

ODOT Integrated Vegetation Management Statewide Plan

1.0 Introduction

Oregon Revised Statute, ORS 634.650 – 655 requires that the Oregon Department of Transportation practices Integrated Pest Management (IPM) when controlling pests. This Statewide IVM Plan outlines how ODOT meets IPM and other natural resource laws associated with vegetation management. It also includes best management practices for vegetation management activities. This plan is meant to be adaptive due to changes in resources (budget, equipment, labor and materials), laws (new rules and regulations), vegetation (new invasive plants, species shifts due to maintenance practices, or climate change) and policy (agency directives)

2.0 Background

ODOT is responsible for managing more than 50,000 acres of roadside vegetation, an area roughly equal to half the size of Oregon's state park system. The balance consists largely of areas managed and maintained for basic functions of transportation facilities such as safety, drainage or future expansion. These roadsides, which stretch out along approximately 9,000 miles of primary and secondary highways, also serve as the front yard for Oregon and many of its communities. Roadsides traverse a wide variety of landscapes including forests, deserts, wetlands, grasslands, agriculture, estuaries, urban areas, suburban areas, community gateways, scenic vistas and safety rest areas. These different landscapes enable residents and travelers alike to experience Oregon's broad cultural and environmental diversity.

As Oregon continues to grow and develop, highway rights-of-way need to accommodate an increasing variety of often-conflicting demands. These include such things as errant vehicle recovery areas, erosion and weed control, storm water detention and treatment, surface and sub-surface drainage, wetlands, fish protection, habitat mitigation, habitat protection for rare or endangered species, scenic quality, resource stewardship, bikeways and pathways, traffic devices, utilities, signing and sound barriers. In addition, for a number of roadside areas, special interest groups request special management techniques. Some can be accommodated and some can not. With these many different considerations, it is important to devise a set of consistent management tools to help the Department coordinate and balance its many roadside responsibilities.

ODOT manages vegetation along the highway right of way primarily for safety, both for motorists, pedestrians, and cyclists, for the protection of the road structure and highway features, for compliance with legal obligations and for good land stewardship. Based on this information unwanted vegetation can be defined as vegetation that obstructs safety features or creates unsafe conditions, limits sight distance, impedes drainage, increases fire hazards and compromises pavement and structure integrity. Unwanted vegetation also includes noxious and invasive weeds as well as hazard trees.

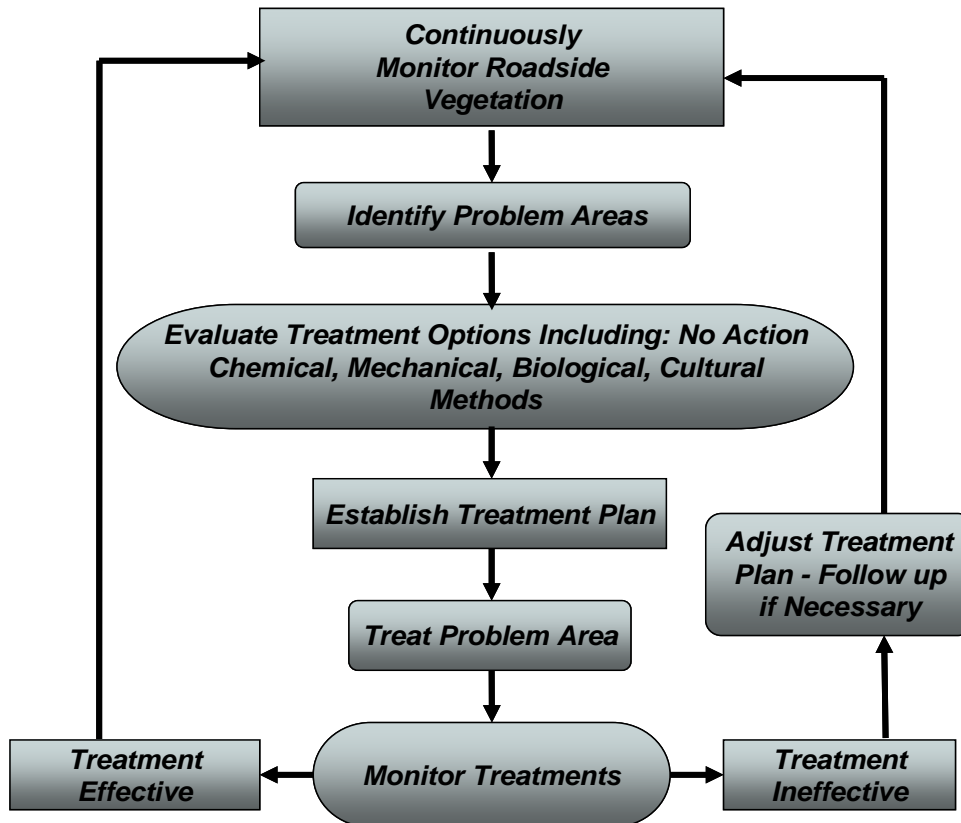
3.0 Integrated Vegetation Management

Oregon Revised Statute (ORS 634.650 – 665) requires ODOT to implement integrated pest management practices when carrying out the agency's duties related to pest control. The primary pest for ODOT is vegetation; therefore, integrated vegetation management (IVM) practices are implemented. In an economically and environmentally sound manner the IVM approach utilizes the following methods to control vegetation:

- Mechanical (mowing, shoulder blading)
- Cultural (reseeding, using weed free straw and mulch)
- Biological (introducing natural predators that control vegetation)
- Herbicide (residual and spot applications)

The elements of the IVM program include:

- Preventing unwanted vegetation problems
- Monitoring for the presence of unwanted vegetation
- Establishing thresholds that trigger treatments
- Establishing a treatment plan
- Applying treatments
- Evaluating the effects of treatments following up with additional treatments if necessary



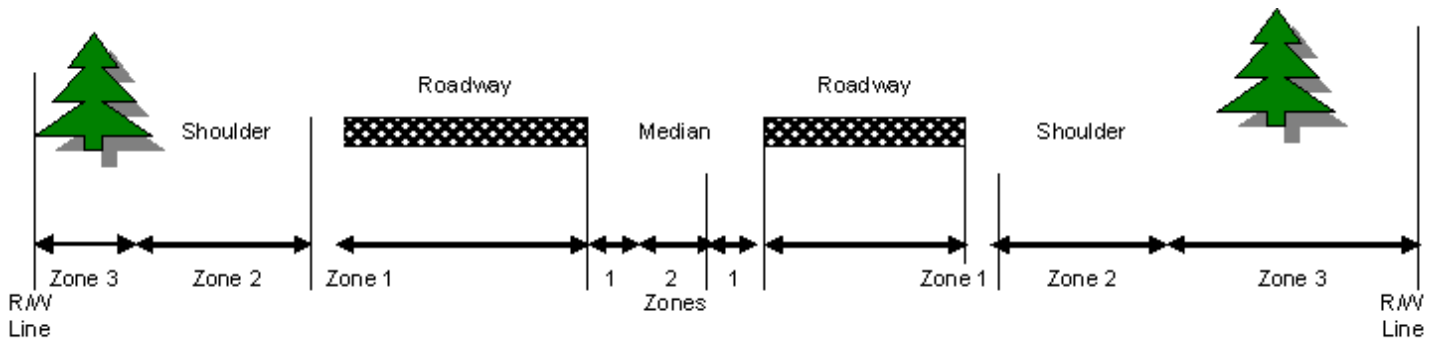
An Operational Notice (MAI 130-02) has been developed that outlines ODOT’s IVM program, and lists roles and responsibilities. See Reference A. To compliment the Statewide IVM Plan, each of the 14 ODOT maintenance districts prepares an annual IVM plan that describes the vegetation management activities that will take place on the ODOT right of way within that district. The annual update of IVM plans allows for a review of the program including changes in laws or policies, reports of successes and failures, updates in ownership changes, and reviews of management practices. A general IVM plan template has been developed to give guidance to maintenance personnel as well as to promote statewide consistency.

3.1 Prevention

Preventing the establishment of unwanted vegetation is the first line of defense in vegetation management and can be both effective and cost efficient. Prevention begins with project development. It is critical to put the right plants in the appropriate location. Features should be located so that pockets are not created that are difficult to maintain. Because this guidance document is aimed primarily at ODOT maintenance staff its focus is on maintenance activities. It is important, however that ODOT maintenance seek to provide input at the project level on proposed plans and how design or features might impact vegetation management. ODOT maintenance should also adopt methods to prevent the establishment of unwanted vegetation that include utilizing weed free seed, mulches, erosion control material and fill, establishing vegetation-free road shoulders, removing unwanted vegetation from stockpile sites and rock sources, cleaning equipment, and protecting existing vegetation. Proper construction design is crucial to insure that appropriate vegetation is planted in the appropriate location.

3.2 Establishing Treatment Levels

To help determine unwanted vegetation treatment levels, the roadside is dissected into management zones. For the operational roadway, ODOT has adopted the three-zone concept, similar to WSDOT. A roadside zone summary is provided in Reference B. Level of service is determined based on road classification in the ODOT publication “Desired Conditions of Maintenance Features on State Highways, September 2002”. Areas outside the operational roadway are managed on a case by case basis.



3.2.1 Zone 1 Drainage Zone

Zone 1 extends from the pavement to a maximum of eight feet on Interstates and six feet on Secondary highways. Zone 1 vegetation maintenance must not extend past the bottom of the ditch. Zone 1 vegetation is maintained to allow for proper surface drainage, to provide visibility and maintenance of roadside safety features, to prevent pavement breakup, to maximize sight distance, to prevent the establishment of noxious weeds. The desired condition for Zone 1 is little or no vegetation, no obstructions to features or sight distance, and no noxious weeds. Zone 1 vegetation maintenance activities include herbicide spraying, shoulder blading, mowing and ditch cleaning.

3.2.2 Zone 2 Surface Drainage Zone

Zone 2 extends from the edge of Zone 1 to four feet beyond the bottom of the ditch. Zone 2 may extend beyond four feet if operational needs determine additional area is needed. Zone 2 vegetation is maintained to provide for an unobstructed vehicle recovery area, to provide for maximum sight distance, to maintain the hydraulic capacity of ditches, to prevent the establishment of noxious weeds, to reduce the effects of erosion and to enhance visual qualities. The desired condition for Zone 2 is low growing grasses and shrubs, no obstructions to features or sight distance, no noxious weeds and no obstructions to drainage. Zone 2 vegetation maintenance activities include mowing, ditch cleaning, brush mowing, brush cutting by hand, and herbicide spray (selective herbicides only).

3.2.3 Zone 3 Maintenance Zone

Zone 3 extends from the edge of Zone 2 to the right of way boundary. Zone 3 vegetation is maintained to blend in to or screen adjacent surroundings. The desired condition for Zone 3 is no obstructions to features and sight distance, no hazard trees and no "A" listed noxious weeds and minimal "B" listed noxious weeds. Zone 3 maintenance activities include selective tree thinning, tree corridor plans, hazard tree removal, noxious weed control, Special Management Areas (SMAs) management, selective herbicide applications, right of way fence repair, and utility installation and repair.

3.2.4 Noxious Weed Management

ODOT is required to control any weeds designated as noxious by the state or the respective counties (ORS 569). The Oregon Department of Agriculture (ODA) has developed a Noxious Weed Classification and Policy that rates noxious weeds as either "A", "B" or "T" listed weeds. See Reference C. ODOT will control all "A" listed noxious weeds found on the right of way. ODOT will manage "B" and "T" listed noxious weeds on a case by case basis. In addition to the ODA Policy, County Weed Boards may establish noxious weed lists. County weed contacts are listed at:

http://www.oregon.gov/ODA/PLANT/WEEDS/county_contacts.shtml

3.2.5 Special Management Areas

ODOT has established the SMA program to protect State and Federal listed threatened and endangered (T&E) plant species identified on ODOT right of way. SMA's are marked with signs that instruct ODOT Maintenance Crews on allowable activities.

ODOT is in the process of creating a Habitat Conservation Program (HCP). The HCP is an agreement between US Fish and Wildlife, ODA and ODOT that outlines how ODOT State and Federal Listed Plant T&E plant species are managed along the right of ways.

3.2.6 Tree Management

Tree management activities are designed to eliminate hazard trees, restore sight distance, minimize or remove shading that may cause icy conditions, and control or prevent slope failure, remove fire danger or fire impacted trees, reduce snowdrift accumulation near roadways and to maintain a clear zone along the roadway. For further guidance on tree management refer to the 'Routine Road Maintenance Water Quality and Habitat Guide, Best Management Practices' (2009). For additional information and best management practices on tree management refer to activity 133 Brush Cutting, in the ODOT Maintenance Guide

3.2.7 Migratory Birds

The Migratory Bird Treaty Act of 1918 was developed to stop the indiscriminant killing and market hunting of migratory birds. Under the MBTA it is unlawful to possess, pursue, hunt, take, capture, kill, or attempt to take, capture or kill any migratory bird, any part, nest, or eggs of any such bird except as permitted in regulation. To provide guidance for the MBTA, ODOT has developed a Highway Division Directive (ENV 01-01) to provide guidance for maintenance personnel. The Highway Directive can be located in the ODOT Routine Road Maintenance, Water Quality and Habitat Guide, Best Management Practices (Rev. 2009), "Blue Book."

3.2.8 USDA Forest Service

State Directed Vegetation Management

State directed vegetation management activities, are funded by State funds and are not subject to NEPA requirements. This is for all activities, including herbicide use, within ODOT's right of way. The Memorandum of Understanding (MOU) defines the right of way as the highways surface, shoulders, structures and such traffic-control devices as are necessary for safe and efficient utilization of the highway. This also includes maintenance on properties leased by ODOT such as maintenance stations, housing compounds, stockpile and quarry sites and rest areas. For these scenarios, ODOT determines the types of herbicides that are applied. The MOU does, however, require that all herbicide applications are done in coordination with local Forest Service staff. A pesticide use permit (PUP) must be submitted at least one week ahead of scheduled applications.

Vegetation Treatments Beyond What is Needed for Maintenance

Vegetation activities beyond what is needed for maintenance (outside the right of way), including invasive plant and native plant management, must be consistent with Forest Service NEPA and Land Management Plan Standards. The status of Invasive Plant NEPA varies by Forest. This influences which herbicides are available. Forests that fall under the post-2005 NEPA generally have 10 herbicides available for use, and Forests that fall under the pre-2005 NEPA have three or four herbicides available.

Herbicide Use Guidelines Within USFS Boundaries

ODOT is responsible for:

- Coordinating with local USFS staff when applying herbicides within the forests. Coordination will help to determine whether NEPA is required, help identify any concerns, and to help with herbicide choices. Some herbicides have the potential to move off-site after application, so close cooperation with local USFS staff is very important.
- Submitting a pesticide use proposal (PUP) to the USFS Region 6 Pesticide Use Coordinator at least one week ahead of scheduled application (See attached form). More advanced notification is recommended. ODOT maintenance should meet with local Forest personnel and update PUPs annually prior to herbicide application season.
- Submitting an annual report outlining pesticide use by Sept 30 of each year. The ODOT Statewide IVM Coordinator will gather information and prepare the annual report.

4.0 Maintenance Activities

ODOT utilizes a variety of methods to manage vegetation including mechanical, cultural, chemical, and biological control. The selection of control method is dependent upon safety (both to the employee and the public), availability of resources (labor, equipment, materials, and budget) the environment (terrain, plant types, location) and regulatory requirements. Control methods may be utilized singularly or in combination. Specific instructions for vegetation management are listed under the Roadside and Vegetation section in the ODOT Maintenance Guide

4.1 Mechanical Control**Description**

Unwanted vegetation is managed using mechanical methods including Shoulder Blading (Activity 111), Mowing (Activity 130), Brush Mowing (Activity 132), and Brush Cutting by Hand (Activity 133).

Activity 111 – Shoulder Blading

Activity 111 involves blading and shaping unpaved shoulders to:

- Restore the proper cross section shape
- Correct drop-offs adjacent to the roadway surfacing
- Correct rutted shoulders
- Remove build-up of debris or unwanted vegetation
- Restore proper drainage on the shoulders

Best Management Practices

- Shoulder blade prior to the application of shoulder residual spray
- Follow BMP's listed in Habitat Guide and Migratory Bird Directive

Activity 130 – Mowing

Activity 130 involves machine mowing roadside vegetation, generally other than large brush or trees to:

Best Management Practices

- Mow to a minimum height of 6 inches
- Adjust mower heights to avoid scalping
- Avoid soil disruption, i.e., mowing slopes when soil is saturated
- Follow up brush cutting with herbicide applications
- Mow noxious weeds prior to seed set to prevent spreading
- To reduce brownout, mow brush that has been treated with herbicides (3-4 weeks)
- Follow BMP's listed in Habitat Guide and Migratory Bird Directive to avoid impacts to nesting birds. Prime nesting period is typically Feb. 15 to Sept. 15.

Activity 132 – Brush Mowing

Activity 132 involves machine mowing of roadside brush and small trees.

Best Management Practices

- Follow-up brush mowing with hand trimming
- Follow BMP's listed in Habitat Guide and Migratory Bird Directive to avoid impacts to nesting birds. Prime nesting period is typically Feb15th to Sept 15th

Activity 133 – Brush Cutting (Hand)

Activity 133 involves hand cutting, pruning and the removal of roadside brush and trees.

Best Management Practices

- Follow BMP's listed in Habitat Guide and Migratory Bird Directive to avoid impacts to nesting birds. Prime nesting period is typically Feb. 15 to Sept 15
- Develop corridor tree management plans that will define trees on an ODOT corridor that need to be removed based on health, location, species etc, develop a time line for removal (e.g., outside prime nesting season, typically Sept. 15 to Feb. 15); a mitigation plan that reflects appropriate conditions for the area; and a disposal plan.

4.2 Cultural Control

Description

Utilizing methods aimed at preventing the successful establishment of unwanted vegetation including:

Best Management Practices

- Always request weed-free seed and erosion control materials
- Clean equipment when working in areas where noxious weeds are present
- For appropriate seed blends contact the local REC or the Statewide IVM Coordinator

4.3 Biological Control

Description

The release of biological control agents (insects, mites, pathogens) that target specific plant species.

Best Management Practices

- Use only ODA approved biological control agents

- Coordinate with the ODA when releasing
- Fill out the ODA control release form
- Release biological control agents in areas that will not be disturbed
- Include release locations in District IVM Plans

4.4 Chemical Control

Description

Herbicides are applied to control unwanted vegetation. Typical herbicide applications include:

- Teams Activity 531 - Selective herbicides are applied to control specific noxious weeds. This is performed with the use of backpack sprayers, handguns and vehicle mounted spray booms.
- Teams Activity 532 – Selective herbicides are applied to control brush and unwanted vegetation other than noxious weeds. This is performed with the use of backpack sprayers, handguns and vehicle mounted spray booms.
- Teams Activity 535 - Residual, non-selective herbicides are applied to the road shoulder through vehicle mounted spray booms to specified widths (8 ft. maximum on Interstates and 6 ft. maximum on Secondary Highways).

Best Management Practices

- Licensing and Certification- Public employees who apply restricted use pesticides, consult in the use of restricted use pesticides, or apply any pesticide with motorized equipment are required by the ODA, to be licensed as public applicators. To become certified as a public pesticide applicator employees are required to pass the Laws and Safety exam and the Right of Way Category exam. The certification period lasts five years. To remain certified, the applicator must complete 40 ODA approved pesticide credit hours. A maximum of 15 recertification credits may be taken annually. In the event that the applicator does not receive enough credits, they will lose their certification and will have to retest.
- Choosing Herbicides
 - Carefully read EPA label instructions before purchase. Pay specific attention to precautionary statements, active ingredients, personal protective equipment, environmental hazards and directions for use. If there are any questions contact the Statewide IVM Coordinator, the herbicide supplier technical representative, or the Department of Agriculture Pesticides Division.
 - Take into consideration application location including terrain, soil types, adjacent vegetation, and adjacent landowners
 - Choose least toxic herbicides to achieve vegetation management goals
 - Rotate herbicides to help prevent plant resistance
 - Dispose of herbicides according to EPA label
 - Purchase herbicides through the DAS Herbicide Convenience Contract. See Reference D
 - Limit the amount of herbicides in storage by purchasing only the amount that will be used in that year.
 - Store herbicides according to standards listed in current EMS Manual

- Applying Herbicides
 - Follow Product's EPA label instructions. Review the labels from the actual containers that herbicide is taken from.
 - Herbicide application equipment must be calibrated at least annually
 - Check weather forecasts before applying herbicides.
 - Herbicides must not be applied when the wind speed exceeds 10 miles per hour. It is strongly recommended that applicators carry handheld wind meters to check wind speeds.
 - Refrain from applying non-selective herbicides such as Roundup beyond the bottom of the ditch
 - If possible, perform brush spraying activities in the fall or winter to minimize the effects of brownout.
 - Follow up brush spraying with mowing
 - Perform shoulder work such as blading and rebuilding prior to applying residual herbicides
 - When herbicide applications are made within three feet of waters of the State the conditions of the NPDES 2300-A permit must be met. The Office of Maintenance and Operations maintains a Statewide Pesticide Discharge Management Plan (PDMP) that outlines ODOT's herbicide use in or near waters of the State. For specific information on the 2300-A permit, see Reference E.
 - When applying herbicides within USFS boundaries the current ODOT/USFS Memorandum of Understanding must be followed.
 - A pesticide use proposal form must be filled out and approved by the USFS prior to herbicide applications within USFS boundaries. See Reference F.

- Spray Widths/Heights
 - Limit shoulder spray to 8 feet on Interstate highways and to 6 feet on secondary highways.
 - Limit shoulder spray to the bottom of the ditch.
 - Refrain from applying non-selective herbicides such as Roundup beyond the bottom of the ditch.

- Vegetation Control/ No-Spray Permit

Landowners can acquire a permit to manage roadside vegetation adjacent to their property. In addition, the landowner can request that ODOT refrain from applying herbicides to the roadside adjacent to their property. The landowner must control vegetation to the standards outlined in the permit. If the landowner fails to adequately control vegetation ODOT may remove the vegetation and the removal could include the use of herbicides.

Public Notification

Herbicide Application Phone System

ODOT Maintenance crews are required to contact their local dispatch with daily herbicide application information (Hwy, Beg & Ending Mile points, Start and Estimated finish time). The information will be placed into the Herbicide Application Phone System and can be accessed by calling **Toll Free at 1(888)996-8080**.

Additional Requests

Individuals may request additional herbicide application information by contacting the corresponding ODOT district office, either verbally, by mail, fax or email, as outlined in the ODOT Public Record Request Policy (ADM 07-04). The following information shall be made available upon request:

1. Tentative district schedules for the entire season. (Annual District IVM Spray Plan)
2. Weekly updates once spraying starts.
 - a. *Tentative herbicide application schedule for the following week.
 - b. Completed herbicide applications from the previous week.
 - c. Information listed by:
 - i. Highway route numbers
 - ii. Beginning and ending mile points, if possible include landmarks (i.e. four miles east of Salem).
 - iii. Type of herbicide application (i.e. Spot spray, Shoulder application).
 - d. Copies of daily spray reports. It should be noted that requests for daily spray reports will trigger the public records request policy.

*Tentative herbicide application schedules should include the following disclaimer: "The herbicide application schedule provided is tentative and is subject to change at any time. For daily information call 1(888) 996-8080 (ODOT Toll Free Herbicide Application Phone System)."

3. The requests are promptly forwarded to district IVM coordinators or appointed district personnel for response.
4. It is important that requests are completed promptly and accurately with a response time of no more than two business days of receipt.
5. Response information is distributed by district personnel to requestors either by phone, email or fax depending on the requestor's technology level.

4.5 Volunteer Activities

The Adopt-A-Highway program was expanded to include noxious weed pulling as volunteer activities. Under the new program, volunteer groups select a section of highway, a minimum of two miles, and, with the help of local county weed boards or the Oregon Department of Agriculture, develop noxious weed removal plans. Once the plan is approved, the permit is issued by the local maintenance district, and signs are installed. It should be noted that volunteers in this program may not use herbicides or powered equipment such as weed eaters or chainsaws. More information is at the following link: <http://www.oregon.gov/ODOT/Pages/involvement.aspx>

4.6 District IVM Plans

District IVM Plans are developed annually using the ODOT IVM plan template (Jan. 2010). A guidance document for the development of District IVM plans is in Reference G.

5.0 Reporting Requirements

5.1 Daily Spray Reports

- Complete Daily Spray Reports (Form 734-3494)
- Completed Daily Spray Reports are to be entered into the ODOT Daily Spray Report Database. For more information on the ODOT Daily Spray Report Database, contact the ODOT Statewide IVM Coordinator.

5.2 NPDES 2300-A Reporting Form

The NPDES 2300-A reporting form must be filled out when herbicide applications take place within three feet of waters of the state. For more information on the NPDES 2300-A reporting form, contact the ODOT Statewide IVM Coordinator.

5.3 USFS Pesticide Use Proposal

A Pesticide Use Proposal form must be filled out and approved by the USFS prior to herbicide applications within USFS boundaries. For more information on the USFS Pesticide Use Proposal form, contact the ODOT Statewide IVM Coordinator.

References

- A. IVM Operational Notice #MAI 130-02
- B. ODOT Roadside Zone Classification
- C. Oregon Department of Agriculture 'Noxious Weed Policy and Classification System (2017)
- D. ODOT Herbicide Price Agreement with Wilbur Ellis
- E. NPDES 2300-A Applicator Guidance Document (March 2012)
- F. USFS Pesticide Use Proposal Form
- G. ODOT District IVM Plan Development Guide (Jan 2017)
- H. Routine Road Maintenance, Water Quality and Habitat Guide, Best Management Practices (Rev. 2014) (Blue Book)