

# North Central Region, Area 2

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# Integrated Roadside Vegetation Management Plan

2010



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

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## Summary

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The Washington State Department of Transportation (WSDOT) manages approximately 840 miles of roadside right-of-way throughout Grant, Adams and Franklin counties. This right-of-way is part of the state highway system including Interstate 90, US 395, US 12, SR 17, 26, 24 as well as a number of other state routes in the area. A map of state highways and routes in this area is attached on the following page.

As a landowner in this area WSDOT is required to control all designated noxious weeds that occur on this right-of-way by state law (RCW 17.10 and 15.15.010). It is important to 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 has developed an Integrated Vegetation Management Plan (IRVM) for this area. This plan serves 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 four main sections:

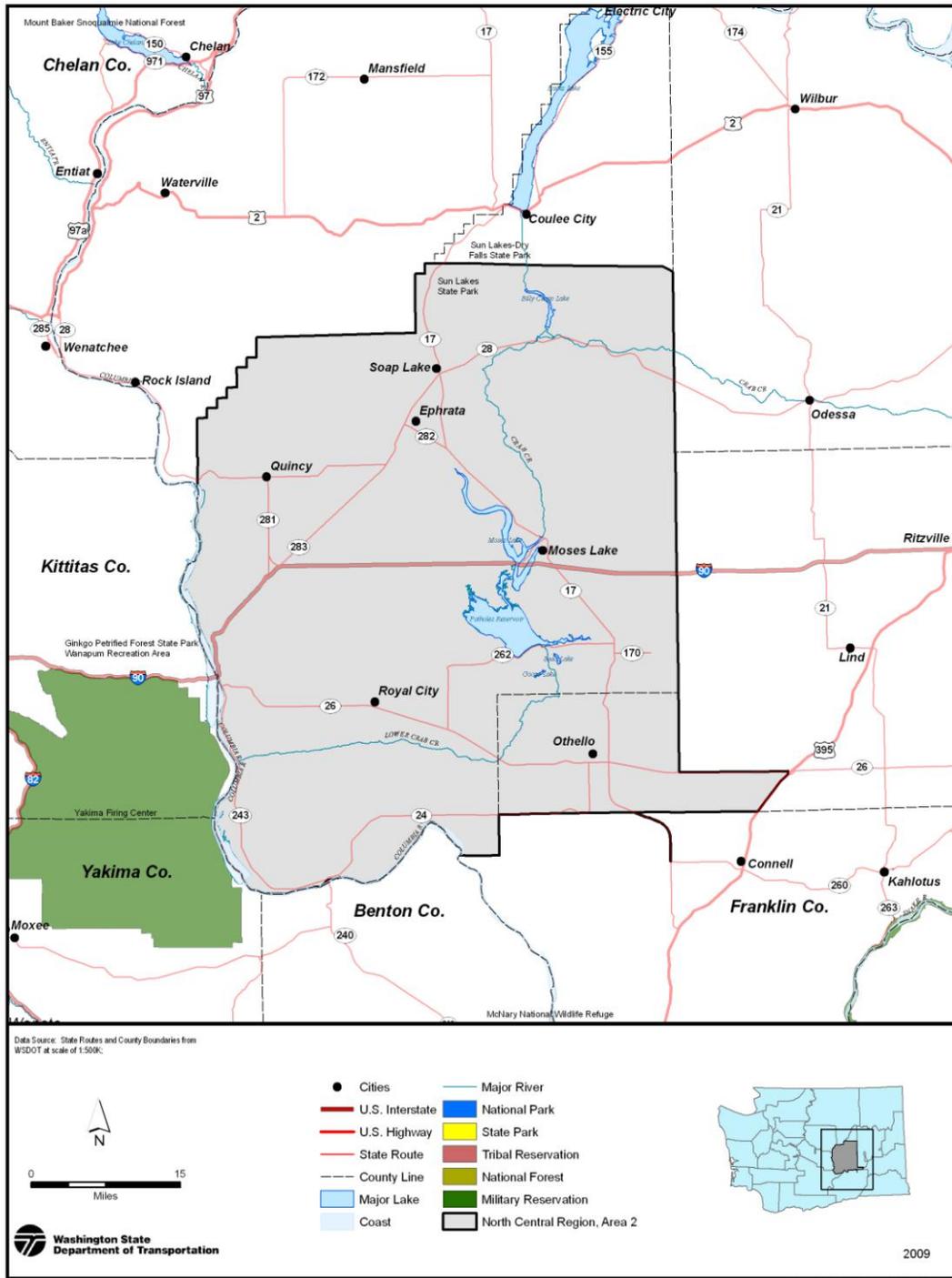
1. **Introduction:** This section provides a background that has lead to the development of the plan as well as references to other pertinent guidance documents.
2. **Description:** This portion of the plan deals with roadside character and maintenance considerations and gives the reader an overall understanding the WSDOT roadside program.
3. **Plan:** This is the main body of the document and includes detailed descriptions of specific maintenance activities, policies and objectives.
4. **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 encourages comments and suggestions from local private and public entities. A copy of the current IRVM plan is accessible in an electronic form 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 Kirk Poldervart, Terry VanHoven or James Morin at the numbers listed below for questions or comments.

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North Central Region, Area 2 Vicinity Map  
Figure 1

## **Program Goals**

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The purpose of this section is to identify the short and long term operational goals within NC Region, Area 2. These goals will help direct decisions that effect 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-Term Goals (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 Grant, Adams and Franklin County Weed Boards
  3. Establish working vineyard policy that allows focused weed control while reducing risk of impact to vineyards.
- **Noxious Weed Control 3A2 *Map Target: B***
  1. Test pre-emergent weed control in vineyard areas, payload fall application @ 8 ozl
  2. Improve long term weed control through encouraging desirable vegetation.
- **Nuisance Weed Control 3A3 *Map Target: B-***
  1. Nuisance weeds will only be controlled incidental to noxious weed control
  2. Improve long-term nuisance weed control through encouraging desirable vegetation
- **Obstructions 3A4- *Map Target: B-***
  1. Maintain hardware, intersections and low site distance locations to be free of vegetation obstructions.

### **Short-Term Goals (2010)**

Short-term goals are planned for implementation during the 2010 season. Short-term goals should be specific goals with clear objectives that can be measured and reported.

- **Noxious Weed Control 3A2- *Map Target: B***
  1. Treat an estimated **4000** acres of roadside with selective herbicides for control of designated noxious weed control
  2. Mow approximately **300** acres of noxious weeds on roadsides and gore areas.
  3. Treat approximately **400** acres with fall/spring pre-emergent application adjacent to vineyards to control noxious weeds.
  4. Continue investment in biological control to target Purple Loosestrife, Spotted and Diffuse Knapweed and Dalmatian Toadflax infestations.
- **Nuisance Weed Control 3A3- *Map Target: B-***
  1. Nuisance weeds will only be controlled incidentally to noxious weed control
- **Obstructions 3A4- *Map Target: B-***
  1. Apply approximately **25** acres of bare ground to control obstructions.

## ***Roadside Maintenance***

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### **Integrated Vegetation management**

Integrated Vegetation Management (IVM) can be defined as a decision making process that consists of a combination of treatment methods and constant evaluation to meet vegetation management goals (see Figure 3, page 12). The general objective of the IVM process is to provide effective long term weed control and prevention.

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

Overall WSDOT maintenance policy and procedures are defined in Chapter 6 of the WSDOT Maintenance Manual (M51-01, March 2002)  
[www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/MaintenanceManual.pdf](http://www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/MaintenanceManual.pdf)

### **Visual Quality**

All maintenance activities should be conducted in a way that minimizes visual impacts such as wide spread “brown-out” from herbicides or shattered limbs from side trimming. Roadside should look as natural as possible throughout the year. Appropriate visual quality for roadsides throughout the state is defined in the WSDOT Roadside Classification Plan (June 1996)  
[www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/RCP.pdf](http://www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/RCP.pdf)

### **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 on NC Region, Area 2. In many cases the narrow width of the right-of-way or adjoining land-use, limits the operational zones to Zone 1 and a narrow Zone 2 only. Roadside vegetation management zones are as follows:

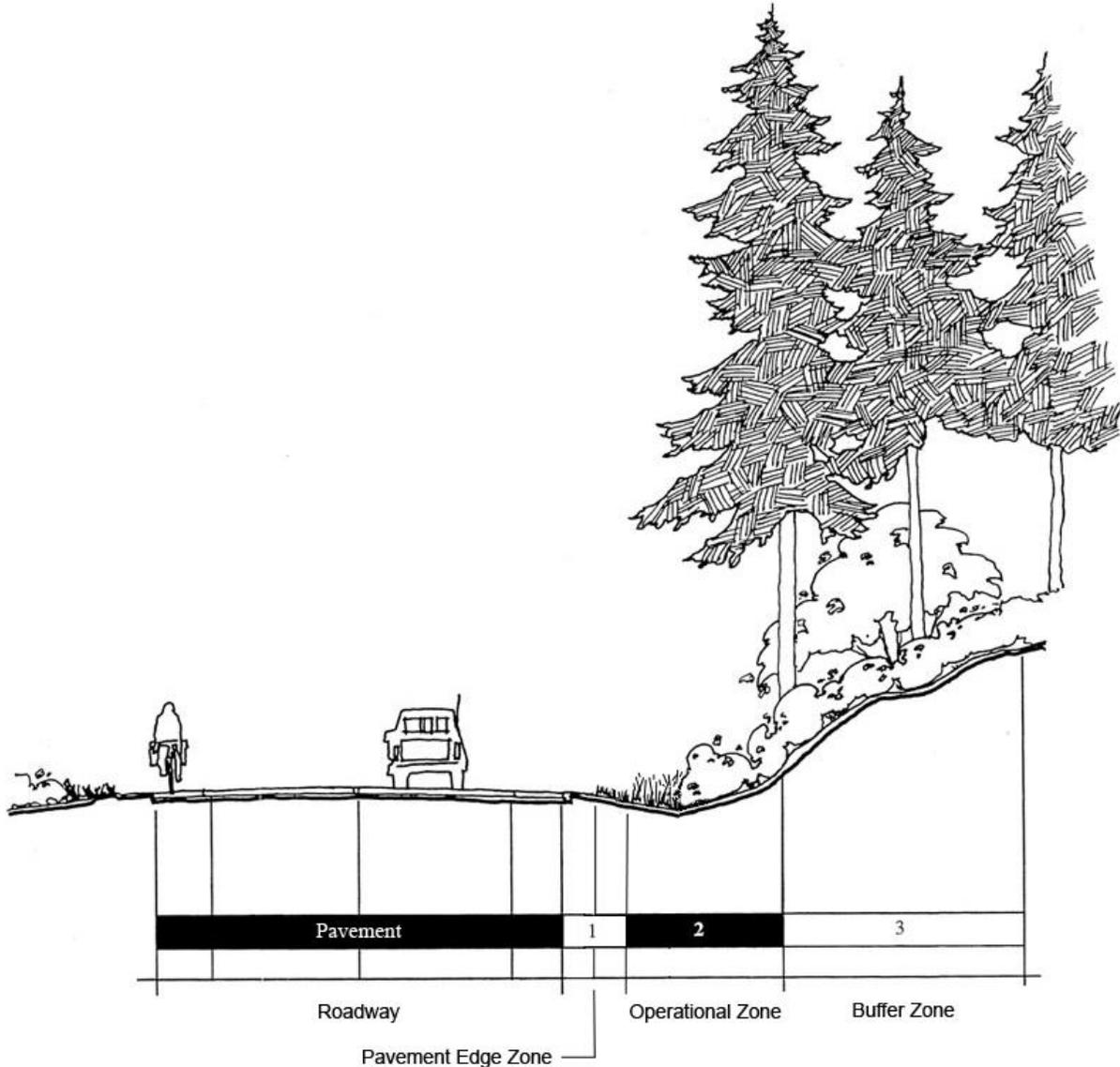
**Zone 1** - The pavement edge zone is maintained to provide for adequate sight distance, storm water drainage and filtration, noxious weed control, pavement preservation and hardware maintenance. Zone 1 may be maintained in a bare ground condition, or with desirable vegetation to pavement edge to meet site specific needs.

**Zone 2** – The operational zone extends from the edge of Zone 1, to a width necessary to provide for safe errant vehicular recovery, maintain sight distance at corners and intersections, and provide for other operational, safety, and environmental functions. This zone must be free of vegetation with trunk diameter greater than 6”. Where guardrail exists there is no requirement to maintain the vehicle recovery zone. The goal of vegetation management in Zone 2 is to:

- Encourage the growth of stable low growing desirable plant communities
- Control noxious weeds
- Reduce routine maintenance costs
- Reduce erosion and stabilize the roadway shoulder
- Support roadside operational and safety needs

**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.



**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.

**Typical Roadside Vegetation Management Zones**  
**Figure 2**

## ***Special Considerations***

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### **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 on 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 509.577.1908.

### **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/biz/maintenance/htm/risk\\_assessment.htm](http://www.wsdot.wa.gov/biz/maintenance/htm/risk_assessment.htm), or copies may be obtained by calling the WSDOT Headquarters Maintenance Office at 360.705.7850.

### **WSDOT Employee Training and Education**

Perhaps the most important key to success in the implementation of this plan is the education and training of the maintenance employees responsible for delivery of the program on a day-to-day basis. This plan and the information resources it provides is intended to supplement and enhance existing training and education opportunities already in place. Training and education for employees engaged in delivery of the roadside vegetation management will include:

- Participation in an annual one day Spring review of vegetation management needs and activities from the previous year, and planning for the coming year, including the maintenance crew(s), supervisor, and area maintenance superintendent and/or assistant superintendent.
- Development of a field guide using representative photographs taken along the highway to illustrate key aspects of IVM treatment. This will be developed over the first several years of plan implementation.
- Attendance at the annual statewide WSDOT Roadside Vegetation Management Workshops, where there is a focus on IVM tools and procedures, proper and safe use of herbicides, and lessons learned from around the state.

- Ongoing participation and communication with the public and private sector. This includes involvement in local weed board meetings, public events as well as communication with neighboring landowners and municipalities.
- Annual Winter Planning Meeting held in each Maintenance Area

## ***Roadside Design and Construction Considerations***

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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 improve roadside vegetation. This commitment has been recognized and agreed to by the regional management team.

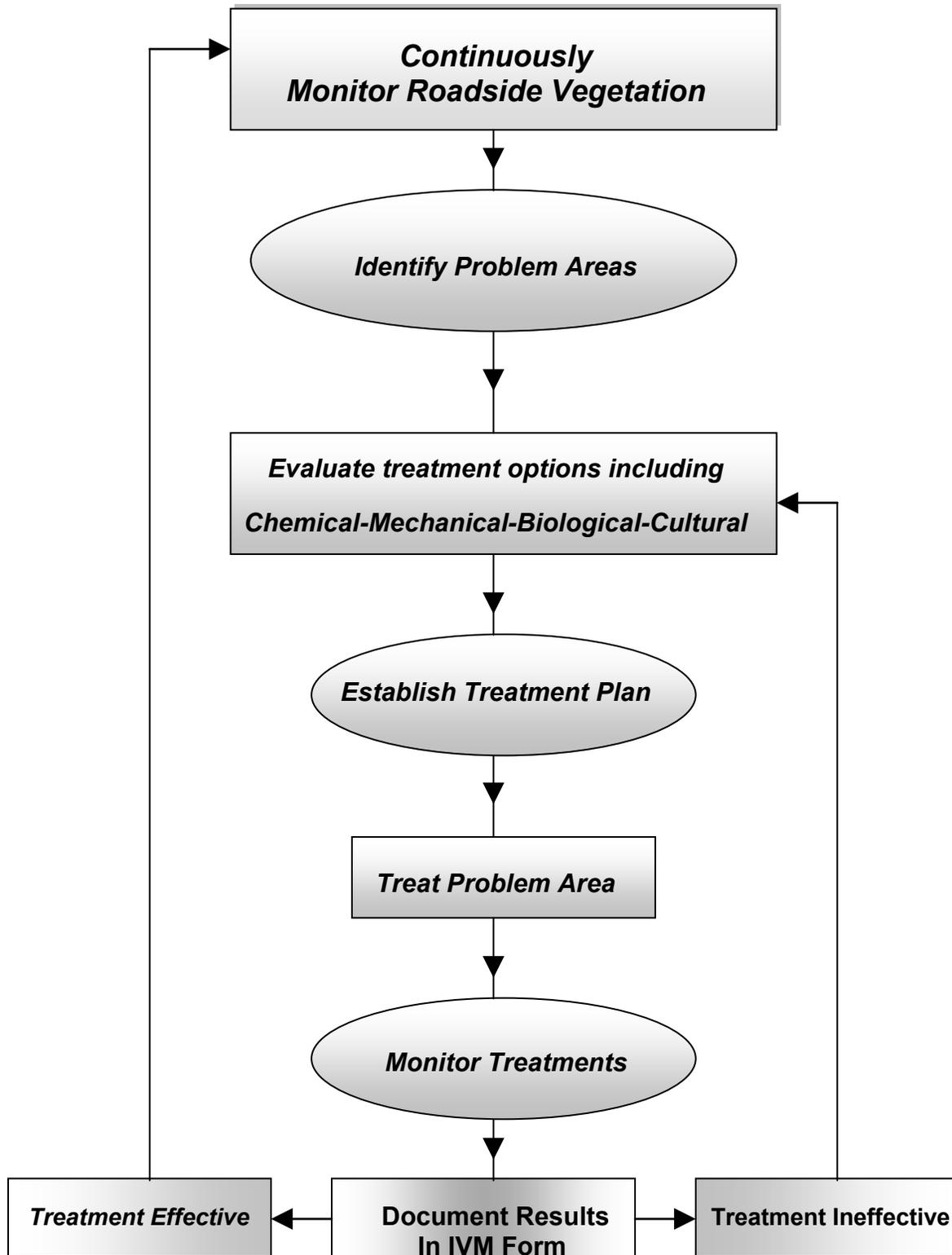
*Below is a list of design/construction projects that may have impacts to roadsides in the next 2-4 years:*

1. SR 26/24 Othello at 1<sup>st</sup> St MP79.6 - Intersection improvements **2010**
2. SR 26 West of Othello, MP 34.5 to 35.78 - Passing Lane **2010**
3. SR 262 MP 1.46 to MP 11.00

- WSDOT North Central Region Projects Link:  
<http://www.wsdot.wa.gov/regions/northcentral/projects/>

*Below is a list of permitted utility projects in the North Central Region, Area 2 that are scheduled for construction within the next 2-4 years.*

- *There are no utility construction contracts planned for the near future*



The IVM Decision-Making Process  
Figure 3

## ***North Central Region, Area 2 Roadside Vegetation Management Plan***

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### **1. ROUTINE MAINTENANCE ACTIVITIES**

Roadside maintenance activities are considered routine when regular annual treatment is required because vegetative growth annually or regularly exceeds action thresholds. Typical routine maintenance activities include maintenance of Zone 1 and certain types of mowing and trimming.

#### **1.1. Routine Shoulder Maintenance (Zone 1)**

##### **1.1.1. Policy and objectives**

Historically the edge of pavement or zone 1 has been maintained to be free of vegetation. This vegetation free zone has typically varied from 10' to over 15' in width. The objectives of this policy was to promote positive surface and subsurface drainage, protect asphalt shoulders from deterioration due to vegetation growth, facilitate preservation and maintenance of roadside hardware (guardrails and delineators), manage sight distance, control noxious weeds and to function as a firebreak. WSDOT is now in the process of reevaluating this policy and objectives on a statewide basis. This evaluation includes installing tests plots, conducting a study to evaluate alternative methods and a focus on defining site-specific goals and objectives.

The goals of the interim zone 1 policy for NC Region, Area 2 are as follows:

- 1) Identify opportunities to reduce zone 1 width where practical
- 2) Develop desirable stable vegetation and reduce routine maintenance and lifecycle costs
- 3) Continue to control noxious and select nuisance weeds
- 4) Meet site-specific operational needs, i.e. drainage, site distance etc.
- 5) Implement appropriate alternatives as they become available

The width of zone 1 has been reduced in recent years from an average of approximately 10-12' to what is now the standard width of 4' as measured from the edge of pavement along the slope of the shoulder.

No residual herbicides will be applied in herbicide sensitive area buffers. In these buffer zones, zone 1 will be maintained with glyphosate only. Any nuisance or noxious weed species that emerge in these areas will be controlled by mechanical control or with an approved selective herbicide application. Where guardrail is present in these areas, vegetation will be controlled around the base of hardware with hand mowing or routine annual applications of glyphosate. These areas are identified in the field with yellow pavement markings.

Zone 1 may be greater or less than the 4-foot standard width under some circumstances for certain operational functions. Prior to application, the area maintenance superintendent must approve all exceptions to standard width applications. These locations will be included on future updates to the area maps and plan documents.

##### ***Exception Areas (No Zone 1)***

Areas where Zone 1 will not be maintained in NC Region, Area 2:

- Shoulders without guard rail in close proximity (60') of sensitive aquatic habitat (maintained w/glyphosate only)
- When required for legal environmental compliance
- By agreement/permit where maintenance is done by others
- Within designated zone 1 "test plot" areas.

### **Variance Areas (Wider than Standard Width)**

Areas where Zone 1 may be greater than the standard 4' feet include:

- Where required for maintenance or visibility of highway hardware such as guardrail or fencing.
- Special areas designated as high fire risk.
- Where maintaining desirable vegetation is impractical such as natural rock or gravel ditches.
- Turn-outs or viewing areas
- To facilitate sight distance and visibility at intersections or gore points where mowing is not practical.
- In locations where a large vegetation free zone is required in order to be consistent with adjacent management techniques. As an interim measure to control noxious and nuisance weeds in an area that is not feasible to restore or reduce due to extreme weed pressure and lack of funding.
  - I-90 East and West Shoulders and median MP 143 to MP 154 10-14' wide
  - I-90 Median MP 161 to MP 165 (10-14')
  - I-90 Shoulders East and West MP 179 to MP 182 (10-14')
  - I-90 Median MP 179 to MP 192 (10-14')

#### **1.1.2. 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 listed noxious or nuisance weeds
- Sight distance limited by vegetation within zone 1
- Damage to the pavement edge as a result of vegetation

#### **1.1.3. Methods (timing and procedures)**

Zone 1 will be maintained by an annual application of non-selective residual herbicide applied according to label instructions and in compliance with all state and federal regulations.

Applications will be made in the spring typically beginning in March. They will be planned and carried out depending on weather patterns and precipitation events. In some cases a focused fall application may take place depending on weather patterns and weed conditions.

Zone 1 Herbicide Sensitive Areas will be maintained with glyphosate or other approved chemical that has been approved for use within this 60-foot buffer. Special care will be given to these sensitive areas to insure that there are no impacts to the aquatic environment. Zone 1 chemical applications will be documented on the WSDOT Pesticide Application Record.

#### **1.1.4. Prescriptions**

See **Appendix A, Zone 1 Maintenance Prescriptions**

## **2. INTEGRATED VEGETATION MANAGEMENT ACTIVITIES**

For all vegetation management needs not addressed through routine maintenance as described above, activities are planned and carried out using the principles of Integrated Vegetation Management (IVM) and the decision making process described in Figure 3 (page 9). This is consistent with requirements in state law pertaining to the use of Integrated Pest Management (IPM), as defined in Chapter 17.15 RCW. IVM is a coordinated decision making process that uses the most appropriate vegetation management methods and strategy, along with a monitoring and evaluation system, to achieve long term roadside maintenance goals and objectives in an environmentally and economically sound manner. The result of utilizing the IVM approach is the establishment of stable, low maintenance native or naturalized plant communities on the roadside that are compatible with highway maintenance and safety objectives, preservation of environmental quality, weed control requirements, and the concerns of WSDOT's customers and neighbors. Long term, the use of the IVM approach can reduce the intensity and cost of maintenance as well as minimizing the need to use herbicides.

### **2.1. Integrated Vegetation Management Planning and Tracking Database**

#### **2.1.1. Description**

One of the keys to a successful use of IVM is to carry 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.

#### **2.1.2. Sample forms**

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

#### **2.1.3. 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.

### **2.2. Mowing Operations (Zone 2)**

#### **2.2.1. Policy and objectives**

Zone 2 is also referred to as the operational zone and is maintained to fulfill operational, safety, and environmental functions of the highway roadside. Vegetation management considerations include noxious and nuisance weed control. Maintenance techniques used to accomplish these objectives must consider impacts to sensitive areas, erosion control, water quality, long-term vegetative growth and overall visual quality.

Zone 2 is measured from the edge of Zone 1 (or pavement if Zone 1 is not present) to the designated errant vehicle recovery zone for a given segment of highway, or to the width required to provide site distance at curves and intersections, or visibility of highway signs. Maintained recovery zone widths are based on a variety of factors including design speed, slopes, and the presence of guardrail. The typical recovery zone width for highways in NC Region, Area 2 is

approximately 30 feet from the outside pavement stripe, or the width of the right of way if less than 30 feet. The recovery zone must be free of vegetation with trunk diameters greater than 6". Where guardrail exists there is no requirement to maintain the vehicle recovery zone.

The goal of vegetation management in Zone 2 is to encourage the growth of stable native plant communities through routine maintenance activities while meeting operational and safety needs. Mowing and the removal of competitive nuisance and noxious weeds will be accomplished in a way that contributes to this goal, as described in Section 2 below. Vegetation management techniques will be used to maintain the predominately natural, but low growing appearance of the roadside.

### **2.2.2. Methods (timing and procedures)**

Mowing will be accomplished throughout the NC Region, Area 2 on an as needed basis. Timing, frequency and mower height are critical issues when planning mowing operations. 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 timing, mowing height and to take the time identify goals of the operation. In some rare instances a lower mowing height may be required, if necessary, it must be approved by the Area Superintendent prior to conducting the operation.

Mowing in Zone 2 will take place as needed when prescribed to meet specific goals. Mowing will take place after desirable native grasses have reached dormancy stage or set seeds, typically this occurs in late July or August. Perennial native grasses in this environment do not respond well to repeated mowing during the active growing period. Early mowing will often result in a depletion of the grasses resources and vigor, as the stand weakens it becomes more susceptible to diseases and less capable of competing with weeds. The long-term result will be a reduction of desirable grasses and an increase in noxious and nuisance weeds.

Mowing equipment will be set to a minimum height of 8 to 10 inches above ground. This minimum mowing height helps to reduce exposing bare soil caused by close mowing on uneven ground. Bare soil contributes to erosion and provides an opportunity for weed infestations to begin along the right-of-way. Maintaining the grass stand at the maximum allowable height should always be the objective. This will not only improve grass stand health but will also improve competition with weeds by shading weed seedlings.

Prior to conducting a mowing operation there are a number of considerations that must be addressed. 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 of the operation are. 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 weed seed production in an area where no desirable vegetation is present, mowing should take place as late as possible but prior to seed development. This will increase the likelihood that the target plant will not produce seed.
3. **Identify Target:** Identify targeted vegetation 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 that restoration work follows immediately.
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 NC Region, Area 2 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.

#### 2.2.3. Prescriptions

See Appendix A, IVM Mowing Prescriptions

### 2.3. Noxious Weed Control

#### 2.3.1. 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, and 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. North Central Region, Area 2 is located primarily within Noxious Weed Region 3 ([http://www.nwcb.wa.gov/weed\\_list/designations.html](http://www.nwcb.wa.gov/weed_list/designations.html)).

Currently there is no known Class A weeds identified within the WSDOT operating right of way in NCR Area 2

### ***Class B and C Designate Weeds***

Class B and C 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 for designated species.

Class B and C designate weeds designated for control within Grant, Adams and Franklin Counties and currently present within WSDOT right-of-way in NC Region, Area 2 include:

#### **Grant County:**

- Blueweed (*echium vulgare*)
- Buffalobur (*Solanum rostratum*)
- Bugloss, annual (*Anchusa arvensis*)
- Bugloss, common (*Anchusa officinalis*)
- Camel thorn (*Alhagi maurorum*)
- Common catsear (*Hypochaeris radicata*)
- Common fennel (*Foeniculum vulgare*)
- Dyers woad (*Isatis tinctoria*)
- Hawkweed, European (*Hieracium sabaudum*)
- Hawkweed, Orange (*Hieracium aurantiacum*)
- Herb Robert (*Geranium robertianum*)
- Hoary alyssum (*Berteroa incana*)
- Knapweed, diffuse (*centaurea diffusa*)
- Knapweed, meadow (*Centaurea jacea x nigra*)
- Knapweed, Russian (*Acroptilon repens*)
- Knapweed, spotted (*Centaurea biebersteinii*)
- Kochia (*Kochia scoparia*)
- Longspine sandbur (*Cenchrus longispinus*)
- Perennial pepperweed (*Lepidium latifolium*)

- Poison hemlock (*Conium maculatum*)
- Policeman's helmet (*Imatiens glandulifera*)
- Puncturevine (*Tribulus terrestris*)
- Rush skeletonweed (*Chondrilla juncea*)
- Scotch broom (*Cytisus scoparius*)
- Spurge, leafy (*Euphorbia esula*)
- Sulfur cinquefoil (*Potentilla recta*)
- Tansy ragwort (*Senecio jacobaea*)
- Thistle, Canada (*Cirsium arvense*)
- Thistle, plumeless (*Carduus acanthoides*)
- Thistle, scotch (*Onopordum acanthium*)
- Toadflax, dalmation (*Linaria dalmatica spp dalmatica*)
- White bryony (*Bryonia alba*)
- Wild carrot (*Daucus carota*)
- Wild four o'clock (*Mirabilis nyctaginea*)
- Yellow starthistle (*Centaurea solstitialis*)

#### **Adams County**

- Buffalobur (*Solanum rostratum*)
- Camel thorn (*Alhagi maurorum*)
- Common reed (*Phragmites australis*)
- Dyers woad (*Isatis tinctoria*)
- Hawkweed, European (*Hieracium sabaudum*)
- Hoary alyssum (*Berteroa incana*)
- Hoary cress (*Cardaria draba*)
- Jointed goatgrass (*Aegilops cylindrical*)
- Knapweed, diffuse (*centaurea diffusa*)
- Knapweed, meadow (*Centaurea jacea x nigra*)
- Knapweed, Russian (*Acroptilon repens*)
- Knapweed, spotted (*Centaurea biebersteinii*)
- Longspine sandbur (*Cenchrus longispinus*)
- Perennial pepperweed (*Lepidium latifolium*)
- Puncturevine (*Tribulus terrestris*)
- Rush skeletonweed (*Chondrilla juncea*)
- Spikeweed (*Hemizonia pungens*)
- Spurge, leafy (*Euphorbia esula*)
- Swainsonspea (*Sphaerophysa salsula*)
- Thistle, Canada (*Cirsium arvense*)
- Thistle, scotch (*Onopordum acanthium*)
- Toadflax, dalmation (*Linaria dalmatica spp dalmatica*)
- Toadflax, yellow (*Linaria vulgaris*)
- Wild four o'clock (*Mirabilis nyctaginea*)
- Yellow starthistle (*Centaurea solstitialis*)

### **Franklin County**

- Blueweed (*echium vulgare*)
- Buffalobur (*Solanum rostratum*)
- Bugloss, annual (*Anchusa arvensis*)
- Bugloss, common (*Anchusa officinalis*)
- Camel thorn (*Alhagi maurorum*)
- Cereal rye (*Secale cereale*)
- Common catsear (*Hypochaeris radicata*)
- Common fennel (*Foeniculum vulgare*)
- Dyers woad (*Isatis tinctoria*)
- Hawkweed, European (*Hieracium sabaudum*)
- Hawkweed, Orange (*Hieracium aurantiacum*)
- Herb Robert (*Geranium robertianum*)
- Hoary alyssum (*Berteroa incana*)
- Houndstongue (*Cynoglossum officinale*)
- Jointed goatgrass (*Aegilops cylindrical*)
- Knapweed, diffuse (*centaurea diffusa*)
- Knapweed, meadow (*Centaurea jacea x nigra*)
- Knapweed, spotted (*Centaurea biebersteinii*)
- Kochia (*Kochia scoparia*)
- Oxeye daisy (*Leucanthemum vulgare*)
- Perennial sowthistle (*Sonchus arvensis*)
- Policeman's helmet (*Imatiens glandulifera*)
- Rush skeletonweed (*Chondrilla juncea*)
- Scotch broom (*Cytisus scoparius*)
- Spiny cocklebur (*Xanthium spinosum*)
- Spurge, leafy (*Euphorbia esula*)
- Sulfur cinquefoil (*Potentilla recta*)
- Swainsonpea (*Sphaerophysa salsula*)
- Tansy ragwort (*Senecio jacobaea*)
- Thistle, musk (*Carduus nutans*)
- Thistle, plumeless (*Carduus acanthoides*)
- Thistle, scotch (*Onopordum acanthium*)
- Toadflax, dalmation (*Linaria dalmatica spp dalmatica*)
- White bryony (*Bryonia alba*)
- Wild carrot (*Daucus carota*)
- Wild four o'clock (*Mirabilis nyctaginea*)
- Yellow starthistle (*Centaurea solstitialis*)

#### **2.3.2. Methods**

Control of noxious weed species can be very 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 area 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 these long-term control measures. IVM forms will be completed for each of these sites and are located in Appendix E.

#### **2.3.3. Action Thresholds:**

The action threshold for noxious weed control is met whenever a noxious weed is present on WSDOT right of way. 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.

#### **2.3.4. Prescriptions**

See **Appendix A, IVM Prescriptions, Noxious Weed Control**

### **2.4. Nuisance Weed Control**

#### **2.4.1. 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 NC Region, area 2 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 weeds.

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.

#### **2.4.2. List of species currently present**

Numerous Class C nuisance weeds not designated for control occur throughout NC Region, area 2 within WSDOT right of way that are not targeted for control. In some cases they are controlled incidentally or for site-specific reasons. Nuisance weed control, while not required by state law, provides many positive benefits to the overall condition of the roadside. When time and funding are available, priority will be given to new infestations or those infestations that threaten desirable roadside vegetation. Common nuisance weed species that occur on WSDOT right of way within NC Region, area 2 include:

- Mustard Species

- Common Mullen (*Verbascum thapus*)
- Poison Hemlock (*Conium maculatum*)
- Russian Thistle (*Salsola iberica sennen*)
- Cereal Rye (*Secale cereale*)
- Common Reed (*Phragmites australis*)
- Pepperweed (*Lepidium* species)
- Babies Breath (*Gypsophila paniculata*)
- Mares Tail (*Conyza canadensis*)
- China Lettuce (*Lactuca serriola*)

Non-Designate nuisance weeds targeted for control in this area include Russian Thistle (*Salsola iberica sennen*), Knapweeds (*Centaurea*), Common Mullen (*Verbascum thapus*), cereal rye (*Secale cereale*), and China Lettuce (*Lactuca serriola*). Other species may be targeted as needed.

There are many other species of weeds present in the area that are too common and widespread to justify treatment or attempt control. There are also new species that have only shown up in recent years and are not yet listed as nuisance or noxious weeds. Other species may be added to this list as they are identified or become priorities for control.

#### **2.4.3. Methods**

Control measures for nuisance weed are dependent on the type of plant. Species that are wide spread are treated routinely throughout the season where time and budget allows. Many of these species are treated with a combination of mowing, herbicide treatments, biological control and establishment and/or encouragement of native vegetation.

#### **2.4.4. 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 adjacent land owners
- Impact to desirable vegetation
- Nuisance weed presence reduces effectiveness of noxious weed control due to height or density

#### **2.4.5. Prescriptions**

See **Appendix A, IVM Prescriptions, Nuisance Weed Control**

### **3. SPECIAL CONSIDERATIONS**

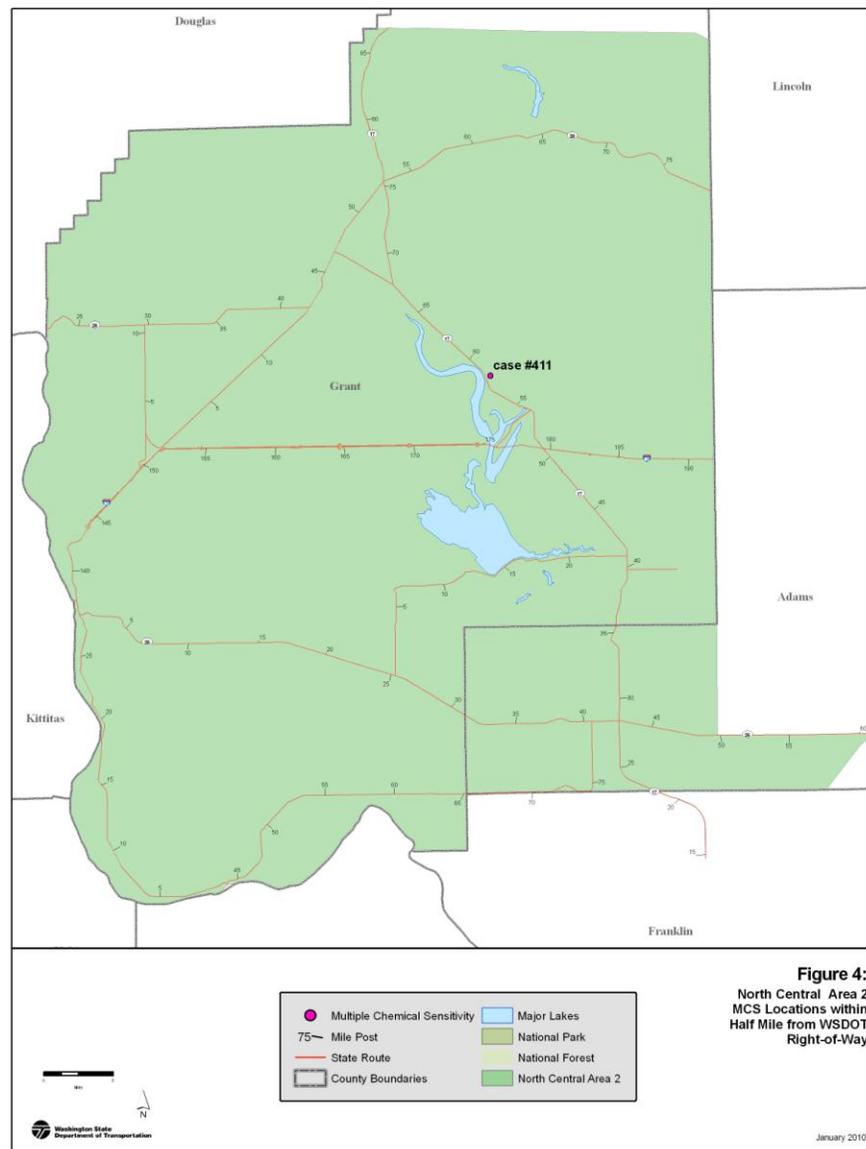
Special Maintenance Areas include any sections of roadside where there are unique maintenance requirements or existing arrangements with any external organizations. Special Maintenance Areas may include interchanges, community entrances or enhancement areas, areas maintained by cities, bicycle paths,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

### 3.1. Herbicide Sensitive Areas

#### 3.1.1. Policy and objectives

There are a number of herbicide sensitive areas located within the region where herbicide use will be limited or restricted in order to reduce the potential for any environmental impact. In these locations vegetation will be managed using limited herbicides 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. Reference figure 4 for locations of MCS individuals within NC Region area 2. Concerned individuals can obtain further information by contacting the area maintenance office in Ephrata at **509.765.6145**.



## **3.2. Restoration Projects and Test Plots**

### **3.2.1. Policy and objectives**

Test plots are established as part of an on-going effort to refine the Integrated Vegetation Management process. Test plots will be used to evaluate revegetation techniques, herbicide selection, species selection, evaluate soil amendments and other research activities as needed. Test plot goals, locations and duration are identified and recorded in **Appendix D**.

### **3.2.2. Locations by Milepost, See Appendix D, Test and Restoration Plots**

## **3.3. Adopt-a-Highway and Owner Will Maintain Agreements**

### **3.3.1. 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.

### **3.3.2. Locations by Milepost**

Locations where partnership agreements exist for accomplishment of roadside maintenance are listed in **Appendix C, Special Maintenance Areas, Table 3.0**.

## **3.4. Environmentally Sensitive Areas**

### **3.4.1. 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 NC, Region area 2, 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.

#### **3.4.2. 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 the following website <http://www.wsdot.wa.gov/maintenance/roadside/esa.htm> or contact Gregor Myhr at 360.705.7853.

### **3.5. Storm Water Management Facilities**

#### **3.5.1. 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.

#### **3.5.2. Activities and 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.

Currently there are no active storm water management facilities in NC Region, Area 2.

### **3.6. Wetland Mitigation Sites**

#### **3.6.1. 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.

Currently there are no known wetland mitigation sites within the operational right of way in NC Region, Area 2.

**Routine Maintenance Activities**

**Zone 1 Maintenance - Bare ground maintenance, (Option A)**

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
gravel shoulder or guardrail sections	4' vegetation free zone	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Payload @ 12 ozl Oust XP @ 3ozl  <u>No Buffer Limitations</u>	Fall	none required

**Zone 1 Maintenance - Bare ground maintenance (Option B)**

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
gravel shoulder or guardrail sections	4' vegetation free zone	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Portfolio @ 5 Ozl Karmex DF @ 5 lbs  <u>No Spray Within 60 of Water</u>	Fall and/or Spring	none required

**Zone 1 Maintenance - Bare ground maintenance (Option C)**

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
gravel shoulder or guardrail sections	4' vegetation free zone	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Karmex DF @ 8 lbs <u>No Spray Within 60 of Water</u>	Fall and/or Spring	none required

**Zone 1 Maintenance - Bare ground maintenance (Option D)**

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
gravel shoulder or guardrail sections	4' vegetation free zone	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Roundup-Pro @ 32 ozd Chemtrol @ 24 ozl <u>No Buffer Limitations</u>	Fall and/or Spring	none required

**Vineyard Maintenance - Annual application of preemergent (Option A)**

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Adjacent to Vineyards	Control of designate weed species adjacent to Vineyards	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Payload @ 8 oz <u>No Buffer Limitations</u>	Fall and/or Spring	Spot treatment as needed

**Vineyard Maintenance - Annual application of preemergent (Option B)**

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Adjacent to Vineyards	Control of designate weed species adjacent to Vineyards	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Portfolio @ 8oz <u>No Spray Within 60 of Water</u>	Fall and/or Spring	Spot treatment as needed

**Noxious Weed Control**

**Noxious Weed Control - General Weed Control (Option A)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Zones 2-3	as soon as plants appear	Selective eradication and control of listed noxious weeds.	spot treatment w/ herbicide most effective	tank sprayer equipped with Invert system, Injection system tank mix or back pack sprayer	Escalade @ 48 ozl Spreader 90 @ 12ozl Reign @32 ozl <b>No Spray Within 60' of Water</b>	Early Season	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Noxious Weed Control - General Weed Control (B)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	Shortly after emergence Shortly after emergence	eradication and control of listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Vista XRT @ 12 ozl Vanquish @ 24 ozl Spreader 90 @ 12 ozl <b>No Buffer Limitations</b>	Early Season	Repeat and/or treat with selective herbicide

**Noxious Weed Control - General Weed Control (C)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	Shortly after emergence Shortly after emergence	eradication and control of listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Veteran 720 @ 64 oz Spreader 90 @ 12 ozl <b>No Buffer Limitations</b>	Late fall	Repeat and/or treat with selective herbicide

**Noxious Weed Control - General Weed Control (D)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Zones 2-3	as soon as plants appear	Selective eradication and control of listed noxious weeds.	spot treatment w/ herbicide most effective	tank sprayer equipped with Invert system, Injection system tank mix or back pack sprayer	Roundup-Pro @ 48-64 ozd MSO @ 16-32 ozl <b>No Buffer Limitations</b>	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Noxious Weed Control - Dalmation Toadflax, Knapweed Species**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Zones 2-3	as soon as plants appear	Selective eradication and control of listed noxious weeds.	spot treatment w/ herbicide most effective	tank mix or back pack sprayer	Tordon 22k @ 32 ozl Escort 1 or Telar @ 1 ozd Phase @ 24 Oz. <b>No Spray Within 60' of Water</b>	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Noxious Weed Control - Dalmation toadflax (Biological)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	Biological Place 2 biocontrol agents (bugs) per plant	hand placement	Mecinus janthinus <b>No Buffer Limitations</b>	Early growing season	Monitor population and reapply as needed document in IVM form

**Noxious Weed Control**

**Noxious Weed Control - *Rush Skeletonweed, Knapweed Species, Canada Thistle***

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Zones 2-3	as soon as plants appear	Selective eradication and control of listed noxious weeds.	spot treatment w/ herbicide most effective	tank mix or back pack sprayer	Milestone @ 5-7 oz. Spreader 90 @ 12 ozl  No Buffer Limitations	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Noxious Weed Control - *Broadleaf in Reseeded Areas - Under 2" in diameter (A)***

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	Band application	tank sprayer	Buctril @ 20 oz or generic equivalent Spreader 90 @ 12 ozl  No Spray Within 60 of Water	Early Season	Repeat as necessary. Seed and fertilize to reduce weed competition.

**Noxious Weed Control - *Broadleaves in Reseeded Areas - Over 2" in diameter (B)***

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	Band application	tank sprayer	Buctril @ 20 ozl Vista @ 12 ozl Vanquish @ 2 ozl Spreader 90 @ 12 ozl No Spray Within 60 of Water	Early Season	Repeat as necessary. Seed and fertilize to reduce weed competition.

**Noxious Weed Control - *Purple loosestrife (Biological)***

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	Biological Place 2 biocontrol agents (bugs) per plant	hand placement	Galerucella californiensis  No Buffer Limitations	Early growing season	Monitor population and reapply as needed document in IVM form

**Noxious Weed Control - *Knapweeds (Biological)***

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	Biological Place 2 biocontrol agents (bugs) per plant	hand placement	Larinus minutus Larinus obtusus No Buffer Limitations	Early growing season	Monitor population and reapply as needed document in IVM form

**Noxious Weed Control - *Kochia, Knapweeds, Dalmation Toadflax, Thistle (Mechanical)***

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Zones 2-3	Weed height exceeds 8"	Reduce or eliminate seed production of weeds	Mow vegetation at 8" to eliminate or reduce production of seeds	Mower	None  No Buffer Limitations	Prior to weed seed development	Re-mow as needed or follow up with herbicide, many plants will still produce seeds without follow-up treatment.

**Tree and Brush Control**

**Tree and Brush Control - Alder, Maple, Cottonwood (trees under 6' ht.)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
zone 2	as soon as seedlings become visible w/in 30' of fog line (no guardrail present)	control of seedling trees that may impact roadside function if allowed to grow.	selective foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Garlon 3A at label rates  No Buffer Limitations	late fall to avoid brown out	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Tree and Brush Control - Alder, Maple, Cottonwood (trees over 6' ht.)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
zone 2	whenever trees are likely or have potential to grow and fall on the highway	control of young trees that may impact roadside function if allowed to grow.	hand cutting, treatment of cut surface w/ herbicide  chip debris in zone 2	power saws, loppers, chipper, backpack or hand-held sprayer	Garlon 4 at label rate for cut-stump treatment  No Spray Within 60 of Water	anytime	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Tree and Brush Control - Conifers (trees under 2' ht.)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
zone 1 or 2	as soon as seedlings become visible w/in 30' of fog line (no guardrail present)	control of seedling trees that may impact roadside function if allowed to grow.	foliar treatment w/ herbicide	tank sprayer where possible, backpack sprayer where necessary	Garlon 3A @ 256 Oz. Platoon @ 128 oz. in 100 gal. water No Spray Within 60 of Water	mid summer when new growth is present	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Tree and Brush Control - Conifers (trees under 2' ht.)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
zone 1 or 2	as soon as seedlings become visible w/in 30' of fog line (no guardrail present)	control of seedling trees that may impact roadside function if allowed to grow.	hand pulling transplant if possible	Weed Wrench optional	Mechanical	anytime	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Tree and Brush Control - Conifers (trees over 2' ht.)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
zone 2 or 3	whenever tree has been identified as defective or likely to fall on the highway	control of trees that may impact roadside function if allowed to grow.	hand cutting  chip debris in zone 2 if necessary	power saws, chipper,	Mechanical	anytime	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Nuisance Weed Control**

**Nuisance Weed Control - Mustard Species, Mullen, Teasel, China Lettuce and other Nuisance species (A)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	When infestation impacts private, public resources (dependent on available resources)	minimize populations and prevent further spread of nuisance weeds	foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Escalade @ 48 ozl Spreader 90 @ 12ozl  <b>No Spray Within 60 of Water</b>	prior to seed	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Nuisance Weed Control - Mustard Species, Mullen, Teasel, China Lettuce and other Nuisance species (B)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	When infestation impacts private, public resources (dependent on available resources)	minimize populations and prevent further spread of nuisance weeds	foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Veteran 720 @ 64 Ozl Spreader 90 @ 12ozl  <b>No Spray Within 60 of Water</b>	prior to seed	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Nuisance Weed Control - Mustard Species, Mullen, Teasel, China Lettuce and other Nuisance species (C)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	When infestation impacts private, public resources (dependent on available resources)	minimize populations and prevent further spread of nuisance weeds	foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Curtail @ 64 Ozl Escort @ .5 Ozd Spreader 90 @ 12ozl <b>No Spray Within 60 of Water</b>	prior to seed	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Nuisance Weed Control - Mustard Species, Mullen, Teasel, China Lettuce and other Nuisance species (D)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	When infestation impacts private, public resources (dependent on available resources)	minimize populations and prevent further spread of nuisance weeds	foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Vista XRT @ 12 ozl Vanquish @ 24 ozl Spreader 90 @ 12 ozl <b>No Buffer Limitations</b>	prior to seed	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**Nuisance Weed Control - Mustard Species, Mullen, Teasel, China Lettuce and other Nuisance species (D)**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	When infestation impacts private, public resources (dependent on available resources)	minimize populations and prevent further spread of nuisance weeds	foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Roundup-Pro @ 64 ozd Spreader 90 @ 12ozl  <b>No Buffer Limitations</b>	prior to seed	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

**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**

Location Type	Management Goals	Method	Equipment	Timing	Planning and Follow-up
As needed in Zone 2 or 3	1) Limit noxious weed seed production 2) Improve roadside vegetation 3) Control of annual weeds 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**

Location Type	Management Goals	Method	Equipment	Timing	IVM Follow-up
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**

Location Type	Management Goals	Method	Equipment	Timing	IVM Follow-up
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 5) 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)**

Location Type	Management Goals	Method	Equipment	Timing	IVM Follow-up
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**

Location Type	Management Goals	Method	Equipment	Timing	IVM Follow-up
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

## Planting Area A

Note: Seed mixes are listed as Pounds Live Seed not bulk rate.

### Planting Prescriptions

#### Seed Mix 1

(George/Moses Lake Vicinity)

Seed Mix Description: This is a general roadside seed mix for the George Vicinity. Additional species may be appropriate for this area depending on planting location in relation to the roadway, soil type, and management goals.

Grass Species	Pounds Pure Live Seed (PLS) Per Acre
Bluebunch Wheatgrass "Wahluke" ( <i>Pseudoroegneria spicata</i> )	10.63
Sandberg Bluegrass "Hanford" ( <i>Poa sandbergii</i> )	0.41
Thickspike Wheatgrass "Schwindemar" ( <i>Agropyron trachycaulum</i> )	4.64
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	0.03
Total Lbs PLS/Acre	15.71
<b>Bulk Rate Per Acre (Drill Seed)</b>	<b>20.00</b>
Total Lbs PLS/Acre	23.50
<b>Bulk Rate Per Acre (Hydroseed)</b>	<b>30.00</b>

**Planting Prescriptions**

**George Vic. Optional Species**

**Grass Species**

Basin Wildrye

*(Elymus cinereus)*

Needle and Thread Grass

*(Achillea millefolium)*

Indian Ricegrass "Nezpar"

*(Oryzopsis hymenoides)*

**Optional Shrubs and Forb Species**

Rubber Rabbitbrush

*(Chrysothamnus nauseosus)*

Basin Big Sage

*(Artemesia tridentata)*

Snowy Buckwheat

*(Eriogonum niveum)*

Yarrow

*(Achillea millefolium)*

Arrow-leaf Balsamroot

*(Balsamorhiza sagittata)*

**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

Chemical Name	Product Name	Where Used	How/Why Used	Cautions	Restrictions	Special Notes
2,4-D	Weedar 64 Amine 4 Veteran 720 Curtail	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Amine formulation causes irreversible eye damage and is highly toxic to rainbow trout, all 2,4-D products pose risks of off target damage when applied near grapes and other sensitive crops	Amine formulations of 2,4-D are restricted for use within 60' of all water	Ester and acid formulations of 2,4-D may provide a good alternative to amine formulations
Aminopyralid	Milestone	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	None	None	Newly developed herbicide, introduced in 2005. Still being evaluated for effectiveness in roadside applications.
Bromacil	Krovar Hyvar	Zone 1	Nonselective pre-emergent grass and weed control	Bromacil highly mobile in soil, high potential to leach into ground water	<u>Westside</u> - Restricted for use <u>Eastside</u> - Krovar restricted for use within 60' of all water.	None
Bromoxynil	Buctril 2EC	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Highly toxic to fresh water fish	<u>Westside</u> - Restricted for use <u>Eastside</u> - Restricted for use within 60' of all water	Effective broadleaf weed control without grass seed suppression
Chlorsulfuron	Telar	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	None	None	Product highly effective on Canadian thistle and Horse tail
Clopyralid	Transline Curtail	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Curtail contains 2,4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout	Curtail is restricted for use within 60' of all water because of 2,4-D amine content	Transline is a clopyralid formulation without 2,4-D
Dicamba	Vanquish Veteran 720	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Veteran 720 contains 2,4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout	Veteran 720 is restricted for use within 60' of all water because of 2,4-D amine content	Vanquish is the dicamba formulation without 2,4-D
Dichlobenil	Norosac 4G Casoron	Ornamental planting beds	Pre-emergent weed control in ground cover beds. Post emergent control of grasses.	Dichlobenil is highly toxic to aquatic insects	Restricted for use within 60' of all water	Highly effective for preemergent control of unwanted weeds in ornamentals
Diflufenzopyr	Overdrive	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	None	None	None
Diuron	Karmex Direx 80 DF	Zone 1	Nonselective pre-emergent grass and weed control	Highly toxic to fish.	<u>Westside</u> - Restricted for use <u>Eastside</u> - Restricted for use within 60' of all water	Cost effective weed control for Zone 1 in Eastern Washington
Flumioxazin	Payload	Zone 1	Nonselective pre-emergent grass and weed control	Highly toxic to estuarine invertebrates	Restricted for use within 60' of all salt water	Second year of use in zone 1, still evaluating
Fluroxypyr	Vista	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Highly toxic to Eastern Oyster, high surface runoff potential.	None	None
Fosamine	Krenite S	Tree and brush control in Zones 2 & 3	Selective broadleaf treatment	None	None	Effective broadleaf tree control without visual impacts
Glyphosate	Roundup Rodeo Aquamaster	Zone 1, spot spray around shrub and tree plantings, aquatic weed control (Rodeo, Aquamaster)	Nonselective weed control	None	None	Aquatic version approved for use with NPDES permit for in or over water treatments
Imazapic	Plateau	All zones	Pre-emergent control of undesirable grasses in newly seeded areas	Moderate to high potential to leach into groundwater	<u>Westside</u> - Restricted for use <u>Eastside</u> - Restricted for use within 60' of all water	Plateau is being evaluated for effectiveness particularly in former Zone 1 areas being re-established with native grasses
Imazapyr	Arsenal Habitat	Zone 1	Pre and post-emergent non-selective control of all vegetation	High surface runoff potential, high potential to leach into ground water	None	Habitat is an aquatic version of Arsenal - good alternative to glyphosate in certain cases
Isoxaben	Gallery 75DF	Turf & Ornamental	Pre-emergent weed control in ground cover beds	High surface runoff potential	Restricted for use within 60' of all water	Works well by itself or with Ronstar
Metsulfuron-methyl	Escort	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf and conifer treatment	None	None	None
Norflurazon	Predict	Zone 1	Pre-emergent Weed control in Zone 1 and ground cover beds	High surface runoff potential	Restricted for use within 60' of all water	Good Zone 1 product but difficult to keep in suspension
Oryzalin	Oryzalin	Zone 1 Ornamental planting beds	Pre-emergent Weed control in Zone 1 and ground cover beds	Highly toxic to fish	Restricted for use within 60' of all water	Product requires additional rinsing to thoroughly remove residues from empty container
Oxadiazon	Ronstar 50 WSP	Turf & Ornamental	Pre-emergent weed control in ground cover beds	Highly toxic to fish	Restricted for use within 60' of all water, gardens, plants bearing edible fruit	Works well by itself or with Gallery
Pendimethalin	Pendulum	Zone 1 Turf & Ornamental	Nonselective Pre-emergent grass and weed control	Highly toxic to fish, high potential for loss on eroded soil	<u>Westside</u> - Restricted for use. <u>Eastside</u> - Restricted for use within 60' of all water	None
Picloram	Tordon	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Highly mobile in soil and plant tissue, readily absorbed through roots	<u>Westside</u> - Restricted for use <u>Eastside</u> - Restricted for use within 60' of all water	Highly effective for conifer and broadleaf control in Eastern Washington
Pyraflufen	Edict	Nuisance and noxious weed control Zones 2 and 3	2,-4-D substitute, effective on Kochia, Russian thistle	Irreversible eye damage, highly toxic to Rainbow Trout	Restricted for use within 60' of all water	Effective with Roundup for Kochia control
Sulfentrazone	Portfolio	Zone 1	Nonselective pre-emergent grass and weed control	High surface runoff potential, high potential to leach into ground water	<u>Westside</u> - Restricted for use. <u>Eastside</u> - Restricted for use within 60' of all water	New product available for use in 2006
Sulfometuron-methyl	Oust	Zone 1	Nonselective pre/post emergent grass and weed control	None	None	None
Tebuthiuron	Spike 80DF	Zone 1	Nonselective pre-emergent grass and weed control	High surface runoff potential. High potential to leach into ground water	<u>Westside</u> - Restricted for use. <u>Eastside</u> - Restricted for use within 60' of all water	None
Triclopyr Amine	Garlon 3A	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Irreversible eye damage	None	None
Triclopyr Ester	Garlon 4	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Highly toxic to fish	Restricted for use within 60' of all water	Works well for invert applications

# Appendix D

# Special Maintenance Area

**Table 3.0**

**Definitions:** Locations area 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.

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

SR	Direction	Shoulder	Beg MP	End MP	Type	Description
002	Both	N	188.62	189.19	US Bureau of Reclamation	
002	Both	RS	191.26	191.58	US Bureau of Reclamation	
017	INC	RS	27.98	28.79	I/C toward Yakima	Mow out quadrants
017	DEC	RS	28.77	27.88	I/C toward Yakima	Mow out quadrants
017	DEC	RS	75.45	75.26	Ramps toward Ephrata	Mow out quadrant
017	Both	RS	50.35	55.32	City of Moses lake	Maintain by City
017	Both	RS	55.90	56.55	City of Moses lake	Maintain by City
017	Both	RS	59.02	59.19	Rocky Ford Creek	
017	Both	RS	75.44	76.45	City of Soap lake	Maintain by City
017	Both	RS	81.16	81.65	Sun Lakes-Dry Falls State Park	
017	Both	RS	82.94	84.43	Sun Lakes Wildlife Area	
017	Both	RS	84.76	85.77	Sun Lakes State Park	
017	Both	RS	87.94	89.61	US Fish and Wildlife Services	
017	Both	RS	90.77	92.27	US Fish and Wildlife Services	
017	Both	RS	91.93	92.07	Sun Lakes-Dry Falls State Park	
017	Both	RS	92.27	94.81	Sun Lakes State Park	
017	Both	RS	95.99	96.56	US Bureau of Reclamation	
017			48.22		396958T - RR crossing at grade	
017			54.40		396983B - RR crossing at grade	
017			56.80		Patton Pit Site	
017			86.70		Unnamed Pit Site	
024	Both	RS	43.77	53.23	Saddle Mt. Nat. Wildlife Refuge	
024	Both	RS	53.30	65.81	US Bureau of Land Management	
024	Both	RS	65.81	69.09	US Bureau of Reclamation	
024	Both	RS	78.52	79.64	City of Othello	Maintain by City
024			72.33		Radar Hill Pit Site	
026	INC	RS	55.50	56.50	Organic Farm	No Spray
026	Both	RS	40.06	41.61	City of Othello	Maintain by City

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

SR	Direction	Shoulder	Beg MP	End MP	Type	Description
026			19.00		Red Rock Coulee Pit Site	
026			25.30		Unnamed Pit Site	
026			38.56		Anderson Pit Site	
026			60.68		Hatton-Coulee Stockpile Site	
028	DEC	RS	55.30	55.07	Neighbor Maintained	
028	DEC	RS	62.03	61.96	Neighbor Maintained	
028	Both	RS	23.42	24.00	US Bureau of Reclamation	
028	Both	RS	27.87	30.63	City of Quincy	Maintain by City
028	Both	RS	43.43	43.74	US Bureau of Reclamation	
028	Both	RS	44.57	49.14	City of Ephrata	Maintain by City
028	Both	RS	52.40	52.61	City of Soap lake	Maintain by City
028	Both	RS	57.60	57.64	US Bureau of Reclamation	
028	Both	RS	77.09	77.56	US Bureau of Land Management	
028			40.00		Unnamed Stockpile Site	
028			43.40		Naylor Stockpile Site	
028			57.00		Adco Pit Site	
028			75.60		Marline Pit Site	
090	INC	RS	137.68	138.10	Ramps towards SR 26	Mow out quadrant
090	INC	RS	143.44	144.22	I/C Silica Rd	Mow out quadrants
090	INC	RS	149.46	150.06	I/C Quincy/Wenatchee	Mow out quadrants
090	INC	RS	151.33	151.99	I/C Ephrata/Soap Lake	Mow out quadrants
090	INC	RS	154.61	154.98	Ramps towards Adams Rd	Mow out quadrant
090	INC	RS	164.51	165.00	I/C Dodson Rd	Mow out quadrants
090	INC	RS	169.36	170.10	I/C Hiawatha Rd	Mow out quadrants
090	INC	RS	175.69	176.31	I/C Moses Lake	Mow out quadrants
090	INC	RS	179.20	179.73	I/C Moses Lake Othello	Mow out quadrants
090	INC	RS	182.75	183.10	I/C Wheeler	Mow out quadrants
090	INC	RS	184.63	185.14	I/C O Rd	Mow out quadrants
090	INC	RS	188.60	189.17	I/C Warden	Mow out quadrants
090	DEC	RS	138.20	137.76	Ramp from SR 26	Mow out quadrant
090	DEC	RS	144.22	143.42	I/C Silica Rd	Mow out quadrants

**Table 3.0**

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

SR	Direction	Shoulder	Beg MP	End MP	Type	Description
090	DEC	RS	150.05	149.47	I/C Quincy/Wenatchee	Mow out quadrants
090	DEC	RS	151.99	151.16	I/C Quincy/Wenatchee	Mow out quadrants
090	DEC	RS	154.60	154.16	Ramps towards Adams Rd	Mow out quadrants
090	DEC	RS	164.84	164.28	I/C Dodson Rd	Mow out quadrants
090	DEC	RS	169.98	169.31	I/C Hiawatha Rd	Mow out quadrants
090	DEC	RS	174.81	174.29	I/C Exit 174	Mow out quadrants
090	DEC	RS	176.29	175.72	I/C Moses Lake	Mow out quadrants
090	DEC	RS	179.72	179.10	I/C Moses Lake Othello	Mow out quadrants
090	DEC	RS	183.09	182.66	I/C Wheeler	Mow out quadrants
090	DEC	RS	185.14	184.69	I/C O Rd	Mow out quadrants
090	DEC	RS	189.17	188.43	I/C Warden	Mow out quadrants

090	Both	RS	139.66	140.66	US Bureau of Reclamation	
090	Both	RS	141.76	141.84	Quincy Wildlife Area	
090	Both	RS	157.64	158.15	Desert Wildlife Area	
090	Both	RS	161.62	161.87	Winchester Wildlife Area	
090	Both	RS	168.16	168.67	Potholes Wildlife Area	

090			139.56		Thundering Hooves Pit Site	
090			151.50		Martha Lake Stockpile Site	
090			168.66		Sand Hollow Stockpile Site	
090			170.00		Hiawatha Rd. Pit Site	
090			172.20		Pit Site (GT-18)	
090			191.80		Pit Site (GT-70)	

101			330.40		Walker Mt. Pit Site	
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155	Both	RS	2.03	4.37	US Bureau of Reclamation	
155	Both	RS	6.21	6.43	US Bureau of Land Management	
155	Both	RS	7.85	8.04	US Bureau of Land Management	
155	Both	RS	11.31	11.87	US Bureau of Land Management	
155	Both	RS	15.40	16.16	US Bureau of Reclamation	
155	Both	RS	16.27	16.43	US Bureau of Land Management	
155	Both	RS	16.72	17.08	US Bureau of Land Management	
155	Both	RS	17.18	17.55	US Bureau of Land Management	
155	Both	RS	17.88	18.16	US Bureau of Land Management	

## Appendix D

## Special Maintenance Area

**Table 3.0**

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

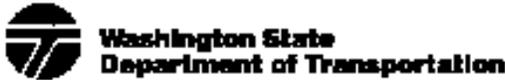
SR	Direction	Shoulder	Beg MP	End MP	Type	Description
155	Both	RS	19.27	20.55	US Bureau of Land Management	
155	Both	RS	24.25	25.73	US Bureau of Reclamation	
155	Both	RS	26.21	28.05	National Park Service	
170	Both	RS	2.53	3.68	City of Warden	Maintain by City
170			2.66		089790G - RR crossing at grade	
170			3.15		396429K - RR crossing at grade	
171	Both	RS	0.00	3.79	City of Moses lake	Maintain by City
171			1.60		396976R - RR crossing at grade	
174	Both	RS	19.70	20.50	National Park Service	
174	Both	RS	21.42	21.66	US Bureau of Reclamation	
243	DEC	RS	18.60	18.34	Neighbor Maintained	
243	DEC	RS	19.65	19.59	Neighbor Maintained	
243	DEC	RS	18.12	17.69	Neighbor Maintained	
243	Both	RS	0.00	3.77	Saddle Mt. Nat. Wildlife Refuge	
243	Both	RS	3.77	4.76	US Bureau of Reclamation	
243	Both	RS	5.48	5.61	US Bureau of Reclamation	
243	Both	RS	17.60	18.62	SR along Columbia River	
243	Both	RS	18.19	19.29	US Bureau of Land Management	
243	Both	RS	28.23	28.01	Neighbor Maintained	
243			24.00		Wanapum Stockpile Site	
262	DEC	RS	13.85	13.86	Neighbor Maintained	
262	Both	RS	0.00	7.00	Orchard close to SR	Use only Karmix DF
262	Both	RS	5.71	6.26	US Bureau of Reclamation	
262	Both	RS	11.92	13.92	Potholes Wildlife Area	
262	Both	RS	14.51	17.80	Potholes Wildlife Area	
262	Both	RS	18.32	19.31	Potholes Wildlife Area	
262	Both	RS	19.99	22.10	Potholes Wildlife Area	

**Table 3.0**

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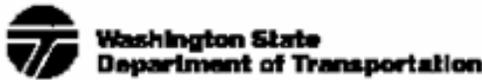
**Description:** Brief explanation of special treatment required

<b>SR</b>	<b>Direction</b>	<b>Shoulder</b>	<b>Beg MP</b>	<b>End MP</b>	<b>Type</b>	<b>Description</b>
281	Both	RS	9.77	10.55	City of Quincy	Maintain by City
282	Both	RS	0.00	0.20	City of Ephrata	Maintain by City
282			1.50		Unnamed Stockpile Site	
282			3.60		Drumheller Pit Site	



**Integrated Vegetation Management Record**

Org. Code 425210	County grant	Date 3/10/2005	Vegetation Management Zone(s) <input type="checkbox"/> Zone 1 <input checked="" type="checkbox"/> Zone 2 <input checked="" type="checkbox"/> Zone 3																		
Area SR 28 MP 40 to MP 39.5		Location Ephrata																			
Check Appropriate Boxes: <input checked="" type="checkbox"/> Roadside <input type="checkbox"/> Landscaped Area <input type="checkbox"/> Interchange <input type="checkbox"/> Mitigation Site <input type="checkbox"/> Third Party Damage <input type="checkbox"/> Sensitive Sites <input type="checkbox"/> NE <input type="checkbox"/> EB <input type="checkbox"/> Shoulder <input type="checkbox"/> Rest Area <input type="checkbox"/> Bridge <input type="checkbox"/> Stormwater <input type="checkbox"/> Yes <input type="checkbox"/> Aquatic <input type="checkbox"/> SB <input checked="" type="checkbox"/> WB <input type="checkbox"/> Median <input type="checkbox"/> Park-n-Ride <input type="checkbox"/> Ramp <input type="checkbox"/> Yard/Stockpile <input type="checkbox"/> Wetlands																					
Target: <input type="checkbox"/> Noxious Weeds <input type="checkbox"/> Brush/Trees <input checked="" type="checkbox"/> Other <input type="checkbox"/> Nuisance Weeds <input type="checkbox"/> Hazard Tree List Target/Species: _____ reseed program																					
Reason for Action: <input type="checkbox"/> Noxious Weeds <input type="checkbox"/> Nuisance Weeds <input type="checkbox"/> Fire Prevention <input type="checkbox"/> Restore Native Veg. <input type="checkbox"/> Zone 1 Pilot <input type="checkbox"/> Aesthetic <input type="checkbox"/> Site Distance <input type="checkbox"/> Hazard Vegetation <input type="checkbox"/> Customer Request <input type="checkbox"/> Enhance Vegetation <input type="checkbox"/> Slope Stabilization <input checked="" type="checkbox"/> Other _____																					
Long term IV/M plan (Describe goals/objectives and a step-by-step approach over time) area was disturbed and cleared as part of a project for yellow rutsage. we Reseeded the area on 3-5-05, and applied about 2300 gals. of water to area in an attempt to replace moisture we lost during ground preparation. the goal to this is to attempt to reclaim this ground in a stand of grass and push out the rutsage. this could be a challenge. On 14 mar. 05 added 3000 gals of water to site																					
Approximate Acres to Accomplish <input type="text" value="2"/>																					
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;">Activities</th> <th style="width:20%;">Planned date of Treatment</th> <th style="width:30%;">Actual date of Treatment</th> </tr> </thead> <tbody> <tr> <td>                     Manual <input type="checkbox"/> Digging <input type="checkbox"/> Pulling <input type="checkbox"/> Planting  <input type="checkbox"/> Logging <input checked="" type="checkbox"/> Seeding <input type="checkbox"/> Other _____                 </td> <td><input type="text"/></td> <td><input type="text" value="3-5-2005"/></td> </tr> <tr> <td>                     Mechanical <input type="checkbox"/> Aerial Saw Work <input type="checkbox"/> Tractor Brush Cutter <input type="checkbox"/> Motor Clean  <input type="checkbox"/> Manual Brush Cutting <input type="checkbox"/> Tractor Mow <input type="checkbox"/> Other _____                 </td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>                     Bio-Control <input type="checkbox"/> Insect <input type="checkbox"/> Pathogen  <input type="checkbox"/> Parasite _____ Type/Species _____                 </td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>                     Cultural <input type="checkbox"/> Burning <input checked="" type="checkbox"/> Grading <input type="checkbox"/> Seeding  <input type="checkbox"/> Fertilizing <input type="checkbox"/> Grazing <input type="checkbox"/> Soil Amendment <input checked="" type="checkbox"/> Other _____                 </td> <td><input type="text"/></td> <td><input type="text" value="3-5-2005"/></td> </tr> <tr> <td>                     Chemical <input type="text"/> _____ Record Number _____                 </td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </tbody> </table>				Activities	Planned date of Treatment	Actual date of Treatment	Manual <input type="checkbox"/> Digging <input type="checkbox"/> Pulling <input type="checkbox"/> Planting <input type="checkbox"/> Logging <input checked="" type="checkbox"/> Seeding <input type="checkbox"/> Other _____	<input type="text"/>	<input type="text" value="3-5-2005"/>	Mechanical <input type="checkbox"/> Aerial Saw Work <input type="checkbox"/> Tractor Brush Cutter <input type="checkbox"/> Motor Clean <input type="checkbox"/> Manual Brush Cutting <input type="checkbox"/> Tractor Mow <input type="checkbox"/> Other _____	<input type="text"/>	<input type="text"/>	Bio-Control <input type="checkbox"/> Insect <input type="checkbox"/> Pathogen <input type="checkbox"/> Parasite _____ Type/Species _____	<input type="text"/>	<input type="text"/>	Cultural <input type="checkbox"/> Burning <input checked="" type="checkbox"/> Grading <input type="checkbox"/> Seeding <input type="checkbox"/> Fertilizing <input type="checkbox"/> Grazing <input type="checkbox"/> Soil Amendment <input checked="" type="checkbox"/> Other _____	<input type="text"/>	<input type="text" value="3-5-2005"/>	Chemical <input type="text"/> _____ Record Number _____	<input type="text"/>	<input type="text"/>
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#1 Evaluation and Date Monitor March 2006: _____ Monitor April 2006: _____																					
#2 Evaluation and Date _____																					
#3 Evaluation and Date _____																					



Pesticide Application

Org. Code 425210	County Grant	Date of Application 6/21/2006	Start 1200 Finish 100	<input type="radio"/> AM <input checked="" type="radio"/> PM	ICP 022A	Stores Issue Ticket Number(s) A030013		
Area SR 171 MP 0.0 to MP 2.8 and MP 2.8 to MP 2 and and MP 2.2 to MP 2.8 and MP to MP								
Check Appropriate Boxes: <input type="checkbox"/> NB <input checked="" type="checkbox"/> EB <input checked="" type="checkbox"/> Shoulder <input type="checkbox"/> Rest Area <input type="checkbox"/> Bridge <input type="checkbox"/> Banded Width <input type="checkbox"/> SB <input checked="" type="checkbox"/> WB <input type="checkbox"/> Median <input type="checkbox"/> Park-n-Ride <input type="checkbox"/> Ramp <input type="checkbox"/> Interchange <input type="checkbox"/> Yard/Stockpile <input checked="" type="checkbox"/> Spot Spray <input type="checkbox"/> Aquatic <input checked="" type="checkbox"/> Blanket Spray <input type="checkbox"/> Wetlands								
<input checked="" type="checkbox"/> Weeds <input checked="" type="checkbox"/> Noxious Weeds <input type="checkbox"/> Disease <input type="checkbox"/> Brush <input type="checkbox"/> Insects <input type="checkbox"/> Other List Pest(s): <u>kochia/thistle</u>								
Start Weather Conditions Temperature <u>73</u> °F (°C) Wind (Direction From) <u>SW</u> Wind (Range) <u>1-2</u> mph (km/h) <input checked="" type="radio"/> Sunny <input type="radio"/> Broken <input type="radio"/> Overcast No Rain <input type="radio"/> Light Scattered Showers <input type="radio"/> Hard Showers								
Finish Weather Conditions Temperature <u>74</u> °F (°C) Wind (Direction From) <u>SW</u> Wind (Range) <u>1-2</u> mph (km/h) <input checked="" type="radio"/> Sunny <input type="radio"/> Broken <input type="radio"/> Overcast No Rain <input type="radio"/> Light Scattered Showers <input type="radio"/> Hard Showers								
Tank No.	Material Name	Material Type	EPA Reg. No.	Lot Number	Product For Acres (hectares)	Unit	Total Daily Usage	Unit
1	Brox 2EC	Pesticide	42750--48	004169	32	Ozl	384	Ozl
1	Vista	Pesticide	62719-308	tco4169442	16	Ozl	192	Ozl
1	MSO	Adjuvant		88875	32	Ozl	384	Ozl
1	Reign	Adjuvant		87049	32	Ozl	384	Ozl
							0	
							0	
1	Water		-----		40	Gal	480	Gal
<b>Total 12.0 Acres (hectares) Treated at 40 gallons (liters) of spray per acre (hectare).</b>								
Equipment Number 8B29-21	Tank Size 1 1400	3 4	5	Calibration Date 6/21/06	Vehicle Speed 8 mph (km/h)	Nozzle Pressure 17 PSI (MPa)	Width of Spray Pattern 10-50 Feet (meters)	
<input type="checkbox"/> Handpreader <input type="checkbox"/> Hand gun <input checked="" type="checkbox"/> Boom <input type="checkbox"/> Tank Mix (Conv.) <input checked="" type="checkbox"/> Injection <input type="checkbox"/> Backpack <input type="checkbox"/> Fixed Nozzle <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Invert								
Operator Name Andrew Bales		Operator Pesticide License No. 71840		Operator Signature		Driver Name Dean Alexander		
Remarks shut off for 60 foot water buffer						Buffer Truck Driver's Name		
						Pesticide Sensitivity Registration Applies: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
						Contact		
Division of Emergency Management (1-800-258-5990)						Additional Notes		

DOI Form 540-506 EF  
Revised 9/2001

Distribution: OSC Maint Operator Log per File  
Send OSC Copy Within 5 Days

Oz=Ounce Dry L=Liter g=gram lb=lb gram  
 Gal=Gallon ml=Milliliter L=Liter  
 P=Psi Q=Quart

# Appendix F

## STAKEHOLDER LIST

Grant County Weed Board .....	PO Box 37, Ephrata, WA 98823
Adams County Weed Board .....	201 W. Broadway, Ritzville, WA 99169 (509) 659-1806
Franklin County Weed Board .....	3416 Stearman Avenue, Pasco, WA 99301 (509) 545-3847
City of Ephrata .....	121 Alder Street SW Ephrata, WA 98823 (509) 754-4601
City of Moses Lake .....	PO Box 1579, Moses Lake, WA 98837 (509) 766-9201
City of Othello .....	111 N. Broadway Ave. Othello, WA 99344 (509) 488-6997
City of Soap Lake .....	PO Box 1270, Soap Lake, WA 98851 (509) 246-1823
City of Quincy .....	PO Box 338, Quincy, WA 98848 (509) 787-4131
City of George.....	PO Box 5277, George, WA 98824 (509) 785-5081
City of Connell .....	PO Box 1200, Connell, WA 99326 (509)234-2701
City of Warden.....	PO Box 428, Warden, WA 98857 (509) 349-2033
WDFW Region 2.....	1550 Alder St. NW, Ephrata, WA 98823 (509) 754-4624
DNR Ellensburg.....	713 E Bowers Rd. Ellensburg, WA 98926 (509) 925-8510
US Bureau Reclamation.....	1917 Marsh Rd. Yakima, WA 98907 (509) 575-5848
Quincy Columbia Basin Irrigation Dist.....	Darvin Fales, PO Box 188, Quincy WA 98848 (509) 750-3591
East Columbia Irrigation Dist.....	Richard Erickson, PO Box "E", Othello, WA 99344 (509) 787-3591