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**Washington State
Department of Transportation**

Maintenance Manual

M 51-01.10

March 2020

Maintenance Operations

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Introduction

Purpose of this Manual

The purpose of this manual is to provide maintenance personnel with guidance on how to conduct a wide variety of activities performed within the maintenance programs. The focus is on types of equipment, materials, techniques, and other information needed to properly carry out basic maintenance activities such as patching a pothole or removing snow from a roadway. Although this guidance does not establish absolute standards, it helps to promote uniform operating procedures and performance guidelines. Highway maintenance is carried out in a dynamic environment where varying factors can lead to different solutions to maintenance problems. Maintenance Operations personnel need flexibility to match the appropriate solutions to different conditions. This manual is one of many resources that are available for trained maintenance personnel to utilize in applying their professional judgment to their daily work.

Performance Measurement

The extent to which maintenance activities are conducted is primarily determined by the level of funding provided each biennium by the Washington State Legislature. By placing their trust, in the form of nearly five hundred twenty million dollar appropriation per biennium, both the legislature and the public are expecting the department's maintenance organizations to deliver their program in a timely and efficient manner. To better communicate the outcomes of the maintenance program, the Maintenance Accountability Program (MAP) has been developed and integrated into the Highway Maintenance Program. The MAP uses performance measures to communicate in easily understood terms the Level of Service (LOS) Maintenance delivers for various maintenance activities. A comprehensive MAP manual has been developed and is available for use by maintenance personnel. The MAP manual is available by visiting the Headquarters Maintenance organizations internet web site.

LOS is based on a letter-grade scale of "A" (highest level of funding) to "F" (lowest level of funding). The LOS for each activity is determined by conducting field condition assessments at highway locations randomly-selected throughout the state during the summer each year. The LOS targets, by MAP activity, are determined by statewide Maintenance staff utilizing both funding and Legislative guidance to provide the appropriate emphasis. The annual surveys can be a valuable management tool for Maintenance Managers in allocating funds amongst various maintenance activities as well as adjusting their work schedules to achieve LOS targets.

Maintenance and Design Coordination

Maintenance activities are key to the highway infrastructure. In order to maintain highway assets Maintenance and Design coordination. Maintainability upon delivery of a completed construction project is key to the lifecycle of all highway asset. Maintenance's role during the scope and design process needs to become routine in the process of project delivery.

Environmental Responsibilities

Just as we are entrusted with public monies to maintain the highway system, we are also entrusted with being good stewards of the public right of way associated with the highway system. As the population of Washington State continues to grow, the environmental value of the highway right of way and adjacent lands is also increasing. Whether the right of way or adjacent lands serve as habitat for burrowing owls, a conveyance for stormwater runoff into salmon-bearing streams, or as a haven for native plant species, it is reasonable to expect that the increasing environmental protection requirements will necessitate changes in how many maintenance activities are performed.

Many resources are available to assist maintenance personnel in conducting maintenance activities in compliance with environmental requirements. Several environmental guidance documents are available on the Headquarters Maintenance and Operations web site <http://wwwi.wsdot.wa.gov/operations/facilities/mecp.htm> Particularly applicable to specific maintenance activities is the ESA 4d Regional Road Maintenance Guidelines. This manual contains a number of best management practices that can be used for a variety of activities and/or conditions to ensure environmental compliance. General HPA permits are also available to cover common maintenance activities that occur in waters of the state. The Maintenance Environmental Compliance Assurance Procedure will be followed to ensure that environmental problems encountered during highway maintenance activities are appropriately responded to and that timely communication of these events is elevated to proper levels of management.

Personnel are available in both the Headquarters Maintenance and Operations Office as well as Regional Environmental offices to assist in providing guidance on environmental issues. Each region environmental office has a Region Maintenance Environmental Coordinator position dedicated to supporting the maintenance program to achieve environmental compliance. One of the most valued environmental resources that can be developed by maintenance personnel is a positive work relationship with local environmental regulators such as the Washington State Department of Fish and Wildlife's Area Habitat Biologists. Such a positive work relationship will help maintenance personnel to not only deliver their program in a timely manner but to do so in conformance with environmental best practice methods.

Fiscal Management

Sound fiscal management is a key ingredient in delivering the maintenance program in an effective and efficient manner. Once the biennial budget is distributed to region maintenance organizations it is essential that the expenditure for various activities be accurately documented. This is accomplished through the department's labor collection (DOTtime) and voucher processing systems which not only provide an expenditure record for each maintenance activity, but also the detailed components that make up the cost, i.e., regular time, overtime, vendor services, materials, and equipment. By tracking the expenditure of activities maintenance managers are not only aware of the costs of doing business relative to targets but are better positioned to adjust their schedules to meet evolving problems and/or deliver their programs.

Acronyms and Abbreviations

AAH	Adopt a Highway
BMP	Best Management Practices
BST	Bituminous Surface Treatment
DOE	Department of E-Ecology
HATS	Maintenance Management System
HMA	Hot Mix Asphalt
HPA	Hydraulic Project Approval
IVM	Integrated Vegetation Management
IRVM	Integrated Roadside Vegetation Management
LOS	Level of Service
MAP	Maintenance Accountability Process
MDT	Measuring Distributor Tank
MUTCD	Manual on Uniform Traffic Control Devices
PCC	Portland Cement Concrete
PDA	Preliminary Damage Assessment
PTO	Power Take Off
RPM	Raised Pavement Marker
RWIS	Roadway Weather Information System
TSMS	Traffic Sign Management System
VMS	Variable Message Signs
WDFW	Washington State Department of Fish and Wildlife
WSDA	Washington State Department of Agriculture
WSDOT	Washington State Department of Transportation
WSP	Washington State Patrol

Chapter 6 *Roadside Management*

6-1 General

This chapter addresses roadside maintenance issues primarily as they relate to vegetation management and roadside land use assets. It also covers maintenance activities and work planning with relation to litter control, and touches on issues with regard to auxiliary features such as Safety Rest Areas, viewpoints, and historical markers. Roadside management as it pertains to Maintenance responsibility for drainage, stormwater management, shoulder pavement, and maintenance of barriers and structures are covered in other chapters. Project permitted Environmental Mitigation Sites are also considered an important component of the agency's Roadside Land Use assets, but until these sites are fully established (10 to 12 years after construction) they are monitored and maintained through the HQ/Regional Environmental Services Offices.

This chapter has been written to integrate with information relating to roadside management topics presented in all other departmental documents. In particular it is tied to the contents of the [Roadside Manual](#) M 25-30, the [Roadside Policy Manual](#) M 3110, the [Design Manual](#) M 22-01 and the annually updated [Region/Area Integrated Roadside Vegetation Management Plans](#).

6-2 Definitions

Roadside – The roadside is the area of highway right of way outside the traveled roadway. This applies to all lands owned and maintained by the Washington State Department of Transportation (WSDOT) and may extend to elements outside the right of way boundaries. It includes unpaved median strips and auxiliary facilities such as rest areas, roadside parks, viewpoints, heritage markers, pedestrian and bicycle facilities, wetlands and their associated buffer areas, stormwater treatment facilities, park and ride lots, and quarries and pit sites within the right of way.

Roadside Management – encompasses the planning, design, construction, and maintenance of the non-paved highway right of way. The bulk of this work involves soils and vegetation systems, but also includes visual issues like litter control and graffiti removal. Management of specific detailed functions within the area of roadside right of way, such as Drainage, Stormwater Filtration, and Roadside Hardware are covered in other sections.

Roadside management goals include:

- Provide for all highway operational objectives
- Restore, protect, and preserve native ecosystems
- Mitigate highway impacts on the environment
- Create and/or maintain desirable visual quality

These goals can be achieved with the lowest life cycle costs by:

- Design and construct roadside plantings that are well established by the time they are turned over to Maintenance responsibility.
- Applying consistent, long-term IVM strategies throughout the management process.
- Using a GIS-based data management system to plan activities, track accomplishments, and monitor the results of IVM treatments.

Roadside Land Use – The major types of landscapes managed by WSDOT, each with a unique set of design and management objectives. WSDOT distinguishes between five types of land use:

- **Operational Right of Way** – The first 15 to 30 foot band of land adjacent to the roadway pavement edges throughout the state. This area is managed in response safe highway operation and drainage.
- **Non-Operational Right of Way** – The land that WSDOT owns and maintains beyond the operational right of way, primarily along major freeway corridors and interchanges. This area is managed as a buffer between the highway and surrounding natural and built environment.
- **Formal Landscape** – Areas of roadside along freeways and interchanges through major cities throughout the state that have been designed to be maintained in a set condition and require routine annual mowing/trimming, weed control, and irrigation in many cases.
- **Resource Conservation Areas** – Naturalized areas of mature native plant communities purchased with Federal dollars, during initial development of the Interstate Highway System for preservation in perpetuity. WSDOT is responsible for ensuring that land remains as undisturbed as possible.
- **Environmental Mitigation Sites** – Sites designed and constructed based on environmental permit conditions. These sites are maintained by the Environmental Services Division until they are fully established (up to 12 years). Once sites have been adequately established to satisfy permit conditions, responsibility shifts to the Maintenance Division and areas area added to the area of non-operational right of way.

Integrated Vegetation Management (IVM) – Integrated Vegetation Management (IVM) is defined as a coordinated decision making process that uses the most appropriate vegetation management strategy on a site-specific basis. It utilizes a monitoring and evaluation system to ensure achievement of roadside maintenance program goals and objectives. IVM practices are environmentally responsible and economically sound. WSDOT uses IVM to design and construct roadsides which will grow and evolve with the natural ecosystem. The type of site specific vegetation chosen is designed to require the least possible attention from maintenance over the long term.

Integrated Roadside Vegetation Management (IRVM) Plans – Integrated Roadside Vegetation Management Plans are updated and published annually for all regions and areas of the state. These plans explain the priorities, procedures, and locations for planned IVM treatment for throughout the state.

Environmental Mitigation Sites – These sites are the result of project permits for environmental mitigation, and fish passage restoration. Because these sites are monitored for permit compliance until fully established, management is funded and carried out through the Environmental Services division. Once fully established and permits are signed off, these sites become the responsibility of the Maintenance Division.

Illegal Camping – The term used to describe the unpermitted use of roadside areas and bridge abutments for temporary housing of transient population.

Pesticides – Federal and State labeled chemical compounds used to control unwanted living organisms. The only pesticides used by WSDOT are herbicides, which are specifically designed to target plant material.

Herbicides – Federal and State labeled chemical compounds used to control and/or eliminate unwanted plant material. Herbicides are approved for use on state highway in Washington based on specific scientific analysis of risk from roadside applications throughout the state. Products are restricted from use in any situations where there is a health risk to the public or the environment.

Best Management Practices (BMPs) – They are physical, structural, and/or managerial practices that, when used singly or in combination, reduce the downstream quality and quantity impacts of stormwater.¹ These assets have vegetation management requirements in many cases. Typical BMPs include biofiltration swales, wet ponds vegetated filter strips, and wet vault/tanks. BMP details can be found in the [Highway Runoff Manual](#) Chapter 8.

6-3 Reference

[Roadside Manual](#) M 25-30

[Roadside Policy Manual](#) M 3110

[Region/Area Integrated Roadside Vegetation Management Plans](#) (updated annually)

[WSDOT Maintenance Manual for Water Quality and Habitat Protection Guidance](#), WSDOT, IL 4020.00, July 1, 1999

[Highway Runoff Manual](#) Chapter 8

[Design Manual](#) M 22-01

[Maintenance Accountability Process Handbook](#)

¹ [Highway Runoff Manual](#) M 31-16. WSDOT

6-4 Resources

- Headquarters Maintenance Office
- Regional and Area Maintenance Offices/Crews
- Region Landscape Architects
- Headquarters Roadside and Site Development Office
- Statewide and Regional Mitigation/Restoration Crews
- Washington State Parks Arborist Crews
- Department of Ecology Youth Corps Crews
- Department of Corrections Work Release Crews
- Volunteer and Sponsored Adopt-a-Highway Participants

6-5 Sustainable Roadside Design and Management

The roadside is designed and managed to support the highway's purpose in four functional categories: **operational, environmental, visual, and auxiliary**. By fulfilling highway needs in these four categories, the roadside contributes to WSDOT's delivery of transportation services. Exhibit 6-1 explains the functions and gives examples.

The [Roadside Policy Manual M 3110](#) provides the basis for solutions to site specific questions on how to develop and manage the roadside. This document provides guidance for resolving the roadside functional needs with variations in site conditions, vegetative patterns, and geographic surroundings. The [Region/Area Integrated Roadside Vegetation Management Plans](#) contain the details of how the majority of the agency's roadside vegetation is maintained, mile-by-mile along all highways in the state, to achieve ongoing compliance with all safety and operation, social, visual, and environmental objectives.

The process for coordination and consultation between Design and Maintenance during the design and construction process varies from region to region, but agency policy dictates (Section 1.1 of the [Roadside Policy Manual](#)) that design coordinate with local maintenance managers on roadside planting design. Once roadsides have been redesigned and constructed following highway improvement projects, the plans for ongoing management are added to the locally adapted Region/Area IRVM plans.

In general terms roadside plantings are designed to function in zones extending outward from the edge of the pavement. Roadside planting design is dictated by highway transportation management objectives in relation to safety and legally required weed control. Roadsides are designed, planted and maintained in bands of land area extending from the edge of pavement. There are also locations throughout the highway system where roadsides are designed and maintained to support local conditions such as Resource Conservation Areas, and Formal Landscapes around urban freeways and interchanges.

Roadside functions and design objectives are further explained Exhibit 6-1.

Exhibit 6-1

Function	Definition
Operational	<p>Those functions that provide safe and multi-use roadsides. Operational functions include:</p> <ul style="list-style-type: none"> • Right of Way Access control • Provide for a free-draining pavement edge • Maintaining a low-growing vegetative ground cover where operational function dictates • Maintain sight distances for intersections, corners, and sign visibility • Controlling trees in vehicle recovery areas • Removing mature hazardous trees • Providing for snow removal storage and snow drift control where needed <p>The Design Manual M 22-01 provides the primary guidance for operational roadside vegetation design guidance. The Area/Region IRVM Plans contain an inventory of all planned work required to provide for operational and safety functions.</p>
Environmental	<p>Those functions that protect, buffer, and/or enhance our natural and built surroundings. Environmental functions mitigate the roadway's impact on its surrounding ecosystem. Major environmental functions include:</p> <ul style="list-style-type: none"> • Water quality (preservation, protection, and improvement) • Storm water detention and retention • Wetland and sensitive area protection • Noxious weed control • Pollinator forage and habitat • Noise control • Habitat protection and connectivity • Air quality improvement and Carbon Sequestration • Erosion control <p>Many roadside environmental functions are regulated by federal, state, and local regulations and as a result, all permit related vegetation management and/or litter control is managed and conducted by the Environmental Services Offices in Headquarters and the Regions.</p>
Visual	<p>Those functions that are designed and experienced primarily from a visual perspective. Visual functions promote a positive quality of life and are integral to operational, environmental, and auxiliary functions. They include:</p> <ul style="list-style-type: none"> • Enhancing roadway delineation, guidance, and navigation • Litter control and cleanliness • Partnering with local communities for enhancement of interchanges and state highway corridors through cities • Screening undesirable views/distractions and maintaining scenic views at viewpoints • Creating visual corridor continuity <p>In addition many activities such as noxious weed control, litter control and illegal camping, wetland and sensitive area preservation, and habitat preservation/connectivity are readily perceived and evaluated through sight.</p>
Auxiliary	<p>Those functions that provide additional operational, environmental, and visual functions to support or supplement the transportation system in local situations. Examples of auxiliary facilities are:</p> <ul style="list-style-type: none"> • Safety rest areas • Stockpile sites • Community enhancement areas • Roadside parks/viewpoints/heritage markers • Bicycle and pedestrian facilities • Park and ride lots

6-6 Roadside Management Zones

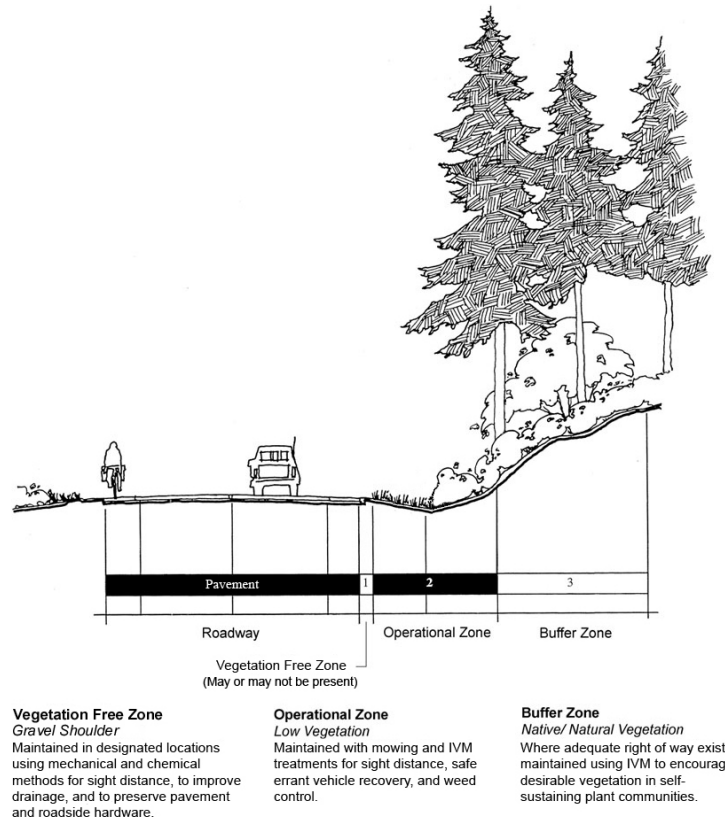
To address the highway's functional needs (as describe above), the roadside is designed and maintained in three major bands of area referred to as Zone 1 – Vegetation Free, Zone 2 – Operational, and Zone 3 – Transition/Buffer. Roadside maintenance priorities within these zones are established beginning with activities relating to the safe traffic operations, maintenance and preservation of the built highway infrastructure, legally required noxious weed control, and environmental mitigation, restoration, protection, and preservation wherever possible.

[Exhibit 6-2](#) shows a cross-section of a typical divided highway, illustrating typical relationships of the Roadside Management Zones within the highway right of way and giving examples of the functional objectives as they apply to the three zones.

6-6.1 Operational Zones

The Operational Zones include a vegetation-free gravel shoulder in most cases, adjacent to band of routinely trimmed low-growing vegetation. These areas require routine roadside maintenance activities occur in **Zones 1 and 2**. These areas are designed and maintained to facilitate operational roadway functions, such as surface and subsurface drainage, traffic operations visibility and site distance. Zones 1 and 2 also allow unobstructed vehicle recovery where traffic may accidentally leave the roadway (referred to as the **Design Clear Zone**). The [Design Manual](#) M 22-01 provides guidance on the required extent of the roadside “clear zone” (Zone 2) for varying highway configurations. In some cases the actual requirements for the clear zone may extend beyond the right of way lines.

Exhibit 6-2 Roadside Management Zones and Objectives



6-6.2 Non-Operational Zones

Along freeway corridors and areas with wide rights of way where there is area available outside the Operational Zones the roadside can function as a buffer to surrounding land use, and provide an opportunity to create pollinator forage and other ecosystem benefits. Zone 3 is managed to address some safety functions such as prevention and removal of hazard trees and trees shading the roadway. There are other operational functions which may be addressed within the area of **Zone 3**, such as drainage, noise and visual attenuation, and stormwater management needs. However, Zone 3 is primarily developed and maintained to address the visual, auxiliary, and non-regulated environmental functional needs of the highway. Zone 3 offers the greatest opportunity to create and maintain self-sustaining, low maintenance plant communities.

Non-operational roadside areas also include:

- **Formal Landscape** – Areas that have been planted with ornamental landscapes in urban settings are measured, planned, and tracked as a separate set of activities. Plantings in formal landscapes are maintained in a set condition and in many cases include permanent irrigation systems. These roadsides are designed and routinely maintained in accordance with all legal and highway operational requirements. Some formal landscape areas are maintained by local government's forces using WSDOT funds.
- **Resource Conservation Areas** – Areas of significant ecosystem preservation value were purchased throughout the state during the expansion of the Interstate Highway System in the 60s and 70s. These areas were purchased with Federal Interstate Completion dollars, with the understanding that they would be preserved in perpetuity. The areas typically consist of mature vegetation that provide screening from junkyards and other developed areas.

Where either of these conditions exist, the roadside area is considered part of Zone 3 and maintenance actions are defined in [Region/Area Integrated Roadside Vegetation Management Plans](#).

6-6.3 Functional Zone Objectives

The Area/Region IRVM Plans contain an inventory of all the planned treatments necessary to achieve the necessary functional objectives for highway operation and maintenance. Treatments are designed to accomplish objectives listed in Exhibit 6-3 in Operational and Non-operational zones throughout the state.

Exhibit 6-3 Functional Zone Objectives

Zone 1 – Vegetation Free	Zone 2 – Operational	Zone 3 – Transition/Buffer
<p>(2 to 5 feet from pavement, maintained where necessary along the majority of road shoulders)</p> <ul style="list-style-type: none"> • Provide for surface drainage • Reduce fire potential • Provide for visibility and maintenance of roadside hardware • Prevent pavement breakup by invasive plants • Provide sight distance for passing, stopping, and at intersections • Prevent the buildup of wind blown debris and winter sand at the pavement edge 	<p>(From Zone 1 or pavement edge to meet operational and maintenance needs)</p> <ul style="list-style-type: none"> • Maintain design width for vehicle recovery • Provide sight distance for passing, stopping, at interchanges and at intersections • Maintain hydraulic capacity of ditches • Eliminate vegetative obstructions (trees with a trunk diameter of 4" or more) • Control weeds • Prevent erosion • Provide wildlife habitat where compatible with roadway traffic • Accommodate underground utilities • Enhance visual quality 	<p>(From Zone 2 to Right of Way line)</p> <ul style="list-style-type: none"> • Promote self-sustaining plant communities that support all ecosystem services mentioned in Exhibit 6-1. • Blend and/or screen adjacent surroundings to meet the goals and objectives of the Roadside Policy Manual M 3110 • Eliminate hazard trees and branches causing excessive shade (ice and frost potential) on the highway pavement • Control noxious weeds • Prevent erosion • Promote pollinator forage • Maintain and enhance visual quality • Preserve wetlands and wildlife habitat • Accommodate utilities • Preserve and conserve native plants and wildflowers

6-7 The Practice of Integrated Vegetation Management

Integrated Vegetation Management (IVM) is a coordinated decision-making process that determines and implements the most appropriate vegetation management methods and strategy, along with a monitoring and evaluation system, to achieve roadside maintenance goals and objectives in the most environmentally and economically sound manner.

The IVM process relies on Highway Activity Tracking System (HATS) and the IRVM Plans, in combination with annual crew training to deliver the most practical and long-term sustainable solutions to roadside vegetation management challenges throughout the state.

The majority of roadside management work is focused on the control of undesirable vegetation – That is, controlling vegetative growth that is in conflict with the objectives listed in Exhibit 6-3. This goes hand in hand with providing care for desirable vegetation – the practice of IVM is intended to encourage roadside plant communities that compliment and support surrounding native ecosystems. WSDOT's IVM program emulates the principles of Integrated Pest Management (IPM) and complies with state law as cited in [RCW 17.15](#), which requires that all state land management agencies to utilize IPM principles when controlling invasive species and other unwanted organisms.

6-7.1 Components of Integrated Vegetation Management for Roadsides

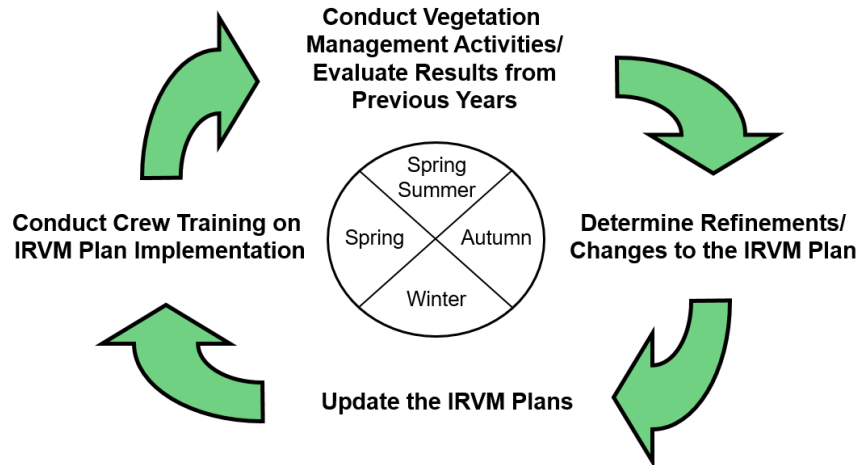
Managing vegetation in relation to designed and constructed roadside zones is a continually adaptive process, as roadside ecosystems never stop growing and evolving in response to maintenance inputs and controls. Planning for this work requires annual consideration of the previous year's accomplishments and the observed response of the plant material to maintenance treatments. In order to accomplish this throughout WSDOT's 100,000 acres of roadsides throughout the state, the agency has developed HATS which includes a geographically oriented inventory of the vegetation maintenance workload, and an accompanying record-keeping system. The annual planning and performance data collected by HATS provides the basis for WSDOT accountability in maintenance and stewardship of the states roadside land use assets.

Roadside vegetation management and the practice of IVM requires specialized knowledge, skills, and certification on the part of the maintenance crews engaged in the work. Crew members responsible for leading vegetation management projects are required to obtain a Pesticide Applicator's License from WSDA and accumulate continuing education credits in IVM practice to maintain the license. Crew training and engagement in IVM planning is a central component of WSDOT's IVM program.

The annual cycle illustrated in Exhibit 6-4 shows the process followed by all WSDOT crews, for all roadside vegetation maintenance on state highways.

This process is supported with planning documents, a geographic inventory of planned treatments, field-based mobile technology that allows geographic recording of all accomplished work, annual statewide crew training and area work planning sessions, and an IVM reference library that can be accessed as needed in the field using mobile devices.

Exhibit 6-4



6-7.2 Roadside Management and the Highway Activity Tracking System

Maintenance activities are mapped and recorded in HATS as shown in Exhibit 6-5.

Exhibit 6-5 Roadside Records and Features in HATS

Group 3 Activities	Work Op/HATS Records	Mapped Reference Features	Unit Reporting
3A1 – Litter	Litter Bag Pickup	N/A	Cubic Yards removed
	Encampment Cleanup	Points representing existing and previous encampments	Cubic Yards removed
3A2 – Noxious Weed Control	Noxious Weed Control – Spray	Points representing locally prioritized infestation sites	Acres treated
	Noxious Weed Control – Manual/ Mechanical		Acres treated
3A3 – Nuisance Vegetation Management	Nuisance Veg. Control – Spray	Polygons representing areas where Nuisance Veg. Management may be required	Acres treated
	Nuisance Veg. Control – Manual/ Mechanical		Acres treated
3A4 – Control of Vegetation Obstructions	Zone 1 Spray	Lines representing locations where routine herbicide treatments are planned	Acres treated
	Zone 2 Mow	Lines representing locations where routine mowing treatments are planned	Acres mowed
	Tree & Brush Control – Spray	N/A – Annually prioritized locations are described in IRVM Plans	Acres treated
	Tree & Brush Control – Mechanical	N/A – Annually prioritized locations are described in IRVM Plans	Acres trimmed
	Tree & Brush Control – Manual	N/A – Annually prioritized locations are described in IRVM Plans	Acres trimmed
	Hazard Tree Removal	N/A	Trees removed
3A5 – Landscape Maintenance	Landscape Maintenance	Polygons representing areas where formally landscaped areas are maintained	Acres maintained

6-8 Vegetation Management Methods and Procedures

Administration of the roadside vegetation management program involves a number of specialized agency processes and functions. It is essential to the function and integrity of the agency that these issues be addressed consistently throughout the state in accordance with the following topics and information.

6-8.1 Chemical Control Methods

Chemical control measures are an essential component of the IRVM program. The use of chemical controls is a highly regulated process and requires that WSDOT maintenance technicians obtain and maintain a Pesticide Application License from the Washington State Department of Agriculture.

When applied in accordance product labels, and used in combination with other vegetation management methods, herbicides are one of the safest, most effective and economical tools available to the roadside vegetation managers.

To further ensure the safety of applicators, the public and all environmental endpoints, WSDOT has invested in additional research into the assessment of environmental and human health risks from use of herbicides. Based on this research, the agency has developed guidelines for agency specific restrictions and application guidelines for [Herbicide Applications on State Right of Way](#).

The largest portion of WSDOT herbicide use is for control of vegetation at the edge of pavement (Zone 1). For other tasks considered in the IVM decision-making process, herbicides are used to achieve initial control of weed infestations, and/or prevent seed production. Once the infestation has been reduced or eliminated through herbicide applications, other methods can be employed for long-term vegetation management. Therefore, in a successful IVM program, overall herbicide use should decrease and applications become increasingly selective over time as beneficial competitors are allowed to become more established on the roadside.

Applicator Licensing and Legal Requirements

All pesticides applied on state highway right of way must be applied by WSDOT employees or contractors licensed through the Washington State Department of Agriculture (WSDA). Licenses are obtained by passing uniform tests administered by WSDA. In order to maintain a pesticide license, applicators must attend and receive credit for continuing education certified through WSDA. Forty recertification credits are required every four years and no more than 15 credits can be counted for any one year.

Maintenance technicians are personally liable for following all state and federal regulations and product label requirements. Legal requirements for pesticide application are defined in [RCW 17.15](#).

Premium Pay for Pesticide Applicators

Due to the technical requirements and personal legal liability inherent in the application of chemical controls, maintenance technicians receive additional pay when preparing for and carrying out the application of herbicides. The details of how this pay is administered and who receives it for which tasks is part of the negotiated agreement is documented in the biennially updated Collective Bargaining Agreement between the State and the Washington Federation of State Employees, Council 28 AFSCME.

6-8.2 *Herbicide Risk Assessment and Product Screening*

WSDOT has developed a detailed and agency-specific risk analysis of potential human health and environmental impacts from the use of herbicides to manage roadside vegetation. This research was used to create a conservative agency policy for application of herbicides and minimize potential risks. The table [Herbicides Approved for Use on WSDOT Rights of Way](#) includes a list of approved herbicide compounds alongside associated products available on the state contract. This table also include herbicide compound specific recommendations, restrictions and additional cautions applied by crews statewide.

Any and all new herbicide compounds with potential application for roadside vegetation management will be formally evaluated for environmental and human health impacts prior to addition to the statewide contract and use on highway right of ways. The State Roadside Asset Manager will be responsible for determining when new products should be evaluated and for administering the contract for toxicological analysis. Once compounds have been analyzed, the state manager is responsible for approving use and determining any necessary restrictions or application buffers.

Pesticide Record Keeping

[RCW 17.21](#) requires that all pesticide applications be documented with a WSDA approved record-form and retained for 7 years. All WSDOT pesticide applications made by agency employees are required to be recorded in HATS on the day the applications are made. HATS Pesticide Application Records are recorded on iPads throughout the day as applications are prepared and carried out. WSDA approved record forms are generated when iPads are synced with HATS Web. Records are stored in the HATS online database for seven calendar years as required by law.

Managing Product Material Inventory

All materials used for making herbicide applications must be accounted for on a daily basis when applications are being made. Daily use of chemical herbicides and additive products recorded in HATS Pesticide Application Records is also tracked through WSDOT's inventory management system. To transfer data between HATS and the agency-wide tracking system, area maintenance offices record amounts on an 8420 form and information is manually input by area office personnel into WSDOT's DataMart system.

Posting Requirements

For all other applications made on the right of way with power equipment, posting is required in the form of placards on the spray apparatus. Requirements for posting right of way applications can be found in [RCW 17.21.400](#). For application of pesticides in areas that are intended for public access, such as Safety Rest Areas and bicycle/pedestrian paths it is required that notification flags be placed throughout the site. [RCW 17.21.410](#) lists legal requirements for posting public access.

Aquatic Pesticide Applications

Pesticide applications made in or over open water or within delineated wetlands are subject to additional regulation and come under the jurisdiction of the Washington State Department of Ecology (WSDOE). Operators making such applications must have aquatic certification on their pesticide applicator's license and a special permit must be obtained through WSDOE. The permit includes limitations on the products available for use and provisions for public posting and notification. The Headquarters Maintenance Office is responsible for negotiating and maintaining statewide coverage for aquatic pesticide applications.

Pesticide Sensitive Individuals

State law requires that pesticide applicators, prior to making an application, will notify individuals who have been medically certified as "pesticide sensitive" and live within one-half mile of the highway application site. The WSDA maintains and annually updates a list of individuals who have received this certification and their addresses. The HQ Maintenance Office is responsible for supplying information on pesticide sensitive individuals to the maintenance areas where notification is required. [RCW 17.21.420](#) explains the process and requirements for establishing the list through WSDA. [RCW 17.21.430](#) explains the requirements for notification of individuals on the list.

Container Disposal

The Washington Administrative Code ([WAC](#) 16-228-185(2)) states in part: "No person shall transport, handle, store, load, apply, or dispose of any pesticide, pesticide container or apparatus in such a manner as to pollute water supplies or waterways, or cause damage or injury to land, including humans, desirable plants and animals, or wildlife:...."

To comply with the law, all pesticide containers shall be triple rinsed (three times) each time, using a volume of an appropriate solvent (water, diesel, oil, etc.) equal to approximately 10 percent of the container's capacity. Rinsing of containers shall be accomplished as soon as possible after emptying. The rinse solution shall be added to the spray tank and considered as part of the pesticide carrier. Proper triple rinsing removes the "hazardous" stigma from the containers. However, the rinsed container must still be disposed of in the proper manner, as listed on the pesticide label.

The need for rinsing and disposal of containers can be eliminated if products are available in refillable bulk containers. Utilizing bulk and “mini-bulk” containers and metered pumps to transfer products from the container to the spray equipment reduces the chance of human contact. Where this system is used in conjunction with injection type spray equipment, unused product may be returned to the bulk container at the end of the day.

Returnable, Reusable, Closed-System Containers

Whenever practical, herbicide products are ordered and delivered in sealed containers with pre-blended mixtures in water, and/or straight concentrate. Use of this type of delivery system is encouraged whenever possible because it decreases the risk of employee exposure to synthetic chemicals and eliminates a portion of the waste from use of traditional, non-recyclable containers.

Hazard Trees

Dead, leaning, or structurally unsound trees within the right of way can pose a threat to the traveling public. They can also damage the pavement, structures, or other parts of the highway. Remove all danger trees as soon as possible after they have been identified.

When practical, debris and wastes may be left on site within the boundaries of Zone 3. The Regional Maintenance Engineer will direct off-site disposal or reuse of the wood. Danger trees outside the highway right of way (or permit boundaries such as in National Forests) may also be removed by WSDOT maintenance. If possible, consult with the property owner where the danger tree was grown prior to removal. If an emergency exists due to a danger tree outside the right of way, remove the tree immediately and notify the property owner at the earliest opportunity. When necessary to access neighboring property for hazard tree removal, there is a Right of Entry and Hold Harmless Agreement in the HATS File Library that protects the legal liability of WSDOT and its agents in this case.

In areas where logging activities occur, adjacent clear-cuts may create a fringe of unstable trees on the highway right of way if not removed or thinned at the time of the adjacent logging. Whenever possible dangerous trees should be removed prior to or in conjunction with the adjacent logging operation. The process for removal and disposal (or sale) of timber from state property is outlined in [RCW 47.12.140](#).

Clear cuts adjacent to the highway may create undesirable views from the road. Especially on corridors designated as scenic and recreational highways, care should be taken to preserve and protect as much of the smaller trees and native vegetation on the right of way as possible to maintain the desirable visual character of the corridor.

Disposal of Logs Dumped on Right of Way

Logs dumped on any state roadway, in any state highway drainage ditch, or within 30 feet of the edge of pavement, are to be removed immediately. Logs that remain within the state right of way for a period of 30 days should be confiscated and removed or disposed of as directed by the Maintenance Superintendent.

The log transporting firm is required to immediately remove any logs dumped on the roadway or drainage ditch. If it becomes necessary for the WSDOT to remove such logs in order to comply with the law, the transporting firm will be billed for the operation including any damage to the highway.

If any logs are left on state right of way for a period of 30 days, the region will notify the transporting firm, by letter, that the logs have been confiscated by the state.

The method of disposing of such logs is at the discretion of the Regional Administrator, taking into account the merchantable value.

Removal of Dangerous Objects and Structures

WSDOT has the authority to remove any structure, device, or natural or artificial object located sufficiently close to a state highway to constitute a hazard or obstruction.

Maintenance personnel should not arbitrarily remove any object from the roadside unless the object represents a definite danger to the highway itself or to highway users. The matter should be brought to the attention of the region office for an initial decision unless immediate local action is required. In some cases “Memorandums of Understanding” are in place with agencies like the Forest Service and National Park Service in order to handle these issues in the areas where they have jurisdiction.

Illegal Tree Removal

[RCW 47.40](#) states that removal or damage to any desirable plant on the right of way by an unauthorized individual is a misdemeanor and punishable by law. [RCW 64.12.030](#) and [040](#) discuss how courts assess damages for injury or removal of desirable plants. In cases where actions are witnessed or where it is obvious who the perpetrator is, the State Patrol and the Attorney General’s Office should be called in for assistance.

Unauthorized removal of materials often occur when adjoining parties feel that the trees are blocking visibility across the highway right of way. A desire to have better visibility for their establishment, their product advertising, or simply wanting a better view of the surrounding area may lead these parties to remove vegetation without proper permission.

While it is difficult to continually monitor the entire right of way for this type of illegal activity, certain locations are more prone to neighbor’s visibility issues than others and should be watched.

6-8.3 *Trespass and Encroachment*

All WSDOT maintenance employees are required to obtain permission from property owners before entering private property, except in cases of an immediate emergency.

Encroachment – General

Maintenance field personnel are not expected to be familiar with all the laws and policies pertaining to the use of public right of way for non-state highway purposes; however, they should at least be aware of the following basic facts:

- No work of any kind shall be permitted on state right of way except that authorized by law. The department has adopted policies, rules, and regulations governing legal encroachments, and permission to occupy the right of way is always covered by a written permit, franchise, or agreement.
- On some highways the access rights of abutting property owners have been purchased by the state. This means that no approach roads to the highway can be constructed except those authorized in the access control plan as a result of right of way agreements.

Encroachment – Maintenance Crew Responsibilities

Maintenance Superintendent assigned to sections are charged with the responsibility of reporting to their superintendent any evidence of intended or actual encroachment on the right of way by individuals, firms, or agencies for non-state highway purposes.

Most violators are not aware of the law or have encroached inadvertently because of poor communication and/or unclear delineation of the right of way line.

Good public relations require that the local Lead Technician politely inform violators of the legal requirements as soon as an impending encroachment is observed, rather than to permit unauthorized work to proceed without such warning while the matter is being referred to someone else for handling. Major work is quite often contracted, and a contractor's crew may not have knowledge of a permit or franchise even if one has been granted. By a radio inquiry to his area office, the maintenance technician can usually determine if authority has been requested or granted.

Generally it can be assumed that permission has not been granted for anyone to install or erect signs, sub-standard or otherwise, on the right of way. Contact the local Maintenance and/or Region Traffic Office if there are questions about the legality of any sign.

Maintenance crews should be familiar with the right of way widths on their sections in order to detect possible encroachments.

Franchises and Permits

Franchises and permits are issued on standard forms that contain applicable legal requirements. Each encroachment document will include its exact location, any applicable special provisions required in the project, and how the installation is to be constructed.

A single application form, in which the applicant describes, with the aid of sketches and/or maps, what he wants to do, is used for both permits and franchises. An area or region employee makes a field investigation to determine whether or not the proposed work is permissible by law, what its effect will be on existing highway conditions, and what construction designs must be adopted to protect the interests and legal requirements of the state. If all is in order, the field investigator submits a recommendation that the application be accepted and approved and what, if any, conditions or restrictions should be included.

Maintenance should check to ensure adequate provisions are included for revegetation of any and all disturbed soil.

Franchises are issued for all utility encroachments that extend along the highway for a distance of more than 300 feet. Approval can only be granted by action of the department after the applicant has furnished proof that he has complied with all the legal requirements of posting and advertising.

Permits are issued for encroachments less than 300 feet in length. Permit forms are shorter than franchise forms and there are no posting and advertising requirements.

All permits on restricted access highways, and permits for any gas or petroleum products crossings, except local gas service line on any highway, regardless of access restrictions, must be approved by the department.

The department has extended authority to the Regional Administrator to approve all other encroachment permits, including those for local gas service crossings and for the cultivation and/or growing of agricultural crops.

See the [Utilities Manual](#) M 22-87 for further information on WSDOT policy on franchises and permits.

Burning Debris

Burning of brush, slash, tumbleweeds or any other waste shall be accomplished in a manner and time that conforms to the rules and regulations of the regulatory agency for that area. Contact local air pollution authorities and fire departments regarding burning requirements.

6-9 Litter Control

6-9.1 *Removal of Large Debris Rubbish and Animal Carcasses*

Debris and rubbish deposited on or along the highway is picked up and disposed periodically as necessary. Debris such as fallen branches and articles that have fallen from vehicles, rocks, or earth slides onto the traveled portion of the roadway or onto shoulders or ditches should be removed immediately.

The remains of animals killed by motor vehicles should be removed promptly and buried at convenient locations. If license tags are present on domestic pets, notification of appropriate city or county is encouraged. The Wildlife Road Kill Report, Form 335-002, should be completed, especially for deer and elk, and submitted to Headquarters. This record of killed wildlife aids in the placement of signing and other preventive measures.

Occasionally, items of value are cleared from the right of way. If possible, the owners of the property should be notified. Otherwise, the property is retained for 30 days and the area office is notified. Generally, owners of such property will contact the department. If the property is not returned to the owners, the region either places the item in inventory or declares it surplus.

6-9.2 *Removal and Cleanup of Illegal Campsites*

WSDOT is reactive to this issue. Public complaint or need of access will trigger necessary efforts to remove and clean an illegal campsite. Illegal encampment cleanup requires the cooperation of agencies that are able to provide social service outreach and law enforcement resources.

6-9.3 *Litter Control and Partnerships for Roadside Enhancement*

Litter is highly visible. A clean or littered roadside creates a perceived indication of the overall maintenance service level. Litter control and local community roadside enhancement are not high maintenance priorities. Roadside partnerships allow WSDOT to accomplish roadside clean up and enhancement at minimal cost.

Responsibility for litter control on state highways is shared between WSDOT and Ecology.

The majority of litter pick up initiated by WSDOT takes place through the administration of the Adopt-a-Highway (AAH) program. WSDOT maintenance employees typically pick litter in advance of mowing operations to prevent shredding and spread of litter by mowing equipment, or where large debris such as discarded furniture items and tire shreds are present and pose a hazard to traffic.

Ecology administers a fund generated through a state tax imposed by [RCW 82.19.010](#) on the sale of all containerized goods, and is charged with leading education and prevention programs. Ecology also utilizes a portion of the fund to pay for litter pick up programs such as the Ecology Youth Corps, which employs seasonal crews to assist with cleaning litter on state highways.

It is necessary for Ecology to notify local WSDOT maintenance of when and where they plan to conduct litter collection activities. This communication insures that EYC activities do not interfere with WSDOT maintenance work and WSDOT maintenance crews are aware of the presence of filled litterbags for collection and disposal.

The largest maintenance expenditure for litter control results from the pick-up and disposal of bags filled by AAH volunteers, Corrections Crews and WSDOE sponsored programs.

6-10 Adopt-a-Highway

The Adopt-A-Highway Program (AAH) allows citizens and businesses an opportunity to contribute to a cleaner environment and an enhanced roadside appearance through partnership with the WSDOT. The program is authorized and governed by state law as defined in [RCW 47.40.100](#).

The program is intended for use in those situations where a volunteer group or business entity wishes to help WSDOT in the performance of litter control or other activities that will enhance the appearance of the roadside. Any activity undertaken as part of this program must be in the primary interest of the traveling public and must contribute to an improved visual and/or environmental condition. The outcome of any activity must be compatible with the surrounding roadside conditions and the department's overall policy and program goals.

6-10.1 Program Rules

It is important to maintain a level of consistency in administration of the program throughout the state, but the individual area maintenance offices must be somewhat flexible in their interaction with participating groups. Management of the program will therefore vary to some degree throughout the state; these rules and procedures are intended to provide consistency on statewide programmatic and legal issues.

6-10.2 Participant Eligibility

Any organization, individual, family, business, corporation, or combination thereof may participate in the Adopt-a-Highway Program by either voluntary efforts or by financially sponsoring roadside enhancement activities. The terms for each assignment shall be specified on the Adopt-a-Highway Agreement and subject to the following rules:

The name displayed on the AAH recognition sign shall be the official name of the organization, individuals, or business. Only the name may be displayed on the sign, no other information may be included. In the case of privately sponsored adoptions, where logo panels are provided by the sponsoring organization, additional information may be included if it is part of the organization's official logo.

Organizations shall not be eligible if their name:

1. Endorses or opposes a particular candidate for public office.
2. Advocates a position on a specific political issue, initiative, referendum, or piece of legislation.
3. Includes a reference to a political party.
4. Includes any words or reference to anything that may be considered or construed to be obscene to the general public.

Organizations whose agreements are terminated for failure to comply with terms shall be ineligible for participation until five years from the date of the termination.

6-10.3 *Assignment of Sections*

Sections shall be assigned on a first come, first served basis. Consider the type of location and anticipated volume of litter in relation to the type of group or privately sponsored adoption. Assignment of groups, locations, management of waiting lists, and special limitations or restrictions are determined by the regions. Limit volunteer adoptions due to safety concerns in locations with high traffic volumes, high litter volume, or difficult access. Sponsored adoptions may occur anywhere except construction zones. Standard litter control sections range from a minimum of two centerline miles to a maximum of ten centerline miles in length. Single organizations may adopt as many sections as desired, but each section adopted by that organization on a given route must be separated by a minimum of ten miles in the direction of travel. Wherever possible assign new adoptions next to existing adoptions.

Sometimes the AAH Program is used to initiate a roadside enhancement in addition to or other than litter control. The activities may include planting projects or graffiti removal. In these situations assignments may be made for specific locations less than two miles in length, such as at interchanges or bridge crossings.

For type and placement of AAH participant recognition signs, see [Traffic Manual](#) Section 2.7.J and Appendix 2-9, signs 16-901 thru 16-905.

AAH agreements last for a minimum period of four years. The termination or renewal date for all agreements is four years from the beginning date, unless otherwise canceled by either party. Agreements can be terminated by either party upon 30 days notice. For routine four year renewals, organizations with previously assigned sections have first right of refusal for their sections upon renewal.

Interruption of agreements may occur due to highway construction or improvement projects. WSDOT will notify all affected participants in the event of interruptions. During this period the area will be reserved for the original participants. Upon completion of construction the original participants have the option of renewing or terminating the agreement.

In some cases, it may be desirable to establish agreements for special clean up or enhancement activities through a General Permit with Special Provisions for Roadside Maintenance. A temporary agreement can be set up within the Adopt-a-Highway Tracking System database to serve this purpose. The procedures are the same as a standard four year agreement and all applicable forms must be completed.

6-10.4 *Volunteer Adoptions*

Volunteer adoptions are established through the form titled Application for Adopt-a-Highway Volunteer Group ([DOT Form 520-032](#)).

Each volunteer organization participating in the program shall have a designated leader or coordinator.

All participants shall be at least 15 years of age.

All participants will submit a signed Adopt-a-Highway Participant Registration Form ([DOT Form 520-031](#)) to WSDOT. This includes the requirement for signed parental consent to be submitted for all minors (participants under the age of 18), prior to their participation in any roadside activities.

During roadside clean up or enhancement activities, there shall be at least one adult supervisor present for every eight minors.

Upon completion of any and all AAH events, volunteers shall complete and submit to the department within seven days an Adopt-a-Highway Volunteer Participant Activity Report ([DOT Form 520-030](#)).

6-10.5 *Sponsored Adoptions*

Sponsored adoptions are established through the form titled Adopt-a-Highway Agreement for Privately Sponsored Work ([DOT Form 520-028](#)). This is a three party agreement between WSDOT, the sponsoring organization, and the organization providing the clean up or enhancement. WSDOT is not responsible for agreements or contracts made between a sponsoring organization and the organization providing the clean up or enhancement. Sponsored adoptions may be initiated by either a sponsor or a potential contractor wishing to solicit a sponsor. Agreements are granted on a first come, first served basis and will only be granted when a sponsor or contractor presents a copy of a signed contract to conduct the required work.

The cost of privately sponsored adoptions and the work involved is intended to be covered by the sponsor. The agreement between the sponsor and the sponsor's contractor must include provisions for all the equipment, materials, labor, and insurance necessary to accomplish the work specified in the agreement. Sponsors are required to pay a fee to the department covering the cost of sign fabrication, installation, and maintenance. The fee is based on the size and total number of signs required to satisfy the agreement, times the average cost per square foot for fabrication, and installation of the signs. The per-sign cost also includes a nominal administration fee to help defer the cost of establishing the agreement and coordinating with the sponsor and the sponsor's contractor over time.

Each sponsoring organization shall have a designated contact person. Each organization providing clean up or enhancement work shall have a designated crew leader for each adopted section and a designated central contact for the organization.

If, during the agreement period, the sponsoring organization fails to meet its financial obligation for the activities specified, WSDOT will allow the organization providing the clean up or enhancement to continue work under the agreement for up to 30 days, at their own expense. If the organization providing the enhancement work fails to obtain a new sponsor within 30 days, the agreement automatically terminates and all agreed upon conditions for default shall apply.

If, during the agreement period, the organization providing the cleanup fails to meet its obligation or otherwise dissolves its agreement with the sponsoring organization and discontinues work, the sponsoring organization has 30 days to find a new organization to provide the cleanup. If the sponsoring organization fails to contract with a new organization to provide the clean up within 30 days, the agreement automatically terminates and all agreed upon conditions for default shall apply.

Upon completion of AAH events, the organization providing the cleanup completes and submits a monthly report to the department.

6-10.6 *General Permits for Roadside Enhancement*

In some cases a General Permit with Special Provisions for Vegetation Management may serve as the most appropriate means to accomplish proposed roadside enhancement or special clean-up work. Use this as an option over an AAH agreement if:

- The permit Grantee is not interested in recognition through the AAH program.
- The proposed work overlaps with existing AAH litter control assignments.
- The proposed work is a situation where an abutting neighbor maintains, such as a “No Spray” agreement.
- The proposed work consists of a limited number of events.

Fill out all General Permits for roadside enhancement work using the AAH database program. This allows information to be recorded and accessed in relation to any questions regarding statewide roadside partnerships.

6-10.7 *AAH Administrative Roles and Responsibilities*

Each region, and each maintenance area has unique personnel resources and responsibilities. They must assign responsibilities for the AAH Program to fit their maintenance and operations management structure.

6-10.8 Maintenance and Operations Responsibilities

The State Maintenance Engineer will designate the AAH Program Manager. This position will be responsible for:

1. Establishing and maintaining standard procedures to provide uniform implementation of the statewide AAH Program.
2. Providing, maintaining, and updating a statewide network database containing all participant information and standard forms, agreements, correspondence letters, and recognition certificates for the AAH Program.
3. Developing, producing, updating, and distributing to the regions all public information on the AAH Program. This includes brochures, safety literature, safety videos, and the WSDOT Web site.
4. Maintaining records on all participating sponsored contractors including proof of insurance, and monthly reports.
5. Assisting the regions in coordination of AAH partnerships throughout the state including litter control and enhancement efforts.
6. Overseeing and commenting on all procedures and issues relating to the AAH Program, including review of all proposed agreements which include enhancement activities other than litter control prior to signature.
7. Pay premiums or assessments required under the [RCW 51.12.035](#) to secure medical aid benefits under [Chapter 51.36 RCW](#) for all volunteers participating in the Program.
8. Oversee the recording of all agreement information and participant activity on the statewide AAH Database and updates.

6-11 Region Responsibilities

The Regional Administrator may delegate responsibilities for regional management and operation of the AAH Program to best serve the Program in that region. Day-to-day interaction with AAH participants will occur at the maintenance area level, but the area offices will receive varying levels of assistance from the regional offices throughout the state. The regions shall delegate responsibility for the following:

1. Assignment of participating groups or sponsors to appropriate sections of -highway.
2. Work with potential partners to develop proposals for roadside enhancement other than litter control.
3. Determine appropriate specifications for all agreements, including frequency of litter pick up, special provisions, and plans for special enhancement projects.
4. Inform and discuss, if requested, with the Washington Federation of State Employees; regional Chief Shop Steward, any projects other than volunteer litter control prior to approval of the agreement.

5. Erect and maintain AAH Recognition Signs in accordance with signing guidelines contained in the *Traffic Manual* Section 2.7.J.
6. Furnish volunteer groups with trash bags, required sign(s) and stand(s), a warning light, hats and vests for all volunteer participants, and all or a portion of the materials and provide assistance required for implementation of enhancement projects other than litter control.
7. Distribute safety information, training aids, and provide consultation to volunteer groups and sponsored contractors.
8. Pick up and dispose of litterbags collected by volunteer participants.
9. Collect and distribute funds paid for privately sponsored agreements to cover costs of sign fabrication, installation and maintenance, and processing agreement.

6-11.1 *Guidelines for Litter Crew Traffic Control*

- Review traffic control plans prior to going out to pick up litter.
- Drive through assigned section and determine what safety concerns you will be facing.
- No stopping, parking, or buffering in the travel lane.
- Choose a safe place to let crew members out of the vehicles.
- Passengers should get out of the vehicle on the side away from traffic.
- Litter crew members should not walk on the paved shoulder.
- Walk facing traffic whenever possible.
- All litter crew members are required to wear an approved class 2 reflective safety vest.

6-11.2 *Two-Lane/Two-Way Roadway*

1. Work areas should be limited to 2-mile increments.
2. Pick litter up only one side of the road at a time.
3. Use pullouts and driveways to get safely off the road.
4. Vehicles must stay off the paved, traveled portion of the highway and should use pullouts and driveways for buffering, loading and unloading.

6-11.3 *High Speed Roadway*

1. Work areas should be limited to 2-mile increments.
2. Pick litter up on one side of the road at a time.
3. Vehicles must stay off the paved, traveled portion of the highway.
4. Find a safe place to set up signs and unload crew members.
5. When parking on shoulder, a minimum of 2 feet from the travel lane is recommended.

6-11.4 Median

1. Work areas are 2-mile increments.
2. Find a safe place to set up signs and unload crew members.
3. Vehicles must stay off the paved, traveled portion of highway.
4. When parking on a shoulder, a minimum of 2 feet from the travel lane is required.

6-12 Auxiliary Facilities

6-12.1 Safety Rest Areas

Safety rest areas have been developed throughout the state adjacent to the highway and within the right of way. These facilities provide places where motorists can get off the highway for short periods to nap, stretch, snack, and/or use the rest room. They also provide a safe place to pull over and telephone for help in the event of vehicle break down. Rest areas contribute to highway safety by allowing drivers to become refreshed and more alert when they resume their journey.

Regular maintenance of rest areas is important. A clean functioning rest area gives visitors and taxpayers a good impression of the state and of WSDOT. Frequency of maintenance depends largely on the use of the individual areas. Clean and service rest rooms at least twice per day or at four-hour intervals during periods of high use. Empty all trash cans. Pick up ground litter and have it removed on schedule. Wash and clean picnic tables and benches at least once a week or as often as necessary to maintain a neat appearance.

A poorly maintained safety rest area will tend to collect added trash. Users will have little respect or desire to put his trash in a litter barrel when large amounts of trash are already scattered about. Similarly, graffiti and other vandalism must be quickly repaired or additional abuse is likely. Some areas with toilets that are maintained by the department must receive extra attention and be maintained to a high -degree of sanitation. Sewage disposal facilities need scheduled maintenance of septic tanks, drain fields, pumps, filters, and back-flow prevention devices. In some rest areas chemical toilets are provided and maintained under private contract. Check them to assure that they are properly maintained. If they need attention or if there is indication of vandalism, report it immediately.

Pet waste stations should be provided at rest areas that fall within the boundaries of an approved bacteria Total Maximum Daily Load (TMDL) and WSDOT's NPDES Municipal Stormwater Permit coverage area. Pet waste stations consist of signage, pet waste pick-up bags and a garbage can. Maintenance of the stations occur as needed and is to include replacement of the pick-up bags. Periodic checks of the pick-up bags should occur to ensure the stations are properly stocked. Pet waste stations provided at rest areas outside the identified boundaries are subject to the same guidance.

Some areas are provided with drinking water from springs or wells. Check these regularly for repair and sanitation. Take test samples of water to ensure a clean water supply. Turn off or divert contaminated water supplies until the source of contamination is found and corrected.

6-12.2 *Park and Ride Lots*

It is the policy of WSDOT to plan, coordinate, develop, and implement effective partnerships for park and ride facilities. Clean, well maintained facilities help to instill a sense of confidence and safety for the users. Maintenance is critical for customer and vehicular safety, accessibility, utilization, protection of the infrastructure investments, and reduction of potential liabilities for the department and/or transit agency.

Whenever possible, maintenance of park and ride facilities is arranged through agreement with the local transit agency. In cases where WSDOT maintenance is responsible for care of a facility, the *Park and Ride Facilities Manual M 3010* provide guidance on activities and procedures.

6-12.3 *Historical Markers*

Historical markers and other interpretive signing within the right of way are maintained jointly with the Washington State Parks and Recreation Commission. Historical or interpretive signs and associated structures are maintained by Parks. WSDOT maintains road approaches, parking areas, litter barrels, and advance advisory signing.

6-12.4 *Viewpoints*

Viewpoints have been provided at many scenic locations. Like safety rest areas they are a definite asset and safety factor to the motorist. They generally consist of a parking area with litter receptacles. Maintenance requirements are not as intense as for rest areas. But, viewpoints do require regular checks to keep litter barrels emptied and trash picked up. Maintain parking areas and keep fences and guardrail in good repair. Assure all warning signs are in place and clearly legible. Remove all undesirable brush that would reduce sight distance and obstruct the view. Dispose the debris away from the viewpoint.

7-1 **General**

Removal or prevention of snow and ice accumulation on the roadway is a top priority and will generally take precedence over other non-emergency maintenance functions.

Washington State Department of Transportation (WSDOT) policy is to remove or prevent snow and ice accumulation starting with higher priority highways such as Interstates and other high ADT routes. After priority highways are cleared, snow removal occurs on lower priority highways according to the Roadway Treatment Goals as established in the [Statewide Snow and Ice Plan](#).

Some mountain pass highways are closed each year once winter snows arrive. Pass closures occur where light traffic does not justify the hazard and expense of attempting to keep roads open in the presence of heavy snowfall and avalanche occurrences.

When snowstorms occur, plowing starts soon after the storm begins. It takes time to complete the operation so during heavy snowfalls there will be periods of time when the roads will not be free of snow and ice and the travelers may need to install chains or other traction devices. Snow removal operations are intended to provide the traveling public with a reasonably safe driving surface. Snow and ice removal continues until roads are returned to a drivable condition even if it involves working extra hours at night, on weekends, and on legal holidays.

Freezing rain, freezing fog, and frost events can occur quickly and sometimes without warning. Deicing operations will begin after notice is made of such events and crews have time to react and treat such conditions appropriately. When conditions are appropriate, snow and ice material pre-treatments will be made to prevent the bonding of snow and ice to the roadway surface.

7-2 **Preparation for Winter Operations**

Winter operational planning begins well ahead of winter so that equipment, materials, and labor forces can be prepared for early events. All items in the [Statewide Snow and Ice Plan](#), Chapter 3, Annual Review of Snow and Ice Procedures, are reviewed and documented. Equipment is adapted to snow and ice response and new personnel are signed off on equipment operation by a qualified person. Material supplies are topped off, and other tools and supplies readied as needed. Night and weekend schedules and contingency schedules are updated and implemented to provide coverage for snow and ice response. Instructions on winter time chain of command, communication procedures, priority routes, and treatment specifications are provided to all maintenance personnel. Public agency, transit, school district, and other affected parties are notified of winter operations plans where appropriate.

7-3 Treatment Levels and Goals

There are five treatment levels assigned to highways in Washington State. They range from Level 1 highways, which include all of the Interstates, down to Level 5 roads which comprise those sections of highway which are closed in the winter. These levels are assigned primarily based on ADT. A color-coded treatment level map of all state highways is available for review in the [Statewide Snow and Ice Plan](#), Chapter 1.

In addition to the treatment levels assigned to all state highways, there are a series of special criteria which must be considered when assigning priority response to segments of state highway. These include:

- Importance to commerce.
- Commuter routes.
- School bus routes.
- Proximity to population centers.
- Curvature and grade of highway alignment.

These criteria are mostly location specific so it is important that priorities are assigned and understood by the area maintenance personnel where such segments deviate from the larger treatment level assignments.

The Treatment Level Goals assigned to the various levels are also available in the [Statewide Snow and Ice Plan](#), Chapter 1. Level 1 highways receive the highest degree of response followed in descending order by the other four levels. In areas where Level 1 highways do not exist, the corresponding treatment level goals may be applied to highways of lower priority. The language in the [Statewide Snow and Ice Plan](#) allows for Level 2 highways to be treated the same as Level 1 highways to the extent that resources allow. However, Level 1 highways where they do exist will take precedence over all other roads and resources may be shifted accordingly.

7-4 Other Facilities

The primary function and mission of the snow and ice program is response to roadway conditions in order to keep travelers moving and to provide for the accustomed level of service. WSDOT recognizes that there are other facilities besides state highways that may rely upon state forces for winter response in order to keep those facilities functional. These can include WSDOT ferries parking lots, park and ride lots, WSDOT regional and area facility lots and some sidewalks that were constructed using federal funds.

In all cases, response to roadway conditions will take precedence over any such activities, and these facilities will be handled on a “as conditions allow” basis. This may mean that such facilities will remain unmaintained until such time that all roadways in any given region are clear, level of service goals are met, and normal movement of goods and services is restored.

7-5 Area of Responsibility

Snow and ice control operations on state highways are restricted to the highway right of way. This includes those portions of intersecting public roads that are within the state highway right of way. Snow control operations consist of removing accumulated snow from the traveled way, shoulders, widened areas, and public highway approaches within highway right of way.

Snow and ice control on private approaches, including that portion that may be located within the state highway right of way, is the responsibility of the abutting property owner. Snow and ice control activities may inadvertently result in the deposit or the windrowing of snow, ice or sleet onto private approaches. The department does not assume responsibility for the removal or clearance of such material, even if caused by normal winter maintenance operations. However, all employees involved in snow control operations are expected to be sensitive, considerate, and courteous when carrying out these policies.

Snow and ice control operations on roads and other facilities under the jurisdiction of other governmental agencies are secondary to work on state highways. Work is completed in accordance with the provisions of an agreement with the other governmental agency. Agreements are processed by the Regional Administrator or his/her authorized representative.

7-6 Abandoned or Illegally Parked Vehicles

[Revised Code of Washington 46.55.085](#) allows the Washington State Patrol (WSP) to impound abandoned or illegally parked vehicles after documented attempts to notify the owner. This process can require several days. However, if the vehicle is determined to be a hazard, WSP can arrange for immediate removal. WSP has requested that WSDOT record any department requests for such removal in order to support WSP's actions should a conflict arise with the owner of the vehicle.

7-7 City Streets on the State Highway System

[RCW 47.24.020](#) defines the jurisdiction of the state and the cities for those city streets that serve as a part of the state highway system within the corporate limits of a city.

In respect to snow and ice control, the law provides that a city or town shall remove all snow at its own expense. Cities are also required to clean the streets, including catch basins, except WSDOT is responsible to plow snow on the roadway when necessary*.

Cities generally plow city streets and are expected to plow the state highways in the city as well. State crews are expected to assist by plowing on the way through town. However, plowing on city streets is a secondary priority to be completed after highways outside city jurisdiction have been cleared.

The general exception is routes within cities that are designated as limited access highways. In those instances, the state exercises full responsibility for the entire facility and all maintenance operations.

*See [2013 City Streets As Part of State Highways Conformed Agreement](#) for a definition of "when necessary"

7-8 Operational Considerations

The following guidelines are of a general nature as more specific guidelines are available in the [Statewide Snow and Ice Plan](#) and in regional and area plans and operator handbooks. These guidelines are also meant to address issues of statewide significance which have arisen in the recent past.

7-8.1 Road Closures and Restrictions

These may occur occasionally when conditions overwhelm the ability of maintenance forces to effectively respond. Deep snow drifts, spin-out accidents, avalanche control missions, and white-out conditions are among the causes of such measures. The safety of our employees and the traveling public is paramount, and when conditions prevent safe travel or response to conditions roads will be closed to safeguard employees and the public. The following actions are taken when a road must be closed for more than an hour:

- The Regional Administrator or designee notifies WSP and other pertinent organizations.
- Immediately erect appropriate traffic control devices and/or electronic message signs advising motorists of the closure and possible detours.
- Take all necessary measures to prevent motorists from entering and becoming stranded in the closed section.
- Keep the Regional Public Information Officer apprised of road conditions so that the news media can be informed of closures.
- Emergency closures require that the Area Superintendent, Regional Maintenance Engineer, Regional Administrator and the Regional Public Information Officer be notified as soon as possible.
- Keep the State Maintenance Engineer informed of all closures that are expected to last for four hours or more and of all actions taken to reopen the roads.

7-8.2 Emergency Assistance

Limited to actions that safeguard life and property. Time spent dealing with minor problems could result in deteriorating road conditions that will affect many more motorists. Employees may render emergency assistance to motorists at the motorist's request, provided:

- The stranded vehicle is drivable.
- The motorist makes his/her own chain or cable hook-up to their vehicle.
- A tow truck is not immediately available.
- Snow and ice conditions are under reasonable control.

Never tow any vehicle that may be unable to proceed because of lack of power or traction, except when the vehicle blocks the traveled way. In this instance, the stalled vehicle may be towed a sufficient distance to clear the normally traveled portion of the roadway to allow the safe passage of other vehicles.

WSDOT employees may not accept compensation of any kind for this or any other type of assistance.

It may be necessary occasionally for an employee to exercise judgment as to whether a motorist is capable of driving his/her vehicle. If the motorist appears impaired or otherwise unsuited to drive notify law enforcement agencies by radio or other available means as soon as possible.

Employees are required to notify the State Patrol about any crashes/collisions that occur on the highway.

WSDOT desires to avoid situations that can cause the department or its employees to be harmed or sued. This has resulted in a general policy that non-employees do not ride in state-owned vehicles. However, employees may provide transportation in state-owned vehicles to stranded travelers under emergency conditions, exercising very careful judgment when doing so, and keeping the TMC or a supervisor informed of such actions as they occur.

7-8.3 *Plowing*

Must be done at speeds appropriate to conditions to avoid damage to roadside hardware, highway signs, utility lines, mail boxes, parked cars, and other private property. Special care must be taken to avoid blocking sidewalks and bike lanes in areas where pedestrians may be present. Moderate speeds must be maintained when plowing wet snow and slush as they tend to be cast much further and faster than dry snow. Dry snow can also cause problems when plowed too fast by creating snow clouds which obscure visibility.

Care must be taken when plowing on the centerline or against median barriers to avoid casting snow into the oncoming lanes. Be especially careful when passing or being overtaken by other traffic to avoid casting snow onto windshields and obstructing the vision of other drivers.

Take care while removing snow in the vicinity of cars parked adjacent to the highway. Even though the cars may be illegally parked on the traveled way, take reasonable care consistent with the necessity of accomplishing the work.

Extreme care should be taken when plowing near or around railroad crossings, raised curbs, raised pavement markings, and other obstructions. When possible, such obstructions should be marked and/or maintenance personnel should be made aware of the locations of such obstructions.

When accumulated, snow becomes compact and removal is not possible with available equipment, the accumulation is treated as an ice control operation. Ice and compact snow are best removed under thawing conditions. If possible, schedule ice and compact snow removal operations during the temperature rise that often occurs between 11:00 a.m. and 3:00 p.m. Use this time to clear surfaces of melting snow and ice, and to remove as much slush as possible.

Tandem plowing can be used for snow removal on multilane highways. Where reversible plows are available, it is often advantageous to operate one plow toward the left plowing to the median strip. In areas where drifting snow is a frequent problem, caution should be exercised in placing snow on the median. A narrow median filled with snow can cause drifting in adjacent lanes. Also, melting snow in the median can cause icy roadways during colder nights. Take care to assure that plowed snow is not thrown into the path of oncoming vehicles or onto a roadway below the highway being plowed.

Interchange ramps are considered as separate roadways independent of the highway they serve. Priorities are determined by traffic volume. Ramp road ways are normally treated after one or more lanes are open on the main roadway.

Never leave a windrow of snow on a railroad grade crossing. Drivers are to raise or otherwise adjust the blade before reaching the crossing to prevent damage to the crossing and/or equipment. Be aware of and avoid any conflicts between snow removal operations and approaching railway traffic.

Widening for snow storage, established turnouts, mailboxes, etc., may be accomplished when available manpower and equipment permit. Shoulders are plowed in conjunction with plowing of the traveled way, or immediately after the storm is over. Clearing shoulders provides storage space for additional snow, makes the highway safer for traveling public helps prevent drifting, damage to the road bed from moisture infiltration, and excessive runoff onto the pavement. Perform shoulder plowing in the direction of travel. Always establish proper traffic control before plowing against traffic on the median shoulder of divided highways.

After the priority lanes are cleared, attention is needed to make sure the bike lanes and sidewalks are travelable.

Clear all drainage ways from the roadway surface prior to thawing conditions. Utilize a road grader or wing plow if possible.

Clear snow-covered highway signs after normal snow and ice control operations have been accomplished. Give first attention to regulatory and warning signs.

7-8.4 *Material Applications*

Must be done according to “sensible salting” strategies, that is, using the least amount of material necessary for the desired outcome. Outcomes are driven by service level goals for any given state route, and should not exceed the [Statewide Snow and Ice Plan](#) defined desired outcome through the excessive use of salt or deicers. Operators must be familiar with local application guidelines specific to the materials in use for that area. They should also be familiar with the characteristics and limitations of those materials.

WSDOT has a chemical priority policy for snow and ice response, but does not preclude the appropriate use of sand or abrasives to apply a traction component when needed. Sand can be an effective stand-alone treatment for certain conditions such as extreme cold or heavy compact snow which would require extremely heavy salt and deicer treatments to remove. The combination of salt and sand in some ratio can be an efficient and cost effective treatment.

Material application equipment must be calibrated pre-season and as needed during the season. The use of precision material controllers in combination with closed loop hydraulic systems is the preferred means of material delivery. Equipping all trucks with such technology is a WSDOT priority and should result in cost savings through more efficient applications of snow and ice material.

Care must be taken to avoid the inadvertent blasting of oncoming traffic with sand or salt. Spinner speed should be adjusted down or spinners turned off when meeting oncoming traffic.

Accurate record keeping of material applications is necessary to demonstrate efforts made to respond to winter conditions for purposes of performance rating, and for response to tort actions. Such record keeping is also useful in determining the “normal” or average material use for a given area over history, and as a budgeting tool. For equipment not yet provided with AVL/GPS technology, records should be kept via PDA or in paper form for later data entry on a PC.

7-8.5 **Material Storage**

Must abide by National Pollutant Discharge Elimination System (NPDES) standards where applicable, and by general good housekeeping and spill prevention procedures everywhere. The guidelines below apply to the storage of all winter chemicals for storm water compliance within the NPDES permit area. . However, they outline good standards of practice for all areas and should be followed to the extent possible.

Prior to the reissuance of the current (2009) NPDES Permit, WSDOT will evaluate all winter chemical storage areas within the permit area to identify necessary capital structural control BMPs. These capital improvements will be ranked and constructed on a priority basis as funding becomes available. Funding may be needed by the state legislature prior to these BMPs being constructed. Additional capital BMPs may be added to this list as their need is identified.

Winter Operations – Winter maintenance chemicals are non-hazardous. However, large quantity spills and small spills that occur over a long period of time may contaminate groundwater drinking water sources and potentially surface water.

Winter Chemical (Solid)

- Manage only the chemical needed for the season.
- Products will be stored in designated areas.
- Designated areas should be located away from storm drains and water bodies.
- Ideally solid chemical will be stored in a covered shed that protects it from precipitation.
- If a covered shed is not available solid chemical will be covered with plastic sheeting (polyethylene, polypropylene, hypalon, or equivalent).
- For facilities that do not have a covered shed, product remaining at the end of the season should be transferred to a yard that does as soon as possible.

- Spilled solid chemical should be swept up and placed back under cover as soon as possible. During a winter storm event, spilled material should be cleaned up as soon as the storm event is over.
- Solid chemical should be stored on an impervious surface that is sloped so that stormwater does not come into contact with the solid chemical.

Winter Chemical (Mixing and Loading Solids)

- If possible solid chemical should be dumped directly into the storage shed.
- If it is not possible to directly dump into the storage shed, the following procedure should be followed:
 - Try to obtain solid chemical on a day when precipitation is not expected.
 - Sweep the impervious pad immediately in front of the storage shed prior to delivery of new product.
 - Have the delivery truck dump the solid chemical as close to the storage shed as possible. Immediately push the chemical into the storage shed with a loader.
 - Sweep the impervious pad to pick up any residual chemical and place it into the storage shed.

Conditioned Sand – Sand Mixed With Solid Chemical

- Only condition the amount of sand expected to be used during the upcoming winter storm event.
- Conditioned sand will be stored in designated areas.
- Designated areas should be located away from storm drains, drainage systems, and water bodies.
- Segregate conditioned sand from unconditioned sand.
- Conditioned sand should be placed in a covered shed if available or should be covered with plastic sheeting (polyethylene, polypropylene, hypalon, or equivalent).
- Spilled conditioned sand should be swept up and placed back in the conditioned sand pile.

Winter Chemical (Liquid)

- Protect tanks from vehicle impact.
- Install and maintain hose connections so that the flange couplings are protected and leaks are reduced.
- Valves should remain closed when not in use.
- Label tanks with product information.
- Inspect tanks and pipes monthly for leaks, spills, and deterioration.
- Permanent tanks must be located in impervious secondary containment surrounded by dikes or UL approved double-walled. The dike must be of sufficient height to provide a containment volume of either 10 percent of the total enclosed tank volume or 110 percent of the volume contained in the largest tank, whichever is greater, or if a single tank, 110 percent of the volume of that tank.

- All hoses and connections should be contained within the secondary containment enclosure.
- Shut-off valves for secondary containment should remain closed at all times, unless draining rainwater.
- Liquid deicer mixed with rainwater needs to be disposed of properly.
 - Pumped back into tanks.
 - Discharged to sanitary sewer.
 - Used on roads as dust suppressant.
- Leave product remaining at the end of the season in the tank.
- If a bucket is used to collect deicer spills during loading or unloading it should be placed within the containment unit and covered to prevent the introduction of rainwater.

7-9 Service Level Quality Measurement

The Headquarters Maintenance Office has developed quality performance measurements for snow and ice control operations. These performance measurements have been established to assess how well field maintenance responds to winter road conditions. These measures are focused on providing targeted levels of service for snow and ice control based on the [Statewide Snow and Ice Plan](#), Chapter 1, Roadway Treatment Goals.

10-1 Right of Way Fences

Fencing is provided to discourage encroachment onto highway rights of way. Fencing on a controlled access highway is usually owned and maintained by the state while fencing on non-controlled access highways is normally owned and maintained by the abutting property owner. Questions regarding maintenance responsibilities of a given section of fence should be resolved by the Area Superintendent.

10-2 Road Approaches – General

10-2.1 *Access Management – General*

There are two types of state highways when it comes to Access Management. **Limited Access Highways** and **Managed Access Highways**. Any highway that is not a Limited Access Highway is a Managed Access Highway. WSDOT controls access on all limited access state highways, and only controls access on Managed Access state highways that are outside the incorporated limits of a City or Town. Cities and Towns are the access permitting authority on Managed Access state highways within their incorporated City or Town limits.

Limited Access Highways - are highways in which the rights of access have been purchased by WSDOT from the adjacent property owner. There are three types of limited access control – full, partial, and modified. Full control is usually found on a freeway and allows no access except at interchanges, or in some cases at-grade intersections. Partial control allows no commercial accesses, but does allow residential, logging, and farm accesses. Farm accesses may not be used for retail uses, such as having a farm produce stand. Modified control allows whatever the local zoning allows, such as commercial uses. Access Connection Permits are not issued on limited access highways. General Permits may be issued to allow for the construction or modification of an access on a limited access highway if the access right already exists, such as in a Warranty Deed for the property. For more information on Limited Access Highways see Chapter 530, Limited Access Control in the WSDOT *Design Manual M 22-01*.

Managed Access Highways - are highways in which access is regulated. There are five classes of Managed Access Highways. Class 1 is the most restrictive down to Class 5 the least restrictive. WSDOT is the access permitting authority for Managed Access state highways outside of an incorporated city or town. All new access connections must be permitted by a regional or area office. Grandfathered access connections are access connections to the state highway which were in existence *and in active use* with the type of connection on July 1, 1990 do not require the issuance of a permit and may continue to provide access to the highway system. The access connection permit stipulates the conditions of the access footprint, such as width, turn radii, culvert sizing and type of surface (HMA or gravel) along with the specific location of the access to ensure adequate sight distance. The permit holder is responsible for maintenance of the access between the edge of pavement and the property line, including any culverts. If new or existing

access construction activities are noticed, the Area Superintendent should be notified to ensure the access is permitted. The fee charged by WSDOT to cover the administrative cost of an access connection permit is listed on DOT form 224-694 by category of connection to the adjacent highway. The involvement of the regional area personnel will vary with the type of access. For more information on Managed Access Highways see Chapter 540, Managed Access Control in the WSDOT *Design Manual* M 22-01.

A good source for more information on Access Management is your Region's Development Services Office.

10-3 Typical Maintenance Responsibilities in Cities

Maintenance on city streets may become complicated, depending on the type of installation. In accordance with [RCW 47.24](#) and [WAC 468-18-050](#), cities with a population greater than 27,500 have different requirements for some types of maintenance than do cities with a population less than 27,500. In general, the city or town is responsible for any portion of the facility beyond the curbs. If no curb is installed, the city or town's responsibility begins at the shoulder edge.

The guidelines in Appendix 1 are designed to clearly identify typical maintenance responsibilities, as determined by statute, agreement, or policy, on city streets that are certified as part of a non-controlled access state highway route. They are general in nature and do not preclude WSDOT and individual cities from entering into agreements to address particular circumstances.

The state has full maintenance responsibility for bridges conveying a State Route or Interstate traffic in a limited access corridor (unless otherwise covered under a separate agreement).

10-4 Maintenance Yards

All maintenance yards are to be kept in a neat, clean, and orderly condition. All buildings are to be kept in good repair, inside and out, and are to be repaired when necessary. Repairs to Maintenance facilities should be coordinated with Facilities for needed repairs for funding and environmental purposes. All buildings and yards are to be kept locked when not occupied by responsible personnel .

Truck sheds are to be kept clean of debris and free from fire hazards. Gasoline and other highly flammable materials should not be stored in buildings where trucks or equipment are stored. Oily rags should be kept in metal containers. If more than 25 gallons of flammable or combustible liquids are used, then the approved containers should be stored in a flammable liquids storage cabinet.

Materials and supplies are to be stored in an orderly manner and an inventory is to be kept of all materials and supplies on hand.

Hazardous wastes i.e. (solvent contaminated rags, methyl methacrylate wastes, and paint residues) are to be placed in proper containers, closed except when adding or removing waste, labeled with a yellow "Hazardous Waste" label and the nature of the hazard (toxic, corrosive, flammable, etc) and disposed of properly within (90) days.

Free, printable labels are available from <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Dangerous-waste-guidance/Dangerous-waste-basics/Label-dangerous-waste/Print-free-labels>.

10-5 Stockpile Sites

Stockpile sites are to be cleared of all vegetation, trees, brush, rocks, or other debris, and a uniform ground surface is prepared prior to depositing stockpile material. The site chosen should attempt to minimize visual impact, especially in urban areas. Stockpiles are to be constructed in a neat and regular shape, that can occupy as small an area as practical while still being, accessible for loading material onto trucks without obstructing the highway. Stockpiles are built up in layers. Plank runways are required for operating trucks on stockpiles where there is danger of tracking dirt or other foreign matter onto the material.

Signs that identify the material as state property should be placed at each stockpile.

Sites where materials are stockpiled year-round or for a considerable period of time should be fenced with signs placed along the fence line identifying the site as state property and the gates kept locked.

Stockpiles should periodically be inspected for vegetation growth, which should be removed, and be on the alert against any removal of materials by unauthorized persons. The inspection should also note potential storm water impacts off-site and corrections should be made as appropriate.

Material used by state forces is to be promptly charged out and reported to the area office. Excessive amounts of materials should not be allowed to accumulate in stockpile sites. If use of stockpiled materials is not anticipated, the area office should be notified so the material can be declared surplus.

10-6 Materials From State Quarries or Pits

Materials produced or manufactured in state-owned or leased pits or quarries may not be sold, or otherwise disposed of, to private individuals or concerns.

Counties and cities or other governmental agencies may participate by having their requirements included in the state's crushing contract, with proper financial arrangements. It is the state's policy to assist other governmental agencies in need of small quantities of crushed rock by selling them material from existing stockpiles at current inventory prices if the material can be spared.

When quarry or pit sites are obtained from the Department of Natural Resources, the material is to be used for state highway construction or maintenance, or by other approved public agencies. Notify the area office when material from such pits and quarries is used.

Ecology storm water permits are required at pits and quarries where aggregate is being mined or crushing operations are taking place. Contact the regional Environmental Office for information.

10-7 Procurement of Materials

Materials necessary for highway maintenance are generally available from the inventory of materials in stores. Stores should be checked well in advance of need, if possible, to help ensure that materials will be available when required. Materials not available must be purchased by personnel in the area or region office. This purchasing process can take weeks or even months for certain materials. Therefore, it is imperative to plan ahead whenever possible.

10-8 Material Specifications – General

It is WSDOT policy that all materials used by state forces to repair or reconstruct highway facilities and buildings conform to the specifications adopted for like material in new construction whenever possible.

Specifications are necessary to ensure that the department receives the quality of material required for the intended use, and to permit vendors to quote prices on an equal basis. It is difficult to dispute the quality of any material received if the original order did not explicitly define what was expected. There is a reason for a particular design, mix, formula, type, or dimension being specified. Good workmanship will not counteract the effects of the use of inferior material, material intended for another purpose, or material that would be adequate only under different conditions. Therefore, it is imperative that maintenance personnel recognize the importance of specifications.

10-9 Disposal of Surplus Items

10-9.1 *Equipment*

If a crew determines that a piece of equipment is no longer needed or is no longer functional they should advise the superintendent or supervisor, providing information on needed repairs, problems, and future needs. This should be done to facilitate the decision on whether to transfer the equipment or dispose of it. A crew is charged for equipment even if it is not being used; therefore, it is important to be sure the equipment is necessary and operable.

For Dump Trucks, AVL modems that were once owned by Maintenance, would follow the Transfer procedure. These modems are now a part of the TEF in-service package and captured in the rental rate for the category of equipment they are placed in. Moving forward, in the case of dump trucks, WSDOT would follow the “PUTTING A NEW UNIT INTO SERVICE THAT IS EQUIPPED WITH AN AVL MODEM” and after its life cycle end, the “DISPOSAL OF AN AVL MODEM” Processes.

For Incident Response, AVL modems are non-TEF. Moving forward, for the foreseeable future, they will continue to follow the “TRANSFERRING AN AVL MODEM (from one vehicle to another)” Process.

10-9.2 *Inventoried Items*

If it is determined to dispose of an article that is carried on an inventory, the region office should be provided with a description of the article, its inventory number, and a statement of its condition. Generally, requests for replacements, with any necessary justification, should accompany the recommendations for disposal.

10-9.3 *Non-Inventoried Items*

Non-inventoried items with potential trade-in or resale value may be declared surplus and turned in to the area office. Disposal of all items will be in accordance with the *Disposal of Personal Property Manual M 72-91*.

10-10 Instructions for Radio Operation

Radio operation techniques primarily comes from on the job training working with supervisors, WSP, Traffic Management Center (TMC), and Incident Response Team (IRT). WSDOT is working to update the Statewide guidelines for IRT Standard Operating Guidelines (SOG) and protocols on radio systems and radio procedures.

10-11 Work Scheduling and Reporting

The previous sections of this manual were directed at specific maintenance activities. This section briefly discusses the overarching budget, plan, and reporting of all the activities. Since procedures change and various district policies vary, details for these processes are not included. The basic principles, however, will remain the same.

10-12 Budget

Maintenance Operations is an operating program where the budget and work accomplishments are on a biennial cycle (2 years). The biennium begins on July 1 of every odd-numbered year. Prior to the beginning of the biennium, the legislature allocates a specific amount of funding (appropriation) directly for maintenance. HQ allocates these funds by region and subprogram, while the region determines the area and activity breakout. The department also determines the statewide level of service (LOS) that can be provided for each of the thirty six activities identified in the Maintenance Accountability Process (MAP) given the funding level allocated. Due to the somewhat unpredictable nature of the work and all the factors that may affect our ability to deliver the work, planning for these funds can be difficult. However, a budget is required in order to responsibly manage our \$520 million program and tell the maintenance story. It is important to remember the budget plan is “anticipated” work and that actual work will not exactly match the plan. Given this, the basis for the budget is calculated by the number of employees, equipment, and materials needed to accomplish the work.

By state law, units within the department may not overspend their budgets. Supervisors should be notified if budget problems begin to arise.

10-13 Scheduling

Throughout the biennium, supervisory personnel must have one eye on the work to be done and one eye on the budget. To ensure that the most important work is accomplished within the budget limits, the biennial budget plan must be refined into a work plan for each month's activities. This enables coordination of materials and equipment availability with the work having the greatest priority for a given month. Consistent with that monthly plan, Supervisors prepare a daily plan of specific work assignments for the upcoming week. The daily plan should recognize the priority items addressed in the monthly plan, but also be adapted to fit current weather conditions, unexpected events, employee absences, equipment breakdowns, etc. This is the backbone of good management and alerts all employees of the following day's activity so they can make proper preparation and wear proper clothing.

10-14 Reporting

The requirement to report what was accomplished in a day, by whom, and with what equipment and materials can easily be viewed in the field as relatively unimportant. However, this is the basis for obtaining additional funding and telling the maintenance story. Without accurate data on what work is actually being done, it is impossible to properly discuss and identify the growing needs of the department and the true costs to deliver. Supervisory personnel should always encourage accurate reporting and review data for compliance

10-15 Environmental Sensitivity

Maintenance is WSDOT's most visible activity with respect to environmental consequences. Painting, sanding, anti-icing, herbicide application, mowing and brush control, landscaping, and maintaining drainage are activities that can raise environmental objections. All material handling can have environmental safety implications for our employees and the general public. Environmental, health and safety issues are being addressed through an education and training program provided by Headquarters.

Appendix B *Emergency Restrictions for Roads*

[RCW 47.48](#), [RCW 46.44.080](#), and [WAC 468-38-080](#) authorize the Washington State Department of Transportation (WSDOT) to impose emergency road restrictions when conditions exist that could cause normal traffic to damage the roadway.

B-1 General

WSDOT may impose load and speed restrictions when freeze-thaw or other conditions may subject the roadway to damage from normal traffic. There are two types of load restrictions that may be imposed depending upon the highway and weather conditions:

- **Emergency Load Restrictions** – This restriction may be applied to any road when the untreated pavement layers (base course and sub-grade) are supersaturated and unstable. Evidence of surface deflection under traffic loading or free water in the base materials under less than six inches of treated materials supporting the roadway may be cause to apply these restrictions.
- **Severe Emergency Load Restrictions** – This restriction may be applied only to a roadway whose surfacing depth is insufficient to resist subgrade swell pressure or is surfaced with a thin bituminous treatment. This restriction may also be used for other roadway types displaying signs of severe distress during a freeze-thaw cycle or unusual weather conditions.

Notify the public, other WSDOT offices, and law enforcement agencies to ensure compliance with pending and current restrictions, and to minimize inconvenience to the public. Provide courtesy notices on highways leading to restricted roads to the extent possible under the circumstances, and in consideration of the expense to be incurred by WSDOT.

Special permits to operate on restricted roads may be issued to school buses and trucks hauling perishable commodities or commodities necessary for the health and welfare of local residents.

School buses may be given a general exemption from weight restrictions by letter, subject to speed restrictions. In no event may an exemption be granted to a vehicle with a gross load weight on each tire exceeding 550 pounds per inch of tire width.

B-2 Actions

As part of your annual snow and ice planning, alert road user groups, freight associations, and the media that emergency road restrictions may be imposed when and where necessary. Provide a list of roads that could be affected.

When weather forecasts indicate that restrictions will likely be imposed, notify Commercial Vehicle Services (CVSpermits@wsdot.wa.gov, 360-704-6340), and alert road user groups, freight associations, and the media that road restrictions will occur if conditions develop as predicted.

Determine the condition of roads subject to freeze-thaw or other weather conditions using the experience of local WSDOT maintenance crews, historical roadway performance, or the expertise of WSDOT materials engineers.

When restrictions must be imposed:

1. Post the road with appropriate signs.
2. Notify regional managers, the Region Administrator, and the traffic management center.
3. Notify Commercial Vehicle Services.
4. Notify local law enforcement agencies and the WSP detachment.
5. Provide courtesy notices to principal road users as circumstances allow.

After restrictions are imposed:

1. Continually monitor restricted roads and remove or change restrictions as conditions change or improve.
2. Establish permit speed and weight restrictions. Issue permits or provide exemptions for school buses and trucks hauling necessary commodities.
3. Notify the public, other WSDOT offices, and law enforcement agencies when restrictions are lifted or modified.
4. Continue to assess road conditions to determine if further restrictions are necessary.

B-3 Signing Instructions

Restrictions are legal only when “Emergency Restriction” signs are posted at each end of a restricted roadway. “Emergency Restriction” signs must also be posted at each crossroad intersection on the right-hand side of the restricted road. Intersection signs should be located within 50 feet of the intersection, preferably at 25 feet, so that motorists intending a right or left turn should see them prior to making the turn. The signs should not prohibit motorists from crossing the restricted road. When signing closely spaced intersections, determine the number and location of signs needed to provide reasonable notice to motorists.

The appropriate sign, “Emergency Load Restrictions” or “Severe Emergency Load Restrictions”, must be attached to “Emergency Restriction” signs when load restrictions apply.

Standard speed limit signs displaying the speed restriction must be posted 500 feet ahead of “Emergency Restriction” signs at each end of the posted road, and 500 feet after signs posted at crossroads. When signing closely spaced intersections, determine the number and location of signs needed to provide reasonable notice to motorists.

“Speed Zone Ahead” signs shall be posted ahead of the speed limit signs as specified in the MUTCD. If the restricted area immediately follows a zone having a lower posted speed, “Speed Zone Ahead” signs are not required.

Existing speed limit signs within the restricted area will be covered, turned away from traffic, or covered with the appropriate restricted speed limit sign.

Courtesy signs should be placed in advance of a restricted roadway to inform motorists and minimize backtracking. Courtesy signs are not necessary if only speed restrictions are imposed. The appropriate sign for either “Emergency Load Restriction” or “Severe Emergency Load Restriction” may accompany road restrictions signs.

The posting distance preceding the restricted area will depend upon site specific conditions, consult with Region Traffic Office for a preferred sign location. One approach is not exceed ten signs posted at locations most likely to be seen by motorists that could be affected by the restrictions.

B-4 Emergency Load Restrictions

Sign examples and size requirements:

Conventional Tires		Tubeless or Special With .5 Marking	
Tire Size	Gross Load Each Tire	Tire Size	Gross Load Each Tire
7.00	1800 lbs.	8-22.5	2250 lbs.
7.50	2250 lbs.	9-22.5	2800 lbs.
8.25	2800 lbs.	10-22.5	3400 lbs.
9.00	3400 lbs.	11-22.5	4000 lbs.
10.00	4000 lbs.	11-24.5	4000 lbs.
11.00	4500 lbs.	12-22.5	4500 lbs.
12.00 or over	4500 lbs.	12-24.5 or over	4500 lbs.

Sign size: 24" wide by 18" high. Black lettering on white background.
Attach to space provided on "Emergency Restrictions in Force" sign.

B-5 Severe Emergency Load Restrictions

Sign examples and size requirements:

Conventional Tires		Tubeless or Special With .5 Marking	
Tire Size	Gross Load Each Tire	Tire Size	Gross Load Each Tire
7.00	1800 lbs.	8-22.5	1800 lbs.
7.50	1800 lbs.	9-22.5	1900 lbs.
8.25	1900 lbs.	10-22.5	2250 lbs.
9.00	2250 lbs.	11-22.5	2750 lbs.
10.00	2750 lbs.	11-24.5	2750 lbs.
11.00 or over	3000 lbs.	12-22.5 or over	3000 lbs.

Sign size: 24" wide by 18" high. Red lettering on white background.
Attach to space provided on "Emergency Restrictions in Force" sign.