RMA Matrix

Stream Type	Existing RMA Width	Standard Practice Width	SFO Minimum Option Width	SFO FCC Option Credit Width
Large Type SSBT	100'	110'	100'	Area between 100' & 110'
Medium Type SSBT	80'	110'	80'	Area between 80' & 110'
Small Type SSBT	60'	100'	60'	Area between 60' & 100'
Large Type F	100'	110'	100'	Area between 100' & 110'
Medium Type F	70'	110'	70'	Area between 70' & 110'
Small Type F	50'	100'	50'	Area between 50' & 100'
Large Type N	70'	75'	70'	Area between 70' & 75'
Medium Type N	50'	75'	50'	Area between 50' & 75'
Small Type Np flows into to Type SSBT	N/A	Upstream retention distance is the shorter of the RH Max or the uppermost Flow Feature (per protocol). RMA width = 75' on first 500' of stream length, then 50' on the next 650'. Total RH Max from confluence with SSBT is 1,150'	Upstream retention is the shorter of the RH Max or uppermost flow feature. RMA width = 35' and the total RH Max is 1,150 feet from confluence with the Type SSBT stream.	Width: Area between 35' & the outside edge of the Standard Practice (50' or 75') Length: Same as Standard Practice
Small Type Np flows into Type F	N/A	The tree retention areas and 35-foot R-ELZ and ELZ apply to each side of the stream as follows: 1. Equipment Limitation Zones with Retention (R-ELZ) are to extend from end of RH Max, upstream to the identified most upstream flow feature. The tree retention area is squared off at the end of the tree retention area (RH Max) in this case. 2. If the furthest upstream flow feature is determined to be within the RH Max for the stream, the ELZ shall extend upstream to the end of the stream channel. Tree retention area should extend as a radius around the flow feature. The R-ELZ does not apply in this case.	Upstream retention is the shorter of the RH Max or uppermost flow feature. RMA width = 35' and the total RH Max is 600 feet from the confluence with the Type F stream. The tree retention areas and 35-foot R-ELZ and ELZ apply to each side of the stream as follows: 1. Equipment Limitation Zones with Retention (R-ELZ) are to extend from end of RH Max, upstream to the identified most upstream flow feature. The tree retention area is squared off at the end of the tree retention area (RH Max) in this case. 2. If the furthest upstream flow feature is determined to be within the RH Max for the stream, the ELZ shall extend upstream to the end of the stream channel. Tree retention area should extend as a radius around the flow feature. The R-ELZ does not apply in this case.	Width: Area between 35' & the outside edge of the Standard Practice (75') Length: Same as Standard Option
Small Type Ns	N/A	35' ELZ	35' ELZ	None

Note: Fish use stream buffers go into effect July 1st, 2023 for large landowners that submit notifications on or after July 1, 2023, otherwise new rules apply to all landowners January 1, 2024.

RH Max - The maximum tree retention distance described for any particular small Type Np Stream that flows into a Type F/SSBT stream.

ELZ - Equipment limitation zone. Minimize soil disturbance. Take corrective action to restore lost function if soil disturbance is >10% ground-based equipment, >20% cable yarding.

R-ELZ - Equipment limitation zone. Retain trees <6" DBH and shrubs where possible. Minimize soil disturbance. Take corrective actions to restore lost function if soil disturbance is >10% ground-based equipment, >20% cable yarding in which disturbance from equipment shall be minimized & all trees less than 6" DBH and shrubs are retained where possible.

SFO - Small Forestland Owner, less than 5,000 acres of forest & harvests less than 2 million board feet a year on average for last 3 years and next 10 years

SFO Minimum Option - Available to SFOs

SFO FCC Option - Forest Conservation tax credit available to SFO's who choose to follow wider buffer widths for and claim a tax credit for the value left in conservation area.

LO - Large forestland owner with 5,000 acres or more of Oregon forestland.

Widths are measured as slope distance from the edge of the active channel or channel migration zone if present.

Strategy 3: Forest Roads & Assessments

The OAR rule division 625 lays out in detail the purpose and goals of the road construction and maintenance rules. OAR 629-625-0000 (4)(a-g) states all forestland owners/operators are to design, construct, improve, maintain, and vacate roads to achieve the following:

- 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 channel, and riparian vegetation
- To the maximum extent practicable, hydrologically disconnect forest roads and landings from waters of the state
- Avoid, minimize, and mitigate loss of wetland function

Proper construction, routine inspections, maintenance, and vacating of forest roads are all critical steps in protecting water quality and fish habitat (Stevens, S., et al. 2022, Chapter 4.1.7). The new FPA rules will establish two new forest road condition assessment and road improvement reporting processes. The first program under OAR 629-625-0920 requires Small Forestland Owners (SFOs), landowners who own less than 5,000 acres of forestland and harvested no more than an average yearly volume of 2 million board feet during the three years prior and expect to harvest no more than that average yearly volume for ten years in the future, to submit a Road Condition Assessment (RCA) when they notify of an operation involving the harvest and hauling of timber on forest roads. The second program under OAR 629-625-0900 establishes the Forest Road Inventory and Assessment (FRIA) process which applies to all other forestland owners who do not qualify as an SFO. The following provides additional information on the RCA and FRIA reporting requirements.

A. Road Condition Assessment (RCA)

Small Forestland Owners (SFOs) will be required to submit a Road Condition Assessment (RCA) when notifying for any timber harvest. The purpose of the RCA is to ensure that roads used for forest practices activities and owned by SFOs comply with the standards of the Forest Practices Act. The objectives of the assessment are to describe road conditions that contribute to active or potential delivery of sediment to waters of the state; document water crossing locations and determine their status of compliance; and identify potential fish passage barriers, abandoned roads, and roads with perched fill that present a significant hazard to fish-bearing streams. The RCA must be completed for existing roads on the parcel where the harvest activity or a Small Forestland Investment in Stream Habitat Program (SFISH) funded project will occur, but the assessment of all roads on owned forestlands is encouraged.

B. Forest Road Inventory and Assessments (FRIA)

The Forest Road Inventory and Assessment (FRIA) is a 20-year ODF program that requires forestland owners, who do not qualify as an SFO, to improve all roads and crossings that do not meet FPA standards (OAR 629-625-0900 (9-11); (Stevens, S., et al. 2022. Chapter 4.3.4). The process is divided into two parts, pre-inventory and initial inventory. Forestland owners need to review their identified road issues and prioritize removing fish passage barriers and the hydrologic disconnection of their roads system from the local stream network.

The pre-inventory phase includes the first five years (2024 through 2029). During this time forestland owners/managers must identify High Conservation Value (HCV) locations in need of repair/improvement. HCVs may include areas of known chronic sedimentation, stream diversions at stream crossings, potential stream diversion areas, and areas of known hydrologic connectivity. HCV projects are to be addressed years 2 through 5 (2026 to 2029).

Forestland owners must submit a complete comprehensive road network inventory by 2029. Landowners must inventory each road segment and classify the segment type as: active, inactive, vacated, or abandoned (OAR 629-600-0100). Landowners are required to conduct routine maintenance and inspections on both active and inactive roads. Landowners may choose to vacate roads during the FRIA process. Vacated roads are roads that have been made impassable and are no longer to be used for forest management purposes or commercial forest harvesting activities. In some scenarios it may be more economically and environmentally beneficial to vacate the road segment and/or crossing than to repair. Vacating a road requires filing an E-notification with the State Forester and the roads must be left in a condition where road-related damage to waters of the state is unlikely (OAR 629-625-0650). The required documents forestland owners will need to submit as part of the FRIA initial inventory are: 1) Paper or electronic maps showing the roads within each road management block; 2) 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 3) A FRIA initial inventory plan describing how the landowner intends to bring the road network into compliance no later than January 1, 2044. The FRIA plan is to include the following:

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

Action Item: The ODF Monitoring Unit will provide an annual summary of the RCA and FRIA landowner reported information for the Upper Yaquina. See Appendix A. Implementation Matrix.

C. Water Crossings

Under OAR 629-625-0320(6)(a -f), landowners/operators are to design and construct all permanent water crossings, in all stream types, using the following parameters:

- Design and install culverts so they will not cause scouring of the stream bed and erosion of the banks in the vicinity of the project.
- Design the culvert to avoid stream diversion potential.
- The culvert and its associated embankments and fills must have sufficient erosion protection to withstand the 100-year peak flow. Erosion protection may include armored overflows or the use of clean coarse fill material.
- Place wood removed from the upstream end of culverts at the downstream end of culverts in such a way as to minimize obstruction of aquatic organism passage to the extent practical, while avoiding significant disturbance of sediment in connection with maintenance activities.
- Limit disturbance of the bed and banks to what is necessary to place the culvert, and any required channel modification associated with it.
- Revegetate, or stabilize with other erosion control techniques, affected bed and bank areas outside the culvert and associated fill with native woody species. Maintain native woody species for one growing season.
- Install permanent water crossing culverts no less than 18 inches in diameter.

Action Item: ODF staff will use completed notifications reported in the E-Notification system, FRIA and RCA reports, to help track the number of crossings upgraded annually. See Appendix A. Implementation Matrix.

Strategy 4: Statewide Abandoned Road Inventory Program

Under OAR 629-625-0910, ODF, in consultation with EPA and ODEQ, is tasked with creating an inventory of abandoned forest roads throughout Oregon. Abandoned roads are defined as roads constructed prior to 1972 and do not meet the criteria of active, inactive, or vacated roads (definitions for each are located under OAR 629-600-0100(3, 39, 91), effective January 1, 2024). The purpose of the inventory is to identify the locations of abandoned roads and bring them into compliance when the road has potential to produce chronic sediment and increase the risks of mass wasting and stream diversions (Stevens, S., et al., 2022. Chapter 4.3.4).

At the time of the development of this TMDL Implementation plan, ODF is working on developing a statewide mapping process to locate potential high-risk locations and inventory potential abandoned roads throughout Oregon. Criteria used to identify risk levels include the following:

- Ongoing stream diversion at stream crossings
- Diversion potential at stream crossings
- Likelihood of hydrologic connectivity
- Comparative risk of chronic sediment produced

- Risk of contributing to mass wasting
- Other criteria as determined by ODF in consultation with other state and federal agencies

After abandoned roads are identified ODF, with assistance from landowners, will designate high priority roads from the inventory of roads with a high level of risk to waters of the state or infrastructure.

Criteria for designating a high-risk segment as high priority includes:

- Importance of the HUC-6 watershed to recovering salmonids;
- Number of stream crossings based on full-densified stream network;
- Cost of improvements in comparison to benefits; and
- Other criteria as determined by ODF in consultation with other state and federal agencies

Abandoned road locations identified in the FRIA and RCA process will help develop and field-verify the statewide abandoned road inventory. Forestland owners required to complete the FRIA process will submit a comprehensive road network inventory by 2029. Landowners must inventory each road segment and classify the segment type as: active, inactive, vacated, or abandoned. ODF will make available a preliminary abandoned road inventory in 2026. A more comprehensive inventory will take shape once ODF receives road status information from landowners required by 2029.

Action Item: The ODF Monitoring Unit will report on the status of the Abandoned Road Inventory process and report the number of confirmed abandoned roads identified to exist in the Upper Yaquina annually. See Appendix A. Implementation Matrix.

Strategy 5. Forest Management Chemical Applications

The application of herbicides or other chemicals for the purposes of forest management are regulated by the chemical and other petroleum product rules in OAR 629-620-0000 through 629-620-0800. These rules require operators to follow the pesticide label instructions promulgated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA,) which may include additional setbacks from water as well as the vegetation retention requirements established in the Water Protection Rules found in OAR 629 Divisions 635,643, 645, 650, 655 and 660. OAR 629-620-0400 (1-8) also prohibits other aerial applications (non-helicopter) within 60 feet of fish-use or drinking water streams and all other open water greater than ¼ acre, ground-based applications within 10 feet of fish-use or drinking water streams and open water greater than ¼ acre, and require the prevention, control and reporting of leaks and spills.

Additionally, Senate Bill 1602 (2020 First Special Session) established Oregon Revised Statute (ORS) 527.786 through 527.798 creating new laws on helicopter applications of pesticides on forestlands. These regulations include the following minimum no-spray buffers when applying pesticides from a helicopter:

- 75ft no-spray buffers adjacent to fish and domestic use streams;
- 50ft no-spray buffers adjacent to non-fish/non-domestic streams with flowing water;
- 300ft no-spray buffers around public and private water intakes, dwellings, and schools.

Vegetation retention requirements established in the water protection rules (OAR 629-643-0000 through 629-643-0500) are often wider than the minimum no-spray buffers, therefore buffer widths will be exceeded in these instances.

Regulations for aerial pesticide applications from helicopters have substantive notification requirements OAR 629-605-0140 through 629-605-0500. Prior to application, the operator, timber owner, or landowner must notify ODF of the proposed spray operation and identify the 90-day period in which the application will occur, identify the precise area slated for application, and list the active ingredients for herbicides to be applied. The responsible party must submit notification at least 15-days prior to the 90-day spray period and community public water systems must be notified at least 15 days before spraying operations commence. In addition, responsible parties must submit day-before-application notifications (by 7pm) for neighbors and water users within 1 mile of the proposed application through an electronic notification system. These notifications will be sent to the neighbors and water users within 1-mile who have registered in the electronic notification system. Responsible parties must afterwards confirm whether the application occurred as noticed, keep spray records (e.g., what was sprayed and in what amounts), and when requested by an entity specified in ORS 527.795, submit those records to the Pesticide Analytical & Response Center (PARC). Failure to submit records upon request by the state’s PARC will result in a penalty of \$1,000 per request.

Action Item: ODF staff will use the E-Notification system to document the number of completed aerial and ground applications that occur annually in the Upper Yaquina Subbasin. See section ODEQ WQMP ODF Specified Strategies section below for details on ODF’s approach to estimating the Total Phosphorus from herbicides applied to the watershed landscape annually using the information obtained from ODF’s E-Notification system. See Appendix A. Implementation Matrix.

Strategy 6: Incentive Programs

In addition to assuring compliance with the FPA rules, ODF also employs landowner voluntary measures and incentive programs to support water quality protection as part of the Oregon Plan for Salmon and Watersheds. Technical assistance programs and financial incentives help private forestland owners manage their natural resources more effectively. The following highlights several of the new landowner programs and existing incentive programs available to private forestland owners in Oregon:

A. Small Forestland Owner Assistance Office

The Private Forest Accord recognizes that small forestland owners (SFOs) are inherently different from industrial landowners in their capabilities, property locations, and size. SFOs

value and manage their properties for a variety of benefits, including but not limited to timber production. Senate Bill 1501 directed ODF to establish a Small Forestland Owner Assistance Office (SFO Office) to aid small forestland owners in understanding and following forest practices regulations. The SFO Office provides technical assistance, supporting services, and administration of two new incentive programs, the Small Forestland Investment in Stream Habitat (SFISH) Program and the Forest Conservation Tax Credit (FCTC).

Small Forestland Investment in Stream Habitat Program (SFISH): Under OAR 629-607-0300 the SFISH grant program is being established to help SFOs implement projects that improve fish habitat and mitigate risks to natural resources arising from forest roads. The program provides up to 100 percent of the cost for eligible projects. The program will be administered by the Oregon Department of Forestry (ODF), in consultation with the Oregon Department of Fish and Wildlife (ODFW).

SFISH projects must benefit the habitat of aquatic species covered under the Private Forest Accord aquatic HCP, currently under development.

The following is a list of project types eligible for SFISH funding:

- Replacement of culverts or fords that are no longer functioning or do not meet the Oregon Forest Practices Administrative Rules design standards.
- Abandoned road repairs that prevent sediment delivery to waters of the state or improve fish passage.
- Remediation of roads with a perched fill that present a significant hazard to fish bearing streams.

The funding available for the SFISH grant program is dependent on biennial legislative funding allocations.

Forest Conservation Tax Credit (FCTC): Under OAR 629-607-0400 through 629-627-0800 the Forest Conservation Tax Credit program was established to provide financial benefit to SFOs who support conservation and habitat protection by retaining a larger unharvested area along streams for protection of wildlife habitat and aquatic species. SFOs who agree to limit timber harvests in their conservation area for 50 years by following the standard practice for harvests rather than the SFO minimum option can receive a tax credit based on the value of the unharvested timber inside the conservation area and related costs. For more information on the FCTC program: <https://www.oregon.gov/odf/pages/fctc-program.aspx>

Action Item: The ODF Monitoring Unit will provide an annual summary on the completed incentive projects/activities that occur in the Upper Yaquina. See Appendix A. Implementation Matrix.

B. Other Assistance Programs

The State Forester and ODF field foresters work with local watershed councils, soil and water conservation districts, OSU Extension Forestry, Farm Service Agency, and the Natural Resources Conservation Service and other partners to help connect forestland owners with technical assistance and funding opportunities that will help them effectively manage their lands. Additional voluntary programs available to landowners in the Upper Yaquina include the following:

ODFW Private Forest Accord Grant Program: The Private Forest Accord Mitigation Fund and its associated grant program (known as the PFA Grant Program) was established in the 2022 Legislative Session (Senate Bills 1501 and 1502; House Bill 4055). The program's purpose is to fund projects that help aquatic species and habitats covered by the ODF Aquatic Habitat Conservation Plan. The Private Forest Accord Report lists the following as categories of potential mitigation measures considered for funding:

- Restoration of degraded habitat to natural condition/function, or to a condition likely to be resilient to projected changes
- Land preservation
- Enhancement of habitat
- Threat reduction or elimination

The restoration, enhancement, and threat reduction projects that improve and/or protect aquatic habitats will most likely include projects that help enhance streamside vegetation and protect and prevent soil erosion and stream sedimentation. The PFA Grant Program offers grant funding at least once per year through competitive solicitation. For more information on the PFA Grant program visit: [ODFW PFA Grant Program Link](#)

Oregon Watershed Enhancement Board (OWEB)

OWEB offers funding to assist landowners and stakeholders with watershed restoration projects. Grant proposals that restore riparian ecosystem processes, remove fish passage barriers, improve floodplain reconnection, address ODEQ 303(d) water quality issues with the goal of benefit fish and wildlife and their habitat are eligible.

Link: [Oregon Watershed Enhancement Board : Grant Programs : Grant Programs : State of Oregon](#)

USDA Natural Resources Conservation Service Environmental Quality Incentives Program (EQIP)

EQIP provides technical and financial assistance to agricultural producers and forestland owners to address natural resource concerns, such as:

- Conserved ground and surface water
- Increased soil health
- Reduced soil erosion and sedimentation
- Improved or created wildlife habitat

- Mitigation against drought and increasing weather volatility

Link: [Environmental Quality Incentives Program | Natural Resources Conservation Service \(usda.gov\)](#)

USDA Farm Services Emergency Forest Restoration Program (EFRP).

The EFRP program helps landowners of non-industrial private forests restore forest health damaged by natural disasters. Many forestland owners impacted by the 2020 Labor Day wildfires enrolled and were able to benefit from this program. The program provides funding assistance for such activities as debris removal, erosion control seeding, invasive weed treatments and replanting impacted tree stands.

Link: [Emergency Forest Restoration Program \(EFRP\) \(usda.gov\)](#)

Action Item: The ODF Monitoring Unit will provide an annual summary on the completed forest related projects/activities that occur in the Upper Yaquina funded through ODFW, OWEB, NRCS and USDA. This information will help ODF identify prioritized areas not yet addressed. See Appendix A. Implementation Matrix.

Strategy 7: Rule Compliance & Adaptive Management

A. Civil Penalties

Under ORS 527.680 through 527.700 along with ORS 527.990 & 527.992 and OAR 629-670-0000 through 629-670-0350, the FPA rules are enforced through a civil penalty program. This program is focused on preventing and correcting damage to Oregon's forest resources. Civil penalties are used to discourage operators, landowners, and timber owners from committing violations that could result in resource damage.

The State Forester and the stewardship foresters who act on their behalf are responsible for administering FPA rules and monitoring forest operations on non-federal forestlands. If a stewardship forester discovers someone has not followed the forest practice rule and damage has occurred, or there is not enough time to correct a situation before damage occurs, an enforcement action will result. If no damage or if minor and immediately repairable damage has occurred, the operator/landowner could be issued a Written Statement of Unsatisfactory Condition to make immediate repair. If the condition does not meet the criteria for a Written Statement of Unsatisfactory Condition, then the next level of enforcement is a citation. A citation is issued with an Order to Cease Violation and an Order to Repair Damage. This will result in a Civil Penalty being assessed which is based on the landowner/operator's cooperation, prior knowledge of the FPA violation rules, the damage incurred and the reparability of the damage.

With these two actions there are repairs required and a timeline to complete the repairs. The Stewardship Forester will then monitor and check compliance with repairs at the repair due

date. If a landowner/operator fails to comply or does not adequately complete the repair ODF will take further action to gain compliance and correct the damage.

After an ODF stewardship forester issues a citation with orders to cease further violation and repair damage, the violator and ODF may discuss the possibility of doing additional repair work or completing a mitigation project. The possibility of revising operational procedures to prevent future problems may also be discussed. If an agreement is reached, a "consent order" will be prepared. A consent order is a binding document indicating commitment to perform mitigation. A consent order also waives current appeal rights. When the person meets the terms of the order, no additional penalty is assessed. If the violator does not enter a consent order and the deadline for completing repairs has passed, a civil penalty will be assessed.

It is important to note, the pre-operation, active operation, and post-operation inspections occur for notified operations to help prevent FPA violations, educate the operator if a practice is new or unfamiliar, and discuss the protected resources involved in or adjacent to the operation.

B. Compliance Monitoring Program

Under OAR 629-678-0000, the purpose of the Compliance Monitoring Program (CMP) is to monitor forest practices rule implementation and analyze compliance rates. The CMP is intended to provide information that will allow for improvement in compliance with the forest practice rules through training, guidance, clarification, and targeted enforcement and to increase the public's trust in the implementation of the FPA rules.

The Private Forest Accord specifically directed the CMP to prioritize the FPA rules related to biological and aquatic resources. The prioritized FPA rules include Division 625 Forest Road Construction and Maintenance rules, Division 630 Harvesting rules, and Division 643 Water Protection Rules: Vegetation Along Streams rules. The CMP may also monitor other rules as directed by the Board of Forestry.

The ODF Monitoring Unit is currently working with a contract statistician on the development of three pilot compliance monitoring studies. The three pilot studies will cover the following prioritized rule sets: riparian rules, road rules, and steep slope rules. The pilot studies will be used to help inform a more robust long-term study. Once the long-term study design and protocol are developed, rule compliance monitoring will occur annually, alternating between assessing the riparian rules one year and the roads and steep slopes the second year. The ODF Monitoring Unit will track statewide compliance trends and provide reports according to the schedule outlined in OAR 629-678-0200 (1-5).

In the spring of 2023, ODF convened a new Compliance Monitoring Program Committee (CMPC) made up of a broad spectrum of stakeholders familiar with ODF FPA rules, including a representative of ODEQ. The CMPC is an advisory committee that will assist and provide

guidance to ODF staff related to CMP projects and procedures. The ODF Monitoring Unit will provide annual updates on the CMPC activities.

C. Adaptive Management Program

The Private Forest Accord and resulting rules (OAR 629-603-0000 through 629-603-0600) lay out an Adaptive Management Program which will be used to coordinate future changes to Oregon's FPA rules. Using stakeholder input, the program will use a science-driven process to analyze the need for any changes to rules, policies, or training. This program is an important part in creating an approved Habitat Conservation Plan (HCP), which is an end goal of the Private Forest Accord. The program's purpose is to apply the best available science to Oregon Board of Forestry's (Board) decision-making, which includes measuring the effectiveness of the rules to meet the Biological Goals and Objectives (BGOs) that benefit covered fish and amphibian species. The program ensures effective change to meet the BGOs, seeks to limit operational costs when possible, and creates a process to increase the awareness of regulatory changes, so landowners, regulators, and interested members of the public can understand and are aware of the change.

This program is made up of two committees: the Adaptive Management Program Committee (AMPC) and the Independent Research and Science Team (IRST). Both the AMPC and IRST must maintain self-developed guides; may receive participation grants; and will use super-majority votes for substantial decisions. The IRST will apply science to answer the policy questions put forth by the AMPC, and there is a process to report that information back to the board and timelines for Board decisions based on those reports. ODF Adaptive Management Program staff will provide status reports to the Board of Forestry annually, and contract for performance audits every six years.

Action Item: The ODF Monitoring Unit will provide an annual summary of civil penalties and compliance monitoring results related to rules in place to prevent soil erosion and stream sedimentation. In addition, Adaptive Management Program activities applicable to the implementation strategies included in this plan will also be reported. See Appendix A. Implementation Matrix.

Strategy 8. ODF Internal Trainings

With the publication of the Private Forest Accord and the passage of the resulting revised FPA rules by the Board of Forestry in October 2022, the ODF Forest Resources Division established an official training unit under the supervision of an HCP Reporting & Training Manager. The training unit is tasked with providing continuous training to all field Stewardship Foresters and ODF staff on the FPA rules, guidance documents, policies, and procedures.

The training unit has developed a two-year training module that will be used to train field foresters, provide relevant training and resources to assist forestland owners, and to ensure the proper implementation of the FPA rules. Moreover, to support the need to on-board new

foresters throughout the year there will be additional training opportunities available in various formats: virtual, web based, in-person, and hybrid. More information will be provided as this program develops.

In addition to the training, the ODF Forest Resources Division has a Field Support Unit with staff available daily to assist and/or provide guidance to field foresters on the implementation of the FPA rules. The Field Support staff consists of individuals with the following expertise: Water Quality Specialist, Wildlife Biologist, Roads Specialist, Geotechnical Specialist, GIS specialist, and FPA Rule Coordinators.

Action Item: The ODF Monitoring Unit will provide an annual summary of the FPA staff rule and program trainings and the estimated number of participants in attendance per training. See Appendix A. Implementation Matrix.

Strategy 9. Partnerships, Education & Outreach

ODF recognizes and values the many partnerships it shares with other organizations throughout Oregon to help manage and protect the forest resources. ODF has both formal and informal agreements in place with organizations to help leverage resources and capacity to provide training opportunities to a range of audiences on the FPA rule implementation.

In addition to internal training, the Forest Resources Division works collaboratively with regional partners on the implementation of the 2013 Partnership in Forest Education strategy. The mission of this strategy is to *“collaboratively provide educational services to Oregon’s landowners, operations, and resource managers to allow them to sustainably manage Oregon’s forests to meet private and public objectives.”* (OFRI 2013).

Table 5. lists the entities the ODF Forest Resources Division works closely with to offer training and educational opportunities to Oregon’s forestland owners and managers.

Table 6. ODF Partners in Forest Education

Associated Oregon Loggers (AOL)
Oregon Committee for Family Forestlands (CFF)
Oregon Forest Resources Institute (OFRI)
Oregon Small Woodlands Association (OSWA)
Oregon Society of American Foresters (OSAF)
Oregon State University, Forestry & Natural Resources Extension (OSU-FNR)
Oregon Tree Farm System (OTFS)
USDA Forest Service -Pacific Northwest Research Station (PNW)
USDA Forest Service – Region 6 – State & Private Forestry (S&PF)
USDA Natural Resources Conservation Service (NRCS)
Western Forestry & Conservation Association (WFCA)

ODF staff are working collaboratively with partners to develop training opportunities to educate forestland owners, land managers and the public on the new FPA rules and programs. OSU Extension, Forestry & Natural Resources Extension is working with ODF staff on implementing 'train the trainer' opportunities to help build statewide training capacity.

In addition, ODF recently updated its Memorandum of Agreement (MOA) with Associated Oregon Loggers (AOL). AOL is the statewide trade association representing some 1,000 member companies engaged in the harvest and sustainable forest management of Oregon's 30 million acres of forestland. In the MOA, ODF and AOL have agreed to the following:

- *Encourage effective forest resource management, protection, and legal compliance.*
- *Improve forest regulation compliance through continuing education of operators who work in Oregon's non-federal forests and know Oregon's forestry laws.*
- *Support the AOL sponsored professional logger training and education program, which provides a voluntary continuing education program to forest operators.*

Annual rule compliance monitoring studies and results will help identify areas where education efforts are succeeding and areas where landowners require more assistance and better guidance.

Action Item: The ODF Water Quality Monitoring Unit will provide an annual summary of the forest management training and educational opportunities implemented. See Appendix A. Implementation Matrix.

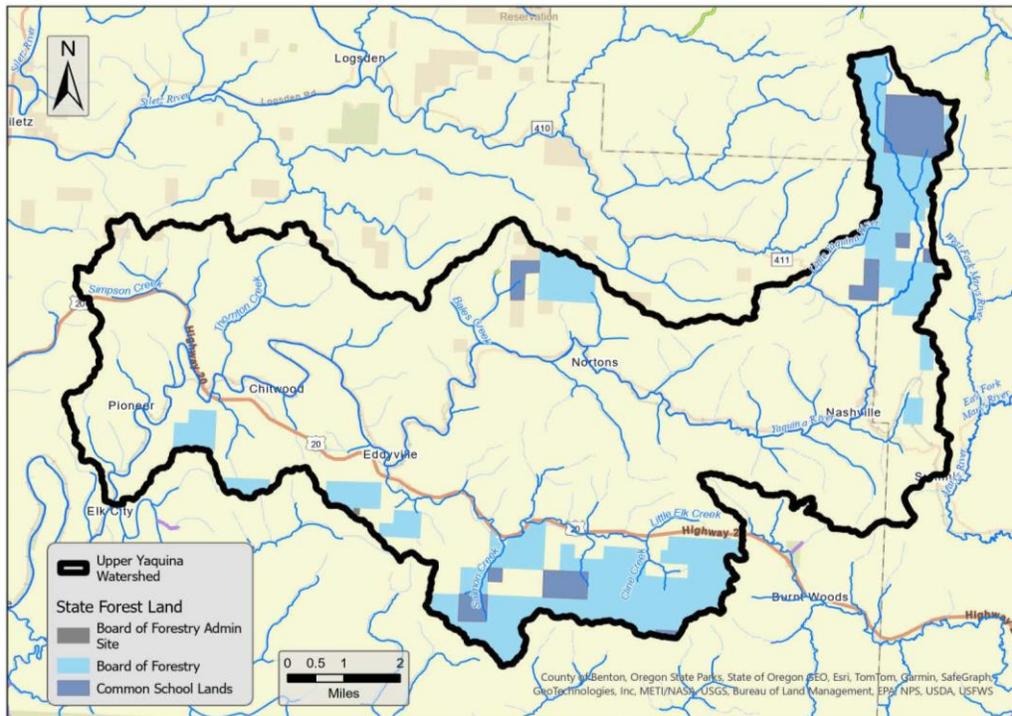
Strategy 10. State Voluntary Measures

ODF's State Forests Division is currently pursuing its own Habitat Conservation Plan. To ensure a smooth transition from the previous Forest Management Plan (FMP) to the new FMP and HCP, beginning in 2023, the State Forests Division will be working under a Stewardship Agreement. The Stewardship Agreement (Agreement), between the ODF's State Forests Division (Landowner) and the Oregon Board of Forestry (BOF) through the State Forester and his or her designees (ODF) is entered into under the authority of Oregon Revised Statute (ORS) 541.973 and administered through the Oregon Administrative Rule (OAR) 629-021-0100 to 629-021-1100.

The strategies and standards articulated in the Stewardship Agreement and associated plan represent the approach the Department of Forestry, State Forests Division will use to self-regulate in a manner that will meet and exceed the regulatory requirements in the Forest Practices Act (FPA) and achieve conservation, restoration and improvement of fish and wildlife habitat or water quality. This approach integrates and summarizes the strategies and standards found in the FMP, State Forests Division Operational Policy, and the draft Habitat Conservation Plan (HCP).

Action Item: The ODF Monitoring Unit will include information on any voluntary forestry management actions that go above and beyond what is required in the FPA rules that occur during the year on state managed lands within the Upper Yaquina, see Map 3. The ODF Monitoring Unit will work with the State Forests staff to determine the specific relevant activities to include in ODF's Upper Yaquina Dissolved Oxygen TMDL implementation plan annual reports. See Appendix A. Implementation Matrix.

Map 3. ODF State Managed Lands in the Upper Yaquina Watershed



Strategy 11. ODEQ WQMP ODF Specified Strategies

In addition to ODF's implementation of the Oregon Forest Practices Act and associated programs, ODEQ identified and assigned several ODF-specific management strategies in the 2023 Upper Yaquina WQMP. ODEQ identified these specific strategies as directly targeting solar radiation and phosphorus pathways affecting dissolved oxygen. The following will highlight the strategies assigned and the approach ODF will take to address a strategy for solar radiation (SR) and phosphorus (P).

A. ODEQ Solar Radiation (SR) Management Strategies

Strategy SR1: Address excess solar radiation due to riparian vegetation canopy cover significantly below restored condition vegetation.

Task 1: Conduct a Shade Gap & Streamside Assessment Pilot Study to identify and prioritize streamside areas needing shade improvement.

ODF will reassess the riparian vegetation canopy cover along the Upper Yaquina mainstem and Little Elk Creek by utilizing a 2022 Digital Aerial Photogrammetry (DAP) derived Canopy Height Model and running the canopy height results through ODEQ's Heat Source Model. The following describes the anticipated modeling process:

Step 1. DAP Derived Canopy Height Model

ODF staff will create a canopy height model derived from 2022 National Agricultural Imagery Program (NAIP) based Digital Aerial Photogrammetry (DAP) point cloud. ODF will normalize a 3 ft resolution digital surface model (DSM) from the DAP point cloud to a digital elevation model (DEM) from the 10-meter resolution National Elevation Dataset (NED). ODF will resample the NED DEM raster using bilinear interpolation to match the resolution and bounding box of the 3ft DAP-derived DSM prior to height normalization. This canopy height model will be used to assess shade gaps.

Step 2. Heat Source Model

Resulting DAP tree height data will be put through ODEQ's Heat Source Model and resulting 2022 outputs compared with the historic canopy height data to determine the most current shade gap values.

Step 3. Determine Agency Authority

To determine ODF's authority ODF staff will further process the canopy height model mentioned in Step 1. to create a tree canopy cover raster. To do this, ODF will calculate the Normalized Difference Vegetation Index (NDVI) from the four-band 2022 NAIP aerial imagery and mask out pixels below a NDVI threshold value considered to be vegetation (typically for forests this would be <0.2). ODF will then mask out pixels below a height threshold value to be considered a tree (likely approximately 4 meters). ODF will mask the canopy height model to the vegetation model to create the final model of tree canopy cover. This method will be repeated with the 2024 DAP and corresponding spectral data. ODF will perform raster subtraction between 2024 and 2022 tree canopy cover rasters to determine where canopy cover has been lost.

ODF will determine where notified harvests have occurred along the three ODEQ modeled reaches and along Little Elk Creek. ODF only has regulatory authority to require reforestation following harvest where the stocking levels are reduced below a certain standard (OAR 629-

610-0020 (1)-(10)). If post forest operation required site improvement or maintenance has not occurred in shade gap deficient areas, ODF will review and address.

It is important to note that given this is a pilot study, ODF anticipates adapting its process as lessons are learned and new information and tools become available. ODF will work closely with ODEQ throughout the implementation of the pilot study to ensure agency alignment.

Step 4. Streamside Assessment

Utilizing the DAP canopy height model and Lidar data, both collected in 2022, ODF will conduct a streamside assessment of the Upper Yaquina and lower reaches of Little Elk Creek. ODF will attempt to stratify the shade gap reaches into the following categories:

- Not suitable for trees: No action
- Not planted/retaining adequate stems per acre post-harvest: Planting needed
- Overcrowded/dense: Thinning recommended
- Recently planted/released: Maintenance needed until free to grow
- On good trajectory: Maintain

Areas identified as not planted or adequately stocked resulting from a silviculture management activity are within ODF's jurisdiction and will be prioritized by ODF staff. ODF will utilize the Oregon Watershed Restoration Inventory (OWRI) database, the ODF E-Notification system database and local partner knowledge to help identify where recent restoration activities have occurred and where harvest replanting activities are needed. Given ODF's jurisdictional access limitations ODF will work with other DMAs and local and regional partners to assist with field verification.

Additionally, ODF State Forest Division recently produced lidar derived forest biometric raster data for a good portion of the Upper Yaquina watershed (HUC10) for which ODF staff may be able to obtain initial estimates of forest biometrics, i.e., Lorey's height or top height.

Task 2: Collaborate with Upper Yaquina DMAs and local and regional partners on the development of grant proposals to fund the assessment, prioritization, outreach and implementation of riparian restoration along the Upper Yaquina River and Little Elk Creek reaches to increase site effective shade

Utilizing the results for its streamside assessment, the ODF Monitoring Unit will work collaboratively with other DMAs and local and regional partners to develop and conduct landowner education/outreach campaigns, assist with writing planting plans, and when opportunities arise assist with writing grant proposals. Collaborative riparian restoration efforts will focus on ODEQ's streamside vegetation management strategies: vegetation planting and establishment; vegetation protection (enhancement, maintenance and growth); and vegetation thinning and management along the Upper Yaquina River and Little Elk Creek reaches to increase site effective shade (combination of vegetation height, buffer width and canopy density).

ODF will prioritize its efforts in ODF management jurisdiction where modeling results show the greatest percent shade gaps. If forestland owners are out of compliance with any of the FPA rules identified in Table 4 above, appropriate action will be taken.

B. ODEQ Phosphorus (P) Management Strategies

Strategy P1: Address silvicultural chemical anthropogenic inputs of nutrients from pesticides and fertilizers to managed forestlands.

Task 1. Forestry Herbicide Use Annual Reporting

The ODF Water Quality and Monitoring Staff will use information from ODF's forest operations E-Notification system to compile herbicide use data to help understand how herbicides are being used in the Upper Yaquina Subbasin. Using the E-notification system ODF staff will be able to gather the following information for each of the four subbasins:

- # of unit herbicide NOAPs submitted each year.
- # of unit herbicide NOAP applications that were completed, # continued, # did not operate.
- # of unit herbicide NOAP's listing an herbicide containing phosphorus (glyphosate, triclopyr with amine, triclopyr with ester).
- Summary of # application methods employed: helicopter, aerial/ drone, ground-pressurized, broadcast, ground, manual spot application.
- Summary of phosphorus containing herbicide application rates by herbicide when the landowner/operator discloses such information in the NOAP completion reporting.
- Summary of herbicide application timing when information is provided.

ODF will use the above quantitative and qualitative information to help capture how herbicides are utilized each year in the Upper Yaquina watershed.

Disclosures: ODF Herbicide TMDL Implementation Plan Reporting Limitations

Herbicide Use: It is important to note that forestland owners/operators may list a wide range of herbicides that may be employed to provide operational flexibility based on what vegetation issues are observed at each site. For routine operations, unless the landowner/operator specifically reports the exact chemical used at a given unit and at what rate at the time of their completion reporting ODF staff do not have the required information to calculate the estimated amount of phosphorus applied on a given unit.

Treatment Area: In addition, it is often difficult to determine the total treatment area. The landowner/operator may list the total unit area on their notification when in practice the treatment area may be significantly less. For instance, a recently harvested unit may require a broadcast spray over the entire unit area to suppress competing vegetation before replanting. Alternately, if a site has any established tree species that would compete or shade the young

seedlings, a direct spot spray may be sufficient. This makes determining the total treated area and estimated amount of chemical used difficult to calculate when the operator is not required by rule to report the information for all application scenarios. When the information is provided ODF will include the information in its annual report.

Spray Records: Information on chemical applications shall be collected and recorded by operators at the time of application, and made available upon request to the State Forester, pursuant to OAR 629-620-0600. These records shall be maintained by the operator for three years from the date of application and be made available at the request of the State Forester

ODF policy states staff will request daily application records only when they are needed for an ODF investigation related to compliance with the forest practice rules or for investigations being conducted by the ODA, PARC, or other cooperating agencies. ODF is not obligated to request the records simply because a FERNs subscriber or other party wants information related to a chemical application. However, if ODF already has possession of the records for an investigation, the documents are considered public records and are available to any person making a public records request, as described in ODF's public records directive.

Task 2. Forestry Fertilizer Use Annual Reporting

Fertilizer use in forestry operations is not common due to the cost. The fertilizer most used in forestry, in the coast range, is Urea, a nitrogen-based chemical. The use of fertilizer containing phosphorus is very rare. The ODF staff will use information obtained from completed fertilizer applications E-Notifications identifying phosphorus containing fertilizers to come up with an annual estimate of gross acres treated. Given the fertilizer chemical and application rate information is not required at time of notification, only a rough estimate based on the information available will be included in the annual reporting. ODF will use this information to determine what phosphorus containing fertilizers are being used and at what estimated rates. ODF will compare those to known recommended rates for the area. In addition to the estimate, ODF will also review notifications to determine the time of year phosphorus containing fertilizer is applied to the watershed (i.e. fall, winter, spring, summer).

Task 3. Coordinate with ODEQ and partners on monitoring strategy to quantify total phosphorus and TSS load reaching Yaquina River and major tributaries.

ODF will participate in the development of a multi-state agency coordinated monitoring strategy for the Upper Yaquina Watershed utilizing the information collected from the strategies outlined in this implementation plan. The ODF Monitoring Unit staff will also collaborate with ODEQ and ODA on their existing Strategic Implementation Area water quality monitoring.

Strategy P2: Implement ODF road and harvesting rules that address preventing, minimizing or reducing soil erosion and stream sedimentation (OAR 629-607-0300, OAR 629-625-0000)

through 629-625-0925) and new riparian buffers rules (OAR 629-643-0000 through 629-643-0500).

Strategies 1 through 7, above, describe the ODF rules and programs in place to protect the waters of the state and specifically rules in place to prevent and reduce soil erosion and stream sedimentation.

Strategy P3: Nutrient Management Education & Outreach Collaboration

Task 1. The ODF staff will work with other Upper Yaquina DMAs, local and regional partners including Lincoln SWCD, Mid-Coast Watershed Alliance, Lincoln NRSC, and ODEQ staff to develop coordinated education and outreach efforts. ODF Monitoring Unit staff will leverage the ODF programs and processes described in Strategy 6 and Strategy 8, above. The streamside assessments and resulting prioritization efforts will help ODF develop targeted outreach messaging via ODF's social media, website, news releases, and direct mailings. In addition, ODF will work with partners to highlight progress using success stories to inspire additional landowners to engage in the water quality restoration efforts. The Water Quality and Monitoring Unit will report annually on the collaborative efforts ODF participates in related to nutrient management.

Section 5. Matrix - Relevant Goals and Targets

The required ODF Upper Yaquina Dissolved Oxygen TMDL Implementation Matrix for 2026-2030 is in Appendix A. For each strategy identified in Sections 4 above, the matrix states the following relevant goals and targets: potential pollutant source, specific actions identified for the strategy, how ODF will report the results and outcomes for those actions, timeline, milestone measurements, adaptive management approach and funding sources to implement the strategy.

Section 6. Monitoring, Performance & Timeline

The ODF Monitoring Unit will track plan implementation activities by summarizing the total counts, types and locations of activities, inspections, best management practices, civil penalties, training and education activities, streamside assessments, restoration activities, herbicide and fertilizer use reviews, and other actions taken to improve stream shade and prevent soil erosion and stream sedimentation. We will report information for the Upper Yaquina Subbasin to directly address ODEQ's Dissolved Oxygen and Phosphorus loading reduction targets. Site specific landowner information will not be reported to protect landowner privacy.

ODF staff will use multiple database systems to track information throughout the year. With the recent substantial changes in the FPA rules, some internal tracking systems are currently in the process of being updated and new tracking systems are developed. The databases used to track the metrics identified in each strategy include the following: ODF E-notification system (FERNS), Vantage (FERNS GIS Mapping Tool), SFO tracking database (under development), FRIA GIS tracking database, RCA tracking database (under development), SFISH grant project tracking system, compliance monitoring database, civil penalties database (database system upgrade in

process), DAS training system and an internal and external event/training tracker (developed). Each of the ODF forest district offices, annually, provide the public with reports on the state’s voluntary measures. Information on activities related to the strategies outlined in this implementation plan included in these district reports or from any future ODF private or state district level reporting process will be incorporated into ODF’s annual TMDL implementation plan reporting. See Appendix A, TMDL Implementation Matrix.

As a listed DMA for the Upper Yaquina Dissolved Oxygen TMDL, ODF will provide ODEQ annual reporting according to the schedule in Table 6. This implementation plan and resulting annual status reports will be made available on ODF’s website.

Table 7. ODF Implementation Plan Reporting Matrix Schedule

Year	Plan Reporting Period	# Months Covered in Report	Report Due Date
Year 1	January 2025 – 12 Months (Jan 25-Dec 25)	12	5-15-26
Year 2	January 2026 December 202_ (Jan 26-Dec 26)	12	5-15-27
Year 3	January 2027 - December 202_ (Jan 27-Dec 27)	12	5-15-28
Year 4	January 2028 - December 202_ (Jan 28-Dec 28)	12	5-15-29
Year 5	Assess progress over last 4 years (2025-2028)	Last 48 months	5-15-30
Complete ODEQ Survey & Submit New Five-Year Plan			

Section 7. Adaptive Management

The ODF Monitoring Unit will conduct an implementation plan adaptive management review each year during the data gathering and reporting process. The annual review will be used to determine if ODF’s TMDL implementation plan strategies are being carried out in accordance with the plan and will be used to identify whether any adjustments need to be made. The review process will look at the information collected across the four subbasins, look for patterns or relationships (if any) by strategy and by subbasin. This information will help us identify where ODF staff need to focus the education, outreach, training, and enforcement efforts. If the annual evaluation indicates the plan or parts of the plan are not adequate, with reasons for inadequacy taken into consideration, ODF will work with ODEQ to modify the plan and timeline to better meet the Upper Yaquina Dissolved Oxygen TMDL reduction goals. Results of the reviews will be included in the annual reports submitted to ODEQ. The ODF Implementation Plan annual reports will be posted on ODF’s website.

After 4 years, the ODF Monitoring Unit will again conduct a review of the data and information collected for each strategy over that time-period and assess the effectiveness of the Dissolved Oxygen TMDL implementation plan relative to effective shade and phosphorus reduction targets. The strategies will be reviewed and refined to reflect progress made over the previous four years and the plan will be updated accordingly.

Section 8. Fiscal Analysis

Most of the objectives and actions outlined in this TMDL implementation plan fall within the scope of work of the ODF's Forest Resources Division. Funding for the implementation for the administration and monitoring of the Forest Practices Act is a mixture of both state General Fund dollars and revenues from the Forest Products Harvest tax received as Other Funds. As a state agency, ODF's budget is determined by the legislature biennially therefore funding availability may vary by biennium.

Section 9. Legal Authority

The Oregon Forest Practices Act, ORS 527.610 to 527.770, 527.990, and 527.992, sets the standards for all commercial activities involving the establishment, management, or harvesting of trees in Oregon's nonfederal forestlands. Under ORS 527.630(3) the Board of Forestry has the exclusive authority to develop forest practice rules pursuant to their duties and powers in ORS 527.710.

ORS 527.765 further requires the Board to establish best management practices "as necessary to insure that to the maximum extent practicable nonpoint source discharges of pollutants resulting from forest operations on forestlands do not impair the achievement and maintenance of water quality standards established by the Environmental Quality Commission" through the forest practice rules. The forest practice rules are found in Oregon Administrative Rule Chapter 629 Divisions 600 to 680 and per ORS 527.710 (1), these rules are administered by the State Forester and duly authorized representatives of the State Forester.

Section 10. References

Oregon Forest Resources Institute (OFRI). 2013. *Oregon Partnership for Forestry Education Strategic Plan*.

https://knowyourforest.org/sites/default/files/documents/OPFE_Strategic_Plan_01_13.pdf

Oregon Department of Environmental Quality (ODEQ). 2023. *Upper Yaquina Watershed TMDL's – Mid Coast Basin Bacteria and Dissolved Oxygen [UY], Technical Support Document [TSD] September*. <https://www.oregon.gov/deq/wq/Documents/UpperYaquinaBacDOW-appendices.pdf>

Oregon Department of Environmental Quality (ODEQ). 2023. *Upper Yaquina Watershed TMDLs -Mid Coast Basin Bacteria & Dissolved Oxygen [UY], Water Quality Management Plan [WQMP]*.

September. <https://www.oregon.gov/deq/wq/Documents/UpperYaquinaWQMP.pdf>

Stevens, S., et al. 2022. *Private Forest Accord Report*. February.

<https://www.oregon.gov/odf/aboutodf/documents/2022-odf-private-forest-accord-report.pdf>

Section 11. Glossary

Acronyms

AMPC - Adaptive Management Program Committee

AOL - Association of Oregon Loggers

BGO's - Biological Goals and Objectives

CFF - Oregon Committee for Family Forestlands

CMP - Compliance Monitoring Program

CMPC - Compliance Monitoring Program Committee

DAP - Digital Aerial Photogrammetry

DMA - Designated Management Agency

DDFTA's - Designated Debris Flow Traversal Areas

DSSA's - Designated Sediment source areas

EFRP - Emergency Forest Restoration Program

ELZ - Equipment Limitation Zone

EPA - Environmental Protection Agency

EQC - Environmental Quality Commission

EQIP - Environmental Quality Incentives Program

ESA - Endangered Species Act

FCTC - Forest Conservation Tax Credit

FERNS - Forest Activity Electronic Notification System

FPA - Forest Practices Act

FRIA - Forest Road Inventory and Assessment

GF - General Funds

HCP - Habitat Conservation Plan

HCV - High Conservation Value

HUC - Hydrological Unit Code

IRST - Independent Research and Science Team

ITP - Incidental Take Permit

MOA - Memorandum of Agreement

NRCS - United States Department of Agriculture Natural Resources Conservation Services

ODEQ - Oregon Department of Environmental Quality

ODF - Oregon Department of Forestry

ODFW - Oregon Department of Fish and Wildlife

OF - Harvest Tax

OFRI - Oregon Forest Resources Institute

OHA - Oregon Health Authority

OSAF - Oregon Society of American Foresters

OSU-FNR - Oregon State University, Forestry & Natural Resources Extension

OSWA - Oregon Small Woodlands Association
OTFS - Oregon Tree Farm System
OWEB - Oregon Watershed Enhancement Board
PFA - Private Forest Accord
PNW - Pacific Northwest Research Station
RCA - Road Condition Assessment
RMA - Riparian Management Area
S&PF - State & Private Forestry
SFISH - Small Forestland Investment in Stream Habitat
SFO - Small Forestland Owners
TMDL - Total Maximum Daily Load
TSS - Total Suspended Solids
USDA - United States Department of Agriculture
WFCA - Western Forest & Conservation Association
WQMP- Water Quality Management Plan

Definitions

The definitions of the Forest Practices Act rule terminology used in this implementation plan are located under OAR 629-600-0100(1-165), effective January 1, 2024.

Appendix

Appendix A. ODF Upper Yaquina Dissolved Oxygen TMDL Implementation Plan Matrix

APPENDIX A

**ODF UPPER YAQUINA DISSOLVED OXYGEN TMDL IMPLEMENTATION MATRIX
2025-2029**

STRATEGY 1. FOREST PRACTICE ACT RULE IMPLEMENTATION							
MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
<i>What is being done, or what will you do, to reduce and/or control pollution from this source?</i>	<i>What sources of this pollutant are under your jurisdiction?</i>	<i>Specifically, how will this be done?</i>	<i>How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?</i>	<i>When do you expect it to be completed?</i>	<i>What intermediate goals do you expect to achieve, and by when, to know progress is being made?</i>	<i>Indicate how strategies have changed with annual review reports</i>	<i>Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)</i>
Pre-Operation Activities: Harvesting near Waterways, Forest Chemical Applications, Road Construction & Harvesting on Steep Slopes							
ODF requires submission of E-Notifications and under certain conditions written plans. ODF reviews these submissions to ensure applicable rules are followed.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	Contact initiated between ODF and LO/OP	1) # E-notifications received with activities marked complete, involving Harvesting near Waterways, Forest Chem app, Road Const & Harvesting on Steep slope's 2) Estimated # written plans received for the above activities reported by HUC 10 or 12.	Annually (Beginning with 2025 data)	Communication between LO and State Forester Promotes/Ensures FPA/BMP implementation.	Process is regularly assessed by ODF's field support unit for improvement.	General Fund /Harvest Tax
Required E-Notifications help guide pre-operation planning and initiate ODF pre-operation site visits.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	State Forester will review E-notification and Written Plans; Will reach out to LO for additional information if needed; Pre operation site visit scheduled if needed.	1) Estimated # of pre-operation consultations/inspections per HUC 10 or 12 (Only for completed E- notifications).	Annually	Communication between LO and Stewardship Forester promotes/ensures FPA/BMP implementation.	Process is regularly assessed by ODF's field support unit for improvement.	General Fund/Harvest Tax
Landowners/operators are required to follow ODF steep slopes rules when harvesting on Western Oregon Steep Slopes and are required to take a Certified Steep Slopes training.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	Landowners/operators w/modeled steep slopes within their operational boundary require steep slopes training.	1) # of SF's, LO/Operators' who have had steep slopes training (accumulative count - Course only needs to be taken once). 2) # of completed E-notifications with modeled steep slope activities by HUC 10 or 12	Cumulative count for training. (Beginning with 2023 data for training). Annual for E-notification count	Operation occurs using steep slope tree retention BMPs: Reduction/prevention of stream sedimentation	FPA rule implementation process is assessed regularly for improvement. Steep slope trainings are assessed after each training to improve delivery	General Fund/Harvest Tax
ODF Foresters communicate Wet Weather Hauling (WWH) BMPs to landowner/operators.	Reduction in erosion/sedimentation resulting from forest operations.	Pre-season & mid-season reminders/trainings for road prepping for the rainy season via email, text or other methods	1) # of FPA internal and external reminders/ trainings on the topic of wet weather hauling.	Annually	Fewer written statements of unsatisfactory conditions or citations related to WWH	Process is regularly assessed by ODF's field support unit for improvement. Assessments shared with training unit.	General Fund/Harvest Tax

Active Operation Activities: Water Protection, Chemical Applications, Road Construction & Harvesting Near Waterways and on Steep Slopes

ODF Foresters conduct site inspections during operations to ensure compliance.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	Assess sites to ensure FPA rules associated with roads, harvesting near waterways & steep slopes are being followed.	1) # of reported active operation inspections by Activity Type by HUC 10 or 12 (Only for E- notifications reported complete)	Annually (Beginning with 2025 data)	FPA rules implemented properly. Reduction in unsatisfactory conditions/citations	Process is regularly assessed by ODF's field support unit for improvement. Assessments shared with training unit.	General Fund/Harvest Tax
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Post Operation Activities: Water Protection, Chemical Applications, Road Construction & Harvesting Near Waterways and on Steep Slopes

Landowner/Operators submit Notification of Completion through the E-Notification system to let ODF know the work they proposed has been completed.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	Notices of completion for each activity for which they notified reported in FERNS.	1) # of completed E-notifications with activities associated with roads, harvesting near waterways, chemical applications & steep slopes by HUC 10 or 12	Annually (Beginning with 2025 data)	Landowners follow the new rules and notify of completion.	FPA rule implementation process is assessed regularly for improvement This is a relatively new rule and will require additional education and outreach to insure compliance.	General Fund/Harvest Tax
ODF Foresters conduct post operation inspections to ensure FPA rules and BMPs were followed.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	Did LO/OP follow FPA rules and BMPs.	1) Estimated # of post inspections by HUC 10 or 12 (Only for E- notifications reported complete).	Annually (Beginning with 2026 data)	Consistent or increase in reported "satisfactory" inspection reports.	Process is regularly assessed by ODF's field support unit for improvement.	General Fund/Harvest Tax

STRATEGY 2. WESTERN OREGON STREAM RIPARIAN MANAGEMENT AREAS

MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
<i>What is being done, or what will you do, to reduce and/or control pollution from this source?</i>	<i>What sources of this pollutant are under your jurisdiction?</i>	<i>Specifically, how will this be done?</i>	<i>How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?</i>	<i>When do you expect it to be completed?</i>	<i>What intermediate goals do you expect to achieve, and by when, to know progress is being made?</i>	<i>Indicate how strategies have changed with annual review reports</i>	<i>Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)</i>
Landowners/operators are required to follow ODF water protection rules when harvesting near waterways.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	LO/OP apply the appropriate vegetated buffer widths near waterways.	1) Estimated # of harvest operations near waterbodies with RMA's per HUC 10 or 12 (For reported completed notifications only).	Annually (Beginning with 2025 data)	Waterbodies buffered appropriately for their type and size.	Process is regularly assessed by ODF's field support unit for improvement.	General Fund/Harvest Tax

STRATEGY 3. ROAD ASSESSMENTS

MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
ODF requires landowner/operators designated as non-SFO to submit pre FRIA's.	Erosion/sedimentation resulting from forest operations.	Large LO's/Managers submit pre-road inventory with identified HCV projects	1) # Pre FRIA submissions received. 2)# of Pre RIA Consultations. 3) Pre FRIA metrics summarized, when applicable. 4) # HCV projects completed (when applicable). Each reported by HUC 10 or 12.	Pre-inventories due by Spring 2025.	Large LO road assessments initiated with prioritized HCV's identified and prioritized.	Program implementation process is regularly assessed and adjustments made as needed.	General Fund/Harvest Tax

ODF requires landowner/operators to submit annual FRIA reports documenting progress.	Erosion/sedimentation resulting from forest operations	Large LO/Managers submit their FRIA Annual Plan, Work Matrix and Maps.	1) # landowners/entities w/ FRIA submissions per HUC 10 (new & annual updates) 2) Annual FRIA metrics summarized by HUC 10 3) HCV projects completed. Reported annually by HUC 10 or 12.	Begin receiving 3 core documents from LO's no later than January 2029	Landowners submit core FRIA documents and annual reports. Landowners begin making progress on addressing the HCV prioritized projects.	Program implementation process is regularly assessed and adjustments made as needed.	General Fund/Harvest Tax
ODF requires certified SFOs to submit RCAs when implementing road related forest activities.	Erosion/Sedimentation resulting from forest operations	SFO submits RCA if operation involves harvest of timber	1) # of SFO's by HUC 10 with RCA submissions 2) # of HCV projects identified	Annually (Beginning with 2025 data)	SFO RCAs received and issues identified SFO Office assistance with issue remediation.	Assess program implementation process annually and make adjustments as needed.	SB 1501, General Fund POP, Other program funding for remediation.

STRATEGY 4. STATEWIDE ABANDONED ROAD INVENTORY

MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
ODF Statewide Abandoned Road Inventory							
ODF Statewide Abandoned Road Inventory program development	Erosion/sedimentation resulting from forest operations.	Develop Abandoned Road Program: (a) assessment protocol, (b) tracking system, and (c) project prioritization protocol.	1) Abandoned Roads Committee formed. 2) Develop assessment protocol/suitability model 3) Develop tracking system.	Legislative deadline: 2026	Form committee, complete assessment approach, tracking system in place.	Assess program implementation process annually and make adjustments as needed.	General Fund/Harvest Tax
Abandoned Road Inventory program implementation.	Erosion/sedimentation resulting from forest operations.	Populate abandoned road inventory with information from FRIA's, RCA's and other effective methods (modeling, information requests, etc.).	1) Work on suitability model and incorporate, 2) # of Abandoned Roads identified through FRIA, RCA's and other methods by HUC 10.	Effort began in 2024. Annual updates	Add additional known abandoned roads to the statewide inventory annually. FRIA inventories due by 2029 will provide significant uplift in effort.	Assess program implementation process annually and make adjustments as needed.	General Fund/Harvest Tax

STRATEGY 5. FOREST MANAGEMENT CHEMICAL APPLICATION

MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
<i>What is being done, or what will you do, to reduce and/or control pollution from this source?</i>	<i>What sources of this pollutant are under your jurisdiction?</i>	<i>Specifically, how will this be done?</i>	<i>How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?</i>	<i>When do you expect it to be completed?</i>	<i>What intermediate goals do you expect to achieve, and by when, to know progress is being made?</i>	<i>Indicate how strategies have changed with annual review reports</i>	<i>Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)</i>
ODF requires landowners/operators implement the FPA and aerial herbicide application rules.	Erosion/sedimentation resulting from forest operations.	LO/OP must submit an E-Notification before applying herbicides to a site.	1) # of E-notifications with aerial and ground chemical application activities completed annually by HUC 10 or 12.	Annually (Beginning with 2025 data)	LO/OP mark E-notifications for their activities involving aerial and ground herbicide applications as complete. Estimated amount of phosphorus found in glyphosate applied across the landscape is within acceptable levels.	Process is regularly assessed by ODF's field support unit for improvement.	General Fund/Harvest Tax

ODF requires landowners/operators implements the FPA fertilizer application rules.	Erosion/sedimentation resulting from forest operations.	LO/OP must submit an E-Notification before applying fertilizer to a site.	1) # of E-notifications with fertilizer application activities completed annually by HUC 10 or 12.	Annually (Beginning with 2025 data)	LO/OP mark E-notification, for their activities involving fertilizer applications, as complete.	Process is regularly assessed by ODF's field support unit for improvement.	General Fund/Harvest Tax
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STRATEGY 6. INCENTIVE PROGRAMS

MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
<i>What is being done, or what will you do, to reduce and/or control pollution from this source?</i>	<i>What sources of this pollutant are under your jurisdiction?</i>	<i>Specifically, how will this be done?</i>	<i>How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?</i>	<i>When do you expect it to be completed?</i>	<i>What intermediate goals do you expect to achieve, and by when, to know progress is being made?</i>	<i>Indicate how strategies have changed with annual review reports</i>	<i>Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)</i>
ODF promotes and implements the SFISH grant program to address fish habitat access and water quality.	Erosion/sedimentation resulting from forest operations.	Award grant funding for one or more of the following SFO activities: a) culvert replacement of fish streams, b) repair abandoned roads; c) reconstruct, vacate or relocate roads with perched fill.	1) # of fish culverts replaced by HUC 10 or 12. 2) # of abandoned road projects implemented identified/funded through SFISH by HUC 10 or 12. 3)# of perch filled projects implemented annually.	Dependent on SFISH Grant funding allocation and on forest landowner participation.	Projects implemented that reduce erosion and stream sedimentation.	Assess program implementation process annually and make adjustments to improve efficiency.	HB 5020: One time general fund appropriation \$667 million provided for the Small Forestland owner Investment in Stream Habitat Program.
ODF implements the Conservation Tax Credit program which encourages SFOs to leave wider RMAs then required.	Erosion/sedimentation resulting from forest operations,	SFO's elect to implement the standard RMA buffer and receive the tax credit for difference in area not harvested between the minimum option and standard option.	1) # SFO's enrolled in the CTC program by HUC 10 or 12. 2) Potential acres or stream length metric associated with the credit.	Annually (Beginning with 2025 data)	SFO landowners are utilizing the incentive. Increase in RMA acres along streams.	Assess program implementation process annually and make adjustments to improve efficiency.	General Fund/Harvest Tax
Identifying relevant improvement/restoration projects aimed at improving riparian shade in forested habitats funded by other organizations/sources.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations	Work with other local and regional partners to help landowners/operators with natural resource forest management efforts	1) Identify # and type of completed projects being implemented through other programs in the Upper Yaquina that help address shade gaps and dissolved oxygen issues.	Annually (Beginning with 2025 data)	Track areas where other relevant work is getting implemented to help with the ODF prioritization effort.	Assess availability of other programs available annually.	General Fund/Harvest Tax

STRATEGY 7. RULE COMPLIANCE & ADAPTIVE MANAGEMENT

MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
<i>What is being done, or what will you do, to reduce and/or control pollution from this source?</i>	<i>What sources of this pollutant are under your jurisdiction?</i>	<i>Specifically, how will this be done?</i>	<i>How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?</i>	<i>When do you expect it to be completed?</i>	<i>What intermediate goals do you expect to achieve, and by when, to know progress is being made?</i>	<i>Indicate how strategies have changed with annual review reports</i>	<i>Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)</i>
Civil Penalties Program Annual Reporting: Enforcement of FPA rules.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	Identify which FPA rules associated with roads, chemical applications, harvesting near waterways, & steep slopes are being followed.	# of civil penalties issued by HUC 10 related to streamside shade and erosion/sedimentation.	Annually	Reduced number of civil penalties issued.	Identify FPA rules that may need additional education and outreach efforts by HUC 10.	General Fund/Harvest Tax
Compliance Monitoring Program Annual Reporting: Monitor forest practices rule implementation and analyze compliance rates. Use results to implement actions focused on improving compliance.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	Conduct pilot studies between 2025-2027 for prioritized rules sets: roads, riparian areas, steep slopes.	Provide status updates. Information gained from the studies will be used to develop a robust long term study for each rule of the prioritized rule sets.	Annually	Development of robust study designs and protocols for the long term study.	Lessons learned from the pilot study will be applied the development of the long term study. The long term study will be evaluated annually.	General Fund/Harvest Tax
Adaptive Management Program Annual Reporting: Use stakeholder input to implement a science-driven process to analyze the need for any changes to rules, policies, or training.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	Will report on any items/research the AMPC and IRST conduct related to stream sedimentation and forest operations.	Provide status updates and/or recommendations made by AMPC to the Board of Forestry.	Annually	AMPC continues to meet and IRST is tasked with research topics.	Process under development.	General Fund

STRATEGY 8. INTERNAL TRAININGS

MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
<i>What is being done, or what will you do, to reduce and/or control pollution from this source?</i>	<i>What sources of this pollutant are under your jurisdiction?</i>	<i>Specifically, how will this be done?</i>	<i>How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?</i>	<i>When do you expect it to be completed?</i>	<i>What intermediate goals do you expect to achieve, and by when, to know progress is being made?</i>	<i>Indicate how strategies have changed with annual review reports</i>	<i>Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)</i>
Internal ODF Trainings Annual Reporting: Provide FPA rule and program implementation trainings for internal staff.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	Provide road, water protection, steep slope trainings.	1) # of FPA/BMP trainings 2) # of ODF staff in attendance (if count is available)	Annually	Trainings offered and well attended, consistent rule implementation across the state.	Assess internal training program and make adjustments to improve as needed.	General Fund/Forest Tax
External ODF trainings annual reporting: Provide FPA rule and program implementation trainings for landowners, practitioners and the public.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations	Provide road, water protection, steep slope trainings	1) # of external trainings	Annually	Trainings offered and well attended. Reduction in unsatisfactory conditions during inspections and improved compliance rates.	Assess external training program and make adjustments to improve as needed.	General Fund/Forest Tax

STRATEGY 9. PARTNERSHIPS, EDUCATION, & OUTREACH

MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
<i>What is being done, or what will you do, to reduce and/or control pollution from this source?</i>	<i>What sources of this pollutant are under your jurisdiction?</i>	<i>Specifically, how will this be done?</i>	<i>How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?</i>	<i>When do you expect it to be completed?</i>	<i>What intermediate goals do you expect to achieve, and by when, to know progress is being made?</i>	<i>Indicate how strategies have changed with annual review reports</i>	<i>Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)</i>
Leverage partnerships in education & outreach to engage the public in implementing forestry BMPs.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	ODF staff work with regional and local partners on the education on the FPA rules and ODF programs.	1) # and sectors working with in the Upper Yaquina 2) Annual summary of FPA/BMP collaborative outreach/educational efforts in the Mid-Coast region.	Annually	Effective education and outreach of ODF FPA WQ protection efforts.	Assess efforts and improve as needed.	General Funds/Harvest Tax

STRATEGY 10. STATE FOREST VOLUNTARY MEASURES

MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
<i>What is being done, or what will you do, to reduce and/or control pollution from this source?</i>	<i>What sources of this pollutant are under your jurisdiction?</i>	<i>Specifically, how will this be done?</i>	<i>How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?</i>	<i>When do you expect it to be completed?</i>	<i>What intermediate goals do you expect to achieve, and by when, to know progress is being made?</i>	<i>Indicate how strategies have changed with annual review reports</i>	<i>Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)</i>
State Forest Division implements FMP/Stewardship Agreement which includes implementing water protection BMPs that go above and beyond the FPA rules.	Reduction in streamside shade & erosion/sedimentation resulting from forest operations.	Road, Riparian & Stand Management Activities/BMP's implemented to reduce erosion and stream sedimentation.	1) # and type of road activities going above and beyond FPA rules. 2) # and type of riparian activities going above and beyond FPA rules.	Annually	State Forest Division implements approved management plan.	Program dependent on State Forests FMP approach.	State Forest Timber Revenue

STRATEGY 11. ODEQ WQMP ODF SPECIFIED STRATEGIES

MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
A. ODEQ Solar Radiation (SR) Management Strategies							
<i>What is being done, or what will you do, to reduce and/or control pollution from this source?</i>	<i>What sources of this pollutant are under your jurisdiction?</i>	<i>Specifically, how will this be done?</i>	<i>How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?</i>	<i>When do you expect it to be completed?</i>	<i>What intermediate goals do you expect to achieve, and by when, to know progress is being made?</i>	<i>Indicate how strategies have changed with annual review reports</i>	<i>Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)</i>
Strategy SR1: Address excess solar radiation due to riparian vegetation canopy cover significantly below restored condition vegetation.							
Task 1: Implement ODF shade gap & streamside assessment pilot study.	Reduction in streamside shade resulting from forest operations.	Conduct pilot study using a DAP Model and Heat Source Model to obtain updated shade gaps and to conduct streamside assessments to assist with prioritization.	1) Run DAP and Heat Source Models. Determine new shade gaps, 2) Determine jurisdictional authority, 3)Conduct stream side assessments utilizing ODF method.	Pilot study should be completed by 2028 and streamside assessment efforts by 2030.	Pilot study completed and begin to categorize streamside conditions in ODF jurisdiction.	Assess pilot study process continuously and make adjustments to improve efficiency as needed. Work collaboratively with ODEQ on effort.	General Funds/Harvest Tax

Task 2: Collaborate with partners in seeking grant funds to assess, prioritize areas with shade gaps, and conduct education/outreach efforts to help improve streamside conditions.	Reduction in streamside shade resulting from forest operations.	Work collaboratively with partners to seek funding to assist with improving streamside shade.	1). Assess and prioritize areas to conduct outreach/education. 2) Assist with planting plans, 3) Assist with grant writing, as needed, to help fund restoration efforts.	Prioritization by 2030. Outreach annually, Assisting with grant writing annually (as needed).	List of prioritized areas in ODF jurisdiction, partner prioritized list, documented outreach efforts annually, list of projects ODF assisted with by providing technical support (planting plans, grant writing support).	Assess efforts annually and make adjustments to improve efficiency. Document successes and lessons learned.	General Funds/Harvest Tax
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B. ODEQ Total Phosphorus (P) Management Strategies

<i>What is being done, or what will you do, to reduce and/or control pollution from this source?</i>	<i>What sources of this pollutant are under your jurisdiction?</i>	<i>Specifically, how will this be done?</i>	<i>How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?</i>	<i>When do you expect it to be completed?</i>	<i>What intermediate goals do you expect to achieve, and by when, to know progress is being made?</i>	<i>Indicate how strategies have changed with annual review reports</i>	<i>Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)</i>
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Strategy P1: Address silvicultural chemical anthropogenic inputs of nutrients from pesticides & fertilizers to managed forestlands

Task 1: Utilize E-Notification system to compile herbicide use data to help understand how herbicides are being applied in the Upper Yaquina Subbasin.	Erosion/sedimentation resulting from forest operations	Review completed herbicide use E-Notifications and statutory written plans submitted in TMDL covered geography.	1) # of unit herbicide NOAPs submitted each year.2) # by status type of NOAP operations. 3) # of unit herbicide NOAPs listing a herbicide containing phosphorus. 4) # application methods employed. 5) Summary of P containing herbicide application rates by herbicide when reported by LO/OP. 6) Summary of timing of application when info provided by LO/OP.	Annually	Review information to better understand how herbicides are being applied in the watershed. Use information to help with targeted outreach.	Assess efforts annually and make adjustments to improve efficiency. Document successes and lessons learned.	General Funds/Harvest Tax
Task 2: Utilize E-Notification system to compile fertilizer use data to help understand how and what kind of fertilizers are being applied to the Upper Yaquina Subbasin.	Erosion/Sedimentation resulting from Forest Operations	LO/OP must submit an E-Notification before applying fertilizer to a site	1) # of E-notifications with fertilizer application activities completed annually by HUC 10 or 12	Annually (Beginning with 2026 data)	LO/OP mark E-notification, for their activities involving fertilizer applications, as complete.	Process is regularly assessed by ODF's field support unit for improvement	General Fund/Harvest Tax
Task 3: Coordinate with ODEQ and partners on monitoring strategy to quantify total phosphorus and TSS load reaching Yaquina River and major tributaries.	Erosion/sedimentation resulting from forest operations.	Meet regularly with ODEQ and DMA's on TP & TSS monitoring strategy development and implementation.	1) Document # of coordination meetings annually. 2) Develop coordinated monitoring strategy for phosphorus.	1) On going documentation of coordination. 2) Coordinated strategy should be complete by 2028.	Hold collaborative meetings to share information and develop unified strategy.	Assess efforts quarterly and make adjustments to improve efficiency	General Funds/Harvest Tax

Strategy P2: Implement ODF road and harvesting rules that address preventing, minimizing or reducing soil erosion and stream sedimentation

*Strategies 1 through 7 (above) describe the ODF rules and programs in place to protect the waters of the state and specifically rules in place to prevent and reduce soil erosion and stream sedimentation. ODF effort for this assigned strategy is documented under Strategies 1 through 7 above.

Strategy P3: Nutrient Education & Outreach Collaboration							
Task 1. Nutrient management education/outreach	Erosion & Sedimentation resulting from forest activities.	Work with other DMA, and local and regional partners and ODEQ to conduct community outreach on proper nutrient management.	1) # of coordination meetings. 2) Document community outreach efforts.	On going	Hold collaborative meetings to share information and develop unified strategy.	Assess efforts quarterly and make adjustments to improve efficiency.	General Funds/Harvest Tax

Important Disclaimer: Completed E-Notifications means the landowner/operator has closed the E-Notification and marked the activity for which they have notified as "complete."

ACRONYMS
AMPC Adaptive Management Program Committee
BMP Best Management Practice
BOF Board of Forestry
CMP Compliance Monitoring Program
DAP Digital Aerial Photogrammetry
FERNS Electronic Notification System or E-notification
FMP Forest Management Plan
FPA Forest Practices Act
FRIA Forest Road Inventory and Assessment
HCP Habitat Conservation Plan
HCV High Conservation Value Site
HUC USGS Hydrologic Unit Code
IRST Independent Research and Science Team
LO Large Forestland Owners (> 5k acres)
NRCS Natural Resources Conservation Service
ODEQ OR Department of Environmental Quality
ODF OR Department of Forestry
OP Operator
OWEB Oregon Watershed Enhancement Board
OWRI Oregon Watershed Restoration Inventory
PFA Private Forest Accord Report
RCA Road Conditions Assessment
SF Stewardship Forester
SFISH Small Forestland in Stream Habitat Program
SFO Small Forestland Owners (< 5k acres and harvest limitations)
TA Technical Assistance
WQ Water Quality
WWH Wet Weather Hauling

FRIA Landowner Reporting Metrics
Length of forest roads improved
Length of forest roads improved specifically related to drainage
Length still needing improvement
Length planned for improvement in the upcoming year
Length of roads vacated
Length planning to be vacated in the upcoming year
Number of fish barriers improved
Number of fish barriers to be improved in the upcoming year
> ODF Staff to determine if the landowner on track to completing FRIA projects by 1-1-2044
FRIA Core Documents Needed from each Non SFO Landowner by 2029
FRIA Annual Plan
Work Matrix
Maps
Pre inventory due by 1-1-2025
Initial inventory due 1-1-2029