

**SDOT BEST MANAGEMENT PRACTICES  
(BMP) REFERENCE MANUAL**

---

Traffic Management  
Sign Maintenance and  
Misc. Traffic Maintenance

December 2008



# **SDOT BEST MANAGEMENT PRACTICES (BMP) REFERENCE MANUAL**

---

## **Traffic Management Sign Maintenance and Misc. Traffic Maintenance**

Prepared for

City of Seattle  
Department of Transportation  
700 Fifth Avenue, Suite 3900  
Seattle, Washington 98124  
Telephone: 206/684-8750

Prepared by

Herrera Environmental Consultants, Inc.  
2200 Sixth Avenue, Suite 1100  
Seattle, Washington 98121  
Telephone: 206/441-9080

December 31, 2008



---

# Contents

## **Traffic Management**

### 2. Sign Maintenance and Misc. Traffic Maintenance

RCAT 813 – Building and Grounds Maintenance

RCAT 815 – Clean and Repair Equipment and Tools

RCATs 901 & 902 – Regulatory/Warning, SNS, Destination, or School Zone Routine  
Maintenance and Work Instructions

RCATs 903-905 – Guardrails

RCATs 906-908 – Crash Cushions

RCAT 950 – Emergency/Miscellaneous Traffic Maintenance

RCAT 962 – Bike Rack Installation

RCAT 972 – Graffiti and Routine Cleaning

---

This best management practice (BMP) reference manual was written to assist you, an SDOT field crew member, in preventing pollution from impacting stormwater. Your actions in the field contribute significantly to preventing stormwater pollution and keeping our streams, lakes, and Puget Sound clean. These manuals also help SDOT comply with the City of Seattle's Stormwater Permit.

We would like to receive your feedback on the information this manual contains. Direct feedback; questions regarding any of the BMPs listed; and information about missing work tasks, pollution sources, or missing BMPs should be directed to Maureen Meehan (SDOT's NPDES Stormwater Advisor) at (206) 684-8750.

To report a spill or any illegal dumping issues you observe while in the field, please call the SPU Water Quality Hotline at (206) 684-7587.

<b>SDOT Manual Name</b>	<b>RCAT</b>	<b>RCAT Description</b>
Traffic Management 2. Sign Maintenance and Misc. Traffic Maintenance	813	Building and Grounds Maintenance

### **Description of Work**

Maintenance, repair, and upkeep of all maintenance headquarters, yards, and transfer sites, including offices, shops, storage yards, and bridge towers.

### **Objectives**

Use proper techniques for vehicle and equipment maintenance, service, and repair operations to reduce the potential for discharge of pollutants to watercourses or streams.

### **Site Preparation**

1. **Spill Kit:** Keep a spill cleanup kit in a nearby vehicle or next to the work site so that it is easily accessible. Make sure the contents of the spill kit are appropriate for the types and quantities of materials used for this work task. Refill spill kit materials before beginning work.
  
2. **Cleaning and repair of tools and equipment:**
  - Perform vehicle and equipment maintenance, repair, and service at designated repair facilities whenever possible.
  - Routinely inspect equipment, tools, and vehicles for leaks or damage.
  - Promptly repair or replace leaking connections, pipes, hoses, and/or valves.

### **BMP Maintenance During Site Work**

1. **Cleaning and repair of tools and equipment:**
  - 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 maintenance in areas that prevent discharges to the storm drain system.
  - Use drip pans (see Figure 1) under equipment when maintaining, repairing, or servicing in the field.
  - Clean maintenance area storm drain grates regularly.

- Clean surfaces following any discharge or spill incident.

2. *Optional BMPs:*

- Use non-toxic solvents whenever possible.
- Minimize water and detergent use in all washing operations.
- Use phosphate-free detergents when practical.
- Consider recycling washwater by installing a closed-loop water recycling system.



**Figure 1. Example of drip pan used for vehicle and/or equipment maintenance.**

## **Site Cleanup**

1. **Waste Disposal:**

- Collect and properly manage (recycle or dispose of) used materials such as grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, hydraulic and transmission fluids, and tires.
- Dispose of these wastes at a recycling facility; municipal solid waste disposal facility; hazardous waste treatment, storage, and disposal (TSD) facility; or the sanitary sewer.
- Do not dispose of collected vegetation in separate storm drainage systems, waterways, water bodies, or greenbelt areas (see Figure 2).

2. *Optional BMP:* Dispose of grass clippings, leaves, sticks, and other collected vegetation by composting, if feasible.



**Figure 2. Hand sweeping.**

*References*

Regional Road Maintenance Endangered Species Act Program Guidelines (Regional Road Maintenance Technical Working Group 2002)	Source Control Technical Requirements Manual (Seattle 2009)
1.111 - Vegetation (Equipment/Tools Cleanup and Maintenance)	BMP 3 - Dispose of Fluids and Wastes Properly



SDOT Manual Name	RCAT	RCAT Description
Traffic Management 2. Sign Maintenance and Misc. Traffic Maintenance	815	Clean and Repair Equipment and Tools

### Description of Work

Cleaning and minor maintenance of equipment performed by field personnel including moving maintenance equipment and the repair of small tools.

### Objectives

Use proper techniques for equipment maintenance, service, and repair operations to reduce the potential for discharge of pollutants to watercourses or streams.

### Site Preparation

1. **Spill Kit:** Keep a spill cleanup kit in a nearby vehicle or next to the work site so that it is easily accessible. Make sure the contents of the spill kit are appropriate for the types and quantities of materials used for this work task. Refill spill kit materials before beginning work.
  
2. **Equipment and Tool Repairs:**
  - Perform vehicle and equipment maintenance, repair, and service at designated repair facilities whenever possible.
  - Routinely inspect equipment, tools, and vehicles for leaks or damage.
  - Promptly repair or replace leaking connections, pipes, hoses, and valves.

### BMP Maintenance During Site Work

1. **Washwater:**
  - Discharge all washwater to a sanitary sewer, process treatment system, or holding tank and not to the stormwater drainage system. If a holding tank is used for the storage of washwater, the contents must be pumped out before the tank is full and then discharged into the sanitary sewer or wastewater treatment system.
  - Conduct pressure washing in a designated area (such as a wash pad) that is provided with a sump drain connected to a sanitary sewer or treatment system, or a blind sump or holding tank. Prevent stormwater run-on using a berm or sump.
  - Prohibit discharge of any wastewaters to stormwater drains.

## 2. Equipment and Tool Repairs:

- 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 maintenance in areas that prevent discharges to the storm drain system.
- Use drip pans (see Figure 1) under equipment when maintaining, repairing, or servicing in the field.
- Clean surfaces following any discharge or spill incident.



**Figure 1. Example of drip pan used for equipment maintenance.**

## 3. *Optional BMPs:*

- Use non-toxic solvents whenever possible.
- Minimize water and detergent use in all washing operations.
- Use phosphate-free detergents when practical.
- Consider recycling washwater by installing a closed-loop water recycling system

## Site Cleanup

### 1. **Waste Disposal:**

- Collect and properly manage (recycle or dispose of) used materials such as grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, hydraulic and transmission fluids, and tires.

- Dispose of these wastes at recycling facilities; municipal solid waste disposal facilities; hazardous waste treatment, storage, and disposal facilities; or the sanitary sewer as required.

*References*

Regional Road Maintenance Endangered Species Act Program Guidelines (Regional Road Maintenance Technical Working Group 2002)	Source Control Technical Requirements Manual (Seattle 2009)
1.111 - Vegetation (Equipment/Tools Cleanup and Maintenance)	BMP 3 - Dispose of Fluids and Wastes Properly BMP 7 - Cleaning or Washing of Tools, Engines, and Manufacturing Equipment



SDOT Manual Name	RCAT	RCAT Description
Traffic Management	901	Regulatory/Warning, SNS, Destination, or School Zone Routine Maintenance
2. Sign Maintenance and Misc. Traffic Maintenance	902	Regulatory/Warning, SNS, Destination, or School Zone Work Instructions

## Description of Work

Repair and replacement of all regulatory/warning signs, street name signs (SNS), destination signs, and school zone signs that are damaged by accidents, vandalism, or weathering including routine patrol steam cleaning of all signs on arterial streets to improve readability.

## Objectives

Prevent sediment, sand, cement, gravel, or soap from cleaning, installation, or maintenance of street signs from entering drainage systems, sensitive areas, and water bodies.

## Site Preparation

1. **Spill Kit:** Keep a spill cleanup kit in a nearby vehicle or next to the work site so that it is easily accessible. Make sure the contents of the spill kit are appropriate for the types and quantities of materials used for this work task. Refill spill kit materials before beginning work.
2. **Storm Drain Covers and Catch Basin Filter Socks:** Install drain covers (see Figure 1) over any catch basin or storm drain inlets that are located downslope or adjacent to the work area. Install catch basin filter socks in any structures that are **greater than 12 inches deep** (see Figure 2).
  - Place the appropriate size filter sock in the storm drain or catch basin.
  - Place the storm drain or catch basin grate on top of the filter sock to hold it in place.
  - Trim and remove filter sock material that extends beyond the grate.



Figure 1. Storm drain cover.



Figure 2. Catch basin filter sock.

### 3. Sweeping:

- Sweeping (see Figure 3) and vacuuming may not be effective when sediment is wet or when tracked soil is caked (caked soil may need to be scraped loose).
- Washing is not an alternative to sweeping and vacuuming because of the risk of pollutant transport.



**Figure 3. Mechanical street sweeping.**

### **BMP Maintenance During Site Work**

1. **Catch Basin Filter Socks:** Clean or remove and replace filter sock when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).
2. **Sweeping:**
  - Control the number of points where vehicles can leave the site to allow focused sweeping and vacuuming efforts.
  - Control speed of sweeper to minimize airborne particulates and remove maximum amount of debris.
  - Use water spray system on sweeper to reduce dust.
  - Use pickup brooms in sensitive areas.
  - Avoid sweeping up any unknown substance or any object that may be potentially hazardous.

- Adjust brooms frequently; maximize efficiency of sweeping operations.
  - Do not use kick brooms or sweeper attachments.
  - Prevent sediment from entering storm drain system.
3. *Optional BMP:* Avoid the activity when rain is falling or expected, where feasible.

## Site Cleanup

1. **Catch Basin Filter Socks:** Remove the filter sock and dispose of the collected sediment in a suitable container to be hauled offsite. Reuse the filter sock at another site if it remains in good condition (e.g., no rips, tears, or visible staining).
2. **Storm Drain Covers:** Remove drain covers from catch basin or storm drain inlets.
3. **Sweeping:** Inspect and sweep or vacuum visible sediment tracking on a daily basis.
4. **Equipment and Vehicle Maintenance:**
  - Clean equipment and tools off site in an area where pollutants can be contained.
  - Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system.
5. **Waste Disposal:** Properly dispose of sweeper wastes at an approved dump site after sweeping is finished.
6. *Optional BMP:* Use a vactor truck to clean any water and sediment out of the catch basin or storm drain inlets.

## References

Regional Road Maintenance Endangered Species Act Program Guidelines (Regional Road Maintenance Technical Working Group 2002)	Construction Stormwater Control Technical Requirements Manual (Seattle 2009)	Source Control Technical Requirements Manual (Seattle 2009)	Stormwater Management Manual for Western Washington (Ecology 2005)
2.79 - Inlet Protection 2.152 - Sweeping	E3.70 - Street Sweeping and Vacuuming E3.25 - Storm Drain Inlet Protection	BMP 9 - Washing, Pressure Washing, and Steam Cleaning of Vehicles, Equipment, and Building Structures BMP 32 - Dust Control at Manufacturing Sites	C220 - Inlet Protection



SDOT Manual Name	RCAT	RCAT Description
Traffic Management	903	Guardrail/Emergency/Accidents
2. Sign Maintenance and Misc. Traffic Maintenance	904	Guardrail New
	905	Guardrail Replacement

## Description of Work

Installation of new guardrails and posts and repair of guardrails and posts damaged by accidents or deterioration.

## Objectives

Prevent sediment from entering drainage systems, sensitive areas, and water bodies.

## Site Preparation

1. **Spill Kit:** Keep a spill cleanup kit in a nearby vehicle or next to the work site so that it is easily accessible. Make sure the contents of the spill kit are appropriate for the types and quantities of materials used for this work task. Refill spill kit materials before beginning work.
2. **Storm Drain Covers and Catch Basin Filter Socks:** Install drain covers (see Figure 1) over any catch basin or storm drain inlets that are located downslope or adjacent to the work area. Install catch basin filter socks in any structures that are **greater than 12 inches deep** (see Figure 2).
  - Place the appropriate size filter sock in the storm drain or catch basin.
  - Place the storm drain or catch basin grate on top of the filter sock to hold it in place.
  - Trim and remove filter sock material that extends beyond the grate.



Figure 1. Storm drain cover.



Figure 2. Catch basin filter sock.

### 3. Sweeping:

- Sweep by hand or using a mechanical street sweeper (see Figure 3).
- Sweeping and vacuuming may not be effective when sediment is wet or when tracked soil is caked (caked soil may need to be scraped loose). Washing is not an alternative to sweeping and vacuuming because of the risk of pollutant transport.



**Figure 3. Mechanical street sweeping.**

### **BMP Maintenance During Site Work**

1. **Catch Basin Filter Socks:** Clean or remove and replace filter sock when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).
2. **Sweeping:**
  - Control the number of points where vehicles can leave the site to allow focused sweeping and vacuuming efforts.
  - Control speed of sweeper to minimize airborne particulates and remove maximum amount of debris.
  - Use water spray system on sweeper to reduce dust.
  - Use pickup brooms in sensitive areas.
  - Avoid sweeping up any unknown substance or any object that may be potentially hazardous.
  - Adjust brooms frequently; maximize efficiency of sweeping operations.

- Do not use kick brooms or sweeper attachments.
- Prevent sediment from entering storm drain system.

### 3. Concrete Containment:

- Vacuum slurry and cuttings during the activity to prevent migration off site and do not leave slurry and cuttings on permanent concrete or asphalt paving overnight (see Figure 4).
- Continually monitor operations to determine whether slurry, cuttings, or wastewater could enter the stormwater system. If observations indicate that a violation of water quality standards could occur, stop operations and immediately implement preventative measures such as berms, barriers, secondary containment, and vector trucks.
- Wash off hand tools (e.g., screeds, shovels, rakes, floats, trowels, etc.) only into formed areas awaiting installation of concrete. A temporary sump can also be used to collect and contain wash water.
- Dispose of collected slurry and cuttings in a manner that does not violate groundwater or surface water quality standards.
- Clean concrete application and mixing equipment or concrete-delivery vehicles on the work site only in a designated area where the rinse water is controlled. Do not discharge to the sanitary sewer without prior approval from King County.



**Figure 4. Sawcutting and vacuuming.**

4. *Optional BMPs:*

- Avoid the activity when rain is falling or expected, where feasible.
- Use a sandbag barrier or containment berm to direct stormwater run-on around the construction site (see Figure 5).



**Figure 5. Containment berm example.**

### Site Cleanup

1. **Catch Basin Filter Socks:** Remove the filter sock and dispose of the collected sediment in a suitable container to be hauled off site. Reuse the filter sock at another site if it remains in good condition (e.g., no rips, tears, or visible staining).
2. **Storm Drain Covers:** Remove drain covers from catch basin or storm drain inlets.
3. **Sweeping:** Inspect and sweep or vacuum visible sediment tracking on a daily basis.
4. **Equipment and Vehicle Maintenance:**
  - Clean equipment and tools off site in an area where pollutants can be contained.
  - Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system.
5. **Waste Disposal:** Properly dispose of sweeper wastes at an approved dump site after sweeping is finished.
6. *Optional BMP:* Use a vactor truck to clean any water and/or sediment out of the catch basin or storm drain inlets.

## References

Regional Road Maintenance Endangered Species Act Program Guidelines (Regional Road Maintenance Technical Working Group 2002)	Construction Stormwater Control Technical Requirements Manual (Seattle 2009)	Source Control Technical Requirements Manual (Seattle 2009)	Stormwater Management Manual for Western Washington (Ecology 2005)
2.79 - Inlet Protection 2.152 - Sweeping	E3.70 - Street Sweeping and Vacuuming E3.25 - Storm Drain Inlet Protection	BMP 32 - Dust Control at Manufacturing Sites	C220 - Inlet Protection



SDOT Manual Name	RCAT	RCAT Description
Traffic Management	906	Crash Cushion/Emergency/Accidents
2. Sign Maintenance and Misc. Traffic Maintenance	907	Crash Cushion New
	908	Crash Cushion Replacement

## Description of Work

Resetting, repairing, and installing crash cushions after accidents or through normal maintenance.

## Objectives

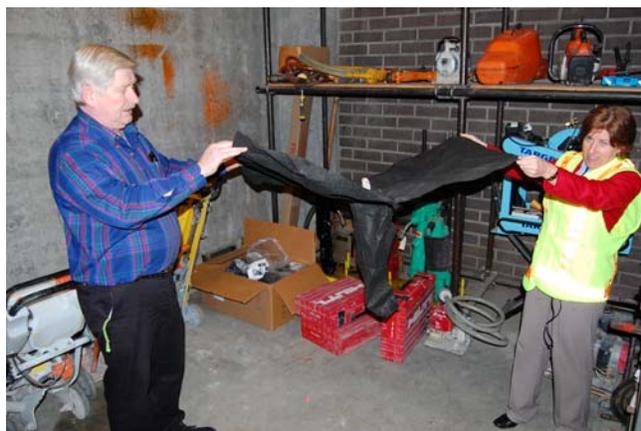
Prevent sediment from entering drainage systems, sensitive areas, and water bodies.

## Site Preparation

1. **Spill Kit:** Keep a spill cleanup kit in a nearby vehicle or next to the work site so that it is easily accessible. Make sure the contents of the spill kit are appropriate for the types and quantities of materials used for this work task. Refill spill kit materials before beginning work.
2. **Storm Drain Covers and Catch Basin Filter Socks:** Install drain covers (see Figure 1) over any catch basin or storm drain inlets that are located downslope or adjacent to the work area. Install catch basin filter socks in any structures that are **greater than 12 inches deep** (see Figure 2).
  - Place the appropriate size filter sock in the storm drain or catch basin.
  - Place the storm drain or catch basin grate on top of the filter sock to hold it in place.
  - Trim and remove filter sock material that extends beyond the grate.



**Figure 1. Storm drain cover.**



**Figure 2. Catch basin filter sock.**

3. **Sweeping:** Sweeping (see Figure 3) and vacuuming may not be effective when sediment is wet or when tracked soil is caked (caked soil may need to be scraped loose). Washing is not an alternative to sweeping and vacuuming because of the risk of pollutant transport.



**Figure 3. Mechanical street sweeping.**

### **BMP Maintenance During Site Work**

1. **Catch Basin Filter Socks:** Clean or remove and replace filter sock when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).
2. **Sweeping:**
  - Control the number of points where vehicles can leave the site to allow focused sweeping and vacuuming efforts.
  - Control speed of sweeper to minimize airborne particulates and remove maximum amount of debris.
  - Use water spray system on sweeper to reduce dust.
  - Use pickup brooms in sensitive areas.
  - Avoid sweeping up any unknown substance or any object that may be potentially hazardous.
  - Adjust brooms frequently; maximize efficiency of sweeping operations.
  - Do not use kick brooms or sweeper attachments.
  - Prevent sediment from entering storm drain system.

3. **Liquid Containment:** Drain and contain liquids from crash cushions, if potential hazardous liquids (e.g., antifreeze) exist. Store liquid waste in appropriate temporary holding tank or another suitable container.
4. *Optional BMP:* Avoid the activity when rain is falling or expected, where feasible.

## Site Cleanup

1. **Catch Basin Filter Socks:** Remove the filter sock and dispose of the collected sediment in a suitable container to be hauled offsite. Reuse the filter sock at another site if it remains in good condition (e.g., no rips, tears, or visible staining).
2. **Storm Drain Covers:** Remove drain covers from catch basin or storm drain inlets.
3. **Sweeping:** Inspect and sweep or vacuum visible sediment tracking on a daily basis.
4. **Equipment and Vehicle Maintenance:**
  - Clean equipment and tools off site in an area where pollutants can be contained.
  - Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system.
5. **Waste Disposal:**
  - Properly dispose of sweeper wastes at an approved dump site after sweeping is finished.
  - Transport hazardous wastes to an appropriate hazardous waste disposal, treatment, and storage facility.
6. *Optional BMP:* Use a vactor truck to clean any water and sediment out of the catch basin or storm drain inlets.

*References*

Regional Road Maintenance Endangered Species Act Program Guidelines (Regional Road Maintenance Technical Working Group 2002)	Construction Stormwater Control Technical Requirements Manual (Seattle 2009)	Source Control Technical Requirements Manual (Seattle 2009)	Stormwater Management Manual for Western Washington (Ecology 2005)
2.79 - Inlet Protection 2.152 - Sweeping	E3.70 - Street Sweeping and Vacuuming E3.25 - Storm Drain Inlet Protection	BMP 32 - Dust Control at Manufacturing Sites	C220 - Inlet Protection

SDOT Manual Name	RCAT	RCAT Description
Traffic Management 2. Sign Maintenance and Misc. Traffic Maintenance	950	Emergency and Miscellaneous Traffic Maintenance

## Description of Work

Other routine maintenance performed on traffic signs, marking, electrical devices, and other meters to accommodate emergency situations or shop support activities including surface mounted Metro frames, bike rack concrete pad pours, and kiosk installations.

## Objectives

Prevent sediment, uncured concrete, water from equipment cleanup, or other pollutants from entering drainage systems, sensitive areas, and water bodies.

## Site Preparation

1. **Spill Kit:** Keep a spill cleanup kit in a nearby vehicle or next to the work site so that it is easily accessible. Make sure the contents of the spill kit are appropriate for the types and quantities of materials used for this work task. Refill spill kit materials before beginning work.
2. **Storm Drain Covers and Catch Basin Filter Socks:** Install drain covers (see Figure 1) over any catch basin or storm drain inlets that are located downslope or adjacent to the work area. Install catch basin filter socks in any structures that are **greater than 12 inches deep** (see Figure 2).
  - Place the appropriate size filter sock in the storm drain or catch basin.
  - Place the storm drain or catch basin grate on top of the filter sock to hold it in place.
  - Trim and remove filter sock material that extends beyond the grate.



Figure 1. Storm drain cover.



Figure 2. Catch basin filter sock.

### 3. Sweeping:

- Sweeping (see Figure 3) and vacuuming may not be effective when sediment is wet or when tracked soil is caked (caked soil may need to be scraped loose).
- Washing is not an alternative to sweeping and vacuuming because of the risk of pollutant transport.



**Figure 3. Mechanical street sweeping.**

### **BMP Maintenance During Site Work**

1. **Catch Basin Filter Socks:** Clean or remove and replace filter sock when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).
2. **Sweeping:**
  - Control the number of points where vehicles can leave the site to allow focused sweeping and vacuuming efforts.
  - Control speed of sweeper to minimize airborne particulates and remove maximum amount of debris.
  - Use water spray system on sweeper to reduce dust.
  - Use pickup brooms in sensitive areas.
  - Avoid sweeping up any unknown substance or any object that may be potentially hazardous.
  - Adjust brooms frequently; maximize efficiency of sweeping operations.

- Do not use kick brooms or sweeper attachments.
- Prevent sediment from entering storm drain system.

### 3. Sawcutting and Concrete Installation:

- Vacuum slurry (see Figure 4) and cuttings during the activity to prevent migration offsite and do not allow the slurry and cuttings to remain on permanent concrete or asphalt paving overnight.
- Collect, treat, and properly dispose of runoff that comes in contact with diesel or coatings used in asphalt applications.
- Continually monitor operations to determine whether cuttings or wastewater could enter the stormwater system. If observations indicate that a violation of water quality standards could occur, stop operations and immediately implement preventative measures such as berms, barriers, secondary containment, and vector trucks.



**Figure 4. Sawcutting and vacuuming.**

### 4. *Optional BMPs:*

- Avoid the activity when rain is falling or expected, where feasible.
- Use a sandbag barrier or containment berm to direct stormwater run-on around the construction site (see Figure 5).



**Figure 5. Containment berm example.**

## Site Cleanup

1. **Catch Basin Filter Socks:** Remove the filter sock and dispose of the collected sediment in a suitable container to be hauled offsite. Reuse the filter sock at another site if it remains in good condition (e.g., no rips, tears, or visible staining).
2. **Storm Drain Covers:** Remove drain covers from catch basin or storm drain inlets.
3. **Sweeping:** Inspect and sweep or vacuum visible sediment tracking on a daily basis.
4. **Equipment and Vehicle Maintenance:**
  - Clean equipment and tools off site in an area where pollutants can be contained.
  - Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system.
5. **Waste Disposal:**
  - Sweep or shovel loose aggregate chunks and dust and collect the material for recycling or proper disposal at the end of each workday (see Figure 6).
  - Remove waste materials from the site and dispose of them properly. Do not discharge to the sanitary sewer without prior approval from King County.
  - Dispose of collected slurry and cuttings in a manner that does not violate groundwater or surface water quality standards.
  - Perform cleaning of concrete application and mixing equipment or concrete-delivery vehicles on the work site in a designated area where the rinse water is controlled.
6. *Optional BMP:* Recycle broken concrete.



**Figure 6. Manual sweeping.**

*References*

Regional Road Maintenance Endangered Species Act Program Guidelines (Regional Road Maintenance Technical Working Group 2002)	Construction Stormwater Control Technical Requirements Manual (Seattle 2009)	Source Control Technical Requirements Manual (Seattle 2009)	Stormwater Management Manual for Western Washington (Ecology 2005)	Highway Runoff Manual (WSDOT 2008)
2.152 - Sweeping 2.37 - Concrete Containment (2) 2.79 - Inlet Protection	E3.25 - Storm Drain Inlet Protection E3.70 - Street Sweeping and Vacuuming C1.20 – Use of Chemicals During Construction C1.35 - Sawcutting and Paving Pollution Prevention C1.45 - Solid Waste Handling and Disposal	BMP16 - Concrete Pouring, Concrete/ Asphalt Cutting, and Asphalt Application BMP 32 - Dust Control at Manufacturing Sites	C151 - Concrete Handling C152 - Sawcutting and Surfacing Pollution Prevention C220 - Inlet Protection	6A-2.33 - Concrete Handling



SDOT Manual Name	RCAT	RCAT Description
Traffic Management 2. Sign Maintenance and Misc. Traffic Maintenance	962	Bike Rack Installation

## Description of Work

Install, remove, or replace bike racks.

## Objectives

Prevent sediment and concrete dust from drilling from entering drainage systems, sensitive areas, and water bodies.

## Site Preparation

1. **Spill Kit:** Keep a spill cleanup kit in a nearby vehicle or next to the work site so that it is easily accessible. Make sure the contents of the spill kit are appropriate for the types and quantities of materials used for this work task. Refill spill kit materials before beginning work.
2. **Storm Drain Covers and Catch Basin Filter Socks:** Install drain covers (see Figure 1) over any catch basin or storm drain inlets that are located downslope or adjacent to the work area. Install catch basin filter socks in any structures that are **greater than 12 inches deep** (see Figure 2).
  - Place the appropriate size filter sock in the storm drain or catch basin.
  - Place the storm drain or catch basin grate on top of the filter sock to hold it in place.
  - Trim and remove filter sock material that extends beyond the grate.



Figure 1. Storm drain cover.



Figure 2. Catch basin filter sock.

## BMP Maintenance During Site Work

1. **Catch Basin Filter Socks:** Clean or remove and replace filter sock when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).
2. **Concrete Containment:**
  - Vacuum slurry and cuttings during the activity to prevent migration off site and do not leave slurry and cuttings on permanent concrete or asphalt paving overnight (see Figure 3).
  - Continually monitor operations to determine whether slurry, cuttings, or wastewater could enter the stormwater system. If observations indicate that a violation of water quality standards could occur, stop operations and immediately implement preventative measures such as berms, barriers, secondary containment, and vector trucks.
  - Wash off hand tools (e.g., screeds, shovels, rakes, floats, trowels, etc.) only into formed areas awaiting installation of concrete. A temporary sump can also be used to collect and contain wash water.
  - Clean concrete application and mixing equipment or concrete-delivery vehicles on the work site only in a designated area where the rinse water is controlled. Do not discharge to the sanitary sewer without prior approval from King County.



**Figure 3. Sawcutting and vacuuming.**

3. **Optional BMPs:**
  - Avoid the activity when rain is falling or expected, where feasible.

- Use a sandbag barrier or containment berm to direct stormwater run-on around the construction site (see Figure 4).



**Figure 4. Containment berm example.**

### Site Cleanup

1. **Catch Basin Filter Socks:** Remove the filter sock and dispose of the collected sediment in a suitable container to be hauled offsite. Reuse the filter sock at another site if it remains in good condition (e.g., no rips, tears, or visible staining).
2. **Storm Drain Covers:** Remove drain covers from catch basin or storm drain inlets.
3. **Waste Disposal:**
  - Sweep or shovel loose aggregate chunks and dust and collect the material for recycling or proper disposal at the end of each workday (see Figure 5).
  - Remove waste materials from the site and dispose of them properly. Do not discharge to the sanitary sewer without prior approval from King County.
  - Dispose of collected slurry and cuttings in a manner that does not violate groundwater or surface water quality standards.
  - Perform cleaning of concrete application and mixing equipment or concrete-delivery vehicles on the work site in a designated area where the rinse water is controlled.
4. *Optional BMP:* Recycle broken concrete.



**Figure 5. Manual sweeping.**

*References*

Regional Road Maintenance Endangered Species Act Program Guidelines (Regional Road Maintenance Technical Working Group 2002)	Construction Stormwater Control Technical Requirements Manual (Seattle 2009)	Source Control Technical Requirements Manual (Seattle 2009)	Stormwater Management Manual for Western Washington (Ecology 2005)
2.79 - Inlet Protection 2.152 - Sweeping	E3.25 - Storm Drain Inlet Protection	BMP 32 - Dust Control at Manufacturing Sites	C220 - Inlet Protection

SDOT Manual Name	RCAT	RCAT Description
Traffic Management 2. Sign Maintenance and Misc. Traffic Maintenance	972	Sign Maintenance/Graffiti Removal

## Description of Work

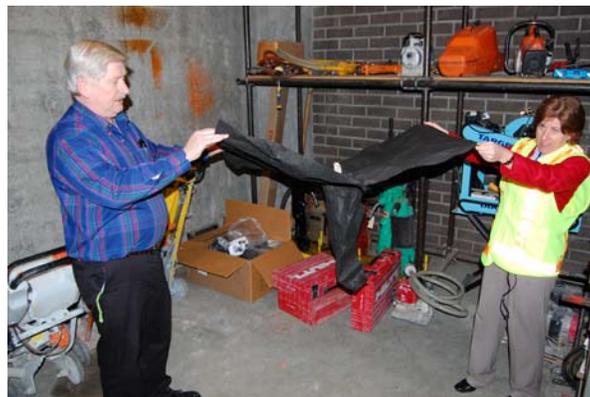
Routine patrol steam cleaning of all signs on arterial streets to improve readability.

## Objectives

Protect drainage systems and water bodies from wash water and sediment.

## Site Preparation

1. **Spill Kit:** Keep a spill cleanup kit in a nearby vehicle or next to the work site so that it is easily accessible. Make sure the contents of the spill kit are appropriate for the types and quantities of materials used for this work task. Refill spill kit materials before beginning work.
2. **Inlet Protection:**
  - **Structures less than 12-inches deep:** Remove debris using a mechanical street sweeper or by hand sweeping before cleaning. Install a sump within the structure.
  - **Structures greater than 12-inches deep:** Install a catch basin filter sock (see Figure 1).
    - Place the appropriate size filter sock in the storm drain or catch basin.
    - Place the storm drain or catch basin grate on top of the filter sock to hold it in place.
    - Trim and remove filter sock material that extends beyond the grate.



**Figure 1. Catch basin filter sock.**

## BMP Maintenance During Site Work

**Catch Basin Filter Socks:** Clean or remove and replace filter sock when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).

## Site Cleanup

### Inlet Protection:

- **Structures less than 12-inches deep:** Remove material from the temporary sump after cleanup is complete.
- **Structures greater than 12-inches deep:**
  - Remove sediment buildup in front of the catch basin or storm drain inlets by hand sweeping after flushing has been completed.
  - Remove the filter sock and dispose of the collected sediment in a suitable container to be hauled off site.
  - Reuse the filter sock at another site if it remains in good condition (e.g., no rips, tears, or visible staining).
  - *Optional BMP:* Use a vactor truck to clean any water and sediment out of the catch basin or storm drain inlets.

## References

Regional Road Maintenance Endangered Species Act Program Guidelines (Regional Road Maintenance Technical Working Group 2002)	Construction Stormwater Control Technical Requirements Manual (Seattle 2009)	Stormwater Management Manual for Western Washington (Ecology 2005)
2.79 - Inlet Protection	E3.25 - Storm Drain Inlet Protection E3.65 - Cleaning Inlets and Catch Basins	C220 - Inlet Protection