

Best

Management Practices Field Guide

**for
ESA § 4 (d) Habitat Protection**

June 2018

**Maintenance and Operations Division
Maintenance Office**



Washington State Department of Transportation

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Glossary of Acronyms

BMPs	Best Management Practices
ESA	Endangered Species Act
Highway Activity Tracking System	HATS
HPA	Hydraulic Project Approval
IRVM	Integrated Roadside Vegetation Plan
LWM	Large Woody Material
RMEC	Regional Maintenance Environmental Coordinator
RRMP	Regional Road Maintenance ESA Program Guidelines
ROW	Right-of-Way
WDFW	Washington State Department of Fish and Wildlife
WSDOT	Washington State Department of Transportation

Introduction

This guide is intended for WSDOT maintenance crews and regional maintenance environmental coordinators who work within sensitive priority areas – these locations are identified on the Highway Activity Tracking System (HATS) base map. This guide was developed to train and alert staff as to when and where to apply and report implementation of the Regional Road Maintenance Endangered Species Act (ESA) Program Guidelines (RRMP) Best Management Practices (BMPs).

Knowing the location of aquatic habitat within the Right-of-Way (ROW) and using BMPs during maintenance activities in these sensitive priority areas will conserve listed ESA threatened salmonids species habitat. The BMPs are not prescriptive, but are outcome based. The best professional judgment of **trained** maintenance personnel is instrumental in meeting the BMP outcomes (minimize erosion and sedimentation, contain pollutants and minimize impacts to vegetation root zone).

This guide provides instructions for completing records using the HATS program and documenting WSDOT compliance with ESA § 4(d) "take" limits for the RRMP. This document constitutes the proof of your compliance with RRMP.

Following the Guide will not only conserve listed salmonids, but help protect water quality and quantity, aquatic and shoreline habitats and the traveling public safety.

Failure to document compliance could result in a violation under the ESA.

Instructions for Maintenance Crews on How to Complete Records for ESA Compliance

Use IPAD HATS program to determine the location of proposed work. The Roadside Sensitive Maintenance Areas are identified on the base map as a green lineal feature. Is work located within a sensitive area? If yes, does the work meet one of the work operation descriptions below? If yes, then complete the HATS form for the work below which will satisfy compliance with the ESA program. The 3rd column to the right describes the form in HATS to use for documenting compliance. If work does not meet the work operation list below, but has the potential to disturb/expose soils, discharge pollutants, disturb vegetation root systems, or could impact water then complete a stand-alone record using the *ESA Compliance form in HATS.

Work Operation Code	Work Description	HATS Form
1142, 1143, 1144, 1212	Shoulder Maintenance	Shoulder Maintenance
1211, 1213, 1214	Slide Cleanup / Rip Rap Cribbing / Rockfall Containment	Slide Cleanup / Rip Rap Cribbing / Rockfall Containment
1311	Ditch Maintenance	Ditch Maintenance
1329	Channel Maintenance	Channel Maintenance
1332, 1333, 1337, 1337	Culvert / Pipe Maintenance	Culvert
1900 Series	Bridge Maintenance	HPA
1390	Beaver Dam Removal	HPA
	Fishway Maintenance	HPA or Culvert
*	* Other work that disturbs soil discharges pollutants or located within natural waters	ESA Compliance

In the HATS form:

- Select the appropriate site specific BMPs for your worksite.
- Write in other site specific BMPs used that aren't listed in the pull down menu.

- Write in any comments regarding process or observations on BMPs that can improve the program.

Maintenance & RMEC Coordination

1. Maintenance notifies RMEC with proposed in water work activity or potential work activity that could impact water. The notification will include maintenance contact and location (Highway # and mile post). Go to step 2.
2. Review work for consistency with programmatic permits. If no, go to step 3. If yes, go to step 5.
3. RMEC or appropriate individual submits individual permit application. Go to Step 4.
4. RMEC or appropriate individual receives permit approval. Go to Step 5.
5. RMEC or appropriate individual contacts maintenance crew to inform them that work is covered under a programmatic or individual permit. Provide a copy of the applicable permit to the crews. Go to step 6.
6. Maintenance goes to work with copies of the appropriate permits on site.

#1: Roadway Surface

Activities:

Activities include the following: pothole and square cut patching; removing paved surface or roadway base; repairing roadway base; repaving; adding gravel or grading roads, access roads, or ROW surfaces; dust control; extending pavement edge; paving gravel shoulder; crack sealing; overlay; chip seal; resurfacing; pavement marking and traffic channelization; traffic control features.

BMP Table:

Routine BMPs	
BMPs	Description
Maintenance of Roadway Surfaces	Perform repairs, replacement and maintenance of roadway surface.
Shoulder Work	Maximize opportunities for shoulder work, which will increase infiltration or bio-filtration. (See also Maintenance Category #7, Gravel Shoulders)
Equipment/ Tools	<p>Tools and equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials, on site to allow prompt clean up of spills. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when

	<p>maintaining, repairing or servicing in the field.</p> <ul style="list-style-type: none"> • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids.
Equipment/ Tools	<ul style="list-style-type: none"> • Surfaces shall be cleaned following any discharge or spill incident. <p>At end of shift, park equipment in designated areas. Clean equipment and tools offsite in an area where pollutants can be contained. If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Material/ Debris Disposal	<p>After repairs are completed, remove construction/maintenance waste materials from work site and dispose of and/or recycle.</p> <p>If area is swept with a pick-up sweeper, the material will be hauled out of the area to appropriate disposal site.</p>
Painting/ Marking	<p>Follow state and federal guidelines for handling paint and other traffic marking material.</p> <p>Stripe roadways in dry weather.</p>
Spill Prevention & Control <i>Continued on next page.</i>	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>

Site Specific BMPs											
BMPs	Description										
Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soils shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>										
Site Specific BMPs	<p>Use any of the three BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses, streams, wetlands, lakes or other water bodies:</p> <p>“Filter/Perimeter Protection”</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Coir</td> <td style="width: 50%;">Inlet Protection</td> </tr> <tr> <td>Continuous Berm</td> <td>Kimble Filter Pipe</td> </tr> <tr> <td>Curb Inlet Sediment Trap</td> <td>Silt Fence</td> </tr> <tr> <td>Excelsior Filled Sediment Trap</td> <td>Silt Mat</td> </tr> <tr> <td>Filter Fabric</td> <td>Straw Bale Barrier (1)</td> </tr> </table>	Coir	Inlet Protection	Continuous Berm	Kimble Filter Pipe	Curb Inlet Sediment Trap	Silt Fence	Excelsior Filled Sediment Trap	Silt Mat	Filter Fabric	Straw Bale Barrier (1)
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Continuous Berm	Kimble Filter Pipe										
Curb Inlet Sediment Trap	Silt Fence										
Excelsior Filled Sediment Trap	Silt Mat										
Filter Fabric	Straw Bale Barrier (1)										

Site Specific BMPs	Grass Lined Channel	Straw Bale Barrier (2)
	Gravel Lined Channel	Straw Bale Barrier (3)
	Gravel Filled Sump	Straw Log
	Half Round Filter	Washed Rock
	“Reduce Potential for Soil Erosion”	
	Back of Slope Planting	Live Staking
	Construction Access Road	Mulching
	Ditch Lining	Plastic Covering
	Dust Control	Soil Stabilization (Blankets/Matting)
	Filter Fabric	Surface Roughening
Grass Lined Channel	Sweeping	
Hand Seeding	Vegetative Buffer	
Hydroseeding		
“Reduce Water Velocity/Erosive Forces”		
Back of Slope Planting	Sandbag	
Coir Fabric	Silt Fence	
Coir Log	Silt Mat	
Continuous Berm (1)	Straw Bale Barrier	
Ditch Lining (2)	Straw Bale Barrier	
Excelsior Filled Log (3)	Straw Bale Barrier	
Hand Seeding	Straw Log	
Hydroseeding Engineering	Stream Bank Bio-	
Large Woody Material Roughening	Surface	
Live Staking Dike	Triangular Silt	
Mulching	Turbidity Curtain	
Rip Rap	Vegetative Buffer	
Rock Check Dam		
Go to http://www.wsdot.wa.gov/maintenance/roadside/esa.htm For Part 2 BMP installation guidelines.		

#2: Enclosed Drainage Systems

Activities:

Enclosed drainage systems include the following: facilities, retention/detention facilities, pollution control devices, manholes, catch basins, vaults, pipes, access roads and inlets/outlets.

BMP Table:

Routine BMPs	
BMPs	Description
Maintaining Enclosed Drainage Systems	Perform repairs, replacement and maintenance of enclosed drainage systems.
Equipment/ Tools	<p>Tools and equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials, on site to allow prompt clean up of spills. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids.

	<ul style="list-style-type: none"> Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas.</p>
Equipment/ Tools	<p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	<p>After repairs are completed, remove construction/maintenance waste materials from work site and dispose of and/or recycle.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>

Site Specific BMPs

BMPs	Description										
Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> During winter season – October through June – no soil shall remain exposed and unworked for more than two days. During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>										
Site Specific BMPs	<p>Use any of the following three BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses, streams, wetlands, lakes, or other water bodies:</p> <p>“Filter/Perimeter Protection”</p> <table border="0"> <tr> <td>Coir Log</td> <td>Inlet Protection</td> </tr> <tr> <td>Continuous Berm</td> <td>Kimble Filter Pipe</td> </tr> <tr> <td>Curb Inlet Sediment Trap</td> <td>Silt Fence</td> </tr> <tr> <td>Excelsior Filled Sediment Trap</td> <td>Silt Mat</td> </tr> <tr> <td>Filter Fabric</td> <td>Straw Bale Barrier (1)</td> </tr> </table>	Coir Log	Inlet Protection	Continuous Berm	Kimble Filter Pipe	Curb Inlet Sediment Trap	Silt Fence	Excelsior Filled Sediment Trap	Silt Mat	Filter Fabric	Straw Bale Barrier (1)
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	Grass Lined Channel Gravel Lined Channel Gravel Filled Sump Half Round Filter	Straw Bale Barrier (2) Straw Bale Barrier (3) Straw Log Washed Rock																										
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#3: Cleaning Enclosed Drainage Systems

Activities:

Removing debris, sediments and liquids from enclosed drainage systems using a vacuum/flush truck ("Vactor"), by hand or other mechanical means. Enclosed drainage systems include the following: facilities, retention/detention facilities, manholes, catch basins, vaults, pipes, access roads, pollution control devices and inlets.

BMP Table:

Routine BMPs	
BMPs	Description
Cleaning Enclosed Drainage Systems	Maintain drainage systems.
Pre-Activity	<p>Cleaning Enclosed Drainage Systems: Use BMPs that include, but are not limited to:</p> <ul style="list-style-type: none"> • Blocking facility outlet. • Using less water. • Blocking downgradient end of pipe.
<p>Equipment/ Tools</p> <p><i>Continued on next page.</i></p>	<p>When using high-pressure flushing equipment, vacuum out solids to reduce sediment and turbidity from moving downgrade throughout the drainage system.</p> <p>Tools and equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials, on site to allow prompt clean up of spills. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping.

	<ul style="list-style-type: none"> • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible.
Equipment/ Tools	<ul style="list-style-type: none"> • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas. Clean equipment and tools off site in an area where pollutants can be contained. If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	<p>Remove and dispose of collected materials and liquids off site.</p> <p>Solid materials removed from the site will be taken to a disposal or recycling area.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>

#4: Open Drainage Systems

Activities:

These systems include facilities, retention/detention facilities, swales, pollution control devices, manholes, catch basins, vaults, pipes, culverts, ditches and inlets/outlets. (Open drainage systems that are part of the watercourses and streams systems are covered in Maintenance Category #5, Watercourses and Streams.)

BMP Table:

Routine BMPs	
BMPs	Description
Maintaining Open Drainage Systems	Maintain drainage systems.
Permits	Maintenance activities within waters of the state will be covered under Maintenance Category #5, Watercourses and Streams.
Scheduling	Plan and schedule work in dry conditions, except in emergency situations.
Equipment/ Tools <i>Continued on next page.</i>	<p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations.</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater. • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filter, antifreeze, cleaning solutions lead-acid batteries, tires, hydraulic and transmission fluid. • Surfaces shall be cleaned following the discharge

	<p>or spill incident.</p> <p>At the end of shift, park equipment in designated areas. Clean equipment and tools off site in an area where pollutants can be contained. If unable to move equipment and tools off site, control and remove cleaning by-products.</p> <p>Follow invasive species prevention guidelines</p>
Material/Debris Disposal	<p>Remove and dispose of collected materials and liquids off site.</p> <p>Solid materials removed from the site will be taken to a disposal or recycling area.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure.</p> <p>At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>
Site Specific BMPs	
BMPs	Description
Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect the soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soils shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils onsite, whether or not at final grade. <p>Leave vegetative buffer outside of work zone to provide biofiltration and shading outside of the back slope of ditch.</p> <p>Leave vegetative buffer of grasses and small forbs between the shoulder and ditch if the area is wide enough.</p> <p>Leave vegetated sections of grasses and small forbs in ditchline where sediment buildup does not impede flow or infiltration.</p> <p>After removal of sediments from ditch line, consider replanting disturbed soils with grasses and small forbs.</p> <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>
Site Specific	Use any of the four BMP outcome categories at or

<p>BMPs</p>	<p>around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses or streams, wetlands, lakes or other waterbodies:</p> <p>“Filter/Perimeter Protection”</p> <table border="0"> <tr> <td>Coir Log</td> <td>Inlet Protection</td> </tr> <tr> <td>Continuous Berm</td> <td>Kimble Filter Pipe</td> </tr> <tr> <td>Curb Inlet Sediment Trap</td> <td>Silt Fence</td> </tr> <tr> <td>Excelsior Filled Sediment Trap</td> <td>Silt Mat</td> </tr> <tr> <td>Filter Fabric</td> <td>Straw Bale Barrier (1)</td> </tr> <tr> <td>Grass Lined Channel</td> <td>Straw Bale Barrier (2)</td> </tr> <tr> <td>Gravel Lined Channel</td> <td>Straw Bale Barrier (3)</td> </tr> <tr> <td>Gravel Filled Sump</td> <td>Straw Log</td> </tr> <tr> <td>Half Round Filter</td> <td>Washed Rock</td> </tr> </table>	Coir Log	Inlet Protection	Continuous Berm	Kimble Filter Pipe	Curb Inlet Sediment Trap	Silt Fence	Excelsior Filled Sediment Trap	Silt Mat	Filter Fabric	Straw Bale Barrier (1)	Grass Lined Channel	Straw Bale Barrier (2)	Gravel Lined Channel	Straw Bale Barrier (3)	Gravel Filled Sump	Straw Log	Half Round Filter	Washed Rock																				
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#5: Watercourses and Streams

Activities:

These activities may include structural repair/replacement, slope stabilization, sediment removal, vegetation management, debris removal, access road maintenance, habitat maintenance and improvements (for example, fish ladders, weirs and large woody material).

BMP Table:

Routine BMPs	
BMPs	Description
Maintenance of Watercourses & Streams	Maintain drainage systems that are watercourses and/or streams.
Permits	<p>Maintenance activities within waters of the state will be reviewed by WDFW and permitted with an HPA, as necessary.</p> <p>When required, habitat restoration will be designed and constructed in accordance with applicable permits.</p>
Scheduling	Plan and schedule work in dry conditions or when flows are anticipated to be at their lowest when possible.
Fish Exclusion	<p>Follow "Fish Exclusion Protocol" (RRMP Appendix E) and permit conditions during maintenance activities.</p> <p>Fish will be excluded from the construction area using appropriate methods such as the use of nets, dewatering at a controlled rate and removal of stranded fish according to HPA permit conditions.</p>
Equipment/ Tools	<p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in
<i>Continued on next page.</i>	

	<p>areas that prevent discharges to the storm drain system.</p> <ul style="list-style-type: none"> • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly.
Equipment/ Tools	<ul style="list-style-type: none"> • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas. Clean equipment and tools off site in an area where pollutants can be contained. If unable to move tools and equipment off site, control and remove cleaning by-products.</p> <p>Follow invasive species prevention guidelines</p>
Material/Debris Disposal	After repairs are completed, remove construction/maintenance waste materials from work site and dispose of and/or recycle.
Spill Prevention & Control	Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.

Site Specific BMPs

BMPs	Description
<p>Are you disturbing soils?</p> <p><i>Continued on next page.</i></p>	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Minimize disturbance to riparian vegetation:</p> <ul style="list-style-type: none"> • Mark job site.

	<ul style="list-style-type: none"> • Flag work area. • Operate equipment to minimize damage to riparian habitat. <p>Leave vegetative buffer of grasses and small forbs between the shoulder and ditch if the area is wide enough.</p> <p>Leave vegetated section in ditchline, where sediment buildup does not impede flow or infiltration.</p> <p>Leave vegetative buffer outside of work zone to provide biofiltration and shading outside of the back slope of ditch.</p> <p>Monitor water quality in accordance with permit requirements.</p>																												
<p>Are you disturbing soils?</p>	<p>Monitor plantings in accordance with permit requirements.</p> <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>																												
<p>Site Specific BMPs</p> <p><i>Continued on next page.</i></p>	<p>Use any of the four BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses or streams, wetlands, lakes or other waterbodies:</p> <p>“Filter/Perimeter Protection”</p> <table data-bbox="592 1060 1442 1585"> <tr> <td>Coir Log</td> <td>Inlet Protection</td> </tr> <tr> <td>Continuous Berm</td> <td>Kimble Filter Pipe</td> </tr> <tr> <td>Curb Inlet Sediment Trap</td> <td>Silt Fence</td> </tr> <tr> <td>Excelsior Filled Sediment Trap</td> <td>Silt Mat</td> </tr> <tr> <td>Filter Fabric. (1)</td> <td>Straw Bale Barrier</td> </tr> <tr> <td>Grass Lined Channel (2)</td> <td>Straw Bale Barrier</td> </tr> <tr> <td>Gravel Lined Channel (3)</td> <td>Straw Bale Barrier</td> </tr> <tr> <td>Gravel Filled Sump</td> <td>Straw Log</td> </tr> <tr> <td>Half Round Filter</td> <td>Washed Rock</td> </tr> </table> <p>“Keep Water from Work Area”</p> <table data-bbox="592 1669 1372 1900"> <tr> <td>Aqua Barrier</td> <td>Plastic Covering</td> </tr> <tr> <td>Coffer Dam</td> <td>Sandbag</td> </tr> <tr> <td>Dewatering</td> <td>Stream Bypass</td> </tr> <tr> <td>Diversion Berm</td> <td>Vactoring</td> </tr> <tr> <td>Diversion Channel</td> <td></td> </tr> </table>	Coir Log	Inlet Protection	Continuous Berm	Kimble Filter Pipe	Curb Inlet Sediment Trap	Silt Fence	Excelsior Filled Sediment Trap	Silt Mat	Filter Fabric. (1)	Straw Bale Barrier	Grass Lined Channel (2)	Straw Bale Barrier	Gravel Lined Channel (3)	Straw Bale Barrier	Gravel Filled Sump	Straw Log	Half Round Filter	Washed Rock	Aqua Barrier	Plastic Covering	Coffer Dam	Sandbag	Dewatering	Stream Bypass	Diversion Berm	Vactoring	Diversion Channel	
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<p>Site Specific BMPs</p>	<p>Large Woody Material Live Staking Mulching Rip Rap Rock Check Dam</p> <p>Surface Roughening Triangular Silt Dike Turbidity Curtain Vegetative Buffer</p> <p>Go to http://www.wsdot.wa.gov/maintenance/roadside/esa.htm For Part 2 BMP installation guidelines.</p>

#6: Stream Crossings

Activities:

Repair, cleaning, maintenance, installation or replacement/upgrade of stream crossing facilities, such as pipes, arch pipes, box culverts, fish ladders, weirs, sediment pools, access roads and bridges. Maintenance within waters of the state will be reviewed by the WDFW.

BMP Table:

Routine BMPs	
BMPs	Description
Permits	<p>Maintenance activities within waters of the state will be reviewed by WDFW and permitted with an HPA, as necessary.</p> <p>When required, habitat restoration will be designed and constructed in accordance with applicable permits.</p>
Scheduling	<p>If seasonal watercourses or stream, schedule work during dry conditions.</p> <p>Plan and schedule work in dry conditions or low flow conditions except in emergency situations if possible (HPA).</p>
Fish Exclusion	<p>Follow "Fish Exclusion Protocol" (See RRMP Appendix E) and permit conditions during maintenance activities.</p> <p>Fish will be excluded from the construction area using appropriate methods such as the use of nets, dewatering at a controlled rate and removal of stranded fish according to HPA permit conditions.</p>
Equipment/ Tools	<p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system.

Continued on next page.

	<ul style="list-style-type: none"> • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids.
Equipment/ Tools.	<ul style="list-style-type: none"> • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas. Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p> <p>Follow invasive species prevention guidelines</p>
Material/Debris Disposal	After repairs are completed, remove construction/maintenance waste materials from work site and dispose of and/or recycle.
Spill Prevention & Control	Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.

Site Specific BMPs

BMPs	Description
<p>Are you disturbing soils?</p> <p><i>Continued on next page.</i></p>	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Minimize disturbance to riparian vegetation:</p> <ul style="list-style-type: none"> • Mark job site. • Flag work area. • Position equipment to protect riparian habitat. <p>Monitor water quality.</p> <p>Restore vegetation appropriate for site conditions within</p>

	<p>riparian areas.</p> <p>Protect outflows by bio-vegetation techniques or armoring to reduce erosion.</p> <p>Monitor vegetation and stream habitat in accordance with permit conditions.</p> <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>																																																
Site Specific BMPs	Use any of the 4 BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses or streams, wetlands, lakes or other water bodies.																																																
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	<p>Go to http://www.wsdot.wa.gov/maintenance/roadside/esa.htm For Part 2 BMP installation guidelines.</p>	

#7: Gravel Shoulders

Activities:

Maintenance tasks performed on gravel shoulders improve drainage, restore proper grade, restore filtering capability, maintain vegetation to provide adequate site distance, smooth rutting and remove buildup of sediment before entering drainage system.

BMP Table:

Routine BMPs	
BMPs	Description
Maintenance of Gravel Shoulders	Perform maintenance. Remove built up sediment and sod. Restore gravel shoulder. Roll shoulder material to ensure proper grade and retention of sediment control qualities.
Scheduling	Periodically remove sediment deposits and vegetation during the dry season when possible with a motor grader.
Equipment/ Tools	Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations: <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose

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	<p>of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids.</p> <ul style="list-style-type: none"> • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas.</p>
Equipment/ Tools	<p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	<p>After repairs are completed, remove construction/maintenance waste materials from work site and dispose of and/or recycle.</p> <p>Use pickup sweepers to remove materials from roadway in assigned areas.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>
Site Specific BMPs	
BMPs	Description
Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p> <p>Minimize disturbance to vegetation outside of shoulder area. Leave vegetative strip where possible between the gravel and ditch line for biofiltration.</p>
Site Specific BMPs <i>Continued on</i>	<p>Use the BMP outcome category listed below at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses or</p>

	<p>streams, wetlands, lakes or other waterbodies: “Filter/Perimeter Protection”</p> <table border="0"> <tr> <td>Coir Log</td> <td>Inlet Protection</td> </tr> <tr> <td>Continuous Berm</td> <td>Kimble Filter Pipe</td> </tr> <tr> <td>Curb Inlet Sediment Trap</td> <td>Silt Fence</td> </tr> <tr> <td>Excelsior Filled Sediment Trap</td> <td>Silt Mat</td> </tr> <tr> <td>Filter Fabric</td> <td>Straw Bale Barrier (1)</td> </tr> <tr> <td>Grass Lined Channel</td> <td>Straw Bale Barrier (2)</td> </tr> </table>	Coir Log	Inlet Protection	Continuous Berm	Kimble Filter Pipe	Curb Inlet Sediment Trap	Silt Fence	Excelsior Filled Sediment Trap	Silt Mat	Filter Fabric	Straw Bale Barrier (1)	Grass Lined Channel	Straw Bale Barrier (2)
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#8: Street Surface Cleaning

Activities:

Removing soil, organic material, dust, trash and other debris to keep road surfaces clean and remove sediment from the roadway before it enters the storm drain system, surface water system, watercourses, streams or other waterbodies. The removal of dust also reduces airborne pollution and sediment loading.

BMP Table:

Routine BMPs	
BMPs	Description
Pre-Activity	Use clean up procedures that protect water quality.
Equipment/ Tools	<p>Control speed of sweeper to minimize airborne particulates and remove maximum amount of debris.</p> <p>Use water spray system on sweeper to reduce dust.</p> <p>Use pickup sweepers to remove materials from roadway in assigned areas.</p> <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible.</p> <p>Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters,
<i>Continued on next page.</i>	

	<p>antifreeze, cleaning solutions, lead-acid batteries, hydraulic and transmission fluids and tires.</p> <ul style="list-style-type: none"> • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas.</p>
Equipment/ Tools	<p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	<p>After repairs are completed, remove construction/maintenance waste materials from work site and dispose of and/or recycle.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>

#9: Bridge Maintenance

Activities:

Bridge maintenance activities include inspecting, testing, repairing, replacing, cleaning, maintaining, painting or resurfacing components of the bridge such as the electrical system, substructure, superstructure, surface footing, piers, supports, access roads, abutments, ramps and vegetation management.

BMP Table:

Routine BMPs	
BMPs	Description
Permits	Bridge maintenance activities requiring an HPA will be reviewed with the WDFW and permitted prior to construction in accordance with the HPAs.
Scheduling	If bridge maintenance is to be performed in a seasonal watercourse or stream, schedule the work during dry conditions if possible.
Habitat Measures	Maintain or add areas of spawning, migration, feeding, or rearing habitat as directed by WDFW (HPA) permit, public safety and ROW structure conditions allow. Place appropriate streambed material (HPA).
Equipment/ Tools	Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations: <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field.

Continued on next page.

	<ul style="list-style-type: none"> • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids.
Equipment/ Tools	<ul style="list-style-type: none"> • Surfaces shall be cleaned following any discharge or spill incident. • At the end of shift, park equipment in designated areas. • Clean equipment and tools off site in an area where pollutants can be contained. • If unable to move tools and equipment off site, control and remove cleaning by-products. • Follow invasive species prevention guidelines
Material/Debris Disposal	After repairs are completed, remove construction/maintenance waste materials from work site and dispose of and/or recycle.
Spill Prevention & Control	Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.
Site Specific BMPs	
BMPs	Description
<p>Are you disturbing soils?</p> <p><i>Continued on next page.</i></p>	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Minimize disturbance to riparian vegetation:</p> <ul style="list-style-type: none"> • Mark job site.

	<ul style="list-style-type: none"> • Flag work area. • Operate equipment to minimize damage to riparian habitat. • Monitor water quality in accordance with permit requirements. • Restore vegetation where appropriate for site conditions within riparian areas (HPA). • Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area. 																																		
<p>Site Specific BMPs</p> <p><i>Continued on next page.</i></p>	<p>Use any of the five BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses or streams, wetlands, lakes or other waterbodies:</p> <p>“Filter/Perimeter Protection”</p> <table border="0"> <tr> <td>Coir Log</td> <td>Inlet Protection</td> </tr> <tr> <td>Continuous Berm</td> <td>Kimble Filter Pipe</td> </tr> <tr> <td>Curb Inlet Sediment Trap</td> <td>Silt Fence</td> </tr> <tr> <td>Excelsior Filled Sediment Trap</td> <td>Silt Mat</td> </tr> <tr> <td>Filter Fabric</td> <td>Straw Bale Barrier (1)</td> </tr> <tr> <td>Grass Lined Channel</td> <td>Straw Bale Barrier (2)</td> </tr> <tr> <td>Gravel Lined Channel</td> <td>Straw Bale Barrier (3)</td> </tr> <tr> <td>Gravel Filled Sump</td> <td>Straw Log</td> </tr> <tr> <td>Half Round Filter</td> <td>Washed Rock</td> </tr> </table> <p>“Reduce Potential for Contaminants Falling into Water”</p> <table border="0"> <tr> <td>Diaper Netting Platform</td> <td>Plywood Work</td> </tr> </table> <p>"Settling,"</p> <table border="0"> <tr> <td>Coir Fabric</td> <td>Silt Mat</td> </tr> <tr> <td>Continuous Berm</td> <td>Siltation Pond/Tank</td> </tr> <tr> <td>Curb Inlet Sediment Trap</td> <td>Straw Bale Barrier (1)</td> </tr> <tr> <td>Excelsior Filled Log</td> <td>Straw Bale Barrier (2)</td> </tr> <tr> <td>Filter Fabric</td> <td>Straw Bale Barrier (3)</td> </tr> <tr> <td>Rock Check Dam</td> <td>Straw Log</td> </tr> <tr> <td>Sandbag Trap</td> <td>Temporary Sediment</td> </tr> </table>	Coir Log	Inlet Protection	Continuous Berm	Kimble Filter Pipe	Curb Inlet Sediment Trap	Silt Fence	Excelsior Filled Sediment Trap	Silt Mat	Filter Fabric	Straw Bale Barrier (1)	Grass Lined Channel	Straw Bale Barrier (2)	Gravel Lined Channel	Straw Bale Barrier (3)	Gravel Filled Sump	Straw Log	Half Round Filter	Washed Rock	Diaper Netting Platform	Plywood Work	Coir Fabric	Silt Mat	Continuous Berm	Siltation Pond/Tank	Curb Inlet Sediment Trap	Straw Bale Barrier (1)	Excelsior Filled Log	Straw Bale Barrier (2)	Filter Fabric	Straw Bale Barrier (3)	Rock Check Dam	Straw Log	Sandbag Trap	Temporary Sediment
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<p>Site Specific BMPs</p>	<p>Excelsior Filled Log Hand Seeding Hydroseeding</p> <p>Large Woody Material Live Staking Mulching Rip Rap Rock Check Dam</p> <p>Go to http://www.wsdot.wa.gov/Maintenance/Roadside/Esa.htm RRMP Part 2 BMPs for installation guidelines.</p>	<p>Straw Bale Barrier (3) Straw Log Stream Bank Bio-Engineering Surface Roughening Triangular Silt Dike Turbidity Curtain Vegetative Buffer</p>

#10: Snow and Ice Control

Activities:

Activities include snow blowing, plowing drift removal, winter sand cleanup, sanding anti-icing and de-icing application.

BMP Table:

Routine BMPs	
BMPs	Description
Operational	<p>Minimize use of salt by reducing salt-to-sand ratios.</p> <p>Treat sand clean up as part of the emergency: remove sand as a priority in order to remove sediments.</p> <p>Plow snow in areas that allow vegetation to filter and contain sand.</p> <p>Prioritize clean up efforts to aquatic habitat areas to minimize impacts.</p> <p>Prioritize clean up in areas <u>without</u> sediment collection systems.</p>
Equipment/ Tools	<p>Tool and Equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials, onsite to allow prompt cleanup of spills. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible.

Continued on next page.

	<ul style="list-style-type: none"> • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids.
Equipment/ Tools	<ul style="list-style-type: none"> • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas. Clean equipment and tools off site in an area where pollutants can be contained. If unable to move equipment and tools off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	Remove construction/maintenance waste materials from work site and dispose of and/or recycle.
Spill Prevention & Control	Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.

#11: Emergency Slide/Washout Repair

Activities:

Slides and washout repair activities may include the following: removal of slide/washout material from ROW; backfilling or stabilizing slope, reestablishment of damaged roadway structures; repairing and cleaning drainage system; restoring access road; revegetating and/or armoring with rock.

BMP Table:

Routine BMPs	
BMPs	Description
Permits	<p>Follow regions notification procedures. Maintenance within waters of the state will be reviewed by WDFW and permitted with an HPA, as necessary.</p> <p>When required habitat restoration will be designed and constructed in accordance with applicable permits.</p>
Fish Exclusion	<p>Where practical and without jeopardizing the emergency response, in a timely manner, "Fish Exclusion Protocol" (See RRMP Appendix E) and permit conditions will be followed during maintenance activities.</p> <p>Fish will be excluded from the construction area using appropriate methods such as the use of net, dewatering at a controlled rate and removal of stranded fish according to HPA permit conditions.</p>
Equipment/ Tools	<p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible.</p> <p>Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when

	<p>maintaining, repairing or servicing in the field.</p> <ul style="list-style-type: none"> • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids.
Equipment/ Tools	<ul style="list-style-type: none"> • Surfaces shall be cleaned following any discharge or spill incident. • At the end of shift, park equipment in designated areas. • Clean equipment and tools off site in an area where pollutants can be contained. • If unable to move tools and equipment off site, control and remove cleaning by-products.
Material/Debris Disposal	After repairs are completed, remove construction/maintenance waste materials from site for disposal or recycling.
Spill Prevention & Control	Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.
Site Specific BMPs	
BMPs	Description
Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>
Site Specific BMPs <i>Continued on next page.</i>	<p>Use any of the three BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses or streams, wetlands, lakes or other waterbodies:</p> <p>“Filter/Perimeter Protection”</p>

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#12: Concrete

Activities:

Maintenance activities performed on the concrete structures, such as concrete roadways, sidewalks, driveways, curb and gutter sections include the following: removal or repair of damaged sections and installation of new structures.

BMP Table:

Routine BMPs	
BMPs	Description
<p>Equipment/ Tools</p> <p><i>Continued on next page.</i></p>	<p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas. Clean equipment and tools off site in an area where pollutants can be contained. If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
<p>Material/Debris Disposal</p>	<p>After repairs are complete, remove construction/maintenance waste materials from site for</p>

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Spill Prevention & Control <i>Continued on next page.</i>	Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.																						
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Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>																						
Site Specific BMPs <i>Continued on next page.</i>	<p>Use any of the two BMP outcomes categories at or around the work site to reduce turbidity, sediment and/or worksite pollutants from entering watercourses or streams, wetlands, lakes or other waterbodies:</p> <p>“Filter/Perimeter Protection”</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Coir Log</td> <td style="width: 50%;">Inlet Protection</td> </tr> <tr> <td>Continuous Berm</td> <td>Kimble Filter Pipe</td> </tr> <tr> <td>Curb Inlet Sediment Trap</td> <td>Silt Fence</td> </tr> <tr> <td>Excelsior Filled Sediment Trap</td> <td>Silt Mat</td> </tr> <tr> <td>Filter Fabric</td> <td>Straw Bale Barrier (1)</td> </tr> <tr> <td>Grass Lined Channel</td> <td>Straw Bale Barrier (2)</td> </tr> <tr> <td>Gravel Lined Channel</td> <td>Straw Bale Barrier (3)</td> </tr> <tr> <td>Gravel Filled Sump</td> <td>Straw Log</td> </tr> <tr> <td>Half Round Filter</td> <td>Washed Rock</td> </tr> </table> <p>"Containment"</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Concrete Containment (1)</td> <td style="width: 50%;">Vactoring</td> </tr> <tr> <td>Concrete Containment (2)</td> <td></td> </tr> </table> <p>Go to http://www.wsdot.wa.gov/Maintenance/Roadside/Esa.ht</p>	Coir Log	Inlet Protection	Continuous Berm	Kimble Filter Pipe	Curb Inlet Sediment Trap	Silt Fence	Excelsior Filled Sediment Trap	Silt Mat	Filter Fabric	Straw Bale Barrier (1)	Grass Lined Channel	Straw Bale Barrier (2)	Gravel Lined Channel	Straw Bale Barrier (3)	Gravel Filled Sump	Straw Log	Half Round Filter	Washed Rock	Concrete Containment (1)	Vactoring	Concrete Containment (2)	
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RRMP Part 2 BMPs for installation guidelines.

#13: Sewer Systems

Activities:

Repair, replace, install and maintain operating components of sewer facilities, including, but not limited to, treatment facilities, lift stations, pump stations, main lines, collection lines, interceptors, lake line, access roads, associated ROW and storage/detention facilities.

BMP Table:

Routine BMPs	
BMPs	Description
Maintenance of Sewer Systems	Maintain sewer system.
Equipment/ Tools	<p>Tools and equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials, on site to allow promptly clean up of spills. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid

	<p>batteries, tires, hydraulic and transmission fluids.</p> <ul style="list-style-type: none"> Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas.</p>						
Equipment/ Tools	<p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>						
Material/Debris Disposal	<p>After repairs are completed, remove construction/maintenance waste materials from site for disposal or recycling.</p>						
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure.</p> <p>At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>						
Site Specific BMPs							
BMPs	Description						
Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> During winter season – October through June – no soil shall remain exposed and unworked for more than two days. During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>						
Site Specific BMPs	<p>Use any of the three BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses, streams, wetlands, lakes or other water bodies:</p> <p>“Filter/Perimeter Protection”</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Coir Log</td> <td style="width: 50%;">Inlet Protection</td> </tr> <tr> <td>Continuous Berm</td> <td>Kimble Filter Pipe</td> </tr> <tr> <td>Curb Inlet Sediment Trap</td> <td>Silt Fence</td> </tr> </table>	Coir Log	Inlet Protection	Continuous Berm	Kimble Filter Pipe	Curb Inlet Sediment Trap	Silt Fence
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Curb Inlet Sediment Trap	Silt Fence						
<i>Continued on next page.</i>							

	<p>Excelsior Filled Sediment Trap Silt Mat</p> <p>Filter Fabric Straw Bale Barrier (1)</p> <p>Grass Lined Channel Straw Bale Barrier (2)</p> <p>Gravel Lined Channel Straw Bale Barrier (3)</p> <p>Gravel Filled Sump Straw Log</p> <p>Half Round Filter Washed Rock</p>
<p>Site Specific BMPs</p>	<p>“Keep Water from Work Area”</p> <p>Aqua Barrier Plastic Covering</p> <p>Coffer Dam Sandbag</p> <p>Dewatering Stream Bypass</p> <p>Diversion Berm Vactoring</p> <p>Diversion Channel</p> <p>“Reduce Potential for Soil Erosion”</p> <p>Back of Slope Planting Live Staking</p> <p>Construction Access Road Mulching</p> <p>Ditch Lining Plastic Covering</p> <p>Dust Control Soil Stabilization (Blankets/Matting)</p> <p>Filter Fabric Surface Roughening</p> <p>Grass Lined Channel Sweeping</p> <p>Hand Seeding Vegetative Buffer</p> <p>Hydroseeding</p> <p>Go to http://www.wsdot.wa.gov/Maintenance/Roadside/Esa.htm RRMP Part 2 BMPs for installation guidelines.</p>

#14: Water Systems

Activities:

Repair, replace, install and maintain operating components of water system facilities including, but not limited to, treatment plant, transmission mains, distribution lines, fire flow systems, reservoirs, tunnels, pump stations, meters, flushing, dewatering, services, access roads and associated ROWs or water system structures.

BMP Table:

Routine BMPs	
BMPs	Description
Water Systems	Maintain sewer system.
Operational	Develop protocols for dechlorination of water. Develop a flushing program.
Equipment/ Tools	<p>Tools and equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials, on site to allow promptly clean up of spills. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates

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	<p>regularly.</p> <ul style="list-style-type: none"> Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. Surfaces shall be cleaned following any discharge or spill incident. 				
Equipment/ Tools	<p>At the end of shift, park equipment in designated areas.</p> <p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>				
Material/Debris Disposal	<p>After repairs are completed, remove construction/maintenance waste materials from site for disposal or recycling.</p>				
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>				
Site Specific BMPs					
BMPs	Description				
Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> During winter season – October through June – no soil shall remain exposed and unworked for more than two days. During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>				
Site Specific BMPs	<p>Use any of the three BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses, streams, wetlands, lakes or other water bodies:</p> <p>“Filter/Perimeter Protection”</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Coir Log</td> <td style="width: 50%;">Inlet Protection</td> </tr> <tr> <td>Continuous Berm</td> <td>Kimble Filter Pipe</td> </tr> </table>	Coir Log	Inlet Protection	Continuous Berm	Kimble Filter Pipe
Coir Log	Inlet Protection				
Continuous Berm	Kimble Filter Pipe				

	<p>Curb Inlet Sediment Trap Silt Fence Excelsior Filled Sediment Trap Silt Mat Filter Fabric Straw Bale Barrier (1) Grass Lined Channel Straw Bale Barrier (2) Gravel Lined Channel Straw Bale Barrier (3) Gravel Filled Sump Straw Log Half Round Filter Washed Rock</p>
<p>Site Specific BMPs <i>Continued on next page.</i></p>	<p>“Keep Water from Work Area” Aqua Barrier Plastic Covering Coffer Dam Sandbag Dewatering Stream Bypass Diversion Berm. Vactoring Diversion Channel</p> <p>“Reduce Potential for Soil Erosion” Back of Slope Planting Live Staking Construction Access Road Mulching Ditch Lining Plastic Covering Dust Control Soil Stabilization (Blankets/Matting) Filter Fabric Surface Roughening Grass Lined Channel Sweeping Hand Seeding Vegetative Buffer Hydroseeding</p> <p>Go to http://www.wsdot.wa.gov/Maintenance/Roadside/Esa.htm RRMP Part 2 BMPs for installation guidelines.</p>

#15: Vegetation

Activities:

Activities include repair, replacement, installation, removal and/or maintenance of the vegetation within the ROW. Vegetation is an integral part of the road ROW structure. Vegetation maintenance includes, but is not limited to, mechanical, chemical, cultural and biological control. It also includes the systems and structures that support the vegetation.

BMP Table:

Routine BMPs	
BMPs	Description
Maintenance of ROW	Perform repairs, replacement and maintenance of roadway vegetation.
Maintenance of Shoulder Work	Maximize opportunities for shoulder work, which will increase infiltration or bio-filtration. (See also Category #7, Gravel Shoulders.)
Equipment/ Tools	<p>Tools and equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials; on site to allow promptly clean up of spill. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible.

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	<ul style="list-style-type: none"> • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids.
Equipment/ Tools	<ul style="list-style-type: none"> • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas.</p> <p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	<p>After repairs are completed, remove construction/maintenance waste materials from site for disposal or recycling.</p> <p>If area is swept with a pick-up sweeper, the material will be hauled out of the area to appropriate disposal site.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>
Site Specific BMPs	
BMPs	Description
Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>
Site Specific BMPs <i>Continued on next page.</i>	<p>Use any of the three BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses, streams, wetlands, lakes or other water bodies:</p>

	“Filter/Perimeter Protection” Coir Log Continuous Berm Curb Inlet Sediment Trap Excelsior Filled Sediment Trap Filter Fabric Grass Lined Channel	Inlet Protection Kimble Filter Pipe Silt Fence Silt Mat Straw Bale Barrier (1) Straw Bale Barrier (2)
Site Specific BMPs <i>Continued on next page.</i>	Gravel Lined Channel Gravel Filled Sump Half Round Filter “Reduce Potential for Soil Erosion” Back of Slope Planting Construction Access Road Ditch Lining Dust Control (Blankets/Matting) Filter Fabric Grass Lined Channel Hand Seeding Hydroseeding “Reduce Water Velocity/Erosive Forces” Back of Slope Planting Coir Fabric Coir Log Continuous Berm Ditch Lining Excelsior Filled Log. Hand Seeding Hydroseeding Large Woody Material Live Staking Mulching Rip Rap Rock Check Dam	Straw Bale Barrier (3) Straw Log Washed Rock Live Staking Mulching Plastic Covering Soil Stabilization Surface Roughening Sweeping Vegetative Buffer Sandbag Silt Fence Silt Mat Straw Bale Barrier (1) Straw Bale Barrier (2) Straw Bale Barrier (3) Straw Log Stream Bank Bio-Engineering Surface Roughening Triangular Silt Dike Turbidity Curtain Vegetative Buffer
Go to http://www.wsdot.wa.gov/Maintenance/Roadside/Esa.ht		

	m RRMP Part 2 BMPs for installation guidelines.
Mowing	Follow IRVM
Brush Cutting	Follow IRVM
Hand Cutting	Follow IRVM
Seeding	Follow IRVM
Chipping	Follow IRVM
Chemical Application	Follow IRVM