Eastern Region, Area 1
Integrated Roadside Vegetation Management Plan

2011

Washington State Department of Transportation
Maintenance Operations Division

Photo by: Rich Old
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Summary

The Washington State Department of Transportation (WSDOT) manages approximately 740 miles of roadside right-of-way throughout Spokane, Pend Oreille and Stevens’ counties. This right-of-way is part of the state highway system including I-90, US-2, US-395, US 195, SR-20, SR-290 as well as a number of other state routes in the area.

As a landowner in this area, WSDOT is required to control all listed noxious weeds that occur on this right-of-way by state law (RCW 17.10 and 15.15.010). It is important for WSDOT to not only meet the legal requirements, but also to consider the needs and concerns of adjacent landowners in this area.

In order to better manage these roadsides, WSDOT is in the process of developing an Integrated Roadside Vegetation Management Plan (IRVM) for this area. This plan will serve as the primary guidance document for maintenance of roadsides in this area and will provide detailed weed control and planting guidance as well as overall policy and procedures. This plan supports WSDOT’s long-range goals of managing these roadsides to:

- Reduce maintenance costs
- Improve weed control
- Enhance roadside vegetation by providing stable, sustainable plant communities

The attached plan consists of three main sections:

1. **Introduction**: This section provides an overview of the maintenance area discussed in the plan. This section also provides contacts, pertinent links and references and the annual work plan while giving the reader a general understanding of the WSDOT roadside program.
2. **Plan**: This is the main body of the document and includes detailed descriptions of specific maintenance activities, policies and objectives.
3. **Appendices**: This section contains prescriptions for weed control and revegetation, noxious and nuisance weed locations, locations of special maintenance areas, forms and records, and a list of local public and private stakeholders.

This plan is a dynamic document that will be developed and updated over time with input from a variety of sources. WSDOT welcomes comments and suggestions from local private and public entities. An electronic version of the Eastern Region, Area 1 Plan is available at [http://www.wsdot.wa.gov/Maintenance/Roadside/mgmt_plans.htm](http://www.wsdot.wa.gov/Maintenance/Roadside/mgmt_plans.htm) or available in hard copy upon request. Please contact Robert Blegen, Russ Johnson or James Morin at the numbers listed below for questions or comments.

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Vicinity Map
Figure 1
2010 Work Plan

The purpose of this section is to identify the short and long term operational goals within Eastern Region, Area 1. These goals will help direct decisions that affect roadside management and the construction of roadside. These goals will be updated and evaluated on a yearly basis during the annual Winter Planning Meeting.

Long-Range (2009-2013)
Long-term goals should be achievable within a 5 year period of time and have clearly stated objectives. Long-term goals may be general in nature and should provide direction for short term operational goals.

- **General Weed Control**
  1. Improve consistency and predictability in Veg. Management (VM) program. Accomplished
  2. Maintain good communication with Spokane County Weed Board Accomplished
  3. Work with Design/Construction on NSC to improve communication Accomplished

- **Noxious Weed Control 3A2 - Map Target: B**
  1. Improve control of Toadflax and Rush Skeletonweed throughout area Accomplished
  2. Revegetate disturbed areas as they occur Accomplished
  3. Increase fall herbicide applications on perennial weed species Partially Accomplished
  4. Continue to invest in biological control, particularly for knapweeds and Dalmatian toadflax Did not Accomplish

- **Nuisance Weed Control 3A3 - Map Target B-**
  1. Nuisance weeds will only be controlled incidental to noxious weed control

- **Obstructions 3A4 - Map Target: B-**
  1. Maintain hardware, intersections and low site distance locations to be free of vegetation obstructions. Accomplished

Annual Work Plan- 2010
The work plan is updated annually and should reflect the “Long-Term Goals” above.

- **Noxious Weed Control 3A2 - Map Target: B**
  1. Treat an estimated 1100 acres of roadside with selective herbicides for noxious weed control. Accomplished 721 acres
  2. Mow approximately 30 acres of noxious weeds on roadsides and gore areas. Accomplished 2 acres
  3. Continue investment in biological control to target Spotted and Diffuse Knapweed and Dalmatian Toadflax infestations. Did Not Accomplish
  4. Plan for 50 acres fall herbicide treatment annually to control Canada thistle, Knapweeds and Dalmatian Toadflax Partially Accomplished

- **Nuisance Weed Control 3A3 - Map Target B-**
  1. Nuisance weeds will only be controlled incidentally to noxious weed control
  2. Mow approximately 300 acres in support of gateway areas and nuisance weed control. Accomplished between 500 and 600 acres

- **Obstructions 3A4 - Map Target: B-**
  1. Apply approximately 150 acres of Bare-ground. Accomplished 145 acres
  2. Mow approximately 200 acres to control obstructions. Accomplished 300 acres
  3. Hand trim approximately 4 acres. Accomplished approximately 10-15 acres
  4. Remove approximately 50 danger trees. Accomplished
2011 Work Plan

The purpose of this section is to identify the elements of the annual work plan for Eastern Region, Area 1. These goals should be consistent with the Long-Range work plan. This work plan will be updated and evaluated on a yearly basis during the annual Winter Planning Meeting.

Long-Range Work Plan- 2009-2013

Long-term goals should be achievable within a 5 year period of time and have clearly stated objectives. Long-term goals may be general in nature and should provide direction for short term operational goals.

- General Weed Control
  1. Improve consistency and predictability in Vegetation Management (VM) program.
  2. Maintain good communication with Spokane County Weed Board
  3. Work with Design/Construction on NSC project to improve communication

- Noxious Weed Control 3A2
  1. Improve control of Toadflax and Rush Skeleton and Bugloss weed throughout area with a focus on the NSC.
  2. Revegetate disturbed areas as they occur
  3. Increase fall herbicide applications on perennial weed species
  4. Continue to invest in biological control, particularly for knapweeds and Dalmatian toadflax.

- Nuisance Weed Control 3A3
  1. Nuisance weeds will only be controlled incidental to noxious weed control

- Obstructions 3A4
  1. Maintain hardware, intersections and low site distance locations to be free of vegetation obstructions.

Annual Work Plan- 2011

The work plan is updated annually and should reflect the “Long-Term Goals” above.

- Noxious Weed Control 3A2
  1. Treat an estimated 1000 acres of roadside with selective herbicides for noxious weed control
  2. Mow approximately 30 acres of noxious weeds on roadsides and gore areas.
  3. Continue investment in biological control to target Spotted and Diffuse Knapweed and Dalmatian Toadflax infestations.
  4. Plan for 50 acres fall herbicide treatment annually to control Canada thistle, Knapweeds and Dalmatian Toadflax

- Nuisance Weed Control 3A3
  1. Nuisance weeds will only be controlled incidentally to noxious weed control
  2. Mow 300-500 acres in support of gateway areas and nuisance weed control.

- Obstructions 3A4
  1. Apply approximately 150 acres of Bare-ground
  2. Mow approximately 250 acres to control obstructions?
  3. Hand trim approximately 5 acres
  4. Remove approximately 50 danger trees
**Roadside Maintenance Considerations**

The primary objectives for maintenance of roadside vegetation are:

- Provide safe highway operation
- Comply with legal regulations for control of noxious weeds
- Protection of the environment

**Visual Quality**

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. Roadsides 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 (June 1996) [http://www.wsdot.wa.gov/Publications/Manuals/M25-31.htm](http://www.wsdot.wa.gov/Publications/Manuals/M25-31.htm)

**Operational Zones**

WSDOT roadsides are divided into several zones for the purposes of assigning management objectives, maintenance intensities, 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 maintenance zones will occur along state highway in Eastern Region, Area 1. In certain cases narrow right-of-way or adjoining land-use limits the operational zones to 1 & 2 only. Roadside vegetation management zones are as follows:

**Zone 1** – The pavement edge zone is maintained in a manner and width necessary to address highway operations 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. A vegetation-free Zone 1 is maintained using non-selective soil residual herbicides. Routine annual mowing may be necessary in some cases where vegetation is established up to the edge of pavement.

**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, trimming and/or herbicide treatment as necessary to selectively remove undesirable trees, brush and weeds and encourage desirable vegetation. Any plant with an existing or potential trunk diameter of 4” or greater is considered undesirable in Zone 2.

**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.
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.
**Special Considerations**

**Herbicide Sensitive Areas**
An Herbicide Sensitive Areas consist of all locations within 60’ of jurisdictional water bodies. WSDOT limits the use of herbicides in these areas to reduce the potential risk of environmental impact to these sensitive resources. Only products that have successfully undergone an internal risk assessment process will be used in these areas (See Herbicide Safety below).

**Special Maintenance Areas**
This plan also defines and identifies areas with unique roadside maintenance requirements or where arrangements exist due to the surrounding land use, neighbor concerns or specific highway related functions. Special maintenance areas include highway roadsides sections with agreements for maintenance by neighbors. These areas are further defined in Special Maintenance Areas, Section 3.

**Public Notification of Herbicide Applications**
WSDOT is required by law to notify chemically sensitive individuals on file with Washington State Department of Agriculture, where the residing property abuts the highway right of way and the residence is within ½ mile of the property line. Notification to chemically sensitive individuals is accomplished by letter and/or phone conversation prior to each application. For specific herbicide application schedules, the roadside vegetation maintenance personnel can be reached at 509.324.6586.

**Herbicide Safety**
When applying herbicides WSDOT takes precaution to avoid any impact on human and environmental health, and to ensure herbicides do not move off target. Applications are made only by trained and licensed employees following all state and federal regulations as well as all recommendations and restrictions given on the individual product labels as approved by the US Environmental Protection Agency.

WSDOT has also conducted a risk assessment for the herbicide products and application methods used on state highways. Toxicological impacts of WSDOT practices were evaluated for human health (both operators and the general public), for aquatic ecosystems, and terrestrial wildlife. The findings of this assessment are summarized in a series of fact sheets for the individual herbicides used by WSDOT. These fact sheets can be viewed and downloaded through the Internet at: [http://www.wsdot.wa.gov/Maintenance/Roadside/herbicide_use.htm](http://www.wsdot.wa.gov/Maintenance/Roadside/herbicide_use.htm) or copies may be obtained by calling the WSDOT Headquarters Maintenance Office at (360) 705-7850.
**Roadside Design and Construction Considerations**

Highway and utility construction in many cases has a significant impact on drainage, soils and vegetation adjacent to the paved roadway. WSDOT policy and practice for restoring the operational, environmental and visual functions disturbed by construction is based on the guidelines found in the Roadside Classification Plan (RCP) (WSDOT 1996), and the Roadside Manual (WSDOT M25-30, July 2002).

Internal agency coordination between the Design, Construction, and Maintenance programs is imperative to a comprehensive roadside vegetation management plan. A commitment to increasing communication in these areas is an important component in an ongoing effort to reduced lifecycle costs and improves roadside vegetation. This commitment has been recognized and agreed to by the regional management team.

*Below is a list of design/construction projects that may have impacts to roadsides in the next 2-4 years:*
  - I-195 Hatch Road to Interstate 90 - Summer 2012

*Below is a list of permitted utility projects that are scheduled for construction within the next 2-4 years.*
  - No utility projects are scheduled in this area at this time.
Continuously Monitor Roadside Vegetation

Identify Problem Areas

Evaluate treatment options including Chemical-Mechanical-Biological-Cultural

Establish Treatment Plan

Treat Problem Area

Monitor Treatments

The IVM Decision-Making Process
Figure 3
1. INTEGRATED VEGETATION MANAGEMENT

Vegetation management activities are planned and carried out using the principles of Integrated Vegetation Management (IVM) and the decision making process described in Figure 3 (page 11). The goals of the IVM program are to:

- Provide effective control of noxious weeds
- Reduce maintenance life cycle costs
- Establish stable roadsides with desirable vegetation
- Preserve and enhance environmental quality

1.1. Integrated Vegetation Management Planning and Tracking Database

1.1.1. Description

One of the keys to the successful use of IVM is carrying out activities in accordance with a long-range plan and to follow up with monitoring and evaluation of treatment results. To facilitate this, IVM forms and a database have been created for statewide use by WSDOT maintenance. This system is being tested as part of the initial development of Roadside Vegetation Management Plans and will be modified and refined as technology in this area continues to develop over the coming years.

1.1.2. Sample forms

A copy of the Integrated Vegetation Management Form and Application Record are included in Appendix E, Forms and Records.

1.1.3. Instructions for use

Maintenance supervisors and technicians can access the IVM Record through the existing pesticide application record keeping system available from the area office. The IVM form should be used whenever evaluation of a method or product is desired. Entries should include future evaluation dates as well as a description of the site and current conditions.

1.2. Shoulder Maintenance (Zone 1 Bare-Ground)

1.2.1. Policy and Objectives

Zone 1 is maintained to be free of vegetation at a typical width of approximately 2’ in ER Area 1. This narrow vegetation free band at the edge of pavement is maintained to improve drainage, maintain necessary site distance and reduce the need for roadside mowing. Guardrail sections are typically maintained to be free of vegetation on the front side unless excessive erosion will occur or sensitive aquatic resources are present.

1.2.2. Action Thresholds (Zone 1):

An action threshold refers to the point at which action must be taken to control an infestation of weeds. The action thresholds for treatment of Zone 1 are listed below.

- Presence of vegetation within 2’ of edge of pavement.
- Sight distance limited by vegetation at or near the edge of pavement.

1.2.3. Methods (timing and procedures)

Zone 1 bare-ground applications, will occur in the spring, typically beginning in early March. Herbicide Sensitive Areas will be maintained with a chemical that has been approved for use within this 60-foot buffer or by
alternative mechanical applications. Special care will be given to these sensitive areas to insure that there are no impacts to the aquatic environment.

1.2.4. Prescriptions
See Appendix A, Zone 1 Maintenance Prescriptions

1.3. Mowing Operations

1.3.1. Policy and Objectives
Mowing will be accomplished throughout the Eastern Region, Area 1 on an as needed basis. Mowing needs and prescriptions will vary by location. Mowing can be an effective form of weed control, but done incorrectly can cause damage to desirable vegetation and enhance the growing environment for unwanted weeds. It’s important when conducting a mowing operation to consider a number of factors including goals, timing, target species, deck height and frequency.

1.3.2. Methods (Timing and Procedures)
Prior to conducting a mowing operation consider the following elements. Review items 1-7 below, then review and follow the appropriate prescriptions in Appendix A. There will be no mowing of desirable vegetation including grass, forbs, shrubs or woody species without prior authorization of the Maintenance Area Superintendent.

1. **Identify Goals Of Mowing Operation:** Before prescribing mowing as a preferred alternative, it is important to clearly understand what the goals are of this operation. These goals should not only be understood by the manager or decision maker, but also must be clearly communicated and understood by the operator as well. Goals may include; control of seed production, maintenance of sight distance, control of vegetation around hardware features, control of noxious or nuisance weeds in an environmental or crop sensitive area or the removal of weed skeletons for the control of newly emerging weeds.

2. **Identify Appropriate Timing:** When mowing in a stand of established dry land perennial grass, particularly native varieties, it is important to consider timing. Mowing shall not occur until after desirable grasses have reached dormancy or set seed, typically in July-August. If the goal is to control seed production of undesirable plants in an area where no desirable vegetation is present, mowing should take place as late as possible and prior to seed development. This will increase the likelihood that the target plant will not produce seed.

3. **Identify Target:** Identify target plant or plants to be controlled and ensure that the mowing operation will not spread these weed or exacerbate the existing problem. Some weeds, such as Japanese knotweed, can be easily spread through mowing. Ensure that the operator understands the target species and any desirable species in the area.

4. **Deck Height:** The mower deck height must be maintained at least 6-8 inches from the ground to reduce the likelihood of exposing bare soil. It
is also important to maintain this deck height if the mowing operation will include desirable grasses. Close mowing may be allowed in special cases where no desirable species occurs and restoration work will immediately follow.

5. **Clean Mower:** Mowing can easily spread weed seed from infested areas to uninfested areas. It is important to clean the mower after each operation to ensure that mowing operation is not contributing to the spread of noxious and nuisance weeds.

6. **Consider Alternatives:** As with all IVM operations it is important to consider alternative methods. Mowing in Eastern Region, Area 1 is not a routine maintenance activity. It is a secondary form of weed control to be used on an as needed basis.

7. **Communicate:** Communication with the mower operator is critical to a successful mowing operation. The operator must understand the goals, timing, target species and desirable species before the mowing operation begins.

1.3.3.**Prescriptions**

See **Appendix A, IVM Mowing Prescriptions**

1.4. **Noxious Weed Control**

1.4.1. **Policy and objectives**

WSDOT is required to control and prevent the spread of all noxious weeds on lands owned or managed by the agency. Noxious weed control is a high priority for WSDOT as a result of this legal mandate as well as the fact that if they are left unchecked, levels of infestation can begin to spread at exponential rates from year to year. Noxious weeds are invasive, non-native plant species that can quickly dominate native plant communities and spread to other areas or regions. New infestations of noxious weeds often appear first in highway corridors after being transported from other areas by vehicles or transportation of agricultural products. Without timely control, new infestations can further spread along transportation corridors and to adjacent property. The overall cost and economic impact to the agricultural community and the health of native ecosystems can be significant.

WSDOT prioritizes weed control based on three legally defined weed species classification categories. Chapter 16-750 of the Washington Administrative Code lists weed species in classes A, B or C. Noxious weeds include all plants listed as class A, and those in classes B and C that are designated for control within each individual county.

**Class A**

Class A noxious weeds are non-native species with a limited distribution in the state. Immediate treatment of these new infestations is required by State law and is the top weed control priority to prevent spread into adjacent areas. Eastern Region, Area 1 is located primarily within Noxious Weed Region 4 and 7 [http://www.nwcb.wa.gov/weed_list/weed_regions.htm](http://www.nwcb.wa.gov/weed_list/weed_regions.htm)

Currently there are no known Class A weeds identified within the WSDOT operating right of way in Eastern Region, Area 1.
Class B and C Designate Weeds

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. Containment, gradual reduction, and prevention of further spread are the chief management concerns of Designate species. Class B and C noxious weeds designated for control within Spokane, Pend Oreille and Stevens Counties and currently present within WSDOT right-of-way include:

Spokane County:
- Blueweed (Echium vulgare)
- Buffalobur (Solanum rostratum)
- Bugloss, Common (Anchusa officinalis)
- Common catsear (Hypochaeris radicata)
- Dalmatian Toadflax, (Linaria dalmatica spp dalmatica)
- Dyers woad (Isatis tinctoria)
- Garlic Mustard (Alliaria petiolata)
- Giant Hogweed (Heracleum mantegazzianum)
- Gorse (Ulex europaeus)
- Hawkweed, Mouseear (Hieracium pilosella)
- Hawkweed, Orange (Hieracium aurantiacum)
- Hawkweed, yellow (Hieracium caespitosum)
- Hoary Cress (Cardaria draba)
- Johnsongrass (Sorghum halepense)
- Knapweed, bighead (Centaurea macrocephala)
- Knapweed, Diffuse (centaurea diffusa)
- Knapweed, Meadow (Centaurea jacea x nigra)
- Knapweed, Russian (Acroptilon repens)
- Knapweed, Spotted (Centaurea biebersteinii)
- Knapweed, Vochin (Centaurea nigrescens)
- Kochia, (Kochia scoparia)
- Meadow clary (Salvia pratensis)
- Mediterranean Sage (Salvia aethiopis)
- Oxeye Daisy, (Leucanthemum vulgare)
- Policeman’s Helmet (Impatiens glandulifera)
- Purple Loosestrife, (Lythrum salicaria)
- Rush Skeletonweed, (Chondrilla juncea)
- Scotch Broom (Cytisus scoparius)
- Silverleaf Nightshade (Solanum elaegnifolium)
- Spurge, Leafy (Euphorbia esula)
- Tansy Ragwort (Senecio jacobaea)
- Thistle, Musk (Carduus nutans)
- Thistle, Scotch (Onopordum acanthium)
- Thistle, Plumeless (Carduus acanthoides)
- Velvetleaf (Abutilon theophrasti)
- Wild Carrot, (Daucus carota)
- Wild Chervil (Anthriscus sylvestris)
- Wild four o’clock (Mirabilis nyctaginea)
- Yellow Starthistle, (Centaurea solstitialis)

Pend Oreille County
- Blueweed (Echium vulgare)
- Buffalobur (Solanum rostratum)
- Bugloss, Common (Anchusa officinalis)
- Camel thorn (Alhagi maurorum)
- Common catsear (Hypochaeris radicata)
- Common reed (Phragmites australis)
- Dalmatian Toadflax, (Linaria dalmatica spp dalmatica)
- Dyers woad (Isatis tinctoria)
- Garlic Mustard (Alliaria petiolata)
- Giant Hogweed (Heracleum mantegazzianum)
- Gorse (Ulex europaeus)
- Hawkweed, European (Hieracium sabaudum)
- Hawkweed, Mouseear (Hieracium pilosella)
- Hawkweed, Orange (Hieracium aurantiacum)
- Herb Robert (Geranium robertianum)
- Indgobush (Amprpha fruiticosa)
- Johnsongrass (Sorghum halepense)
- Knapweed, bighead (Centaurea macrocephala)
- Knapweed, Meadow (Centaurea jacea x nigra)
- Knapweed, Russian (Acroptilon repens)
- Knapweed, Vochin (Centaurea nigscens)
- Knotweed, Himalayan (Polygonum polystachyim)
- Knotweed, Giant (Polygonum sachalinesnse)
- Knotweed, Japanese (Polygonum cucpidatum)
- Kochia, (Kochia scoparia)
- Longspine Sandbur (Cenchrus longispinus)
- Meadow clary (Salvia pratensis)
- Mediterranean Sage (Salvia aethiopis)
- Perennial Pepperweed (Lepidium latifolium)
- Perennial Sowthistle (Sonchus arvensis ssp.
- Policeman’s Helmet (Impatiens glandulifera)
- Puncturevine (Tribulus terrestris)
- Purple Loosestrife, (Lytthrum salicaria)
- Rush Skeletonweed, (Chondrilla juncea)
- Saltcedar (Tamarix ramosissima)
- Scotch Broom (Cytisus scoparius)
- Silverleaf Nightshade (Solaman elaeagnifolium)
- Spurge, Leafy (Euphorbia esula)
- Swainsonspea (Sphaerophysa salsula)
- Tansy Ragwort (Senecio jacobaea)
- Thistle, Milk (Silybum marianum)
- Thistle, Musk (Carduus nutans)
- Thistle, Scotch (Onopordum acanthium)
- Thistle, Plumeless (Carduus acanthoides)
- Velvetleaf (Abution theophrasti)
- Wild Chervil (Anthriscus sylvestris)
- Wild four o’clock (Mirabilis nyctaginea)
- Yellow Starthistle, (Centaura solstitialis)

**Stevens County**

- Bluweed (Echium vulgare)
- Buffalobur (Solaman rostratum)
- Bugloss, Annual (Anchusa arvensis)
- Bugloss, Common (Anchusa officinalis)
- Dalmatian Toadflax, (Linaria dalmatica spp dalmatica)
1.4.2. Methods
Control of noxious weed species can be difficult; therefore it is important to incorporate the concepts of IVM. Regardless of the specific method used to control noxious weeds it is important to fully understand the life cycle of the weeds that are being controlled.

- **Chemical**: In many cases, herbicides are used as a means of early control due to levels of infestations and in areas requiring control. Timing of herbicide treatments within the growth stage of the weed species is critical to achieving complete control of perennial species.

- **Mechanical**: Mowing, blading, disking and hand pulling are often used in conjunction with other control methods. Mowing considerations are covered in section 2.2 of this document.

- **Biological**: Biological controls are being used widely throughout WSDOT within the operating right of way. It is important to consider climate, level of infestation, and available control species when selecting an appropriate biological control. It is also imperative that biocontrols be placed in an area that won’t be adversely effected by mechanical or chemical control methods.

- **Revegetation/Enhancement**: A variety of other measures may be taken to promote natural vegetative competition through seeding, planting, and soil enhancement. Documentation of these methods and related success is essential to the success of long-term control measures. IVM forms will be completed for each of these sites and are located in Appendix E.
1.4.3. Action Thresholds:
The action threshold for noxious weed control is met whenever seed production
of a noxious weed is imminent. WSDOT is required by state law to control and
prevent the spread of all noxious weeds on WSDOT right-of-way (RCW
17.10.040). Control efforts will be initiated prior to the noxious weed producing
seed.

1.4.4. Prescriptions
See Appendix A, IVM Prescriptions, Noxious Weed Control

1.5. Nuisance Weed Control

1.5.1. Policy and objectives
Nuisance weed control, while not required by state law, provides many
positive benefits to the overall condition of the roadside including:

- Stabilization of shoulders and banks
- Improved storm water treatment
- Protection and enhancement of native plant communities
- Reduces spread of weeds
- Enhances visual quality

Depending on crew availability and budget, nuisance weeds will be
controlled throughout the roadsides of Eastern Region, Area 1 as part of the
overall Integrated Vegetation Management process. Priority control
measures will be given to new infestations or those infestations that threaten
desirable roadside vegetation. In some cases, where practical, nuisance
weed infestations may be treated in conjunction with noxious weed.

For established infestations currently identified in this plan, weed
populations will be contained and gradually reduced by applying appropriate
vegetation management prescriptions as funds and resources are available.
Control options range from manual cutting, mechanical removal,
revegetation and biological control, to targeted selective herbicide
application, or combinations thereof.

1.5.2. List of Species Currently Present
Numerous Class C nuisance weeds occur throughout Eastern Region, Area
1 within WSDOT right of way that are not targeted for control. In some
cases they are controlled incidentally or for site-specific reasons.

Common nuisance weed species that occur on WSDOT right of way within
Eastern Region, Area 1 include:

- Baby's Breath (Gypsophila paniculata)
- Common Mullen (Verbascum thapus)
- China Lettuce (Lactuca serriola)
- Marestail (Conyza canadensis)
- Mustard Species
- Russian Thistle (Salsola iberica sennen)
- Teasel (Dipsacus sylvestris)
1.5.3. Methods
Control measures for nuisance weeds are very similar to those of noxious weeds, see Section 1.4.2 and are dependent on available resources. Species that are wide spread are treated routinely throughout the season, often controlled incidental to noxious weeds.

1.5.4. Action Threshold For Nuisance Weed Control
Action will be taken at the discretion of the area superintendent. WSDOT is not required to control nuisance weeds, however, action is advised where funding is available and one or more of the following instances occur as a result of a nuisance weed infestation.

- Impact to desirable vegetation
- Nuisance weed presence reduces effectiveness of noxious weed control due to height or density
- New infestation where local control is achievable

1.5.5. Prescriptions
See Appendix A, IVM Prescriptions, Nuisance Weed Control

1.6. Tree and Brush Control

1.6.1. Policy and Practices
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 Zones 2 and 3 and side trimmed if they encroach on site distance or other traffic operational requirements.
- Large coniferous or deciduous tree species such as Ponderosa Pine, or cottonwood left to grow in Zone 2, can reach substantial size over a relatively short period of time and should be removed when young.

1.6.2. Methods
Removal of undesirable tree and brush species is accomplished in a variety of manners including hand cutting, herbicide applications, hand pulling, mowing or combinations thereof. A thorough understanding of the species to be controlled and consideration of proper timing is important with any of these control methods to reduce damage, minimize visual impact and be cost effective. Below are specific considerations for the various control methods:

- Mowing: In many cases it is effective to mow back the majority of the existing vegetation to the outside edge of zone 2, then follow with spot mowing or herbicide treatments of undesirable species as needed, leaving desirable species to form a competitive cover.
- Hand Cutting: When possible, hand cuttings can be chipped in place and applied to the roadside as mulch where needed. In many cases this can be used to improve soils, reduce erosion and improve vegetation.
• Trimming: Consideration should be given to the visual impact of trimming as well as the effectiveness of this operation. Chemical control will not be used on deciduous trees and shrubs until after the first of September, except for cut stump treatments.
• Chemical Control: Chemical control will not be used on conifers greater than 2’ in height.
• Transplanting: Whenever possible, safe and practical, seedling trees will 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 or groups to collect seedlings for use as transplants.
• Prescriptions: See Appendix A, IVM Prescriptions, Tree and Brush Control

1.7. Hazard Tree Removal

1.7.1. Policy and Practices
Trees within the right-of-way are routinely monitored by maintenance staff. Hazard trees may be:

• Dead
• Diseased
• Leaning
• Structurally damaged or unsound
• Shading, in some cases trees cause shading and create excessive frost problems on the roadway. In these cases canopy thinning or removal may take place to mitigate risk.

Trees that are identified as an imminent threat to the highway or traffic will be evaluated using best horticultural judgment and removed as soon as possible.

2. SPECIAL MAINTENANCE AREAS
Special Maintenance Areas include any sections of roadside where there are unique maintenance requirements or existing arrangements with any external organizations. Special Maintenance Areas may include interchanges, community entrances or enhancement areas, areas maintained by cities, bicycle paths, storm water retention ponds, state parks, wellheads, environmentally sensitive areas, school zones, roadsides adjacent to individual properties with current or annual no-spray agreements, and new technologies.

2.1. Herbicide Sensitive Areas

2.1.1. Policy and objectives
There are a number of herbicide sensitive areas located within the area where herbicide use will be limited or restricted in order to reduce the potential of environmental impact. In these locations vegetation will be managed using limited herbicides use or non-chemical alternatives.

The Washington State Department of Agriculture maintains a list of individuals who have been diagnosed with Multiple Chemical Sensitivity (MCS). WSDOT is required by law to notify these individuals when making herbicide applications to roadside locations if the highway right of way is adjacent to their property and their principle residence is...
within one-half mile of the application. Concerned individuals can obtain further information by contacting the area maintenance office in Spokane at 509.324.6586.

2.2. Adopt-a-Highway and Owner Will Maintain Agreements

2.2.1. Policy and Objectives
The Adopt-a-Highway program allows private citizens, volunteer groups, and businesses an opportunity to contribute to an enhanced roadside appearance through direct partnership with WSDOT. The program improves the overall appearance of the roadside primarily through litter control, although other activities that improve the visual and environmental condition of the roadside are permitted as well including limited planting and maintenance of specific areas. Other partnership opportunities are possible through general permits and agreements. Volunteer groups that do enhancement planting on WSDOT roadsides are typically required to establish and maintain the plantings. Communities may partner with WSDOT to develop and maintain selected Community Enhancement Areas as described in the Roadside Classification Plan.

Neighboring property owners may enter into an agreement with WSDOT where they take responsibility for the vegetation management activities along the area where their property abuts state right-of-way. These “owner will maintain” agreements are established through a General Permit and are required to be renewed on an annual basis. These agreements are typically implemented in cases where a neighboring property owner desires a higher level of care in front of their business or residence, or prefers maintaining the area to avoid WSDOT herbicide applications near their home or business.

2.2.2. Locations by Milepost
Locations where partnership agreements exist for accomplishment of roadside maintenance are listed in Appendix D, Special Maintenance Areas, Table 3.0.

2.3. Environmentally Sensitive Areas

2.3.1. Policy and Objectives
As a state agency, WSDOT is committed to conducting its activities in accordance with the dictates of sound environmental protection practices. This includes pollution prevention, avoid, minimize and appropriately mitigate adverse environmental impacts, and to comply with all environmental laws and regulations applicable to our business and activities.

Numerous environmentally sensitive areas occur within Eastern Region, Area 1, such as lakes, streams and wetlands. Special care will be taken to avoid and minimize impacts to these resources. Herbicide applications in these areas will follow normal label requirements. Other IVM treatments that take place in these areas, such as mowing or revegetation efforts will be subject to the Regional Road Maintenance Endangered Species Act Program Guidelines.

In compliance with the Regional Road Maintenance Endangered Species Act Program Guidelines, as agreed upon with the National Marine Fisheries Service, WSDOT has identified, mapped and located in the field all highway sections within 300 feet of rivers, wetlands and water bodies.
2.3.2. Locations
Environmentally sensitive areas are identified in the field with green guideposts and identified in an area atlas. For more information on the Regional Road Maintenance ESA Program Guidelines refer to: http://www.wsdot.wa.gov/maintenance/roadside/esa.htm or contact Gregor Myhr at 360.705.7853.

2.4. Storm Water Management Facilities

2.4.1. Policy and Objectives
Storm water management facilities include bio-filtration, swales, retention ponds and infiltration ponds.

Storm water management facilities will be managed for noxious and nuisance weeds following the same guidelines mentioned in previous sections. The primary objectives, with regard to vegetation management within these facilities, are to maintain retention and detention functions to improve water quality.

2.4.2. Methods
Noxious weed control will be conducted at all storm water management facilities as necessary. Control of nuisance weeds will be coordinated with nuisance weed control along the adjacent roadside. 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 unwanted vegetation and debris as well.

Refer to vegetation management prescriptions for specific weed, tree and brush species in Sections 1 and 2 of this document for timing and control methods.

2.5. Wetland Mitigation Sites

2.5.1. Policy and Objectives
Wetland mitigation results from unavoidable impacts to naturally occurring wetlands from highway construction. In these cases new wetlands are created on WSDOT right of way and vegetation is managed to provide environmental functions similar to those eliminated in other areas by the highway’s presence.

Wetland mitigation sites are carefully monitored 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 process so the maintenance actions are not required unless noxious weeds or hazardous trees become an issue. However, it is important that maintenance be aware of the locations of wetland mitigation sites to avoid impacting the required environmental functions of the sites.

2.5.2. Locations by Milepost
See Appendix D, Special Maintenance Areas, Table 3.0
## Appendix A

### Routine Vegetation Management Prescriptions

#### ER Region Area 1 - IVM Prescriptions

**Bare-Ground Prescriptions**

<table>
<thead>
<tr>
<th>Zone 1 Maintenance - General Bare-ground (Option A)</th>
<th>Location Type</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where needed on gravel shoulder or guardrail sections</td>
<td>1-3' area free of vegetation</td>
<td>annual herbicide application</td>
<td>spray truck w/ fixed nozzle mounted 18&quot; from ground</td>
<td>Non-selective residual herbicide</td>
<td>March/April</td>
<td>Monitor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Diuron 4L @ 128-256 ozl (4-8 lbs.)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**No Spray Within 60' of Water**

<table>
<thead>
<tr>
<th>Zone 1 Maintenance - General Bare-ground (Option B)</th>
<th>Location Type</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where needed on gravel shoulder or guardrail sections</td>
<td>1-3' area free of vegetation</td>
<td>annual herbicide application</td>
<td>spray truck w/ fixed nozzle mounted 18&quot; from ground</td>
<td>Non-selective residual herbicide</td>
<td>Spring</td>
<td>Monitor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Diuron 4L @ 128 ozd (4 lbs.)</td>
<td>March/April</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Oust XP @ 3 ozd</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**No Spray Within 60' of Water**

<table>
<thead>
<tr>
<th>Zone 1 Maintenance - General Bare-ground (Option C)</th>
<th>Location Type</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where needed on gravel shoulder or guardrail sections</td>
<td>1-3' area free of vegetation</td>
<td>annual herbicide application</td>
<td>spray truck w/ fixed nozzle mounted 18&quot; from ground</td>
<td>Non-selective residual herbicide</td>
<td>Spring</td>
<td>Monitor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plainview @ 14 ozl</td>
<td>March/April</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Consider Surfactant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No Spray Within 60' of Water</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**No Spray Within 60' of Water**

<table>
<thead>
<tr>
<th>Zone 1 Maintenance - General Bare-ground (Option D)</th>
<th>Location Type</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where needed on gravel shoulder or guardrail sections</td>
<td>1-3' area free of vegetation</td>
<td>annual herbicide application</td>
<td>spray truck w/ fixed nozzle mounted 18&quot; from ground</td>
<td>Non-selective residual herbicide</td>
<td>Spring</td>
<td>Monitor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Oust XP @ 3 ozd</td>
<td>March/April</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Portfolio 4F @ 10 ozl</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**No Spray Within 60' of Water**

<table>
<thead>
<tr>
<th>Zone 1 Maintenance - Sensitive/Buffer Area Bare-ground (Option E)</th>
<th>Location Type</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where needed on gravel shoulder or guardrail sections</td>
<td>1-3' area free of vegetation</td>
<td>annual herbicide application</td>
<td>spray truck w/ fixed nozzle mounted 18&quot; from ground</td>
<td>Non-selective residual herbicide</td>
<td>Spring</td>
<td>Monitor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Payload @ 12 ozl</td>
<td>March/April</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Oust XP @ 3 ozd</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**No 60' Buffer Limitations**

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**Eastern Region, Area 1**

Integrated Roadside Vegetation Management Plan

Routine - 1

2011
# Appendix A

## Integrated Vegetation Management Prescriptions

### ER Region Area 1 - IVM Prescriptions

#### Noxious Weed Control

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>all zones</td>
<td>Shortly after emergence</td>
<td>eradication and control of listed noxious weeds.</td>
<td>Spot/Band</td>
<td>Truck mounted injection sprayer</td>
<td>Amine 4 @ 32 ozl Super Spreader 90 @ 32 oz/100 gallons</td>
<td>Early growing season</td>
<td>Reapply as necessary. Seed and fertilize to reduce weed competition.</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - General Broadleaf Control (A)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>all zones</td>
<td>4' to 6'</td>
<td>eradication and control of listed noxious weeds.</td>
<td>Spot/Band</td>
<td>Truck mounted injection sprayer</td>
<td>Veteran 720 @ 64 ozl Super Spreader 90 @ 32 oz/100 gallons</td>
<td>Early growing season</td>
<td>Reapply as necessary. Seed and fertilize to reduce weed competition.</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - General Broadleaf Control (B)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>all zones</td>
<td>Before seed</td>
<td>Reduce seed production listed noxious weeds. Limit damage to grasses</td>
<td>Spot/Band</td>
<td>Truck mounted injection sprayer</td>
<td>Brox @ 32 Ozl Vista @ 16 Ozl Vanquish @ 4 ozl Sup Spread 90 @ 32 oz/100 gallons</td>
<td>Early growing season</td>
<td>Repeat as necessary</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - General Broadleaf Control (C)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>all zones</td>
<td>Before seed</td>
<td>Reduce seed production listed noxious weeds.</td>
<td>Spot/Band</td>
<td>Truck mounted injection sprayer</td>
<td>Escalade @ 48 ozl Sup Spread 90 @ 32 oz/100 gallons</td>
<td>Early growing season</td>
<td>Repeat as necessary</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - General Broadleaf Control (D)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>all zones</td>
<td>Before seed</td>
<td>Reduce seed production listed noxious weeds.</td>
<td>Spot/Band</td>
<td>Truck mounted injection sprayer</td>
<td>Vanquish @ 32 ozl Milestone @ 7 ozl Sup Spread 90 @ 32 oz/100 gallons</td>
<td>Early growing season</td>
<td>Repeat as necessary to reduce weed competition.</td>
</tr>
</tbody>
</table>
# Integrated Vegetation Management Prescriptions

## ER Region Area 1 - IVM Prescriptions

### Noxious Weed Control

#### Noxious Weed Control - General Broadleaf Control In Sensitive/Buffer Areas (E)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>All zones</td>
<td>Before seed</td>
<td>Reduce seed production listed noxious weeds.</td>
<td>Spot/Band</td>
<td>Truck mounted injection sprayer</td>
<td>Perspective @ 4.75 ozl Sup Spread 90 @ 32 ozl/100 gallons</td>
<td>Early growing season</td>
<td>Repeat as necessary reduce weed competition.</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - Dalmatian Toadflax - Actively Growing or Soil Residual Application (A)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>All zones</td>
<td>As soon as plants appear</td>
<td>Eradication and control of listed noxious weeds.</td>
<td>Spraying w/ herbicide</td>
<td>Backpack sprayer, pickup, etc.</td>
<td>Tordon 22k @ 32 ozl Telar XP @ 1.0 Ozd Syl-Tac @ 20 oz/100 gal</td>
<td>Early growing season</td>
<td>Reapply as necessary. Seed and fertilize to reduce weed competition.</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - Dalmatian Toadflax (Biological Control) (C)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>All zones</td>
<td>As soon as plants appear</td>
<td>Reduce/control host plant</td>
<td>Biological</td>
<td>None</td>
<td>Macinus Jenthus</td>
<td>Spring</td>
<td>Monitor and repeat or redeploy as needed</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - Rush Skeletonweed - Rosette Stage (A)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>All zones</td>
<td>As soon as plants appear</td>
<td>Eradication and control of listed noxious weeds.</td>
<td>Spraying w/ herbicide</td>
<td>Backpack sprayer, pickup, etc.</td>
<td>Tordon 22k @ 32 ozl Syl-Tac @ 20 oz/100 gal</td>
<td>Early growing season</td>
<td>Reapply as necessary. Seed and fertilize to reduce weed competition.</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - Rush Skeletonweed - Bolting/Flowering Stage (B)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>All zones</td>
<td>As soon as plants appear</td>
<td>Eradication and control of listed noxious weeds.</td>
<td>Spraying w/ herbicide</td>
<td>Backpack sprayer, pickup, etc.</td>
<td>Tordon 22k @ 64 ozl Syl-Tac @ 20 oz/100 gal</td>
<td>Early growing season</td>
<td>Reapply as necessary. Seed and fertilize to reduce weed competition.</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - Rush Skeletonweed - Bolting/Flowering Stage (C)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>All zones</td>
<td>As soon as plants appear</td>
<td>Eradication and control of listed noxious weeds.</td>
<td>Spraying w/ herbicide</td>
<td>Backpack sprayer, pickup, etc.</td>
<td>Milestone VM @ 7 ozl Syl-Tac @ 20 oz/100 gal</td>
<td>Early growing season</td>
<td>Reapply as necessary. Seed and fertilize to reduce weed competition.</td>
</tr>
</tbody>
</table>
## Appendix A

### Integrated Vegetation Management Prescriptions

ER Region Area 1 - IVM Prescriptions

### Noxious Weed Control

#### Noxious Weed Control - Rush Skeletonweed - Biocontrol (D)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>all zones</td>
<td>as soon as plants appear</td>
<td>Reduce/control host plant</td>
<td>Biological</td>
<td>None</td>
<td>Eriophyes chondrillae</td>
<td>Spring</td>
<td>Monitor and repeat or Summer redeploy as needed</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - Thistles/Knapweeds - Bolting/Flowering Stage (A)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>all zones</td>
<td>as soon as plants appear</td>
<td>eradication and control of listed noxious weeds.</td>
<td>spot treatment w/ herbicide</td>
<td>backpack sprayer, pickup, etc.</td>
<td>Milestone @ 7 ozl Syl-Tac @ 20 oz/100 gal</td>
<td>Spring or Fall</td>
<td>Reapply as necessary. Seed and fertilize to reduce weed competition.</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - Reseeded Areas - (Weeds Under 2") (A)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revegetation Site</td>
<td>as soon as plants appear</td>
<td>eradication and control of listed noxious weeds.</td>
<td>spot treatment w/ herbicide</td>
<td>Boom or boomless Broadcast application</td>
<td>Buctril @ 20 ozl or generic equivalent Super Spread 90 @ 32 oz/100 gallons</td>
<td>Early growing season</td>
<td>Reapply with Vista after grass reaches 2nd leaf stage</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - Reseeded Areas - (Weeds over 2") (A)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revegetation Site</td>
<td>When weeds appear After 2nd leaf break on desirable grass</td>
<td>eradication and control of listed noxious weeds.</td>
<td>spot treatment w/ herbicide</td>
<td>Boom or boomless Broadcast application</td>
<td>Buctril @ 20 ozl or generic equivalent Vista @12 ozl Vanquish @ 4 ozl Super Spread 90 @ 32 oz/100 gallons</td>
<td>Early growing season</td>
<td>Reapply as necessary.</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - Reseeded Areas - (Pre-Treatment)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revegetation Site</td>
<td>Apply immediately after fall planting for residual control of cheatgrass</td>
<td>eradication and control of listed noxious weeds.</td>
<td>broadcast application selective preemergence herbicide application</td>
<td>Boom or boomless Broadcast application</td>
<td>Milestone @ 7 ozl Super Spread 90 @ 32 oz/100 gallons</td>
<td>Fall</td>
<td>Reapply as necessary.</td>
</tr>
</tbody>
</table>
## Integrated Vegetation Management Prescriptions

### Tree and Brush Control

#### Tree and Brush Control - Locust, Russian Olive, Tree of Paradise, Poplar, (trees over 6’ in height)

<table>
<thead>
<tr>
<th>Location</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>zone 2</td>
<td>whenever trees are likely or have potential to grow and fall on the highway</td>
<td>control of young trees that may impact roadside function if allowed to grow</td>
<td>hand cutting, treatment of cut surface w/ herbicide chip debris in zone 2</td>
<td>power saws, loppers, chipper, backpack or hand-held sprayer</td>
<td>Backpack sprayer-undiluted mix of Garlon 3A</td>
<td>anytime</td>
<td>Seed and fertilize or plant to establish low growing native plant community</td>
</tr>
</tbody>
</table>

### Nuisance Weed Control

#### Noxious Weed Control - General Broadleaf Control (A)

<table>
<thead>
<tr>
<th>Location</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>all zones</td>
<td>Shortly after emergence</td>
<td>eradication and control of listed noxious weeds</td>
<td>Spot/Band</td>
<td>Truck mounted injection sprayer</td>
<td>Amine 4 @ 32 ozl Super Spreader 90 @ 32 oz/100 gallons No Spray Within 60 of Water</td>
<td>Spring/Summer</td>
<td>Reapply as necessary. Seed and fertilize to reduce weed competition</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - General Broadleaf Control (B)

<table>
<thead>
<tr>
<th>Location</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>all zones</td>
<td>4’ to 6’</td>
<td>eradication and control of listed noxious weeds</td>
<td>Spot/Band</td>
<td>Truck mounted injection sprayer</td>
<td>Veteran 720 @ 64 ozl Super Spreader 90 @ 32 oz/100 gallons No Spray Within 60 of Water</td>
<td>Spring/Summer</td>
<td>Reapply as necessary. Seed and fertilize to reduce weed competition</td>
</tr>
</tbody>
</table>

#### Noxious Weed Control - General Broadleaf Control (C)

<table>
<thead>
<tr>
<th>Location</th>
<th>Action Threshold</th>
<th>Management Goal</th>
<th>Method</th>
<th>Equipment</th>
<th>Materials</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>all zones</td>
<td>Before seed</td>
<td>Reduce seed production listed noxious weeds</td>
<td>Spot/Band</td>
<td>Truck mounted injection sprayer</td>
<td>Brox @ 32 Ozl Vista @ 16 Ozl Vanquish @ 4 ozl Super Spreader 90 @ 32 oz/100 gallons No Spray Within 60 of Water</td>
<td>Spring/Summer</td>
<td>Repeat as necessary</td>
</tr>
</tbody>
</table>
Appendix A

Integrated Vegetation Management Prescriptions

Mowing Prescriptions

Note: Mowing should be accomplished to meet specific goals and objectives specified in the "Management Goal" section below.

### Zone 2 Maintenance - Weed seed Control

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Management Goals</th>
<th>Method</th>
<th>Equipment</th>
<th>Timing</th>
<th>Planning and Follow-up</th>
</tr>
</thead>
</table>
| As needed in Zone 2 or 3       | 1) Limit noxious weed seed production  
2) Improve roadside vegetation  
3) Control of annual weeds  
4) Eliminate potential risk of herbicide application  
5) Improve conditions for desirable species | Mow single pass at 10-12 inches | mower, attenuator | Mowing should take place late in the growth cycle of the target plant species but prior to seed development.  
This will limit regrowth and potential seed production. | 1) Communicate goals with operator prior to undertaking operation  
2) Inspect after operation is complete to ensure target species are controlled and seeds have not developed |

### Zone 2 Maintenance - Crop/Sensitive Area

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Management Goals</th>
<th>Method</th>
<th>Equipment</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
</table>
| As needed in Zone 2 or 3       | 1) Limit noxious weed seed production  
2) Improve roadside vegetation  
3) Control of annual weeds  
4) Eliminate potential risk of herbicide application  
5) Improve conditions for desirable species | Mow single pass at 10-12 inches | mower, attenuator | Mowing should take place late in the growth cycle of the target plant species but prior to seed development.  
This will limit regrowth and potential seed production. | 1) Communicate goals with operator prior to undertaking operation  
2) Inspect after operation is complete to ensure target species are controlled and seeds have not developed |

### Zone 2 Maintenance - Safety/Sight Distance

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Management Goals</th>
<th>Method</th>
<th>Equipment</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
</table>
| As needed in Zone 1, 2 or 3    | 1) Improve sight distance for safety  
2) Incidental control of annual noxious weeds  
3) Incidental control of seed production  
4) Improve conditions for desirable species | Mow single pass at 10-12 inches | mower, attenuator | Mowing should take place as late in the growing season as possible while still maintaining good sight distance | 1) Communicate goals with operator prior to undertaking operation  
2) Monitor area for regrowth and adequate sight distance  
3) re-mow as necessary to provide safe sight distance |

### Zone 2 Maintenance - Remove Overstory (old weed debris)

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Management Goals</th>
<th>Method</th>
<th>Equipment</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
</table>
| As needed in Zone 2 or 3       | 1) Remove old vegetation debris in order to control emerging weeds  
2) Remove old vegetation debris that may be restricting desirable grasses  
3) Improve conditions for desirable species | Mow single pass at 10-12 inches | mower, attenuator | Mowing should take place late fall/winter after grass is dormant | 1) Communicate goals with operator prior to undertaking operation |

### Zone 2 Maintenance - New Seeding

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Management Goals</th>
<th>Method</th>
<th>Equipment</th>
<th>Timing</th>
<th>IVM Follow-up</th>
</tr>
</thead>
</table>
| As needed in Zone 1, 2 or 3    | 1) Reduce weed pressure  
2) Improve roadside vegetation  
3) Eliminate weed seed source | Mow single pass maintaining deck height above desirable grass | mower, attenuator | Prior to seed set of weed species or when needed to reduce competition with desirable species | 1) Communicate goals with operator prior to undertaking operation  
2) Inspect after operation is complete to ensure target species are controlled |

Eastern Region, Area 1
Integrated Roadside Vegetation Management Plan

Mowing - 1
2011
### Spokane Valley

**Planting Prescriptions**

#### Compost Mix

<table>
<thead>
<tr>
<th>Species and Variety of Seed in Mixture by Common Name and (Botanical name)</th>
<th>Pounds Pure Live Seed (PLS) Per Acre</th>
<th>Drill Seeding</th>
<th>Hydroseeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bluebunch Wheatgrass “Anatone” <em>(Pseudoroegneria spicata)</em></td>
<td>8.0 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Prairie Junegrass “Zumwalt” <em>(Koeleria cristat)</em></td>
<td>0.2 0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Crested Wheatgrass “Hycrest” <em>(Agropyron cristatum)</em></td>
<td>0.5 0.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Mountain Brome “Trout Lake” <em>(Bromus marginatus)</em></td>
<td>5.0 7.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Sandberg Bluegrass “Wallowa” <em>(Poa sandbergii)</em></td>
<td>0.3 0.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Idaho Fescue “Winchester” <em>(Festuca idahoensis)</em></td>
<td>2.0 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Lbs PLS/Acre</strong></td>
<td><strong>16.0 24.0</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix A  Integrated Vegetation Management Prescriptions

<table>
<thead>
<tr>
<th>Optional Species</th>
<th>Spokane Valley</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species and Variety of Seed in Mixture by Common Name and (Botanical name)</td>
<td>Pounds Pure Live Seed (PLS) Per Acre</td>
</tr>
<tr>
<td></td>
<td>Drill Seeding</td>
</tr>
</tbody>
</table>

### Optional Grass Species

### Optional Forb Species

### Optional Shrub Species

Total Lbs PLS/Acre 0.0 0
## Appendix A Integrated Vegetation Management Prescriptions

### Deer Park North

#### Planting Prescriptions

**Compost Mix**

<table>
<thead>
<tr>
<th>Species and Variety of Seed in Mixture by Common Name and (Botanical name)</th>
<th>Pounds Pure Live Seed (PLS) Per Acre</th>
<th>Drill Seeding</th>
<th>Hydroseeding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Bluebunch Wheatgrass “Anatone” <em>(Pseudoroegneria spicata)</em></td>
<td>3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2</strong> Prairie Junegrass “Zumwalt” <em>(Koeleria cristat)</em></td>
<td>0.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3</strong> Crested Wheatgrass “Hycrest” <em>(Agropyron cristatum)</em></td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4</strong> Mountain Brome “Trout Lake” <em>(Bromus marginatus)</em></td>
<td>9.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5</strong> Idaho Fescue “Winchester” <em>(Festuca idahoensis)</em></td>
<td>2.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Lbs PLS/Acre</strong></td>
<td>16.0</td>
<td>24.0</td>
<td></td>
</tr>
</tbody>
</table>

---

*Eastern Region, Area 1  
Integrated Roadside Vegetation Management Plan*
## Optional Species

### Spokane Valley

<table>
<thead>
<tr>
<th>Species and Variety of Seed in Mixture by Common Name and (Botanical name)</th>
<th>Pounds Pure Live Seed (PLS) Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Drill Seeding</td>
</tr>
</tbody>
</table>

### Optional Grass Species

### Optional Forb Species

### Optional Shrub Species

Total Lbs PLS/Acre | 0.0 | 0
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>2,4-D</td>
<td>Weedar 64 Amine 4 Veteran 720 Curtail WeedDestroy Platoon Crossbow Escalade Weedmaster Solution Savage 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>Nuisance and noxious weed control Zones 2 and 3</td>
<td>Selective broadleaf treatment</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 VM</td>
<td>Growth regulator - mimics plant hormones, synthetic auxin (4)</td>
<td>Nuisance and noxious 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 Eastside - Krovar restricted for use within 60’ of all water</td>
<td>Bromacil is potentially mobile in soil, use caution if rain is possible.</td>
</tr>
<tr>
<td>Bromoxynil</td>
<td>Buctril 2EC BroClean Brox 2E</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 Eastside - Restricted for use within 60’ of all water</td>
<td>Can cause irreversible eye damage, highly toxic to fresh water fish</td>
</tr>
<tr>
<td>Chlorsulfuron</td>
<td>Telar XP Landmark XP</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>
</tbody>
</table>

Eastern Region, Area 1
Integrated Roadside Vegetation Management Plan

2011
# 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</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>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>Cutil is premixed with 2,4-D, Pathfinder is premixed with triclopyr</td>
<td>Curtail 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>
<tr>
<td>Dicamba</td>
<td>Vanquish, Veteran 720</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 preemergent 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>No WSDOT use restrictions beyond those specified on labels</td>
<td>Refer to product label</td>
<td></td>
</tr>
<tr>
<td>Diuron</td>
<td>Karmex, Diuron 4 L, Diuron 80 DF</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>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>Nonselective 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</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</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>
## 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>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>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 Zone 1 and 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>
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<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></td>
<td>Westside - Restricted use</td>
<td>Highly toxic to fish, high potential for loss on eroded soil</td>
</tr>
<tr>
<td>Pictoram</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>
<tr>
<td>Pyraflufen</td>
<td>Edict</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>
</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>
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<th>WSDOT Restrictions</th>
<th>Cautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfentrazone</td>
<td>Portfolio</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 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>Sulfometuron-methyl</td>
<td>Oust</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></td>
<td>Westside - Restricted use 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>
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<tr>
<td>Triclopyr Amine</td>
<td>Garlon 3A</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>Garlon 4</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>
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</tbody>
</table>

Eastern Region, Area 1
Integrated Roadside Vegetation Management Plan
### Definitions
Locations area distinguishes between opposing sides of the highway by right shoulder (RS) and median shoulder (LS) in relation to direction of travel, indicated by increasing (INC) or decreasing (DEC) mile markers.

### Descriptions
Brief explanation of special treatment required

<table>
<thead>
<tr>
<th>SR</th>
<th>DIRECTION</th>
<th>SHOULDER</th>
<th>BEG MP</th>
<th>END MP</th>
<th>TYPE</th>
<th>DESCRIPTION</th>
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<td>RS</td>
<td>281.74</td>
<td>282.61</td>
<td>Exit to W. Spokane</td>
<td>Mow out quadrants</td>
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<tr>
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<td>DEC</td>
<td>RS</td>
<td>282.63</td>
<td>281.70</td>
<td>Exit to Airport Way</td>
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<td>293.80</td>
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<tr>
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<tr>
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<td>Maintain by city</td>
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<td>Maintain by city</td>
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<td>86.75</td>
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<td>RS</td>
<td>264.07</td>
<td>264.75</td>
<td>Exit to Salnave Rd.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3.0

**Definitions:** Locations area distinguishes between opposing sides of the highway by right shoulder (RS) and median shoulder (LS) in relation to direction of travel, indicated by increasing (INC) or decreasing (DEC) mile markers.

**Descriptions:** Brief explanation of special treatment required

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<tr>
<td>090</td>
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<td>RS</td>
<td>270.30</td>
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<tr>
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<tr>
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<td>RS</td>
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<td>299.26</td>
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<table>
<thead>
<tr>
<th>SR</th>
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<th>TYPE</th>
<th>DESCRIPTION</th>
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<tr>
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<tr>
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<td>RS</td>
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<tr>
<td>090</td>
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<tr>
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<tr>
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<td>285.78</td>
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<td>287.59</td>
<td>Exit 287 Argonne Rd</td>
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<td>296.61</td>
<td>295.83</td>
<td>Exit 296 Liberty Lake</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3.0

**Definitions**: Locations are distinguished between opposing sides of the highway by right shoulder (RS) and median shoulder (LS) in relation to direction of travel, indicated by increasing (INC) or decreasing (DEC) mile markers.

**Descriptions**: Brief explanation of special treatment required

<table>
<thead>
<tr>
<th>SR</th>
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<th>BEG MP</th>
<th>END MP</th>
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<td>291.90</td>
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<td>Philleo Lake Pit Site</td>
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<td>88.55</td>
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<td></td>
<td>Cedar Cr./Rocky Gorge Pit Site</td>
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<td>1.83</td>
<td>RR crossing</td>
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<td>Both</td>
<td>RS</td>
<td>4.31</td>
<td>12.84</td>
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<td>8.60</td>
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<td>Maintain by city</td>
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<td>Both</td>
<td>RS</td>
<td>9.09</td>
<td>11.05</td>
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<td>RS</td>
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<td>169.68</td>
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<td>Deer Park Quarry Site</td>
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<td>902</td>
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<td>7.21</td>
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<td>Both</td>
<td>RS</td>
<td>6.83</td>
<td>6.84</td>
<td>RR crossing</td>
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<tr>
<td>902</td>
<td>Both</td>
<td>RS</td>
<td>8.83</td>
<td>9.21</td>
<td>Fairchild Air Force Base</td>
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</tr>
</tbody>
</table>
Table 3.0

**Definitions:** Locations area distinguishes between opposing sides of the highway by right shoulder (RS) and median shoulder (LS) in relation to direction of travel, indicated by increasing (INC) or decreasing (DEC) mile markers.

**Descriptions:** Brief explanation of special treatment required

<table>
<thead>
<tr>
<th>SR</th>
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<th>SHOULDER</th>
<th>BEG MP</th>
<th>END MP</th>
<th>TYPE</th>
<th>DESCRIPTION</th>
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<td>12.50</td>
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<td></td>
<td>23015 W</td>
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<td>New Tyler Stockpile Site</td>
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</table>
# Integrated Vegetation Management Record

**EAGLE**

**Date:** 8/9/2007

**Vegetation Management Zone(s):** Zone 1, Zone 2, Zone 3

**Location:** PEMEROY

<table>
<thead>
<tr>
<th>Chg Code</th>
<th>County</th>
<th>Date</th>
<th>Vegetation Management Zone(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>455420</td>
<td>GARFIELD</td>
<td>8/9/07</td>
<td>Zone 1, Zone 2, Zone 3</td>
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</tbody>
</table>

**Check Aggressive Areas:**
- Roadside
- Landscaped Area
- Interchange
- Mitigation Site
- Third Party Damage
- Sensitive Sites
- Shoulder
- Exit Area
- Bridge
- Stormwater
- Yes
- Aquatic
- Median
- Park-n-Ride
- Ramp
- Yard/Stockpile
- Wetlands

**Target:**
- Noxious Weeds
- Brush/Dees
- Other
- Noxious Weeds
- Haze
- Russian Thistle
- RUSSIAN THISTLE

**Resources for Action:**
- Noxious Weeds
- Noxious Vegetation
- Fire Prevention
- Restore Native 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):**

**Maintain clean area for fall planting of new grass.**

**Approximate Area to Accomplish:**

<table>
<thead>
<tr>
<th>Activities</th>
<th>Planned Date of Treatment</th>
<th>Actual Date of Treatment</th>
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<tbody>
<tr>
<td>Manual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanized</td>
<td></td>
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<tr>
<td>Bi-Cultural</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical</td>
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</tbody>
</table>

**Evaluation and Date**

1. **07-09-08** Sprayed area with RAZOR PRO with good effects on all weeds except for Russian Thistle.

2. **08-09-08** Sprayed Russian Thistle with Escalade, all other weeds remain dead.

3. **08-09-08** Sprayed Russian Thistle with Escalade, all other weeds remain dead.
## Pesticide Application

### Eastern Region, Area 1

**Integrated Roadside Vegetation Management Plan 2011**

### Appendix E

**Forms and Records**

<table>
<thead>
<tr>
<th>Org. 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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<tr>
<td>465110</td>
<td>Spokane</td>
<td>3/30/2005</td>
<td>8:00 AM</td>
<td>11:00 AM</td>
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<td>E 07476</td>
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</table>

### Eastern Region, Area 1

**Forms & Records**

### Pesticide Application

**Row 1:**
- **Organ Code:** 465110
- **County:** Spokane
- **Date of Application:** 3/30/2005
- **Start Time:** 8:00 AM
- **Finish Time:** 11:00 AM
- **ICP:** 001A
- **Stores Issue Ticket Number(s):** E 07476

### Eastern Region, Area 1

**Forms & Records**

### Pesticide Application

#### Start Weather Conditions
- **Temperature:** 38°F
- **Wind (Direction From):** W
- **Wind (Range):** 8-10 mph

#### Finish Weather Conditions
- **Temperature:** 43°F
- **Wind (Direction From):** W
- **Wind (Range):** 8-10 mph

### Material Details

<table>
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<tr>
<th>No.</th>
<th>Material Name</th>
<th>Material Type</th>
<th>EPA Reg. No.</th>
<th>Lot Number</th>
<th>Per Acre Unit</th>
<th>Total Daily Unit</th>
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<tbody>
<tr>
<td>1</td>
<td>Water</td>
<td></td>
<td></td>
<td></td>
<td>30.89 Gal</td>
<td>380 Gal</td>
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<tr>
<td>2</td>
<td>Amine 4</td>
<td>Pesticide</td>
<td>34704-120</td>
<td>04PW44434</td>
<td>57.71 Ozl</td>
<td>203 Ozl</td>
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<tr>
<td>3</td>
<td>Roundup-Pro</td>
<td>Pesticide</td>
<td>524-475</td>
<td>LKJW070154</td>
<td>53 Ozl</td>
<td>53 Ozl</td>
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<tr>
<td>4</td>
<td>Direx 4L</td>
<td>Pesticide</td>
<td>1812-257</td>
<td>MAY04VL095</td>
<td>229.4 Ozl</td>
<td>1996 Ozl</td>
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</table>

### Total Details

- **Total Acres/Acre:** 12.3
- **Total Gallons/Acre:** 30.89
- **Gallons/Square Foot:**

### Equipment Details

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<th>Equipment Number</th>
<th>Real Use:</th>
<th>Left</th>
<th>Right</th>
<th>Front</th>
<th>Back</th>
<th>Vehicle Speed</th>
<th>Month Process</th>
<th>Width of Spray Pattern</th>
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</thead>
<tbody>
<tr>
<td>8030-4</td>
<td>1,100</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td>10 mph</td>
<td>20</td>
<td>2 Feet</td>
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### Operator Details

- **Operator Name:** Phillip Wickman
- **Operator Address:** 60100
- **Operator License No.:**

### Additional Notes

- **Amine 4 was figured on 3.5 acres, Roundup Pro figured on 1.0 acres, and the Direx 4L figured on 8.7 acres.**
Appendix F

STAKEHOLDER LIST

City of Spokane ........................................ City Hall 808 W. Spokane Falls Blvd. Spokane WA 99207 (509) 625-6270

City of Airway Heights ............................... 13120 W 13th Ave. Airway Heights, WA 99201 (509) 244-5429

City of Deer Park ....................................... P.O Box F Deer Park, WA 99066 (509) 276-5900

City of Spokane Valley .................. 11707 E. Sprague Ave, Suite 106 Spokane, WA 99019 (509) 921-1000

City of Liberty Lake .................................. 22710 E. Country Vista Dr. Liberty Lake, WA 99019 (509) 755-6700

City of Rockford ....................................... P.O. Box 49 Rockford, WA 99030

City of Newport ....................................... 200 S. Washington Ave, Newport, WA 99156 (509) 447-5611

City of Cheney ......................................... 609 Second St. Cheney, WA 9904 (360) 498-9293

Spokane County Noxious Weed Control Board .................................. Dave Mundt 222 N. Havana Rm 112 Spokane, WA 99202 (509) 477-5777

Pend Oreille Noxious Weed Control Board ................................... Sharon Sorby 1432 Larch Lane Cusick, WA 99119 (509) 447-2402

Stevens County Noxious Weed Control Board .......................... 230 Williams Lake Road Colville, WA 99114 (509) 684-7590

US Fish and Wildlife ................................ 11103 E. Montgomery Dr. Spokane Valley, WA 99206 (509) 921-0160

Washington State Dept. Fish and Wildlife ................................... 315 N. Discovery Place Spokane, WA 99216 (509) 892-1001
Appendix F

Washington State Dept. of Ecology ................................................... N. 4601 Monroe
Spokane, WA 99205 (360) 329-3400

Washington State Parks ................................................................. P.O. Box 42650 Olympia, WA
98504 (360) 902-8844

Stevens County Public Parks ............................................................. 210 W. Alder Ritzville, WA
99169 (509) 659-3276

Spokane County Public Works .......................................................... 1026 W. Broadway
Spokane, WA 99250 (360) 477-3600

Pend Oreille County Public Works .................................................... P.O. Box 5065 Newport, WA
99156 (360) 447-4513