

Part 7

Maintenance and Operations

Chapter 700 Maintenance and Operations

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700.01 Introduction

Part 7 summarizes environmental requirements covered in the WSDOT *Maintenance Manual M 51-01* and *Regional Road Maintenance Endangered Species Act Program Guidelines*, and it gives additional details on several environmental issues with reference to **Part 4** and **Part 5** of the *Environmental Procedures Manual M 31-11*, the *Highway Runoff Manual M 31-16* (revised in May 2006), *Roadside Manual M 25-30*, and other WSDOT documents.

At WSDOT, highway maintenance includes both maintenance and operations. The maintenance service objective, stated in the State Highway Systems Plan, is to “maintain and operate state highways on a daily basis to ensure safe, reliable, and pleasant movement of people and goods.”

Maintenance work is performed to care for and maintain the highway and associated features so it substantially retains its original intended use and function. Maintenance activities include patching pavement, cleaning ditches and culverts, repairing slopes and streambank stabilization structures, controlling vegetation, and painting stripes on the road surface.

Operations activities affect the reliability of a direct service to users of the highway system. Activities include operating rest areas, reversible lane gates, highway lighting, traffic signals, snow and ice control, and keeping the roads operational during a disaster.

The information referenced in **Part 7** primarily applies to highway maintenance; it also covers procedures for compliance with state surface water quality standards applicable to ferry system maintenance activities.

700.02 Process Overview

Often environmental commitments made years before during Design and Environmental Review (**Part 4**) and Environmental Permitting and PS&E (**Part 5**) will require on going maintenance and attention. **Figure 700-1** illustrates the relationship between maintenance and operations and preceding phases of WSDOT’s transportation decision-making process.

Among the maintenance activities that may impact the environment are painting, sanding, anti-icing, applying herbicide, mowing and brush control, restoring native plants, and maintaining drainage facilities. Maintenance facility material handling also can have environmental and safety implications for WSDOT employees and the general public. Environmental, health, and safety issues are being addressed through an environmental management program for maintenance employees provided by WSDOT Headquarters (see *Maintenance Manual M 51-01*, Chapter 11).

Figure 700-1: Maintenance and Operations Phase

EPM Part 6	EPM Part 7				EPM Part 8
Construction Phase	Maintenance and Operations Phase				Property Management Phase
	Maintenance Accountability Program Scores	Prioritization of Tasks	Active Maintenance	Evaluation for Future MAP Scores	

700.03 Organization of Part 7

Part 7 has three chapters. **Chapter 710** summarizes the environmental requirements applicable to WSDOT maintenance and operations, including those found in policy documents, interagency agreements, and permits and approvals. **Chapter 720** briefly describes the WSDOT manuals that give detailed technical guidance on maintenance and operations, and summarizes the guidance applicable as general practices for all maintenance activities and specific practices for various activity groups. **Chapter 790** reviews how environmental commitments made during transportation planning, project scoping and programming, design and environmental review, and permitting and PS&E are implemented during maintenance and operations.

700.04 Abbreviations and Acronyms

Abbreviations and acronyms used in **Part 7** are listed below. Others are found in the general list in **Appendix A**.

BMP	Best Management Practice
GHPA	General Hydraulic Project Approval
HPA	Hydraulic Project Approval
LWD	Large Woody Debris
MAP	Maintenance Accountability Program
NPDES	National Pollutant Discharge Elimination System
PDA	Personal Data Assistant
REM	Regional Environmental Manager
RMEC	Regional Maintenance Environmental Coordinator

SPCC Spill Prevention, Control, and Countermeasures

700.05 Glossary

None. See **Appendix B** for a general glossary of terms used in the EPM.

700.06 Exhibits

None.

Chapter 710

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- 710.02 Policy Guidance
- 710.03 Interagency Agreements
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710.01 Introduction

Many environmental commitments made earlier in the WSDOT transportation decision-making process are implemented in maintenance and operations activities. For example, permits issued before a project is constructed may include plans for long term revegetation and restoration; wetland mitigation site maintenance; and spill prevention, control, and countermeasures (SPCC). This chapter summarizes the source of these commitments in policy guidance, interagency agreements, and permits and approvals, with reference to information in **Part 4** and **Part 5**.

710.02 Policy Guidance

A WSDOT Environmental Policy Statement issued by executive order on April 7, 2009) makes it clear that WSDOT will comply with environmental requirements and that it is each individual employee's responsibility to ensure that happens. The policy statement is available online at:

🔗 <http://www.wsdot.wa.gov/environment/policystatement.htm>

As stated above, the environmental requirements applicable to maintenance and operations activities are spelled out in the interagency agreements and permits and approvals referenced in this chapter. These include a Regional Road Maintenance Program (RRMP) approved by NOAA along with some *Regional Road Maintenance Endangered Species Act Program Guidelines* that include various general practices and specific practices (such as BMPs) that WSDOT will use to avoid and minimize adverse impacts to fish and aquatic habitat. In areas where none of the referenced documents apply, and there is potential for a maintenance activity to harm a fish or aquatic habitat protected under the ESA, BMPs will still be utilized to avoid and minimize adverse impacts. BMPs will generally be used for activities conducted within

*Web sites and navigation referenced in this chapter are subject to change. For the most current links, please refer to the online version of the EPM, available through the WSDOT Environmental Services Office (ESO) home page: <http://www.wsdot.wa.gov/environment/>

300 feet of protected riparian areas. BMPs will also be used where some type of conveyance, such as a roadside ditch or channel, serves to potentially convey impacts beyond a 300-foot buffer. To assure adequate usage of BMPs, WSDOT is identifying, mapping, and marking sensitive areas so maintenance field personnel know where to apply protective BMPs.

In some areas of Washington State (most notably the more arid parts of central and eastern Washington) highway maintenance activities have no potential to harm protected fish or aquatic habitat, simply because there is no habitat, fish, or conveyances to fish habitat in these areas. Under these circumstances, maintenance superintendents determine the need to use BMPs for operational efficiencies. See the *Regional Road Maintenance Endangered Species Act Program Guidelines* at:

☞ <http://www.wsdot.wa.gov/maintenance/roadside/esa.htm>

WSDOT uses statewide Regional Maintenance Environmental Coordinator Meetings to identify and announce any modifications or changes to the Regional Road Maintenance Program (RRMP). New technologies are also discussed at these meetings. Modifications are shared with NOAA Fisheries for concurrence to maintain the status of “ESA compliant.” Additional forums are utilized or created if needed to adequately include key stakeholders (i.e., federal and state regulatory agencies and additional WSDOT personnel) in changes of applicable environmental protection practices.

710.03 Interagency Agreements

Appendix E-1 includes an index to all of WSDOT’s environmental interagency agreements, in the form of Memoranda of Understanding (MOUs), Memoranda of Agreement (MOAs), or Implementing Agreements. **Appendix E-1** also includes a matrix and an accompanying narrative showing which agreements have provisions applicable to maintenance and operations. These are summarized in this section.

These interagency agreements are accessible on line at:

☞ <http://www.wsdot.wa.gov/environment/compliance/agreements.htm>

(1) *Memorandum of Understanding on Environmental Issues*

This August 1988 MOU between WSDOT and Ecology describes procedures that the two agencies will use to enhance coordination and cooperation on environmental issues in order to provide for timely and efficient review of environmental documents and permit applications. It also provides authority for and directs the two agencies to develop and execute implementing agreements for specified program-specific areas as supplements to the MOU. With regard to maintenance, the MOU indicates that WSDOT will immediately investigate any permit violations identified by Ecology.

(2) **Compliance Implementing Agreement**

The November 2004 Compliance Implementing Agreement between WSDOT and Ecology is designed to assist in obtaining and maintaining WSDOT compliance with state surface water quality standards, including compliance with Section 401 Certifications, Section 402 NPDES permits, and other Ecology Orders and approvals.

This agreement, which primarily applies to compliance during the construction phase, includes a provision that maintenance and operations staff have received a copy of and understand all long-term compliance expectations, including mitigation site monitoring and maintenance.

(3) **Implementing Agreement on State Surface Water Quality Standards**

The February 1998 Implementing Agreement between Ecology and WSDOT regarding compliance with state surface water quality standards, currently being revised, is intended for use by WSDOT and WSDOT contractors. The agreement covers general conditions for concrete work, erosion control, hazardous spill prevention and control, spill reporting, and specific provisions for erosion control in new roadway and bridge construction projects. (See **Section 430.04.**)

The Implementing Agreement also covers activity-specific conditions for the highway and ferry system maintenance activities listed below. Note that many of these activities are also covered by more recent General (programmatic) NPDES and Hydraulic Project Approval permits; see **Section 540.08** and **Section 540.15**, respectively, for details.

- Beaver dam removal
- Ferry system maintenance pile driving and removal
- Highway bridge and ferry terminal transfer span cleaning and painting
- Bridge pier, structure, bridge protection device, stream bank and roadway protection maintenance and repair.
- Debris removal from bridge piers, piles, braces and abutments
- Ditch, stream, and culvert cleaning and maintenance
- Ferry sacrificial structures, wing walls, dolphins
- Maintenance and relocation of navigation buoys
- Maintenance of stormwater control and treatment structures

The General NPDES and General Hydraulic Project Approval (GHPA) permits are available online at:

☞ <http://www.wsdot.wa.gov/environment/Programmatics/>

(4) MOA Concerning Work in State Waters

This June 2002 agreement between WSDOT and WDFW replaces previous agreements including Compliance with the Hydraulic Code (8/90), Fish Passage Guidelines – Culvert Installations (8/90), and Work in State Waters (12/96). See **Section 430.04**.

The MOA describes how WSDOT and WDFW will cooperate to ensure that state transportation projects protect fish life and habitats, and ensure consistent and uniform application of RCW 77.55 (construction in state waters) and WAC 220-110 (hydraulic code rules). It includes procedures for emergency/disaster maintenance and repair. **Appendix F** is maintenance guidelines.

(5) Implementing Agreement – Alternative Mitigation Policy Guidance for Aquatic Permitting

In this February 2000 agreement, WSDOT agrees to comply with consensus on mitigation policy among agencies responsible for aquatic resource mitigation. Applies to Ecology and WDFW in issuing or reviewing permits, documents, appeals or compensation agreements under Clean Water Act, Shoreline Management Act, or Hydraulic Code. See **Section 430.04**.

Provisions applicable to maintenance and operations:

- Monitoring is required. If mitigation is failing and corrective actions not successful, applicant must contact permitting agencies and use an adaptive management approach to achieve stated performance standards.
- Compliance monitoring may be performed by agencies.
- Mitigation site to be protected permanently or at least for the life of the project.

(6) MOA – Wetland Compensation Banking

This February 1994 agreement between WSDOT, Ecology, WDFW, and several federal agencies, establishes principles and procedures for establishing, implementing, and maintaining the WSDOT wetland compensation bank program. See **Section 431.04**.

Requirements for inspections and monitoring.

- Semi-annual inspections for five years after as-builts accepted, and annually thereafter.
- WSDOT will use inspection checklist in **Appendix E** to document inspections.
- **Appendix F** is elements of a monitoring plan and report, includes monitoring checklist
- WSDOT retains responsibility for inspections if management and maintenance of the site is transferred to another agency or entity.

(7) MOU on Preservation of Agricultural and Forest Lands

This September 1982 agreement between WSDOT and the State Conservation Commission is intended to enhance cooperation in preserving agricultural and forest land, to prevent and treat erosion adjacent to or associated with farmlands and state highways, and maintain drainage ways and reclaim abandon roadways for agricultural purposes. See **Section 450.04**.

The agreement commits WSDOT to work with conservation districts through county weed control boards or appropriate county officials to control noxious weeds.

(8) MOU on Highways Over National Forest Lands

This March 2002 MOU establishes procedures for coordinating transportation activities on national forest lands. See **Section 450.04**.

Provisions applicable to maintenance and operations:

- WSDOT will coordinate with USFS on maintenance activities that might affect national forest lands, including: removal/disposal of dangerous trees, disposal of slash or other waste, material source or storage, changes to drainage patterns, snow and avalanche control, and rock scaling.
- WSDOT will work with USFS to develop roadside vegetation management plans.
- WSDOT will furnish and maintain all standards highway signs, including guide signs requested by the USFS.
- WSDOT will coordinate with USFS for third party occupancy or use by utility facility installations on WSDOT easements.
- Specifies responsibilities for signage for maintenance or emergency activities.
- Specifies responsibilities for control of access to WSDOT easements by USFS or its permittees.

710.04 Permits and Approvals

Permits and approvals applicable to WSDOT activities are described in detail in **Chapter 520** through **Chapter 550**. Most WSDOT maintenance activities are covered by general or programmatic permits (particularly ESA Section 4(d), **Section 520.08**; NPDES permits, **Section 540.08**; and HPAs, **Section 540.15**). However, some WSDOT maintenance activities are required to obtain individual permits from federal, tribal, state, or local authorities. Permit conditions provide for protection of water quality, fish, and their habitat, and other elements of the environment.

More than one permit from more than one agency may be required for work in streams or fish-bearing waters. The most common restriction has to do with timing. Normally, these restrictions will require that work be done during low flow conditions to minimize impacts to fish and water quality. (*Roadside Manual* M 25-30, p. 440-11.)

Additionally, when maintenance activities are carried out on tribal lands, environmental protection measures may be required by the tribal government or the U.S. Environmental Protection Agency (USEPA). Local governments also have authority to issue permits regulating activities in their jurisdiction. It is the responsibility of the Regional Maintenance Environmental Coordinator to obtain permits when necessary.

(1) Federal

National Environmental Policy Act (NEPA), 42 USC 4321; 40 CFR Part 1500 (CEQ); 23 CFR 771 (FHWA). See Chapter 410 and Chapter 411.

Clean Water Act, Section 404 permit, administered by the U.S. Army Corps of Engineers, required occasionally for bank stabilization projects. See **Section 520.02**.

Rivers and Harbors Act of 1899, Section 10 permit, administered by the U.S. Army Corps of Engineers, required occasionally for bank stabilization projects. See **Section 520.03**.

Endangered Species Act (ESA) compliance – See **Section 436.02**, **Section 520.08**, and **Section 436.05**.

(2) Tribal

See **Chapter 530** for permits and approvals that may be needed on tribal land or for activities affecting usual and accustomed fishing and hunting rights guaranteed by treaty.

(3) State

State Environmental Policy Act (SEPA), RCW 43.21C and WAC 197-11. See **Chapter 410** and **Chapter 411**.

Washington State Department of Natural Resources (DNR), Aquatic Lands Use Authorization (Aquatic Lease), RCW 79.105 through 79.140, and WAC 332-30. See **Section 540.16**.

Coastal Zone Management Consistency Certification, Washington State Department of Ecology. See **Section 540.03**.

Hydraulic Project Approval (HPA), RCW 77.20 and WAC 220-110, administered by WDFW. A General HPA covers specific WSDOT maintenance activities, including removal of beaver dams; see **Section 540.15**.

NPDES Construction Stormwater Permit. See **Section 540.04** through **Section 540.08**.

Minimal Functional Standards for Solid Waste Handling, WAC 173-304, and Washington State Dangerous Waste Regulations, WAC 173-303. See **Section 447.05**.

(4) Local Governments

Critical/Sensitive Areas Ordinances adopted under the Washington State Growth Management Act, RCW 36.70A, WAC 173-14 through 173-28. See **Section 550.04**.

Shorelines Permit Programs adopted under the Washington State Shorelines Management Act, RCW 90.58 and WAC 173-14 through 173-28. See **Section 550.02**.

Clearing and grading permits. See **Section 550.05**.

710.05 Non-Road Project Requirements

Environmental procedures for ferry-related maintenance activities are covered under the Implementing Agreement between Ecology and WSDOT regarding compliance with state surface water quality standards (February 13, 1998). See **Section 710.03** for a list of ferry maintenance activities covered under this agreement and **Section 540.08** and **Section 540.15** for a discussion of any General (programmatic) NPDES Permit and Hydraulic Project Approval requirements applicable to ferry maintenance activities.

710.06 Exhibits

None.

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720.01 Introduction

This section summarizes guidance in the *Regional Road Maintenance Endangered Species Act Program Guidelines* and other WSDOT manuals. As in the *Guidelines*, the section is organized by program elements (10) and maintenance categories (15). The *Guidelines* define BMPs that are expected to be used when performing maintenance activities. A range of BMP options are provided to achieve prescribed outcomes. This allows the crew supervisors the flexibility to select or modify BMPs for each site based on conditions in the field as long as they meet BMP outcomes that focus on avoiding and minimizing erosion/sedimentation, containing pollutants, and avoiding and minimizing impacts to habitat.

720.02 WSDOT Manuals

Technical guidance is summarized by reference to the WSDOT manuals described below. Refer to these documents for details. Most manuals can be accessed on line from the WSDOT Engineering Publications Web site at:

 <http://www.wsdot.wa.gov/publications/manuals/>

(1) ***Regional Road Maintenance Endangered Species Act Program Guidelines***

These *Guidelines* define general and specific practices WSDOT will utilize to avoid adverse impacts to the aquatic environment from maintenance activities. Whenever avoidance is not attainable, impacts will be minimized. The *Guidelines* were developed in compliance with the Endangered Species Act, Section 4(d) Limitation #10 Roadside Maintenance. The document also has been reviewed for consistency with Hydraulic Permit Approval (HPA) requirements by the National Marine Fisheries Service (NMFS) and Washington State Department of Fish and Wildlife (WDFW), and for consistency with state surface water quality standards by Washington State Department of Ecology (Ecology).

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The *Guidelines* are online at WSDOT's Web site:

☞ <http://www.wsdot.wa.gov/maintenance/roadside/esa.htm>

(2) Maintenance Manual M 51-01

This manual covers procedures for highway maintenance. In several chapters maintenance activities have environmental implications: emergency operations (hazardous materials spills), drainage (aquatic habitat, water quality, wetlands, shorelines), bridge repair, roadside maintenance (integrated vegetation management), snow and ice control, and procuring materials from quarries or pits. References in this section are to the March 2002 edition.

(3) Maintenance Accountability Process (MAP)

This document is the primary tool used by the Maintenance Office for evaluating program service delivery and identifying budget investment choices. For information on the maintenance accountability process, see:

☞ <http://www.wsdot.wa.gov/maintenance/mgmt/accountability.htm>

(4) Roadside Manual M 25-30

This manual provides consistent guidelines for roadside management, and supplements guidelines in WSDOT's *Roadside Classification Plan M 25-31*. It is organized around a framework of roadside functions: operational, environmental, visual, and auxiliary. Environmental functions include water quality preservation, protection, and improvement; stormwater detention and retention; wetland and sensitive area protection; noxious weed control; noise control; habitat protection and connectivity; air quality improvement; and erosion control. Sections of the manual offer resources on designated and sensitive areas, wetlands, water quality, wildlife, and noise abatement. The manual is available at:

☞ <http://www.wsdot.wa.gov/Publications/Manuals/M25-30.htm>

(5) Design Manual M 22-01

This manual is the basic reference for highway design. It is available at:

☞ <http://www.wsdot.wa.gov/Publications/Manuals/M22-01.htm>

720.03 Program Elements

The program elements are fully described in the *Regional Road Maintenance ESA Program Guidelines (Guidelines)*.

(1) Regional Forum

A regional forum has been created from participating agencies. The regional forum provides a regional meeting for program discussion, coordination, and adaptive management. In terms of contributing to conservation, the regional forum provides a process whereby, as new information is gathered in each

individual agency, it can be shared with other agencies across the state. Sharing information on successful BMP applications in the field, together with scientific research, creates a potential for each agency to improve its contribution to conservation over time. Additionally, if a problem with program implementation occurs in one jurisdiction, this information sharing prevents repeated problems.

(2) Program Review and Approval

The program review and approval process will require that each agency participating in the regional program comply with the ten program elements. WSDOT's Highways and Local Programs (H&LP), Headquarters, or the regional forum will review each agency's Part 3 Application to determine whether or not all program elements are included. The goal of the program review and approval process is to establish consistency across Washington so that conservation measures are achieved. **The services will issue approval for each agency to receive a take limit (NMFS) under Limit 10 (ii) of the 4(d) Rule, and/or a reduction or elimination of the prohibition on take of threatened species (USFWS).**

(3) Training

Courses will include the topics of basic ESA, design, biological review, permit activities, maintenance BMPs, and monitoring BMP activities. The WSDOT Technology Transfer (T2) Center, University of Washington, or WSDOT Operations and Maintenance Program in conjunction with the regional forum, will develop a curriculum for training maintenance employees in the implementation of the regional program that may be taught by T2 instructors or other trainers. Thorough training on all elements of the regional program, at applicable levels of implementing agencies, provides consistency across the state so that conservation goals can be met.

For a list of WSDOT training courses and other training opportunities, see WSDOT's Environmental Services Office training Web site at:

 http://www.wsdot.wa.gov/environment/ems/ems_training.htm

(4) Compliance Monitoring

The objective of compliance monitoring is to evaluate program implementation to accomplish regional program conservation goals consistently across the state. Compliance monitoring will take place at several levels: local agency supervisory staff, local agency permitting authorities, and state and federal permitting authorities evaluating BMPs for use and implementation. Each local agency will establish a formal compliance monitoring program for monitoring BMP outcomes and any monitoring that is part of various research projects.

(5) Scientific Research

Case studies in the field, as well as literature research done by others, are included in this program element. The scientific research element will serve to verify effectiveness of BMPs and update BMPs based on the latest technologies. Using information derived from scientific research, conservation opportunities can be maximized.

(6) Adaptive Management

The adaptive management philosophy will apply to all ten elements of the regional program. The training, research, biological data collection, and program monitoring elements are the basis for adaptive management. Adaptive management provides a means by which potential adverse impacts are avoided and minimized, and conservation opportunities maximized, as the regional program is implemented throughout the state of Washington.

(7) Emergency Response

This element provides a framework under which road maintenance organizations can operate during emergencies. This program element allows for necessary emergency response measures, while keeping the services and regulatory agencies apprised.

(8) Biological Data Collection

This element includes habitat location information within the right of way (ROW) and development of a process to train and alert staff where the *Guidelines* need to be applied.

(9) Biennial Reports

The regional forum will provide biennial (every two years) reports to the services. Biennial reports will include a review of the ten program elements, updates on research, recommended BMP changes, and recommended updates on each program element.

(10) Best Management Practices (BMPs) and Conservation Outcomes

Under the regional program, BMPs and desired conservation outcomes have been developed for road maintenance activities. The regional forum will annually review and update the BMPs. Local agencies and the services will review the changes the regional forum recommends for adoption.

720.04 Maintenance Categories

The following maintenance categories are defined in the *Guidelines*. Within each category are descriptions of the road maintenance activities most commonly performed.

Category 1 – Roadway Surface

The roadway surface is part of the ROW structure. The slope of the roadway surface routes water and sediments off the roadway to the shoulder, to an open drainage area or ditch, or enclosed drainage system. Thus, the slope of the roadway surface is part of the water flow and sediment collection systems.

The purpose of repair, replace, install, or maintain roadway surfaces include:

- Pothole and square cut patching.
- Removing paved surfaces or roadway base.
- Repairing roadway base.
- Repaving.
- Adding gravel or grading surfaces.
- Dust control.
- Extending pavement edge.
- Paving graveled shoulder.
- Crack sealing and overlay.
- Chip seal.
- Resurfacing.
- Pavement marking and traffic channelization.
- Traffic control features.

BMPs proposed for maintaining, repairing, installing, or replacing roadway surfaces are designed to achieve one or more of the following habitat goals:

- Protect watercourse, stream, and/or water body.
- Maximize opportunities for increased infiltration.
- Reduce runoff (of dirt, debris, sediment, and petroleum products) from maintenance activity to contribute to restoration of water quality.

Categories 2 and 3 – Enclosed Drainage Systems and Cleaning of Enclosed Drainage Systems

The enclosed drainage system is part of the ROW structure that routes water and sediments from roadways and surface structures through water and sediment collection systems to outlet areas. Facilities can be located within the ROW, public property, separate tracts, easements, or on private property. Enclosed drainage systems, which are used for water quality and quantity treatment, are designed to accumulate sediments over time. Because of limited storage capacity, this sediment should be removed to maintain

treatment effectiveness and environmental protection. The purpose of repair, replacement, installation, cleaning, and maintenance tasks on enclosed drainage systems includes the following:

- Removing large quantities of sediment and debris from stormwater before it enters watercourses or streams.
- Ensuring the roadway drainage system removes, collects, and conveys water from the ROW to permit the maximum use of the roadway.
- Reducing damage to roadway structures.
- Protecting abutting property from damage.
- Restoring surface water drainage.
- Ensuring structural integrity.
- Vegetation management.

BMPs proposed for maintaining, repairing, installing, and replacing enclosed drainage systems are designed to achieve one or more of the following habitat goals:

- Protect watercourse, stream, and/or water body.
- Reduce work site pollutants run off to restore or maintain water quality.
- Control storage, delivery, and routing of surface and groundwater to control volumes and velocities of stormwater discharge by cleaning and maintaining system.
- Reduce pollutant transport from system breaks by performing repairs.

Category 4 – Open Drainage Systems

Like the enclosed system, the open drainage system is part of the ROW structure that routes water and sediments from roadways and surface structures through water and sediment collection systems to outlet areas. Facilities can be located within the ROW, public property, separate tracts, easements, or on private property. Open drainage systems include stormwater conveyance systems that were created entirely by artificial means, such as roadside ditches and storm or surface water runoff facilities. These structures are not watercourses, streams, or wetlands. Maintenance tasks may involve the following activities:

- Cleaning.
- Reshaping/regrading.
- Erosion control/bank stabilization of drainage system.
- Vegetation management.
- Removal of debris, trash, yard waste, and sediment.
- Repair of structures.

These tasks are performed on facilities, retention/detention facilities, swales, pollution control devices, manholes, catch basins, vaults, pipes, culverts, inlets/outlets, and ditches. The open drainage system allows sediment to separate and settle from the water flow, thus cleaning and removing large quantities of sediment out of the stormwater system. Maintenance operations are performed when sediment, debris, or vegetation in a ditch impedes flows or storage of water and sediments to a point where safety or structural integrity of the roadway system is jeopardized.

BMPs proposed for maintaining, repairing, and cleaning open drainage systems are designed to achieve one or more of the following habitat goals:

- Protect downgrade habitat by removing sediment.
- Protect water quality.
- Reduce work site pollutant runoff to watercourses, streams, and/or water bodies.
- Maintain or restore the storage, delivery, and routing of surface and groundwater.
- Control volumes and velocities of discharge by removing sediment loading from drainage systems.
- Maintain or restore the storage area of sediment and other pollutants.
- Remove sediment from system.
- Vegetation management.

Category 5 – Watercourses and Streams

Watercourses, rivers, and/or streams refer to any portion of a channel, bed, bank, or bottom waterward of the ordinary high water line of the waters of the state. This definition includes areas in which fish may spawn, reside, or through which they may pass, and tributary waters with defined bed or banks, which influence the quality of fish habitat downstream. This definition includes watercourses that flow on an intermittent basis or that fluctuate in level during the year and applies to the entire bed of the watercourse whether or not the water is at peak level. This definition does not include irrigation ditches, canals, stormwater runoff devices, or other entirely artificial watercourses, except where they exist in a natural watercourse that has been altered by humans.

Some roadside ditches and/or stormwater facilities can be watercourses or streams. Proposed maintenance activities within waters of the state will be reviewed prior to work with the Washington State Department of Fish and Wildlife (WDFW) staff to achieve Hydraulic Project Approval (HPA) compliance.

Maintenance tasks for watercourses, rivers, and/or streams involve the following activities:

- Structural repair/replacement.
- Slope stabilization.
- Sediment removal.
- Vegetation management.
- Debris removal.
- Habitat maintenance/improvements, such as, fish ladders, weirs, and large woody debris (LWD).
- Access road maintenance

BMPs proposed for the maintenance of watercourses and streams are designed to achieve one or more of the following habitat goals:

- Protect habitat.
- Protect water quality.
- Reduce work site pollutant runoff to watercourses, streams, and/or water bodies.
- Maintain or restore the storage, delivery, and routing of surface and groundwater to control volumes and velocities of discharge by removing sediment loading from drainage system.
- Remove sediment from system.
- Identify the number of chronic sediment deposit problem sites that require frequent sediment removal..

Category 6 – Stream Crossings

The repair, maintenance, cleaning, installation, replacement or upgrade of pipes, arch pipes, box culverts, fish ladders, weirs, sediment pools, access roads, and bridges are conducted to prevent flooding or catastrophic road failure. Flooding and road failures can occur from structures filled to capacity, blocked with sediment or debris, damaged or may be undersized. Maintenance within waters of the state will require HPA compliance.

BMPs proposed for maintaining stream crossings are designed to achieve one or more of the following habitat goals:

- Repair, replace, or maintain structure.
- Protect habitat and watercourse or stream by, or while, performing maintenance.
- Reduce work site pollutant runoff.
- Restore or maintain fish passage through structure.

- Maintain or restore the storage, delivery, and routing of surface and groundwater to control volumes and velocities of discharge by maintaining structure.
- Reduce flooding..

In some cases, habitat restoration work is possible as part of a road maintenance activity. In many cases, this type of work is beyond the scope of routine maintenance activities, but might be done as a capital improvement project or a major restoration project. Whether done on a small scale as part of a maintenance activity, or on a more significant level as a capital improvement project, the following BMPs may apply where ROW is available and to the extent that design/habitat considerations allow:

- Remove artificial bank hardening and/or channel confining structures.
- Enhance or add areas for spawning, migration, feeding or rearing habitat.
- Create connections to off-channel habitat..

Category 7 – Gravel Shoulders

Maintenance activities on gravel shoulders are performed to ensure the shoulder functions as a filter for sediment, provides bio-filtration, and controls surface water runoff. Maintenance activities include removal of sediment, sod and debris from the shoulder; restore filtering ability; restore proper grade; improve drainage; vegetation control to maintain adequate site distances; and smoothing ruts.

BMPs proposed for maintaining gravel shoulders are designed to achieve one or more of the following habitat goals:

- Protect watercourse, streams, and other water bodies.
- Restore or maintain water quality.
- Control storage, delivery, and routing of surface and groundwater.
- Control volumes and velocities of stormwater discharge by cleaning and maintaining shoulders, which allows for sheet flow and infiltration.
- Reduce sediment transport by removing sediments before they enter watercourses and/or streams.
- Maximize opportunities for increased infiltration and/or bio-filtration..

Category 8 – Street Surface Cleaning

Street surface cleaning activities are performed to provide a safe roadway surface. Sweeping reduces sediment loading of the drainage system, surface waters, watercourses, streams, and other water bodies. Water spray systems are used on sweepers to reduce dust. Pickup sweepers remove materials from the roadway.

BMPs proposed for street surface cleaning are designed to achieve one or more of the following habitat goals:

- Restore or preserve water quality.
- Protect watercourses, streams, and/or other water bodies by performing maintenance.
- Reduce sediment transport and loading of drainage systems, watercourses or streams, or other water bodies.
- Reduce sediment and pollutant transport and loading of drainage systems, watercourses, streams or other water bodies.

Category 9 – Bridge Maintenance

Bridge repair, replacement, installation, and maintenance activities are performed to provide a safe roadway and to protect bridge infrastructure according to local, state, and federal regulations. Maintenance activities include inspecting, testing, repairing, replacing, maintaining, painting, or resurfacing various components of the bridge. WDFW reviews and permits activities requiring an HPA prior to work activities.

BMPs proposed for bridge maintenance are designed to achieve one or more of the following habitat goals:

- Contribute to the restoration and/or enhancement of aquatic habitat (HPA).
- Control work site pollutant runoff.
- Maintain or restore fish passage through structure.
- Maintain or restore water quality off bridge by maintaining drainage system.
- Repair, replace, or maintain structure.
- Maintain habitat and watercourse or stream by performing maintenance.
- Reduce flooding.
- Preserve or restore watercourse or stream velocities impaired by blockages in the vicinity of bridge maintenance activity.

Category 10 – Snow and Ice Control

Snow and ice control activities are performed to provide a reasonably safe roadway surface. Sanding and plowing operations are considered to be work of such importance that they are classified as emergency operations and take precedence over all nonemergency work. Post-event cleanup is considered a continuation of the activity.

BMPs proposed for snow and ice control are designed to achieve one or more of the following habitat goals: maintain or restore water quality and protect aquatic habitat and riparian area.

Category 11 – Emergency Slide/Washout Repair

Slides and washouts are caused by the impact of heavy rainfall or freeze and thaw conditions on unstable and/or saturated soils. Slides and washouts may occur on the slope above or below roadways, private property, or sensitive areas. Slide or washout repair activities may include the following:

- Removal of slide/washout material from the ROW.
- Backfilling or stabilizing slope.
- Reestablishment of damaged roadway features.
- Repairing and cleaning the drainage system.
- Restoring access roads.
- Re-vegetation.
- Armoring with rock.

The initial response to emergencies relating to slide and washout repair is covered under Program Element 7, Emergency Response. After the emergency is stabilized, the repair work is covered under this maintenance category.

BMPs proposed for emergency slide/washout repairs are designed to achieve one or more of the following habitat goals:

- Reduce erosion/sedimentation to restore water quality.
- Reduce sedimentation loading off-site.
- Contribute to the restoration of aquatic habitat (HPA).
- Encourage revegetation to stabilize slope and provide riparian habitat near aquatic habitat.
- Maintain or restore the storage, delivery, and routing of surface and groundwater by restoring the damaged structure.

Category 12 – Concrete Surfaces

The removal and repair of damaged concrete roadways, sidewalks, driveways, and curb and gutter sections are performed to provide a safe roadway and pedestrian traffic infrastructure and to maintain adequate conveyance of surface water to drainage systems. Maintenance activities may also involve the installation of new concrete structures.

BMPs proposed for concrete maintenance activities are designed to achieve the following habitat goal:

- Reduce pollutant runoff to restore water quality.
- Reduce velocities and allowing sheet flow when possible.
- Reduce work site runoff to watercourses, streams, and/or water bodies.

- Maintain or restore the storage, delivery, and routing of surface and groundwater.
- Maintain or restore the storage area of sediments and other pollutants.
- Remove sediment from system.
- Protect water quality.

Category 13 – Sewer Systems

Sewer and storm systems are designed to efficiently collect and remove water from the ROW to permit the maximum use of the roadway, prevent damage to roadway structures, protect abutting property from damages, and restore surface water drainage in combined sewer/storm systems and manage vegetation. To maintain integrity of infrastructure and operational reliability, the following systems are repaired, replaced, installed, and maintained: treatment facilities, lift stations, pump stations, main lines, collection lines, trunk lines, interceptors, lake lines, access roads, associated ROWs, and storage/detention facilities.

BMPs proposed for sewer system maintenance activities are designed to achieve one or more of the following habitat goals:

- Protect watercourses and/or streams.
- Reduce work site pollutants to restore or maintain water quality.
- Control the storage, delivery, and routing of surface and groundwater to control volumes and velocities of stormwater discharge by repairing and maintaining sewer system.
- Repairs reduce sediment transport from system breaks.
- Maximize opportunities for increased infiltration or infiltration.

Category 14 – Water Systems

Water system maintenance is conducted to maintain the integrity of the infrastructure, collect, treat and distribute clean drinking water, provide additional service and components, maintain operational reliability, and protect health and safety issues. Maintenance activities are performed on the operating components of the water system facilities including but not limited to treatment plants, transmission mains, distribution lines, fire flow systems, reservoirs, tunnels, and pump stations, meters, flushing, dewatering, services, and associated ROWs or access roads.

BMPs proposed for water system maintenance activities are designed to achieve one or more of the following habitat goals:

- Protect watercourses and/or streams.
- Reduce work site pollutants to restore or maintain water quality.

- Control the storage, delivery, and routing of surface and groundwater to control volumes and velocities of stormwater discharge by restoring surface after installation, repair or replacement of underground piping.
- System maintenance and repairs reduce sediment transport from system breaks.
- Maximize opportunities for increased infiltration or bio-filtration where possible.

Category 15 – Vegetation

Vegetation is part of the ROW structure. Vegetation maintenance will be conducted in all roadway categories including roadway surface, open and closed drainage, sediment containment, watercourses and streams, stream crossings, shoulders, and utilities. The purpose of vegetation maintenance is to promote, maintain, sustain, manage, or encourage vegetation growth within the ROW to comply with a variety of regulations and standards including public safety. Vegetation maintenance improves visibility, surface and subsurface drainage, fire and pollution control, and clear zone area.

BMPs proposed for maintaining vegetation are designed to achieve one or more of the following habitat goals:

- Improve drainage by reducing erosion.
- Reduce the spread of noxious weeds and undesirable vegetation.
- Limit erosion.
- Increase bio-filtration.
- Lower herbicide use.
- Provide shading/reduce water temperature.
- Provide habitat for macro invertebrates.
- Provide LWD.

720.05 Exhibits

None.

Chapter 790 Implementing Environmental Commitments

- 790.01 Introduction
- 790.02 Implementing Environmental Commitments During Maintenance and Operations
- 790.03 Exhibits

790.01 Introduction

As a project progresses through the design and PS&E phases (**Part 4** and **Part 5** of this manual) many commitments in the form of mitigation plans and permit conditions are made to the various resource agencies to protect the environment, reduce social impacts, and protect cultural and historic resources. Some of those commitments must be fulfilled during maintenance and operations.

Interagency agreements between WSDOT and resource agencies also include environmental commitments. Those applicable to maintenance and operations are summarized in **Section 710.03** and discussed in **Chapter 420** through **Chapter 470**. **Appendix E-1** includes an index of all WSDOT environmental interagency agreements, in the form of Memoranda of Understanding (MOUs), Memoranda of Agreement (MOAs) or Implementing Agreements. **Appendix E-1** also includes a matrix and an accompanying narrative showing which agreements have provisions applicable to maintenance and operations.

In addition, some statutory requirements do not involve permits or approvals, but still apply to WSDOT maintenance; for example, dangerous waste and underground storage tank requirements. See **Chapter 710** and **Chapter 720** for requirements applicable to maintenance and operations.

Some of those commitments are unique to a given project. Other requirements are standard operating procedure (SOP) for WSDOT and can be found in the *Standard Specifications* M 41-10, *WSDOT Construction Manual* M 41-01 and *Right of Way Manual* M 26-01.

790.02 Implementing Environmental Commitments During Maintenance and Operations

The guidance in this section is intended to ensure compliance with environmental commitments when potential problems occur within the right of way during maintenance fieldwork. It includes procedures for making sure there is a smooth handoff to Maintenance and Operations when a construction project is completed, promptly notifying the appropriate individuals if a potential problem arises, and coordinating appropriate response measures to prevent violations.

(1) Post-Project Construction Requirements

When a construction project has been completed, the Project Engineer (PE) should notify the Regional Environmental Manager (REM). The Regional Environmental Manager, in consultation with the PE, should then brief Regional Maintenance Superintendents and Maintenance Environmental Coordinators (RMEC) on any environmental permit conditions with post-construction requirements and on all mitigation sites in the project area needing avoidance or protection. Perform this briefing according to regional procedures.

(2) In-Water Work

Requirements for communication with the appropriate resource agencies are defined in the *Regional Road Maintenance Endangered Species Act Program Guidelines*. Specific notification from maintenance crews to the resource agencies is required in situations described below.

(a) In Water Work

The Regional Maintenance Environmental Coordinator (RMEC) must be notified before beginning any work activity in or adjacent to sensitive or aquatic areas, including streams, wetlands, lakes, marine water, or other waters of the state. Any work in these areas may require some form of environmental review and/or notification, although in most cases formal permits are not be required. This is coordinated through the RMEC. If prior notification is not possible due to an emergency action, the Regional Environmental Office must be informed on the first business day following an emergency declaration.

(b) Emergency In Water Work

The U.S. Army Corps of Engineers (Corps) and the Washington State Department of Fish and Wildlife (WDFW) require immediate notification for any emergency work in or affecting waters of the state. For emergency response work involving in water work, maintenance staff must immediately call the local area habitat biologist with jurisdiction in the affected watershed. If the biologist cannot be reached, maintenance staff must call the WDFW Emergency Hotline, 360-902-2537.

Maintenance staff should also contact Corps liaison for that region or fax work information to 206-764-6602 before proceeding with work. For emergency work outside normal working hours, contact Muffy Walker at 206-781-0469. Work information should include location, nature, and method of work. Take photographs if possible. If a Corps permit is required, work may result in an after-the-fact permit or initial corrective measures which are processed as a violation.

The RMEC or Regional Environmental Office will make the additional notifications required for in water work on the first business day following the response notification. Following notification, the Environmental Office will commence environmental permitting and endangered species impact assessment as required.

The initial emergency response work is to stabilize the affected area only, minimizing adverse environmental effects, and using BMPs to avoid further impact. The normal design, construction, and permit procedures are followed for permanent repairs, as necessary, after stabilizing the initial emergency condition.

(3) **ESA/General Permit Reporting Requirements and Violation Notification Process**

During the course of maintenance work, crews are required to report work that is conducted within priority sensitive areas on the personal data assistant (PDA) ESA Compliance checklist (consult the Roadside-Sensitive Management Area Atlas, fish sticks, or pavement markings). For instructions on completing this checklist, see *Best Management Practices Field Guide for ESA, Section 4(d), Habitat Protection* (March 2004). The checklist documents WSDOT's compliance with ESA Section 4(d) "take" limits and general permits.

Permit compliance, maintenance category, BMP, and other reports are developed and generated on request. Additional BMPs utilized in the field, along with associated comments, are evaluated and discussed at the statewide RMEC meetings. Any recommended improvements are forwarded to the Regional Forum for consideration.

Figure 790-1 illustrates the maintenance violation notification process. Roles and responsibilities are summarized below:

On Site Maintenance Personnel

- Notify the Maintenance Superintendent.

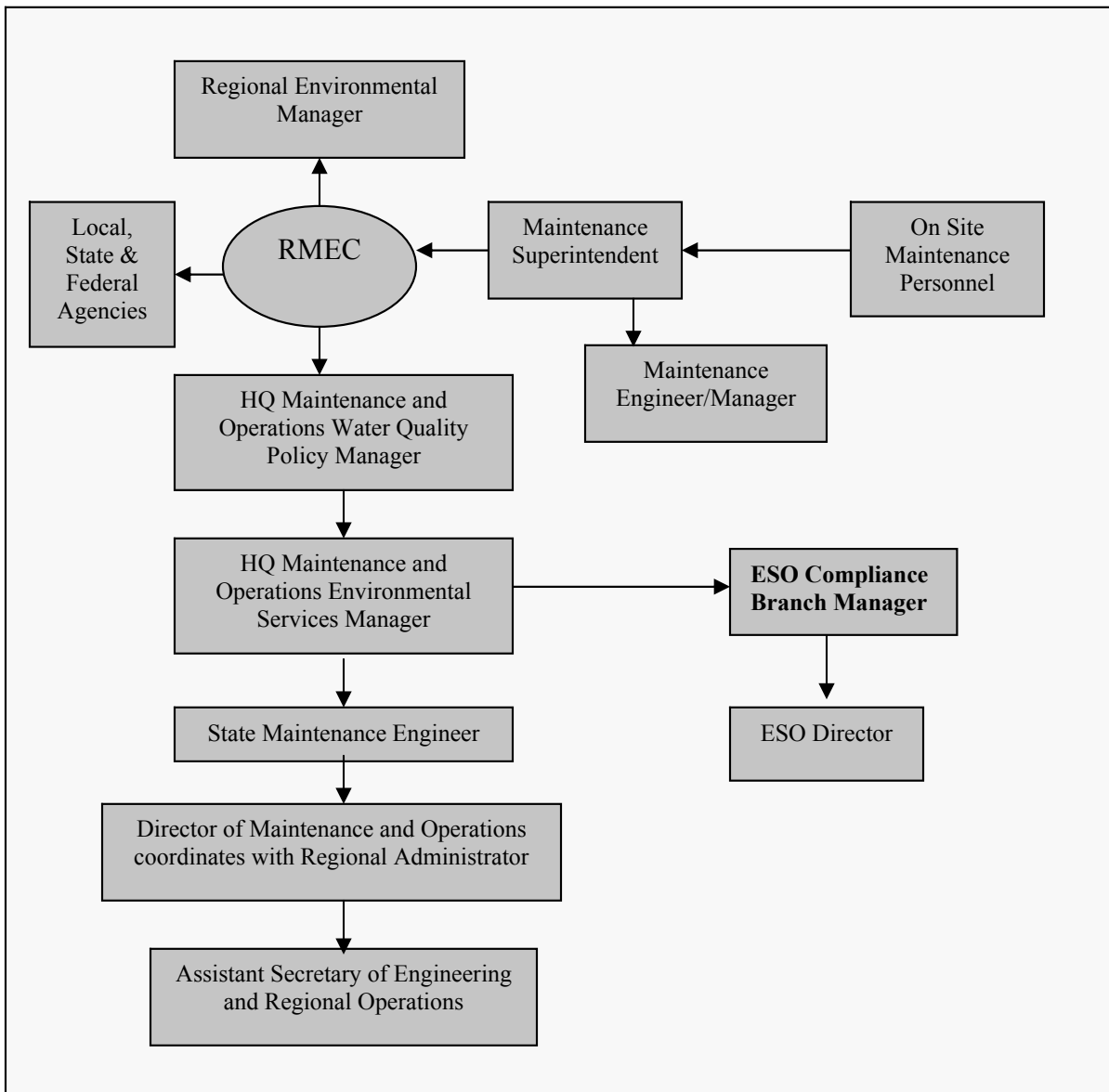
Maintenance Superintendent

- Notify the Regional Maintenance Engineer/Manager and the RMEC.

RMEC

- Serve as the contact lead.
- Immediately notify the appropriate local, state, and federal agencies, Regional Environmental Manager, and the Headquarters Maintenance and Operations Water Quality Policy Manager.
- Identify and obtain appropriate permits or permit revisions.
- Document all actions, conversations and activities. Communicate issues and send documentation to the appropriate resource agencies.

Figure 790-1: Maintenance Violation Notification Process



Headquarters Maintenance and Operations Water Quality Policy Manager

- Notify the Headquarters Maintenance and Operations Environmental Services Manager.

Headquarters Maintenance and Operations Environmental Services Manager

- Notify the Environmental Services Office Compliance Branch Manager.
- Determine if the violation is significant to warrant notification to the State Maintenance Engineer.

Environmental Service Office Compliance Branch Manager

- Document the details of the notification process and problem resolution in a central database used to report, as may be required by the Environmental Management System, on agency compliance with environmental regulations.
- Determine if the violation is significant enough to warrant notification to the Environmental Services Office (ESO) Director.

State Maintenance Engineer (if notified)

- Notify the Director of Maintenance and Operations

Director of Maintenance and Operations:

- Coordinate with the Regional Administrator to contact the Assistant Secretary of Engineering and Regional Operations and advise on the situation, and provide updates as needed on the situation.

790.03 Exhibits

None.

