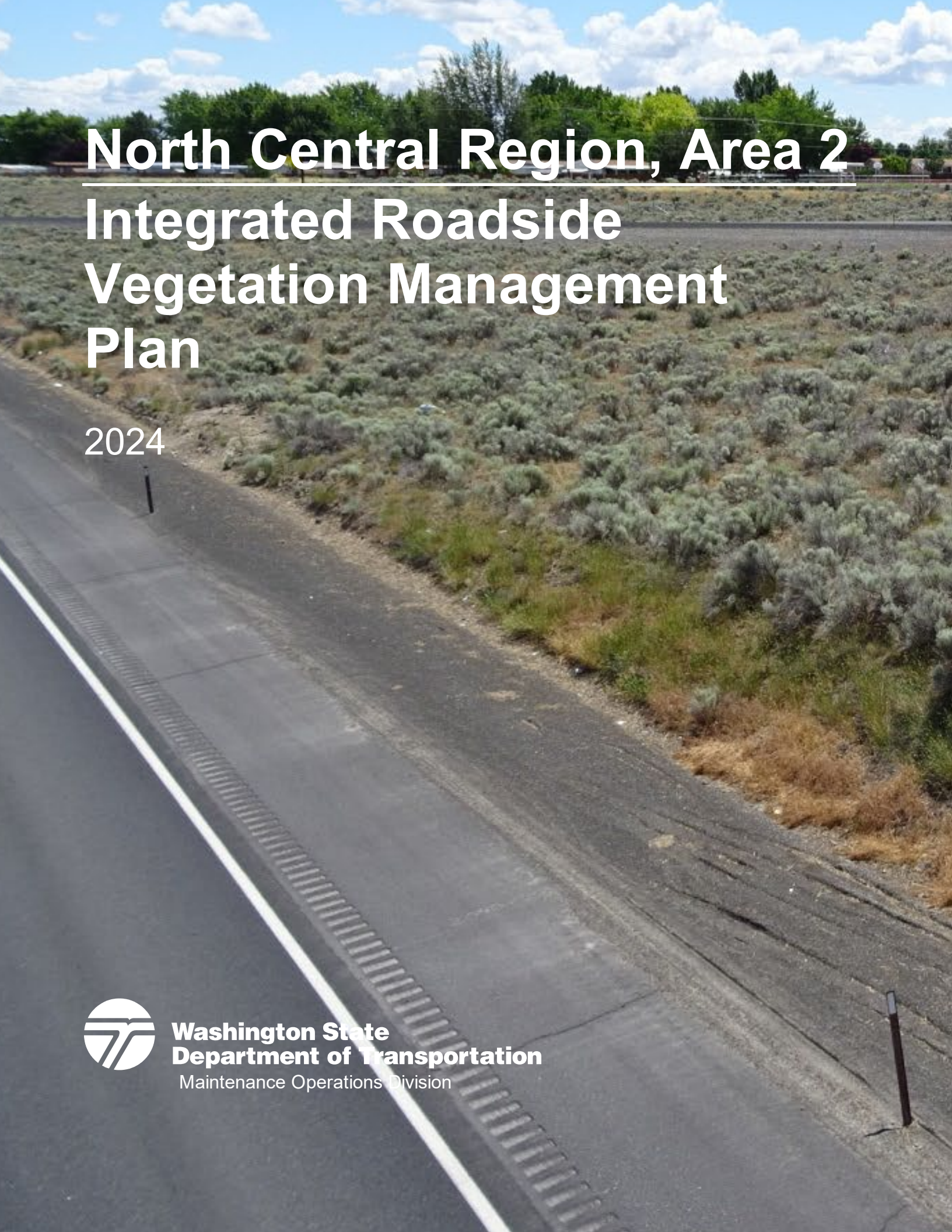

# North Central Region, Area 2

# Integrated Roadside Vegetation Management Plan

2024

Washington State Department of Transportation
Maintenance Operations Division

## *Introduction*

The Washington State Department of Transportation (WSDOT) North Central Region, Area 2 manages approximately **840 miles** of roadside right-of-way throughout Grant, Adams and Franklin counties. This right-of-way is part of the state highway system including Interstate 90, SR 17, 26, 24 as well as other state routes in the area. A map of state highways and routes in this 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.

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 over time. 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 roadside vegetation maintenance in North Central Region Area 2 in the heart of Washington State. It provides detailed treatment prescriptions and location data 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 efficiently maintain traffic safety and comply with weed control laws on all state roadsides, and working within budget, to invest in restoring a set of selected priority locations to a stable self-sustaining native condition. This plan also accounts for specific locations where maintenance tactics are adjusted due to environmental sensitivity, 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. The continued development of this system and the statewide geographic data set will greatly improve the agency's ability to properly execute planned actions, monitor and document results of treatments, and measure cost and results over time.

WSDOT welcomes input from local public and private entities and its weed control and other vegetation management activities. Wherever appropriate the agency is looking for opportunities to plan and cooperate with others in management of the roadside. Please direct any questions to North Central Region Area 2 Superintendent – Pat Kenyon, Area Supervisors – Mike Koehn, Gale Wilson, or State Roadside Asset Manager – Ray Willard

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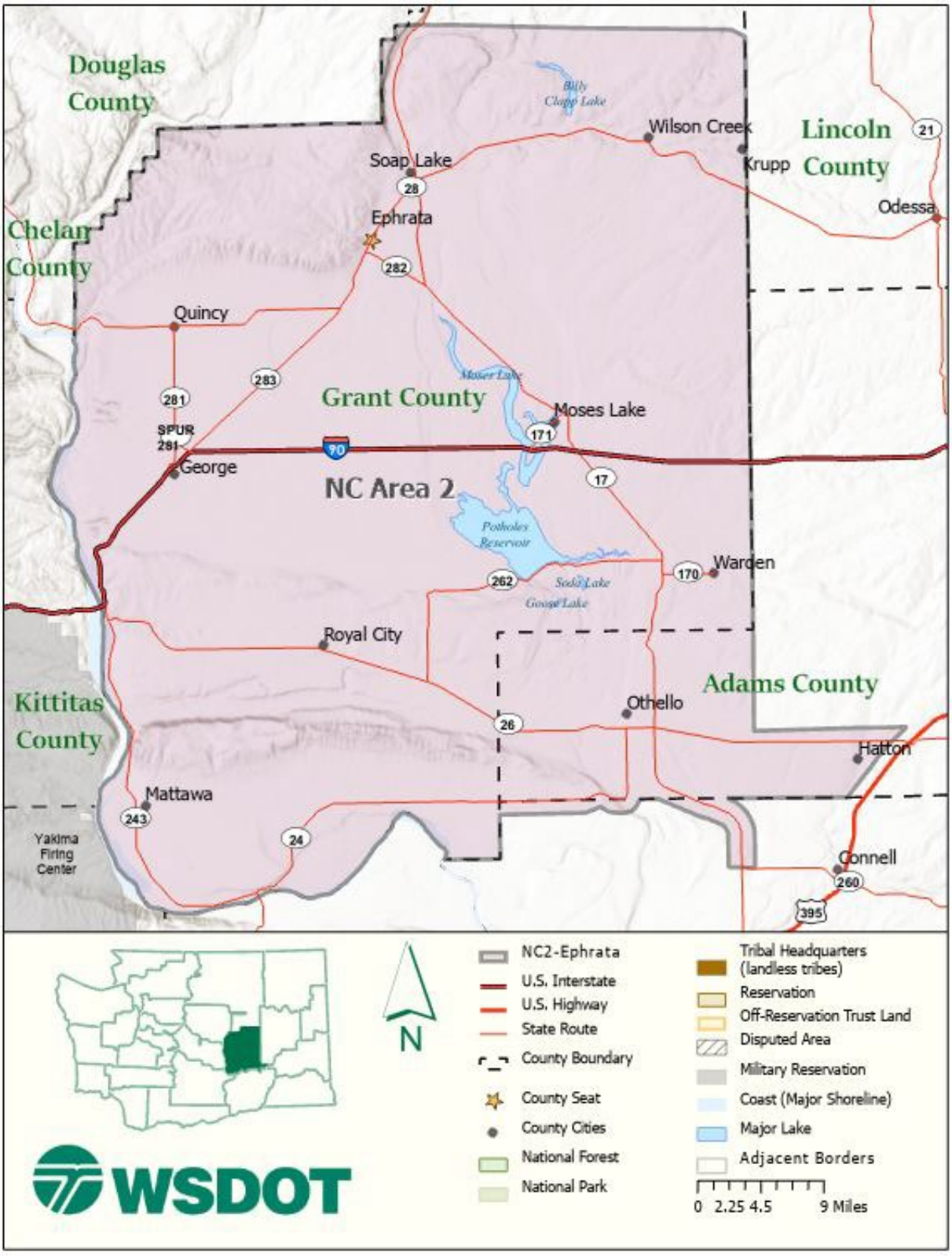


**North Central Region, Area 2 Vicinity Map**
**Figure 1**

This plan outlines the overall approach and geographic distribution of roadside vegetation management requirements throughout the maintenance area in 2024. Information is organized in relation to three 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**, 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 in this group of maintenance activities relates to the safety and operational requirements of the highway. These items are considered the 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 in FIRS: 1615**
**HATS Form: Spray Zone 1**
**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

- Approximately **1,000 acres** of residual herbicide treatment is applied annually in the fall to road shoulders throughout the area.
- Approximately **200 acres** of glyphosate only will be applied in the spring to shoulders designated for re-establishing bare ground on SR 17, 24, 26, and 28.

Locations of Planned Treatments

- Planned treatment are mapped in HATS layer – **Zone 1 Treatments**.
- With the exception of a few road sections in the south part of the area, all shoulders on secondary routes are maintained to be vegetation-free for a distance of 4 ft. from the edge of pavement.
- Over the next several years the area will be reestablishing bare ground shoulders in areas where grass has been allowed to grow in Zone 1. These areas will be added to the HATS maps each year as they are regraded, and then sprayed in succeeding years.
- Because of difficult growing conditions long much of I-90 bare ground conditions are maintained across the entire median width and up to 15 ft. or more from outside shoulders in designated areas.

Treatment Methods

- Residual applications are made in fall on all roads
- Applications will be calibrated for a 4 ft. band on a flat surface for all secondary roads, with sloping shoulder bare ground width may extend to 8 ft. in places.
- Application for I-90 will be calibrated at 12 or 24 ft. on a flat surface

- Locations designated for fall applications will be treated with the following mixture of herbicides and adjuvants:
    - Blend R6
        - Roundup Pro Conc. @ 32 oz/acre
        - Lockdown SC @ 8 oz/acre
        - Milestone @ 7 oz/acre
        - Telar @ 2 oz/acre
        - In Place @ 8 oz/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

- Up to **50 acres**

Locations of Planned Treatments

- This type of mowing is used only in select locations where spring vegetation growth blocks visibility at intersections and curves, and along sections where grass grows up to the edge of pavement.

Treatment Methods

- Shared equipment with NC1, tractor with arm and rotary pull behind deck
- Skid steer with rotary deck

**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 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

- Minimal tree and brush control in this area, **less than 1 acre per year**
- Tumbleweed removal is considered brush control and charged to this work operation when needed, including burning at times.

Locations of Planned Treatment

- There are only a few locations where naturally growing vegetation requires trimming back from the edge of road on occasion.
- Seedling trees such as Tree of Heaven, Russian olive, and Chinese elm are removed ASAP.

Treatment Methods

- Hand tools

**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.

Total Units of Planned Treatment

- Less than **10 mature trees** per year require removal

Locations of Planned Treatments

- As needed

Treatment Methods

- Fallen trees are left to decompose on site whenever possible.

## 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.

To prioritize, plan, and track noxious weed control, WSDOT maps and monitors weed infestations in three categories: **Priority**, and **Planned Treatment**. **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.

**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 noxious weed species are known to exist on state right of way in North Central Region Area 2 at this time or in the recent past.

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.

Designated Species Controlled as Noxious Weeds in NC Area 2

- The list of target species known to occur throughout the area is included as **Appendix A**.

Total Units of Planned Treatment

- Approximately **900 acres** will be treated with herbicides.

Locations of Planned Treatments

- Mapping of seasonally planned treatment sites will take place this season as described in relation to target species in **Appendix A**.

Treatment Methods and Timing

- Broadcast applications of selective herbicides and/or non-selective spot treatment applications are used throughout the growing season.
- Herbicide mixtures used for noxious weed control:
  - Mix 1 (this mix will be revised once existing products are used up)
    - E2 @ 64 oz./acre
    - Syltac EA @ 4.3 oz./acre
    - In-Place @ 16 oz./acre
    - Bronc Max @ 16 oz./acre
  - Mix 2
    - Dicamba HD @ 16 oz./acre
    - Vista XRT @ 8 oz./acre
    - Venue 2SC @ 2.13 oz./acre
    - Syltac EA @ 4.3 oz./acre
    - In-Place @ 16 oz./acre
  - Mix 3 (edge treatment for areas green up in spring)
    - Roundup Pro Concentrate @ 48 to 64 oz./acre
    - Syltac EA @ 4.3 oz./acre
    - In-Place @ 16 oz./acre
    - Bronc Max @ 16 oz./acre
  - Mix 4
    - Roundup Pro Concentrate @ 64 oz./acre
    - Milestone @ 6 oz./acre (or Opensite)
    - Syltac EA @ 4.3 oz./acre
    - In-Place @ 16 oz./acre

## 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

- In 2024, there will be minimal if any nuisance vegetation management conducted in the area.

Locations of Planned Treatment

- There are several areas along I-90 that would benefit from nuisance vegetation control and establishment of native vegetation, including some of the rangeland that burned in past years, and areas in some of the interchanges where there is periodic disturbance from irrigation canals.
- Over the course of the 2024 season the area will begin developing a long-term strategy for location-specific nuisance vegetation management and native restoration.

## Drainage and Stormwater Facilities Maintenance – 2A4

Highway drainage features which require vegetation management include ditches and culvert ends. Stormwater facilities maintenance operations that include vegetation management considerations are discussed in this section of the plan. This work is regulated by the agreement WSDOT has established under the statewide National Pollution Discharge Elimination System (NPDES) permit granted to the agency by the USEPA.

**Drainage System and NPDES Maintenance**
**Work Operations: 1331, 1368, 1399**
**HATS Forms: Pesticide Application (for all spray applications), other forms are in Stormwater Feature Layer**
**HATS Map Layer: All feature types listed under Stormwater Features Layer**

Periodic removal of vegetative growth is necessary in ditches and around culvert ends to allow access for routine inspection and repair. There are several vegetation management activities necessary to maintain function and operation of certain constructed stormwater management facilities such as vegetated filter strips and swales along the edge of pavement and throughout the roadside, and stormwater

retention/detention ponds in the more urbanized areas. Each of these design features should include a manual which details the requirements in relation to control of vegetation and sediment buildup over time.

Locations of Planned Treatments

- There is only one constructed stormwater feature in the area at the SR17 and it is maintained by City of Moses Lake
- All culverts are mapped in HATS, vegetation around culvert ends is maintained to be low growing and free of trees and brush.

Treatment Methods and Timing

- Weed control within stormwater management features is carried out by City of Moses Lake

## Safety Rest Operations – 7B1

All safety rest areas have planted areas and vegetation maintenance requirements throughout the facility. These are some of WSDOT's most heavily accessed facilities and often one the first impressions of Washington State for the visiting public. The goal in maintenance of rest area landscape plantings is to present a well-kept appearance and plantings are intended to be maintained in a set condition throughout the year. For landscape treatments in these facilities 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 including irrigation and fertilization where necessary.

**Safety Rest Area Landscape Maintenance**
**Work Operations: 1711, 1752, 1789, 1799**
**HATS Forms: Pesticide Application (for all spray applications)**
**HATS Map Layers: Formal Landscape and Natural Landscape polygons (under development)**

Rest area landscape maintenance operations may be conducted by rest area attendants and/or maintenance area IVM specialists. Planting areas at all rest area sites are mapped as two sets of reference polygons in HATS showing areas with formal landscape plantings and those with naturalized plantings. Treatment plans are based on monitoring and evaluation of previous years' actions and results. Annually adaptive plans are based on the proven most effective combination of maintenance actions to keep plantings (and lawns if present) looking healthy and trimmed throughout the year.

Safety Rest Areas and Treatment Notes

- I-90 Winchester
  - Annual edging on lawns done with mechanical edger (not glyphosate treatment)
- SR 17 Blue Lake
  - Limited herbicide use due to proximity of shoreline
- SR 28 Quincy Valley
  - Limited herbicide use due to proximity of vineyards around site
- Polygons have been created for outlines on high and low maintained landscape areas throughout each site. These polygons will be incorporated with HATS in the future.

Treatment Methods and Timing

- Vegetation management activities within Safety Rest Areas is conducted by the Area 2 crew with some assistance from the rest area attendants.
- Routine landscape related work requirements include:
  - Annual startup and winterization of irrigation
  - Weekly mowing and routine edging of lawn areas
  - Pre-emergent treatment on cracks (Pendulum)

    - Weed control in lawns, planting beds, and around pedestrian and pet areas
    - Pruning trees
- Lagune maintenance
    - Bare ground on the berms around edges
    - Monitor for aquatic veg./weeds

There are no Class A species known to be present on state right of way in this area. However, a number of Class B and C weeds routinely emerge annually and in some places multi-year seed banks exist. Area crews work throughout the growing season to address priority infestations and randomly emerging occurrences as agreed upon and directed by the county noxious weed control boards. The area is also impacted by overspray from agricultural irrigation which stimulates weed growth in certain areas.

North Central Area 2 is mostly made up of Grant County but goes into Adams and Franklin in the south. The area has adopted the following list of target species based on designates in each of the three counties, with treatment notes describing the strategy for control in this area:

| ***Common Name/Botanical Name*** | ***Treatment Notes*** |
|---|---|
| Bugloss, annual *(Anchusa arvensis)* | County weed board will inform WSDOT if any infestations are discovered. |
| Bugloss, common *(Anchusa officinalis)* | County weed board will inform WSDOT if any infestations are discovered. |
| Canada thistle | Control where visible in conjunction with summer seasonal weed patrols. |
| Common reed *(Phragmites australis)* | Sites part of larger infestations will not be treated, Isolated patches will be mapped and treated in the spring. |
| Cereal rye (*Secale cereale)* | Control sites where weed boards notify us |
| Dalmatian toadflax *(Linaria dalmatica)* | Control where visible in conjunction with summer seasonal weed patrols. |
| Grass leaved arrowhead *(Sagittaria graminea)* | County weed board will inform WSDOT if any infestations are discovered. |
| Hawkweed sp. *(Hieracium sp.)* | Control where visible in conjunction with summer seasonal weed patrols. |
| Hoary alyssum *(Berteroa incana)* | County weed board will inform WSDOT if any infestations are discovered. |
| Knapweed sp. *(Centaurea sp.)* | Control where visible in conjunction with summer seasonal weed patrols. Bio controls released on the east end of the area in 2016. |
| Knapweed, Russian *(Acroptilon repens)* | Control where visible in conjunction with summer seasonal weed patrols. |
| Kochia *(Kochia scoparia)* | Control where visible in conjunction with summer seasonal weed patrols. |
| Loosestrife, purple *(Lythrum salicaria)* | Target sites will be mapped and treated in the spring. |
| Perennial pepperweed *(Lepidium latifolium)* | Control where visible in conjunction with summer seasonal weed patrols. |
| Poison hemlock *(Conium maculatum)* | County weed board will inform WSDOT if any infestations are discovered. |
| Puncturevine *(Tribulus terrestris)* | Control where visible in conjunction with summer seasonal weed patrols. |
| Rush skeletonweed *(Chondrilla juncea)* | Control where visible in conjunction with summer seasonal weed patrols. |
| Tansy ragwort *(Senecio jacobaea)* | Control where visible in conjunction with summer seasonal weed patrols. |
| Thistle, musk *(Carduus nutans)* | Control where visible in conjunction with summer seasonal weed patrols. |
| Thistle, plumeless *(Carduus acanthoides)* | Control where visible in conjunction with summer seasonal weed patrols. |
| Thistle, Scotch *(Onopordum acanthium)* | Control where visible in conjunction with summer seasonal weed patrols. |
| Yellow nutsedge *(Cyperus esculentus)* | All known infestations have been controlled. Past infestation sites will be mapped and monitored. |
| Yellow starthistle *(Centaurea solstitialis)* | Target sites will be mapped and treated in the spring. |

| | |
|---|---|
| Yellow flag iris | Target sites will be mapped and treated in the spring. |