Southwest Region, Area 2
Integrated Roadside Vegetation Management Plan
2014
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Summary

This plan explains the Washington State Department of Transportation’s (WSDOT) policy and practice for maintenance of roadside vegetation for Maintenance Area 2 within the agency’s Southwest Region. This area manages vegetation within approximately 258 miles of state highway corridor throughout Lewis County. In addition to the Interstate 5 corridor, the area maintains US 12 up to the south entrance to Mt. Rainier National Park, State Routes (SR) 122, 505, 506, 508, and portions of SR 6 and 7. A map of the area is included as Figure 1 on the following page.

The primary objectives in maintenance of roadside vegetation within the area are in relation to safety of the highway users, preservation of the highway infrastructure, and control of legally designated noxious weeds where they occur on the right-of-way. Other considerations include protection and preservation of natural environment, preserving and enhancing the natural scenic quality of the roadside, and being a good neighbor to the many adjoining property owners. In all cases, roadside vegetation maintenance activities are planned and conducted in a way that discourages or eliminates unwanted vegetation and promotes desirable vegetation. This is the basic premise of Integrated Vegetation Management (IVM) and the foundation of the program.

This document and associated information management tools serve as the primary reference for maintenance of roadside vegetation in the area. Included is detailed information on policies and locations for planned routine maintenance practices, reoccurring weed infestations, sensitive areas, and other areas with special management considerations. Also included are guidelines and prescriptions for best management practices in dealing with roadside vegetation problems and opportunities. In effect, this plan supports WSDOT’s compliance with state law (RCW 17.15) by implementing the principles of Integrated Pest Management for the management of roadside vegetation. It also supports WSDOT’s long-range goals for the management of roadsides to:

- Encourage naturally stable, sustainable plant communities
- Improve effectiveness and efficiency in the control of weeds and unwanted trees and brush
- Reduce maintenance needs and herbicide use over time

This plan is organized around the major categories of roadside vegetation maintenance work. The major categories include: Zone 1 (or pavement edge maintenance), Routine Mowing, Noxious Weed Control, Nuisance Weed Control, Tree and Brush Control, and Special Maintenance Areas (areas with unique vegetation management needs or constraints).

The management of roadside vegetation is a dynamic process and it is intended that this plan be continuously adapted over time based on input from a variety of sources. An integral component of the process is a database for recording IVM treatments for specific vegetation controls and locations, and to record information on follow-up evaluation on these treatments. Annual area meetings will be held to discuss what is learned each year and refine the plan over time.

WSDOT is also requesting that local public and private entities with an interest in weed control and roadside vegetation management provide input on the plan and cooperate in efforts where appropriate. Copies of the draft plan are available online: [http://www.wsdot.wa.gov/Maintenance/Roadside/mgmt_plans.htm](http://www.wsdot.wa.gov/Maintenance/Roadside/mgmt_plans.htm), hard copies can also be provided upon request. Please contact Scott Wilcox or Ray Willard at the numbers listed below for questions or comments:

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Southwest Region, Area 2 Map
Figure 1
Roadside Management Considerations

The primary objectives for maintenance of roadside vegetation are to provide for safe highway operation and to comply with legal regulations for control of noxious weeds and protection of the environment. Overall WSDOT maintenance policy and procedures for roadside management are defined in Chapter 6 of the WSDOT Maintenance Manual (M51-01, August 2014) http://www.wsdot.wa.gov/Publications/Manuals/M51-01.htm

Visual Quality
It is also important to maintain appropriate visual standards in the appearance of the roadside. All maintenance activities should be conducted in a way that minimizes visual impacts such as widespread "brown-out" from herbicides or shattered limbs from side trimming. Roadside should look as natural as possible throughout the year. Appropriate visual quality for roadsides throughout the state is defined in the WSDOT Roadside Classification Plan (November 2011) http://www.wsdot.wa.gov/Publications/Manuals/fulltext/M25-31/RCP.pdf

Operational Zones
WSDOT roadsides are divided into several zones for the purposes of assigning management objectives, maintenance needs, and thresholds for triggering vegetation maintenance actions. Noxious weed species designated for control by state and county law are controlled throughout all zones. Not all management zones occur along all state highways. In some cases the narrow width of the right-of-way or adjoining land-use, limits the operational zones to Zone 1 and/or a narrow Zone 2 only. Roadside vegetation management zones are illustrated in Figure 2 below and defined as follows:

Zone 1 – The Pavement Edge Zone is maintained in a manner and width necessary to address highway operational functions and safety, pavement preservation, guardrail maintenance, and stormwater management. Zone 1 may include a vegetation-free band adjacent to the pavement edge, particularly when guardrail is present, or may consist of desirable vegetation up to the pavement edge depending on site specific needs. Vegetation-free Zone 1 is maintained using non-selective soil residual herbicides. Routine annual mowing is required in most cases where vegetation is established up to the edge of pavement; periodic grading may also be required to prevent excess edge build up.

Zone 2 – The Operational Zone extends from Zone 1 to a width necessary to provide for safe errant vehicular recovery, site distance at corners, intersections and for regulatory signs, and to provide for other operational, safety, and environmental protection functions. Zone 2 is typically maintained through periodic mowing and trimming and through selective removal of undesirable trees and brush as needed.

Zone 3 – In areas with sufficient right-of-way width, a Buffer or Transition Zone extends from Zone 2 to the right-of-way line to provide a buffer or transitional area between the highway facility and adjacent land uses. This area is maintained selectively, and to the greatest degree possible as a self-sustaining plant community, to minimize erosion as well as the growth of weeds and undesirable trees and brush.

Roadside Maintenance Activities
All roadside maintenance activities are to be planned and conducted in a way that discourages or eliminates unwanted vegetation and promotes desirable vegetation. This is the basic premise of Integrated Vegetation Management. In every case it is essential that the results of maintenance activities are evaluated and adjusted as necessary to maximize efficiency and effectiveness, and to establish desirable plant communities that are as self-sustaining as possible. However, in some cases maintenance activities are planned and conducted on a regularly scheduled repeating basis, such as maintenance of a vegetation-free Zone 1 and/or routine mowing cycles where appropriate.

Routine Maintenance Activities – When vegetation maintenance activities are required to keep the area of roadside being treated in an annually controlled condition, activities are considered routine. This is more critical for areas of vegetated roadside near the
travel lanes, edge of pavement, and around guardrails. This plan provides prescriptions and gives locations for routine maintenance activities including maintenance of Zone 1 and annual mowing.

**Integrated Vegetation Management Activities** – Although all activities are to be planned and conducted in accordance with the principles of IVM, many vegetation maintenance activities are intended to target a specific type or types of unwanted plants. By carefully planning and carrying out these target specific activities it is possible over time to establish desirable vegetation, which will prevent the re-infestation of unwanted plants. The process for determining and carrying out IVM actions is illustrated in Figure 3 below. This plan provides information, locations, and gives prescriptions for selective control of weeds and other unwanted vegetation and the promotion and establishment of desirable vegetation. Further information and guidance on the application of IVM is available in the document *Integrated Vegetation Management for Roadsides* (WSDOT, July 1997). A copy of this document can be obtained by contacting the state roadside maintenance program manager.

**Special Maintenance Areas** – In some locations there are unique situations that require special consideration in determining appropriate vegetation maintenance actions. Examples of these are: environmentally sensitive areas, areas with special neighbor concerns, areas where a higher level of maintenance is expected such as gateway interchanges or formally landscaped areas, or along highways that cross tribal or federal lands. This plan provides information and guidance on the locations and unique requirements or restrictions on maintenance activities in all of these situations throughout the area.

**Herbicide Use** – WSDOT has conducted independent research on herbicide risk from toxicity and environmental fate, based specifically on agency application methods and use rates. Findings from this research have been used to establish an approved palette of herbicides and application limits for state highways. A complete summary of herbicides approved for use on WSDOT rights-of-way is included in Appendix B.

For all planned herbicide applications made on US Forest Service land WSDOT will submit a Pesticide Use Proposal Form (see Appendix E) to the Forest Service R6 Pesticide Use Coordinator at the start of each season, or at least one week prior to any scheduled application. At the end of each season the WSDOT HQ Maintenance Office will submit a report outlining herbicide use performed for highway sections in each National Forest.
Typical Roadside Vegetation Management Zones

Figure 2

Pavement Edge Zone
Low Growing or Routinely Mowed Vegetation and/or Vegetation-Free Strip
Maintained using mechanical and/or chemical methods for sight distance, stormwater drainage and filtration, noxious weed control, pavement preservation and roadside hardware maintenance.

Operational Zone
No Vegetation with Stem Diameter Greater than 4"
Maintained using IVM techniques for sign visibility, sight distance, errant vehicle recovery and weed control.

Buffer Zone
Native or Naturally Occurring Vegetation
Where adequate right of way exists, maintained using IVM techniques to encourage desirable, self-sustaining plant communities.
Continuously monitor roadside vegetation

Locate areas and situations where vegetation requires IVM treatment
Document location, situation and treatment plan

Apply initial IVM treatment

Monitor and document any significant observations

Were treatments effective?

Is follow-up treatment necessary?

Apply follow-up IVM treatments

Monitor and document any significant observations

Were treatments effective?

Adjust treatment plan

Adjust treatment plan

No

Yes

No

Yes

The IVM Decision-Making Process
Figure 3
Area IVM Work Plan 2014

The purpose of this section is to identify the highest priority roadside vegetation management needs in Southwest Region, Area 2 and to describe in general the approach the area will take in addressing these needs in the coming years. Information here is presented in relation to the three major Maintenance Accountability Process (MAP) groups for roadside vegetation maintenance performance: Control of Vegetative Obstructions, Noxious Weed Control, and Nuisance Weed Control. This section is intended to supplement the information in the following section, Southwest Region, Area 2 – Roadside Vegetation Management Plan which details the guidelines and methods for accomplishing the work of roadside vegetation management along the highways within this maintenance area.

Control of Vegetative Obstructions
The work of this group of maintenance activities relates directly to the safety and operational functions of the highway and these items are considered first priority in terms of the overall roadside maintenance needs. Vegetation management goals in this category fall into two groups – Pavement Edge Maintenance/Zone 1, and Tree and Brush Control/Zone 2.

Pavement Edge Maintenance/Zone 1
- All gravel shoulders in the area will be treated annually in April/May with a mixture of pre and post emergent, non-selective residual herbicides to maintain a 3-4ft. vegetation-free band along the edge of pavement and prevent vegetation from growing around guide posts, sign posts, luminaires, junction boxes, guardrails and Scenic Byway signs. In some areas where the ditch slope begins at or near the edge of the asphalt we will maintain a vegetation free slope to the bottom of the ditch to improve site distance and minimize mowing activities where mowers might traditionally encroach too far into the traveling lanes. Maximum speed for applying residual will be 8mph to prevent drift and treating areas beyond a zone 1.
- Selective mowing will be conducted throughout the spring if needed to address safety and traffic visibility issues at interchanges, intersections, corners and encroachment points.
- As needed, all shoulders will be mowed; one mower-width pass after grass has set seed around the middle of June to enable visibility of noxious weeds and their control.

Tree and Brush Control/Zone 2
- Selective cutting and clean up from winter storm debris will be conducted throughout the area in late winter/early spring.
- On selected roads, selective spot spraying for small one to two year old trees, along with Scotch broom and blackberries where they are impacting traffic safety will be conducted throughout the summer in conjunction with noxious weed control.
- Larger trees or solid stands of blackberry and Scotch broom will be addressed with mechanical mowing/trimming throughout the year whenever time allows.
- Selective spraying of larger trees and solid stands of blackberry and Scotch broom will be conducted with broadleaf herbicides in late summer/early fall to avoid wide-spread brown-out.
- Overhanging and encroaching branches will be mechanically trimmed as time allows.
- Cut encroaching brush and vegetation from slopes with mechanical arm mower throughout the year as time allows.
- Danger trees will be assessed and removed at various times throughout the year as time allows.
Noxious Weed Control
Noxious weeds are those species legally designated by state and county regulations for required control by all property owners. Because laws are enforced with fines and/or control work and billing of property owners by county administration, work under this group is considered second priority after critical safety related locations have been addressed. Control of designated noxious weed species is typically carried out on all highways throughout the area on an as needed basis. However, some locations merit more focused attention and effort to apply multi-year IVM treatments or coordinate with adjacent landowners. The general area-wide approach and areas of focused attention for 2014 include:

- From late May to the first part of August, crews will target known infestations and incidental emergent weeds with a wide-spectrum broadleaf herbicide mixture. Priority targets include –
  - US12, MP 130 to 138 – Scotch broom
  - Packwood pit site – Scotch broom
  - Skeleton weed
  - Hawkweeds
  - Common fennel
  - Butterfly bush
  - US12 MP 66 to 76 Tansy and Knapweed
  - I-5 MP 52 to 86 Tansy and Knapweed
- In August and September crews will treat priority infestations of difficult to control deep rooted perennial species including knotweed species and Dalmatian toadflax.
  - SR7, MP 1, 4, 9, 10, 11,12, and 15 – Knotweed
  - I-5, MP 82.5 NB, 78.46 SB, and 52.65 NB – Knotweed
- September through November – Spot spraying dormant brush control

Nuisance Vegetation Control
Nuisance vegetation control includes control/management of weed species that are recommended but not mandated by state and/or county law. It also includes work such as mowing of grass and weeds in areas where a more neatly maintained appearance is desired such as in gateway interchanges or highways in urbanized areas. Because nuisance vegetation control is lower priority after safety related and legally mandated activities, the location and work actions listed below may be postponed depending on availability of resources. For 2014, the overall approaches to control of nuisance vegetation and locations where focused efforts will be applied if time and resources allow include:

- I-5, MP 76 to 83 – Except for areas with desirable native vegetation and wet areas, all of Zone 2 and 3 will be mowed out once a year to address concerns of fire hazard within the city limits.
- I-5 Labree interchange, February through April, and other landscaped areas as they evolve along the I-5 corridor, treat with a Casoron application to prohibit growth of weeds.
1. ROUTINE MAINTENANCE ACTIVITIES

Roadside maintenance activities are considered routine when a regularly occurring cycle of treatment is required to keep vegetative growth from interfering with highway operational and maintenance objectives. Typical routine maintenance activities are maintenance of a vegetation-free band at the edge of pavement where required, and certain types of mowing and trimming operations.

1.1. Shoulder Maintenance (Zone 1)

Some type of routine maintenance is required in most cases for maintenance of vegetation at the edge of pavement. Annual herbicide applications are required where a vegetation-free condition is specified, and regular cycles of mowing and/or grading are required where grass is allowed to grow up to the edge of pavement. Determination on maintenance practices and cycles for vegetation at the edge of pavement varies by roadway section. Key factors in determining the best management approach include: Lowest life cycle cost, pavement edge design/construction, environmental precautions for herbicide use, and available area resources.

1.1.1. Guidelines

- Zone 1 is maintained with the annual application of non-selective pre and post-emergent herbicides throughout the area.
- Zone 1 is 3’ maximum band width in most locations, a slightly wider band may be necessary in some guardrail installations and at gore points in interchanges.

1.1.2. Methods

- Zone 1 treatments will be applied in April/May, depending on rainfall patterns and annual plant growth.
- Pavement edges without Zone 1 will be monitored for surface drainage problems resulting from sod build-up and will be graded in locations as necessary to allow for hydraulic flow of storm water off the roadway surface.
- See Appendix A, Routine Maintenance Prescriptions, Zone 1 Maintenance

1.1.3. Locations

- Delineation for Zone 1 maintenance can be found using a web base map viewer application at: [IVM Map Viewer](#)

Data and locations represented on this map are for general reference and planning purposes only and are subject to change without notice. WSDOT cannot guarantee complete accuracy.

1.2. Mowing/Trimming (Zone 2)

Regular mowing cycles are required in locations where seasonal grass growth adjacent to Zone 1 is tall enough to interfere with traffic operations and safety. In some locations, particularly on secondary highways with narrow rights-of-way, periodic trimming is required to prevent growth of shrubs/brush or side branches on trees from interfering with traffic operations and safety.

1.2.1. Guidelines

- Routine annual mowing of roadside grass stands occurs along all shoulders throughout the area in one pass, and at least once per year.
When the intention is to mow roadsides only once during the growing season, mowing will begin in summer when the majority of spring growth has taken place and grasses are beginning to set seed, and continue as necessary through the remainder of the summer.

For roadsides that are intended to be mowed more than once during the spring growing season, an initial pass will be made in mid to late spring followed by another cycle beginning once the majority of spring growth has taken place and grasses are beginning to set seed.

Trimming is distinguished from mowing because it consists of selectively cutting back encroaching limbs and/or hedging shrubs or woody vegetation. Trimming occurs annually as well, but not in the same places every year, only in select locations as needed to preserve the safe operation of the highway.

In designated areas on Interstate 5 and SR-12, mowing widths extend beyond one mower pass. Sections of highway designated for multiple pass mowing will typically be mowed once by mid to late spring and then mowed out completely beginning in summer once the majority of spring growth has taken place and grasses are beginning to set seed.

Additional annual mowing width or frequency may also be conducted as needed for select locations on secondary highways to preserve site distance at curves, intersections and any other highway entry points.

In focus areas such as interchanges and areas adjacent to safety rest areas mowing patterns and frequencies are adjusted to local situations as described in Section 3 and Appendix C, Routine Mowing Plan (not included at this time).

In all areas outside designated routine mowing limits, mowing is only used as part of IVM treatments for weed and brush control as described below in Section 2.

### 1.2.2. Methods

- On I-5 and lower SR-12, routine annual mowing areas are designated as either single pass or multiple pass.
- Single pass mowing consists of one pass up to the maximum width of mowing equipment (25’ max.) but may be as narrow as 6’ depending on mowing equipment and the presence of existing visual lines such as ditches. When ditch lines are present, single mowing passes shall extend only to the bottom of the ditch line whenever possible.
- In areas designated as multiple pass, roadsides are mowed out from edge of pavement to the right-of-way line, the edge of shrub or tree lines, or across the entire median widths depending on the location.
- See Appendix A, Routine Maintenance Prescriptions, Zone 2 Maintenance

### 1.2.3. Locations

(locations will be available in the next version)

- Single pass routine mowing occurs on all roadsides in the area except under guardrail and other locations where a vegetation-free Zone 1 is maintained. Inaccessible steep slopes behind Jersey barrier may also be left un-mowed. Delineation for areas receiving routine multiple pass mowing can be found using a web base map viewer application at: IVM Map Viewer

Data and locations represented on this map are for general reference and planning purposes only and are subject to change without notice. WSDOT cannot guarantee complete accuracy.
1.3. Hazard Tree Monitoring and Removal (Zone 3)
In areas where there is adequate right-of-way width to accommodate Zone 3 the main objective is to establish vegetation that requires as little maintenance as possible. Whatever activities are conducted are targeted selectively at removal of unwanted vegetation and establishment of desirable vegetation. However, large trees with health or structural problems can pose a significant threat to the highway, therefore both monitoring for the presence of potential hazard trees and removal when necessary are consider routine and ongoing roadside maintenance activities.

1.3.1. Guidelines
- Hazard tree removal is considered a routine maintenance activity because maintenance is constantly on the lookout for any trees that pose an imminent threat to the highway or traffic, and whenever hazard trees are identified they are routinely removed as soon as possible.
- Hazard trees may be dead, diseased, leaning, or structurally unsound. Best horticultural judgment will be used in evaluating trees that appear diseased or structurally unsound or are believed to pose a long-term threat to determine the best course of action.
- Another consideration in removal of trees is the contribution to shading in areas prone to frost and ice formation on the highway surface. When such areas are identified, the surrounding canopy may be thinned through selective removal of large trees on the right-of-way.

1.3.2. Methods
- Hazard trees are removed in such a manner to minimize damage and impact to the highway structure and other healthy trees and under-story vegetation.
- When possible felled trees may be left on site.
2. INTEGRATED VEGETATION MANAGEMENT ACTIVITIES
All roadside vegetation maintenance activities technically fall under IVM. IVM is a
coordinated decision making process that uses the most appropriate vegetation
management methods and strategy, along with a monitoring and evaluation system, to
achieve long-term roadside maintenance goals and objectives in an environmentally and
economically sound manner. Even routine activities should be evaluated for
effectiveness and refined whenever possible to reduce annual maintenance
requirements. However, for the following activities the ultimate goal is to eliminate and
prevent the future growth of unwanted plants, and to promote and enhance desirable
vegetation. Activities are planned and carried out using the decision making process
diagrammed in Figure 3 on page 7. The goal in utilizing the IVM approach is the
establishment of stable, low maintenance native or naturalized plant communities on the
roadside that are compatible with:
- Highway maintenance and safety objectives
- Preservation of environmental quality
- Weed control requirements
- The concerns of WSDOT’s customers and neighbors

Long term, the use of the IVM approach can reduce the intensity and cost of
maintenance as well as minimizing the need to use herbicides.

2.1. Integrated Vegetation Management Planning and Tracking Database

2.1.1. Guidelines
- An Integrated Vegetation Management Records database is available for use. This database is accessed through the same
  WSDOT network application as the Pesticide Application Records
database.
- Any activities focused on treatment of a specific location and
  species infestation, or focused on treatment of any types of
  unwanted vegetation throughout the area will be documented with
  an initial IVM record outlining the long-term treatment plan. These
  same records will be updated over time whenever planned
treatments are carried out, or when observations are made as to the
  success or failure of past treatments.
- Treatment records may be printed out and inserted into Appendix
e for reference.

2.2. Noxious Weed Control
WSDOT defines noxious weeds as any species listed for mandatory control under
state law (WAC 16-750) or by the local county codes. Other weed species that
may be listed as noxious weeds on the state and county lists but not legally
mandated for control are defined as nuisance weeds and managed as described
under section 2.3 in this plan.

2.2.1. Guidelines
- Noxious weed control is a high priority for WSDOT because of state
  law requiring control of designated species. Transportation rights-
of-way are high priority locations for control of noxious weed species
within the state because they cross and link so many adjacent
properties and land uses.
- Whenever possible designated noxious weed species and
  infestations locations will be documented and treated following
  plans as defined by IVM record forms in the database.
Washington State Law classifies noxious weeds in three classes: A, B, and C. All Class A species are required control wherever they occur statewide. The law allows for individual county weed boards to designate individual Class B and C weeds for control within the counties depending on how widespread and potentially harmful they are at the local level.

For SW Region, Area 2 the following weeds designated for control are known to exist on state highway rights-of-way in Lewis County. It is assumed that the same list will be applied to the short sections of highway within the area extending into Cowlitz and Yakima Counties.

**Class A**
Class A noxious weeds are non-native species with a limited distribution in the state. No Class A weeds are known to exist on WSDOT rights-of-way in this area.

**Class B**
Class B weeds are more widespread than Class A, with control mandated by law only if infestations are generally limited and the species are designated within the individual counties by the County Noxious Weed Control Boards. The following designated species are known to exist on WSDOT right-of-way:

<table>
<thead>
<tr>
<th>Common Name/Botanical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knotweed sp./Polygonum sp.</td>
</tr>
<tr>
<td>Ragwort tansy/Senecio jacobaea</td>
</tr>
<tr>
<td>Knapweed sp./centaury sp.</td>
</tr>
<tr>
<td>Scotch broom/Cytisus scoparius (only eastern SR12 and 123)</td>
</tr>
<tr>
<td>Dalmation toadflax/Linaria dalmatica ssp. dalmatica</td>
</tr>
<tr>
<td>Rush skeletonweed/Chondrilla juncet</td>
</tr>
<tr>
<td>Moseear hawkweed/Hieracium pilosella</td>
</tr>
<tr>
<td>Yellow hawkweed/Hieracium caespitosum</td>
</tr>
<tr>
<td>Common fennel/Foeniculum vulgare</td>
</tr>
<tr>
<td>Poison hemlock/Conium maculatum</td>
</tr>
<tr>
<td>Butterfly bush/Buddleia davidii</td>
</tr>
</tbody>
</table>

**Class C**
Class C noxious weeds are widely established throughout Washington or may impact the agricultural industry. The County Noxious Weed Control Boards also have the power to designate Class C species for control. There are no designated Class C noxious weeds known to exist on state right-of-way in SW Region, Area 2.

- Pictures of designated control noxious weeds are included for reference in Appendix D.

### 2.2.2. Methods
- Because noxious weed species are often difficult to control, herbicides treatments are often the primary, initial means of control.
- If infestations are limited to a few plants, hand pulling is also effective when the entire root system is also removed. Maintenance employees are encouraged to be aware of and look for new noxious weed occurrences, and to stop and pull these plants whenever possible.
• In conjunction with weed control treatments, a variety of other measures may be taken to promote natural vegetative competition through seeding, planting, and soil enhancement. The IVM Record and database are essential to the execution and success of these control measures.
• For recommended treatments specific to noxious weed species, see Appendix A, IVM Prescriptions, Noxious Weed Control

2.2.3. Locations

• Priority Locations for control of designated noxious weeds species in SW region, Area 2 can be found using a web base map viewer application at: IVM Map Viewer
  Data and locations represented on this map are for general reference and planning purposes only and are subject to change without notice. WSDOT cannot guarantee complete accuracy.

2.3. Nuisance Weed Control

2.3.1. Guidelines

• For the purposes of this plan, nuisance weed species are defined as species listed as Class B and C weeds on the state noxious weed lists, but not required for control within individual counties.
• Nuisance weed control, while not required by state law, provides many positive benefits to the overall condition of the roadside, enhances ecological function by maintaining and enhancing native plant communities, reduces the potential for continuing spread of weed infestations, and enhances visual quality.
• Nuisance weed species will be controlled when time and budget allows. At times control may be accomplished incidental to noxious weed control when species are present in the same area.
• Priority will be given to locations with the highest chance for success including relatively new infestations and where there is potential for infestations to spread to un-infested areas of the right-of-way or to un-infested neighboring properties.
• Species designated as nuisance weeds in SW Region, Area 2 that are known to exist on the highway right-of-way include:

<table>
<thead>
<tr>
<th>Common Name/Botanical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Johnswort/Hypericum perforatum</td>
</tr>
<tr>
<td>Sulfur cinquefoil/Potentilla recta</td>
</tr>
<tr>
<td>Common tansy/Tanacetum vulgare</td>
</tr>
<tr>
<td>Bull thistle/Cirsium vulgare</td>
</tr>
<tr>
<td>Canada thistle/Cirsium arvense</td>
</tr>
<tr>
<td>Scotch broom/Cytisus scoparius</td>
</tr>
<tr>
<td>Wild carrot/Daucus carota</td>
</tr>
<tr>
<td>Common Mullein/Verbascum thapsus</td>
</tr>
<tr>
<td>Himalayan blackberry/Rubus discolor</td>
</tr>
</tbody>
</table>

• Pictures of nuisance weeds are included for reference in Appendix D.
2.3.2. Methods

- Control measures for nuisance weed are dependent on the type of plant.
- Woody species such as Scotch broom and Himalayan blackberry are most effectively treated with a combination of cutting, herbicide treatments and encouragement of native vegetation.
- Perennial species such as Canada thistle are most effectively controlled by succeeding years of properly timed herbicide applications.
- Annual or biennial species such as bull thistle and common tansy may also be effectively controlled with herbicide applications when plants are in the rosette stage in spring, or by hand pulling prior to seed set.
- See Appendix A, IVM Prescriptions, Nuisance Weed Control.

2.4. Tree and Brush Control

2.4.1. Guidelines

- Trees and brush are controlled for safety reasons including preservation of sight distance at curves and intersections, and for visibility of signs, and preventing trees with large trunk diameter from growing too close to traffic lanes.
- Native large shrub and small tree species should be allowed to grow and mature in Zone 2 and selectively trimmed if they begin to encroach on site distance or other traffic operational requirements.
- Large coniferous or hardwood deciduous tree species such as Douglas fir, bigleaf maple, alder, or cottonwood left to grow in Zone 2 and in some cases parts of Zone 3, can reach substantial size over a relatively short period of time and should be removed when young.
- Fast-growing hardwood pioneer species such as big leaf maple, alder, or cottonwood, present a risk from falling on the road when mature. Wherever these trees emerge within 70' of the pavement on highway right-of-way, they should be removed within the first two to three years of growth or as soon as possible.
- Any tree with a trunk diameter of 4" or greater is considered a hazard for errant vehicles in Zone 2 and should be removed. This zone is also referred to as the Design Clear Zone and is typically maintained to a width of 30’ from the traffic lane edge. Actual minimum widths are determined by roadway alignment, traffic speed and volume, and cross-section of the roadside, as specified in the WSDOT Design Manual, Chapter 700.04. http://www.wsdot.wa.gov/Publications/Manuals/M22-01.htm

2.4.2. Methods

- Removal of undesirable tree and brush species is typically accomplished by hand cutting, hand pulling, properly timed selective mowing, properly timed herbicide applications, or combinations thereof.
- In some locations it is most effective to mow back the majority of the existing vegetation and then selectively treat undesirable re-growth with herbicides in succeeding years, allowing desirable vegetation to grow up around and form a competitive cover.
- In some cases when tree and brush species are cut by hand, the debris can be fed through a chipper and placed back on the
roadside in the form of mulch for soil enhancement and weed prevention.

- Timing of activities has a significant effect on how the vegetation grows back. Herbicide applications made by hand, directly to the cut surfaces of undesirable plants may be used to reduce or eliminate grow back.
- Chemical control methods will not be used on conifers greater than 2 feet in height and/or large dense patches of young trees, to avoid unnecessary negative visual impacts from “brown-out”.
- Chemical control methods will not be used on deciduous plants until after the first of September, except for as stump treatments in conjunction with mechanical cutting to eliminate grow-back.
- When possible, safe and practical, seedling of desirable trees may be dug or pulled by hand and transplanted to areas where there growth will be beneficial and appropriate. Agreements may be signed to allow private citizens to collect seedlings for use as transplants.
- See Appendix A, IVM Prescriptions, Tree and Brush Control.
3. SPECIAL MAINTENANCE AREAS
Special Maintenance Areas are any locations with unique maintenance requirements or special considerations for roadside management. These areas may include interchanges, community entrances or enhancement areas, areas maintained by cities, bicycle paths, storm water retention ponds, state park land, wellheads, environmentally sensitive areas, school zones and roadides adjacent to individual properties with current or annual no-spray agreements.

3.1. Interchanges/Intersections

3.1.1. Guidelines
- Interchange areas are sometimes developed to a greater level than general roadside areas to include storm water management facilities, pedestrian areas, and permanent vegetation designed for screening, and visual enhancements for community entrances.

3.1.2. Locations
- Interchanges and intersections with unique maintenance considerations and/or interchanges that are considered urban gateways along with a description of special maintenance activities can be referenced using a web base map viewer application at: IVM Map Viewer
  Data and locations represented on this map are for general reference and planning purposes only and are subject to change without notice. WSDOT cannot guarantee complete accuracy.

3.2. City Maintenance Areas

3.2.1. Guidelines
- In most cases where non-limited access highways exist within city limits, the roadside (all area outside the highway pavement and drainage systems) are maintained by the local city government.

3.2.2. Locations
- Areas where roadsides are maintained by cities can be referenced using a web base map viewer application at: IVM Map Viewer
  Data and locations represented on this map are for general reference and planning purposes only and are subject to change without notice. WSDOT cannot guarantee complete accuracy.

3.3. Herbicide Sensitive Areas

3.3.1. Guidelines
- In some situations herbicide use is limited or restricted because of legal requirements, neighbor concerns, or WSDOT imposed environmental safety precautions.
- In these locations, vegetation must be managed without the use of herbicides or with only a limited palette of herbicide types.

3.3.2. Locations
- Herbicide sensitive areas and reason/type of limitations on herbicide use can be referenced using a web base map viewer application at: IVM Map Viewer
  Data and locations represented on this map are for general reference and planning purposes only and are subject to change without notice. WSDOT cannot guarantee complete accuracy.
3.4. Adopt-a-Highway and Neighbor Maintained Agreements

3.4.1. Guidelines
- In some locations WSDOT has signed agreements with private citizens or neighboring businesses for maintenance of roadside vegetation.

3.4.2. Locations
- Areas with existing agreements for others to maintain a portion of the roadside, along with notes describing arrangements for each location can be referenced using a web base map viewer application at: IVM Map Viewer

Data and locations represented on this map are for general reference and planning purposes only and are subject to change without notice. WSDOT cannot guarantee complete accuracy.

3.5. Storm Water Management Facilities

3.5.1. Guidelines
- Storm water management facilities include bio-filtration swales, retention ponds and infiltration ponds.
- Storm water management facilities are managed for noxious and nuisance weeds, and hazard trees following the same guidelines mentioned in previous sections. The primary objectives with regard vegetation management within these facilities are maintenance of the functionality in terms of the designed volume of retention and water flow, and the maintenance of the surrounding fence.
- Trees and brush should be cleared along both sides of the perimeter fencing for a width of approximately 8 feet as needed.
- Inlets and outfalls should be kept clear of vegetation and debris.

3.5.2. Locations
- Storm water management facilities, along with notes describing general maintenance requirements for each location can be referenced using a web base map viewer application at: IVM Map Viewer

Data and locations represented on this map are for general reference and planning purposes only and are subject to change without notice. WSDOT cannot guarantee complete accuracy.

3.6. Wetland Mitigation Sites

3.6.1. Guidelines
- Wetland mitigation sites are carefully monitored through WSDOT’s Environmental Services Office for up to 10 years following their creation to ensure compliance with environmental regulation.
- In most cases vegetation in these sites is planted and established through the construction and long-term monitoring process so that once they are turned over to maintenance, actions are not required unless noxious weeds or hazardous trees become an issue.
- In cases where mitigation sites have fulfilled their original permit requirements and have been turned back to maintenance, sites should be inspected on an annual basis to determine if any repairs or weed control is necessary.
3.6.2. Locations

- All wetland mitigation sites with SW Region, area 2 along with notes describing dates constructed and permit requirements for each location can be referenced using a web base map viewer application at: IVM Map Viewer

Data and locations represented on this map are for general reference and planning purposes only and are subject to change without notice. WSDOT cannot guarantee complete accuracy.

3.7. Protected Terrestrial Species

3.7.1. Guidelines

- WSDOT is currently working with the Department of Fish and Wildlife to identify highway locations where known populations of federally listed threatened and endangered terrestrial species exist on or near the highway right-of-way. These locations are then being matched against maintenance activities with potential to have adverse impacts on the protected species so that necessary maintenance activities can timed to avoid impacts wherever possible.
- Methods and timing of roadside maintenance activities to avoid impacts on protected terrestrial species are described in the Region Maintenance Environmental Compliance Guidance for Protected Terrestrial Species.

3.7.2. Locations

- Once locations and guidelines have been finalized in the region compliance guide, locations and descriptions of limitations on vegetation maintenance activities will be added to a web base map viewer application at: IVM Map Viewer

Data and locations represented on this map are for general reference and planning purposes only and are subject to change without notice. WSDOT cannot guarantee complete accuracy.

3.8. Railroad Crossings

3.8.1. Guidelines

- State law requires that all trees and brush be kept clear on highway rights of way within 100’ of railroad crossings.
- To maximize safety at rail crossings, trees and brush should be cleared as far back as practical to maximize site distance.

3.8.2. Locations

- Locations of all railroad crossing in SW Region, area 2 can be referenced using a web base map viewer application at: IVM Map Viewer

Data and locations represented on this map are for general reference and planning purposes only and are subject to change without notice. WSDOT cannot guarantee complete accuracy.

3.9. IVM Treatment Sites

3.9.1. Guidelines

- As discussed in Section 2.1, selected sites are designated for planning, carrying out and monitoring multi-year IVM treatments for control of weeds or other unwanted vegetation.
- IVM treatment sites are documented with an initial record in the IVM Treatment Database, to identify the problem to be addressed, location(s), management goals, and integrated treatment plan.
- Records are updated each time a treatment is made, results observed, or when the treatment plan is modified based on observations.

3.9.2. Locations
- All designated IVM treatment sites within SW Region, Area 2 are referenced by individual records found in the IVM Treatment Database.
## Appendix A

### IVM Prescriptions

#### Zone 1 Maintenance - Bareground Treatment

<table>
<thead>
<tr>
<th>TREATMENT TYPE:</th>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
<th>OPTION 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Broadcast chemicals at pavement edge</td>
<td>Broadcast chemicals at pavement edge</td>
<td>Broadcast chemicals at pavement edge</td>
<td>Broadcast chemicals at pavement edge</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MANAGEMENT GOALS:</th>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
<th>OPTION 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vegetation free zone</td>
<td>Vegetation free zone</td>
<td>Vegetation free zone</td>
<td>Vegetation free zone</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>METHOD:</th>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
<th>OPTION 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual herbicide application</td>
<td>Annual herbicide application</td>
<td>Annual herbicide application</td>
<td>Annual herbicide application</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EQUIPMENT:</th>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
<th>OPTION 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spray truck w/ fixed width booms</td>
<td>Spray truck w/ fixed width booms</td>
<td>Spray truck w/ fixed width booms</td>
<td>Spray truck w/ fixed width booms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MATERIALS:</th>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
<th>OPTION 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milestone 6-7 oz / acre</td>
<td>Perspective 8 oz / acre</td>
<td>Milestone 6-7 oz / acre</td>
<td>Payload 10 oz / acre</td>
<td></td>
</tr>
<tr>
<td>Landmark 6-8 oz / acre</td>
<td>Sulfomet 3 oz / acre</td>
<td>Landmark 6-8 oz / acre</td>
<td>Landmark 6 oz / acre</td>
<td></td>
</tr>
<tr>
<td>Round Up Pro 64 oz / acre</td>
<td>Ranger Pro 64 oz / acre</td>
<td>Ranger Pro 64 oz / acre</td>
<td>Ranger Pro 64 oz / acre</td>
<td></td>
</tr>
<tr>
<td>In Place 16 oz / acre</td>
<td>In Place 16 oz / acre</td>
<td>In Place 16 oz / acre</td>
<td>In Place 16 oz / acre</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIMING:</th>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
<th>OPTION 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Spring</td>
<td>Early Spring</td>
<td>Early to mid June</td>
<td>Early Spring</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REMARKS:</th>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
<th>OPTION 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use on tough to control annuals such as crab grass or when earlier spring applications are not possible</td>
<td>For areas with horsetail add Telar 2 oz/acre or substitute Landmark 6 oz/acre for Sulfomet</td>
<td>Use on tough to control annuals such as crab grass or when earlier spring applications are not possible</td>
<td>Use as a rotational mix to vary the mode of action where herbicide resistant weeds may be present</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GENERAL REMARKS:</th>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
<th>OPTION 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typically applied in a 2 to 3 ft. band possibly wider at gore points, under guardrail or between cable rail and pavement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Zone 2 Maintenance - Tree and Brush

<table>
<thead>
<tr>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
<th>OPTION 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadcast or spot application selective chemical control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control existing or potential vegetation obstructions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herbicide application as part of an overall IVM treatment strategy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spray rig w/ hand gun or backpack sprayer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rangestar 64 oz / acre. In Place 16 oz / acre</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Late summer, early fall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior to mid-September use only as spot spray on seedling trees and occasional brush</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoid noticeable brown out by spraying late in the season and/or limiting applications to small plants, and avoiding large scale broadcast applications.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OPTION 1**

**OPTION 2**

**OPTION 3**

**OPTION 4**
### Noxious and Nuisance Weed Control - General

<table>
<thead>
<tr>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
<th>OPTION 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREATMENT TYPE:</td>
<td>Selective broadleaf chemical weed control</td>
<td>Selective broadleaf chemical weed control</td>
<td>Selective broadleaf chemical weed control</td>
</tr>
<tr>
<td>MANAGEMENT GOALS:</td>
<td>Eradication</td>
<td>Eradication</td>
<td>Eradication</td>
</tr>
<tr>
<td>METHOD:</td>
<td>Spot spray w/ herbicide</td>
<td>Spot spray w/ herbicide</td>
<td>Spot spray w/ herbicide</td>
</tr>
<tr>
<td>EQUIPMENT:</td>
<td>Backpack / Handgun</td>
<td>Backpack / Handgun</td>
<td>Backpack / Handgun</td>
</tr>
<tr>
<td>MATERIALS:</td>
<td>Capstone 144 oz/acre</td>
<td>Milestone 5-7 oz./acre</td>
<td>Rangestar 64 oz./acre</td>
</tr>
<tr>
<td></td>
<td>Syl-Tac 16 oz/acre</td>
<td>Syl-Tac 16 oz/acre</td>
<td>Syl-Tac 16 oz/acre</td>
</tr>
<tr>
<td>TIMING:</td>
<td>During growing season</td>
<td>Late winter through growing season</td>
<td>During growing season</td>
</tr>
<tr>
<td>REMARKS</td>
<td>Broad spectrum control, some soil residual activity</td>
<td>Some soil residual activity, good choice for biennial weeds</td>
<td>Broad spectrum control, including conifers</td>
</tr>
<tr>
<td>GENERAL REMARKS:</td>
<td>Check product labels to insure all target species will be controlled by the selected option. Check for species specific prescriptions for difficult to control weeds and applications in sensitive areas.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Southwest Region, Area 2*  
*Integrated Roadside Vegetation Management Plan*  
*Prescriptions - 3*  
*2014*
### Knotweed

<table>
<thead>
<tr>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
<th>OPTION 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TREATMENT TYPE:</strong></td>
<td>Non-selective chemical foliar control near standing water</td>
<td>Non-selective chemical foliar control</td>
<td></td>
</tr>
<tr>
<td><strong>MANAGEMENT GOALS:</strong></td>
<td>Eradication</td>
<td>Eradication</td>
<td></td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Spot treatment w/ herbicide</td>
<td>Spot treatment w/ herbicide</td>
<td></td>
</tr>
<tr>
<td><strong>EQUIPMENT:</strong></td>
<td>Truck mounted sprayer where possible, back spray where necessary</td>
<td>Truck mounted sprayer where possible, backpack sprayer where necessary.</td>
<td></td>
</tr>
<tr>
<td><strong>MATERIALS:</strong></td>
<td>Aquaneat 128 oz./acre Polaris 32 oz./acre or LI 700 16 oz./acre Agri Dex</td>
<td>Ranger Pro 128 oz./acre Polaris 32 oz./acre Syl-Tac 16 oz./acre</td>
<td></td>
</tr>
<tr>
<td><strong>TIMING:</strong></td>
<td>Early to late bloom between July and August</td>
<td>Early to late bloom between July and August</td>
<td></td>
</tr>
<tr>
<td><strong>REMARKS:</strong></td>
<td>Reapply if necessary following year. Restore site w/ native vegetation.</td>
<td>Reapply if necessary following year. Restore site w/ native vegetation.</td>
<td></td>
</tr>
<tr>
<td><strong>GENERAL REMARKS:</strong></td>
<td>Well established knotweed patches have deep and long-lived root systems that may survive years after emergent growth has been killed. Controlled sites should be monitored and re-treated for up to 3 years after initial treatment.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Appendix A

## IVM Prescriptions

### Dalmatian Toadflax

<table>
<thead>
<tr>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TREATMENT TYPE:</strong></td>
<td>Selective chemical application</td>
<td>Selective chemical application</td>
</tr>
<tr>
<td><strong>MANAGEMENT GOALS:</strong></td>
<td>Eradication</td>
<td>Eradication</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Spot treatment w/ herbicide</td>
<td>Spot treatment w/ herbicide</td>
</tr>
<tr>
<td><strong>EQUIPMENT:</strong></td>
<td>Backpack sprayer or spray bottle, pickup, etc.</td>
<td>Backpack sprayer or spray bottle, pickup, etc.</td>
</tr>
</tbody>
</table>
| **MATERIALS:** | Telar 2 oz./acre  
Syl-Tac 16 oz/acre | Metcel 2 oz./acre  
Syl-Tac 16 oz/acre |  |
| **TIMING:** | When in bloom late June thru August | When in bloom late June thru August |  |
| **REMARKS** | Reapply as necessary in succeeding years | Reapply as necessary in succeeding years |  |
| **GENERAL REMARKS:** |  |  |  |
# Appendix B

## Herbicide Guidelines

When making herbicide applications:
1. Always read and follow product labels
2. Always use personal protective equipment when mixing, loading, and applying

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Product Names</th>
<th>Mode of Action (WSSA Class)</th>
<th>Where Used</th>
<th>How/Why Used</th>
<th>Notes/Recommendations</th>
<th>WSDOT Restrictions</th>
<th>Cautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>Agri Star 2, 4-D LV4, Basecamp Amine 4, Clean Amine, Crossbow, Curtail, ES, Escalade, Low Vol 4 Ester, Platoon, Rangelar, Savage, Sokton, Veteran 720, WeedDestroy, Weedmaster, Weedone LV4</td>
<td>Growth regulator - phenoxy synthetic auxin (4)</td>
<td>Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3</td>
<td>Selective broadleaf treatment</td>
<td>Ester and acid formulations of 2,4-D may provide a good alternative to amine formulations. A number of the 2,4-D products come premixed with other herbicides.</td>
<td>Amine formulations of 2,4-D are restricted for use within 60' of all water</td>
<td>Amine formulations cause irreversible eye damage and are highly toxic to rainbow trout. All 2,4-D products pose risks when applied near grapes and other sensitive crops.</td>
</tr>
<tr>
<td>Aminocyclopyrachlor</td>
<td>Perspective, Plainview, Streamline, Viewpoint</td>
<td>Growth regulator - mimics plant hormones, synthetic auxin (4)</td>
<td>Noxious and nonxious weed control Zones 2 and 3, Plainview is a bare-ground mixture</td>
<td>Depending on which mixture, can be either selective broadleaf or non-selective pre-emergent control</td>
<td>Each product is premixed with other herbicide to achieve either selective or non-selective control</td>
<td>No WSDOT use restrictions beyond those specified on product labels</td>
<td>Refer to product labels</td>
</tr>
<tr>
<td>Aminopyralid</td>
<td>Milestone, Milestone VM, Milestone VM Plus, Capstone</td>
<td>Growth regulator - mimics plant hormones, synthetic auxin (4)</td>
<td>Noxious and nonxious weed control Zones 2 and 3</td>
<td>Selective broadleaf treatment</td>
<td>Effective on many perennial weed species due to some amount of soil residual activity on suppressing seed germination</td>
<td>No WSDOT use restrictions beyond those specified on product labels</td>
<td>Refer to product label</td>
</tr>
<tr>
<td>Bromacil</td>
<td>Krovar 1 DF, Hyvar</td>
<td>Photosynthetic inhibitor photosystem II, site A (5)</td>
<td>Zone 1 bare-ground</td>
<td>Nonselective pre-emergent grass and weed control</td>
<td>Krovar is premixed with diuron</td>
<td>Westside - Restricted use</td>
<td>Bromacil is potantially mobile in soil, use caution if rain is possible.</td>
</tr>
<tr>
<td>Bromoxynil</td>
<td>Buctril 2EC, BroClean, Brox 2E, Maestro 2EC</td>
<td>Photosynthetic inhibitor photosystem II, site C (6)</td>
<td>Noxious and nuisance weed control Zones 2 and 3</td>
<td>Selective broadleaf treatment</td>
<td>Effective broadleaf weed control without grass seed suppression</td>
<td>Westside - Restricted use</td>
<td>Can cause irreversible eye damage, highly toxic to fresh water fish</td>
</tr>
<tr>
<td>Chlorsulfuron</td>
<td>Telar XP, Landmark XP, Throttle XP, Perspective</td>
<td>Amino acid synthesis inhibitors - ALS inhibitor (2)</td>
<td>Noxious and nuisance weed control Zones 2 and 3</td>
<td>Selective broadleaf treatment</td>
<td>Product highly effective on difficult perennials such as Canadian thistle and horsetail. Landmark is premixed with Oust.</td>
<td>No WSDOT use restrictions beyond those specified on product labels</td>
<td>Refer to product labels</td>
</tr>
<tr>
<td>Clopyralid</td>
<td>Transline, Curtail</td>
<td>Growth regulator - pyridinecarboxylic acid synthetic auxin (4)</td>
<td>Noxious and nuisance weed control Zones 2 and 3</td>
<td>Selective broadleaf treatment</td>
<td>Curtail is premixed with 2,4-D, Pathfinder is premixed with triclopyr</td>
<td>Curtilt and Pathfinder are restricted for use within 60' of all water because of mixture with other restricted herbicides.</td>
<td>Curtail contains 2,4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout</td>
</tr>
</tbody>
</table>
# Appendix B  Herbicide Guidelines

## Herbicides Approved for Use on WSDOT Rights of Way

When making herbicide applications:

1. Always read and follow product labels
2. Always use personal protective equipment when mixing, loading, and applying

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Product Names</th>
<th>Mode of Action (WSSA Class)</th>
<th>Where Used</th>
<th>How/Why Used</th>
<th>Notes/ Recommendations</th>
<th>WSDOT Restrictions</th>
<th>Cautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dicamba</td>
<td>Vanquish, Veteran 720, Dicamba HD E2, Escalade, Range Star Viewpoint</td>
<td>Growth regulator - benzoic acids/synthetic auxin (4)</td>
<td>Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3</td>
<td>Selective broadleaf treatment</td>
<td>Vanquish is the dicamba formulation without 2,4-D</td>
<td>Veteran 720 is restricted for use within 60’ of all water because of 2,4-D amine content</td>
<td>Veteran 720 contains 2,4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout</td>
</tr>
<tr>
<td>Dichlobenil</td>
<td>Norosac 4G, Casoron</td>
<td>Cell wall (cellulose) synthesis inhibitor (20)</td>
<td>Ornamental planting beds</td>
<td>Pre-emergent weed control in ground cover beds. Post emergent control of grasses.</td>
<td>Highly effective for pre-emergent control of unwanted weeds in ornamentals</td>
<td>Restricted for use within 60’ of all water</td>
<td>Dichlobenil is highly toxic to aquatic insects</td>
</tr>
<tr>
<td>Diflufenopyr</td>
<td>Overdrive</td>
<td>Auxin transport inhibitor (19)</td>
<td>Noxious and nuisance weed control, Zones 2 and 3</td>
<td>Selective broadleaf treatment</td>
<td></td>
<td>No WSDOT use restrictions beyond those specified on labels</td>
<td>Refer to product label</td>
</tr>
<tr>
<td>Diuron</td>
<td>Karmex, Diuron 4 L, Diuron 80 DF, Parrot, Sahara DG</td>
<td>Photosynthetic inhibitor, photosystem II, site B (7)</td>
<td>Zone 1 bare-ground</td>
<td>Non-selective pre-emergent grass and weed control</td>
<td>Cost effective weed control for Zone 1 in Eastern Washington</td>
<td>Westside - Restricted use, Eastside - Restricted for use within 60’ of all water</td>
<td>Highly toxic to fish.</td>
</tr>
<tr>
<td>Flumioxazin</td>
<td>Payload</td>
<td>Cell membrane disrupter - PPO inhibitor (14)</td>
<td>Zone 1 bare-ground</td>
<td>Non-selective pre-emergent weed control</td>
<td>Requires constant agitation to keep in suspension</td>
<td>Restricted for use within 60’ of all salt water</td>
<td>Highly toxic to estuarine invertebrates</td>
</tr>
<tr>
<td>Fluroxypyr</td>
<td>Vista E2, Escalade</td>
<td>Growth regulator - pyridinecarboxylic acid synthetic auxin (4)</td>
<td>Noxious and nuisance weed control, Zones 2 and 3</td>
<td>Selective broadleaf treatment</td>
<td>Highly effective on Kochia</td>
<td>No WSDOT use restrictions beyond those specified on product labels</td>
<td>Highly toxic to Eastern Oyster, high surface runoff potential</td>
</tr>
<tr>
<td>Fosamine</td>
<td>Krenite S</td>
<td>Growth regulator - inhibits bud and leaf formation (27)</td>
<td>Tree and brush control in Zones 2 &amp; 3</td>
<td>Selective broadleaf treatment</td>
<td>Effective broadleaf tree control without visual impacts</td>
<td>No WSDOT use restrictions beyond those specified on labels</td>
<td>Refer to product labels</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>Roundup Pro, Razor Pro, Buccaneer, Aquaneat, Rodeo, Aquamaster, Mad Dog Plus, Ranger Pro</td>
<td>Amino acid synthesis inhibitor - EPSP synthase inhibitor (9)</td>
<td>Zone 1, spot spray around shrub and tree plantings, aquatic weed control (Rodeo, Aquamaster)</td>
<td>Nonselective control of all vegetation</td>
<td>Rodeo, Aquamaster and Aquaneat are approved for use in or over water. Aquatic versions of glyphosate products are approved for use with NPDES permit.</td>
<td>No WSDOT use restrictions beyond those specified on product labels</td>
<td>Refer to product labels</td>
</tr>
</tbody>
</table>
# Herbicide Guidelines

## Herbicides Approved for Use on WSDOT Rights of Way

When making herbicide applications:

1. Always read and follow product labels
2. Always use personal protective equipment when mixing, loading, and applying

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Product Names</th>
<th>Mode of Action (WSSA Class)</th>
<th>Where Used</th>
<th>How/Why Used</th>
<th>Notes/Recommendations</th>
<th>WSDOT Restrictions</th>
<th>Cautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imazapic</td>
<td>Plateau</td>
<td>Amino acid synthesis inhibitors - ALS inhibitor (2)</td>
<td>All zones</td>
<td>Pre-emergent control of undesirable grasses</td>
<td>WSDOT tests plots show a significant impact on desirable perennial grasses at rates above 6 oz per acre.</td>
<td>Westside - Restricted use</td>
<td>Moderate to high potential to leach into groundwater</td>
</tr>
<tr>
<td>Imazapyr</td>
<td>Arsenal</td>
<td>Amino acid synthesis inhibitors - ALS inhibitor (2)</td>
<td>All zones</td>
<td>Pre and post-emergent non-selective control of all vegetation</td>
<td>Habitat is an aquatic version of Arsenal - good alternative to glyphosate in certain cases, approved for use with NPDES permit.</td>
<td>No WSDOT use restrictions beyond those specified on product labels</td>
<td>High surface runoff potential</td>
</tr>
<tr>
<td>Indaziflam</td>
<td>Esplanade</td>
<td>Cellulose-biosynthesis inhibitor (21)</td>
<td>Zone 1 bare-ground</td>
<td>Nonselective pre-emergent weed control</td>
<td>Effective control of annual weeds such as marestail, Kochia, and crab grass</td>
<td>Restricted for use within 60’ of all water</td>
<td>Toxic to fish and aquatic invertebrates</td>
</tr>
<tr>
<td>Isoxaben</td>
<td>Gallery 75DF</td>
<td>Cell wall (cellulose) synthesis inhibitor (20)</td>
<td>Turf &amp; Ornamental</td>
<td>Pre-emergent weed control in ground cover beds</td>
<td>Works well by itself or with Ronstar</td>
<td>Restricted for use within 60’ of all water</td>
<td>Moderate to high potential to leach into groundwater</td>
</tr>
<tr>
<td>Metsulfuron-methyl</td>
<td>Escort XP</td>
<td>Amino acid synthesis inhibitors - ALS inhibitor (2)</td>
<td>Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3</td>
<td>Selective broadleaf and conifer treatment</td>
<td>Good control on many difficult perennials.</td>
<td>No WSDOT use restrictions beyond those specified on product labels</td>
<td>Refer to product labels</td>
</tr>
<tr>
<td>Norflurazon</td>
<td>Predict</td>
<td>Bleaching - carotenoid biosynthesis inhibitor (12)</td>
<td>Zone 1 bare-ground</td>
<td>Pre-emergent weed control in ground cover beds</td>
<td>Good Zone 1 product but may be difficult to keep in suspension</td>
<td>Restricted for use within 60’ of all water</td>
<td>High surface runoff potential</td>
</tr>
<tr>
<td>Oryzalin</td>
<td>Oryzalin A.S.</td>
<td>Seedling growth inhibitor - microtubule assembly inhibitor (3)</td>
<td>Zone 1 Ornamental planting beds</td>
<td>Pre-emergent weed control in Zone 1 and ground cover beds</td>
<td>Product requires additional rinsing to thoroughly remove residues from empty container</td>
<td>Restricted for use within 60’ of all water</td>
<td>Highly toxic to fish</td>
</tr>
<tr>
<td>Oxadiazon</td>
<td>Ronstar G</td>
<td>Cell membrane disrupter - PPO inhibitor (14)</td>
<td>Turf &amp; Ornamental</td>
<td>Pre-emergent weed control in ground cover beds</td>
<td>Works well by itself or with Gallery</td>
<td>Restricted for use within 60’ of all water, gardens, plants bearing edible fruit</td>
<td>Highly toxic to fish</td>
</tr>
<tr>
<td>Pendimethalin</td>
<td>Pendulum 2G</td>
<td>Seedling growth inhibitor - microtubule assembly inhibitor (3)</td>
<td>Zone 1 Turf &amp; Ornamental</td>
<td>Nonselective/Selective depending on rate, Pre-emergent grass and weed control</td>
<td>Highly effective for conifer and broadleaf weed control in Eastern Washington</td>
<td>Westside - Restricted use</td>
<td>Highly toxic to fish, high potential for loss on eroded soil</td>
</tr>
<tr>
<td>Picloram</td>
<td>Tordon</td>
<td>Growth regulator - pyridinecarboxylic acid synthetic auxin (4)</td>
<td>Noxious and nuisance weed control, Zones 2 and 3</td>
<td>Selective broadleaf treatment</td>
<td>Highly effective for conifer and broadleaf weed control in Eastern Washington</td>
<td>Westside - Restricted use</td>
<td>Highly mobile in soil and readily adsorbed through roots of desirable trees</td>
</tr>
</tbody>
</table>

---

**Southwest Region, Area 2**

**Integrated Roadside Vegetation Management Plan**

Page - 3

2014
## Herbicide Guidelines

### Appendix B Herbicide Guidelines

When making herbicide applications:
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<tr>
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<th>Where Used</th>
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<th>WSDOT Restrictions</th>
<th>Cautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyraflufen</td>
<td>Edict Edict 2SC</td>
<td>Cell membrane disrupter - PPO inhibitor (14)</td>
<td>Noxious and nuisance weed control, Zones 2 and 3</td>
<td>2,4-D substitute, effective on Kochia, Russian thistle</td>
<td>Effective with Roundup for Kochia control</td>
<td>Restricted for use within 60’ of all water</td>
<td>Irreversible eye damage, highly toxic to Rainbow Trout</td>
</tr>
<tr>
<td>Sulfentrazone</td>
<td>Portfolio Throttle XP</td>
<td>Cell membrane disrupter - PPO inhibitor (14)</td>
<td>Zone 1 bare-ground</td>
<td>Nonselective pre-emergent grass and weed control</td>
<td>Use caution in sandy soils</td>
<td>Westside - Restricted use</td>
<td>Eastside - Restricted for use within 60’ of all water</td>
</tr>
<tr>
<td>Sulfometuron-methyl</td>
<td>Oust Landmark XP Sulfomet Throttle XP</td>
<td>Amino acid synthesis inhibitors - ALS inhibitor (2)</td>
<td>Zone 1 bare-ground</td>
<td>Nonselective pre/post emergent grass and weed control</td>
<td>Landmark is a premix with Oust and Telar</td>
<td>Refer to product labels</td>
<td>Oust has been proven to move with wind if not watered in to the ground</td>
</tr>
<tr>
<td>Tebuthiuron</td>
<td>Spike 80DF</td>
<td>Photosynthetic inhibitor photosystem II, site B (7)</td>
<td>Zone 1 bare-ground</td>
<td>Nonselective pre-emergent grass and weed control</td>
<td>Westside - Restricted use</td>
<td>Eastside - Restricted for use within 60’ of all water</td>
<td>High surface runoff potential, potentially mobile in soil if rain is possible</td>
</tr>
<tr>
<td>Topramezone</td>
<td>Frequency</td>
<td>Bleaching - carotenoid biosynthesis inhibitor (12)</td>
<td>Zone 1 bare-ground</td>
<td>Nonselective pre-emergent grass and weed control</td>
<td>Use in combination with another bare-ground chemical</td>
<td>Refer to product label</td>
<td>Refer to product label</td>
</tr>
<tr>
<td>Triclopyr Amine</td>
<td>Capstone, Element 3A, Garlon 3A, Milestone VM Plus</td>
<td>Growth regulator - pyridinecarboxylic acid synthetic auxin (4)</td>
<td>Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3</td>
<td>Selective broadleaf treatment</td>
<td>Works well for scotch broom control</td>
<td>Refer to product label</td>
<td>Can cause irreversible eye damage</td>
</tr>
<tr>
<td>Triclopyr Ester</td>
<td>Crossbow, Crossbow L, Element 4, Garlon, Pathfinder</td>
<td>Growth regulator - pyridinecarboxylic acid synthetic auxin (4)</td>
<td>Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3</td>
<td>Selective broadleaf treatment</td>
<td>Works well for cut-stump or basal treatments applications. Crossbow is premixed with 2,4-D, Pathfinder with clopyralid</td>
<td>Restricted for use within 60’ of all water</td>
<td>Highly toxic to fish</td>
</tr>
</tbody>
</table>
Appendix D  Noxious Weed Identification

Designated for control in SW area 2:
(Lewis and Yakima County)

- Japanese Knotweed/ Polygonum cuspidatum
- Tansy Ragwort/ Senecio jacobaea
- Knapweed sp./ Centauria sp.
- *Scotch Broom/ Cytisus scoparius
- Butterly Bush/ Buddleia davidii
- Poison Hemlock/ Conium maculatum

*only the very eastern portion of SR 12 and SR 123
Appendix D  Noxious Weed Identification

Designated for control in SW area 2:
(Lewis and Yakima County)

- Yellow Hawkweed/ Hieracium caespitosum
- Dalmation Toadflax/ Hieracium caespitosum
- Mouseear Hawkweed/ Hieracium pilosella
- Rush Skeletonweed/ Chondrilla juncea
- Common fennel/ Foeniculum vulgare
Appendix D  Nuisance Weed Identification

Nuisance weeds in SW area 2:
(Lewis and Yakima County)

- St. Johnswort/ Hypericum perforatum
- Sulfur Cinquefoil/ Potentilla recta
- Common Tansy/ Tanacetum vulgare
- Bull Thistle/ Cirsium vulgare
- Canada Thistle/ Cirsium arvense
- Scotch Broom/ Cytisus scoparius
Appendix D  Nuisance Weed Identification

Nuisance weeds species in SW area 2:
(Lewis and Yakima County)

Wild Carrot/ Daucus carota

Mullein/ Verbascum thapsus

Himalayan Blackberry/ Rubus discolor
## Integrated Vegetation Management Record

**Org Code** | **County** | **Date** | **Vegetation Management Zone(s)**
---|---|---|---
 | | 6/13/2007 | [ ] Zone 1 [ ] Zone 2 [ ] Zone 3

**Area**

<table>
<thead>
<tr>
<th>SE</th>
<th>MP to MP</th>
<th>Location</th>
</tr>
</thead>
</table>

**Check Appropriate Box:**

- [ ] NB
- [ ] EB
- [ ] Roadside
- [ ] Landscape Area
- [ ] Interchange
- [ ] Mitigation Site
- [ ] Third Party Damage
- [ ] Sensitive Sites
- [ ] SB
- [ ] WB
- [ ] Shoulder
- [ ] Rest Area
- [ ] Bridge
- [ ] Stormwater
- [ ] Yes
- [ ] Aquatic
- [ ] Median
- [ ] Park-n-Ride
- [ ] Ramp
- [ ] Yard/Stockpile
- [ ] Wetlands

**Target:**

- [ ] Noxious Weeds
- [ ] Brush/Trees
- [ ] Other
- [ ] Noninvasive Weeds
- [ ] Hazard Tree

**Reason for Action:**

- [ ] Noxious Weeds
- [ ] nuisance Weeds
- [ ] Fire Prevention
- [ ] Restore Nature Veg.
- [ ] Zone 1 Pilot
- [ ] Aesthetic
- [ ] Site Distance
- [ ] Hazard Vegetation
- [ ] Customer Request
- [ ] Enhance Vegetation
- [ ] Slope Stabilization
- [ ] Other

**Long term IVM plan (Describe goals/objectives and a step-by-step approach over time)**

<table>
<thead>
<tr>
<th>Activities</th>
<th>Planned date of Treatment</th>
<th>Actual date of Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual</td>
<td>Dug</td>
<td>Polling</td>
</tr>
<tr>
<td></td>
<td>Leach</td>
<td>Pulling</td>
</tr>
<tr>
<td>Mechanical</td>
<td>Axial Saw Cut</td>
<td>Invasive Brush/Cut</td>
</tr>
<tr>
<td></td>
<td>Manual Brush/Cutting</td>
<td>Invasive Mosquito</td>
</tr>
<tr>
<td>Bio-Control</td>
<td>Insecticide</td>
<td>Pesticide</td>
</tr>
<tr>
<td></td>
<td>Fungicide</td>
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</tr>
<tr>
<td>Cultural</td>
<td>Burning</td>
<td>Grazing</td>
</tr>
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<td></td>
<td>Harvesting</td>
<td>Grazing</td>
</tr>
<tr>
<td>Chemical</td>
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</table>

**#1 Evaluation and Date**

<p>| |</p>
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</table>

**#2 Evaluation and Date**

<p>| |</p>
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<th></th>
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</table>

**#3 Evaluation and Date**

<p>| |</p>
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<th></th>
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</thead>
</table>
### Pesticide Application

<table>
<thead>
<tr>
<th>Form Code</th>
<th>County</th>
<th>Date of Application</th>
<th>Start Time</th>
<th>Finish Time</th>
<th>ICP</th>
<th>Stores Issue Ticket Number(s)</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>6/13/2007</td>
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</tr>
</tbody>
</table>

#### Area
- SR [MP] [to MP] [and MP] [to MP] [to MP] [to MP] [to MP] [to MP]
  - NB
  - EE
  - WB
  - WE

#### Check Appropriate Box:
- Roadside
- Landscaped Area
- Interchange
- Yard/Stockpile
- Spot Spray
- Aquatic
- Blanket Spray
- Wetlands

#### Start Weather Conditions
- Temperature [°F]
- Wind (Direction From)
- Wind (Range) [mph/km/h]
  - Sunny
  - Broken
  - Overcast
  - Rain
  - Light Shower
  - Hard Shower

#### Finish Weather Conditions
- Temperature [°F]
- Wind (Direction From)
- Wind (Range) [mph/km/h]
  - Sunny
  - Broken
  - Overcast
  - Rain
  - Light Shower
  - Hard Shower

<table>
<thead>
<tr>
<th>Total No.</th>
<th>Material Name</th>
<th>Material Type</th>
<th>EPA Reg. No.</th>
<th>Lot Number</th>
<th>Product Description</th>
<th>Unit</th>
<th>Total Daily Usage</th>
<th>Unit</th>
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<tbody>
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#### Total
- Acres (hectares) Treated: [ ]
- Gallons (liters) of spray per acre/ha: [ ]

<table>
<thead>
<tr>
<th>Equipment Number</th>
<th>Tank Size 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Calibration Date</th>
<th>Vehicle Speed</th>
<th>Field Presence</th>
<th>Width of Spray Pattern</th>
<th>Remarks</th>
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#### Operator Information
- Operator Name: [ ]
- Operator Signature: [ ]
- Driver Name: [ ]

<table>
<thead>
<tr>
<th>Buffer Truck Driver’s Name: [ ]</th>
</tr>
</thead>
</table>

#### Pesticide Sensitivity
- Application: [ ] Yes [ ] No

---

**Division of Emergency Management (1-800-258-5990)**

**Additional Notes**

---

Southwest Region, Area 2  
Integrated Roadside Vegetation Management Plan  
2014
### PESTICIDE - USE PROPOSAL

(Reference FSM 2150)

<table>
<thead>
<tr>
<th></th>
<th>DEPARTMENT/AGENCY</th>
<th>CONTACT/PHONE NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>REGION</td>
<td>FOREST</td>
</tr>
</tbody>
</table>

#### 1) OBJECTIVE
- a) Project No.
- b) Specific Target Pest
- c) Purpose

#### 2) PESTICIDE
- a) Common Name
- b) Formulation
- c) % AI, AE, or lb / Gal.
- d) Registration No.

#### 3) APPLICATION
- a) Form Applied
- b) Use Strength (%) or Dilution Rate
- c) Diluent

#### 4) lb/ Acre or Other Rate

#### 5) APPLICATION
- a) Method
- b) Equipment

#### 6) Acres or Other Unit to be Treated
- a) Number of Applications
- b) Number of Sites
- c) Specific Description of Sites

#### 7) Month(s) of Year
- a) States

#### 8) SENSITIVE AREAS
- a) Areas to be Avoided
- b) Areas to be Treated with Caution

#### 9) REMARKS
- a) Precautions to be Taken
- b) Use of Trained / Certified Personnel
- c) State and Local Coordination
- d) Other Pesticides Being Applied to Same Site
- e) Monitoring
- f) Other
## Appendix F
### IVM Stakeholders List

<table>
<thead>
<tr>
<th>Entity</th>
<th>Mailing Address</th>
<th>Contact Person</th>
<th>Title</th>
<th>Phone</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Centralia</td>
<td>1100 No. Tower</td>
<td>Kahle Jennings</td>
<td>Public Works Director</td>
<td>(360) 330-7512</td>
<td><a href="mailto:kjennings@cityofcentralia.com">kjennings@cityofcentralia.com</a></td>
</tr>
<tr>
<td></td>
<td>Centralia, WA 98531</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City of Chehalis</td>
<td>2007 N.E. Kresky Ave.</td>
<td>Rick Sahlin</td>
<td>Public Works Director</td>
<td>(360) 748-0238</td>
<td><a href="mailto:rsahlin@ci.chehalis.wa.us">rsahlin@ci.chehalis.wa.us</a></td>
</tr>
<tr>
<td></td>
<td>Chehalis, WA 98532</td>
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<td>(Fax: (360) 748-0694)</td>
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<tr>
<td>City of Napavine</td>
<td>407 Birch Ave. SW</td>
<td>Kenneth Twining</td>
<td>Superintendent</td>
<td>(360) 262-9344</td>
<td><a href="mailto:ktwining@cityofnapavine.com">ktwining@cityofnapavine.com</a></td>
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<td>Napavine, WA 98565</td>
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<td>(Fax: (360) 262-9199)</td>
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<tr>
<td>City of Winlock</td>
<td>712 N.W. Dexter</td>
<td>Greg Robinson</td>
<td>Public Works Superintendent</td>
<td>(360) 785-3550</td>
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<td></td>
<td>Winlock, WA 98596</td>
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<td>(cell: (360) 520-1005)</td>
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<tr>
<td>City of Vader</td>
<td>317 8th St</td>
<td>Wanda Brazla</td>
<td>Public Works Superintendent</td>
<td>(360) 295-3225</td>
<td><a href="mailto:vaderpw@toledotel.com">vaderpw@toledotel.com</a></td>
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<td>Vader, WA 98593</td>
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<tr>
<td>City of Toledo</td>
<td>130 N Second St</td>
<td>Craig McCown</td>
<td>Public Works Superintendent</td>
<td>(360) 864-4564</td>
<td><a href="mailto:wwp@toledotel.com">wwp@toledotel.com</a></td>
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<td>Toledo, WA 98591</td>
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<tr>
<td>City of Mossyrock</td>
<td>3963 US Hwy 12</td>
<td>Dennis Montgomery</td>
<td>Public Works Superintendent</td>
<td>(360) 983-8001</td>
<td><a href="mailto:mossrockwwt@tds.net">mossrockwwt@tds.net</a></td>
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<td></td>
<td>Mossyrock, WA 98564</td>
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<td>(Fax: (360) 983-8910)</td>
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<tr>
<td>City of Morton</td>
<td>117 Klasey Road</td>
<td>Keith Coumner</td>
<td>Public Work Superintendent</td>
<td>(360) 496-5210</td>
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<tr>
<td></td>
<td>Morton, WA 98356</td>
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<td>(Fax: (360) 496-6899)</td>
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<tr>
<td>Lewis County</td>
<td>351 NW North St.</td>
<td>Bill Wamsley</td>
<td>Noxious Weed Coordinator</td>
<td>(360) 740-1215</td>
<td><a href="mailto:wamsleyb@wsu.edu">wamsleyb@wsu.edu</a></td>
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<td></td>
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<td>(Fax: (360) 740-2792)</td>
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<tr>
<td>Cowlitz County</td>
<td>207 4th Ave. N. rm #101</td>
<td>Angelica Velazquez</td>
<td>Noxious Weed Coordinator</td>
<td>(360) 577-3117</td>
<td><a href="mailto:velazquez@co.cowlitz.wa.us">velazquez@co.cowlitz.wa.us</a></td>
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<td>(Fax: (360) 425-7760)</td>
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<td>Gifford Pinchot</td>
<td>10600 N.E. 51st. Circle</td>
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<td>(360) 891-5000</td>
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<tr>
<td>National Forest</td>
<td>Vancouver, WA 98682</td>
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<td>(Fax: (360) 891-5045)</td>
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