

Eastern Region, Area 2 Integrated Roadside Vegetation Management Plan

2024



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

Introduction

The Washington State Department of Transportation (WSDOT) Eastern Region, Area 2 manages approximately **895 miles** of roadside right-of-way throughout Adams, Whitman, Spokane, and Lincoln counties. This right-of-way is part of the state highway system including portions of US 195, SR 270, SR 27, SR 26, and SR 23, as well as several other state routes in the area. A map of the area is shown on the following page.

The primary roadside vegetation management objectives are 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.

In order to best manage roadsides with these priority objectives in mind, WSDOT 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 refining the most efficient maintenance procedures, and establishing the naturally self-sustaining roadside 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 with other required highway maintenance activities.

This plan serves as the guidance document for vegetation maintenance in Eastern Region Area 2 for the 2024 growing season. It identifies priority locations and prescribes treatments for accomplishing safety and weed control objectives through the use of integrated, 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 Eastern Region Area 2 Superintendent – Tom Riebold, or the State's Roadside Asset Manager – Ray Willard.

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Eastern Region Area 2 Vicinity Map
Figure 1

Eastern Region, Area 2 IVM Work Plan – 2024

This is an outline of the overall approach and geographic distribution of planned roadside vegetation management actions throughout the maintenance area in 2024. Information is organized in relation to the three major groups of activities defined in the WSDOT Maintenance Accountability Program (MAP) for the performance of roadside vegetation maintenance: **Control of Vegetative Obstructions, Noxious Weed Control, and Nuisance Weed Control**. 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. Pre-Activity Safety Plans (PSAP) are developed for all activities and crews review, discuss and sign these plans at tailgate meetings, prior to each day's work. When applying herbicides, our licensed pesticide 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 environmental 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 any potential environmental and/or human health risks as part of the daily PASP meeting. Technicians inspect their calibrated equipment daily to ensure it is in proper working order. Herbicides are kept well organized in locked storage facilities.

Control of Vegetative Obstructions – 3A4

The work of this group of maintenance activities relates to the safety and operational requirements of the highway. These items are considered first priority in terms of overall roadside vegetation maintenance needs. Vegetation management objectives and work activities in this category fall into four subgroups: **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: Pesticide Application

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 vegetation-free gravel shoulder adjacent to the pavement. 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

- Apply approximately **400 acres** of herbicide treatment to designated road shoulders throughout the area.
- Up to **200 acres** added glyphosate only for touch up in spring/summer in conjunction w/ Noxious Weed Control ops

Locations of Planned Treatments

- Planned treatment sites are mapped as HATS line feature – **Zone 1 Treatments**
- All shoulders in the area will be treated annually in the fall with a 4' wide application of soil residual and non-selective herbicides, with designated treatment

- Special applications will be made to control patches of Equisetum species (snake grass and horsetail) on SR271, 272, and 194.
- Locations where no bare ground treatment will be applied include:
 - SR263 MP0.6 to 2.6 next to the river (marked)

Treatment Methods

- Herbicides are applied using a truck mounted power spray system calibrated to deliver a 4-foot band of spray mixture adjacent to the paved shoulder. The resulting width of treated shoulder may be wider than 4 feet in areas with steeper shoulder slope.
- The area uses pre-blended 15 gallon kegs for product delivery
- **Blend EW1** with adjuvants will be used in the area:
 - Roundup Pro Concentrate @ 26 oz/acre
 - Frequency @ 8 oz/acre
 - Portfolio 4F @ 10 oz/acre
 - Telar @ 2 oz/acre
 - Crosshair @ 4 oz/acre
- Control of equisetum species where present in or next to Zone 1 (spring treatment is best timing):
 - Telar @ 2 oz/acre
 - Crosshair @ 4 oz/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. In many cases this type of mowing is unnecessary if an adequate width of Zone 1 is present.

Total Units of Planned Treatment

- Approximately **200** acres will be mowed along the edge of the road throughout the area.

Locations of Planned Treatments

- SR 195 MP 29.0-35.0 Target is Canary Grass to prevent drifting of snow
- SR 271 MP 2.0-8.0 Target is Canary Grass for snow drift prevention
- SR 27 MP 25.0-28.0 Target is Canary Grass for snow drift prevention
- SR 27 MP 44.5-45 mowed wider (30 feet) for traffic visibility
- SR195 MP 51-53 Target is Canary grass for visibility and drift prevention
- SR 26 MP 98-118 Target is canary grass for visibility and snow drift prevention

Treatment Methods

- Mowing will be accomplished using a tractor with front and side mount drop down decks, side arm mower with rotary head used to access areas on back slope and behind guardrail

Tree and Brush Control/Zone 2 and 3

Work Operations: 1622, 1625, 1626

HATS Forms: Pesticide Application for spray applications, and three sub-forms under Tree/Brush Control –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. There is a minimal amount of this type of work required in Eastern Region Area 2.

Total Units of Planned Treatment

- Less than **10 acres** will be treated throughout the area.

Locations of Planned Treatments

- Occasional random needs throughout the area

Treatment Methods

- Manual cutting with limited herbicides when necessary

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 mature trees identified as a potential imminent threat will be further evaluated and removed as soon as possible where needed.

Total Units Planned

- Less than **10 trees/year**

Locations of Planned Treatments

- Tree of Heaven and black locust on SR 194 MP 0 to 1
- Russian olive pops up throughout the area and try to control while young
- Trees will be removed where monitoring identifies potential risk to highway or neighbors

Treatment Methods

- Manual cutting, leave wood to decompose on site wherever possible

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**, and **Planned Treatment**. **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.

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 (currently turned off)

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.

Designated Species Known to Exist on WSDOT Right of Way

- See list in Appendix A

Total Units of Planned Treatment

- Approximately **900 acres** will be treated with herbicides.
- Less than **10 acres** will be mowed to prevent seed production.

Locations of Planned Treatments

- As identified in County Weed Board notices.
- Planned treatment sites/weed locations will be mapped with iPads throughout the year as described in **Appendix A**.

Treatment Methods and Timing

- Treatment with boom applications, from truck or tractor, spot spray for touch up
- Spring/Summer touch up control will be combined with Zone 2 control in a 15 foot band:
 - Curtail @ 32 oz/acre
 - Tordon 22K @ 32 oz/acre
- Herbicides mixtures planned for use in 2024:

Early Season Targets

Mix 1:

- Opensight @ 3ozd/acre
- Trumpcard @ 64 oz/acre
- Crosshair @ 4 oz/acre

Mid-Season Targets

- Trumpcard @ 64 ozl/acre
- Tordon 22K @ 32 ozl/acre
- Crosshair @ 4 oz/acre

Late Season Targets

- Curtail @ 32 ozl/acre
- Tordon 22K @ 32 ozl/acre
- Crosshair @ 4 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, 1641, 1699

HATS Forms: Pesticide Application (for all spray applications), and 3 sub-forms under Nuisance Veg. Control General – 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 **25 acres** will be treated with herbicide for nuisance weed control.
- SR26 will have new passing lane added in coming years and will have some plant establishment needs

Locations of Planned Treatments

- SR 26 Dusty near the grain elevator, alkali soils,
- SR 27 MP 40.9 Environmental Mitigation Site released to maintenance winter of 2020 will be treated at the direction of the regional environmental coordinators
-

Treatment Methods and Timing

- See mixes used for Noxious Weed Control
- Herbicide treatments generally occur in the early part of the summer, or when weeds are starting to flower.

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.
 - SR 270 passing lanes were constructed with shoulder filters and stormwater ponds (Owner's Manual?)
- 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 Eastern Region Area 2

- Horn School

- Polygons have been created for outlines on high and low maintained landscape areas throughout the site. These polygons will be incorporated with HATS in the future.

Treatment Methods and Timing

- Vegetation management activities within Safety Rest Areas is conducted by the Area 1 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
 - Sewage Lagune – Bare ground around spray bottom, selective broadleaf when dry, sometimes may need to treat with aquatic application when wet

Noxious Weed Targets on WSDOT Right of Way

Noxious weed control is defined by state law in RCW 17.10. Species present on WSDOT right of way in Eastern Region Area 2 are listed below, and infestation locations will be mapped in HATS over the coming year.

There are no Class A weeds known to exist on WSDOT right of way in the area. The following table lists the Class B and C weed targets found on the right of way in Adams, Spokane, Whitman and Franklin Counties, and explains the treatment strategy for each species.

Common Name/Botanical Name	Treatment Notes
Bugloss, Annual (<i>Anchusa arvensis</i>)	Isolated patches are mapped in HATS and controlled at bud stage in summer
Bugloss, Common (<i>Anchusa officinalis</i>)	Isolated patches are mapped in HATS and controlled at bud stage in summer
Cereal rye (<i>Secale cereale</i>)	Monitor for presence and map with pink dots in HATS
Common catsear (<i>Hypochaeris radicata</i>)	Control where visible in conjunction with seasonal patrols
Common reed (<i>Phragmites australis</i>)	One patch on SR23, mapped in HATS and treated with specified herbicide mix in summer
Dalmatian Toadflax, (<i>Linaria dalmatica</i> spp <i>dalmatica</i>)	Target sites mapped and treated in the spring and fall
Hawkweed sp. (<i>Hieracium</i> sp.)	Control where visible in conjunction with seasonal patrols
Hawkweed, Orange (<i>Hieracium aurantiacum</i>)	Get input from weed boards
Hoary alyssum (<i>Berteroa incana</i>)	Control where visible in conjunction with seasonal patrols
Hoary cress (<i>Cardaria draba</i>)	Control where visible in conjunction with seasonal patrols
Jointed goatgrass (<i>Aegilops cylindrical</i>)	Get input from weed boards
Knapweed sp. (<i>Centaurea</i> sp.)	Control where visible in conjunction with seasonal patrols
Knapweed, Russian (<i>Acroptilon repens</i>)	Control where visible in conjunction with seasonal patrols
Kochia (<i>Kochia scoparia</i>)	Control where visible in conjunction with seasonal patrols
Leafy Spurge (<i>Euphorbia esula</i>)	Isolated patches are mapped in HATS and controlled at bud stage in summer SR23 Peggy was controlling. 195 MP68 mapped
Longspine sandbur (<i>Cenchrus longispinus</i>)	Currently under investigation, county weed
Meadow clary (<i>Salvia pratensis</i>)	Control where visible in conjunction with seasonal patrols
Perennial Sowthistle (<i>Sonchus arvensis</i>)	Control where visible in conjunction with seasonal patrols
Puncturevine (<i>Tribulus terrestris</i>)	Infestation areas are mapped in HATS and controlled at bud stage in summer
Purple Loosestrife, (<i>Lythrum salicaria</i>)	Isolated patches are mapped in HATS and controlled at bud stage in summer
Rush Skeletonweed (<i>Chondrilla juncea</i>)	Infestation areas are mapped in HATS and controlled in spring at rosette stage

Common Name/Botanical Name	Treatment Notes
Silverleaf Nightshade (<i>Solanum elaeagnifolium</i>)	Control where visible in conjunction with seasonal patrols
Spikeweed (<i>Hemizonia pungens</i>)	Control where visible in conjunction with seasonal patrols
Spiny cocklebur (<i>Xanthium spinosum</i>)	Control where visible in conjunction with seasonal patrols
Tansy Ragwort (<i>Senecio jacobaea</i>)	<i>Get input from weed boards</i>
Thistle, Canada (<i>Cirsium arvense</i>)	Control where visible in conjunction with seasonal patrols
Thistle, bull (<i>Cirsium vulgare</i>)	Control where visible in conjunction with seasonal patrols
Thistle, scotch (<i>Onopordum acanthium</i>)	Infestation areas are mapped in HATS and controlled in spring at rosette stage
Toadflax, yellow (<i>Linaria vulgaris</i>)	Control where visible in conjunction with seasonal patrols
White Bryony (<i>Bryonia alba</i>)	Control where visible in conjunction with seasonal patrols
Yellow starthistle (<i>Centaurea solstitialis</i>)	Control where visible in conjunction with seasonal patrols