

# Eastern Region, Area 2

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# Integrated Roadside Vegetation Management Plan

2016



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

## ***Introduction***

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The Washington State Department of Transportation (WSDOT) Eastern Region, Area 2 manages approximately 850 miles of roadside right-of-way throughout Adams, Whitman and Spokane counties. This right-of-way is part of the state highway system including portions of US 195, SR 27, SR 26, and SR 23, as well as several other state routes in the area. A map of the area is shown on the following page.

The primary roadside vegetation management objectives are in relation to traffic safety and preservation of the highway infrastructure. Additionally as a landowner WSDOT is required to control all listed noxious weeds that occur on the right-of-way by state law (RCW 17.10 and 15.15.010). It is important that WSDOT not only meet the legal requirements for weed control, but also consider the needs and concerns of adjacent landowners in this area.

In order to best manage roadsides with these priority objectives in mind WSDOT practices an annually cycling process called Integrated Vegetation Management (IVM). Plans like this are maintained and updated annually for all areas of the state with an overall goal of establishing the most naturally self-sustaining roadsides vegetation possible. Adjustments are made year to year in each area plan based on monitoring the previous years' accomplishments and results, available budget, and prioritization of other highway maintenance activities.

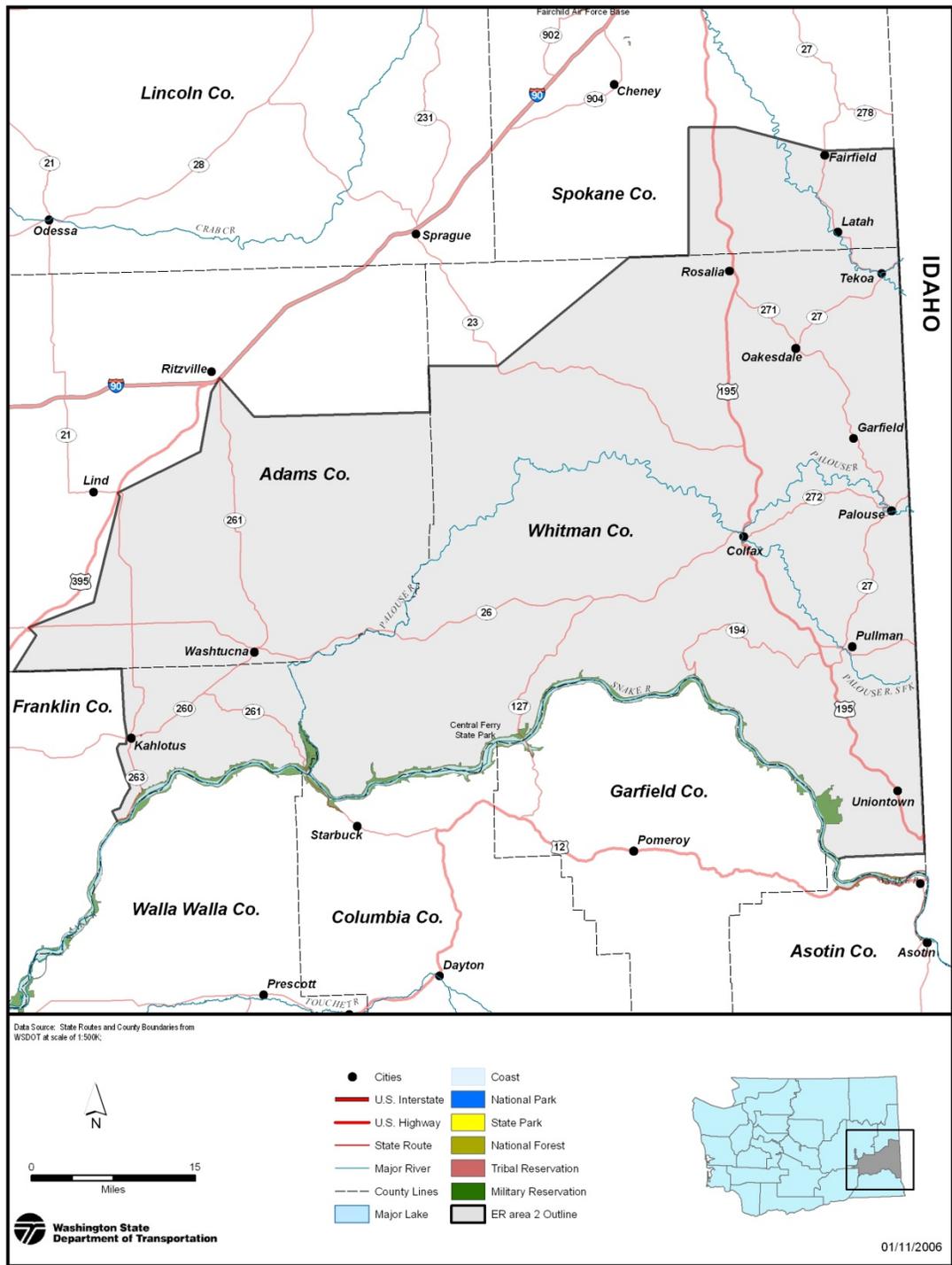
This plan serves as the guidance document for vegetation maintenance in Eastern Region Area 2 for the 2016 growing season. It provides detailed treatment prescriptions for accomplishing safety and weed control objectives through the use of a combination of control measures. Each year's actions are designed as part of a coordinated multi-year strategy to minimize roadside maintenance requirements wherever possible. This plan also accounts for specific locations where maintenance tactics are adjusted due to environmental issues, neighboring properties, local partnerships, or restoration work done through WSDOT design and construction.

Beginning with the 2016 season, the information contained in this plan document can be geographically referenced by crews in the field using iPads and the Highway Activity Tracking System (HATS). Accomplishments and results will also be tracked through this new system. This development in WSDOT maintenance management will greatly improve the agency's success in properly executing actions, monitoring and documenting results of treatments, and in measuring cost and results over time.

WSDOT welcomes input from local public and private entities on its weed control and other vegetation management activities. Wherever appropriate the agency is looking for opportunities to plan and cooperate with others in managing the roadside. Please direct any questions, comments or suggestions to the Eastern Region Area 2 Superintendent – Russ Johnson, or the State's Roadside Asset Manager – Ray Willard.

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Vicinity Map  
Figure 1

## ***Eastern Region, Area 2 IVM Work Plan – 2016***

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This is an outline of the overall approach and geographic distribution of planned roadside vegetation management actions throughout the maintenance area in 2016. Information is organized in relation to the three major groups of activities defined in the WSDOT Maintenance Accountability Program (MAP) for the performance of roadside vegetation maintenance: **Control of Vegetative Obstructions, Noxious Weed Control, and Nuisance Weed Control**. Specific locations as noted in this work plan are also mapped in the Highway Activity Tracking System (HATS) for reference by maintenance in the field.

### **Control of Vegetative Obstructions – 3A4**

The work of this group of maintenance activities relates to the safety and operational requirements of the highway. These items are considered first priority in terms of overall roadside vegetation maintenance needs. Vegetation management objectives and work activities in this category fall into four subgroups: **Pavement Edge Maintenance/Zone 1, One Pass Mowing/Zone 2, Tree and Brush Control/Zone 2 and 3, and Hazard Tree Removal/Zone 3.**

#### **Pavement Edge Maintenance/Zone 1**

**Work Operation: 1615**

**HATS Form: Zone 1 Spray**

This work includes the application of herbicides to road shoulders where needed throughout the area. The objective of these applications in the designated locations is maintenance of a 2 to 3 foot gravel shoulder strip that is free of vegetation. This treatment is necessary in the locations described below to provide visibility and maintainability of roadside hardware and guideposts, allow room for vehicles to pull off on shoulders, facilitate stormwater drainage, and/or provide added visibility of wildlife approaching the highway.

#### **Total Units of Planned Treatment**

- Apply approximately **500 acres** of herbicide treatment to designated road shoulders throughout the area.

#### **Locations of Planned Treatments**

- Planned treatment sites are mapped as HATS line feature – **Zone 1 Treatments**
- Locations where bare ground treatments will be applied to all gravel shoulder sections include:
  - All roads in Eastern Region, Area 2
- Locations where application width will be wider than 3 ft. include:
  - As needed to clear for site distance needs at intersections
- Locations where no bare ground treatment will be applied include:
  - Any shoulders within 60 ft. of surface water.

#### **Treatment Methods**

- All treatments are intended to provide year-round bare ground condition through the annual application of soil residual, pre-emergent herbicides
- All locations will be treated in mid to late spring with the following mixture of herbicides, adjuvants, and rates/acre:
  - Esplanade 7 oz., Opensite 3 oz., Sulfomet XP 3 oz., Roundup Pro Concentrate 32 oz., In Place 8 oz.

#### **One Pass Mowing/Zone 2**

**Work Operation: 1625**

**HATS Form: Zone 2 One Pass Mowing**

This work includes routine mechanical cutting of vegetation on the road shoulder immediately adjacent to pavement or Zone 1 treatments. Mowing is necessary in areas with taller growing grasses or other vegetation are present and must be annually or semi-annually cut back for visibility and maintenance of roadside hardware and delineators, to maintenance traffic sight distance at curves and intersections, and for improved visibility of wildlife approaching the highway. In many cases this type of mowing is unnecessary if an adequate width of Zone 1 is present.

Total Units of Planned Treatment

- Approximately 100 acres

Locations of Planned Treatments

- SR 195 MP 29.0-35.0 Target is Canary Grass to prevent drifting of snow
- SR 271 MP 2.0-8.0 Target is Canary Grass for snow drift prevention
- SR 27 MP 25.0-28.0 Target is Canary Grass for snow drift prevention
- SR195 MP 51-53 Target is Canary grass for visibility and drift prevention

Treatment Methods

- Mowing will be accomplished using a tractor with a side mount drop down deck

**Tree and Brush Control/Zone 2 and 3**

**Work Operations: 1622, 1625, 1626**

**HATS Forms: 3 sub-forms under Tree/Brush Control – Spray, Trimming Mechanical, and Trimming Manual**

This includes work in Zone 2 such as periodic trimming or removal of brush and trees encroaching on traffic operations and visibility. Also included is work in Zone 2 and 3 when controlling emergent undesirable tree species to prevent them from growing into hazard trees. There is a minimal amount of this type of work required in Eastern Region Area 2.

Total Units of Planned Treatment

- Approximately **10 acres** will be treated throughout the area.

Locations of Planned Treatments

- Occasional random needs throughout the area

Treatment Methods

- Manual cutting with limited herbicides when necessary

**Hazard Tree Removal/Zone 3**

**Work Operation: 1628**

**HATS Forms: 3 sub-forms under Hazard Tree Removal – Individual Tree Removal, Stand Removal, and Storm Damage Cleanup**

Trees within and adjacent to the right of way are routinely monitored by maintenance staff for potential risk to the highway and/or neighboring structures. Individual and stands of trees identified as a potential imminent threat will be evaluated using best arboricultural judgment and removed as soon as possible where needed. There is a minimal amount of this type of work required in Eastern Region Area 2.

Total Units Planned

- Less than 10 trees/year

Locations of Planned Treatments

- Where monitoring identifies potential risk to highway or neighbors

Treatment Methods

- Manual cutting, leave wood to decompose on site wherever possible

**Noxious Weed Control – 3A2**

This group of activities is focused on control of weed species that are legally designated by state and county regulations for required control by all property owners. Work under this activity group is considered second priority after safety related objectives have been addressed. In some counties noxious weed laws may be enforced with fines and/or control work by the counties and billing of property owners if adequate control is not accomplished. WSDOT communicates annually and throughout the season with each County Noxious Weed Board to identify and prioritize infestations and planned control efforts on state highways.

In most cases the primary goal in noxious weed control is to prevent seed production and to reduce population levels where possible. The majority of IVM treatments are carried out as needed throughout the growing season on all highways in the area to accomplish this using a combination of manual, mechanical, herbicide, and/or biological agents. In addition, where needed WSDOT and the County Noxious Weed Boards have identified a set of **Highest Priority Infestations** where complete eradication and/or prevention of spread into uninfested regions are the goals.

### **General Noxious Weed Control**

**Work Operations: 1616, 1618, 16**

**HATS Forms: 4 sub-forms under Noxious Weed Control/General – Noxious Weed Control/Spray, Noxious Weed Control/Mechanical, Noxious Weed Control/Manual, and Noxious Weed Control/Biological**

These operations are timed and carried out throughout the season to prevent the spread of legally designated noxious weed species, and to reduce or eliminate populations wherever possible. Integrated treatment plans combine field monitoring and a mixture of seasonally timed treatment methods with proven effectiveness on designated species. Successful plans are consistently implemented over a series of years and annually adjusted as necessary based on field observations. Care must be taken in all cases to avoid damage to surrounding desirable/native vegetation.

#### Designated Species Known to Exist on WSDOT Right of Way

- See list in Appendix A

#### Total Units of Planned Treatment

- Approximately **500 acres** will be treated with herbicides.

#### Locations of Planned Treatments

- As identified in County Weed Board notices.
- Treatment sites/weed locations will be mapped with iPads throughout the year for future reference.

#### Treatment Methods and Timing

- Various combinations of broadleaf herbicides and adjuvant mixtures per Wilbur Ellis recommendations will be documented and tracked throughout the year in HATS for reference in the coming years.
- Seasonal timing is critical to successful reduction in weed populations. However, in some cases the only possible treatments are made in response to County weed board notifications, with a goal of controlling spread and seed production, rather than to reduce and eradicate populations.
- When possible to make preventative treatments ahead of County Weed Board, seasonal target species include:

##### Early Season Targets

- Prickly Lettuce, Rush Skeletonweed, Poison Hemlock, Knapweed, Dalmatian Toadflax

##### Mid-Season Targets

- Canadian Thistle, Hawkweed, Sow Thistle, Scotch Thistle, Yellow Stark, Kochia

##### Late Season Targets

- Russian Thistle, Rush Skeletonweed, Kochia,

### **Priority Noxious Weed Control**

**Work Operations: 1616, 1618, 1641**

**HATS Forms: 4 sub-forms under Noxious Weed Control/Priority – Noxious Weed Control/Spray, Noxious Weed Control/Mechanical, Noxious Weed Control/Manual, and Noxious Weed Control/Cultural**

These operations are timed and carried out throughout the season to prevent the spread of legally designated noxious weed species, and to reduce or eliminate populations wherever possible. Integrate treatment plans combine field monitoring and a mixture of seasonally timed treatment methods with proven effectiveness on designated species. Successful plans are consistently implemented over a series of years and annually adjusted as necessary based on field observations. Care must be taken in all cases to avoid damage to surrounding desirable/native vegetation. In some cases soil enhancements may be used as well as seeding or planting of beneficial competition species.

#### Priority Treatment Sites

- No priority treatment sites have been designated for this Eastern Region Area 2 in 2016

#### Total Units of Planned Treatment

- None this year

#### Locations of Planned Treatments

- None this year

#### Treatment Methods and Timing

- None this year

### **Nuisance Vegetation Control – 3A3**

Nuisance vegetation control includes control/management of weed species that are recommended but not mandated by state and/or county law. These maintenance activities also may address vegetation growth that presents a publically perceived negative visual impact, or neighboring property concerns. Because nuisance weed control activities are not legally mandated and they do not pose a safety risk, they are considered the last priority vegetation management needs. Maintenance funding currently only allows for control of nuisance weed species in designated higher profile areas such as urban freeway corridors and at interchanges or when they are growing alongside designated noxious weed species and control is incidental.

### **Nuisance Vegetation Control**

**Work Operations: 1611, 1612, 1613**

**HATS Forms: 4 sub-forms under Noxious Weed Control/Priority – Nuisance Vegetation Control/Spray, Nuisance Vegetation Control/Mechanical, Nuisance Vegetation Control/Manual, and Nuisance Vegetation Control/Cultural**

#### Total Units of Planned Treatment

- Approximately **150 acres** will be treated with herbicides for nuisance weed control.

#### Locations of Planned Treatments

- SR 261 MP 15.5-16.0 Mowing Rye grass with establishment of Native grasses
- The only other treatments of nuisance weeds in this area will be incidental to control of designated noxious weed species, where nuisance weeds occur in the same vicinity.

#### Treatment Methods and Timing

- Mowing on 261 will occur just prior to seed set on the rye grass
- Herbicide treatments generally occur in the early part of the summer, or when weeds are starting to flower.

***Weed Species Required for Control***

Noxious weed control is defined by state law in RCW 17.10. Species present on WSDOT right of way in Eastern Region Area 2 are listed below, and infestation locations will be mapped in HATS over the coming year.

There are no Class A weeds known to exist on WSDOT right of way in the area. Class B and C weeds designated by the County Noxious Weed Control Boards are. Species designated in Adams, Spokane, Whitman and Franklin Counties 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*)

**Spokane County**

- Blueweed (*Echium vulgare*)
- Buffalobur (*Solanum rostratum*)
- Bugloss, Common (*Anchusa officinalis*)
- Common catsear (*Hypochaeris radicata*)
- Dalmatian Toadflax, (*Linaria dalmatica spp dalmatica*)
- Dyers woad (*Isatis tinctoria*)
- Garlic Mustard (*Alliaria petiolata*)
- Giant Hogweed (*Heracleum mantegazzianum*)
- Gorse (*Ulex europaeus*)
- Hawkweed, Mouseear (*Hieracium pilosella*)
- Hawkweed, Orange (*Hieracium aurantiacum*)
- Hawkweed, yellow (*Hieracium caespitosum*)
- Hoary Cress (*Cardaria draba*)

## Appendix A

## County Noxious Weed Designations

- Johnsongrass (*Sorghum halepense*)
- Knapweed, bighead (*Centaurea macrocephala*)
- Knapweed, Diffuse (*centaurea diffusa*)
- Knapweed, Meadow (*Centaurea jacea x nigra*)
- Knapweed, Russian (*Acroptilon repens*)
- Knapweed, Spotted (*Centaurea biebersteinii*)
- Knapweed, Vochin (*Centaurea nigrscens*)
- Kochia, (*Kochia scoparia*)
- Meadow clary (*Salvia pratensis*)
- Mediterranean Sage (*Salvia aethiopsis*)
- Oxeye Daisy, (*Leucanthemum vulgare*)
- Policeman's Helmet (*Impatiens glandulifera*)
- Purple Loosestrife, (*Lythrum salicaria*)
- Rush Skeletonweed, (*Chondrilla juncea*)
- Scotch Broom (*Cytisus scoparius*)
- Silverleaf Nightshade (*Solanum elaeagnifolium*)
- Spurge, Leafy (*Euphorbia esula*)
- Tansy Ragwort (*Senecio jacobaea*)
- Thistle, Musk (*Carduus nutans*)
- Thistle, Scotch (*Onopordum acanthium*)
- Thistle, Plumeless (*Carduus acanthoides*)
- Velvetleaf (*Abutilon theophrasti*)
- Wild Carrot, (*Daucus carota*)
- Wild Chervil (*Anthriscus sylvestris*)
- Wild four o'clock (*Mirabilis nyctaginea*)
- Yellow Starthistle, (*Centaurea solstitialis*)

### Whitman County

- Blueweed (*Echium vulgare*)
- Buffalobur (*Solanum rostratum*)
- Bugloss, Annual (*Anchusa arvensis*)
- Bugloss, Common (*Anchusa officinalis*)
- Camelthorn (*Alhagi maurorum*)
- Common catsear (*Hypochaeris radicata*)
- Common cordgrass (*Spartina anglica*)
- Dalmatian Toadflax, (*Linaria dalmatica spp dalmatica*)
- Dyers woad (*Isatis tinctoria*)
- Garlic Mustard (*Alliaria petiolata*)
- Giant Hogweed (*Heracleum mantegazzianum*)
- Gorse (*Ulex europaeus*)
- Hawkweed, Mouseear (*Hieracium pilosella*)
- Hawkweed, Orange (*Hieracium aurantiacum*)
- Hawkweed, Polar (*Hieracium atratum*)
- Hawkweed, Smooth (*Hieracium laevigatum*)
- Hawkweed, yellow (*Hieracium caespitosum*)
- Herb Robert (*Geranium robertianum*)
- Hoary Alyssum (*Berteroa incana*)
- Indgobush (*Amprpha fruticosa*)
- Johnsongrass (*Sorghum halepense*)
- Knapweed, Bighead (*Centaurea macrocephala*)
- Knapweed, Brown (*Amorpha fruticosa*)
- Knapweed, Diffuse (*centaurea diffusa*)
- Knapweed, Meadow (*Centaurea jacea x nigra*)

## Appendix A

## County Noxious Weed Designations

- Knapweed, Russian (*Acroptilon repens*)
- Knapweed, Spotted (*Centaurea biebersteinii*)
- Knapweed, Vochin (*Centaurea nigrescens*)
- Longspine Sandbur (*Cenchrus longispinus*)
- Meadow clary (*Salvia pratensis*)
- Mediterranean Sage (*Salvia aethiopsis*)
- Oxeye Daisy, (*Leucanthemum vulgare*)
- Purple Loosestrife, (*Lythrum salicaria*)
- Perennial Pepperweed (*Lepidium latifolium*)
- Perennial Sowthistle (*Sonchus arvensis ssp.*
- Policeman's Helmet (*Impatiens glandulifera*)
- Rush Skeletonweed, (*Chondrilla juncea*)
- Scotch Broom (*Cytisus scoparius*)
- Silverleaf Nightshade (*Solanum elaeagnifolium*)
- Spurge, Leafy (*Euphorbia esula*)
- Sulfur Cinquefoil (*Potentilla recta*)
- Swainson's pea (*Sphaerophysa salsula*)
- Tansy Ragwort (*Senecio jacobaea*)
- Thistle, Milk (*Silybum marianum*)
- Thistle, Musk (*Carduus nutans*)
- Thistle, Plumeless (*Carduus acanthoides*)
- Thistle, Scotch (*Onopordum acanthium*)
- Velvetleaf (*Abutilon theophrasti*)
- Wild Carrot, (*Daucus carota*)
- Wild Chervil (*Anthriscus sylvestris*)
- Wild four o'clock (*Mirabilis nyctaginea*)
- Yellow Starthistle, (*Centaurea solstitialis*)

### Franklin County .

- Blueweed (*Echium vulgare*)
- Buffalobur (*Solanum rostratum*)
- Bugloss, Common (*Anchusa officinalis*)
- Camelthorn (*Alhagi maurorum*)
- Cereal rye (*Secale cereale*)
- Common catsear (*Hypochaeris radicata*)
- Common fennel (*Foeniculum vulgare*)
- Dyers woad (*Isatis tinctoria*)
- Hawkweed, Orange (*Hieracium aurantiacum*)
- Hawkweed, European (*Hieracium sabaudum*)
- Herb Robert (*Geranium robertianum*)
- 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*)
- Kochia (*Kochia scoparia*)
- Leafy Spurge (*Euphorbia esula*)
- Oxeye Daisy (*Leucanthemum vulgare*)
- Perennial Pepperweed (*Lepidium latifolium*)
- Perennial Sowthistle (*Sonchus arvensis ssp. Arvensis*)
- Policeman's Helmet (*Impatiens glandulifera*)

## **Appendix A**

## **County Noxious Weed Designations**

- Rush Skeletonweed (*Chondrilla juncea*)
- Scotch Broom (*Cytisus scoparius*)
- Spiny cocklebur (*Xanthium spinosum*)
- Sulfur Cinquefoil (*Potentilla recta*)
- Swainsonspea (*Sphaerophysa salsula*)
- Tansy Ragwort (*Senecio jacobaea*)
- Thistle, Plumeless (*Carduus acanthoides*)
- Thistle, Musk (*Carduus nutans*)
- Thistle, Scotch (*Onopordum acanthium*)
- Toadflax, Dalmatian (*Linaria dalmatica*)
- White Bryony (*Bryonia alba*)
- Wild Carrot (*Daucus carota*)
- Wild four o'clock (*Mirabilis nyctaginea*)
- Yellow Starthistle (*Centaurea solstitialis*)

ER Region Area 2 - IVM Prescriptions

**Bare-Ground Prescriptions**

**Zone 1 Maintenance - General Bare-ground (Planned for use in 2016)**

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Where needed on gravel shoulder or guardrail sections	1-3' area free of vegetation	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Non-selective residual herbicide Esplanade @ 5 oz. RU Pro Conc @ 32 oz./Perspec @ 8 oz. <b>No Spray Within 60' of Water</b>	Spring March/April	Monitor

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

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Where needed on gravel shoulder or guardrail sections	1-3' area free of vegetation	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Non-selective residual herbicide Esplanade @ 7 oz., Opensite @ 3 oz. RU Pro Conc @ 32 oz. Sulfomet @ 3 oz. <b>No Spray Within 60' of Water</b>	Spring March/April	Monitor

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

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

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

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Where needed on gravel shoulder or guardrail sections	1-3' area free of vegetation	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Non-selective residual herbicide Oust XP @ 3 ozd Portfolio 4F @ 10 ozl <b>No Spray Within 60' of Water</b>	Spring March/April	Monitor

**Zone 1 Maintenance - Bare-ground (Option E)**

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Where needed on gravel shoulder or guardrail sections	1-3' area free of vegetation	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Non-selective residual herbicide Payload @ 12 ozl Oust XP @ 3 ozd <b>No 60' Buffer Limitations</b>	Spring March/April	Monitor

## ER Region Area 2 - IVM Prescriptions

### Noxious Weed Control

#### Chemical Control

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

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	Before seed	Reduce seed production listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Weedmaster @ 32 oz. Perspective @ 5 oz. Superspreader @ 32 oz per/100 <b>No Spray Within 60 of Water</b>	Early growing season	Repeat as necessary

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

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	4' to 6'	eradication and control of listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	E2 @32 oz. Tordon 22k @32 oz. Syl-Tac @ 5 oz. <b>No Spray Within 60 of Water</b>	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition.

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

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
All zones very low impact on grasses	Before seed	Reduce seed production listed noxious weeds. Limit damage to grasses	Spot/Band	Truck mounted injection sprayer	E2/Opensite @3 oz. Syl-Tac @ 5 oz. <b>No Spray Within 60 of Water</b>	Early growing season	Repeat as necessary

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

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	Before seed	Reduce seed production listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Vanquish @ 32 ozl Milestone @ 7 ozl Sup Spread 90 @ 32 ozl/100 gallons <b>No Buffer Limitations</b>	Early growing season	Repeat as necessary reduce weed competition.

## ER Region Area 2 - IVM Prescriptions

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

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
All zones	Before seed	Reduce seed production listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Perspective @ 4.75 ozd Sup Spread 90 @ 32 ozl/100 gallons  <b>No Buffer Limitations</b>	Early growing season	Repeat as necessary reduce weed competition.

### Noxious Weed Control - Dalmation Toadflax - Actively Growing or Soil Residual Application (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.	Tordon 22k @ 32 ozl <b>E2 @ 32 oz.</b> Syl-Tac @ 20 oz/100 gal  <b>No Spray Within 60 of Water</b>	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition

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

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	Macinus Jenthus  <b>No Buffer Limitations</b>	Spring	Monitor and repeat or redeploy as needed

### Noxious Weed Control - Rush Skeletonweed - Rosette Stage (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.	Tordon 22k @ 32 ozl Syl-Tac @ 20 oz/100 gal <b>No Spray Within 60 of Water</b>	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition.

### Noxious Weed Control - Rush Skeletonweed - Bolting/Flowering Stage (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.	<b>Tordon @ 32 oz./ E2 @ 32 oz.</b> Syl-Tac @ 20 oz/100 gal <b>No Spray Within 60 of Water</b>	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition.

# Appendix B

# IVM Prescription

## ER Region Area 2 - IVM Prescriptions

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

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 VM @ 7 ozl Syl-Tac @ 20 oz/100 gal <a href="#">No Buffer Limitations</a>	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition.

### Noxious Weed Control - Thistles/Knapweeds - Bolting/Flowering Stage (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.	<del>Curtail @ 32 oz/Tordon @ 32.oz</del> Syl-Tac @ 20 oz/100 gal <a href="#">No Buffer Limitations</a>	Spring or Fall	Reapply as necessary. Seed and fertilize to reduce weed competition.

### Noxious Weed Control - Diffuse Knapweed (Biological Control) (B)

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	Larinus minutus  <a href="#">No Buffer Limitations</a>	Spring	Monitor and repeat or redeploy as needed

### Noxious Weed Control - Yellow Starthistle - Bolting/Flowering Stage (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.	<del>Weedmaster @ 32 oz/Tordon@ 32 oz</del> Syl-Tac @ 20 oz/100 gal <a href="#">No Buffer Limitations</a>	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition.

### Noxious Weed Control - Rush Skeletonweed - Biological Control (B)

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	Eustenopus villosus  <a href="#">No Buffer Limitations</a>	Spring Summer	Monitor and repeat or redeploy as needed

# Appendix B

# IVM Prescription

## ER Region Area 2 - IVM Prescriptions

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

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Revegetation Site	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	Boom or boomless Broadcast application	Buctril @ 20 ozl or generic equivalent Super Spread 90 @ 32 oz/100 gallons <b>No Spray Within 60 of Water</b>	Early growing season	Reapply with Vista after grass reaches 2nd leaf stage

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

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Revegetation Site	When weeds appear After 2nd leaf break on desirable grass	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	Boom or boomless Broadcast application	Buctril @ 20 ozl or generic equivalent Vista @ 12 ozl Vanquish @ 4 ozl Super Spread 90 @ 32 oz/100 gallons <b>No Spray Within 60 of Water</b>	Early growing season	Reapply as necessary.

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

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Revegetation Site	Apply immediately after fall planting for residual control of cheatgrass	eradication and control of listed noxious weeds.	broadcast application selective pre-emergence herbicide application	Boom or boomless Broadcast application	Milestone @ 7 ozl Super Spread 90 @ 32 oz/100 gallons <b>No Buffer Limitations</b>	Fall	Reapply as necessary.

## 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 <b>No Buffer Limitations</b>	Late fall	Repeat as necessary

### Noxious Weed Control - **Scotch Thistle** (Mechanical)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	2' to 6'	eradication	with herbicide 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

# Appendix B

# IVM Prescription

## ER Region Area 2 - IVM Prescriptions

all zones	flowering	Reduce/control host plant	Biological	None	<b>Larinus minutus</b> No Buffer Limitations	Spring Summer	Monitor and repeat or redeploy as needed
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### 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	<b>Eustenopus villosus</b> 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	<b>Agonopterix alstroemeriana</b> No Buffer Limitations	Spring Summer	Monitor and repeat or redeploy as needed

### Noxious Weed Control - **Dalmation 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	<b>Macinus Jenthus</b> No Buffer Limitations	Spring Summer	Monitor and repeat or redeploy as needed

**ER Region Area 2- IVM Prescriptions**

**Tree and Brush Control**

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

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		Seed and fertilize or plant to establish low growing 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"> <li>1) Limit noxious weed seed production</li> <li>2) Improve roadside vegetation</li> <li>3) Control of annual weeds</li> <li>5) Improve conditions for desirable species</li> </ol>	Mow single pass at 10-12 inches Height	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"> <li>1) Communicate goals with operator prior to undertaking operation</li> <li>2) Inspect after operation is complete to ensure target species are controlled and seeds have not developed</li> </ol>

**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"> <li>1) Limit noxious weed seed production</li> <li>2) Improve roadside vegetation</li> <li>3) Control of annual weeds</li> <li>4) eliminate potential risk of herbicide application.</li> <li>5) Improve conditions for desirable species</li> </ol>	Mow single pass at 10-12 inches Height	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"> <li>1) Communicate goals with operator prior to undertaking operation</li> <li>2) Inspect after operation is complete to ensure target species are controlled and seeds have not developed</li> </ol>

**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"> <li>1) Improve sight distance for safety</li> <li>2) Incidental control of annual noxious weeds</li> <li>3) Incidental control of seed production</li> <li>5) Improve conditions for desirable species</li> </ol>	Mow single pass at 10-12 inches Height	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"> <li>1) Communicate goals with operator prior to undertaking operation</li> <li>2) Monitor area for regrowth and adequate sight distance</li> <li>3) re-mow as necessary to provide safe sight distance</li> </ol>

**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"> <li>1) Remove old vegetation debris in order to control emerging weeds</li> <li>2) Remove old vegetation debris that may be restricting desirable grasses</li> <li>3) Improve conditions for desirable species</li> </ol>	Mow single pass at 10-12 inches Height	mower, attenuator	Mowing should take place late fall/winter after grass is dormant	<ol style="list-style-type: none"> <li>1) Communicate goals with operator prior to undertaking operation</li> </ol>

**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"> <li>1) Reduce weed pressure</li> <li>2) Improve roadside vegetation</li> <li>3) Eliminate weed seed source</li> </ol>	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"> <li>1) Communicate goals with operator prior to undertaking operation</li> <li>2) Inspect after operation is complete to ensure target species are controlled</li> </ol>