

# Eastern Region, Area 4 Integrated Roadside Vegetation Management Plan

2016



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

## ***Introduction***

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The Washington State Department of Transportation (WSDOT) Eastern Region Area 4 manages approximately 850 miles of roadside right-of-way throughout Ferry, Pend Oreille and Stevens' counties. This right-of-way is part of the state highway system including portions of US-395, SR-20, and SR-31, as well as a number of other secondary state routes in the area. A map of state highways and routes in this area is attached 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 Eastern Region Area 4 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 4 Superintendent – David Cabbage, or the State's Roadside Asset Manager – Ray Willard.

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## ***Eastern Region Area 4 IVM Work Plan – 2016***

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The section outlines the overall approach and geographic distribution of roadside vegetation management requirements and planned treatments throughout the maintenance area in 2016. Information is organized in relation to three 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**, 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.

### **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**, **One Pass Mowing/Zone 2**, **Tree and Brush Control/Zone 2 and 3**, and **Hazard Tree Removal/Zone 3**.

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

**Work Operation: 1615**

**HATS Form: Spray Zone 1**

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 to 3 foot 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, stormwater drainage, and/or added visibility of wildlife approaching the highway.

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

- Apply approximately **65 acres** of herbicide treatment to road shoulders throughout the area.

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

- Planned treatment sites are mapped in HATS layer – **Zone 1 Treatments**.
- Bare ground treatments will be applied to all gravel shoulder sections where guardrail is present.

#### **Treatment Methods**

- Treatments will be made in the fall with the following locations and mixtures of herbicides and adjuvants:
  - Esplanade @ 7 oz/acre
  - Milestone @ 5 oz/acre
  - Sulfomet @ 1 oz/acre
  - Ranger Pro @ 64 oz/acre
  - In-Place @ 16 oz/acre

### **One Pass Mowing/Zone 2**

**Work Operation: 1625**

**HATS Form: Mowing Zone 2**

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

- Approximately **1,000 acres** will be mowed annually

#### Locations of Planned Treatments

- All shoulders without guardrail will be mowed once per year where grass growth exceeds 12" height.

#### Treatment Methods

- Mowing will occur as needed once per year, after seed set and selective control of noxious weeds.
- Mowing will consist of one pass with a tractor mounted sickle-bar, locations with additional sight distance needs may be mowed beyond one pass as necessary.

### **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

- Approximately **50 acres** will be treated throughout the area.

#### Locations of Planned Treatments

- Forested and wetland locations throughout the area must be periodically cut back and trees pruned for highway safety and visibility.
- Seedling trees growing too close to the highway must be selectively removed where they occur.

#### Treatment Methods

- Some control of seedlings and encroaching brush species is accomplished incidental to noxious weed control spraying throughout the growing season.
- Mechanical side trimming is conducted using a tractor mounted cutting deck, in combination with hand saws where needed.
- In areas with overhanging branches, occasional pruning is conducted using a man-lift and hand saws.

### **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

- The area has experienced a high number of hazard trees in recent years due to fire and insect damage.
- Total trees removed are between **1,000 and 1,500 per year** throughout the area.

#### Locations of Planned Treatments

- Pine forest areas are the most effected

#### Treatment Methods

- We will fell all the danger trees and leave the debris to decompose on site.

## **Noxious Weed Control – 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**

- The area has adopted the combined designate species lists for all four counties in the area as noxious weed control targets throughout the area.
- A list of target species is included in **Appendix A**.

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

- Approximately **350 acres** will be treated with herbicides.

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

- Locations are being mapped in HATS over the course of the 2016 season, including county weed board identified “hot spots” and priority sites identified by the spray crews.

#### **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.
- Detailed treatment plans will be developed over the course of the 2016 season for implementation beginning 2017.

### **Priority Noxious Weed Control**

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

**HATS Feature-based Forms: 4 sub-forms tied to points, layer 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 weeds have been located on the highway right of way in this area at this time.

#### Locations of Planned Treatments

- If infestations are discovered, they will be recorded as features in HATS layer – **Noxious Weed Control Priority** for species location and distribution.

### **Nuisance Vegetation Control – 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 Feature-based Forms: 4 sub-forms tied to polygons, layer Nuisance Vegetation Control Zone 3 – Herbicide Application, Manual/Mechanical, Biological, and Seed/Fertilize/Mulch**

Nuisance vegetation control operations are only conducted in a limited number of locations as described below. No nuisance weed management areas are mapped as polygons in Eastern Region Area 4. Nuisance weeds are effectively managed incidental to operations to control designate noxious species.

#### Total Units of Planned Treatment

- Approximately **10 acres** will be treated with herbicides for nuisance weed control.
- No mowing for nuisance vegetation will be done in this maintenance area.

#### Treatment Methods and Timing

- The only nuisance weed control in the area will be control of non-designed weed species incidental to operations to target legally designated noxious weed species throughout the area.

There are no Class A species known to be present on state right of way in this area. However, a number of Class B and C weeds routinely emerge annually and in some places multi-year seed banks exist. Area crews work throughout the growing season to address priority infestations and randomly emerging occurrences as agreed upon and directed by the county noxious weed control boards.

Eastern Region, Area 4 includes Ferry, Stevens, and Pend Oreille Counties. The area has adopted the following list of target species based on designates in each of the three counties. Target species known to occur or currently exist on state right of way in the area:

- Annual bugloss (*Anchusa arvensis*)
- Black henbane (*Hyocyamus niger*)
- Blueweed (*Echium vulgare*)
- Bohemian knotweed (*Polygonum x bohemicum*)
- Buffalobur (*Solanum rostratum*)
- Butterfly bush (*Buddleja davidii*)
- Common bugloss (*Anchusa officianalis*)
- Common reed (*Phragmites australis*)
- Dalmation toadflax (*Linaria dalmatica* ssp. *dalmatica*)
- Diffuse knapweed (*Centaurea diffusa*)
- Garden loosestrife (*Lysimachia vulgaris*)
- Giant knotweed (*Polygonum sachalinense*)
- Herb Robert (*Geranium robertianum*)
- Hoary alyssum (*Berteroa incana*)
- Houndstongue (*Cynoglossum officinale*)
- Japanese knotweed (*Polygonum cuspidatum*)
- Kochia (*Kochia scoparia*)
- Longspine sandbur (*Cenchrus longispinus*)
- Leafy spurge (*Euphorbia esula*)
- Meadow knapweed (*Centaurea jacea* x *nigra*)
- Musk thistle (*Carduus nutans*)
- Orange hawkweed (*Hieracium aurantiacum*)
- Oxeye daisy (*Leucanthemum vulgare*)
- Perennial pepperweed (*Lepidium latifolium*)
- Plumeless thistle (*Carduus acanthoides*)
- Purple loosestrife (*Lythrum salicaria*)
- Puncturevine (*Tribulus terrestris*)
- Rush skeletonweed (*Chondrilla juncea*)
- Russian knapweed (*Acroptilon repens*)
- Saltcedar (*Tamarix ramossisma*)
- Scotch thistle (*Onopordum acanthium*)
- Spurge laurel (*Daphne laureola*)
- Spotted knapweed (*Centaurea stoebe*)
- Sulfur cinquefoil (*Potentilla recta*)
- Tansy ragwort (*Senecio jacobaea*)
- Velvetleaf (*Abutilon theophrasti*)
- Wand loosestrife (*Lythrum virgatum*)
- Wild chervil (*Anthriscus sylvestris*)
- Yellow archangel (*Lamiastrum galeobdolo*)
- Yellow hawkweed (*Hieracium caespitosum*)
- Yellow starthistle (*Centaurea solstitialis*)