Eastern Region, Area 4
Integrated Roadside Vegetation Management Plan
2017
Introduction

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 2017 growing season. It provides detailed treatment prescriptions and location data for accomplishing safety and weed control objectives through the use of a combination of 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 sensitivity, neighboring properties, local partnerships, or restoration work done through WSDOT design and construction.

The information contained in this plan document is referenced and utilized by crews in the field using iPads and the Highway Activity Tracking System (HATS). Accomplishments and results also tracked and referenced through this system, as part of the budget planning and maintenance accountability process. Carrying iPads in the field also gives maintenance crews the ability to reference a wide range of technical information and alerts for locations with environmental sensitivity or special agreements with neighbors.

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.

David Cabbage
cabbagd@wsdot.wa.gov
Maintenance Superintendent
509-684-7434
440 N. Hwy
Colville, WA 99114

Ray Willard, PLA
willarr@wsdot.wa.gov
State Roadside Asset Manager
360-705-7865
310 Maple Park Ave. SE
Olympia, WA 98504
Eastern Region, Area 4

Vicinity Map

Figure 1
The section outlines the overall approach and geographic distribution of roadside vegetation management requirements and planned treatments throughout the maintenance area in 2017. 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  
**HATS Map Layer:** Reference lines – Roadside Features/Spray Zone 1 Reference

This work involves the annual application of herbicides to road shoulders where necessary throughout the area. The objective of these applications in designated locations is preserving of a band of vegetation-free gravel shoulder adjacent to the pavement. This treatment is necessary in the mapped locations described below to provide visibility and maintainability of roadside hardware and guideposts, allow room for vehicles to safely pull off on shoulders, facilitate stormwater drainage, and/or provide added visibility of wildlife approaching the highway.

**Total Units of Planned Treatment**
- Apply approximately **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**
- Treatment widths extend to the back of hardware.
- Due to the fact that the area did not apply Zone 1 treatments last fall, there may be a need to apply early summer treatment of glyphosate only.
- 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

#### 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. In many cases this type of mowing is unnecessary if an adequate width of Zone 1 is present.

**Total Units of Planned Treatment**
- Approximately **500 acres** will be mowed annually

**Locations of Planned Treatments**
- Shoulders without guardrail will be mowed once per year in areas 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, if timing allows before IFPL regulations restrict this activity.
- 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:** Tree/Brush Control – Spray, 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 successional tree species – to prevent them from growing into mature hazard trees within striking distance of the road.

**Total Units of Planned Treatment**
- Approximately **50 acres** will be mechanically 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:** Hazard Tree Removal – Individual Tree Removal, Stand Removal, and Cleanup Fallen Trees  
**HATS Map Layer:** None

Trees within and adjacent to the right of way are routinely monitored by maintenance staff for potential risk to the highway and/or neighboring structures. Individual and stands of mature trees identified as a potential imminent threat will be further evaluated and removed as soon as possible where needed.
Total Units 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 affected.

Treatment Methods
- Wherever possible trees will be dropped in place and left to naturally decompose.

Noxious Weed Control – 3A2
This group of activities is focused on control of weed species and infestation locations identified in this plan document. The focus is on species that are legally designated by state and county regulations for required control by all property owners, along with any other identified and agreed upon species/locations that pose a unique threat to the roadside or surrounding environment if not controlled. 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 treatment sites on state highways.

WSDOT employs three distinct strategies in planning and executing noxious weed control efforts. 1.) Any and all Class A species that occur on the right of way are treated as Priority Noxious Weed Control, and all maintenance actions are planned and tracked as individual, multi-year treatment sites. All other actions are considered General Noxious Weed Control, and are carried out either by: 2.) Area-wide patrol and control operations are made in the early summer with a goal of spraying or pulling all visible target species prior to seed-set, or 3.) Early and late season treatments are planned for a set of prioritized and mapped infestation points where the goal is early detection/rapid response/eradication.

Priority Noxious Weed Control
Work Operations: 1616, 1618, 1641, 1699
HATS Point Feature-based Forms: Priority Infestation
HATS Map Layer: Feature points – Roadside Features/Noxious Weed Control Priority
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, and all control activities are recorded as point feature data in HATS. 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 4 at this time or in the recent past.

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.

General Noxious Weed Control
Work Operations: 1616, 1618, 1699, 1641
These operations are timed and carried out throughout the season to prevent the spread of designated noxious weed species, and to reduce or eliminate populations wherever possible. Integrated treatments as described in the table below, are planned to address infestations through 1.) seasonally timed treatments of identified priority sites, or 2.) during late spring/early summer section patrols to treat all visible target weed species. Successful plans are consistently implemented over a series of years and annually adjusted as necessary based on field observations. Care is 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 three counties in the area as noxious weed control targets throughout the area.
- A list of target species and treatment strategies is included in Appendix A.

Total Units of Planned Treatment
- Approximately 350 acres will be treated with herbicides.

Locations of Planned Treatments
- Locations for seasonally planned treatment sites are being mapped in HATS over the course of the 2017 season, including county weed board identified reoccurring “hot spots” and priority sites identified by the spray crews.

Treatment Methods and Timing
- Detailed treatment plans will be developed over the course of the 2017 season for implementation beginning 2018.

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 Feature-based Forms: Herbicide Application, Manual/Mechanical, Biological, and Seed/Fertilize/Mulch
HATS Map Layer: Feature polygons – Roadside Features/Nuisance Vegetation Control Zone 3

Maintenance activities in each identified location are planned and tracked as multi-year treatment strategies, utilizing monitoring and the most effective combination of control methods – with a goal of establishing desirable vegetation that requires only
minimal maintenance. Care must be taken in all cases to avoid damage to surrounding desirable/native vegetation. In some cases, soil enhancements may be used as well as seeding or planting of beneficial competition species. Successful plans are consistently implemented over a series of years and annually adjusted as necessary based on field observations.

Total Units of Planned Treatment
- There is no nuisance vegetation control planned for Eastern Region Area 4 in 2017.
Appendix A  Noxious Weed Targets

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, with treatment notes describing the strategy for control in this area:

<table>
<thead>
<tr>
<th>Common Name/Botanical Name</th>
<th>Treatment Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual bugloss (Anchusa arvensis)</td>
<td>Target sites mapped and treated in the spring with follow up treatments in summer if needed</td>
</tr>
<tr>
<td>Buffalobur (Solanum rostratum)</td>
<td>Control where visible in conjunction with summer seasonal weed patrols.</td>
</tr>
<tr>
<td>Common bugloss (Anchusa officinalis)</td>
<td>Target sites mapped and treated in the spring with follow up treatments in summer if needed</td>
</tr>
<tr>
<td>Dalmation toadflax (Linaria dalmatica)</td>
<td>Target sites will be mapped and treated in the spring and fall</td>
</tr>
<tr>
<td>Knapweed sp. (Centaurea sp.)</td>
<td>Control where visible in conjunction with summer seasonal weed patrols. Some spotted knapweed sites may be mapped</td>
</tr>
<tr>
<td>Herb Robert (Geranium robertianum)</td>
<td>Control where visible in conjunction with summer seasonal weed patrols.</td>
</tr>
<tr>
<td>Hoary alyssum (Berteroa incana)</td>
<td>Target sites will be mapped and treated in the spring</td>
</tr>
<tr>
<td>Houndstongue (Cynoglossum officinale)</td>
<td>Only controlled when growing next to other target species</td>
</tr>
<tr>
<td>Knotweed sp. (Polygonum sp.)</td>
<td>Target sites will be mapped if found</td>
</tr>
<tr>
<td>Kochia (Kochia scoparia)</td>
<td>Coming into the area along 395 and in Ferry County along SR21. These corridors will be targeted for control in the early summer. Heavy infestation sites will be mapped this year.</td>
</tr>
<tr>
<td>Longspine sandbur (Cenchrus longispinus)</td>
<td>Target sites will be mapped and treated in the spring. County weed boards help with control.</td>
</tr>
<tr>
<td>Leafy spurge (Euphorbia esula)</td>
<td>Historical sites treated and controlled in past years. These sites will be mapped and monitored.</td>
</tr>
<tr>
<td>Musk thistle (Carduus nutans)</td>
<td>Control where visible in conjunction with summer seasonal weed patrols.</td>
</tr>
<tr>
<td>Orange hawkweed (Hieracium aurantiacum)</td>
<td>Mostly on SR20, sites will be mapped and treated in spring</td>
</tr>
<tr>
<td>Oxeye daisy (Leucanthemum vulgare)</td>
<td>Only controlled when growing next to other target species</td>
</tr>
<tr>
<td>Plumeless thistle (Carduus acanthoides)</td>
<td>Target sites will be mapped and treated in the spring.</td>
</tr>
<tr>
<td>Rush skeletonweed (Chondrilla juncea)</td>
<td>Heavy infestation target sites will be mapped and treated in the spring. Priority control will be in areas on the northern part of the area where infestations do not currently exist.</td>
</tr>
<tr>
<td>Russian knapweed (Acroptilon repens)</td>
<td>Coming into the area along 395 and in Ferry County along SR21. These corridors will be targeted for control in the early summer. Heavy infestation sites will be mapped this year.</td>
</tr>
<tr>
<td>Scotch thistle (Onopordum acanthium)</td>
<td>Target sites will be mapped and treated in the spring.</td>
</tr>
<tr>
<td>Sulfur cinquefoil (Potentilla recta)</td>
<td>Only controlled when growing next to other target species</td>
</tr>
<tr>
<td>Tansy ragwort (Senecio jacobaea)</td>
<td>Control where visible in conjunction with summer seasonal weed patrols.</td>
</tr>
<tr>
<td>Hawkweed sp. (<em>Hieracium sp.</em>)</td>
<td>Control where visible in conjunction with summer seasonal weed patrols.</td>
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<td>--------------------------------</td>
<td>---------------------------------------------------------------------</td>
</tr>
<tr>
<td>Yellow starthistle (<em>Centaurea solstitialis</em>)</td>
<td>Target sites will be mapped and treated in the spring.</td>
</tr>
</tbody>
</table>