South Central Region, Area 2

Integrated Roadside Vegetation Management Plan

2019

Washington State Department of Transportation
Maintenance and Operations Division

Introduction

The Washington State Department of Transportation (WSDOT) South Central Region Area 2 manages approximately 680 miles of transportation corridor throughout Yakima, Kittitas, Benton and Lewis Counties. This right-of-way is part of the state highway system including I-82, US-12, US 97, SR 24, SR 821, as well as a number of other secondary state routes. A map of the area and roads maintained is included 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 South Central Region Area 2 for the 2019 growing season. It identifies priority locations and prescribes treatments for accomplishing safety and weed control objectives through the use of a combination of 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.

As of the 2019 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 geographically through this new system. 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.

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 South Central Region Area 2 Superintendent – Les Turnley, or the State's Roadside Asset Manager – Ray Willard.

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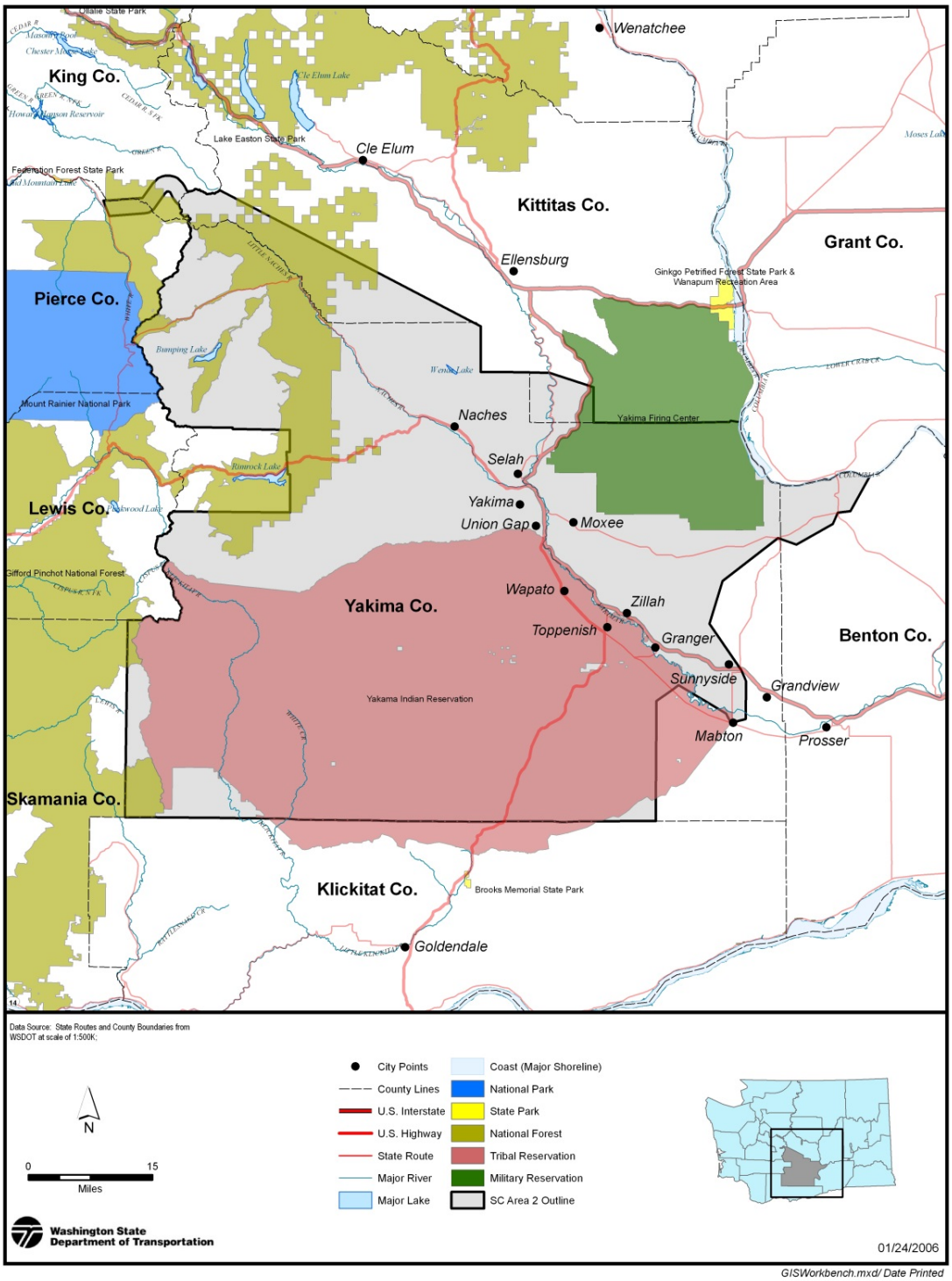

South Central Area 2 – Vicinity Map
Figure 1

The section outlines the overall approach and geographic distribution of roadside vegetation management requirements throughout the maintenance area in 2019. Information is organized in relation to four 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.

Safety

Safety of our employees, the traveling public, and the environment are WSDOT's highest priorities and key to our success. Our licensed applicators read the entire label before using products and use the products strictly in accordance with label precautionary statements and directions. WSDOT has implemented additional agency specific restrictions on some products, to minimize any risk to aquatic or terrestrial ecosystems. Applicators wear protective equipment applicable to the products being used and discuss product exposure procedures at a daily Pre Activity Safety Plan meeting. They inspect their calibrated equipment daily to ensure it is in proper working order. Herbicides are kept in locked storage facilities which are always kept in an organized and presentable condition. In addition to their morning safety meeting, the applicators hold brief tailgate meeting at the job site prior to work to address current and unforeseen circumstances.

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 work activities in this category fall into four groups – **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: Pesticide Application
HATS Map Layer: Reference lines – Roadside Features/Spray Zone 1 Reference

This work involves the annual 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 vegetation-free gravel shoulder adjacent to the pavement. 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 **450 acres** of herbicide treatment to road shoulders throughout the area.

Locations of Planned Treatments

- Planned treatment sites are being mapped in HATS layer – **Spray Zone 1 Reference**.
- Locations where bare ground treatments will be applied to all gravel shoulder sections include:
  Rimrock Section
  US 12: Up to the Wenatchee National Forest boundary at milepost 179: 4 feet application under all guardrail from milepost 179 to milepost 198.66.
  -Including 4 feet application to all intersections starting 100 feet prior to intersection, treating to right of way line, and then out to 100 feet past the intersection.

-Residual Application includes selective treatment of cracks in asphalt shoulder both directions on 4 lane freeway from milepost 190.79 to 198.66.

SR 410: Up to Wenatchee National Forest boundary at milepost 100: 4 feet under all guardrail from milepost 100 to milepost 116.37.
- Including 4 feet application to all intersections starting 100 feet prior to intersection, treating to right of way line, and then out to 100 feet past the intersection.

Toppenish Section

I-82: 4 feet application under all guardrail both directions from milepost 36.33 to milepost 69. Including a 4 foot Zone 1 application to both the shoulder and median, both directions from milepost 50 to milepost 69. No residual under median cable guardrail from milepost 37 to milepost 38.48 due to native grasses and shrubs.
Residual Application includes selective treatment of cracks in asphalt shoulder both directions on 4 lane freeway from milepost 36.33 to milepost to 69.

SR 22: 4 feet application under all guardrail both directions from milepost 0 to milepost 22.87. Including 4 feet application to all intersections starting 100 feet prior to intersection, treating to right of way line, and then out to 100 feet past the intersection.

SR 223: 4 feet application under all guardrail both directions from milepost 0 to milepost 3.81. Including 4 feet application to all intersections starting 100 feet prior to intersection, treating to right of way line, and then out to 100 feet past the intersection.

SR 241: 4 feet application under all guardrail both directions from milepost 0 to milepost 7.52. Including 4 feet application to all intersections starting 100 feet prior to intersection, treating to right of way line, and then out to 100 feet past the intersection.

US 97: 4 feet application under all guardrail and cable barrier both directions from milepost 33.22 to milepost 76.36. A 1 foot shot of residual will be made adjacent to the median jersey barrier both directions from milepost 61.54 to milepost 76.36
-Including 4 feet application to all intersections starting 100 feet prior to intersection, treating to right of way line, continuing out to100 feet past the intersection.
-Residual treatment includes all gravel bowls and islands at intersections on US 97 North from milepost 61.54 to milepost 74.74.

East Selah Section

I-82: 4 feet application under all guardrail both directions from milepost 15.03 to milepost 36.33. Including a 4 foot Zone 1 application to both the shoulder and median, both directions from milepost 29.06 to milepost 36.33.
- Residual Application includes selective treatment of cracks in asphalt shoulder both directions on 4 lane freeway from milepost 15.03 to milepost to 30.

US12: 4 feet application under all guardrail both directions from milepost 198.72 to milepost 202.75. Including 4 feet application to all intersections starting 100 feet prior to intersection, treating to right of way line, and then out to 100 feet past the intersection.

SR 24: 4 feet application under all guardrail both directions from milepost 0 to milepost 44. A 4 feet application will be made both directions to the roadside shoulder from milepost 0 to milepost 6.47. Including 4 feet application to all intersections starting 100 feet prior to intersection, treating to right of way line, and then out to 100 feet past the intersection.

SR 821: 4 feet application under all guardrail both directions from milepost 0 to milepost 12.95. Including 4 feet application to all intersections starting 100 feet prior to intersection, treating to right of way line, and then out to 100 feet past the intersection.

SR 823: 4 feet application under all guardrail both directions from milepost 0 to milepost 4.74. Including 4 feet application to all intersections starting 100 feet prior to intersection, treating to right of way line, and then out to 100 feet past the intersection.
-Selected gravel island locations around the Selah Interchange.

Selected Locations in Selah Section
US 12 & Gordon Road: Blanket bareground treatment to rock within fenced area.
I-82: Bareground treatment to selected Roadside and Landscape Areas at Interchanges on I-82 at Exits 29, 30, 31, 33, 34 and 36.

Locations within Area 2 where bare ground treatment extends across the entire median include:

- I-82 median through Yakima from milepost 29.34 to milepost 37.
- US 12 median from milepost 201.90 to milepost 202.11
- Entire width of median from milepost 198,08 (Suntides Intersection) to milepost 198.66 (Nelson Bridges).

White Pass Section
Section notes under development

Treatment Methods

- All noted locations will be treated in spring with one of the following mixture of herbicides and adjuvants.
- Herbicides are applied using a truck mounted power spray system calibrated to deliver a 4-foot band of spray mixture adjacent to the paved shoulder. The resulting width of treated shoulder may be wider than 4 feet in areas with steeper shoulder slope.
- If there is green up by the time Zone 1 applications are made, glyphosate products will be added at @ 48 or 64 ozl/acre.

  Mix 3:
  - Roundup Pro Concentrate @ 32 oz/acre
  - Diuron 4L @ 192 ozl/acre
  - Oust XP @ 3 oz/acre
  - Unfoamer
  - In-Place

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. In many cases this type of mowing is unnecessary if an adequate width of Zone 1 is present.

Total Units of Planned Mowing

- Approximately **700 acres** will be mowed annually

Locations of Planned Mowing

- US 12 Milepost 199-202.5
- SR 24 Milepost 0-6.47
- I-82 Milepost 31-38
- I-82 Milepost 50-69
- SR 410 throughout forested sections, and MP 69.2-76 on the upper end
- US 12, MP 166 to 190

Treatment Methods

- Mowing with 3 gang mower
- Mowing with arm mower in forested sections

Tree and Brush Control/Zone 2 and 3

Work Operations: 1622, 1625, 1626

HATS Forms: Pesticide Application (for spray applications,) and three sub-forms under Tree/Brush Control –Trimming Mechanical, Trimming Manual, and Mowing

HATS Map Layer: None

This includes safety and traffic operations related work 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 **100 acres** will be treated with mechanical trimming or mowing of seedlings.
- Less than **5 acres** will be treated with herbicides, stump treatment and some Garlon on willow.

Locations of Planned Treatments

- As needed where willow and other brush grows into Zone 2

Treatment Methods

- Spray late season for seedlings and light trimming on encroaching branches
    - Herbicides used:
        - Garlon 3A @ 128 ozl/acre
- Trimming manually with chain/pole saws, mowing unwanted seedlings with 3 gang or side arm mower.
- Cut stump surfaces will be treated with Garlon 3A daub 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 are further evaluated and removed as soon as possible if there is any indication of risk.

Total Units of Planned Treatment

- Up to **250** mature hazardous trees may be removed from the area each year.

Locations of Planned Treatments

- As identified throughout the year

Treatment Methods

- Chain saws, Chipper
- Timber is left to decompose on site wherever possible

Noxious Weed Control – 3A2

This group of activities includes control of non-native invasive weed species as defined by state law and individual county designation. This group of activities is second priority vegetation management work after safety related objectives have been addressed. While all Class A, B, and C noxious weed species as listed in RCW 17.10 are considered potential targets for WSDOT noxious weed control, the agency is currently not funded to achieve 100% control of all noxious weeds. Therefore, the top priorities for weed control are focused on locations and species that are more limited in distribution on the right of way – where there is a chance of successful eradication. To prioritize control of species that are already widespread in the area, WSDOT works with the local county noxious weed boards and coordinators, to annually review and determine which species and locations will be specifically targeted.

To prioritize, plan, and track noxious weed control, WSDOT maps and monitors weed infestations in three categories: **Priority**, **Planned Treatment**, and **General Reference**. **Priority** locations are where Class A noxious weed species exist on the right of way, and complete eradication is required by state law. **Planned Treatment** sites are locations where there are new, and/or limited distribution infestations of Class B and C noxious weed exist, and eradication is possible. **General Reference** sites are recorded for reference only to document the presence of noxious weed species which are more commonly occurring in the local area.

Noxious Weed Control

Work Operations: 1616, 1618, 1641, 1699

HATS Forms: Pesticide Application (for spray applications,) and three sub-forms under Noxious Weed Control General– Manual/Mechanical, Seed/Fertilize/Mulch, and Biological

HATS Map Layer: Reference Points – Roadside Features/Noxious Weed Control Priority, Noxious Weed Control Planned Treatment, and Noxious Weed Control General Reference

Operations are prescribed throughout the season to prevent the spread of any legally designated noxious weed species, and to reduce or eliminate populations wherever possible. Integrated treatment plans combine field monitoring and an integral mixture of seasonally timed control 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.

Target Species on WSDOT Right of Way in South Central Area 2:

Common Name/Botanical Name	***Treatment Notes***
Cereal rye *(Secale cereal)*	Talk to Yakima Weed Board

Common reed *(Phragmites australis)*	Target sites mapped and treated in the spring/summer
Hoary alyssum *(Berteroa incana)*	Target sites mapped and treated in the spring/summer
Houndstongue *Cynoglossum officinale)*	Target sites mapped and treated in the spring/summer
Knapweed sp. *(Centaurea sp.)*	Control where visible in conjunction with summer seasonal weed patrols. Priority treatment sites in specific counties will be mapped this year.
Knotweed, Japanese *(Polygonum cuspidatum)*	Has showed up on the right of way in the past, and was controlled. Any future occurrences will be mapped.
Loosestrife, purple *(Lythrum salicaria)*	Pops up in places but mostly controlled in the past. Any future occurrences will be mapped.
Rush Skeletonweed *(Chondrilla juncea)*	Target sites mapped and treated in the spring/summer
Scotch broom *(Cytisus scoparius)*	Only occurs on the west side of US 12. All visible plants are treated each year.
Spurge, myrtle *(Euphorbia myrsinites)*	Occurs on SR 410 MP 104, site will be mapped this year.
Tansy ragwort *(Senecio jacobaea)*	Only occurs on the west side of US 12. All visible plants are treated each year.
Thistle, Scotch *(Onopordum acanthium)*	Control where visible in conjunction with seasonal weed patrols. Priority treatment sites in specific counties are being mapped.
Yellow starthistle *(Centaurea solstitialis)*	Target sites mapped and treated in the spring/summer

Total Units of Planned Treatment

- Approximately **75 acres** will be treated with a mixture of herbicide treatments and other methods
- Approximately **10 acres** will be treated with mowing or hand pulling

Locations of Planned Treatments

- Locations for seasonally planned treatment sites are being mapped in HATS over the course of the 2019 season, including county weed board identified reoccurring “hot spots” and priority sites identified by the spray crews.

Treatment Methods and Timing

- As described in the table above, seasonally timed applications will be made with the following herbicide mixtures:

  Spring Season Targets
  - Milestone @ 5 oz/acre, Spreader 90 @ 32 oz/acre per 50 gallons carrier.
  - Perspective @ 5 oz/acre, Spreader 90 @ 32 oz/acre per 50 gallons carrier.

  Summer Season Targets
  - Milestone @ 5-7 oz/acre, Spreader 90 @ 32 oz/acre per 50 gallons carrier.
  - Perspective @ 5-8 oz/acre, Spreader 90 @ 32 oz/acre per 50 gallons carrier.
  - E2 @ 2-5 pts./acre, Spreader 90 @ 32 oz/acre per 50 gallons carrier.

  Fall Season Targets
  - Milestone @ 5-7 oz/acre, Spreader 90 @ 32 oz/acre per 50 gallons carrier.

- Perspective @ 2-5 oz/acre, Spreader 90 @ 32 oz/acre per 50 gallons carrier.

Nuisance Vegetation Control – 3A3

Nuisance vegetation control takes place only in a select set of carefully prioritized locations throughout the state, primarily along wider rights of way and interchanges on limited access highways. 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. 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. 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 **200 acres** will be treated with herbicides for nuisance weed control.

Locations of Planned Treatments

- Reference HATS layer – **Nuisance Vegetation Management**.

Treatment Methods and Timing

- Mowing along I-82 occurs in the fall and winter for control of Kochia and Russian thistle skeletons when time allows.
- Engage local partners, such as City and County Governments, local businesses, and bordering land owners to take interest and support our vegetation management program & policies. Propose agreements and shared cost strategies.

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 clean conditions and 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: 1513, 1516, 1518, 1525, 1541, 1552, 1561, 1599

HATS Forms: Pesticide Application (for all spray applications), and six sub-forms under Landscape – Weed Control/Manual, Weed Control/Mechanical, Pruning/Hedging/Edging, Seed/Mulch/Plant/Fertilize, Mowing Lawn, Irrigation System Operations & Maintenance, and Other Maintenance as Approved by Superintendent

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 **62 acres** of formally landscaped roadside.

Locations of Planned Treatments

- Reference HATS layer – **Landscape Maintenance**.
- Locations of designate formal landscape include:
    - US 12 in the vicinity of North 1st Street Interchange
    - Interstate 82 in the vicinity of North 1st Street Interchange
    - Interstate 82 in the vicinity of Yakima Avenue Interchange
    - Interstate 82 in the vicinity of Nob Hill Blvd. Interchange
    - Interstate 82 in the vicinity of Valley Mall Blvd. Interchange

Treatment Methods and Timing

- Fertilize turf, trees, and shrubs early spring.
- Casoron around trees and shrubs, early spring.
- Some areas treated with Zone 1 residual mix
- Mow turf April – October.
- Spray Roundup in turf areas around trees and borders to delineate from mowing activities; early spring and late summer if needed.
- Prune/trim trees and shrubs, late fall, winter, early spring or as needed.
- Maintain and perform necessary repairs to landscape irrigation system – April – October.