

North Central Region, Area 3

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 3 manages approximately 460 miles of roadside right-of-way throughout Okanogan, Chelan and Douglas Counties. This right-of-way is part of the state highway system including US 97, SR-20, US-2, SR 155, SR 153, SR 17 in addition to a number of other state routes. 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 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 region.

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 for North Central Region Area 3 for the 2024 growing season. It identifies priority locations and prescribes treatments for accomplishing safety and weed control objectives through an integrated combination of seasonally- timed control measures. Each year's actions are designed as part of a coordinated multi-year strategy to establish stable, desirable vegetation, and 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.

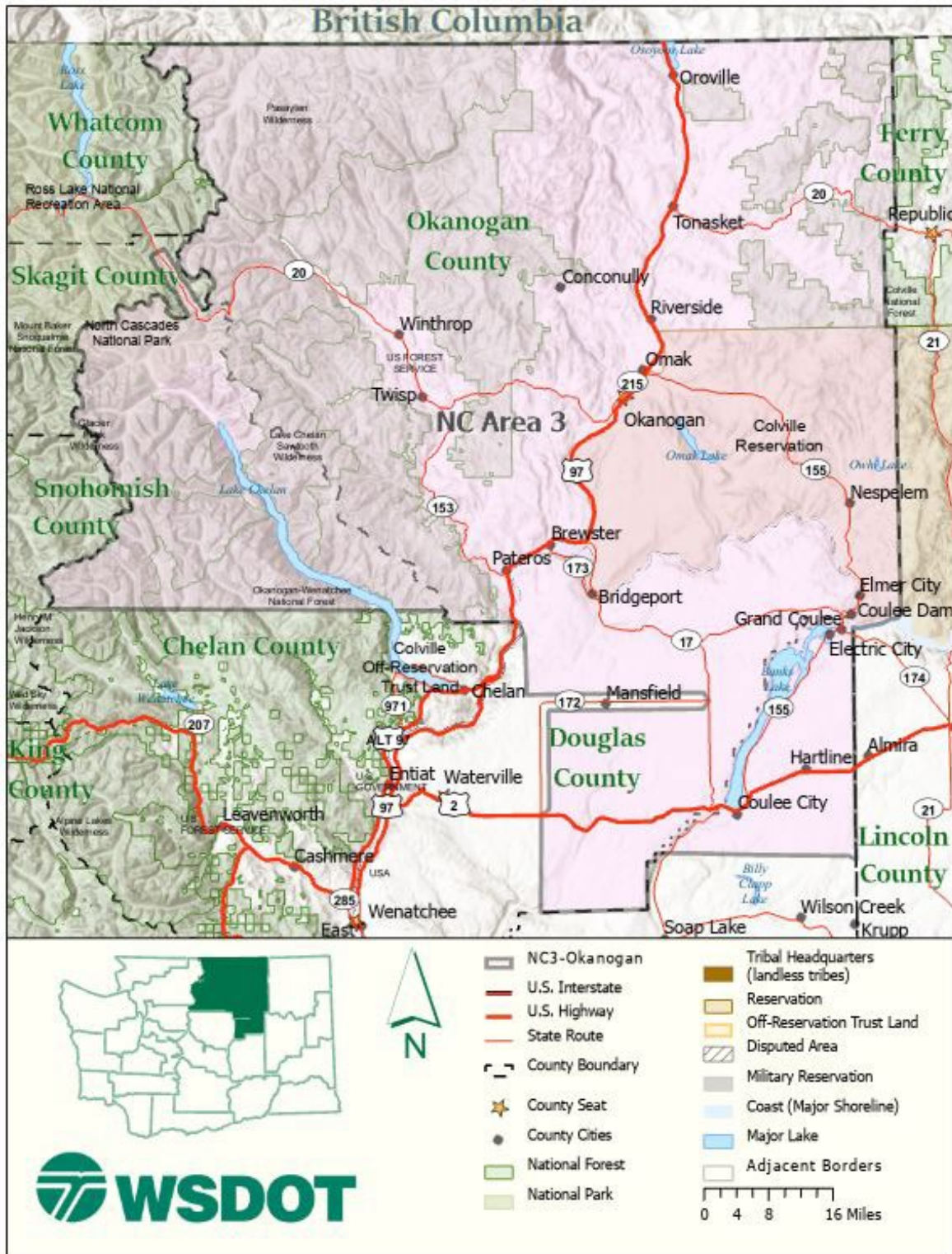
The information contained in this plan can be geographically referenced by crews in the field using iPads and the Highway Activity Tracking System (HATS). Accomplishments and results will also be tracked geographically through this system. This development in WSDOT maintenance management will greatly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

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 2024. All 2024 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 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 3 Superintendent – Ryan Smith, or State Roadside Asset Manager – Ray Willard

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North Central Region, Area 3 Vicinity Map
Figure 1

North Central Region, Area 3 IVM Plan – 2024

The section 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.

Safety First

Safety of our employees, the traveling public, and the environment are WSDOT's highest priorities and key to our success. Pre-Activity Safety Plans (PSAP) are developed for all activities. Crews review, discuss and sign these plans at tailgate meetings, prior to each day's work. When applying herbicides, our licensed pesticide 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 environmental 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 any potential environmental and/or human health risks as part of the daily PASP meeting. Technicians 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 condition.

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**, **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: Pesticide Application

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

This work includes the annual application of herbicides to road shoulders in a select set of corridors and locations throughout the area. The objective of these applications in the designated locations is maintenance of a 3 to 4 foot gravel shoulder that is free of vegetation in most. This treatment is necessary in the locations described below to provide visibility and maintainability of roadside hardware and guideposts, room for vehicles to pull off on shoulders, allow for stormwater drainage, and/or allow for added visibility of wildlife approaching the highway.

Total Units of Planned Treatment

- Approximately **650 acres** of herbicide treatment is applied annually to road shoulders throughout the area.
- Treatment areas are designated for either spring or fall annual applications.

Locations of Planned Treatments

- Planned treatments are mapped in HATS layer – **Spray Zone 1 Reference**.
- All shoulders throughout the area will receive bare ground treatments annually in the fall except as noted below.
- Areas where Zone 1 treatments will be applied in USFS beginning this year:
 - SR20, west of MP 177
 - SR20, MP210-215

- SR20, MP292
- Locations along SR20 where the right of way runs through the Colville National Forest will only receive treatment with herbicides approved for use within the forest.
- Forest Service areas will be treated with a 3 foot width
- There are several “No Spray” agreements throughout the area, where neighbors have agreed to provide the needed vegetation management.
- Most pit sites are also treated annually in the spring for bare ground control with residual herbicide mixtures.

Treatment Methods

- Herbicides are applied using a truck mounted power spray system calibrated to deliver a 6-foot band of spray mixture adjacent to the paved shoulder. The resulting width of treated shoulder may be wider than 6 feet in areas with steeper shoulder slope.
- Electric City section will be making apps half in fall:
 - SR174
 - SR172
 - SR17 (north section)
 - US 2
- All other EC apps will be in spring
- Lowland Okanogan sections will be treated in the spring including:
 - SR 17
 - SR 97
 - SR 173
 - SR153
- All other Okanogan sections will be treated in the fall
- Herbicide mixture Blend R4:
 - Roundup Pro Conc. 32 oz/acre
 - Esplanade 200sc 5 oz/acre
 - Lockdown SC 8 oz/acre
 - Escort XP 1.5 oz/acre
 - MSO @ 16 oz/acre
- Herbicide mixture in USFS:
 - Aquatic Glyphosate @ 32 oz/acre
 - Milestone @ 7 oz/acre
 - Escort @ 1.5 oz/acre
 - Aquatic surfactant @ specified rate

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 Treatment

- Approximately **50 acres** of shoulder primarily in areas where there is no bare ground Zone 1 present.

- Several areas are mowed specifically to prevent snow drifts on the roadway.
- Locations of Planned Treatments
- This type of mowing is used throughout the area in select locations where spring vegetation growth blocks visibility at intersections and curves.
 - One pass mowing is planned as described for the following road sections:
 - US2 MP 194-201 – Isaacs Corner to Hartline, for snow drift control
 - SR20 MP 226-227
 - SR172 MP 22-35 in selective areas for snow drift control
 - SR173 MP 5-10.5

Treatment Methods

- Mowing with tractor mounted equipment

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 **20 acres** of Zone 2 will be side trimmed as needed in conjunction with Zone 2 mowing operations as described above.
- Less than **10 acres** will be trimmed by hand where sign visibility may be blocked, or occasional tree seedlings emerge too close to the road.
- Up to **10 acres** will be sprayed for control of unwanted seedling trees.

Locations of Planned Treatment

- Treatments are carried out as needed throughout the area.
- SR20 MP148-171 – Within the National Forest, Zone 2 is trimmed with a side arm mower once every four years, the crew typically addresses ¼ of the overall area each year.

Treatment Methods

- Tractor mounted arm mowers
- Hand tools
- Any species such as cottonwood, willow, alder, will receive follow up herbicide treatments with Capstone @ 128 ozl/acre, where there is regrowth.

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. USFS is included in any considerations for removal on US forest land.

Total Units of Planned Treatment

- Up to **300 trees** per year require removal along forested sections

Locations of Planned Treatments

- Mainly along forested sections of road on the western parts of the area.

Treatment Methods

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

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 North Central Area 3:

<i>Common Name/Botanical Name</i>	<i>Treatment Notes</i>
Black henbane (<i>Hyoscyamus niger</i>)	County weed board will notify if found
Bugloss, annual (<i>Anchusa arvensis</i>)	Target sites mapped and treated in the spring with follow up treatments in summer if needed
Bugloss, common (<i>Anchusa officinalis</i>)	Target sites mapped and treated in the spring with follow up treatments in summer if needed
Bull thistle (<i>Cirsium vulgare</i>)	Only controlled when growing next to other target species
Canada Thistle (<i>Cirsium arvense</i>)	Target sites mapped and treated in the early to mid summer.
Cereal Rye (<i>Secale cereal</i>)	Target sites mapped in Grant County and treated in the spring with a wick applicator
Common reed (<i>Phragmites australis</i>)	Target sites mapped and treated in the spring

Common Name/Botanical Name	Treatment Notes
Common tansy (<i>Tanacetum vulgare</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Dalmatian toadflax (<i>Linaria dalmatica</i>)	Control where visible in conjunction with seasonal weed patrols.
Field bindweed (<i>Convolvulus arvensis</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Hawkweed sp. (<i>Hieracium sp.</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Hawkweed, orange (<i>Hieracium aurantiacum</i>)	Target sites mapped and treated in the spring
Hoary alyssum (<i>Berteroa incana</i>)	Control where visible in conjunction with summer seasonal weed patrols. County containment area?
Hoary cress (<i>Lepidium draba L.</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Houndstongue (<i>Cynoglossum officinale</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Knapweed sp. (<i>Centaurea sp.</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Knapweed, Russian (<i>Acroptilon repens</i>)	Target sites mapped and treated in the fall
Knotweed, Japanese (<i>Polygonum cuspidatum</i>)	Not currently present on the right of way. Past infestations have been controlled.
Kochia (<i>Kochia scoparia</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Longspine sandbur (<i>Cenchrus longispinus</i>)	Target sites mapped and treated in the spring
Loosestrife, purple (<i>Lythrum salicaria</i>)	Not currently present on the right of way. Past infestations have been controlled.
Perennial pepperweed (<i>Lepidium latifolium</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Poison hemlock (<i>Conium maculatum</i>)	Target sites mapped and treated in the spring
Puncturevine (<i>Tribulus terrestris</i>)	Control where visible in conjunction with summer seasonal weed patrols. More of a problem in and around the towns.
Rush skeletonweed (<i>Chondrilla juncea</i>)	Target sites mapped and treated in the spring
Spurge, leafy (<i>Euphorbia esula</i>)	Not currently present on the right of way. Past infestations have been controlled.
St. Johnswort (<i>Hypericum perforatum</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Sulfur cinquefoil (<i>Potentilla recta</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Thistle, musk (<i>Carduus nutans</i>)	Control where visible in conjunction with summer seasonal weed patrols.
Thistle, Scotch (<i>Onopordum acanthium</i>)	Target sites mapped and treated in the spring
Yellow starthistle (<i>Centaurea solstitialis</i>)	Target sites mapped and treated in the spring

Total Units of Planned Treatment

- The area has been averaging a total of **1,500 acres** of selective herbicide applications for noxious weed control over the past several years.
- Approximately **25 acres** will be controlled by manual pulling and/or mowing to prevent seed production.
- Priority infestations:
 - SR155 MP20 – Prevent spread of Kochia north of this location
 - US2 MP188-207 – Cereal Rye listed in Grant County

Locations of Planned Treatments

- Any designate species occurring in the area will be treated prior to seed production whenever possible.

- Mapping of target sites described in the table above will be mapped over the course of the 2024 growing season.

Treatment Methods and Timing

- Selective herbicides and/or non-selective spot treatment are used throughout the growing season as described in the table above.
- Herbicide mixtures used for noxious weed control:

Mix 1 (Kochia and Russian thistle)

- E-2 @ 64 oz./acre
- Vista @ 6 oz./acre
- Syltac @ 4 oz./acre

Mix 2 (Toadflax)

- Weedmaster @ 16 oz./acre
- Tordon (when needed) @ 32 oz/acre
- MSO @ 32 oz./acre

Mix 3

- Roundup Pro Concentrate @ 48 oz./acre
- Milestone @ 7 oz./acre
- LI 700 @ 16 oz./acre
- EDT Concentrate @ 12 oz./acre

Mix 4

- Amine 4@ 16 oz/acre
- Dicamba HD@16 oz/acre
- Vista @ 5 oz/acre
- MSO @ 16 oz/acre

Nuisance Vegetation Control – MAP Activity 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 Forms: Pesticide Application (for all spray applications), and 3 sub-forms under Nuisance Veg. Control General – Manual/Mechanical, Biological, and Seed/Fertilize/Mulch

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

Total Units of Planned Treatment

- No Zone 3 nuisance weed management areas are mapped as polygons in NC Area 3.