



# South Central Region, Area 3

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# Integrated Roadside Vegetation Management Plan

2020



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

## ***Introduction***

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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 and a number of 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, employee 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 3 for the 2020 growing season. It identifies priority locations and prescribes treatments for accomplishing safety and weed control objectives through a combination of integrated, seasonally-timed 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.

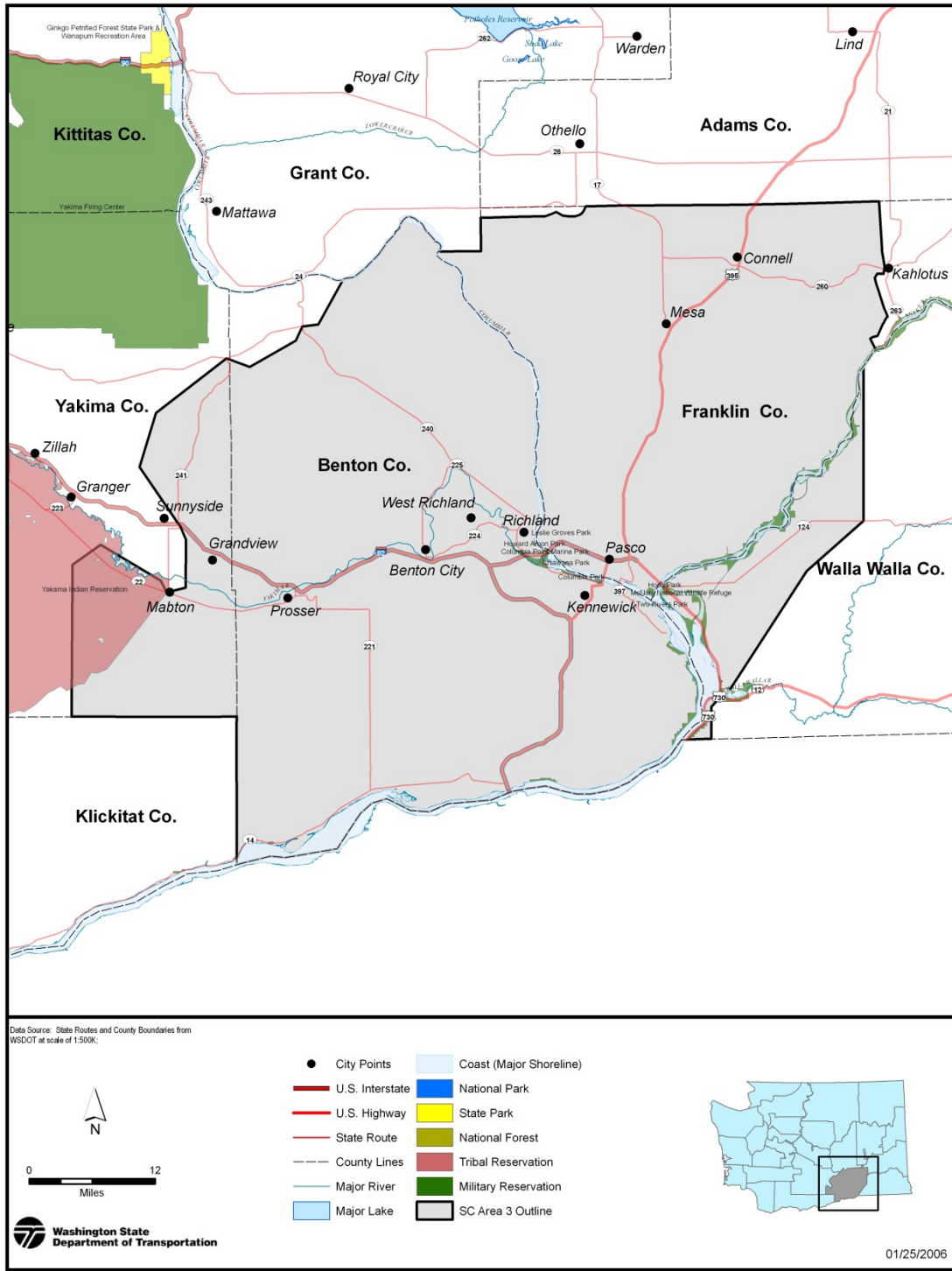
The information contained in this plan document can be geographically referenced by crews in the field using iPads and the Highway Activity Tracking System (HATS). Accomplishments and results will also be tracked geographically through this new system, providing site specific reference of historic actions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

This year's plan also takes into account the fact that virtually all highway maintenance work was put on hold in response to the COVID-19 pandemic from the end of March through the end of May 2020. All 2020 IRVM plans have been adjusted to compensate for the backlog of weed control and shoulder maintenance work resulting from response to this global emergency.

WSDOT welcomes input from local public and private entities on its weed control and vegetation management activities. Wherever appropriate the agency is looking for opportunities to plan, cooperate, and partner with others in managing the roadside. Please direct any questions, comments or suggestions to the South Central Region Area 3 Superintendent – Kara Shute, or the State's Roadside Asset Manager – Ray Willard.

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**South Central Region Area 3 – Vicinity Map  
Figure 1**

## ***South Central Region Area 3 IVM Work Plan – 2020***

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The section outlines the overall approach and geographic distribution of roadside vegetation management requirements throughout the maintenance area in 2020. Information is organized in relation to the four major groups defined in the WSDOT Maintenance Accountability Program (MAP) for the performance of roadside vegetation maintenance activities: **Control of Vegetative Obstructions, Noxious Weed Control, Nuisance Vegetation Control, and Landscape Maintenance**. 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 the overall roadside maintenance needs. Vegetation management objectives and measured work activities in this category fall into four groups – **Pavement Edge Maintenance/Zone 1, Safety 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: Spray Zone 1**

**HATS Map Layer: Reference lines – Roadside Features/Spray Zone 1 Reference**

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

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

- Apply approximately **650 acres** of herbicide treatment to road shoulders throughout the area.

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

- Planned treatment sites are mapped in HATS map layer – **Zone 1 Spray** (under development)
- Approximately one third of the shoulders in the area are maintained to be vegetation free, other shoulders are maintained as low growing vegetation up to the edge of pavement.
- A separate mixture of herbicides will be applied in areas with environmental or agricultural sensitivities in the following locations:
  - SR 225 mp 3 - 5.67
  - SR 225 mp 0-0.1 Benton City roundabout
  - SR 14 mp 158.2-158.9, mp161.9-162, and 167.75- 167.95
  - SR 12 mp 299.36-300.74
  - SR 12 mp305.94-306.04

#### **Treatment Methods**

- For typical applications, spray equipment will be calibrated to deliver a 4 ft. band of spray on a flat surface adjacent to the spray truck for all shoulder where no hardware is present. For treatment around guardrail base and where wider bare ground is required, additional nozzles may be activated to deliver between a 5 and 18 ft. band on a flat surface adjacent to the truck.
- Application width around the base of hardware shall extend 1 to 2 ft. beyond the back of the hardware.

- Actual width of treatment on shoulders may vary depending on the steepness of the slope away from pavement.
- All noted locations will be treated in mid to late spring with the following mixture of herbicides and adjuvants:
- In most locations application will be made in the spring with the following mix of pre-blended herbicides:
  - Blend #5**
    - Method 240SL @ 12.64 oz./acre
    - Esplanade @ 5 oz./acre
    - Roundup-Pro Conc. @ 16 oz./acre
    - Escort XP @ 1.5 oz./ acre
  - Blend #10**
    - Frequency @ 8 oz./acre
    - Roundup-Pro Conc. @ 51 oz./acre
    - Telar @ 2 oz./ acre
- Sensitive areas:
  - Payload @ 10 ozd/acre
  - Landmark XP @ 5 ozd/acre
  - Polaris @ 24 ozl/acre
  - In-Place @ 8 ozl/acre

### **Safety Mowing/Zone 2**

**Work Operation: 1625**

**HATS Form: Mowing Zone 2**

**HATS Map Layer: Reference lines – Roadside Features/Mowing Zone 2 Reference**

This work includes routine mechanical cutting of all vegetation on the road shoulder in a band width immediately adjacent to pavement. Mowing is necessary in areas where 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. Mowing height for these operations is typically 6 to 8 inches above the ground.

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

- Approximately **66 acres** of shoulder mowing is planned throughout the area.

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

- Locations that will be mowed one pass are mapped in HATS map layer – **Zone 2 Mowing** (under development)
- Locations that typically get mowed once per year include:
  - I-82 MP 69-82
  - SR225 3-4.5
  - SR225 7-11
  - SR14 152-180
  - I-182 MP 2.70-10.68
  - SR240 39.05-42.57
  - SR395 24.13-37.49
  - SR395 14.93-19.95

#### **Treatment Methods**

- Mowing will be conducted with tractor mounted mowing deck or side arm booms.
- Mowing widths vary between 5 ft. and 15 ft. depending on equipment used and shoulder configuration.

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

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

## **HATS Forms: Tree/Brush Control – Spray, Trimming Mechanical, Trimming Manual, and Mowing**

### **HATS Map Layer: None**

This includes safety and traffic operations related vegetation obstructions in Zone 2, such as periodic side-trimming or removal of brush and trees or tree branches encroaching on or overhanging traffic operations, and impacting sign visibility. Also included is work in Zone 2 and 3 when selectively controlling emergent early succession tree species – to prevent them from growing into mature hazard trees within striking distance of the road.

#### Total Units of Planned Treatment

- Approximately **50 acres** per year will be mechanically trimmed to reduce the height of native brush species in Zone 2, with a goal of addressing all areas with this type of growth once every 3 to 4 years.

#### Locations of Planned Treatments

- Roadside locations with this type of growth at the edge of pavement include:
  - SR 022 mile post 27.5 to 28.6 north side of the road.
  - SR225 mp 3-5
  - Prosser will be getting you their mowing plan.

#### Treatment Methods

- The goal in locations where trimming sage brush is not to remove the native species, but to reduce their height along the edge of pavement. The areas addressed will be trimmed with tractor mounted boom mowers to a height of approximately 12 inches. The width of trimming will typically be one pass equivalent to the width of the mowing deck.
- Method of treatment will be mowing with arm mower.
- Manual trimming frill and/or cut stump treatment.

## **Hazard Tree Removal/Zone 3**

### **Work Operation: 1628**

## **HATS Forms: Hazard Tree Removal – Individual Tree Removal, Stand Removal, and Cleanup Fallen Trees**

### **HATS Map Layer: None**

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 mature trees identified as a potential imminent threat will be further evaluated and removed as soon as possible where needed. This work also includes removal of trees and large limbs blown down from “non-disaster” events.

#### Total Units of Planned Treatment

- Minimal hazard tree removal is necessary in this maintenance area.

#### Locations of Planned Treatments

- No planned hazard tree removal in 2020

## **Noxious Weed Control – 3A2**

This group of activities is focused on control of weed species and infestation locations identified in this plan document. The focus is on species that are legally designated by state and county regulations for required control by all property owners, along with any other identified and agreed upon species/locations that pose a unique threat to the roadside or surrounding environment if not controlled. Work under this 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 treatment sites on state highways.

WSDOT employs three distinct strategies in planning and executing noxious weed control efforts. Any and all Class A species that occur on the right of way are treated as **Priority Noxious Weed Control**, and all maintenance actions are planned and tracked as individual, multi-year treatment sites. **General Noxious Weed Control** is planned and executed in one of two ways: 1.) Area-wide patrol and control operations are made in the early summer with a goal of spraying or pulling all visible target species prior to seed-set, and 2.) Early and late season treatments are planned for a set of prioritized and mapped infestation points where the goal is early detection/rapid response/eradication.

**Priority Noxious Weed Control**

**Work Operations: 1616, 1618, 1641, 1699**

**HATS Point Feature-based Forms: Priority Infestation**

**HATS Map Layer: Feature points – Roadside Features/Noxious Weed Control Priority**

These operations are directed at locations where Class A noxious weed species are present on the right of way and state law requires complete eradication. Site specific integrated treatment plans are developed for each identified location/species, and all control activities are recorded as point feature data in HATS. Ongoing operations will combine field monitoring and a mixture of seasonally timed treatment methods over a series of years. Sites must also be monitored for 3 to 5 years after control to check for grow back.

Species and Locations

- No Class A species are known to existing in SC Region Area 3 at this time.

Locations of Planned Treatments

- If infestations are discovered, they will be recorded as features in HATS layer – **Noxious Weed Control Priority** for species location and distribution.

**General Noxious Weed Control**

**Work Operations: 1616, 1618, 1699, 1641**

**HATS Form: Noxious Weed Control General – Noxious Weed Control-Spray, Noxious Weed Control-Mechanical, Noxious Weed Control-Manual, and Noxious Weed Control-Biological**

**HATS Map Layer: Reference points – Roadside Features/Noxious Weed Control General (Under Development)**

These operations are timed and carried out throughout the season to prevent the spread of designated noxious weed species, and to reduce or eliminate populations wherever possible. Integrated treatments as described in the table below, are planned to address infestations through 1.) seasonally timed treatments of identified priority sites, or 2.) during late spring/early summer section patrols to treat all visible target weed species. Successful plans are consistently implemented over a series of years and annually adjusted as necessary based on field observations. Care is taken in all cases to avoid damage to surrounding desirable/native vegetation.

Target Species on WSDOT Right of Way in South Central Region Area 3

<b><i>Common Name/Botanical Name</i></b>	<b><i>Treatment Notes</i></b>
Buffalobur ( <i>Solanum rostratum</i> )	Control where visible in conjunction with summer seasonal patrols
Bugloss, annual ( <i>Anchusa arvensis</i> )	Control where visible in conjunction with summer seasonal patrols

<b>Common Name/Botanical Name</b>	<b>Treatment Notes</b>
Cereal rye ( <i>Secale cereal</i> )	Not controlled except where mapped for planned treatment due to neighboring agricultural interests
Common Mullen ( <i>Verbascum thapsus</i> )	Control where visible in conjunction with summer seasonal patrols
Common reed ( <i>Phragmites australis</i> )	Target sites mapped and treated in early spring
Common St. Johnswort ( <i>Hypericum perforatum</i> )	Control where visible in conjunction with summer seasonal patrols
Dalmatian toadflax ( <i>Linaria dalmatica</i> )	Target sites mapped and treated in early spring, sites are monitored and retreated in the fall if there is any grow back
Knotweed sp. ( <i>Polygonum sp.</i> )	Target sites mapped and treated in the fall
Hoary cress ( <i>Cardaria draba</i> )	Target sites mapped and treated in early spring
Houndstongue ( <i>Cynoglossum officinale</i> )	Control where visible in conjunction with summer seasonal patrols
Knapweed sp. ( <i>Centaurea sp.</i> )	Control where visible in conjunction with summer seasonal patrols
Knapweed, Russian ( <i>Acroptilon repens</i> )	When present in large, well established patches in Zone 3, control only as described under Nuisance Vegetation Management/ Zone 3. When present in small patches or isolated plants, control where visible in conjunction with summer seasonal patrols
Kochia ( <i>Kochia scoparia</i> )	When present in large, well established patches in Zone 3, control only as described under Nuisance Vegetation Management/ Zone 3. When present in small patches or isolated plants, control where visible in conjunction with summer seasonal patrols
Longspine sandbur ( <i>Cenchrus longispinus</i> )	Monitor only, no infestations are currently known to exist in the area
Loosestrife, purple ( <i>Lythrum salicaria</i> )	Target sites mapped and treated at early flower stage in summer
Perennial pepperweed ( <i>Lepidium latifolium</i> )	Control where visible in conjunction with summer seasonal patrols
Poison hemlock ( <i>Conium maculatum</i> )	Target sites mapped and treated in early spring
Puncturevine ( <i>Tribulus terrestris</i> )	Target sites mapped and treated in early spring
Rush skeletonweed ( <i>Chondrilla juncea</i> )	Target sites mapped and treated in early spring, sites are monitored and retreated in the fall if there is any grow back
Saltcedar ( <i>Tamarix ramosissima</i> )	Not typically found on the right of way, any plants that appear will be controlled
Spikeweed ( <i>Hemizonia pungens</i> )	Present on the east end of the area. Control where visible in conjunction with summer seasonal patrols.
Tansy ragwort ( <i>Senecio jacobaea</i> )	Control where visible in conjunction with summer seasonal patrols
Teasel ( <i>Dipsacus sylvestris</i> )	Control where visible in conjunction with summer seasonal patrols
Thistle, bull ( <i>Cirsium vulgare</i> )	Control where visible in conjunction with summer seasonal patrols
Thistle, Canada ( <i>Cirsium arvense</i> )	Control where visible in conjunction with summer seasonal patrols
Thistle, Scotch ( <i>Onopordum acanthium</i> )	Control where visible in conjunction with summer seasonal patrols



<b>Common Name/Botanical Name</b>	<b>Treatment Notes</b>
Yellow nutsedge ( <i>Cyperus esculentus</i> )	Target sites mapped and treated in early spring, sites are monitored and retreated in the fall if there is any grow back
Yellow starthistle ( <i>Centaurea solstitialis</i> )	Control where visible in conjunction with summer seasonal patrols

Total Units of Planned Treatment

- Approximately **400 acres** will be treated with herbicides.
- Minor amounts of hand pulling will be conducted incidental to other activities.
- Approximately **350 acres** will be mowed to prevent seed production on larger, established infestations.

Locations of Planned Treatments

- Planned treatment areas and species as described in the table above are identified in collaboration with the Lewis County Noxious Weed Board and mapped in the HATS map layer – **Noxious Weed Control General**.

Treatment Methods and Timing

- As described in the table above, treatments of species and locations takes place in three time windows throughout the growing season. Herbicide mixtures used within each window are prescribed as follows:

**Early Season Targets. February-April**

- Milestone @ 5oz/acre  
Spreader 90 @ 32ozl/100g

**Mid-Season Targets**

- Milestone @ 5oz/acre  
Spreader 90 @ 32ozl/100g

**Late Season Targets**

- Milestone @ 5oz/acre  
Spreader 90 @ 32ozl/100g

**Nuisance Vegetation Control – 3A3**

Nuisance vegetation control takes place only in a select set of carefully prioritized locations throughout the area. These locations are delineated on maps in HATS as polygon outlines in Zone 3. Locations are prioritized to take place where there is heightened local interest in the visual appearance and condition of the roadside vegetation. Typical locations include: wider areas along limited access freeways in urban and suburban areas, freeway interchanges for local urban centers, environmentally sensitive areas, and areas where neighbors are willing to partner with WSDOT on management efforts. Because nuisance weed control activities are not related to safety or legal requirements, and are primarily undertaken to improve the visual appearance of the roadside, they are considered the last priority vegetation management needs.

For all areas designated to receive Nuisance Vegetation Control, multi-year treatment plans have been developed. The actions contained in these plans will be executed and tracked in relation to specific Zone 3 polygons for **Nuisance Vegetation Control Zone 3**, referenced on HATS maps and described below.

Nuisance Vegetation Control

**Work Operations: 1611, 1612, 1641, 1699**

**HATS Feature-based Forms: Herbicide Application, Manual/Mechanical, Biological, and Seed/Fertilize/Mulch**

**HATS Map Layer: Feature polygons – Roadside Features/Nuisance Vegetation Control Zone 3**

Maintenance activities in each identified location are planned and tracked as multi-year treatment strategies utilizing monitoring and the most effective combination of control methods – with a goal of establishing desirable vegetation that requires only minimal maintenance. Undesirable species are identified and specifically targeted while care is taken 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. Successful plans are consistently implemented over a series of years and annually adjusted as necessary based on field observations.

#### Total Units of Planned Treatment

- Approximately **150 acres** will be treated with a combination of herbicides and mowing for nuisance weed control.
- Approximately **100 acres** will be mowed as part of IVM treatments.

#### Locations and Methods of Planned Treatments

- Reference HATS map layer – **Zone 3 Nuisance Vegetation Control**.
- Herbicides will not be used in any cases where there is potential for damage to neighboring agricultural interests.
- Locations and actions prioritized for nuisance weed control include:
  - SR 012 mile post 295 to 299 mowing with chemical applications to enhance the natural vegetation.
  - SR 182 milepost 0 to 10.7 mowing with chemical applications to enhance the natural vegetation.
  - SR 017 milepost 10 to 15 mowing with chemical applications to enhance the natural vegetation.
  - Exit 69 interchange to exit 82 interchange to include all kochia pockets on right shoulder and in Median. There is mowing done in front of some businesses for aesthetics and vision of products
- Herbicides used:
  - E2 @ 48 to 64oz./acre
  - Spreader 90 @ 16 oz./acre

### **Landscape Maintenance – 3A5**

Landscape maintenance work includes all vegetation management activities that take place on roadsides within areas designated as formal urban planting areas where the intention is to enhance the appearance of freeways through urban centers. For these roadsides the goal is to maintain healthy plantings in all three zones and to control all weeds. Planted vegetation is intended to be preserved and enhanced over time through pruning, hedging, trimming, and fertilization where necessary.

#### Landscape

**Work Operations: 1516, 1518, 1525, 1541, 1552, 1561, 1599**

**HATS Polygon Feature-based Form: Roadside Features/Landscape Maintenance**

**HATS Map Layer: Feature polygons – Roadside Features/Landscape Maintenance**

Landscape maintenance operations are only conducted in a limited number of locations as described below and mapped in HATS. Maintenance activities in each identified location are planned based on a multi-year treatment strategy. Treatment decisions are based on monitoring and the proven most effective combination of maintenance actions, to keep plantings (and lawns if present) looking healthy and trimmed throughout the year.

#### Total Units of Planned Treatment

- There are approximately **43 acres** of formally landscaped roadside.

#### Locations of Planned Treatments

- Reference HATS map layer – **Landscape Maintenance**.
- Locations of designate formal landscape include:

- SR395/SR240 Interchange
- SR395 Lewis St. Interchange
- SR395/SR182 Interchange
- Bare rock ground cover SR240 along Richland noise wall
- Bare rock ground cover SR395 through Kennewick
- US12/SR730, park at Wallula Junction
- Roundabouts – US12/SR124, SR240 and Steptoe, I-82 in Benton City

Treatment Methods and Timing

- Areas with permanent irrigation require annual winterization and startup of systems.
- Lawn at Wallula gets mowed weekly during the growing season.
- Areas maintained as vegetation-free rock for groundcover are treated annually with the following mixes of pre-emergent herbicides:

**Richland rock areas:**

**Blend #5**

- Method 240SL @ 12.64 oz./acre
- Esplanade @ 5 oz./acre
- Roundup-Pro Conc. @ 16 oz./acre
- Escort XP @ 1.5 oz./ acre

**Blend #10**

- Frequency @ 8 oz./acre
- Roundup-Pro Conc. @ 51 oz./acre
- Telar @ 2 oz./ acre

**Kennewick rock areas:**

- Casoron @ 150 lbs./acre
- Pendulum @128 oz/acre

