

Southwest Region

Integrated Roadside Vegetation Management Plan

2019



**Washington State
Department of Transportation**

Maintenance Operation Divisions

Introduction

The Washington State Department of Transportation's (WSDOT) Southwest Region manages vegetation within 1207 miles of state highway corridor in Lewis, Cowlitz, Clark, Skamania, Pacific, Wahkiakum and Klickitat Counties. In addition to the Interstate 5 corridor North of Centralia to the Oregon border and all of Interstate 205, the area maintains State Route (SR) 14 through the Columbia Gorge out to about the Benton County line, US 12 east to Packwood, US 97, 197 and all of State Routes 4, 6, 7, 100, 101, 103, 141, 142, 401, 409, 411, 432, 433, 500, 501, 502, 503, 504, 505, 506, 508. A map of the area is included as **Figure 1** on the following page.

The primary roadside vegetation management objectives are in relation to traffic 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 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.

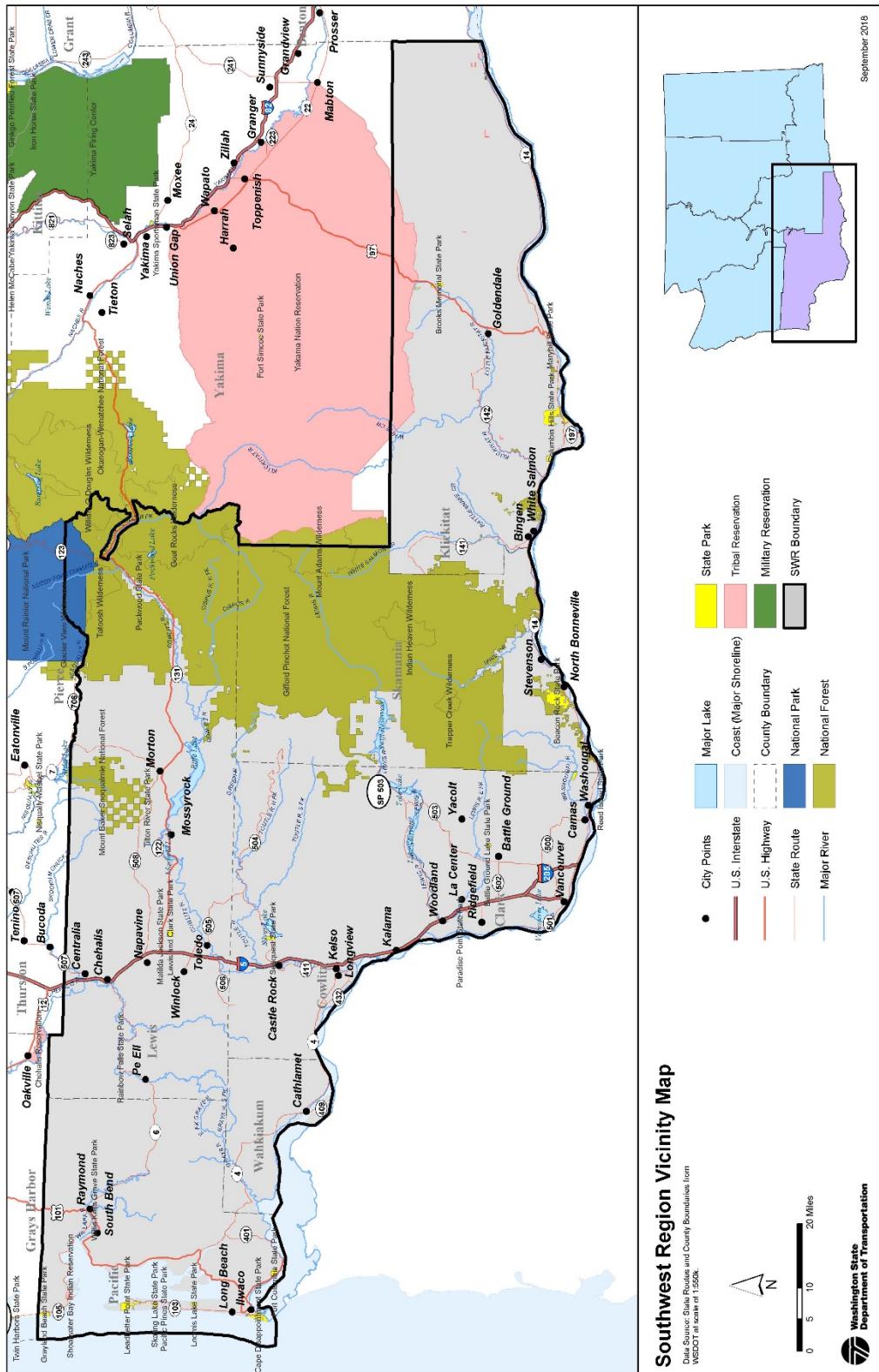
This plan serves as the guidance document for vegetation maintenance in Southwest Region for the 2019 growing season. It provides a general description of the area work plan, and includes treatment prescriptions for accomplishing safety and prioritized weed control objectives through the use of a combination of seasonally-timed control measures. Each year's actions are designed as part of a coordinated multi-year strategy to efficiently maintain traffic safety and comply with weed control laws on all state roadsides, and working within budget, to invest in restoring a set of selected priority locations to a stable self-sustaining native condition. 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.

As of the 2019 season, the information contained in this plan document can be geographically referenced by crews in the field using iPads and the Highway Activity Tracking System (HATS). Accomplishments and results will also be tracked geographically through this new system. 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 Southwest Region Maintenance Manager – Bob Kofstad, or the State's Roadside Asset Manager – Ray Willard.

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Southwest Region Map
Figure 1

Southwest Region IVM Work Plan – 2019

This is an outline of the overall planned approach and geographic distribution of roadside vegetation management requirements throughout the Southwest Region in 2019.

Information is organized in relation to four groups of activities defined in the WSDOT Maintenance Accountability Program (MAP) for the performance of roadside vegetation maintenance activities: **Control of Vegetative Obstructions, Noxious Weed Control, Nuisance Weed Control, and Landscape Maintenance**. 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

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 the safety and operational requirements of the highway. These items are considered first priority in terms of the overall roadside maintenance needs. Vegetation management objectives and work activities in this category fall into four groups – **Pavement Edge Maintenance/Zone 1, Safety 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 includes the application of non-selective herbicides to road shoulders where necessary throughout the region. The objective of these applications in designated locations is preserving of 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 storm water drainage, and/or provide added visibility of wildlife approaching the highway.

Total Units of Planned Treatment

- Apply approximately **805 acres** of herbicide treatment to road shoulders throughout the region.

Locations of Planned Treatments

- Planned treatment sites are mapped in HATS layer – **Spray Zone 1 Reference**.
- Most gravel shoulders throughout the region will receive an annual application of herbicide in the spring or fall depending on operational needs.

- Additional treatments will be applied as needed to pavement and barrier locations where vegetation is growing in the cracks and joints.
- Locations within the National Forest shall be treated with a formulation approved by USFS.
 - Locations where no bare ground treatment will be applied include:
 - Locations along secondary roads where neighboring property owners have agreed to maintain the roadside
 - Inside City Limits except limited access areas
 - US97 mp.13-33
 - In several locations throughout the area where vegetation has established in pavement cracks and barrier joints, glyphosate will be applied annually in the spring

Treatment Methods

- Herbicides are applied using a truck mounted power spray system calibrated to deliver a 3-4foot band of spray mixture adjacent to the paved shoulder. The resulting width of treated shoulder may be wider than 3-4 feet in areas with steeper shoulder slope.
- In locations with cable rail or guard rail – Bare ground will extend from pavement edge to back side of rail
- Locations with vegetation growing in cracks and joints will be spot-sprayed in May/June with a Glyphosate product and/or an Imazapyr product.
- All locations receiving bare ground applications will be treated in early fall with the following pre-blended products in 15 gallon reusable containers, mixed with 25 gallons of water per acre
- Herbicide formulations for Zone 1 throughout the region:

<i>Spring Residual</i>	<i>Fall Residual</i>
RangerPro@64oz/acre	Method240@12.5oz/acre
Polaris@48oz/acre	Sulfomet@3oz/acre
Syl-Tac@16oz/acre	Rodeo@51oz/acre
	Escort@1.5oz/acre
	Climb@1oz/acre
	Insist@16oz/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 Treatment

- Approximately **1475 acres** of shoulders will be mowed annually throughout the region.

Locations of Planned Treatments

- Planned Zone 2 mowing locations are mapped in HATS reference layer - **Mowing Zone 2 Reference**
- All roadsides with vegetation along the edge of pavement will be mowed once per year in late spring/early summer
- No Zone 2 mowing needed on SR507
- No Zone 2 mowing on SR506 mp.1-11.53

Treatment Methods

- Mechanical mowing with side mounted flail mower
- Mowing width varies between 5 and 25 feet as specified on the HATS maps.
- Mowing will be done with multiple types of tractor mounted mowers including a 3-deck, 25 ft. total width mower, side arm mounted flail and rotary mowers, and orchard mowers.
- Where Median is narrow there should be no uncut grass left down the center if it can be caught with an extra pass.
- Some mowing will be achieved with string trimmers and weed eaters.
- Desirable, low-growing shrubs or ground covers where present will not be mowed.

Regional Prioritization

- Interstate 5 and Interstate 205 are Priority 1 routes
- Triple Gang Mowers and Double Gang Mowers will achieve the single pass mowing
- Area 1 (800 Acres) will gain a double gang mower from Area 2 (600 Acres) as they have 2

Tree and Brush Control/Zone 2 and 3

Work Operations: 1622, 1625, 1626

HATS Forms: Pesticide Application (for all 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 behind guardrail, encroaching on or overhanging traffic operations, and/or 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. Removal of mature-sized dead, diseased, dying or structurally defective trees is also included in this activity group.

Total Units of Planned Treatment

- Approximately **580 acres** will be treated throughout the area.
- This will be a combination of sprayed then mowed or mowed then treated when time and resources allow.

Locations of Planned Treatments

- Locations should be mapped in HATS feature map.
- Local areas should touch base with regional administration if help or equipment is needed

Treatment Methods

- Side arm mounted mowing heads; skid steer mower; excavators with brush heads; Truckcat mowers; Brown Brush Monitor; man-lift; hand held saws; pole saws; and chippers.
- Herbicide formulations may be used to treat seedlings trees and encroaching brush:

Early Fall

Garlon@64oz/acre
Insist90@12oz/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 exhibiting structural or health defects and identified as a potential imminent threat are removed as soon as possible.

Total Units of Planned Treatment

- Approximately **1950 mature hazard trees** are removed from region roadsides each year.

Locations of Planned Treatments

- As needed throughout the region
- Any areas proposed for logging next to the highway will be coordinated with any necessary removal of trees on the right of way, to avoid creating a fringe of hazard trees.

Treatment Methods

- 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.
- Removal will be done by WSDOT crews in most cases. Stump treatment with Garlon/Element 3A, 4 or Vastlan at time of cutting, for tree species prone to re-sprouting.
- For difficult removals WSDOT will utilize the Washington State Parks arborist crew.
- Where cottonwood stands are removed, areas will be managed from that point on for a species shift from Cottonwood to coniferous forest.

Noxious Weed Control – 3A2

This group of activities includes control of non-native invasive weed species as required 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 – 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.

Control of noxious weeds is accomplished area by area throughout the region, in response to individual county designations, and local priorities.

Noxious Weed Control

Work Operations: 1616, 1618, 1641, 1699

HATS Forms: Pesticide Application (for spray applications,) and three sub-forms under Noxious Weed Control – 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.

Priority Class A Noxious Weed on WSDOT Right of Way in Southwest Region Area 1:

Common Name/Botanical Name	Treatment Notes
Garlic mustard/ <i>Alliaria petiolata</i>	Hand pull or dig anytime, wherever plants are found
Giant hogweed/ <i>Heracleum mantegazzianum</i>	Treat in spring prior to flowering
Milk thistle/ <i>Silybum marianum</i>	Treat in late winter, early spring when plants are in rosette stage
Slenderflower thistle/ <i>Carduus tenuiflorus</i>	Treat in late winter, early spring when plants are in rosette stage

Class B and C weed species mapped for Planned Treatments on WSDOT right of way in Southwest Region Area 1:

Common Name/Botanical Name	Treatment Notes
Absinthe wormwood/ <i>Artemisia absinthium</i>	Target sites mapped and treated in Spring before plants are 12 inches tall.
Bull thistle/ <i>Cirsium vulgare</i>	Control small patches where visible in conjunction with seasonal patrols
Butterfly bush/ <i>Buddleja davidii</i>	Control where visible
Canada thistle/ <i>Cirsium arvense</i>	Key target sites are mapped for treatment in late spring. Control small patches and individual plant where visible in conjunction with seasonal patrols
Common reed/ <i>Phragmites australis</i>	Target sites mapped and treated in the fall
Common tansy/ <i>Tanacetum vulgare</i>	Control where visible in conjunction with seasonal patrols
Dalmatian toadflax/ <i>Linaria dalmatica</i>	Target sites mapped and treated in the spring and fall
European Hawkweed/ <i>Hieracium sabaudum</i>	Target sites mapped and treated in the late summer
Gorse/ <i>Ulex</i> sp.	Target sites mapped and treated in the late summer
Hawkweed sp./ <i>Hieracium</i> sp.	Control where visible in conjunction with seasonal patrols
Knapweed sp./ <i>Centaurea</i> sp.	Control where visible in conjunction with seasonal patrols, priority target sites are mapped and treated in the spring
Knotweed sp./ <i>Polygonum</i> sp.	Target sites mapped and treated after flower stage in late summer
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 are mapped and treated prior to full flower stage in summer
Rush skeletonweed/ <i>Chondrilla juncea</i>	Target sites mapped and treated in the spring, any remaining visible flowering

	plants will be treated in conjunction with summer seasonal weed patrols.
Scotch broom/ <i>Cytisus scoparius</i>	Control prioritized for Cowlitz County, and treated wherever visible on secondary roads in the area. Along I-5 control efforts are focused on isolated patches and identified Zone 3 restoration areas.
Shiny geranium/ <i>Geranium lucidum</i>	Worst infestation sites will be mapped, otherwise control where visible and per County Weed Board notifications
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
Tree of Heaven/ <i>Ailanthus altissima</i>	All visible seedlings treated wherever visible in conjunction with season weed patrols, mature plants controlled by cutting and stump treatment with herbicide
Wild chervil/ <i>Anthriscus sylvestris</i>	Target sites are mapped and treated in early spring
Yellow flag iris/ <i>Iris pseudacorus</i>	Target sites mapped and treated in the spring prior to flower and late summer after flower.

Target Species on WSDOT Right of Way in Southwest Region Area

Common Name/Botanical Name	Treatment Notes
Shiny geranium/ <i>Geranium shinonianum</i>	Target sites mapped and treated in the spring and fall, and incidental to seasonal weed patrols
Knotweed sp./ <i>Polygonum</i> sp.	Target sites mapped and treated after flower stage in late summer
Ragwort tansy/ <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
Knapweed sp./ <i>centauria</i> sp.	Control where visible in conjunction with summer seasonal patrols
Scotch broom/ <i>Cytisus scoparius</i>	Control required east of Packwood on US12 where all visible plants are treated annually with herbicide in the early summer. Cowlitz County. All other areas, controlled only in small isolated patches or incidental to seasonal weed patrols.
Dalmatian toadflax/ <i>Linaria dalmatica</i>	Target sites mapped and treated in early spring, sites are monitored and retreated in the fall if there is any grow back.
Rush skeletonweed/ <i>Chondrilla juncea</i>	Target sites mapped and treated in early spring, additional

	treatments are made to any remaining plants visible when summer season weed patrols are conducted.
Hawkweed sp./ <i>Hieracium</i> sp.	Control where visible in conjunction with seasonal patrols
Common fennel/ <i>Foeniculum vulgare</i>	Target sites mapped and treated in early spring
Poison hemlock/ <i>Conium maculatum</i>	Target sites mapped and treated in early spring
Butterfly bush/ <i>Buddleia davidii</i>	Control where visible in conjunction with seasonal patrols

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

Class B and C weed species mapped for **Planned Treatments** on WSDOT right of way in Southwest Region Area 3:

Common Name/Botanical Name	Treatment Notes
Gorse/ <i>Ulex europaeus</i>	Planned treatment sites mapped in HATS
Knotweed sp./ <i>Polygonum</i> sp.	Planned treatment sites mapped in HATS
Ragwort tansy/ <i>Senecio jacobaea</i>	Occurs sporadically throughout the area. All visible plants are sprayed 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>	Controlled with annual spray where visible throughout the area. Annual mowing when present in Zone 2. Planned treatment sites mapped in HATS where isolated, established infestations exist in Zone 3.
Wild chervil/ <i>Anthriscus sylvestris</i>	Target sites mapped and treated in the spring

Priority Class A Noxious Weed on WSDOT Right of Way in Southwest Region Area 3:

Common Name (Botanical Name)	Treatment Notes
Garlic mustard (<i>Alliaria petiolata</i>)	One location in Skamania County on SR14 at MP 41.82. It is mapped in HATS. 1-2% Glyphosate provides effective control of seedlings and rosettes.

Target Noxious Weed Species on WSDOT Right of Way

Common Name/Botanical Name	Treatment Notes
Annual bugloss (<i>Anchusa arvensis</i>)	One infestation mapped on SR14 at MP 36.11, treat in Spring
Common tansy (<i>Tanacetum vulgare</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Dalmatian toadflax (<i>Linaria dalmatica</i>)	Target sites mapped and treated in the spring and fall
Hairy willow-herb (<i>Epilobium hirsutum</i>)	Only present within Bingen City limits and controlled by city
Himalayan blackberry (<i>Rubus armeniacus</i>)	Present mainly on the west end of the area, control where visible in conjunction with summer seasonal weed patrols.

	Priority treatment sites will be mapped in areas where pioneer infestations exist.
Hoary cress (<i>Cardaria draba</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Houndstongue (<i>Cynoglossum officinale</i>)	Target sites mapped and treated in the spring and fall (Ask Marty how they kill it)
Japanese knotweed (<i>Polygonum cuspidatum</i>)	Target sites mapped and treated in the late summer/fall and plants are past the peak flowering stage.
Knapweed sp. (<i>Centaurea</i> sp.)	Control where visible in conjunction with summer seasonal weed patrols.
Kochia (<i>Kochia scoparia</i>)	Mainly present on the east end of the section. Control where visible in conjunction with summer seasonal weed patrols.
Loosestrife, purple (<i>Lythrum salicaria</i>)	All known have been controlled, any new occurrences will be controlled and sites mapped for monitoring.
Perennial pepperweed (<i>Lepidium latifolium</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Poison hemlock (<i>Conium maculatum</i>)	Target sites mapped and treated at early flower stage in spring.
Puncturevine (<i>Tribulus terrestris</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Rush skeletonweed (<i>Chondrilla juncea</i>)	Still a designate in Skamania County so any infestations or individual plants found west of Bingen will be treated and mapped for early spring treatment in 2018.
Saltcedar (<i>Tamarix ramosissima</i>)	Target sites mapped and treated in the late summer with foliar spray, or cut and stump treat at any time.
Scotch broom (<i>Cytisus scoparius</i>)	Present mainly on the west end of the area, control where visible in conjunction with summer seasonal weed patrols. Priority treatment sites will be mapped in areas where pioneer infestations exist.
Shiny geranium (<i>Geranium lucidum</i>)	Target sites are mapped and visited in spring summer and fall to treat any visible plants
Spurge laurel (<i>Daphne laureola</i>)	Control where visible in conjunction with seasonal weed patrols. Isolated plants or patches are mapped and treated in spring or summer.
Sulfur cinquefoil (<i>Potentilla recta</i>)	Isolated plants or patches are mapped and treated in spring or summer.
Tansy ragwort (<i>Senecio jacobaea</i>)	Mainly present west of Stevenson. 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
Teasel (<i>Dipsacus fullonum</i>)	
Thistle, Canada (<i>Cirsium arvense</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Thistle, Scotch (<i>Onopordum acanthium</i>)	Target sites mapped and treated at early flower stage in spring.
Tree of Heaven (<i>Ailanthus altissima</i>)	Control trees under 3' ht. with foliar herbicides in conjunction with season weed control and tree/brush spray operations. Any mature trees will be cut and stump treated.

Wild carrot (<i>Daucus carota</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Yellow starthistle (<i>Centaurea solstitialis</i>)	Present on the east side of the area, control prioritized for any occurring plant west of MP69

Total Units of Planned Treatment

- Approximately **255 acres** will be treated with herbicides for control of noxious weeds.

Locations and Timing of Planned Treatments

- Over the course of the 2018-2019 season the area will be working with the County Weed Boards to prioritize and map seasonally planned treatment sites.
- Locations will be mapped in HATS in “Features Map” as early detection Orange Dots or Red Dots for Priority Control.
- See local area IVM plan for specific locations list.

Nuisance Vegetation Control – 3A3

Nuisance vegetation control takes place only in a select set of carefully prioritized locations along the wider areas of right of way throughout the state. These locations are delineated on maps in HATS as polygon outlines where Zone 3 exists. Locations are prioritized to receive treatments where there is heightened local interest in a more controlled visual appearance and highly maintained condition. 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 Zone 3

Work Operations: 1611, 1612, 1699

HATS Forms: Pesticide Application (for all spray applications), Manual/Mechanical, Biological, and Seed/Fertilize/Mulch

HATS Map Layer: Reference polygons – Roadside Features/ Zone 3 Nuisance Reference

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 **130 acres** will be mowed for nuisance weed control.
- Approximately **50 acres** will be treated with herbicides

Locations of Planned Treatments

- I-5 MP 26.4 to 32.3 Zone 3 in median throughout

- Some nuisance vegetation may be removed in Zone 3 along fence lines when time allows in response to complaints and safety concerns
- Zone 3 nuisance vegetation should be treated if possible so as not to continue reoccurrence.

Treatment Methods and Timing

- Full median mowing for nuisance vegetation followed by a broadcast herbicide treatment. The goal is to return this area back to native grasses and eradicate the weeds.
- 3-20 foot broadleaf boom shot may be used to control weeds and return the area to native grasses if necessary
- Management plan will be noted in HATS on a polygon attributes.

Landscape Maintenance – 3A5

Landscape maintenance work includes all vegetation management activities that take place on roadsides within areas designated as formal urban planting, where the intention is to enhance the appearance of freeways through urban centers. For these highly developed roadsides 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 fertilization where necessary.

Landscape

Work Operations: 1513, 1516, 1518, 1525, 1541, 1552, 1561, 1599

HATS Forms: Pesticide Application (for all spray applications), Weed Control – Manual, Weed Control – Mechanical, Pruning/Hedging/Edging, Seed/Mulch/Plant/Fertilize, Mowing Lawn, Irrigation System Operations & Maintenance, and Other Maintenance as Approved by Superintendent

Landscape maintenance operations are only conducted in a limited number of locations as described below and mapped in HATS. Maintenance activities in each identified location are planned based on a multi-year treatment strategy. Treatment decision are based on monitoring and the proven most effective combination of maintenance actions, to keep plantings (and lawns if present) looking healthy and trimmed throughout the year.

Total Units of Planned Treatment

- There are approximately **88 acres** of formally landscaped roadside.

Locations of Planned Treatments

- Reference HATS layer – Landscape Maintenance.
- Locations of designate formal landscape include:
- I-5 MP 0-3.1
- I-5 MP 5.4 99th street interchange
- I-5 MP 7.2-7.62 134 street interchange & 139th street interchange
- I-5 MP 11.4 NB Gee Creek Rest Area
- I-5 MP 12.98 SB Gee Creek Rest Area
- I-5 MP 21.09 Woodland interchange
- I-205 MP 28.37 Mill Plain interchange
- SR-14 MP 0-1.08
- SR-14 MP 14.73-15.03
- SR-500 MP 1.12 St Johns interchange
- SR-500 MP 3.14 Andresen interchange
- SR-500 MP 3.92 Thurston interchange
- SR-500 MP 5.42 Gher Rd. interchange
- SR-500 MP 7-10B

Treatment Methods and Timing

- Prune and weed control as needed, maintain irrigation, and mow lawns weekly during the growing season.