



Oregon Department of Forestry
Willamette Mercury TMDL Implementation Plan

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Monitoring Unit
Forest Resources Division
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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 (DEQ 2019). Every two years, Oregon Department of Environmental Quality (DEQ) is required to assess water quality and report to the U.S. Environmental Protection Agency (EPA) on the condition of Oregon's waters. DEQ prepares an Integrated Report that meets the requirements of the federal Clean Water Act for Sections 305(b) and 303(d)(DEQ 2023). DEQ is the agency responsible for developing TMDL's in Oregon.

The Willamette River and many of its tributaries are on Oregon's list of impaired waters. Mercury is a pollutant of concern throughout the world due to its widespread distribution in the environment and its ability to accumulate in aquatic organisms. In DEQ's 2019 *Final Revised Willamette Basin Mercury Total Maximum Daily Load plan*, the Oregon Department of Forestry (ODF) is listed as a Designated Management Agency (DMA). 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.

This TMDL implementation plan identifies the direct and indirect management strategies ODF employs to reduce potential nonpoint sources of mercury from entering the waterways, resulting from forest operations, on private and state forestlands within the Willamette River Basin. This implementation plan is organized into the following required sections:

- Section 1. Introduction
- Section 2. Revised Willamette Mercury TMDL
- Section 3. Forestry in the Willamette Basin: Private & State
- Section 4. Sources of Mercury
- Section 5. Management 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. Revised Willamette Mercury TMDL

In the spring of 2017, the U.S. District Court issued a ruling requiring the U.S. Environmental Protection Agency (EPA) to revise DEQ's 2006 mercury TMDL by November 2019. EPA, with input from the DEQ, led the technical work associated with modeling the amount of mercury gained and lost by stream systems, as well as the concentration of mercury in the aquatic food network. DEQ led the development of a water quality management plan (WQMP) to describe

the overall framework for implementing the mercury TMDL (DEQ 2019). The WQMP describes activities, programs, legal authorities, and other measures for which DEQ, and other DMAs have regulatory responsibility. On Nov. 22, 2019, DEQ issued the *Final Revised Willamette Basin Mercury Total Maximum Daily Load* that was submitted to EPA. EPA disapproved of DEQ's TMDL on Dec. 30, 2019, and issued their final TMDL on Feb. 4, 2021. The total mercury allocations specified in EPA's TMDL are effective for DMAs and responsible persons named in DEQ's management plan (EPA 2021).

The DEQ established an instream TMDL target Total Mercury (THg) concentration of 0.14 ng/L within the Willamette River Basin based on the simulated bioaccumulation of methylmercury for Northern Pikeminnow (ODEQ 2019). Methylmercury is a potent neurotoxin in humans and other vertebrates (EPA 2023). The DEQ Willamette mercury TMDL applies to all perennial and intermittent streams in the Willamette Basin (ODEQ 2019). The Oregon Health Authority (OHA) currently has mercury fish consumption advisories in place throughout the Willamette Basin (OHA 2023).

Table 1. EPA’s 2019 Mercury Load Reduction Allocations by Willamette Subbasin HUC 8

Watershed Name	HUC 8 Code	Percent Reduction from Nonpoint Sources: Agriculture, forest, shrub, developed, other (runoff and sediment) (EPA 2021)
Middle Fork Willamette River	17090001	88%
Coast Fork Willamette River	17090002	97%
Upper Willamette River	17090003	97%
McKenzie River	17090004	88%
North Santiam River/Santiam	17090005	88%
South Santiam River	17090006	88%
Middle Willamette River	17090007	97%
Yamhill River	17090008	88%
Molalla-Pudding River	17090009	88%
Tualatin River	17090010	97%
Clackamas River	17090011	88%
Lower Willamette River	17090012	97%

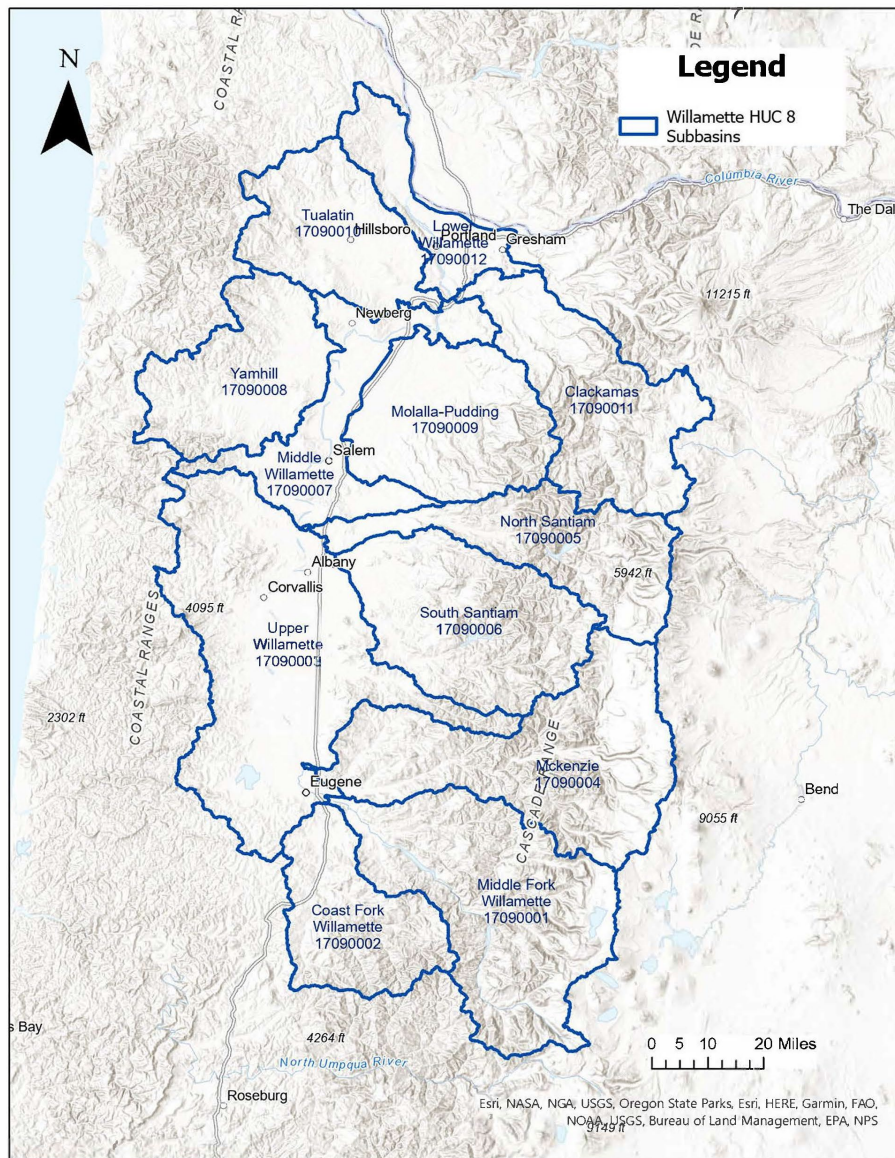
Source: EPA 2021

Table 1. displays EPA’s percent reduction of mercury allocated to each of the twelve subbasins in the Willamette. EPA’s mercury TMDL assigned an 88% reduction in non-point sources relating to sediment erosion across most basins. EPA specified a 97% reduction attributed to sediment in five of the twelve subbasins. The percent reduction target values in Table 1. are the reduction amounts all Willamette DMAs, collectively, are working to achieve.

Section 3. Forestry in the Willamette Basin: Private & State

The Willamette River Basin is a major tributary to the Columbia River which drains into the Pacific Ocean. The basin is flanked on the west by the Coast Range and on the east by the Cascade Range, it encompasses 11,478 square miles and includes the Willamette Valley and adjacent foothills. The twelve Hydrological Unit Codes (HUC) at the 8-digit subbasin scale that make up the Willamette Basin include: Lower Willamette, Tualatin, Molalla-Pudding, Yamhill, Clackamas, South Santiam, North Santiam, Middle Willamette, McKenzie, Coast Fork Willamette, Middle Fork Willamette, and Upper Willamette. See Map 1. The mainstem Willamette River flows south to north until it converges with the Columbia River. While forestry use is active from the higher elevations to the foothills of the Coast and Cascade Mountain ranges, agriculture is the largest land use in low elevation valleys.

Map 1. Willamette HUC 8 Subbasins



In 2022, ODF staff conducted a GIS exercise using a raster vegetation layer and tax lot data. The resulting assessment shows state and private forest lands making up approximately 33% of the entire Willamette Basin. Table 2. displays the percent area of state managed lands and the estimated percent area under the ODF Forest Practices Act (FPA) jurisdiction in each of the 12 subbasins.

Table 2. Estimated State & Private Forests Percent Area by Willamette Subbasin HUC 8

Watershed Code HUC 8	Willamette Subbasin Watershed Name	Estimated Percent ODF State Managed Lands Per HUC 8	Estimated Percent Private Forest Per HUC 8
17090001	Middle Fork Willamette River	0.07%	14%
17090002	Coast Fork Willamette River	0.00%	51%
17090003	Upper Willamette River	0.96%	40%
17090004	McKenzie River	0.00%	27%
17090005	North Santiam River/Santiam	5.94%	17%
17090006	South Santiam River	0.58%	50%
17090007	Middle Willamette River	0.05%	21%
17090008	Yamhill River	0.08%	45%
17090009	Molalla-Pudding River	2.53%	41%
17090010	Tualatin River	5.10%	40%
17090011	Clackamas River	0.00%	15%
17090012	Lower Willamette River	0.02%	26%

Bolded Items: EPA requires 97% sediment and runoff reduction from all combined non-point sources for that subbasin.

Non-Bolded Items: EPA requires 88% sediment and runoff reduction from all combined non-point sources for that subbasin.

Map 2. displays the estimated area of forest managed land, including both potential small forestland owners and all other non-federal or state forest land managed under the ODF FPA rules.

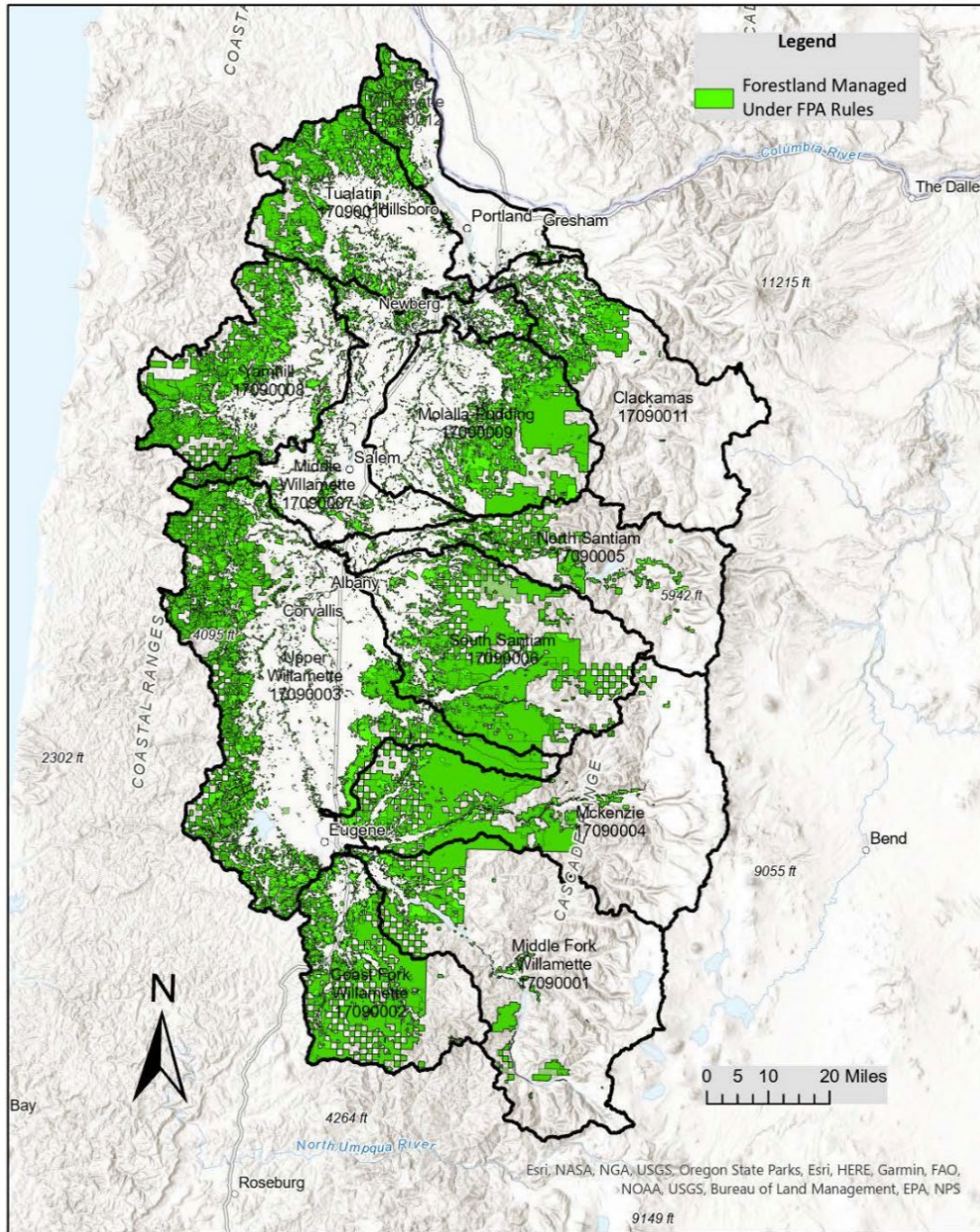
Section 4. Sources of Mercury

There are several major sources of Total Mercury (elemental, inorganic and organic) concentrations within the Willamette River, including nonpoint sources like atmospheric deposition (outside our region carried in with weather systems), soil/sediment erosion (natural and anthropogenic disturbances), and point source discharges from industrial facilities and stormwater outfalls. (ODEQ 2019).

DEQ notes in their 2019 Mercury WQMP that Total Suspended Solids (TSS) are often used as surrogate for pollutants. Total suspended solids (TSS) are defined as solids in water that can be trapped by a filter. Studies have shown a strong relationship between TSS and total mercury (Eckley & Branfireun 2009).

Given the positive correlation between TSS and total mercury DEQ uses TSS as a surrogate measure for mercury due to the capacity of total mercury to bind to particulate matter (Eckley & Branfireun 2009).

Map 2. Estimated Forestland Managed Under the Forest Practices Act Rules



Important Note: The Forestland Managed FPA area in Map 2. was created using both GIS tax lot and raster vegetation layer data. It is an estimated representation of the potential private non-state or federal land in which the ODF FPA rules apply.

In addition, THg can be expensive to measure in a water column. Using TSS as its surrogate is more cost effective and can be used to evaluate targets for total mercury.

DEQ's TMDL modeling indicated that the major pathway for mercury entering waters of the state is through runoff and erosion of sediment containing mercury (DEQ 2019). Therefore, DEQ's recommended approach to meeting EPA's fish tissue criterion is through runoff and erosion control management strategies, thereby reducing the total reservoir of mercury available to be methylated, the form that bioaccumulates in fish and shellfish (DEQ 2019).

Land management practices that result in runoff or sediment erosion include forestry and agriculture, water impoundments and conveyances, non-permitted urban stormwater runoff, groundwater, mines, and atmospheric deposition direct to waterbodies or to land. A multitude of factors influence the occurrence of erosion during forestry activities including local climate, soil type, forest type, geology, topography, forest activity and timing of the activity. Disturbances (fire or logging) also reduce water interception and transpiration resulting in an increased potential for erosion. Legacy metal mines also contribute to sources of mercury in the Willamette Basin as identified in Section 9.2.3 of DEQ's 2019 Final Revised Willamette Basin Mercury TMDL & WQMP.

Section 5. Management Strategies

The following are the management strategies ODF employs to prevent soil erosion and stream sedimentation from occurring during forest operations on private and state forestlands within the Willamette River Basin.

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

Strategy 1: FPA 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 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 increased protection of Oregon’s water resources and provide incentives and technical assistance for small forestland owners. Senate Bill 1501 (2022) 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 forest landowners, 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 aquatic non-federal forest aquatic HCP.

A large portion of the FPA rules are aimed at the protection of water resources. Forest landowners/operators are required to manage forest roads to prevent soil erosion and stream sedimentation. Regulations also require landowners to leave forested buffers and other vegetation along streams, wetlands, and lakes to protect water quality and fish and wildlife habitat. ODF rules relevant to protection of water quality and erosion control are found in the Oregon Administrative Rules (OARs) referenced in Table 3.

Table 3. ODF Rules Related to Water Quality and Erosion Control

Forest Practice 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 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 new and revised FPA rules and programs associated with construction and maintenance of roads, harvesting near waterways and on steep slopes are the primary focus of the FPA Rule implementation strategy. The ODF Monitoring Unit will document metrics for both rules and

programs designed to both directly and indirectly reduce erosion and stream sedimentation from occurring during and a result 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 the 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 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).

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 a 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.

The ODF Monitoring Unit will use data from the ODF's E- notification system, also known as the Forest Activity Electronic Notification System (FERNS) database. The total number of notified completed E-Notifications reported and any associated required written plan received will be tallied. Totals will be reported annually by activity type: road work, harvesting near waterways, and/or on steep slopes, by Willamette HUC 8 subbasin.

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.

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-operations 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 each Willamette HUC 8 subbasin.

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 debris flows while mitigating the potential negative effects of forest management activities on unstable slopes. The new 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, they would include the trees and large debris which help benefit fish and wildlife by providing wood and rock for their habitats. 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 DSSAs, 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's Certified Steeps Slopes training is available online. Information on accessing the training can be found at here: <https://www.oregon.gov/odf/working/documents/certified-steep-slopes-training.pdf>

Small Forestland Owners (SFOs) who qualify to manage their forestlands under the minimum option for harvesting are exempt from the rules and Technical Guidance for timber harvesting on designated sediment source areas (DSSA) and SRA (OAR 629-630-0920(6)). This Technical Guidance does not replace division 623 rules or Technical Guidance for high landslide hazard locations that have downslope public safety risk. For more information on the specific requirements for SFO's who take the Minimum Option and plan to harvest on features identified in the slopes model, see OAR 629-630-0910 (1-12).

For more information on the steep slopes model, see 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.

The ODF Monitoring Unit will report annually the number of trainings held and the 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.

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, 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. The *Forest Practices Technical Guidance Wet Weather Road Use April 2024* document available online. 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 guidance document. If the State Forester identifies roads where there is evidence of stream sedimentation, they will issue a notification of unsatisfactory condition and will issue a citation if corrective action is not taken within a designated time frame.

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.

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.

The 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, by each Willamette HUC 8 subbasin.

C. Post-Operation

Beginning in 2024, in accordance with OAR 629-605-0150(10) any landowner/operator who filed an E-Notification is 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.

Using the inspection information reported in the E-notification system, the ODF Monitoring Unit will provide an annual summary of the post-operation inspections, conducted by the State Forester, for completed notifications by each Willamette HUC 8 subbasin.

Strategy 2: 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. The new FPA rules establish two new forest road condition assessment and road improvement reporting processes. The first program under OAR 629-625-0920 requires Small Forestland Owners (SFO), landowners who own less than 5,000 acres of forestland and harvest no more than an average yearly volume of 2 million board feet during the three years prior or 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 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. 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; 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)

Forest Road Inventory and Assessment (FRIA) is a 20-year ODF program that requires forestland owners, who do not qualify as an SFO, to update their roads to meet the revised FPA standards that went into effect January 1, 2024. 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 hydrologically disconnecting their roads system from the local stream network.

The first five years (2024 through 2029) is the pre-inventory phase, and it is during this time forestland owners must identify locations in high need of repair/improvement. These areas are designated as High Conservation Value (HCV) areas. HCVs may include areas of known chronic sedimentation, stream diversions at stream crossings, potential stream diversion areas and areas of known hydrological connectivity. Implementation of HCV identified work will be done Years 2 through 5 (2026 to 2029).

Forestland owners must submit a completed comprehensive road network inventory by 2029. Landowners must inventory each road segment and classify the segment type as: active, inactive, vacated, or abandoned. For road classification definitions see: OAR 629-600-0100 (2) for Abandoned, OAR 629-600-0100 (5) for Active, OAR 629-600-0100 (74) for Inactive, and OAR 629-600-0100 (155) for Vacated. 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 vacated in accordance with 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.

The ODF Monitoring Unit will provide an annual summary of the RCA and FRIA reported information by Willamette HUC 8 watershed.

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.

ODF staff will use the E-Notification system, FRIA reports and RCA reports to help track the number of crossings upgraded annually by each Willamette HUC 8 watershed.

Strategy 3: Statewide Abandoned Road Inventory Program

Under OAR 629-625-0910, ODF, in consultation with EPA and DEQ, is tasked with creating an inventorying 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. According to the new administrative rule, the purpose of the inventory is to identify the locations of abandoned roads and bring them into compliance with the new FPA road rules. The goal is to reduce the potential of abandoned roads from producing chronic sediment and reduce the risks of mass wasting and stream diversions.

At the time of the development of this TMDL Implementation plan, ODF, DEQ and EPA are working on developing a statewide mapping process to inventory potential abandoned roads throughout Oregon. After abandoned roads are identified ODF, with assistance from partners,

will identify roads with a high level of risk to waters of the state or infrastructure. 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

Abandoned road locations identified in the FRIA and RCA process will help develop and field verify the statewide abandoned road inventory. The anticipated date for ODF to provide the results of the abandoned road inventory to landowners is no later than January 1, 2026.

The ODF Monitoring Unit will report annually on the number of abandoned roads identified and remediated by Willamette HUC 8 subbasin.

Strategy 4: 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 4. 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 4., 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.

The ODF Monitoring Unit will report annually on the number of E-notifications with harvest activity with an RMA. The information will be summarized by Willamette HUC 8.

Table 4. 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 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 confluence with the Type F stream.	Width: Area between 35' & the outside edge of the Standard Practice (75') Length: Same as Standard Option
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 confluence with the Type F stream.	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 5: 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 forest landowners 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(2022) 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 will provide 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 was established to help SFO's 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 presents a significant hazard to fish bearing streams.

The ODF Small Forestland Owner office staff will be reaching out and educating SFO's on this new program. 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 SFO's who support conservation and habitat protection by retaining a larger unharvested area next to

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 small forestland owner 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 can be found online. Link:

<https://www.oregon.gov/odf/pages/fctc-program.aspx>

The ODF Monitoring Unit will provide an annual summary of the ODF managed incentive programs. Information will be reported by Willamette HUC 8 subbasin.

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 Willamette include the following:

ODFW Private Forest Accord Mitigation Fund Grant Program: This fund was established in the 2022 Legislative Session (Senate Bills 1501 and 1502 and 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 protect and prevent stream sedimentation. Information on the ODFW Private Forest Accord Mitigation Fund grant program can be found online: Link: https://www.dfw.state.or.us/habitat/PFA/grant_program.html

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 DEQ 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 forest landowners 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 \(EFRP\) \(usda.gov\)](#)

Strategy 6: Rule Compliance & Adaptive Management

A. Civil Penalties

Under ORS 527.680 through ORS 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 state and private 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, a citation will be issued. The citation will be accompanied by an order to cease and repair resource damage, if necessary and feasible.

After an ODF stewardship forester issues a citation with orders to cease further violation and repair damage, 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 of 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 compliance monitoring program to prioritize the FPA rules related to biological and aquatic resources. This includes FPA rule Division 625 Forest Road Construction and Maintenance rules; Division 630 Harvesting on Steep Slopes 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 Compliance Monitoring Unit is currently working with a contract statistician to determine a study design for the long-term CMP. Once the study design is determined and protocol developed, rule compliance monitoring will occur annually. The first year in which rules are assessed under the new rules will be in 2025 and will be looking at forest operations completed in 2024.

In early 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 DEQ. 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 regular updates to the CMPC.

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 important 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. ODF Adaptive Management Program staff will provide status reports to the Board of Forestry annually, and contract for performance audits every six years.

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.

Strategy 7. 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. The training unit is tasked with training all field Stewardship Foresters and ODF staff on the new 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 trainings, ODF Forest Resource Division has a Field Support Unit with staff available daily to assist and/or provide guidance to field foresters on 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, FPA Rule Coordinators.

The ODF Monitoring Unit will provide a summary of the FPA staff trainings related to sediment prevention and reduction in annual reports and when possible, the number of participants in attendance per training.

Strategy 8: 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 trainings, the Forest Resource 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 trainings and educational opportunities to Oregon’s forest landowners and managers.

Table 5. ODF Partners in Forest Education

Association of 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 Services (NRCS)
Western Forest & 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 the Association of Oregon Loggers (AOL). AOL is a statewide trade association representing around 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. The ODF Monitoring Unit will provide an annual summary of the forest management trainings and educational opportunities related to sediment prevention and reduction and when possible, the approximate number of participants in attendance per event.

Strategy 9: State Voluntary Measures

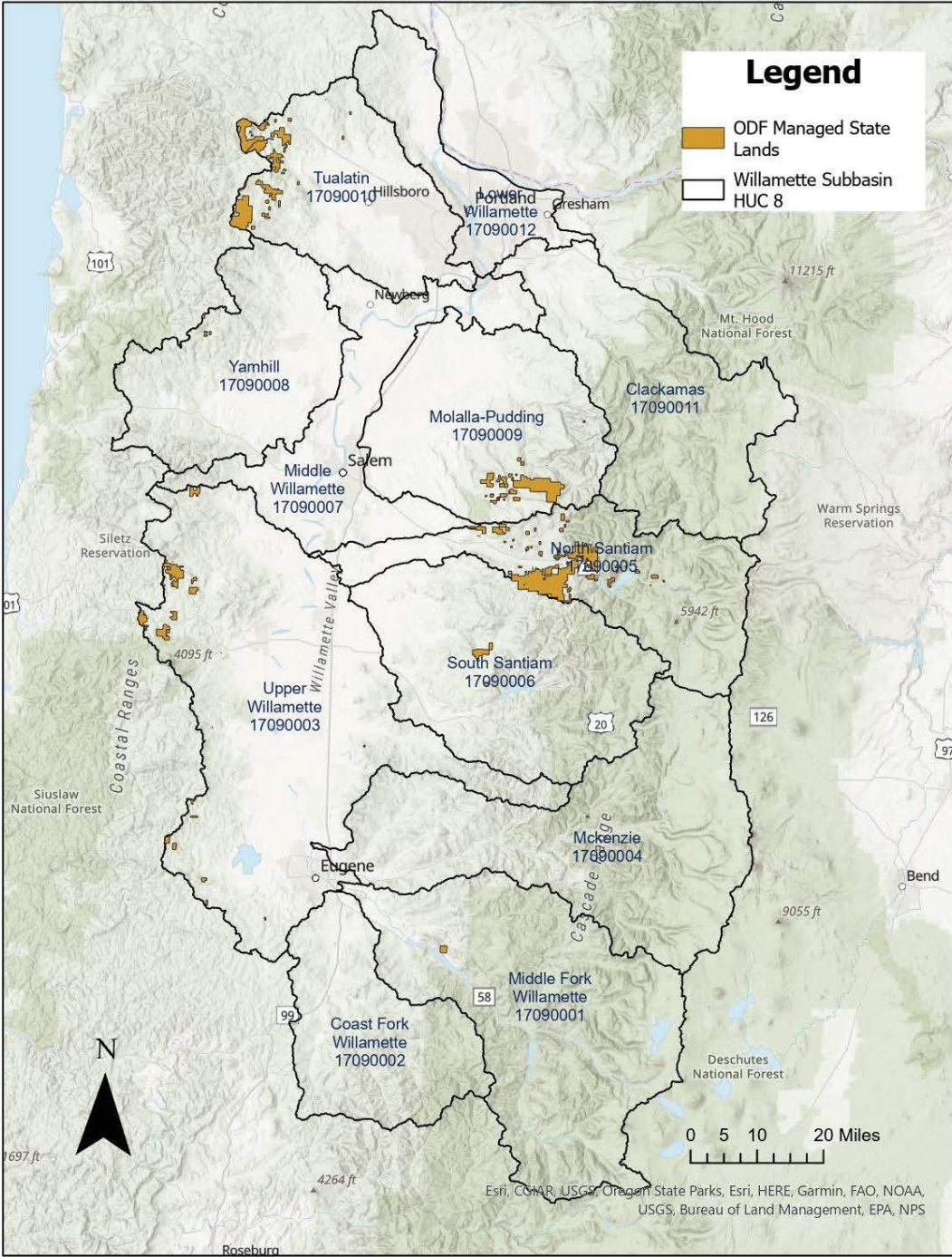
State Forest lands in the Willamette Basin are currently managed according to the Northwest Oregon State Forests Management Plan (FMP), (OAR 629-035-0105). The FMP provides management direction for all Board of Forestry Lands and Common School Forest Lands in Northwest Oregon and Willamette Planning Regions. These two regions contain over 615,000 acres of state forest land, located in twelve northwest Oregon counties. The Board of Forestry owns 97 percent of these lands, and the State Land Board owns the other 3 percent.

Most of Oregon's state forest lands are located within northwestern Oregon. These forests include three large blocks of land, in Tillamook, Clatsop, and Santiam State Forests, see Map 3. Smaller tracts of state forest land are scattered throughout the Willamette Basin. All state forest lands in the planning area total approximately 615,680 acres. The Tillamook and Clatsop State Forests are at the northern end of the Oregon Coast Range. The Santiam State Forest is in the Cascade Range, a little more than 25 miles southeast of Salem. See Map 3. For the percent area of State managed lands for each Willamette subbasin see Table 2.

State Forests is currently pursuing a Habitat Conservation Plan (HCP). To ensure a smooth transition from the previous FMP to the new FMP and HCP, beginning with Fiscal Year 2024 (July 1, 2023, to June 30, 2024) State Forest lands will be managed according to the policy standards and strategies established in the draft HCP. In addition, as a non-federal landowner, the Department of Forestry is required to comply with the Oregon Forest Practices Act when managing State Forest lands.

The ODF Monitoring Unit will include information on any forest road and riparian voluntary management actions that go above and beyond what is required in the FPA rules that occur during the year within the Willamette Basin. Once a State FMP is finalized the ODF Monitoring Unit will work with the State Forest staff to determine the specific relevant metrics to include in ODF's Willamette Mercury TMDL implementation plan.

Map 3. Willamette Basin - ODF State Managed Lands



Section 6. Matrix - Relevant Goals and Targets

The required ODF Willamette Mercury TMDL Implementation Matrix for 2023-2027 is in Appendix A. For each strategy identified in Section 5 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 7. 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, restoration activities and any other actions taken to prevent soil erosion and stream sedimentation. The Monitoring Unit will attempt to report information by Willamette Subbasin (HUC 8) watershed to directly address EPA’s Mercury 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 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 tracking database (under development), RCA tracking database (under development), SFISH grant project tracking system (under development), compliance monitoring database (under development, civil penalties database (database system upgrade in process), DAS training database (internal staff training – in development), and an external event/training tracker (under development). 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.

As a listed DMA for the Willamette Mercury TMDL, ODF will provide DEQ 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 6. ODF Implementation Plan Reporting Schedule

Year	Plan Reporting Period	# Months Covered in Report	Report Due Date
Year 1	August 17, 2023 - December 31, 2024	16	03/31/2025
Year 2	January 1, 2025 - December 31, 2025	12	03/31/2026
Year 3	January 1, 2026 - December 31, 2026	12	03/31/2027
Year 4	Assess progress over last 4 years (2023-2027) Complete DEQ Survey & Submit New Five-Year Plan	Last 40 months	03/31/2028

Section 8. 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 12 Willamette HUC 8 subbasins, look for patterns or relationships (if any) by strategy and by subbasin. This information will help ODF identify where staff need to focus 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 DEQ to modify the plan and timeline to better meet the Willamette Mercury TMDL Mercury load reduction goals. Results of the reviews will be included in the annual reports submitted to DEQ. 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 Mercury TMDL implementation plan relative to the stream sediment loading reduction goals. The strategies will be reviewed and refined to reflect progress made over the previous four years and the plan will be updated accordingly.

Section 9. 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 of the Forest Practices Act, and Private Forest Accord comes from the State of Oregon's General Fund (GF) and Harvest Tax (OF). The objectives of the work dictate what combination of funding is used to support the effort. Funding availability may vary by biennium.

Section 10. Legal Authority

The Oregon legislature delegated to the Board of Forestry the responsibility under ORS 526.016 to oversee all matters of forest policy and management under the jurisdiction of the state.

Under ORS 527.630 (3), the Board of Forestry has the exclusive authority to develop and enforce the Oregon Forest Practices Act (FPA) rules. The FPA set standards for all commercial activities involving the establishment, management, or harvesting of trees on Oregon's nonfederal forestlands. Oregon law gives the Board of Forestry primary responsibility to interpret the FPA and set rules for forest practices.

Oregon's nonpoint source program for private non-federal forestlands is primarily administered by the Oregon Department of Forestry (ODF) through the FPA. Under ORS 468B.110(2), ORS 527.765, and ORS 527.770, the Environmental Quality Commission (EQC) is responsible for establishing water quality standards and determining the overall amount of pollution reduction needed when a water body does not achieve those standards. Through the FPA, the Board of

Forestry establishes best management practices or other actions by rule that will ensure attainment and maintenance of federally approved water quality standards or TMDL requirements.

Section 11. References

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<https://www.epa.gov/sites/default/files/2021-02/documents/tmdl-willamette-mercury-final-02-04-2021.pdf>

Section 12. 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
DEQ - Department of Environmental Quality
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
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 Forest Owners
THg - Total Mercury
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 Willamette Mercury TMDL Implementation Plan Matrix

APPENDIX A

ODF WILLAMETTE MERCURY TMDL IMPLEMENTATION MATRIX
2023-2027

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: Roads & Harvesting Near Waterways/Steep Slopes									
E-Notifications & Written Plans		Erosion/Sedimentation resulting from Forest Operations	Contact initiated between ODF and LO/OP	1) # completed E-notification's received with activities involving Roads, Harvesting near Waterways and Steep slope's 2) Estimated # written plans received for the above activities reported by HUC 8	Annually (Beginning with 2024 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	
Pre-Operation Planning & Inspections		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 will be scheduled	1)# of pre-operation consultations per HUC 8 (Only for completed E-notifications). 2) Estimated # pre-op site visits conducted by HUC 8	Annually	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	
Harvesting on Western Oregon Steep Slopes & Certified Steep Slopes Training		Erosion/Sedimentation resulting from Forest Operations	Landowners w/modeled steep slopes within their operational boundary require steep slopes training	1) # of SF's, LO/Operators' who have had steep slopes training 2) # of completed E-notifications with Steep Slope activities by HUC 8	Annually (Beginning with 2024 data)	Operation occurs using steep slope tree retention BMP's Reduction/prevention of stream sedimentation	FPA rule implementation process will be assessed regularly for improvement Steep slope trainings will be assessed after each training to improve delivery	General Fund/Harvest Tax	
Wet Weather Hauling Reminders		Erosion/Sedimentation resulting from Forest Operations	Pre-season & mid-season reminders for road prepping for the rainy season via email, text or other methods	1) # of ODF districts that sent notices pre-season and midseason by Field Office and/or District. 2)Approx # of recipients 3) Summary of how reminders were delivered	Annually	Fewer written statements of unsatisfactory conditions or citations related to WWH	Process is regularly assessed by ODF's field support unit for improvement	General Fund/Harvest Tax	
Active Operation Activities: Roads & Harvesting Near Waterways/Steep Slopes									

ODF Forester Inspections During Operations	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 8 (Only for completed E-notifications)	Annually (Beginning with 2024 data)	FPA rules implemented properly Reduction in unsatisfactory conditions/citations	Process is regularly assessed by ODF's field support unit for improvement	General Fund/Harvest Tax
Post Operation Activities: Roads & Harvesting Near Waterways & Steep Slopes							
Notification of Completion	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 & steep slopes by HUC 8	Annually (Beginning with 2024 data)	Landowners follow the new rules and notify of completion	FPA rule implementation process will be assessed regularly for improvement This is a new rule and will require additional education and outreach to insure compliance	General Fund/Harvest Tax
Post Inspections	Erosion/Sedimentation resulting from Forest Operations	Did landowners follow FPA rules	1) Estimated # of post inspections by HUC 8	Annually (Beginning with 2024 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 ROAD ASSESSMENTS							
MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
Pre FRIA -Non SFO	Erosion/Sedimentation resulting from Forest Operations	Large LO's submit pre-road inventory with identified HCV projects	1) # landowners w/submissions 2) Pre FRIA metrics summarized 3) # HCV projects completed. Each reported by HUC 8	Pre-inventories due by Spring 2025	Large LO road assessments initiated with prioritized HCV's identified and prioritized	Program implementation process will be regularly assessed and adjustments made as needed	General Fund/Harvest Tax
Annual FRIA reporting - Non SFO	Erosion/Sedimentation resulting from Forest Operations	Large LO's submit their FRIA Annual Plan, Work Matrix and Maps	1) # landowners w/ FRIA submissions per HUC 8 (New & Updated) 2) Annual FRIA metrics summarized by HUC 8 3) HCV projects completed by type. Reported annually by HUC 8	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 will be regularly assessed and adjustments made as needed	General Fund/Harvest Tax
Road Condition Assessments - SFO's	Erosion/Sedimentation resulting from Forest Operations	SFO submits RCA if operation involves harvest of timber	1) # of SFO's by HUC 8 with RCA submissions 2) # of HCV projects identified & # selected by SFO per HUC 8	Annually (Beginning with 2024 data)	SFO RCA's 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

Stream Crossings	Erosion/Sedimentation resulting from Forest Operations	Permanent stream crossings are to be upgraded to a 100 year flood level	1) Approximate # of permanent crossings upgraded to a 100 year flood level per HUC 8	Annually (Beginning with 2024 data)	Increase in permanent stream crossings being upgraded to 100 year flood level	Assess program implementation process annually and make adjustments as needed	General Fund/Harvest Tax
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STRATEGY 3 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) Steering Committee formed. 2) Assessment protocol developed 3) Tracking System developed 4) Prioritization process developed	Legislative deadline: 01/01/2026	Complete each program development step	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) # of Abandoned Roads identified through FRIA, RCA'S and other methods by HUC 8 2) Beginning of prioritization process	Annually (Beginning with 2024 data)	Completed Abandoned Road Inventory	Assess program implementation process annually and make adjustments as needed	General Fund/Harvest Tax

STRATEGY 4 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>
Harvest operations near waterways	Erosion/Sedimentation resulting from Forest Operations	LO/OP apply the appropriate vegetated buffer widths near waterways	1) Estimated # of harvest operations near waterbodies near RMA's per HUC 8 (For reported completed notifications only)	Annually (Beginning with 2024 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 5 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>

SFISH Program	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 HUC8 2) # of abandoned road projects implemented identified/funded through SFISH by HUC 8 3) # of perch filled projects implemented annually	Dependent on SFISH Grant funding allocation	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
Conservation Tax Credit	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 8. 2) Potential acres or stream length metric associated with the credit	Annually (Beginning with 2024 data)	Increase in RMA acres along streams	Assess program implementation process annually and make adjustments to improve efficiency	General Fund/Harvest Tax

STRATEGY 6 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 Annual Reporting: Roads and Harvesting on steep slopes and near waterways	Erosion/Sedimentation resulting from Forest Operations	Identify which FPA rules associated with roads, RMA's and/or steep slopes were issued	# of civil penalties issued by HUC 8	Annually	Reduced number of civil penalties issued	Identify FPA rules that may need additional education and outreach efforts by HUC 8	General Fund/Harvest Tax
Compliance Monitoring Program Reporting	Erosion/Sedimentation resulting from Forest Operations	CMP will assess landowner rule compliance with roads, riparian areas and steep slopes (Rules sets will be assessed on a rotating schedule)	Compliance rates by specific rules and by rule division	Rules measured for compliance: Study design and schedule under development	Completed statistically sound compliance monitoring for each prioritized rule division	Identify which rules are not being followed and improve internal and external education and outreach	General Fund/Harvest Tax
Adaptive Management Program Reporting	Erosion/Sedimentation resulting from Forest Operations	Will report on any items/research the AMPC and IRST conduct related to stream sedimentation and forest operations	Reports and/or recommendations made by AMPC to the Board	TBD	AMPC continues to meet and IRST is tasked with research topics.	TBD	General Fund

STRATEGY 7 INTERNAL TRAININGS

MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
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<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	Erosion/Sedimentation resulting from Forest Operations	Provide road, water protection, steep slope trainings	1) # of FPA/BMP trainings 2) # of ODF staff in attendance	Annually	Trainings offered and well attended	Assess internal training program and make adjustments to improve as needed	
External FPA Trainings	Erosion/Sedimentation resulting from Forest Operations	Provide road, water protection, steep slope trainings	1) # of external trainings 2) # of participants in attendance	Annually	Trainings offered and well attended Reduction in unsatisfactory conditions during inspections Improved compliance rates	Assess external training program and make adjustments to improve as needed	
ODF Public Outreach & Education	Erosion/Sedimentation resulting from Forest Operations	Newspaper articles, Facebook posts, website posts, email newsletters	# and types of outreach stories/information related to FPA BMP's and/or projects related to erosion and stream sedimentation reduction	Annually	Outreach campaigns implemented	Assess communication efforts and make adjustments to improve as needed	

STRATEGY 8 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>
Partnerships	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 Willamette 2) Annual summary of FPA/BMP collaborative educational efforts in the Willamette Basin	Annually	Effective education and outreach of ODF FPA WQ protection efforts	Assess efforts and improve as needed	General Funds/Harvest Tax

STRATEGY 9 STATE FOREST VOLUNTARY MEASURES

MANAGEMENT STRATEGY	POLLUTANT SOURCES	SPECIFIC ACTIONS	RESULTS/ OUTCOMES	TIMELINE	MILESTONE	ADAPTIVE MANAGEMENT	FUNDING
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<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>
Road and Riparian Activities on State Managed Lands	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 Forests implement the new management plan	Program dependent on State Forests FMP approach	State Forest Timber Revenue

ACRONYMS
AMPC Adaptive Management Program Committee
BMP Best Management Practice
BOF Board of Forestry
CMP Compliance Monitoring Program
DEQ OR Department of Environmental Quality
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
ODF OR Dep'd of Forestry
OP Operator
OWEB Oregon Watershed Enhancement Bd
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