



Eastern Region, Area 1

Integrated Roadside Vegetation Management Plan

2016



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

Introduction

The Washington State Department of Transportation's (WSDOT) Eastern Region Area 1 manages approximately 740 miles of roadside right-of-way throughout Spokane, Pend Oreille and Stevens' counties. This right-of-way is part of the state highway system including I-90, US-2, US-395, US 195, SR-20, SR-290 as well as a number of other state routes in the area. A map of the area is shown 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 the 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 Eastern Region Area 1 for the 2016 growing season. It provides detailed treatment prescriptions 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.

Beginning with the 2016 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 through this new system. This development in WSDOT maintenance management will greatly improve the agency's success in properly executing 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 vegetation management activities. Wherever appropriate the agency is looking for opportunities to plan, cooperate, and partner with others in managing the roadside. Please direct any questions, comments or suggestions to the Eastern Region Area 1 Superintendent – Ernie Sims, Assistant Superintendent Doug Bierce, or the State's Roadside Asset Manager – Ray Willard.

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Vicinity Map
Figure 1

Eastern Region Area 1 IVM Work Plan – 2016

This is an outline of the overall approach and geographic distribution of roadside vegetation management requirements throughout the maintenance area in 2016. 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.

Control of Vegetative Obstructions – MAP Activity 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, 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: Zone 1 Spray

This work includes the application of herbicides to road shoulders in a select set of corridors and locations throughout the area. The objective of these applications in the designated locations is maintenance of a 2-foot-wide gravel shoulder that is free of vegetation. This treatment is necessary in the locations described below to provide visibility and maintainability of roadside hardware and guideposts, room for vehicles to pull off on shoulders, storm water drainage, and/or added visibility of wildlife approaching the highway.

Total Units of Planned Treatment

- Apply approximately 160 acres of herbicide treatment to road shoulders throughout the area.

Locations of Planned Treatments

- Planned treatment sites are mapped in HATS layer – **Zone 1 Spray Reference**.
- All gravel shoulders in the area will be treated annually with herbicides to maintain a vegetation-free condition.
 - Typical width of application is 2 feet
 - SR290 and SR27 within city limits of Spokane Valley will be maintained vegetation-free for a six-foot band.
- Locations where no bare ground treatment will be applied include:
 - Depending on seasonal weather and timing, locations with standing water or where the highway is immediately adjacent to water bodies will not be treated.

Treatment Methods

- All noted locations will be treated in mid to late spring with the following mixture of herbicides and adjuvants:
 - Perspective @ 9 oz. per acre
 - Sulfomet (Oust) @ 3oz. per acre
 - Glyphosate (for post emergent treatment areas) @ 90 oz. per acre
 - Syltac.

One Pass Mowing/Zone 2

Work Operation: 1625

HATS Form: Zone 2 One Pass Mowing

This work includes routine mechanical cutting of vegetation on the road shoulder immediately adjacent to pavement. Mowing is necessary in areas with 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.

Total Units of Planned Treatment

- Less/ than 15 acres

Locations of Planned Treatments

- I-90 MP 285 – 288
- SR195 MP 95 – 80 as needed
- SR206 MP 1 – MP 15

Treatment Methods

- Six-foot-wide rotary or sickle style mower for long stretches
- Hand held gas powered weed trimmers used as needed for spot treatment where sight distance is impacted.

Tree and Brush Control/Zone 2 and 3

Work Operations: 1622, 1625, 1626

HATS Forms: 3 sub-forms under Tree/Brush Control – Spray, Trimming Mechanical, and Trimming Manual

This includes work in Zone 2 such as periodic trimming or removal of brush and trees encroaching on traffic operations and visibility. Also included is work in Zone 2 and 3 when controlling emergent undesirable tree species to prevent them from growing into hazard trees.

Total Units of Planned Treatment

- No planned treatment but will proceed on an “as needed basis” throughout the area.

Treatment Methods

- Brush hog/ chain saws/ hand held tools/ Element 3A herbicide applied to stumps.

Hazard Tree Removal/Zone 3

Work Operation: 1628

HATS Forms: 2 sub-forms under Hazard Tree Removal – Individual Tree Removal and Stand Removal

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 using best arboricultural judgment and removed as soon as possible where needed.

Total Units of Planned Treatment

- Any trees will be continually monitored in the area and any identified as a threat to the road or neighboring property will be removed as soon as possible.

Locations of Planned Treatments

- SR 2
- SR 206
- SR 211

Treatment Methods

- Chain saw

- Trees will be dropped and left in place whenever possible

Noxious Weed Control – MAP Activity 3A2

This group of activities is focused on control of weed species that are legally designated by state and county regulations for required control by all property owners. Work under this group is considered second priority after safety related objectives have been addressed. In some counties noxious weed laws may be enforced with fines and/or control work by the counties and billing of property owners if adequate control is not accomplished. WSDOT communicates annually and throughout the season with each County Noxious Weed Board to identify and prioritize infestations and planned control efforts on state highways.

In most cases the primary goal in noxious weed control is to prevent seed production and to reduce population levels where possible. The majority of IVM treatments are carried out as needed throughout the growing season on all highways in the area to accomplish this using a combination of manual, mechanical, herbicide, and/or biological agents. In addition, WSDOT and the County Noxious Weed Boards have identified a set of highest priority infestations where complete eradication and/or prevention of spread into uninfested regions are the goals.

General Noxious Weed Control

Work Operations: 1616, 1618, 16

HATS Forms: 4 sub-forms under Noxious Weed Control/General – Noxious Weed Control/Spray, Noxious Weed Control/Mechanical, Noxious Weed Control/Manual, and Noxious Weed Control/Biological

These operations are timed and carried out throughout the season to prevent the spread of legally designated noxious weed species, and to reduce or eliminate populations wherever possible. Integrate treatment plans combine field monitoring and a mixture of seasonally timed treatment 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

- Target species list is included as **Appendix A**.

Total Units of Planned Treatment

- Approximately **300 acres** will be treated with herbicides.

Locations of Planned Treatments

- All State highway right of ways and pit sites in the Spokane Maintenance Area 1.

Treatment Methods and Timing

- Seasonal timing is critical to successful reduction in weed populations. However, in some cases the only possible treatments are made simply to control seed production, rather than to reduce populations. Seasonal target species and herbicide prescriptions include:

Early Season Targets

- Knapweeds, Skeleton weed, Toadflax, Bugloss,

Mid-Season Targets

- Thistles

Late Season Targets

- Kochia

- 2016: Perspective @ 6oz. per acre/Milestone for Skeleton weed/ Tordon 22K-Telar (pit sites) Knapweeds.

Priority Noxious Weed Control

Work Operations: 1616, 1618, 1641

HATS Forms: 4 sub-forms under Noxious Weed Control/Priority – Noxious Weed Control/Spray, Noxious Weed Control/Mechanical, Noxious Weed Control/Manual, and Noxious Weed Control/Cultural

These operations are directed at locations where Class A noxious weed species are present on the right of way and state law requires complete eradication. Site specific integrated treatment plans are developed for each identified location/species. Ongoing operations will combine field monitoring and a mixture of seasonally timed treatment methods over a series of years. Sites must also be monitored for 3 to 5 years after control to check for grow back.

Species and Locations

- No Class A noxious weed species are known to exist on state right of way in Eastern Region, Area 1 at this time.

Nuisance Vegetation Control – MAP Activity 3A3

Nuisance vegetation control includes control/management of weed species that are recommended but not mandated by state and/or county law. These maintenance activities also may address vegetation growth that presents a publically perceived negative visual impact. Because nuisance weed control activities are not legally mandated and they do not pose a safety risk, they are considered the last priority vegetation management needs. Maintenance funding currently only allows for control of nuisance weed species in designated higher profile areas such as urban freeway corridors and at interchanges or when they are growing alongside designated noxious weed species and control is incidental.

Nuisance Vegetation

Work Operations: 1611, 1612, 1699

HATS Forms: 5 sub-forms under Nuisance Vegetation – Nuisance Vegetation Control/Spray, Nuisance Vegetation Control/Mechanical, Nuisance Vegetation Control/Manual, Nuisance Vegetation Control/Biological, and Nuisance Vegetation Control/Cultural

Nuisance vegetation control operations are only conducted in a limited number of locations as described below and areas mapped in HATS as polygons. Maintenance activities in each identified location are planned based on a multi-year treatment strategy utilizing monitoring and the most effective combination of control methods with a goal of establishing desirable vegetation requiring 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 50 acres will be treated with herbicides for nuisance weed control.
- No mowing for nuisance vegetation will be done in this maintenance area.

Locations of Planned Treatments

- Reference HATS layer – **Zone 3 Nuisance Vegetation Control.**

Treatment Methods and Timing

- Applications will be made on an as needed basis during and after noxious weeds are being treated.
- 2016: Perspective @ 6oz. per acre/Milestone for Skeleton weed/ Tordon 22K-Telar (pit sites) Knapweeds.

Landscape Maintenance – MAP Activity 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: 7 sub-forms under Landscape – Weed Control – Spray, Weed Control – Manual/Mechanical, Cutting/Pruning/Selective Thin, Seed/Mulch/Plant/Fertilize & Lime, Mowing Ornamental Lawns, Irrigation System Operations & Maintenance, and Other Maintenance as Approved

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 **45 acres** of formally landscaped roadside.

Locations of Planned Treatments

- Reference polygons in HATS layer – **Landscape Maintenance**.
- Locations of designate formal landscape include:
 - Interstate 90 through Downtown Spokane
 - Interstate 90/US 2 Interchange

Treatment Methods and Timing

- Mechanical: mowing irrigated turf areas regularly throughout the growing season with a *turf type mower*.
- Spot spraying broadleaf infestations on an “as needed basis”.
- Pulling weeds in areas that are inaccessible to power tools.

Appendix A – County Designate Noxious Weed Species

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 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. Class B and C noxious weeds designated for control within Spokane, Pend Oreille and Stevens Counties and currently present within WSDOT right-of-way include:

Spokane County:

- Canada thistle (*Cirsium arvense*)
- Common bugloss (*Anchusa officinalis*)
- Dalmatian toadflax (*Linaria dalmatica*)
- Garlic mustard (*Alliaria petiolata*)
- Hawkweed, orange (*Hieracium aurantiacum*)
- Hoary cress (*Cardaria draba*)
- Knapweed, diffuse (*Centaurea diffusa*)
- Knapweed, spotted (*Centaurea stoebe*)
- Kochia (*Kochia scoparia*)
- Puncturevine (*Tribulus terrestris*)
- Rush skeletonweed (*Chondrilla juncea*)
- Russian Knapweed (*Acroptilon repens*)
- Thistle, musk (*Carduus nutans*)
- Thistle, Scotch (*Onopordum acanthium*)
- Yellow starthistle (*Centaurea solstitialis*)

Pend Oreille County

- Annual Bugloss (*Anchusa arvensis*)
- Common bugloss (*Anchusa officinalis*)
- Meadow knapweed (*Centaurea Jacea x nigra*)
- Musk thistle (*Carduus nutans*)
- Plumeless thistle (*Carduus acanthoides*)
- Rush Skeletonweed (*Chondrilla juncea*)
- Scotch thistle (*Onopordum acanthium*)
- Tansy ragwort (*Senecio jacobaea*)
- Yellow starthistle (*Centaurea solstitialis*)
- Baby's breath (*Gypsophila paniculata*)
- Common catsear (*Hypochaeris radicata*)
- Wild carrot (*Daucus carota*)

Stevens County

- Annual bugloss (*Anchusa arvensis*)
- Common bugloss (*anchusa officinalis*)
- Diffuse knapweed (*Centaurea diffusa*)
- Kochia (*Kochia scoparia*)
- Musk thistle (*Carduus nutans*)
- Plumeless thistle (*Carduus acanthoides*)
- Puncturevine (*Tribulus terrestris*)
- Rush skeletonweed (*Chlordrilla juncea*)

- Scotch thistle (*Onopordum acanthium*)
- Spotted Knapweed (*Centaurea biebersteinii*)
- Tansy ragwort (*Senecio jacobaea*)
- Yellow starthistle (*Centaurea solstitialis*)