

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

Traffic Management
Signal Electrician

December 2008

SDOT BEST MANAGEMENT PRACTICES (BMP) REFERENCE MANUAL

Traffic Management Signal Electrician

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

1. Signal Electrician

RCATs 931 & 932 – Underground Construction and Pole Construction

RCAT 937 – Vehicle Loop Detector Installation

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.

SDOT Manual Name	RCAT	RCAT Description
Traffic Management	931	Underground Construction
1. Signal Electrician	932	Pole Construction

Description of Work

RCAT 931 All underground construction associated with repair, removal, installation, and maintenance of electrical equipment including repair and installation of handholes, bases, service boxes, guy anchors, pole risers, and associated equipment.

RCAT 932 Removal, replacement, reconstruction, or new installation of poles including mast arms, mast arm extensions, and other support equipment.

Objectives

Prevent sediment, loose aggregate, uncured concrete, grout, or related materials from leaving the work site; contain water from exposed aggregate work areas; and contain water from equipment cleanup.

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.

BMP Maintenance During Site Work

1. **Concrete Repair:**
 - Vacuum slurry and cuttings (see Figure 3) 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 1. Storm drain cover.



Figure 2. Catch basin filter sock.



Figure 3. Sawcutting and vacuuming.

2. **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).
3. **Equipment Maintenance:** Wash off hand tools only into formed areas awaiting installation of asphalt concrete or use a temporary sump to collect and contain wash water.
4. *Optional BMPs:*
 - Avoid the activity when rain is falling or expected, where feasible.

- Cover portable asphalt mixing equipment with an awning, a lean-to, or other simple structure to avoid contact with rain, if possible.
- 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 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. **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).
 - Dispose of collected slurry and cuttings in a manner that does not violate groundwater or surface water quality standards.
 - Remove waste materials from the site and dispose of them properly.
 - 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.
5. *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)	Highway Runoff Manual (WSDOT 2008)
2.37 - Concrete Containment (2) 2.79 - Inlet Protection	C1.20 - Use of Chemicals During Construction C1.35 - Sawcutting and Paving Pollution Prevention C1.45 - Solid Waste Handling and Disposal E3.25 - Storm Drain Inlet Protection	BMP16 - Concrete Pouring, Concrete/Asphalt Cutting, and Asphalt Application	C151 - Concrete Handling C152 - Sawcutting and Surfacing Pollution Prevention	6A-2.33 - Concrete Handling

SDOT Manual Name	RCAT	RCAT Description
Traffic Management 1. Signal Electrician	937	Vehicle Loop Detector Installation

Description of Work

Complete installation of vehicle detectors including saw cutting asphalt or concrete; sealing pavement; vacuuming and disposing of slurry; and installation of loop wire, loop lead-in, and stubout conduit.

Objectives

Prevent sediment and pollutants of concern including petroleum hydrocarbons, toxic organic compounds, oils and greases, metals, suspended solids, and water with high pH from entering drainage systems, sensitive areas, or 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. The contents of the spill kit must be appropriate to the types and quantities of materials used for this work task. Spill kit materials must be refilled 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. Asphalt Paving:

- Vacuum slurry (see Figure 3) 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 3. Sawcutting and vacuuming.

2. **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).
3. **Equipment Maintenance:** Wash off hand tools only into formed areas awaiting installation of asphalt concrete or use a temporary sump to collect and contain wash water.
4. *Optional BMPs:*
 - Avoid the activity when rain is falling or expected, where feasible.
 - Cover portable asphalt mixing equipment with an awning, a lean-to, or other simple structure to avoid contact with rain, if possible.

- 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 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. **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).
 - Dispose of collected slurry and cuttings in a manner that does not violate groundwater or surface water quality standards.
 - Remove waste materials from the site and dispose of them properly.
 - 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.
5. *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)	Highway Runoff Manual (WSDOT 2008)
2.37 - Concrete Containment (2) 2.79 - Inlet Protection	C1.20 - Use of Chemicals During Construction C1.35 - Sawcutting and Paving Pollution Prevention C1.45 - Solid Waste Handling and Disposal E3.25 - Storm Drain Inlet Protection	BMP16 - Concrete Pouring, Concrete/Asphalt Cutting, and Asphalt Application	C151 - Concrete Handling C152 - Sawcutting and Surfacing Pollution Prevention	6A-2.33 - Concrete Handling