

# Northwest Region, Area 3 Integrated Roadside Vegetation Management Plan

2024



**Washington State  
Department of Transportation**  
Maintenance Operations Division

## ***Introduction***

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The Washington State Department of Transportation's (WSDOT) Northwest Region Area 3 manages vegetation within approximately 221 miles of state highway corridor primarily in Snohomish and Northeast King County. The area maintains the Interstate 5 corridor through most of Snohomish County, the State Route (SR) 2 corridor up to Stevens Pass, the SR 9 corridor between the King County line and Arlington, SR 203, 522, and a number of smaller collector/distributor routes in and around the Everett area. A map of the entire area is included as **Figure 1** on the following page.

The primary roadside vegetation management objectives are in relation to traffic safety, employee safety, and preservation of the highway infrastructure. Additionally, as a landowner WSDOT is required to control all listed noxious weeds that occur on the right-of-way by state law (RCW 17.10 and 15.15.010). It is important that WSDOT not only meet the legal requirements for weed control, but also consider the needs and concerns of adjacent landowners in this area.

With these priority objectives in mind, WSDOT works within budget and practices an annually cycling process called Integrated Vegetation Management (IVM). Plans like this are maintained and updated annually for all areas of the state with an overall goal of establishing the most naturally self-sustaining roadsides vegetation possible. Adjustments are made year to year in each area plan based on monitoring the previous years' accomplishments and results, available budget, and prioritization of other highway maintenance activities.

This plan serves as the guidance document for vegetation maintenance in Northwest Region Area 3 for the 2024 growing season. It identifies priority locations and prescribes treatments for accomplishing safety and weed control objectives through a combination of seasonally timed control measures. Each year's actions are designed as part of a coordinated multi-year strategy to minimize roadside maintenance requirements wherever possible. This plan also accounts for specific locations where maintenance tactics are adjusted due to environmental issues, neighboring properties, local partnerships, or restoration work done through WSDOT design and construction.

The information contained in this plan document can be geographically referenced by crews in the field using iPads and the agency's Highway Activity Tracking System (HATS). Accomplishments and results are also tracked geographically through this system, providing site specific reference of historic actions and results. This development in WSDOT maintenance management will greatly improve the agency's success in properly executing planned actions, monitoring and documenting results of treatments, and in measuring cost and results over time.

WSDOT welcomes input from local public and private entities on its weed control and other vegetation management activities. Wherever appropriate the agency is looking for opportunities to plan and cooperate with others in managing the roadside. Please direct any questions, comments, or suggestions to the Northwest Region Area 3 Superintendent – Mark Renshaw, Assistant Superintendents – Doug Young or Brandon Harding, or the State's Roadside Asset Manager – Ray Willard.

**Mark Renshaw**

Maintenance Superintendent  
[RenshaM@wsdot.wa.gov](mailto:RenshaM@wsdot.wa.gov)  
(425) 258-8300  
709 N. Broadway  
Everett, WA 98206-1247

**Brandon Harding**

Assistant Superintendent  
[hardib@wsdot.wa.gov](mailto:hardib@wsdot.wa.gov)  
(425) 258-8300  
709 N. Broadway  
Everett, WA 98206-1247

**Ray Willard, PLA**

State Roadside Asset Manager  
[WillarR@wsdot.wa.gov](mailto:WillarR@wsdot.wa.gov)  
(360) 705-7865  
PO Box 47358  
Olympia, WA 98504-7358



Northwest Region, Area 3 Map  
Figure 1

## ***Northwest Region, Area 3 IVM Work Plan – 2024***

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This is an outline of the overall approach and geographic distribution of roadside vegetation management requirements throughout the maintenance area in 2024. Information is organized in relation to three groups defined in the WSDOT Maintenance Accountability Program (MAP) for the performance of roadside vegetation maintenance activities: **Control of Vegetative Obstructions, Noxious Weed Control, and Nuisance Vegetation Control. Safety Rest Area Landscape Maintenance and Drainage and Stormwater Facilities Vegetation Maintenance** are also covered. Specific locations as noted in this work plan are also mapped in the Highway Activity Tracking System (HATS) for reference by maintenance in the field.

### **Safety First**

Safety of our employees, the traveling public, and the environment are WSDOT's highest priorities and key to our success. Our licensed applicators read the entire label before using products and use the products strictly in accordance with label precautionary statements and directions. WSDOT has implemented additional agency specific restrictions on some products, to minimize any risk to aquatic or terrestrial ecosystems. Applicators wear protective equipment applicable to the products being used and discuss product exposure procedures at a daily Pre-Activity Safety Plan meeting. They inspect their calibrated equipment daily to ensure it is in proper working order. Herbicides are kept in locked storage facilities which are always kept in an organized and presentable condition. In addition to their morning safety meeting, the applicators hold brief tailgate meeting at the job site prior to work to address current and unforeseen circumstances.

### **Control of Vegetative Obstructions – 3A4**

The work of this group of maintenance activities relates to preserving the safety and operational requirements of the highway. These items are considered top priority in terms of the overall roadside maintenance needs. Vegetation management objectives and measured work activities in this category fall into four groups – **Pavement Edge Maintenance/Zone 1, One Pass Mowing/Zone 2, Tree and Brush Control/Zone 2 and 3, and Hazard Tree Removal/Zone 3.**

#### **Pavement Edge Maintenance/Zone 1**

**Work Operation: 1615**

**HATS Form: Spray Zone 1**

**HATS Map Layer: Reference lines – Roadside Features/Spray Zone 1 Reference**

This work involves the annual application of herbicides to road shoulders where necessary throughout the area. The objective of these applications in designated locations is preserving a band of gravel shoulder adjacent to the pavement that is free of vegetation. This treatment is necessary in the mapped locations described below to provide visibility and maintainability of roadside hardware and guideposts, allow room for vehicles to safely pull off on shoulders, facilitate stormwater drainage, and/or provide added visibility of wildlife approaching the highway.

#### **Total Units of Planned Treatment**

- Approximately **200 acres** of herbicide treatment will be applied to road shoulders throughout the area.

#### **Locations of Planned Treatments**

- All shoulders throughout the area will be treated in the spring
- A separate mixture will be used on USFS land including:
  - US2 MP 37 – 56.68
- Planned treatment locations are mapped in HATS layer – **Spray Zone 1 Reference**

#### **Treatment Methods**

- Herbicides are applied using a truck mounted power spray system set up to deliver a 4 ft. band of spray mixture on all shoulders except adjacent to hardware installations where it is set to deliver a 8 foot band. Application widths will extend

from the pavement edge to the back side of the hardware. The resulting width of treated shoulder may be wider in areas with steeper shoulder slope.

- Herbicide mixture is Blend R6 on the state contract:

Roundup Pro Conc. @ 32 oz/acre

Lockdown SC @ 10 oz/acre

Milestone @ 7 oz/acre

Telar @ 1.5 oz/acre

Crosshair @ 4 ozl/acre

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Herbicide mixture USFS Lands:

Roundup Pro Conc. @ 64 oz/acre

Imazapyr @ 64 oz/acre

Milestone @ 7 oz/acre

Escort @ 1.5 oz/acre

Crosshair @ 4 ozl/acre

### **Safety Mowing/Zone 2**

**Work Operation: 1625**

**HATS Form: Mowing Zone 2**

**HATS Map Layer: Reference lines – Roadside Features/Mowing Zone 2 Reference**

This work includes routine mechanical cutting of all vegetation on the road shoulder in a band width immediately adjacent to pavement. Mowing is necessary in areas where taller growing grasses or other vegetation are present and must be annually or semi-annually cut back for visibility and maintenance of roadside hardware and delineators, to maintenance traffic sight distance at curves and intersections, and for improved visibility of wildlife approaching the highway. Mowing height for these operations is typically 6 to 8 inches above the ground.

#### Total Units of Planned Mowing

- Approximately **500 acres** of Zone 2 safety mowing will be conducted throughout the area.

#### Locations of Planned Mowing

- Planned Zone 2 mowing locations are mapped in HATS.
- All shoulders with vegetative growth are mowed as needed. Some locations only require mowing less than once a year, other locations with fast growing vegetation require mowing twice per year.
- I-5 median where stormwater treatment facilities have been constructed, mowing is charged and recorded a vegetation management in stormwater treatment.

#### Treatment Methods

- Shoulder mowing operations are conducted with truck or tractor mounted flail or rotary cutting heads.
- Width of mowing varies between 5 and 20 feet as specified on HATS maps.
- Mowing operations are typically carried out in late spring, early summer, following Zone 1 herbicide applications and seed set on grass species.

### **Tree and Brush Control/Zone 2 and 3**

**Work Operations: 1622, 1625, 1626**

**HATS Forms: Tree/Brush Control – Spray, Trimming Mechanical, Trimming Manual, and Mowing**

**HATS Map Layer: None**

This includes safety and traffic operations related work in Zone 2, such as periodic side-trimming or removal of brush and trees or tree branches encroaching on or overhanging traffic operations, and impacting sign visibility. Also included is work in Zone 2 and 3 when selectively controlling emergent early succession tree species – to prevent them from growing into mature hazard trees within striking distance of the road.

#### Total Units of Planned Treatment

- Up to **15 acres** will be treated with herbicide as stump treatment in conjunction with cutting and trimming in Zone 2, or for edge control with encroaching blackberry vines
- Approximately **100 acres** trimmed with tractor/truck mounted mowing equipment
- Up to **20 acres** trimmed/pruned using hand tools this included manual brush cutting in some cases.

#### Locations of Planned Treatments

- As time allows throughout the year, annual mechanical trimming and selective removal operations are conducted throughout the area as needed to maintain safe traffic operations.
- We will be continuing to address backlog in Zone 2 in the 2024 season and planning units accordingly.

#### Treatment Methods

- Side trimming with truck or tractor mounted cutting arms are used to periodically hedge back side growth in some areas, and to selectively cut off emerging undesirable tree species.
- Hand held cutting tools are used for more selective pruning and removal of vegetative growth and overhanging branches where appropriate.
- Herbicides are used to trim back encroaching brush and tree growth and remove undesirable emergent tree species in some locations. Herbicide treatments for this purpose are made late in the growing season whenever possible.
- Herbicide products used for brush control:
  - Vastlan @ 96 oz/acre
  - Syl-tac @ 8 oz/acre

### **Hazard Tree Removal/Zone 3**

**Work Operation: 1628**

**HATS Forms: Hazard Tree Removal – Individual Tree Removal, Stand Removal, and Cleanup Fallen Trees**

**HATS Map Layer: None**

Trees within and adjacent to the right of way are routinely monitored by maintenance staff for potential risk to the highway and/or neighboring structures. Individual and stands of trees identified as a potential imminent threat will be evaluated and removed as soon as possible where needed.

#### Total Units of Planned Treatment

- There may be up to **400** mature hazard trees removed throughout the area each year.

#### Locations of Planned Treatments

- Crews are continuously looking for any trees that exhibit structural defects and could strike the road or neighboring property if they come down.
- If trees growing outside WSDOT right of way are hazards, crews work with the neighboring property owner to negotiate removal.

#### Treatment Methods

- WSDOT crews typically fall hazard trees as needed. In more challenging cases the Washington State Parks arborist crew is utilized.
- Wherever possible trees are dropped in place and left to decompose naturally.

### **Noxious Weed Control – 3A2**

This group of activities includes control of non-native invasive weed species as defined by state law and individual county designation. This group of activities is second priority vegetation management work after safety related objectives have been addressed. While all Class A, B, and C noxious weed species as listed in RCW 17.10 are considered potential targets for WSDOT

noxious weed control, the agency is currently not funded to achieve 100% control of all noxious weeds. Therefore, the top priorities for weed control are focused on locations and species that are more limited in distribution on the right of way – where there is a chance of successful eradication. To prioritize control of species that are already widespread in the area, WSDOT works with the local county noxious weed boards and coordinators, to annually review and determine which species and locations will be specifically targeted.

To prioritize, plan, and track noxious weed control, WSDOT maps and monitors weed infestations in three categories: **Priority, Planned Treatment, and General Reference.** **Priority** locations are where Class A noxious weed species exist on the right of way, and complete eradication is required by state law. **Planned Treatment** sites are locations where there are new, and/or limited distribution infestations of Class B and C noxious weed exist, and eradication is possible. **General Reference** sites are recorded for reference only to document the presence of noxious weed species which are more commonly occurring in the local area. \**General Reference points are hidden at this time and not in use.*

**Noxious Weed Control**

**Work Operations: 1616, 1618, 1641, 1699**

**HATS Forms: Pesticide Application (for spray applications,) and three sub-forms under Noxious Weed Control General– Manual/Mechanical, Seed/Fertilize/Mulch, and Biological**

**HATS Map Layer: Reference Points – Roadside Features/Noxious Weed Control Priority, Noxious Weed Control Planned Treatment, and Noxious Weed Control General Reference**

Operations are prescribed throughout the season to prevent the spread of any legally designated noxious weed species, and to reduce or eliminate populations wherever possible. Integrated treatment plans combine field monitoring and an integral mixture of seasonally timed control methods with proven effectiveness on designated species. Successful plans are consistently implemented over a series of years and annually adjusted as necessary based on field observations. Care must be taken in all cases to avoid damage to surrounding desirable/native vegetation.

**No Class A noxious weed species are known to exist on WSDOT right of way in Northwest Region Area 3.**

**Designated Target Class B and C Species Known to Exist on WSDOT Right of Way in Northwest Region Area 3:**

<b><i>Common Name/Botanical Name</i></b>	<b><i>Treatment Notes</i></b>
Absinth wormwood	
Bull thistle/ <i>Cirsium vulgare</i>	Control small patches where visible in conjunction with seasonal patrols
Butterfly bush/	
Common fennel/ <i>Foeniculum vulgare</i>	Target sites mapped and treated in the spring
Common hawkweed/ <i>Hieracium lachenalli</i>	Control where visible in conjunction with seasonal patrols
Common reed/ <i>Phragmites australis</i>	Planned treatment sites mapped in HATS and treatments are planned by WDFW crews and WSDOT crews in the spring and summer
Common teasel/ <i>Dipsacus fullonum</i>	Control where visible in conjunction with seasonal patrols
Canada thistle/ <i>Cirsium arvense</i>	Control small patches where visible in conjunction with seasonal patrols
Dalmatian toadflax / <i>Linaria dalmatica</i>	Target sites mapped and treated in the spring and fall
Hawkweed sp./ <i>Heiracium</i>	European, Tall, Yellow, and Orange planned treatment sites mapped in HATS and treated in spring and summer.
Houndstongue/ <i>Cynoglossum officinale</i>	Target sites mapped and treated at early flower stage in spring

Knapweed sp./ <i>Centaurea sp.</i>	Control where visible in conjunction with seasonal patrols, priority target sites are mapped and treated in the spring
Knotweed sp./ <i>Polygonum sp.</i>	Target sites mapped and treated after flower stage in late summer
Pampas grass	
Poison hemlock/ <i>Conium maculatum</i>	Control where visible in conjunction with seasonal patrols, priority target sites are mapped and treated in the spring
Purple loosestrife/ <i>Lythrum salicaria</i>	Target sites mapped and treated at early flower stage in summer
Spurge laurel/ <i>Daphne laureola</i>	Target sites mapped and monitored. Historic infestations I-5 median south of Downtown Everett
Sulfur cinquefoil/ <i>Potentilla recta</i>	Target sites mapped and treated at early flower stage in summer
Tansy ragwort/ <i>Senecio jacobaea</i>	Occurs sporadically throughout the area. All visible plants are sprayed in the spring prior to bud/seed set, any remaining plants visible in flower are hand pulled with seed heads removed, bagged, and disposed of
Scotch broom/ <i>Cytisus scoparius</i>	Only controlled as a noxious weed west of MP 40 on SR 2
Yellow flag iris/ <i>Iris pseudacorus</i>	Target sites mapped and treated in the summer with aquatic herbicides
Wild chervil/ <i>Anthriscus sylvestris</i>	Target sites mapped and treated in the spring

#### Total Units of Planned Treatment

- Approximately **100 acres** will be treated with a mixture of herbicide treatments and other methods described below.
- Up to **30 acres** will be mechanically cut or pulled by hand

#### Locations and Timing of Planned Treatments

- Crews from each section shed manage the noxious weed control within their sections as described below.
- Mitigation crew controls weeds on sites throughout the region and acres treated are filed under Area 3.

#### Treatment Methods

- Herbicide products and rates:
  - Capstone @ 128 oz/acre
  - Crosshair @ 16 oz/acre
  - Insist 90 @ 16 oz/acre
- Herbicides used for mitigation sites (non-selective):
  - Aquaneat @ 60 oz/acre
  - Agri-dex @ 20 oz/acre
- Herbicides used for mitigation sites (broadleaf):
  - Vastlan @ 60 oz/acre
  - Agri-dex @ 20 oz/acre

### **Nuisance Vegetation Control – 3A3**

Nuisance vegetation control takes place only in a select set of carefully prioritized locations throughout the area. These locations are delineated on maps in HATS as polygon outlines in Zone 3. Locations are prioritized to take place where there is heightened local interest in the visual appearance and condition of the roadside vegetation. Typical locations include: wider areas along limited access freeways in urban and suburban areas, freeway interchanges for local urban centers, environmentally sensitive areas, and areas where neighbors are willing to partner



with WSDOT on management efforts. Because nuisance weed control activities are not related to safety or legal requirements, and are primarily undertaken to improve the visual appearance of the roadside, they are considered the last priority vegetation management needs.

For all areas designated to receive Nuisance Vegetation Control, multi-year treatment plans have been developed. The actions contained in these plans will be executed and tracked in relation to specific Zone 3 polygons for **Nuisance Vegetation Control Zone 3**, referenced on HATS maps and described below.

### **Nuisance Vegetation Control**

**Work Operations: 1611, 1612, 1699**

**HATS Polygon Feature-based Forms: Herbicide Application, Manual/Mechanical, Biological, and Seed/Fertilize/Mulch**

**HATS Map Layer: Feature polygons – Roadside Features/Nuisance Vegetation Control Zone 3**

Maintenance activities in each identified location are planned and tracked as multi-year treatment strategies utilizing monitoring and the most effective combination of control methods – with a goal of establishing desirable vegetation that requires only minimal maintenance. Care must be taken in all cases to avoid damage to surrounding desirable/native vegetation. In some cases, soil enhancements may be used as well as seeding or planting of beneficial competition species. Successful plans are consistently implemented over a series of years and annually adjusted as necessary based on field observations.

#### **Total Units of Planned Treatment**

- Approximately **5 acres** will be treated with herbicides for nuisance weed control.
- Approximately **35 acres** will be mowed as part of nuisance weed control efforts.

#### **Locations, Treatment Methods, and Timing**

- Information outlined below is mapped in HATS layer – **Roadside Features/Nuisance Vegetation Control Zone 3**.
- Polygons for Environmental Mitigation Sites that have been turned over to maintenance are currently being developed for reference in HATS, these areas become part of area's Zone 3 inventory.
- Sites are being identified for priority Zone 3 work including: wetland mitigation sites being turned back to regular maintenance, any new construction projects following three-year plant establishment, and any areas where encampment cleanup has been conducted.

#### **Treatment Methods**

- Goal of any work conducted in these locations is to control invasive weed species and unwanted tree growth.

### **Drainage and Stormwater Facilities Maintenance – 2A4**

Highway drainage features which require vegetation management include ditches and culvert ends. Stormwater facilities maintenance operations that include vegetation management considerations are discussed in this section of the plan. This work is regulated by the agreement WSDOT has established under the statewide National Pollution Discharge Elimination System (NPDES) permit granted to the agency by the USEPA.

### **Drainage System and NPDES Maintenance**

**Work Operations: 1331, 1368, 1399**

**HATS Forms: Pesticide Application (for all spray applications), other forms are in Stormwater Feature Layer**

**HATS Map Layer: All feature types listed under Stormwater Features Layer**

Periodic removal of vegetative growth is necessary in ditches and around culvert ends to allow access for routine inspection and repair. There are several vegetation management activities necessary to maintain function and operation of certain constructed stormwater management facilities such as vegetated filter strips and

swales along the edge of pavement and throughout the roadside, and stormwater retention/detention ponds in the more urbanized areas. Each of these design features should include a manual which details the requirements in relation to control of vegetation and sediment buildup over time.

#### Locations of Planned Treatments

- All stormwater management facilities are mapped within the Stormwater Features Layer in HATS.
- All culverts are mapped in HATS, vegetation around culvert ends is maintained to be low growing and free of trees and brush.
- Vegetation management activities in stormwater management features are specified in the Highway Runoff Manual, Chapter 5, and Owner's Manual for each constructed feature (if it exists). If no Owner's Manual questions should be directed to Region Hydraulics and Landscape Architecture.
- Required work in stormwater features within the area for 2024 include:
  - None required

#### Treatment Methods and Timing

- Weed control within stormwater management features is carried out in concert with other weed control activities throughout the area, as described in the plan section Noxious Weed Control – 3A2 above.
- Removal of trees and brush in ditches and around culvert ends may be conducted in conjunction with other chemical and mechanical tree and brush control operations.

### **Safety Rest Operations – 7B1**

All safety rest areas have planted areas and vegetation maintenance requirements throughout the facility. These are some of WSDOT's most heavily accessed facilities and often one the first impressions of Washington State for the visiting public. The goal in maintenance of rest area landscape plantings is to present a well-kept appearance and plantings are intended to be maintained in a set condition throughout the year. For landscape treatments in these facilities the goal is to maintain healthy plantings in all three zones and to control all weeds. Planted vegetation is intended to be preserved and enhanced over time through pruning, hedging, trimming, and including irrigation and fertilization where necessary.

#### **Safety Rest Area Landscape Maintenance**

**Work Operations: 1711, 1752, 1789, 1799**

**HATS Forms: Pesticide Application (for all spray applications)**

**HATS Map Layers: Formal Landscape and Natural Landscape polygons**

Rest area landscape maintenance operations may be conducted by rest area attendants and/or maintenance area IVM specialists. Planting areas at all rest area sites are mapped as two sets of reference polygons in HATS showing areas with formal landscape plantings and those with naturalized plantings. Treatment plans are based on monitoring and evaluation of previous years' actions and results. Annually adaptive plans are based on the proven most effective combination of maintenance actions to keep plantings (and lawns if present) looking healthy and trimmed throughout the year.

#### Locations of Safety Rest Areas in Northwest Region Area 3

- Smokey Point NB – I-5, MP 207
- Smokey Point SB – I-5, MP 207
- Silver Lake – SB I-5, MP 188

#### Treatment Methods and Timing

- Vegetation management activities within Safety Rest Areas is conducted by the Area 3 crew with some assistance from the Rest Area Attendants.
- Routine landscape related work requirements include:

- Annual startup and winterization of irrigation.
- Weekly mowing and routine edging of lawn areas
- Weed control in lawns and in planting beds around pedestrian areas