

South Central Region, Area 3

Integrated Roadside Vegetation Management Plan

2012



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

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Appendix A	Integrated Vegetation Management Prescriptions
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Appendix D	Weed Locations (not included at this time)
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Summary

The Washington State Department of Transportation (WSDOT) South Central Region, Area 3 manages approximately 930 miles of roadside right-of-way throughout Adams, Benton, Franklin, Walla Walla and Yakima counties. This right-of-way is part of the state highway system including I-82, I-182, US-12, SR-395, SR-17, SR-14 as well as a number of other state routes in the area.

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

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

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

The attached plan consists of three main sections:

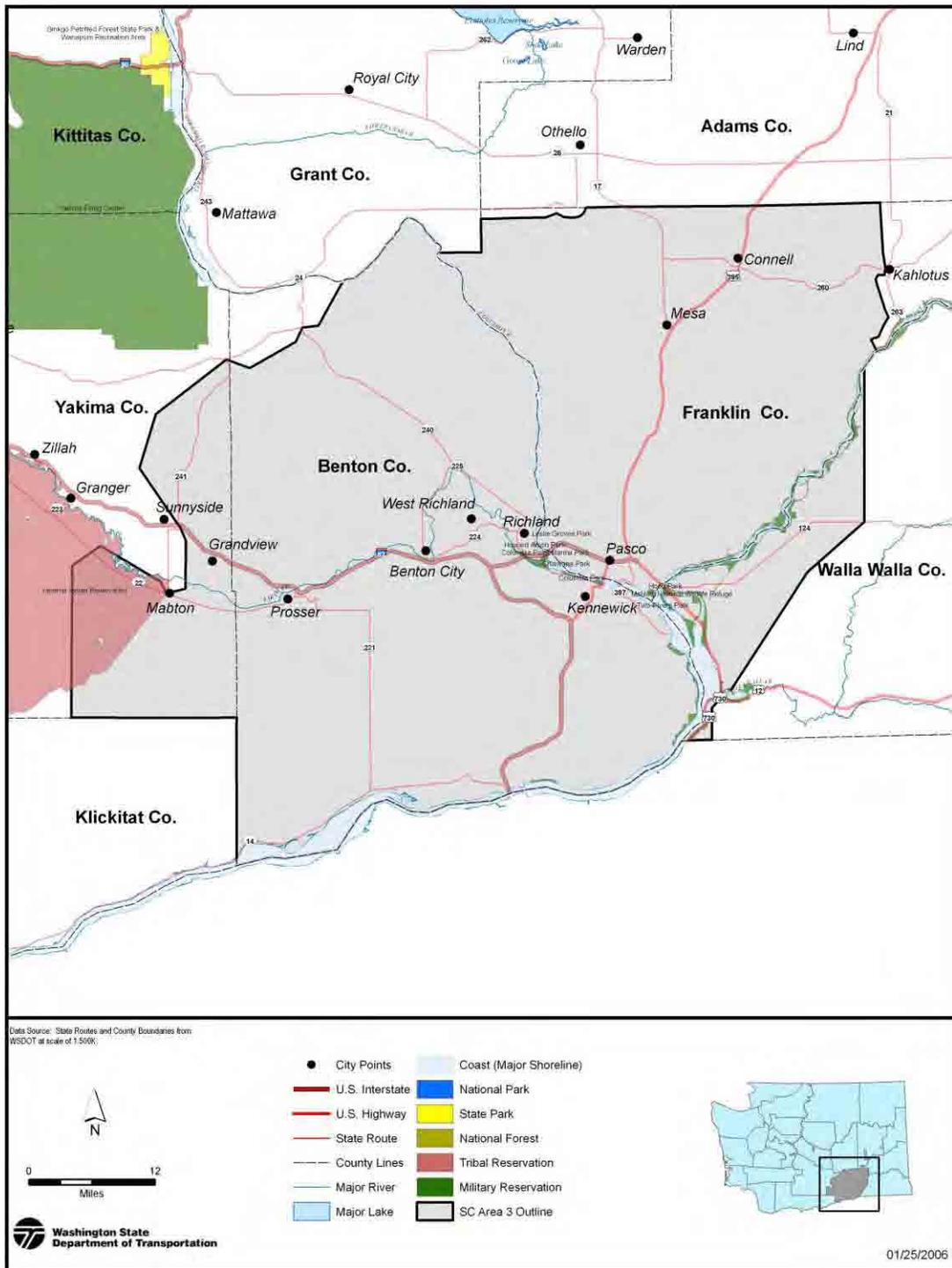
1. **Introduction:** This section provides an overview of the maintenance area discussed in the plan. This section also provides contacts, pertinent links and references and the annual work plan while giving the reader a general understanding of the WSDOT roadside program.
2. **Plan:** This is the main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

This plan is a dynamic document that will be developed and updated over time with input from a variety of sources. WSDOT welcomes comments and suggestions from local private and public entities. An electronic version of the South Central Region, Area 3 Plan is available at <http://www.wsdot.wa.gov/Maintenance/Roadside> or available in hard copy upon request. Please contact Steve Underwood, Tom Lenberg or James Morin at the numbers listed below for questions or comments.

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Vicinity Map
Figure 1

Program Goals (2009)

The purpose of this section is to identify the short and long term operational goals within South Central Region, Area 3. 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 (2006-2010)

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.

- 1) Reduce as time and resources allow *Accomplished*
- 2) Have no herbicide related violations *Accomplished*
- 3) No reportable/recordable safety issues within the VM program
Accomplished
- 4) Control weeds by actively re-vegetating right-of-way as time and resources allow. *Accomplished*
- 5) Aggressively control Yellow Starthistle from SR395 right-of-way between MP 23 and MP 67 with goal of eradication from this area *Partially Accomplished*
- 6) Reduce noxious and nuisance weed populations through encouraging desirable vegetation. *Ongoing*

Short-Term Goals (2009)

Short-term goals should be attainable within a 1-2 year period of time. Short-term goals should be specific goals with clear objectives that can be measured and reported.

- 1) Improve timing of selective noxious weed control to achieve no more than 2 applications yearly- Minimal mechanical treatments will be made in support of this goal. *Accomplished*
- 2) Reduce weed board complaints through consistent communication and coordination with county staff. *Accomplished*
- 3) Monitor zone 1 test plots by documenting costs/issues and photographs on US-12 phase 2. *Accomplished*
- 4) Partnership with counties to improve fall weed applications *Accomplished*
- 5) Identify opportunities to revegetate "old zone one" based on vegetative indicators *Accomplished*
- 6) Reseed areas where indicators are favorable, to equal 5 acres a year.
Accomplished
- 7) Focus on maintaining existing revegetated sites instead of creating new ones
Accomplished
- 8) Treat approximately 1200 acres of ROW for the control of designate noxious weeds *Accomplished 801 acres*
- 9) Apply approximately 245 acres of Bareground *Accomplished 197 acres*
- 10) Mow approximately 500 acres for noxious weeds and obstructions.
Accomplished 850 acres

Long-Range Work Plan (2010-2015)

The purpose of this section is to identify the short and long term operational goals within South Central Region, Area 3. These goals will help direct decisions that affect roadside management and the construction of roadside. These goals will be updated and evaluated on a yearly basis during the annual Winter Planning Meeting.

Long-Term Goals (2010-2015)

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 the annual work plan.

- **General Weed Control**
 1. Improve roadside vegetation (zones 1-3) through IVM practices and revegetation. *Ongoing*
 2. No herbicide related violations *Did not Accomplish*
 3. Designate and maintain gateways at a higher standard *Partially Accomplished*
 4. Work closely and proactively with county weed boards and local CWMA *Accomplished*
 5. No reportable, recordable safety issues within the VM Program *Accomplished*

- **Noxious Weed Control 3A2-**
 1. Continue to focus on bio-control as a viable weed control option for Knapweeds and Rush Skeletonweed *Ongoing*
 2. Focus on controlling the spread of Rush Skeletonweed on SR 124 between MP 10 and MP 18 *Ongoing*

- **Nuisance Weed Control 3A3-**
 1. Control nuisance weeds on an "as needed" basis in support of noxious weed control and establishment of desirable vegetation. *Ongoing*

- **Obstructions 3A4-**
 1. Maintain hardware, intersections and low site distance locations to be free of vegetation obstructions. *Ongoing*
 2. Convert zone 1 bare-ground to desirable vegetation as time and resources allow *Ongoing*

Annual Work Plan (2010)

The work plan is updated on an annual basis and should reflect the priorities in the long-term goals.

- **Noxious Weed Control 3A2-**
 1. Reduce Weed Board complaints through consistent communication and coordination with county staff. *Accomplished*
 2. Partnership with counties to increase fall herbicide treatments particularly when in cooperation with local weed boards. *Accomplished*
 3. Identify opportunities to revegetate and/or encourage desirable vegetation in former bare-ground zones based on vegetative indicators. *Accomplished*
 4. Revegetate where indicators are favorable, at least 5 acres of roadside a year. *Accomplished*
 5. Treat approximately 1000-1200 acres of ROW for the control of designated noxious weeds. *Accomplished 1161 acres*
 6. Mow approximately 225 acres of ROW in support of noxious weeds and control of obstructions. *Accomplished approximately 1188 acres*

- **Nuisance Weed Control 3A3-**
 1. Apply herbicides to approximately 50 acres of nuisance vegetation *Accomplished approximately 50-60 acres*
 2. Mow approximately 150 acres of nuisance vegetation *Accomplished approximately 190 acres*
 3. US-12 phase 6- control kochia, Russian thistle and mustard species in support of establishing new grasses. *Accomplished*

- **Obstructions 3A4-**
 1. Apply approximately 225 acres of bare-ground *Accomplished 299 acres*
 2. Mow approximately 50 acres of weeds for control of visual obstructions *Accomplished approximately 56 acres*
 3. Remove approximately 1-3 hazard trees *Accomplished*
 4. Hand Trim approximately 5 acres *Accomplished*

Long-Range Work Plan (2011-2016)

The purpose of this section is to identify the short and long term operational goals within South Central Region, Area 3. These goals will help direct decisions that affect roadside management and the construction of roadside. These goals will be updated and evaluated on a yearly basis during the annual Winter Planning Meeting.

Long-Term Goals (2010-2015)

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 the annual work plan.

- **General Weed Control**
 1. Improve roadside vegetation (zones 1-3) through IVM practices and revegetation.
 2. No herbicide related violations
 3. Designate and maintain gateways at a higher standard
 4. Work closely and proactively with county weed boards and local CWMA
 5. No reportable, recordable safety issues within the VM Program

- **Noxious Weed Control 3A2-**
 1. Continue to focus and coordinate with counties on bio-control as a viable weed control option for Knapweeds and Rush Skeletonweed
 2. Focus on controlling the spread of Rush Skeletonweed on SR 124 between MP 10 and MP 18

- **Nuisance Weed Control 3A3-**
 1. Control nuisance weeds on an "as needed" basis in support of noxious weed control and establishment of desirable vegetation.

- **Obstructions 3A4-**
 1. Maintain hardware, intersections and low site distance locations to be free of vegetation obstructions.
 2. Convert zone 1 bare-ground to desirable vegetation as time and resources allow

Annual Work Plan (2011)

The work plan is updated on an annual basis and should reflect the priorities in the long-term goals.

- **Noxious Weed Control 3A2-**
 1. Reduce Weed Board complaints through consistent communication and coordination with county staff. **Accomplished**
 2. Partnership with counties to increase fall herbicide treatments particularly when in cooperation with local weed boards. **Accomplished**
 3. Identify opportunities to revegetate and/or encourage desirable vegetation in former bare-ground zones based on vegetative indicators.
 4. Revegetate where indicators are favorable, at least 5 acres of roadside a year.
 5. Treat approximately 1000-1200 acres of right-of-way for the control of designated noxious weeds. **Accomplished approximately 979 acres**
 6. Mow approximately 225 acres of right-of-way in support of noxious weeds and control of obstructions. **Accomplished approx. 353 in 2011**

- **Nuisance Weed Control 3A3-**
 1. Apply herbicides to approximately 50 acres of nuisance vegetation **Accomplished**
 2. Mow approximately 150 acres of nuisance vegetation **Accomplished 120 acres**

- **Obstructions 3A4-**
 1. Apply approximately 300 acres of bare-ground **Accomplished 248 acres**
 2. Mow approximately 50 acres of weeds for control of visual obstructions **Accomplished 17 acres**
 3. Remove approximately 1-3 hazard trees **Accomplished 8**
 4. Hand Trim approximately 5 acres **Accomplished 3 acres**

- **Other**
 1. Monitor and document build-up on US-12 for severity, scale and potential solutions to include:
 - i. Plowing build-up with plow truck
 - ii. Grading

Annual Work Plan (2012)

The work plan is updated on an annual basis and should reflect the priorities in the long-term goals.

- **Noxious Weed Control 3A2-**
 1. Reduce Weed Board complaints through consistent communication and coordination with county staff.
 2. Partnership with counties to increase fall herbicide treatments particularly when in cooperation with local weed boards.
 3. Identify opportunities to revegetate and/or encourage desirable vegetation in former bare-ground zones based on vegetative indicators.
 4. Revegetate where indicators are favorable, at least 5 acres of roadside a year.
 5. Treat approximately 700-1000 acres of right-of-way for the control of designated noxious weeds.
 6. Mow approximately 225 acres of right-of-way in support of noxious weeds and control of obstructions.

- **Nuisance Weed Control 3A3-**
 1. Apply herbicides to approximately 50 acres of nuisance vegetation
 2. Mow approximately 150 acres of nuisance vegetation

- **Obstructions 3A4-**
 1. Apply approximately 300 acres of bare-ground
 2. Mow approximately 50 acres of weeds for control of visual obstructions
 3. Hand Trim approximately 5 acres

- **Other**
 1. Monitor and document build-up on US-12 for severity, scale and potential solutions to include:
 - i. Plowing build-up with plow truck
 - ii. Grading

Roadside Maintenance Considerations

The primary objectives for maintenance of roadside vegetation are:

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

Visual Quality

All maintenance activities should be conducted in a way that minimizes visual impacts such as 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 (November 2011) <http://www.wsdot.wa.gov/Publications/Manuals/M25-31.htm>

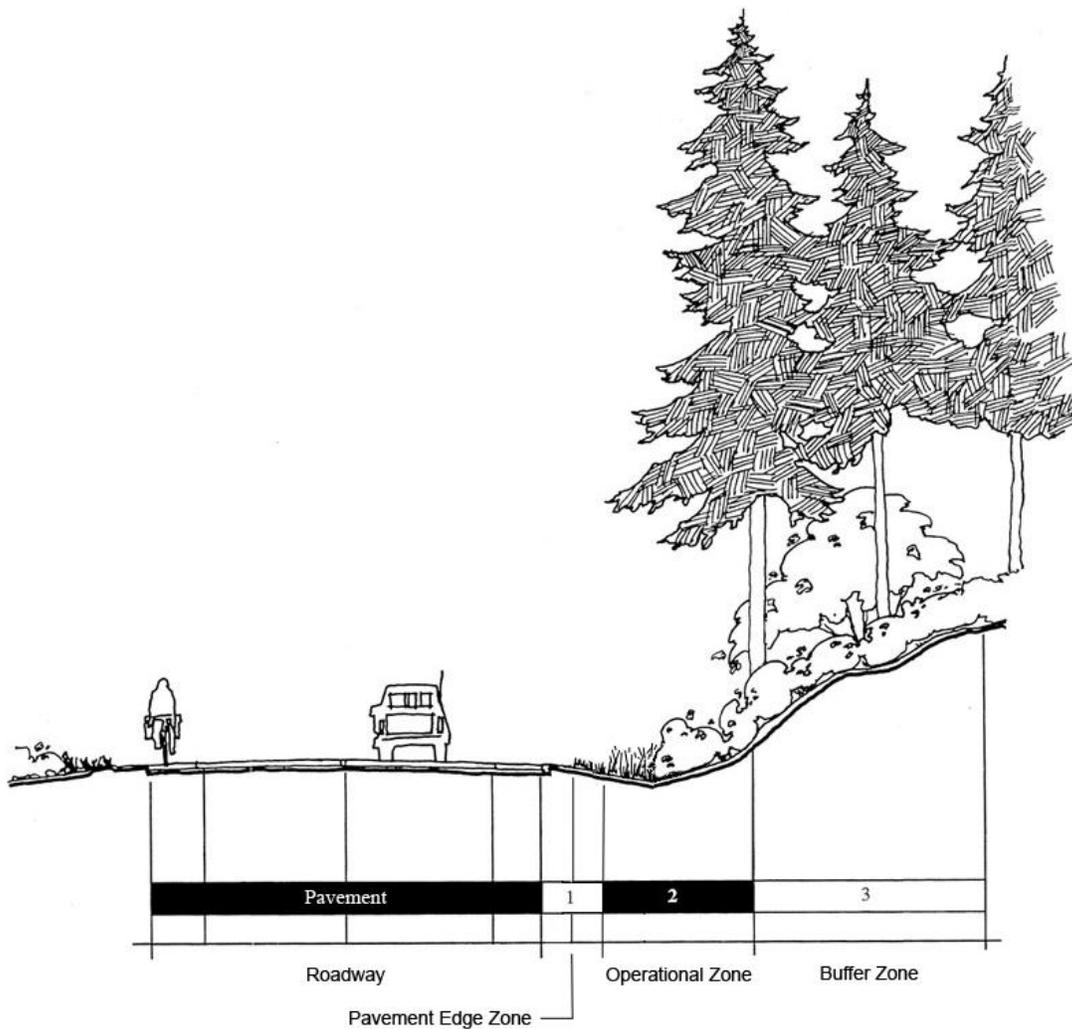
Operational Zones

WSDOT roadsides are divided into several zones for the purposes of assigning management objectives, maintenance intensities, and thresholds for triggering vegetation maintenance actions. Noxious weed species designated for control by state and county law are controlled throughout all zones. Not all maintenance zones will occur along state highways in South Central Region, Area 3. 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 in a manner and width necessary to address highway operations and safety, pavement preservation, guardrail maintenance, and stormwater management. Zone 1 may include a vegetation-free band adjacent to the pavement edge, particularly when guardrail is present, or may consist of desirable vegetation up to the pavement edge depending on site specific needs. A vegetation-free Zone 1 is maintained using non-selective soil residual herbicides. Routine annual mowing may be necessary in some cases where vegetation is established up to the edge of pavement.

Zone 2 – The operational zone extends from Zone 1 to a width necessary to provide for safe errant vehicular recovery, site distance at corners, intersections and for regulatory signs, and to provide for other operational, safety, and environmental protection functions. Zone 2 is typically maintained through periodic mowing, trimming and/or herbicide treatment as necessary to selectively remove undesirable trees, brush and weeds and encourage desirable vegetation. Any plant with an existing or potential trunk diameter of 4” or greater is considered undesirable in Zone 2.

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



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

Herbicide Sensitive Areas

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

Special Maintenance Areas

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

Public Notification of Herbicide Applications

WSDOT is required by law to notify chemically sensitive individuals on file with Washington State Department of Agriculture, where the residing property abuts the highway right-of-way and the residence is within ½ mile of the property line. Notification to chemically sensitive individuals is accomplished by letter and/or phone conversation prior to each application. For specific herbicide application schedules, the roadside vegetation maintenance personnel can be reached at 509.577.1933.

Herbicide Safety

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

WSDOT has also conducted a risk assessment for the herbicide products and application methods used on state highways. Toxicological impacts of WSDOT practices were evaluated for human health (both operators and the general public), for aquatic ecosystems, and terrestrial wildlife. The findings of this assessment are summarized in a series of fact sheets for the individual herbicides used by WSDOT. These fact sheets can be viewed and downloaded through the Internet at: http://www.wsdot.wa.gov/Maintenance/Roadside/herbicide_use.htm or copies may be obtained by calling the WSDOT Headquarters Maintenance Office at 509.577.1912.

Roadside Design and Construction Considerations

Highway and utility construction in many cases has a significant impact on drainage, soils and vegetation adjacent to the paved roadway. WSDOT policy and practice for restoring the operational, environmental and visual functions disturbed by construction is based on the guidelines found in the Roadside Classification Plan (RCP) (WSDOT 2011), and the Roadside Manual (WSDOT M25-30, July 2003).

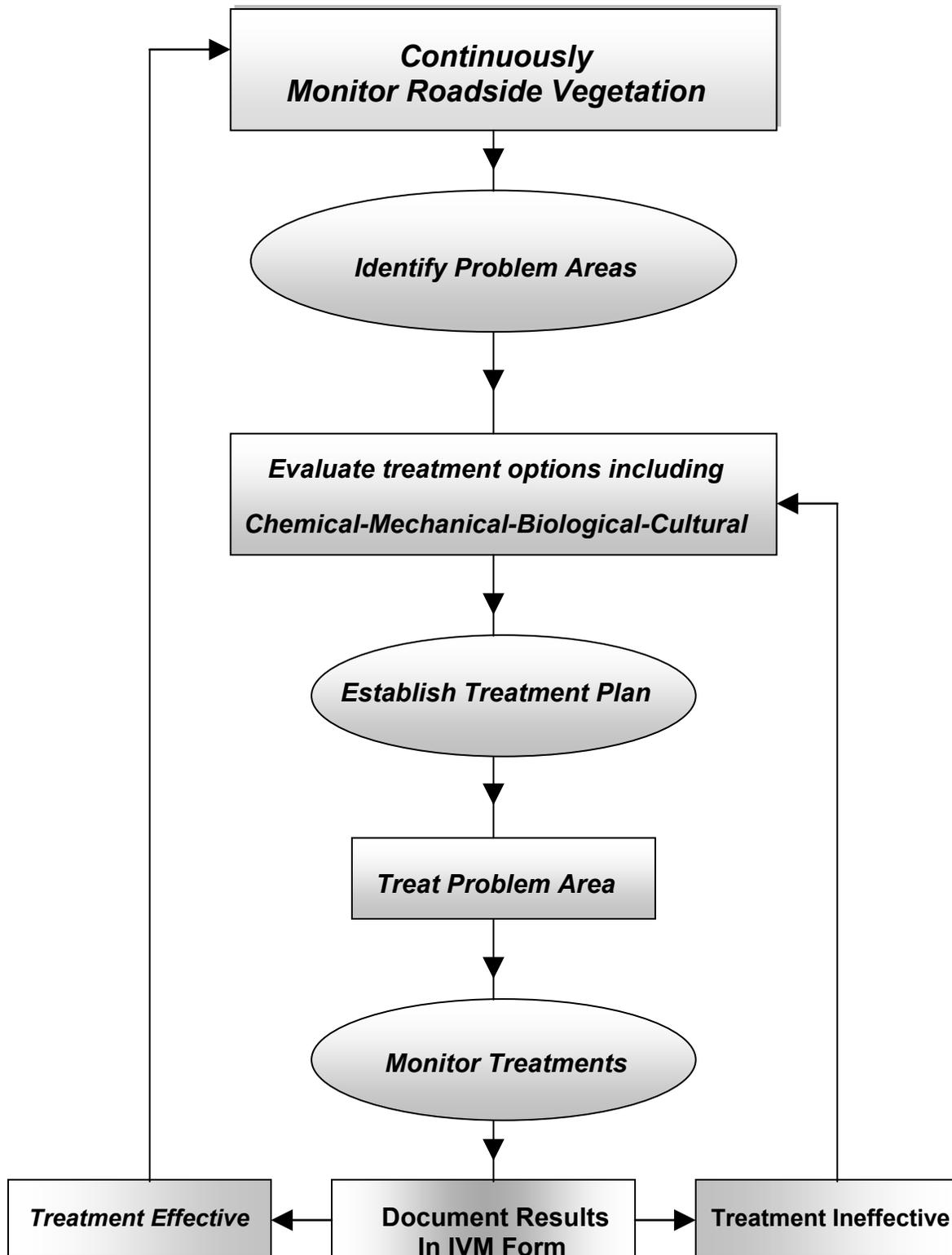
Internal agency coordination between the Design, Construction, and Maintenance programs is imperative to a comprehensive roadside vegetation management plan. A commitment to increasing communication in these areas is an important component in an ongoing effort to reduced lifecycle costs and improves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

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

- SR-240/Hagen-Robertson Rd I/S to SR-182 Paving
- WSDOT South Central Region Projects Link:
<http://www.wsdot.wa.gov/Regions/SouthCentral/Projects/>
<http://www.wsdot.wa.gov/regions/southcentral/construction/>

Below is a list of permitted utility projects that are scheduled for construction within the next 2-4 years.

- No utility projects are scheduled in this area at this time.



The IVM Decision-Making Process
Figure 3

Roadside Vegetation Management Plan

1. INTEGRATED VEGETATION MANAGEMENT

Vegetation management activities are planned and carried out using the principles of Integrated Vegetation Management (IVM) and the decision making process described in Figure 3 (page 13). The goals of the IVM program are to:

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

1.1. Integrated Vegetation Management Planning and Tracking Database

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

1.1.1. Sample forms

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

1.1.2. Instructions for use

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

1.2. Shoulder Maintenance (Zone 1 Bare-Ground)

1.2.1. Policy and Objectives

Prior to 2006 the edge of pavement was routinely treated with a zone 1 bare ground application. In many areas remnants of this practice is still visible in the form of continued bare ground as a result of lingering chemicals and lack of organic matter in the soil. Currently in SCR Area 3 only guardrail sections are maintained with bare ground residual applications. Zone 1 is maintained with selective herbicide applications on an as needed basis. In some limited cases zone 1 bare ground may be used to control vegetation for sight distance and safety needs.

1.2.2. Action Thresholds (Zone 1 Bare Ground):

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 bare-ground, where present, are listed below.

- Sight distance limited by vegetation within zone 1
- Guardrail or other roadside hardware that must be routinely maintained to be free of vegetation
- Special safety considerations as approved by the Area Superintendent

1.2.3. Methods (timing and procedures)

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

1.2.4. Prescriptions

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

1.2.5. Locations by Milepost,

See Appendix C, Zone 1 Bare-ground

1.3. Mowing Operations

1.3.1. Policy and Objectives

Mowing will be accomplished throughout the South Central Region, Area 3 on an as needed basis. Mowing needs and prescriptions will vary by location. Mowing can be an effective form of weed control, but done incorrectly can cause damage to desirable vegetation and enhance the growing environment for unwanted weeds. It's important when conducting a mowing operation to consider a number of factors including goals, timing, target species, deck height and frequency.

1.3.2. Methods (Timing and Procedures)

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

- 1. Identify Goals Of Mowing Operation:** Before prescribing mowing as a preferred alternative, it is important to clearly understand what the goals are of this operation. These goals should not only be understood by the manager or decision maker, but also must be clearly communicated and understood by the operator as well. Goals may include; control of seed production, maintenance of sight distance, control of vegetation around hardware features, control of noxious or nuisance weeds in an environmental or crop sensitive area or the removal of weed skeletons for the control of newly emerging weeds.
- 2. Identify Appropriate Timing:** When mowing in a stand of established dry land perennial grass, particularly native varieties, it is important to consider timing. Mowing shall not occur until after desirable grasses have reached dormancy or set seed, typically in July-August. If the goal is to control seed production of undesirable plants in an area where no desirable vegetation is present, mowing should take place as late as possible and prior to seed development. This will increase the likelihood that the target plant will not produce seed.
- 3. Identify Target:** Identify target plant or plants to be controlled and ensure that the mowing operation will not spread these weed or exacerbate the existing problem. Some weeds, such as Japanese

knotweed, can be easily spread through mowing. Ensure that the operator understands the target species and any desirable species in the area.

4. **Deck Height:** The mower deck height must be maintained at least 6-8 inches from the ground to reduce the likelihood of exposing bare soil. It is also important to maintain this deck height if the mowing operation will include desirable grasses. Close mowing may be allowed in special cases where no desirable species occurs and restoration work will immediately follow.
5. **Clean Mower:** Mowing can easily spread weed seed from infested areas to uninfested areas. It is important to clean the mower after each operation to ensure that mowing operation is not contributing to the spread of noxious and nuisance weeds.
6. **Consider Alternatives:** As with all IVM operations it is important to consider alternative methods. Mowing in South Central Region, Area 3 is not a routine maintenance activity. It is a secondary form of weed control to be used on an as needed basis.
7. **Communicate:** Communication with the mower operator is critical to a successful mowing operation. The operator must understand the goals, timing, target species and desirable species before the mowing operation begins.

1.3.3. Prescriptions

See **Appendix A, IVM Mowing Prescriptions**

1.4. Noxious Weed Control

1.4.1. Policy and objectives

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

WSDOT prioritizes weed control based on three legally defined weed species classification categories. Chapter 16-750 of the Washington Administrative Code lists weed species in classes A through 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.

Currently there are no known Class A weeds identified within the WSDOT operating right of way in South Central Region, Area 3.

Class B and C Designate Weeds

Class B and C weeds are more widespread than Class A weeds, with control mandated by law only if infestations are generally limited and the species are designated within the individual counties by the County Noxious Weed Control Boards. Containment, gradual reduction, and prevention of further spread are the chief management concerns of Designate species. Class B and C noxious weeds designated for control within Adams, Benton, Franklin Counties, Walla Walla and Yakima counties and currently present within WSDOT right-of-way include:

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*)

Benton County

- Buffalobur (*Solanum rostratum*)
- Dyers woad (*Isatis tinctoria*)
- Hawkweed, European (*Hieracium sabaudum*)
- Houndstongue (*Cynoglossum officinale*)
- Knapweed, diffuse (*centaurea diffusa*)
- Knapweed, spotted (*Centaurea biebersteinii*)
- Knotweed , Japanese (*Polygonum cucpidatum*)
- Perennial pepperweed (*Lepidium latifolium*)

- Perennial Sowthistle (*Sonchus arvensis* ssp. *Arvensis*)
- Rush skeletonweed (*Chondrilla juncea*)
- Thistle, Canada (*Cirsium arvense*)
- Thistle, Musk (*Carduus nutans*)
- Thistle, plumeless (*Carduus acanthoides*)
- Thistle, scotch (*Onopordum acanthium*)
- Toadflax, dalmation (*Linaria dalmatica* spp *dalmatica*)
- Wild four o'clock (*Mirabilis nyctaginea*)
- Yellow flag Iris (*Iris pseudacorus*)
- 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*)

Walla Walla County

- Blueweed (*Echium vulgare*)

- Buffalobur (*Solanum rostratum*)
- Bugloss, Common (*Anchusa officinalis*)
- Camel thorn (*Alhagi maurorum*)
- Common catsear (*Hypochaeris radicata*)
- Common fennel (*Foeniculum vulgare*)
- Dyers woad (*Isatis tinctoria*)
- Field bindweed (*Convolvulus arvensis*)
- Hawkweed, European (*Hieracium sabaudum*)
- Hawkweed, Orange (*Hieracium aurantiacum*)
- Herb Robert (*Geranium robertianum*)
- Knapweed, Meadow (*Centaurea jacea x nigra*)
- Knapweed, Russian (*Acroptilon repens*)
- Knapweed, Spotted (*Centaurea biebersteinii*)
- Oxeye Daisy (*Leucanthemum vulgare*)
- Perennial Pepperweed (*Lepidium latifolium*)
- Perennial Sowthistle (*Sonchus arvensis ssp. Arvensis*)
- Policeman's Helmet (*Impatiens glandulifera*)
- Scotch Broom (*Cytisus scoparius*)
- 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, Dalmatian (*Linaria dalmatica*)
- Wild four o'clock (*Mirabilis nyctaginea*)

Yakima County

- Buffalobur (*Solanum rostratum*)
- Common Catsear (*Hypochaeris radicata*)
- Dyers Woad (*Isatis tinctoria*)
- Hawkweed, European (*Hieracium sabaudum*)
- Knapweed, Meadow (*Centaurea jacea x nigra*)
- Knapweed, Spotted (*Centaurea biebersteinii*)
- Oxeye daisy (*Leucanthemem vulgare*)
- Perennial Sowthistle (*Sonchus arvensis spp. Arvensis*)
- Purple Loosestrife (*Lythrum salicaria*)
- Rush Skeletonweed (*Chondrilla juncea*)
- Saltcedar (*Tamarix ramosissima*)
- Scotch Broom (*Cytisus scoparius*)
- Spurge, Leafy (*Euphorbia esula*)
- Sulfer Cinquefoil (*Potentilla recta*)
- Tansy Ragwort (*Senecio jacobaea*)
- Thistle, musk (*Cardus nutans*)
- Thistle, Scotch (*Onopordum acanthium*)
- Wild Carrot (*Daucus carota*)
- Wild Four O'clock (*Mirabilis nyctaginea*)
- Yellow Starthistle (*Centaurea solstitialis*)

1.4.2. 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 1.3 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.
- Re-vegetation/Enhancement: A variety of other measures may be taken to promote natural vegetative competition through seeding, planting, and soil enhancement. Documentation of these methods and related success is essential to the success of long-term control measures. IVM forms will be completed for each of these sites and are located in Appendix F.

1.4.3. Action Thresholds

The action threshold for designate weed control is met whenever seed production of a noxious weed is imminent. WSDOT is required by state law to control and prevent the spread of all noxious weeds on WSDOT right-of-way (RCW 17.10.040). Control efforts will be initiated prior to the noxious weed producing seed.

1.4.4. Prescriptions

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

1.5. Nuisance Weed Control

1.5.1. Policy and objectives

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

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

Depending on crew availability and budget, nuisance weeds will be controlled throughout the roadsides of South Central Region, Area 3 as part of the overall Integrated Vegetation Management process. Priority control measures will be given to new infestations or those infestations that threaten desirable roadside vegetation. In some cases, where practical, nuisance weed infestations may be treated in conjunction with noxious weed.

For established infestations currently identified in this plan, weed populations will be contained and gradually reduced by applying appropriate

vegetation management prescriptions as funds and resources are available. Control options range from manual cutting, mechanical removal, revegetation and biological control, to targeted selective herbicide application, or combinations thereof.

1.5.2. List of species currently present

Numerous Class C nuisance weeds occur throughout South Central Region, Area 3 within WSDOT right-of-way that are not targeted for control. In some cases they are controlled incidentally or for site-specific reasons.

Common nuisance weed species that occur on WSDOT right-of-way within South Central Region, Area 3 include:

- Babies Breath (*Gypsophila paniculata*)
- Cereal Rye (*Secale cereale*)
- Common Mullen (*Verbascum thapsus*)
- China Lettuce (*Lactuca serriola*)
- Maretail (*Conyza canadensis*)
- Mustard Species
- Russian Thistle (*Salsola iberica sennen*)
- Teasel (*Dipsacus sylvestris*)

1.5.3. Methods

Control measures for nuisance weeds are very similar to those of noxious weeds, see Section 1.4 and are dependent on available resources. Species that are wide spread are treated routinely throughout the season, often controlled incidental to noxious weeds.

1.5.4. Action Threshold For Nuisance Weed Control

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

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

1.5.5. Prescriptions

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

1.6. Tree and Brush Control

1.6.1. Policy and Practice

Trees and brush are controlled for safety reasons including preservation of sight distance at curves and intersections, and for visibility of signs, and preventing trees with large trunk diameter from growing too close to traffic lanes.

- Native large shrub and small tree species should be allowed to grow and mature in Zones 2 and 3 and side trimmed if they

encroach on site distance or other traffic operational requirements.

- Large coniferous or deciduous tree species such as Douglas fir, big leaf maple, alder, or cottonwood left to grow in Zone 2, can reach substantial size over a relatively short period of time and should be removed when young.

1.6.2. Methods

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

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

1.7. Hazard Tree Removal

1.7.1. Policy and Objectives

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

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

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

2. SPECIAL 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.

2.1. Herbicide Sensitive Areas

2.1.1. 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 of 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. Concerned individuals can obtain further information by contacting the area maintenance office in the Pasco Maintenance Facility at 509.577.1933.

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

2.2.1. Policy and objectives

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

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

2.2.2. Locations by Milepost

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

2.3. Environmentally Sensitive Areas

2.3.1. Policy and Objectives

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

Numerous environmentally sensitive areas occur within South Central Region, Area 3, such as lakes, streams and wetlands. Special care will be taken to avoid and minimize impacts to these resources. Herbicide applications in these areas will follow normal label requirements. Other IVM treatments that take place in these areas, such as mowing or revegetation efforts will be subject to the Regional Road Maintenance Endangered Species Act Program Guidelines.

In compliance with the Regional Road Maintenance Endangered Species Act Program Guidelines, as agreed upon with the National Marine Fisheries Service, WSDOT has identified, mapped and located in the field all highway sections within 300 feet of rivers, wetlands and water bodies.

2.3.2. Locations

Environmentally sensitive areas are identified in the field with green guideposts and identified in an area atlas. For more information on the Regional Road Maintenance ESA Program Guidelines refer to: <http://www.wsdot.wa.gov/maintenance/roadside/esa.htm> or contact Gregor Meyer at 360.705.7853.

2.4. Storm Water Management Facilities

2.4.1. Policy and Objectives

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

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

2.4.2. Methods

Noxious weed control will be conducted at all storm water management facilities as necessary. Control of nuisance weeds will be coordinated with nuisance weed control along the adjacent roadside. Trees and brush should be cleared along both sides of the perimeter fencing for a width of approximately 8 feet as needed. Inlets and outfalls should be kept clear of unwanted vegetation and debris as well.

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

We are currently in the process of developing an inventory of Stormwater facilities. The preliminary list includes:

- I-182 Yakima River Bridge, 2 sediment retention ponds- Captured sediments are removed as needed, vegetation control consists of controlling designate noxious weeds and tree/brush species that may impede the removal of sediments.

2.4.3. Locations table by Milepost

See **Appendix E, Special Maintenance Areas**, Table 3.0

2.5. Wetland Mitigation Sites

2.5.1. Policy and Objectives

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

Wetland mitigation sites are carefully monitored for up to 10 years following their creation to ensure compliance with environmental regulation. In most cases vegetation in these sites is planted and established through the construction process so the maintenance actions are not required unless noxious weeds or hazardous trees become an issue. However, it is important that maintenance be aware of the locations of wetland mitigation sites to avoid impacting the required environmental functions of the sites.

2.5.2. Locations by Milepost

See **Appendix E, Special Maintenance Areas**, Table 3.0

Bare-Ground Applications

Zone 1 Bare-Ground Maintenance - Annual Cycle (Option A)

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Where needed on site specific areas or guardrail sections	1'-6' area free of vegetation	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Non-selective residual herbicide Krovar DF @ 8 lbs. Oust/SFM @ 3oz In-Place 16 oz No Spray Within 60' of Water	Spring March/April	Monitor

Zone 1 Bare-Ground Maintenance - Annual Cycle (Option B)

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Where needed on site specific areas or guardrail sections	1'-6' area free of vegetation	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Non-selective residual herbicide Payload @ 8 oz Oust/SFM 75 @ 3 ozd No Buffer Limitations	Spring March/April	Monitor

Zone 1 Bare-Ground Maintenance - Annual Cycle (Option C)

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Where needed on site specific areas or guardrail sections	1'-6' area free of vegetation	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Non-selective residual herbicide Prespective @ 10 ozd Oust/SFM 75 @ 3 ozd No Buffer Limitations	Spring March/April	Monitor

Appendix A

Integrated Vegetation Management Prescriptions

SC Region Area 3 - IVM Prescriptions

Noxious Weed Control

Chemical Control

Noxious Weed Control - *General Weed Control*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	After emergence	eradication and control of listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Escalade @ 32-48 ozl Spreader 90 @ 32 oz per 100 gallons carrier No Spray Within 60' of Water	Early growing season first/second flush	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - *General Weed Control*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	After emergence	eradication and control of listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Perspective @ 4.75 oz Spreader 90 @ 32 oz per 100 gallons carrier No Buffer Limitations	Early growing season first/second flush	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - *Thistles/Knapweeds - Rosette/Bolting Stage*

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.	herbicide	labor, transportation	Milestone @ 7 oz. Spreader 90 @ 32 oz per 100 gallons carrier No Buffer Limitations	Early growing season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - *Rush Skeletonweed - Rosette/bolting Stage*

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.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Milestone @ 5 oz. Spreader 90 @ 32 oz per 100 gallons carrier No Buffer Limitations	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - *Yellow starthistle - At Rosette Stage*

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.	spot treatment w/ herbicide	backpack sprayer or spray bottle, pickup, etc.	Milestone @ 5 oz. Spreader 90 @ 32 oz per 100 gallons carrier No Buffer Limitations	Early Season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Appendix A

Integrated Vegetation Management Prescriptions

SC Region Area 3 - IVM Prescriptions

Noxious Weed Control

Noxious Weed Control - *Dalmation Toadflax* - Plant Emergence (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.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Escalade @ 48 ozl Phase @ 32 oz per 100 gallons No Spray Within 60' of Water	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition

Noxious Weed Control - *Dalmation Toadflax* - Plant Emergence (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.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Tordon 22k @ 32 ozl Telar @ 1 ozl Spreader 90 @ 32 oz per 100 gallons No Spray Within 60' of Water	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition

Noxious Weed Control - *Poison Hemlock*

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.	spot treatment w/ herbicide	backpack sprayer, pump sprayer	Veteran 720 @ 64 ozl Spreader 90 @ 32 oz per 100 gallons No Spray Within 60' of Water	Late spring to fall	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - *Broadleaves in Reseeded Areas* - Under 2" (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 @ 24 oz Spreader 90 @ 32 ozl per 100 gallons carrier 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" (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 @ 16 ozl Vanquish @ 2-4 ozl Spreader 90 @ 32 oz per 100 gallons carrier No Spray Within 60' of Water	Early Season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Appendix A

Integrated Vegetation Management Prescriptions

SC Region Area 3 - IVM Prescriptions

Noxious Weed Control

Mechanical Control

Noxious Weed Control - *Kochia* (Mechanical Control)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	Before seed	Reduce seed production listed noxious weeds.	mow	Mower	None No Buffer Limitations	Late fall	Repeat as necessary

Noxious Weed Control - *Scotch Thistle* (Mechanical) with herbicide

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	2' to 6'	eradication	dig up plant	shovel	N/A	all season	monitor for reemergence

Biological Control

Noxious Weed Control - *Diffuse Knapweed* (Biological Control)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	flowering	Reduce/control host plant	Biological	None	<i>Larinus minutus</i> No Buffer Limitations	Spring Summer	Monitor and repeat or redeploy as needed

Noxious Weed Control - Yellow Starthistle (Biological Control)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	Reduce/control host plant	Biological	None	<i>Eustenopus villosus</i> No Buffer Limitations	Spring Summer	Monitor and repeat or redeploy as needed

Noxious Weed Control - *Poison Hemlock* (Biological Control)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	Reduce/control host plant	Biological	None	<i>Agonopterix alstroemeriana</i> No Buffer Limitations	Spring Summer	Monitor and repeat or redeploy as needed

Noxious Weed Control - *Dalmatian Toadflax* (Biological Control)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	Reduce/control host plant	Biological	None	<i>Macinus Jenthus</i> No Buffer Limitations	Spring Summer	Monitor and repeat or redeploy as needed

Appendix A

Integrated Vegetation Management Prescriptions

SC Region Area 3 - IVM Prescriptions

Tree and Brush Control

Tree and Brush Control - *Locust, Russian Olive, Tree of Paradise, Poplar (A)*

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	power saws, loppers, chipper, backpack or hand-held sprayer	Arsenal @ 12 oz per gallon No Buffer Limitations	anytime	Seed and fertilize or plant to establish low growing native plant community.

Tree and Brush Control - *Locust, Russian Olive, Tree of Paradise, Poplar (B)*

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	Backpack sprayer-undiluted mix of Garlon 3A No Buffer Limitations	anytime	Seed and fertilize or plant to establish low growing native plant community.

Nuisance Weed Control

General Nuisance Weed Control

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	whenever new infestations occur (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 @ 32-48 ozl Spreader 90 @ 2 pts or equivalent No Spray Within 60' of Water	prior to seed	Reapply as necessary. Seed and fertilize or plant to restore native plant community.

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	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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 8-10 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.	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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 8-10 inches	mower, attenuator	Mowing should take place as late in the growing season as possible while still maintaining good sight distance	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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 8-10 inches	mower, attenuator	Mowing should take place late fall/winter after grass is dormant	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> (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	<ol style="list-style-type: none"> 1) Communicate goals with operator prior to undertaking operation 2) Inspect after operation is complete to ensure target species are controlled

Tri-Cities Area

Planting Prescriptions

Compost Mix

	Species and Variety of Seed in Mixture by Common Name and (Botanical name)	Pounds Pure Live Seed (PLS) Per Acre
	Bluebunch Wheatgrass "Wahluke" (<i>Pseudoroegneria spicata</i>)	5.9
	Thickspike Wheatgrass "Schwindemar" (<i>Agropyron trachycaulum</i>)	4.65
	Crested Wheatgrass "Nordan" (<i>Agropyron cristatum</i>)	0.75
	Crested Wheatgrass "Siberian Vavilov" (<i>Agropyron cristatum</i>)	0.75
	Sandberg Bluegrass "Duffy Creek" (<i>Poa sandbergii</i>)	0.83
	Indian Ricegrass "Nespar" (<i>Oryzopsis hymenoides</i>)	2.35
	Needle and Thread Grass (<i>Hesperostipa comata</i>)	0.71
	Sand dropseed (<i>Sporobolus cryptandrus</i>)	0.06
	Total Lbs PLS/Acre	16

Tri-Cities Area

Planting Prescriptions

Optional Species

	Species and Variety of Seed in Mixture by Common Name and (Botanical name)	Pounds Pure Live Seed (PLS) Per Acre
	Rubber Rabbitbrush	1.00
	Basin Big Sage	0.04
	Common Yarrow	0.01
	Snowy Buckwheat	1.10

Herbicides Approved for Use on WSDOT Rights of Way

When making herbicide applications:

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2. Always use personal protective equipment when mixing, loading, and applying

Chemical Name	Product Names	Mode of Action (WSSA Class)	Where Used	How/Why Used	Notes/ Recommendations	WSDOT Restrictions	Cautions
2,4-D	Weedar 64 Amine 4 Veteran 720 Curtail WeedDestroy Platoon Crossbow Escalade Weedmaster Solution Savage Weedone LV4	Growth regulator - phenoxy synthetic auxin (4)	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Ester and acid formulations of 2,4-D may provide a good alternative to amine formulations. A number of the 2,4-D products come premixed with other herbicides.	Amine formulations of 2,4-D are restricted for use within 60' of all water	Amine formulations cause irreversible eye damage and are highly toxic to rainbow trout. All 2,4-D products pose risks when applied near grapes and other sensitive crops.
Aminocyclopyrachlor	Perspective Plainview Streamline Viewpoint	Growth regulator - mimics plant hormones, synthetic auxin (4)	Nuisance and noxious weed control Zones 2 and 3, Plainview is a bare-ground mixture	Depending on which mixture, can be either selective broadleaf or non-selective pre-emergent control	Each product is premixed with other herbicide to achieve either selective or non-selective control	No WSDOT use restrictions beyond those specified on product labels	Refer to product labels
Aminopyralid	Milestone VM	Growth regulator - mimics plant hormones, synthetic auxin (4)	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Effective on many perennial weed species due to some amount of soil residual activity on suppressing seed germination	No WSDOT use restrictions beyond those specified on product labels	Refer to product label
Bromacil	Krovar 1 DF Hyvar	Photosynthetic inhibitor - photosystem II, site A (5)	Zone 1 bare-ground	Nonselective pre-emergent grass and weed control	Krovar is premixed with diuron	<u>Westside</u> - Restricted use <u>Eastside</u> - Krovar restricted for use within 60' of all water	Bromacil is potentially mobile in soil, use caution if rain is possible.
Bromoxynil	Buctril 2EC BroClean Brox 2E	Photosynthetic inhibitor - photosystem II, site C (6)	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Effective broadleaf weed control without grass seed suppression	<u>Westside</u> - Restricted use <u>Eastside</u> - Restricted for use within 60' of all water	Can cause irreversible eye damage, highly toxic to fresh water fish
Chlorsulfuron	Telar XP Landmark XP	Amino acid synthesis inhibitors - ALS inhibitor (2)	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Product highly effective on difficult perennials such as Canadian thistle and horsetail. Landmark is premixed with Oust.	No WSDOT use restrictions beyond those specified on product labels	Refer to product labels

Herbicides Approved for Use on WSDOT Rights of Way

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

Herbicides Approved for Use on WSDOT Rights of Way

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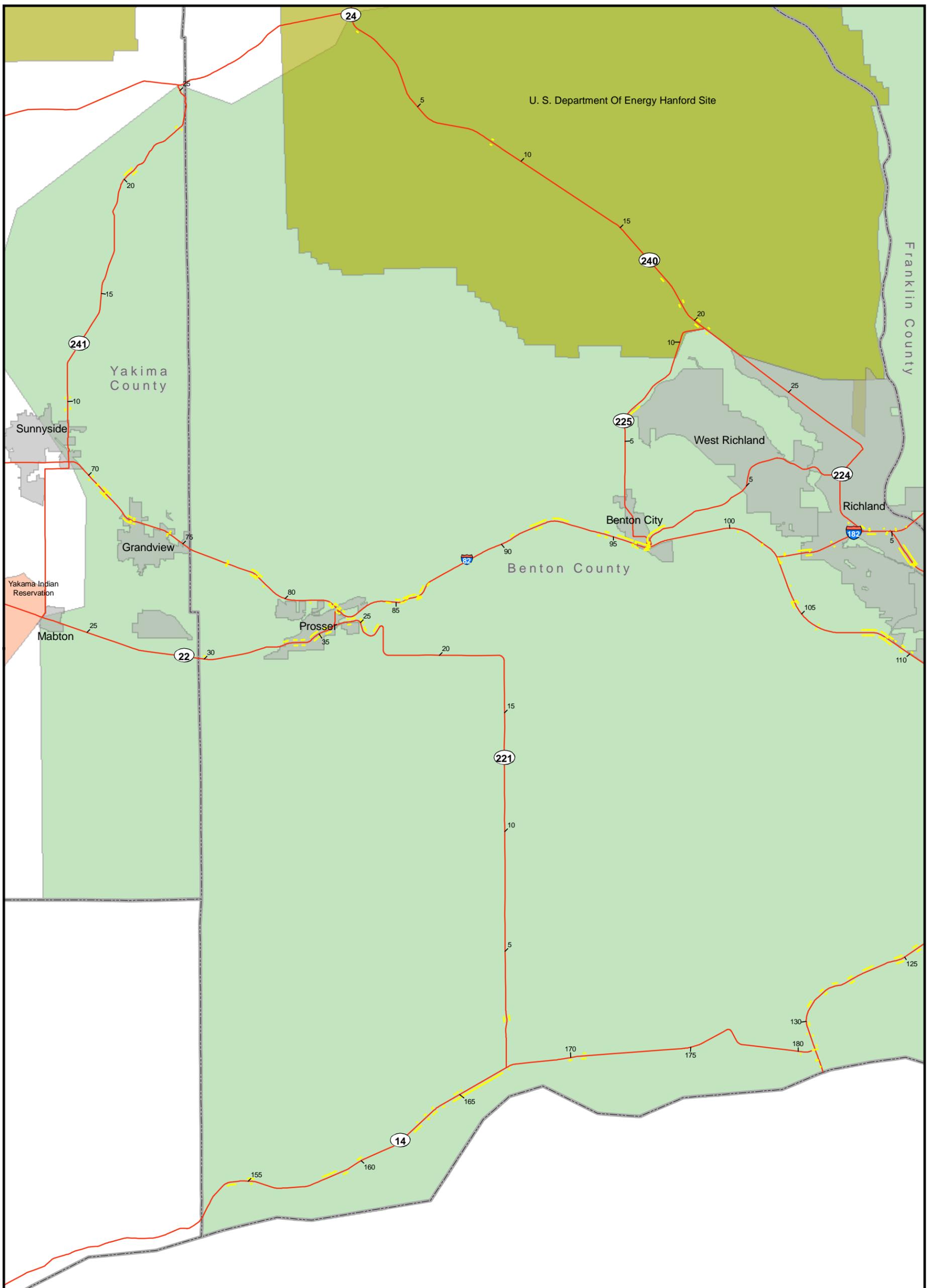
Chemical Name	Product Names	Mode of Action (WSSA Class)	Where Used	How/Why Used	Notes/ Recommendations	WSDOT Restrictions	Cautions
Imazapic	Plateau	Amino acid synthesis inhibitors - ALS inhibitor (2)	All zones	Pre-emergent control of undesirable grasses	WSDOT tests plots show a significant impact on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

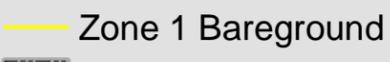
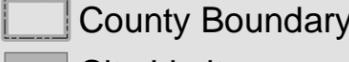
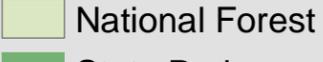
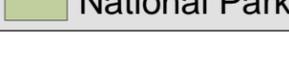
Herbicides Approved for Use on WSDOT Rights of Way

When making herbicide applications:

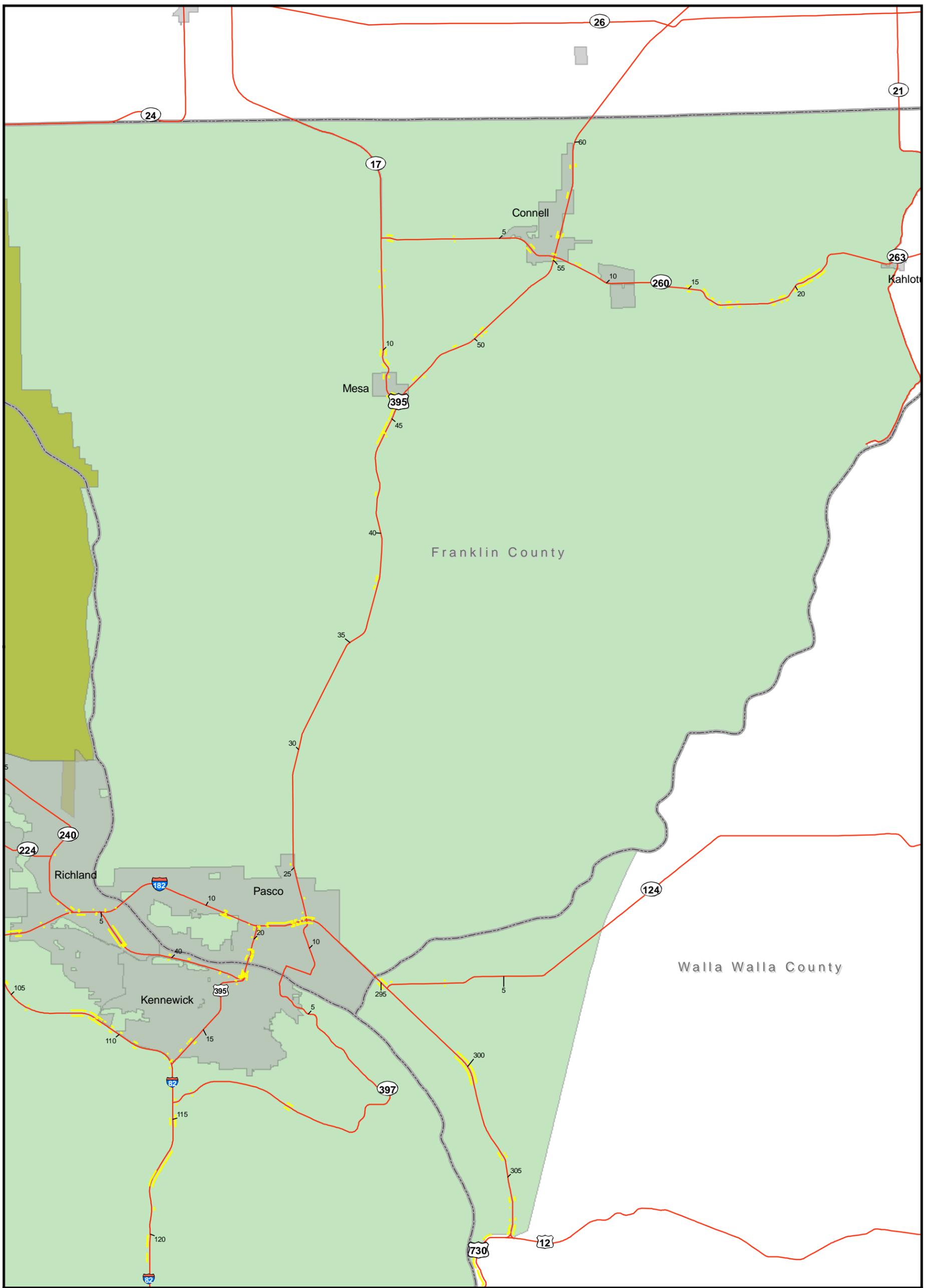
1. Always read and follow product labels
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Chemical Name	Product Names	Mode of Action (WSSA Class)	Where Used	How/Why Used	Notes/ Recommendations	WSDOT Restrictions	Cautions
Sulfentrazone	Portfolio	Cell membrane disrupter - PPO inhibitor (14)	Zone 1 bare-ground	Nonselective pre-emergent grass and weed control	Use caution in sandy soils	Westside - Restricted use Eastside - Restricted for use within 60' of all water	High surface runoff potential, potentially mobile in soil if rain is possible.
Sulfometuron-methyl	Oust Landmark XP	Amino acid synthesis inhibitors - ALS inhibitor (2)	Zone 1 bare-ground	Nonselective pre/post emergent grass and weed control	Landmark is a premix with Oust and Telar	Refer to product labels	Oust has been proven to move with wind if not watered in to the ground
Tebuthiuron	Spike 80DF	Photosynthetic inhibitor - photosystem II, site B (7)	Zone 1 bare-ground	Nonselective pre-emergent grass and weed control		Westside - Restricted use Eastside - Restricted for use within 60' of all water	High surface runoff potential, potentially mobile in soil if rain is possible.
Topramezone	Frequency	Bleaching - carotenoid biosynthesis inhibitor (12)	Zone 1 bare-ground	Nonselective pre-emergent grass and weed control	Use in combination with another bare-ground chemical	Refer to product label	Refer to product label
Triclopyr Amine	Garlon 3A	Growth regulator - pyridinecarboxylic acid synthetic auxin (4)	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Works well for scotch broom control	Refer to product label	Can cause irreversible eye damage
Triclopyr Ester	Garlon 4 Crossbow Pathfinder	Growth regulator - pyridinecarboxylic acid synthetic auxin (4)	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Works well for cut-stump or basal treatments applications. Crossbow is premixed with 2,4-D, Pathfinder with clopyralid	Restricted for use within 60' of all water	Highly toxic to fish



75— Mile Post Marker	 Military Base
 Zone 1 Bareground	 Indian Reservation
 County Boundary	 National Forest
 City Limits	 State Park
 National Park	 SC Region area 3

Appendix C:
South Central Area 3
Zone 1 Bareground
Map 1 of 2



Washington State
Department of Transportation

75— Mile Post Marker	Military Base
— Zone 1 Bareground	Indian Reservation
— County Boundary	National Forest
— City Limits	State Park
— National Park	SC Region area 3

Appendix C:
South Central Area 3
Zone 1 Bareground
Map 2 of 2

Appendix E

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
012	INC	RS	291.82	293.10	Ramp	
012	DEC	RS	292.78	291.69	Ramp	
012			294.40		No Name Pit Site	
012			301.79	301.81	Dispersion Areas	Natural Dispersion
012			301.81	302.22	Vegetated Roadside Filter Strips	Filter Strip
012			302.21	302.54	Dispersion Areas	Natural Dispersion
012			302.22	302.78	Dispersion Areas	Natural Dispersion
012			302.29	303.20	Dispersion Areas	Natural Dispersion
012			302.54	302.80	Vegetated Roadside Filter Strips	Filter Strip
012			302.78	302.91	Dispersion Areas	Natural Dispersion
012			302.91	303.17	Dispersion Areas	Natural Dispersion
012			303.06	303.87	Dispersion Areas	Natural Dispersion
012			303.17	303.19	Dispersion Areas	Natural Dispersion
012			303.19	303.22	Dispersion Areas	Natural Dispersion
012			303.24	303.26	Dispersion Areas	Natural Dispersion
012			303.26	303.56	Dispersion Areas	Natural Dispersion
012			303.26	303.35	Dispersion Areas	Natural Dispersion
012			303.27	303.62	Dispersion Areas	Natural Dispersion
012			303.56	303.63	Dispersion Areas	Natural Dispersion
012			303.62	303.80	Dispersion Areas	Natural Dispersion
012			303.62	303.80	Stormwater Ponds	Detention pond
012			303.63	304.06	Dispersion Areas	Natural Dispersion
012			303.80	303.87	Dispersion Areas	Natural Dispersion
012			304.16	304.36	Bio-Swales	Swale
012			304.16	304.36	Bio-Swales	Swale
012			304.16	304.36	Bio-Swales	Swale
012			304.36	304.89	Dispersion Areas	Natural Dispersion
012			304.36	304.99	Vegetated Roadside Filter Strips	Filter Strip
012			304.39	304.58	Dispersion Areas	Natural Dispersion
014			152.24	180.77	Dispersion Areas	Natural Dispersion
014			152.24	180.77	Dispersion Areas	Natural Dispersion
014			152.24	180.77	Dispersion Areas	Natural Dispersion
014			152.24	180.77	Dispersion Areas	Natural Dispersion
014			152.24	180.77	Dispersion Areas	Natural Dispersion
014			152.24	180.77	Dispersion Areas	Natural Dispersion
014			152.24	180.77	Dispersion Areas	Natural Dispersion
014			152.24	180.77	Dispersion Areas	Natural Dispersion
014			169.00		Paterson Stockpile Site	
014			170.60		Kosmos Quarry Site	
014			176.96		Plymouth Scalehouse Stockpile Site	
014			178.00		BPA Tower #27 Stockpile Site	

Appendix E

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
017			7.50		South Mesa Pit Site	
017			14.70		Substation Stockpile Site	
022			24.03		Gulden Rd. Pit Site	
082	INC	RS	69.00	69.51	Ramp	
082	INC	RS	72.70	73.30	Ramp	
082	INC	RS	74.71	75.59	Ramp	
082	INC	RS	75.85	76.83	Ramp	
082	INC	RS	79.59	80.49	Ramp	
082	INC	RS	82.24	82.85	Ramp	
082	INC	RS	88.25	89.05	Ramp	
082	INC	RS	93.21	94.17	Ramp	
082	INC	RS	96.28	97.11	Ramp	
082	INC	RS	101.67	102.55	Ramp	
082	INC	RS	104.20	105.15	Ramp	
082	INC	RS	108.95	109.68	Ramp	
082	INC	RS	112.86	113.69	Ramp	
082	INC	RS	114.09	114.95	Ramp	
082	INC	RS	122.34	123.28	Ramp	
082	INC	RS	131.27	132.05	Ramp	
082	DEC	RS	69.28	69.00	Ramp	
082	DEC	RS	73.07	72.65	Ramp	
082	DEC	RS	75.38	74.53	Ramp	
082	DEC	RS	80.38	79.48	Ramp	
082	DEC	RS	82.25	80.38	Ramp	
082	DEC	RS	82.88	82.25	Ramp	
082	DEC	RS	88.85	88.04	Ramp	
082	DEC	RS	93.93	93.10	Ramp	
082	DEC	RS	96.97	96.08	Ramp	
082	DEC	RS	102.88	102.01	Ramp	
082	DEC	RS	104.83	104.05	Ramp	
082	DEC	RS	109.43	108.99	Ramp	
082	DEC	RS	113.06	112.27	Ramp	
082	DEC	RS	114.69	113.87	Ramp	
082	DEC	RS	123.12	122.16	Ramp	
082	DEC	RS	130.88	129.94	Ramp	
082	DEC	RS	131.87	131.06	Ramp	
082			89.20		Yakitat Quarry Site	
082			96.72		Kiona Interchange Stockpile Site	
082			114.22		Locust Grove Stockpile Site	
082			126.20		Coffin Camp Pit & Stockpile Site	
082			Exit 75		Krough Rd. Pit Site	

Appendix E

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
124	Both		5.28	5.28	RR crossing at grade	
182	INC	RS	0.00	0.47	Ramp	
182	INC	RS	2.58	3.43	Ramp	
182	INC	RS	3.91	4.50	Ramp	
182	INC	RS	4.75	5.47	Ramp	
182	INC	RS	6.96	7.93	Ramp	
182	INC	RS	8.96	9.95	Ramp	
182	INC	RS	11.82	1.84	Ramp	
182	INC	RS	13.48	13.82	Ramp	
182	INC	RS	13.93	14.95	Ramp	
182	DEC	RS	0.37	0.00	Ramp	
182	DEC	RS	3.25	2.38	Ramp	
182	DEC	RS	4.20	3.67	Ramp	
182	DEC	RS	5.23	4.36	Ramp	
182	DEC	RS	7.62	6.78	Ramp	
182	DEC	RS	9.66	8.77	Ramp	
182	DEC	RS	12.14	11.39	Ramp	
182	DEC	RS	12.91	12.30	Ramp	
182	DEC	RS	13.73	13.17	Ramp	
182	DEC	RS	14.80	13.93	Ramp	
182			1.07	5.91	Stormwater Ponds	Wet Pond
182			2.70		Birdhouse/Queensgate Stockpile Site	
182			2.90	3.06	Bio-Swales	Detention Swales
182			3.83	5.05	Stormwater Ponds	Infiltration Basin
182			6.31	12.76	Stormwater Ponds	Infiltration Basin
182			9.33	9.43	Dispersion Areas	Engineered Dispersion
182			9.33	9.43	Dispersion Areas	Engineered Dispersion
221			24.00		Prosser Hill Stockpile Site	
221	Both	RS	25.48	26.07	City of Prosser	Maintain by city
221			9.99		Bedrock Stockpile Site	
224	Both	RS	4.75	8.39	City of West Richland	Maintain by city
224	Both	RS	8.39	9.90	City of Richland	Maintain by city
224	Both		9.87	10.12	RR crossing at grade	
224			0.10		Goose Hill Quarry Site	
225	Both	RS	0.00	2.69	City of Benton	Maintain by city
240	INC	RS	37.59	38.14	Ramp	
240	INC	RS	38.65	39.27	Ramp	

Appendix E

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
240	INC	RS	40.17	40.98	Ramp	
240	DEC	RS	34.74	34.55	Ramp	
240	DEC	RS	36.47	36.05	Ramp	
240	DEC	RS	37.74	37.49	Ramp	
240	DEC	RS	39.13	38.38	Ramp	
240	DEC	RS	40.83	40.00	Ramp	
240	DEC	RS	43.15	42.16	Ramp	
240	Both	RS	22.36	28.82	City of Richland	Maintain by city
240	Both		28.54	28.54	RR crossing at grade	
240			0.00	0.19	Dispersion Areas	Natural Dispersion
240			28.30		No. Richland Stockpile Site	
240			37.40	38.90	Stormwater Ponds	Infiltration Pond
240			37.42	37.52	Stormwater Ponds	Infiltration Pond
240			37.70	37.80	Stormwater Ponds	Infiltration Pond
240			37.75	37.85	Stormwater Ponds	Infiltration Pond
241	Both	RS	7.52	8.02	City of Sunnyside	Maintain by city
241	Both		7.94	7.94	RR crossing at grade	
241			0.45		Sulfur Creek Stockpile Site	
241			10.07	24.30	Dispersion Areas	Natural Dispersion
241			10.07	24.30	Dispersion Areas	Natural Dispersion
260	Both	RS	24.59	24.73	City of Kahlotus	Maintain by city
260			0.50		Camp Quarry Stockpile Site	
260			14.80		Simon Miller Quarry Site	
395	INC	RS	13.12	13.45	Ramp	
395	INC	RS	19.38	19.58	Ramp	
395	INC	RS	19.84	20.54	Ramp	
395	INC	RS	22.80	23.30	Ramp	
395	INC	RS	23.60	24.28	Ramp	
395	INC	RS	32.54	33.31	Ramp	
395	INC	RS	45.50	46.49	Ramp	
395	INC	RS	54.50	55.73	Ramp	
395	DEC	RS	18.58	18.03	Ramp	
395	DEC	RS	20.52	19.77	Ramp	
395	DEC	RS	23.06	22.77	Ramp	
395	DEC	RS	24.18	23.63	Ramp	
395	DEC	RS	33.05	32.42	Ramp	
395	DEC	RS	46.25	45.35	Ramp	
395	DEC	RS	55.46	54.25	Ramp	
395	Both	RS	16.17	17.28	City of Kennewick	Maintain by city
395			38.15		No Name Quarry Site	

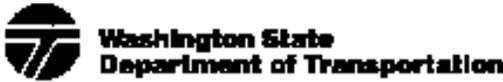
Table 3.0

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
395			38.50		Eltopia Stockpile Site	
395			38.60		Eltopia Pit Site	
395			45.86		Mesa Stockpile Site	
395			54.90		Havlina Stockpile Site	
395			57.65		Quarry Site FN-12	
397	INC	RS	11.05	11.23	Ramp	
397	DEC	RS	11.23	11.04	Ramp	
397	Both		0.13	0.13	RR crossing at grade	
397	Both		0.91	0.91	RR crossing at grade	
397	Both	RS	5.52	7.24	City of Kennewick	Maintain by city
397	Both		6.40	6.40	RR crossing at grade	
397	Both		6.72	6.72	RR crossing at grade	
397	Both	RS	7.24	11.23	City of Pasco	Maintain by city
397	Both		8.18	8.18	RR crossing at grade	
397	Both		9.01	9.01	RR crossing at grade	
397	Both		9.18	9.18	RR crossing at grade	
397			5.08	7.00	Stormwater Ponds	Detention pond



Integrated Vegetation Management Record

Org Code 455310	County franklin	Date 7/21/2005	Vegetation Management Zone(s) <input type="checkbox"/> Zone 1 <input type="checkbox"/> Zone 2 <input checked="" type="checkbox"/> Zone 3	
Area SR <u>395</u> MP <u>27.6</u> to MP _____		Location <u>quarry site/west of 395 from preston winery</u>		
Check Appropriate Boxes:				
<input type="checkbox"/> NB	<input type="checkbox"/> EB	<input type="checkbox"/> Roadside	<input type="checkbox"/> Landscaped Area	<input type="checkbox"/> Interchange
<input checked="" type="checkbox"/> SB	<input type="checkbox"/> WB	<input type="checkbox"/> Shoulder	<input type="checkbox"/> Rest Area	<input type="checkbox"/> Bridge
		<input type="checkbox"/> Median	<input type="checkbox"/> Park-n-Ride	<input type="checkbox"/> Ramp
				<input checked="" type="checkbox"/> Yard/Stockpile
Target		<input checked="" type="checkbox"/> Noxious Weeds	<input type="checkbox"/> Brush/Trees	<input type="checkbox"/> Other
		<input type="checkbox"/> Nuisance Weeds	<input type="checkbox"/> Hazard Tree	
Reason for Action:		List Target/Species:		
<input checked="" type="checkbox"/> Noxious Weeds		<u>diffuse knapweed/spotted knapweed</u>		
<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 type="checkbox"/> Other				
Long term IVM plan (Describe goals/objectives and a step-by-step approach over time)				
Larinus minutus was released in June of 2000 .first year no results .no monitoring for the next 3 years .on July 20th, 2005 I went out to the site with Shirley Bumpous . We found an extremely high population of beetles . I would say that 90 percent or more of the knapweed is controlled. This is a fantastic nursery site.				
Approximate Acres to Accomplish <u>5</u>				
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 type="checkbox"/> Staking <input type="checkbox"/> Other _____			
Mechanical	<input type="checkbox"/> Aerial Saw Work <input type="checkbox"/> Tractor Brush Cutter <input type="checkbox"/> Mower/Chop <input type="checkbox"/> Manual Brush Cutting <input type="checkbox"/> Tractor Mower <input type="checkbox"/> Other _____			
Bio-Control	<input checked="" type="checkbox"/> Insect <input type="checkbox"/> Pathogen <input type="checkbox"/> Parasite	Type/Species _____	<u>6/1/2000</u>	<u>7/20/2005</u>
Cultural	<input type="checkbox"/> Burning <input type="checkbox"/> Grading <input type="checkbox"/> Seeding <input type="checkbox"/> Fertilizing <input type="checkbox"/> Grazing <input type="checkbox"/> Soil Amendment <input type="checkbox"/> Other _____			
Chemical	<input type="checkbox"/> _____ Record Number _____			
#1 Evaluation and Date				
their was no previous treatments that wereevaluated.				
#2 Evaluation and Date				
#3 Evaluation and Date				



Pesticide Application

Org. Code 455310	County Franklin	Date of Application 9/12/2006	Start 8:30 <input checked="" type="radio"/> AM <input type="radio"/> PM Finish 9:30 <input checked="" type="radio"/> AM <input type="radio"/> PM	ICP 017A	Stores Issue Ticket Number(s) E61914			
Area SR 395 MP 37.5 to MP and MP to MP and MP to MP and MP to MP								
Check Appropriate Boxes: <input type="checkbox"/> Roadside <input type="checkbox"/> Landscaped Area <input type="checkbox"/> Interchange <input type="checkbox"/> Yard/Stockpile <input type="checkbox"/> Spot Spray <input type="checkbox"/> Aquatic <input type="checkbox"/> NB <input type="checkbox"/> EB <input checked="" type="checkbox"/> Shoulder <input type="checkbox"/> Rest Area <input type="checkbox"/> Bridge <input checked="" type="checkbox"/> Blanket Spray <input type="checkbox"/> Wetlands <input checked="" type="checkbox"/> SB <input type="checkbox"/> WB <input type="checkbox"/> Median <input type="checkbox"/> Park-n-Ride <input type="checkbox"/> Ramp <input type="checkbox"/> Banded Width								
<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 <i>List Pest(s):</i> Rush skeleton, rusience grasses and broadleaves								
Start Weather Conditions Temperature 65 °F Wind (Direction From) calm Wind (Range) 2 mph(mph) <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 67 °F Wind (Direction From) Calm Wind (Range) 2 mph(mph) <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	Roundup-Pro Conc.	Pesticide	524-529	MTRM1107BJ	128	Ozl	256	Ozl
1	Water	Water	-----		12.5	Gal	25	Gal
Total 2 Acres(hectares) Treated at 12.5 gallons(liters) of spray per acre(hectare).								
Equipment Number 4-wheeler	Tank Size 1 25 3 5	Calibration Date 9/12/06	Vehicle Speed 3 mph(mph)	Nozzle Pressure 20 PSI(PSI)	Width of Spray Pattern 8 Feet(meter)			
<input type="checkbox"/> Handpumped <input type="checkbox"/> Handgun <input checked="" type="checkbox"/> Boom <input type="checkbox"/> Backpack <input type="checkbox"/> Fixed Nozzle <input type="checkbox"/> Other (Specify) _____					<input checked="" type="checkbox"/> Tank Mix (Conv.) <input type="checkbox"/> Injection <input type="checkbox"/> Invert			
Operator Name SCOTT A. SMITH		Operator Pesticide License No. 7512		Operator Signature		Driver Name		
Remarks Sprayed from the fence out approximately 20 feet from Eltopia west road to the south end of Booker Auction Property.						Buffer Inval 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 Region File Col= Ounces Dry Lt= Pound gal= gallon gal= Gallon Pt= Pint Q= Quart

Appendix G

STAKEHOLDERS LIST

Benton County Weed Board	1215 Dudley Ave. Prosser, WA 99350 Marc Stairet (509) 545-6988
Franklin County Weed Board	1016 N. 4 th Ave. Pasco, WA 99301 Robin Kusske (509) 545-3847
Walla Walla County Weed Board	328 W. Poplar Walla Walla, WA 99362 Walter Bosley (509) 527-3246
Yakima County Weed Board	1216 E. Race St. Yakima, WA 98901 Dick Jacobson (509) 574-2180
Adams County Weed Board	201 West Broadway Ritzville, WA 99169 Susan Sackman (509) 659-1806
Port of Pasco	904 E. Ainsworth Ave. Pasco, WA 99301 (509) 547-3378
Port of Kennewick.....	101 Clover Island Drive Kennewick, WA 99336 (509) 585-4200
Washington State Patrol.....	143302 East Law Lane Kennewick, WA 99337 (509)734-7029
Benton County Clean Air Authority.....	114 Columbia Point Dr. Suite C Richland, WA 99352 (509) 99352
South Columbia Basin Irrigation District.....	1135 E.Hillsboro STE # A Pasco, WA 99301 (509) 547-1735
Sunnyside Valley Irrigation District	120 South 11 th St. Sunnyside, WA 98944 (509) 837-6980

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Columbia Irrigation District	10 E. Kennewick Ave. Kennewick, WA 99336 (509) 586-6118
Badger Mountain Irrigation District	8033 W. Grandridge Blvd Kennewick, WA 99336 (509)783-1554
Burlington Northern Santa Fe	Forrest Gibson (509) 521-2846
Tri-City Railway.....	(509) 371-8313
Union Pacific.....	(541) 720-1520
Benton P.U.D.....	2721 W. 10 th Ave. Kennewick, WA 99336 (509) 582-2175
Franklin P.U.D	1411 w. Clark St. Pasco, WA 99301 (509) 547-5591
Benton R.E.A	(509)967-2921
Pacific Power Burbank	(888) 221-7070
City of Pasco.....	525 N. 3 rd Ave. Pasco, WA 99352 Bob Alberts (509) 545-3441
City of West Richland	3801 West Van Giesen West Richland, WA 99353 (509) 967-3431
City of Benton City.....	708 9 th St. Benton City, WA 99350 (509) 588-3322
City of Prosser	601 7 th St. Prosser, WA 99350 (509) 786-2332
City of Grandview	207 West Second St. Grandview, WA 98930 (509) 882-9200
City of Connell	104 E. Adams St. Connell, WA 99326 (509) 234-2701
City of Kahlotus.....	E. 130 Westin Kahlotus, WA 99335

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Department of Energy	825 Jadin Ave STE 1 Richland, WA 99352 (509) 376-7411
U.S. Department of Fish and Wildlife	3250 Port of Benton Blvd. Richland, WA 99354