

South Central Region, Area 4 Integrated Roadside Vegetation Management Plan

2019



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

Introduction

The Washington State Department of Transportation (WSDOT) South Central Region, Area 4 manages approximately 450 miles of roadside right-of-way throughout Walla Walla, Columbia, Garfield, Whitman, and Asotin counties. This right-of-way is part of the state highway system including US12, SR124, SR125, SR129 as well as a number of other state routes in the area. 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 South Central Region Area 4 for the 2019 growing season. It identifies priority locations and prescribes treatments for accomplishing safety and 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 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.

As of the 2018 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 South Central Region Area 4 Superintendent – Larry Batterton, or the State's Roadside Asset Manager – Ray Willard.

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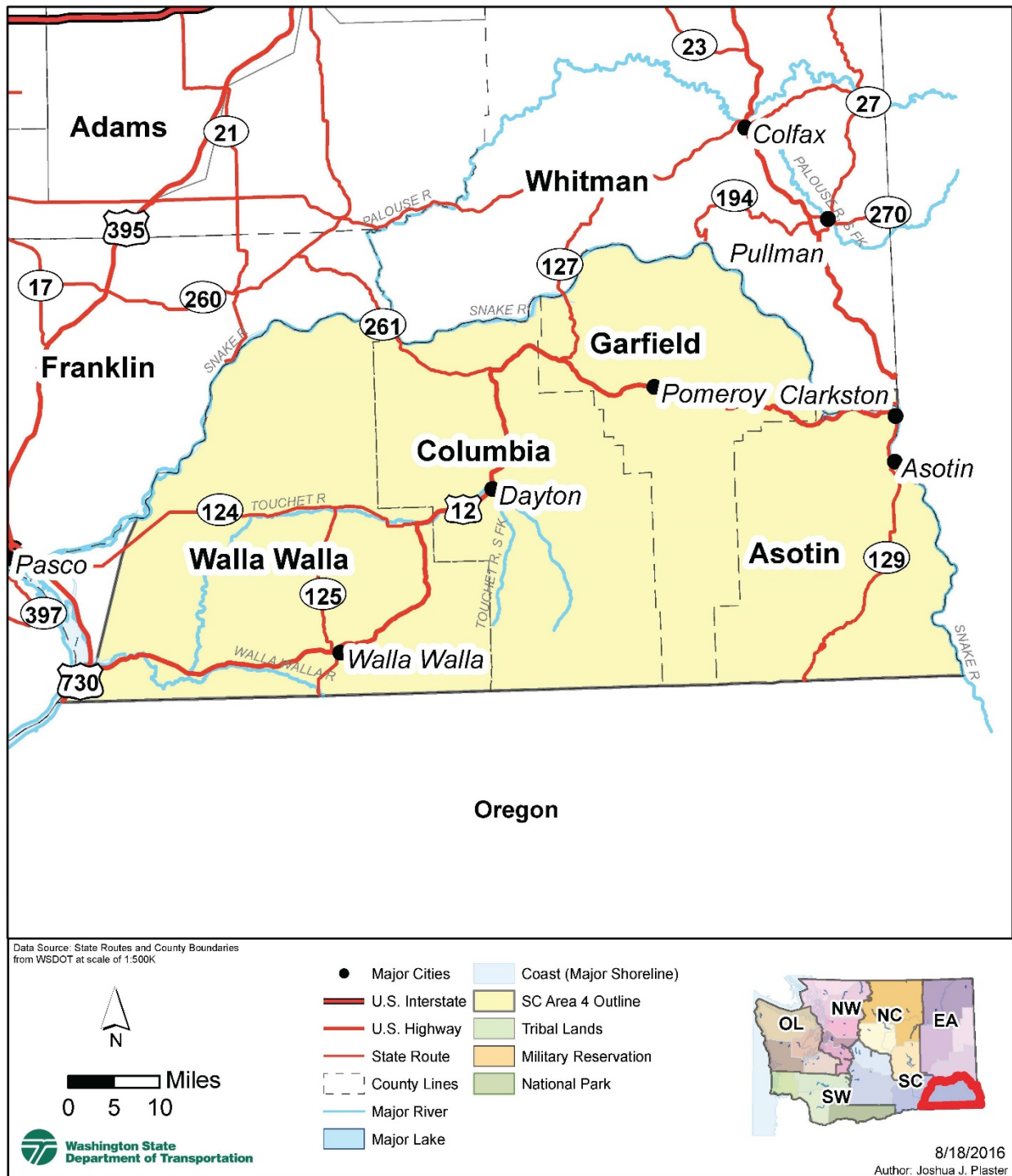


Figure 1
South Central Region, Area 4 – Vicinity Map

South Central Region, Area 4 IVM Work Plan – 2019

The section outlines the overall approach and geographic distribution of roadside vegetation management requirements throughout the maintenance area in 2019. Information is organized in relation to the four major groups defined in the WSDOT Maintenance Accountability Program (MAP) for the performance of roadside vegetation maintenance activities: **Control of Vegetative Obstructions, Noxious Weed Control, Nuisance Vegetation 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.

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 measured 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: Pesticide Application

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

This work includes the application of herbicides to road shoulders where necessary throughout the area. 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 stormwater drainage, and/or provide added visibility of wildlife approaching the highway.

Total Units of Planned Treatment

- Apply approximately **350 acres** of herbicide treatment to road shoulders with guardrail installations throughout the area.

Locations of Planned Treatments

- Planned treatment sites are mapped in HATS layer – **Zone 1 Spray Reference**.
- Soil residual herbicide treatments will be made on all gravel shoulders throughout the area.
- In addition to under-guardrail treatments, a select set of re-established bare-ground shoulder sections will be re-graded and added to the list of treatment areas. For spring of 2019 additional areas include:
 - o SR 261, MP 0 – 14.82
 - o SR 125, MP 0 – 4.47
 - o SR 125, MP 5.95 – 23.67
 - o SR 12, MP 358 – 382, Waitsburg to Delaney, All
 - o US 730, MP 0 – 6.01
 - o SR 124, MP 9.6 – 14
 - o US 12 MP 411-432.6
 - o US 12 MP 432.6- 425.1
 - o SR 127 MP 0-10
 - o SR128 MP 0-2.2
 - o SR 193 MP 0-3.5
 - o SR 129 MP 31-41.2
- Treatments will also be made along cracks in barrier in the spring in the following locations:
 - o SR 12, MP 334 – 339

Treatment Methods

- Width of application is typically 2 ft. or less and extending to the back of roadside hardware (4 ft.) where present.
- Spray equipment will be calibrated to deliver a 2 band of spray on a flat surface adjacent to the spray truck. For treatment around guardrail base and where wider bare ground is required, a second set of nozzles may be activated to deliver a 4 ft. band on a flat surface adjacent to the truck to widen out where necessary.
- Actual width of treatment on shoulders will vary depending on the steepness of the slope away from pavement.
- All locations receiving a spring application will be treated with the following mixture of herbicides and adjuvants:
- Mix 1 for areas along water bodies (mainly on the east end of the area):
 - o Payload @ 10 ozl/acre
 - o Sulfomet XP @ 3 ozd/acre
 - o Roundup Pro Concentrate @ 48 ozl/acre
 - o In-Place @ 8 ozl/acre
 - o Climb @1 oz/acre
- Mix 2 for arid areas:
 - o Krovar @ 10 lbs/acre
 - o Roundup Pro Concentrate @ 48 ozl/acre
 - o In-Place @ 8 ozl/acre
 - o Spreader 90 @ 8 ozl/acre
 - o Climb @1 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. Mowing height for these operations is typically 6 to 8 inches above the ground.

Total Units of Planned Treatment

- Approximately **400 acres** will be mowed along the edge of the road throughout the area.

Locations of Planned Treatments

- As needed for preventing snow drift and to allow for visibility at corners and intersections.

Treatment Methods

- Sickle bar mower attached to a tractor
- Flail as needed

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.

Total Units of Planned Treatment

- Approximately **15 acres** will be trimmed annually as needed throughout the area.
- Call out manual acre

Locations of Planned Treatments

- SR 12, MP 335-337, 348-351, 354, and 360-361

Treatment Methods

- Tractor mounted side arm with a brush cutting head.

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. This work also includes removal of trees and large limbs blown down from “non-disaster” events.

Total Units of Planned Treatment

- Up to **30 trees** are typically removed throughout the area each year, mostly on the east end.

Treatment Methods

- Crews are continuously looking for trees that exhibit structural defects and could strike the road or neighboring property if they come down. Any potential hazard trees identified will be further evaluated and removed as soon as possible if necessary.
- If trees growing outside WSDOT right of way are hazards, crews work with the neighboring property owner to negotiate removal.
- When possible, woody debris will be left to decompose on the roadside. In some cases debris may be taken to a nearby pit site 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.

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.

Priority Class A Species on WSDOT Right of Way in South Central Region Area 4:

- Johnsongrass/*Sorghum halepense* US12 MP 341.92 Eastbound, Lat:46.314694 - Long: -117.990501

Locations of Planned Treatments

- US12 MP 341.92 Eastbound, Lat:46.314694 - Long: -117.990501
- Reference HATS layer – **Noxious Weed Control Priority** for species location

Treatment Methods and Timing

- Currently monitoring annually for any reoccurring infestation.
- If necessary, control treatments will consist of herbicide treatment in spring when grass is between 18 and 24 inches height at the whorl. Sites are monitored throughout the summer and fall for regrowth and herbicide treatment with glyphosate only is applied if any regrowth occurs.
- Herbicide mixture:
 - o Plateau @ 10ozl/acre
 - o Roundup Pro @ 32ozl/acre
 - o Syl-Tac @ 8ozl/acre
- Re-treatment if necessary:
 - o Roundup Pro @ 64ozl/acre

Target Species on WSDOT Right of Way in South Central Region Area 4

Common Name/Botanical Name	Treatment Notes
Cereal rye	Mapping of priority treatment sites in relation neighboring concerns
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. SR 12 MP 336.56 2nd Ave Eastbound off ramp
Knapweed, Russian (<i>Acroptilon repens</i>)	Control where visible in conjunction with seasonal patrols. Except for SR12 MP 314 Eastbound by Byrnes Rd. where WSU is monitoring and collecting bio agents – Do not spray
Knapweed, spotted (<i>Centaurea stoebe</i>)	Control where visible in conjunction with seasonal patrols
Kochia (<i>Kochia scoparia</i>)	Control where visible in conjunction with seasonal patrols SR 12 MP 315.45 South side of highway and RXR
Mediterranean sage (<i>Salvia aethiopis</i>)	Target sites mapped and treated in early spring. SR 261 MP 12.4 East side of road

Perennial sowthistle (<i>Sonchus arvensis</i>)	Control where visible in conjunction with seasonal patrols
Puncturevine (<i>Tribulus terrestris</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. SR 12 335.3 Landscape South side
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. SR 124 MP 12.35 South side of Highway, SR 12 MP 374.8 North side of Highway, MP 377.53 North side of Highway MP 388-402 SR 127 MP 0-8
Spikeweed (<i>Centromadia pungens</i>)	Control where visible in conjunction with seasonal patrols. In 2019 focus will be on follow up to mowing control done in 2016 on US12 west of town. SR 125 MP 7.4 along DOC fence SR 12 MP 322.03 South side of Highway and RXR
Tansy ragwort (<i>Senecio jacobaea</i>)	Occurs sporadically in places throughout the area. All visible plants are sprayed in the spring prior to flower/seed set, any remaining plants visible in flower are hand pulled with seed heads removed, bagged, and disposed of
Thistle, Canada (<i>Cirsium arvense</i>)	Control where visible in conjunction with seasonal patrols. Target sites of reoccurring infestations are mapped, monitored annually and treated if necessary. SR 125 MP 3.6 Next to Big 5 Retail store. MP13.85 East side of twin bridges SR 12 MP 335.33 Round a Bouts, MP 370.42 North Side of Highway MP 411- 419
Thistle, Scotch (<i>Onopordum acanthium</i>)	Control where visible in conjunction with seasonal patrols SR 730 MP 4.8 South side of Historical Marker
Tree of Heaven (<i>Ailanthus altissima</i>)	Control where visible in conjunction with seasonal patrols. Target sites of reoccurring infestations are mapped, monitored annually and treated if necessary. SR 12 MP 335.9 13 th Ave

Total Units of Planned Treatment

- Approximately **400 acres** will be treated with herbicides for noxious weed control.
- We will mow noxious weeds as part of IVM treatments in select locations if time allows. Less than **20 acres** per year.

Locations of Planned Treatments

- Priority treatment areas and species are identified by County Noxious Weed Boards and mapped in the HATS map layer – **Noxious Weed Control**
- **General.**
- Area IVM technicians will verify and edit weed location data in HATS as treatments are carried out through the season.

Treatment Methods and Timing

- In many cases weeds will be spot-treated with broad spectrum herbicide formulations in the spring and early summer, with a goal of preventing seed production and reducing populations when possible.
- For the priority infestation sites listed below multi-year, integrated treatment plans will be developed and implemented beginning in 2019:
 - o US 12 mp 336.56, 2nd Ave Eastbound off ramp, Lat: 46.314706 Long: - 117.990484, Pest: Dalmation Toadflax, Canada thistle
 - o US12 mp 314 Eastbound @ Byrnes Rd. ESA area bio control needed

- along Walla Walla River. Lat:46.314696 Long: -117.990474, Pest: Russian Knapweed
 - SR 261 mp 12.6 Southbound. Lat: 46.314721 Long: -117.990489, Pest: Mediterranean Sage
- Herbicide mixes used:
 - Spring targets:
 - Opensite @ 3.0 ozd/acre
 - Spreader 90 @ 32 oz per 100 gallons water
 - Summer targets:
 - Escalade @ 32-48 ozl/acre
 - Spreader 90 @ 32 oz per 100 gallons water
 - Species specific: *Kochia*
 - Arsenal @ 29.5 oz/acre
 - Roundup pro @ 32 oz/acre

Nuisance Vegetation Control – 3A3

Nuisance vegetation control takes place only in a select set of carefully prioritized locations throughout the state, primarily along wider rights of way and interchanges on limited access highways. 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: Reference polygons – 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 **300 acres** will be treated with herbicides for nuisance vegetation control.
- Approximately **300 acres** will be mowed as part of IVM treatments for nuisance vegetation.

Locations of Planned Treatments

- Designated wide areas west of Walla Walla on US12.

- SR 124, 125 in select areas
- Non-landscaped gateway interchanges.
- Reference HATS layer – **Nuisance Vegetation Management**, polygons for the planned treatment areas will be mapped in the coming year.

Treatment Methods and Timing

- Milestone @ 7 oz/acre
- Vanquish @ 16 oz/acre
- Syl-Tac @ 16 oz/acre

Early Spring Chemical Application, Jim Hill Mustard

- Brox 2EC @ 24 oz/acre
- Vista XRT @ 16 oz/acre
- Spreader 90 @ 8oz/acre

Late Spring: Chemical Application, Mullen

- Milestone VM @ 7 oz/acre
- Spreader 90 @ 10 oz/acre
- Tordon 22K @ 32 oz/acre

Landscape Maintenance – 3A5

Landscape maintenance work includes all vegetation management activities that take place on roadsides within areas designated as formal urban planting areas where the intention is to enhance the appearance of freeways through urban centers. For these 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: 1516, 1518, 1525, 1541, 1552, 1561, 1599

HATS Forms: Pesticide Application (for all spray applications), and sub-forms for all other activities

HATS Map Layer: Reference polygons – Landscape Maintenance

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 **28 acres** of formally landscaped roadside along SR12 through Walla Walla.

Locations of Planned Treatments

- Reference HATS layer – **Landscape Maintenance**.

Treatment Methods and Timing

- Primary maintenance actions include irrigation operation and lawn maintenance throughout the summer.
- Irrigation and mowing will be same as the reduced efforts applied in 2017.
- Minimal weed control is required in the well-established planting beds.
- Selective edge trimming and pruning is conducted throughout the edges of the planting beds on a 2 to 3 year cycle as needed.

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.

Weed Species Required for Control

Noxious weed control is defined by state law in RCW 17.10. Species present on WSDOT right of way in South Central Region Area 4 are listed below, and infestation locations will be mapped in HATS over the coming year.

Class B and C weeds designated by the County Noxious Weed Control Boards within Asotin, Garfield, Columbia and Walla Walla and Whitman counties are controlled throughout South Central Region Area 4. The list below includes all species designated for control as noxious weeds in the area. Those currently present or known to occur within WSDOT right-of-way are shaded grey.

Common Name/Botanical Name	Treatment Notes
Common catsear (<i>Hypochaeris radicata</i>)	
Knapweed, spotted (<i>Centaurea stoebe</i>)	
Perennial sowthistle (<i>Sonchus arvensis</i>)	
Rush skeletonweed (<i>chondrilla juncea</i>)	
Thistle, Scotch (<i>Onopordum acanthium</i>)	
Knapweed, Russian (<i>Acroptilon repens</i>)	
Kochia (<i>Kochia scoparia</i>)	
Puncturevine (<i>Tribulus terrestris</i>)	
Tansy ragwort (<i>Senecio jacobaea</i>)	
Tree of Heaven (<i>Ailanthus altissima</i>)	