

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

**Street Maintenance Surface Repair
Concrete Repair**

December 2008

SDOT BEST MANAGEMENT PRACTICES (BMP) REFERENCE MANUAL

Street Maintenance Surface Repair Concrete Repair

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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
Street Maintenance Surface Repair 1. Concrete Repair	201 202 203A 204A 209 211 218 220 224 226 229 234	Concrete Repair - Standard Utility Cuts Concrete Repair - Non-standard Utility Cuts Standard Cut Repair Rigid Base Pavement Non-standard Cut Repair Rigid Base Pavement Remove/replace Concrete Pavement Decorative/special Pavement Repair Construct Concrete Traffic Revisions Replace Curb Sidewalk Safety Repair Remove/Replace Alley Crossings Repair Stairway Curb Ramp Construction

Description of Work

- RCAT 201 Permanent concrete repair of street and sidewalk cuts and replacement of concrete sidewalks up to 18 SF resulting from utility repairs.
- RCAT 202 Permanent concrete repair of street and sidewalk cuts (greater than 18 SF), utility trenches backfilled by paving crews, and street cuts on rigid base asphalt pavement resulting from utility repairs.
- RCAT 203A Permanent repair of utility street cuts on rigid base asphalt pavement up to 18 SF including concrete (digout and pave).
- RCAT 204A Permanent repair of utility street cuts on rigid base asphalt pavement greater than 18 SF.
- RCAT 209 Repairing voids, removing and replacing concrete surfaced streets or rigid based pavement by breaking out failed pavement, and replacing it in kind.
- RCAT 211 Removal and replacement of decorative/special pavement sections including repair to the base.
- RCAT 218 Construction or removal of concrete traffic islands, dividers, and widening and associated curb and sidewalk landings.
- RCAT 220 Removal and replacement of broken standard curb sections.
- RCAT 224 Removal and repair of failed mid-block sidewalk, sidewalk landing (including necessary curb and curb ramps) and sidewalk tree pit repairs.
- RCAT 226 Removal and replacement of improved alley crossings.
- RCAT 229 Repair of concrete stairways, including steps and slab patching and replacement as necessary to eliminate hazards.
- RCAT 234 Construction of a curb ramp as a companion ramp or constructing a ramp in the area of a landing that is not in need of repair.

Objectives

Contain uncured concrete and prevent chemicals from leaving the work site, water from exposed aggregate work areas, and 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.



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 Repair:**
 - Vacuum slurry and cuttings during the activity to prevent migration off site and do not allow the material to remain on permanent concrete or asphalt paving overnight (see Figure 3).

- Wash off hand tools (e.g., screeds, shovels, rakes, floats, trowels) only into formed areas awaiting installation of concrete or use a temporary sump to collect and contain wash water.
- 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/or vector trucks.
- Contain and collect discarded concrete slurry when washing exposed aggregate, and dispose of the slurry properly.
- 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. **Storm Drain Covers:** Remove drain covers from any catch basin or storm drain inlets.
2. **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).
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 material from site and dispose of it properly.
 - Remove material from temporary sump after cleanup is complete.
 - Dispose of collected slurry and cuttings in a manner that does not violate groundwater or surface water quality standards.
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)	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
Street Maintenance Surface Repair 1. Concrete Repair	208	Concrete Repair – Joint and Crack Sealing

Description of Work

Routing, cleaning, and filling of street pavement joints and cracks with asphalt emulsion to prevent moisture from entering pavement cracks and base.

Objectives

Contain excess joint sealant and sand to reduce turbidity, sediment, and/or worksite pollutants from entering watercourses or streams, wetlands, lakes, or other 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.

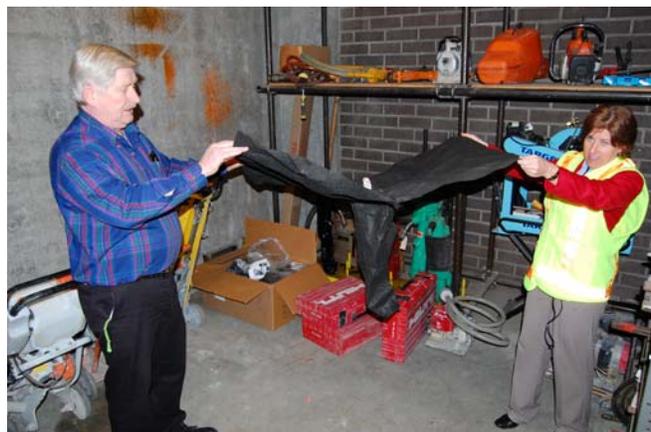


Figure 2. Catch basin filter sock.

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. **Sweeping:**
 - Use hand sweeping and mechanical sweepers as needed to collect soil and sediment on adjacent paved surfaces (see Figure 3).
 - 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.
 - Adjust brooms frequently; maximize efficiency of sweeping operations.
 - Avoid sweeping up any unknown substance or any object that may be potentially hazardous.
 - Do not use kick brooms or sweeper attachments.
 - Prevent sediment from entering the storm drain system.



Figure 3. Mechanical street sweeping.

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. **Storm Drain Covers:** Remove drain covers from any catch basin or storm drain inlets.
2. **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).
3. **Sweeping:**
 - Inspect and sweep or vacuum visible sediment tracking on a daily basis.
 - 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.
 - Properly dispose of sweeper wastes at an approved dump site after sweeping is finished.

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)
2.79 - Inlet Protection 2.152 - Sweeping	E3.25 - Storm Drain Inlet Protection E3.70 - Street Sweeping and Vacuuming C1.45 - Solid Waste Handling and Disposal	BMP 32 - Dust Control at Manufacturing Sites

SDOT Manual Name	RCAT	RCAT Description
Street Maintenance Surface Repair 1. Concrete Repair	210	Trench Backfill

Description of Work

Street and sidewalk cut and tunnel backfilling of side sewers or utilities from the utility up to the top of the subgrade or including the temporary surface, if necessary.

Objectives

Contain sand, soil, crushed rock, and uncured controlled density fill (CDF); prevent chemicals from leaving the work site; 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.



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. **Trench Backfill:**
 - Wash off hand tools (e.g., screeds, shovels, rakes, floats, trowels) only into the backfilled trench or use a temporary sump to collect and contain wash water.

 - Continually monitor operations to determine whether soil, aggregate, or CDF slurry 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/or vector trucks.

 - 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.

3. **Sweeping:**
 - Use hand sweeping and mechanical sweepers as needed to collect soil and sediment on adjacent paved surfaces (see Figure 3).

 - 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.

 - Adjust brooms frequently; maximize efficiency of sweeping operations.

 - Avoid sweeping up any unknown substance or any object that may be potentially hazardous.

 - Do not use kick brooms or sweeper attachments.

 - Prevent sediment from entering the storm drain system.

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 4).



Figure 3. Mechanical street sweeping.



Figure 4. Containment berm example.

Site Cleanup

1. **Storm Drain Covers:** Remove drain covers from any catch basin or storm drain inlets.
2. **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).
3. **Sweeping:**
 - Inspect and sweep or vacuum visible sediment tracking on a daily basis.
 - 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.
 - Properly dispose of sweeper wastes at an approved dump site after sweeping is finished.

4. **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 material from site and dispose of it properly.
- Remove material from temporary sump after cleanup is complete.
- Dispose of excess CDF slurry in a manner that does not violate groundwater or surface water quality standards.

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) 2.61 - Dust Control 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	6A-2.33 - Concrete Handling

SDOT Manual Name	RCAT	RCAT Description
Street Maintenance Surface Repair 1. Concrete Repair	214	Pavement Grinding

Description of Work

Remove concrete pavement by grinding with proper grinding machine to prepare for paving or profiling of street.

Objectives

Prevent asphalt and concrete grindings from entering the storm drain system and surface 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. **Pavement Grinding:**
 - Vacuum slurry and cuttings during the activity to prevent migration off site and do not allow the slurry or cuttings to remain on permanent concrete or asphalt paving overnight (see Figure 3).
 - Continually monitor operations to determine whether slurry or grindings 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 vacator trucks.



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. **Storm Drain Covers:** Remove drain covers from any catch basin or storm drain inlets.
2. **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).
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).
 - Collect and properly dispose of concrete grindings.
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)	Highway Runoff Manual (WSDOT 2008)
2.37 - Concrete Containment (2) 2.79 - Inlet Protection	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
Street Maintenance Surface Repair	217	Grade Dirt Streets and Alleys
1. Concrete Repair	221	Reshaping Gravel Shoulders
	222	Gravel Patching
	250	Other Street Maintenance

Description of Work

- RCAT 217 Grading dirt streets and alleys including ripping surface to remove chuck holes, scribing gutter line down both sides of street, and adding ledge rock/asphalt grindings as necessary to reestablish crown.
- RCAT 221 Reshaping gravel shoulders with grader to smooth out chuck holes and edge ruts and bring material up to edge, developing drainage pathways, and eliminating hazards to traffic.
- RCAT 222 Addition of material to shoulders, pathways, and gravel streets to replace lost material including building up shoulders after resurfacing or other asphaltic improvements to the streets to provide lateral support for street.
- RCAT 250 All maintenance, repair, or construction performed that is not covered by a specific RCAT including repairing road base by recompacting disturbed material and/or over digging and replacing with ledge rock, surface leveling, removal of signal traffic pads, etc.

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 Cover and Catch Basin Filter:** 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. **Straw Wattles:** Install straw wattles (see Figure 3) if warranted by the size of the project, if the project will last multiple days, or if the project is located adjacent to a sensitive area.
4. **Other Related BMPs:** Install silt fences, coir logs, or other BMPs, as appropriate, depending on the size and location of the project.



Figure 3. Straw wattle used for erosion control.

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. **Grading and Patching:** Continually monitor operations to determine whether aggregate or debris 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.
3. **Straw Wattles:** Remove sediment around straw wattles when deposits reach one-half the height of the wattle.

4. **Sweeping:** Frequently sweep paved surfaces directly adjacent to the work area to remove accumulated debris and other material that could otherwise be washed off by stormwater. Do not sweep this debris into storm drains.
5. *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. **Storm Drain Covers:** Remove drain covers from catch basin or storm drain inlets.
2. **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).
3. **Straw Wattles:**
 - Evaluate site to determine if straw wattles are no longer needed (the area has stabilized; potential of sediment laden water exiting the area has passed).
 - Remove sediment buildup in front of straw wattles before removing them.
4. **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.



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)
2.31 - Coir Log 2.79 - Inlet Protection 2.152 - Sweeping	E3.25 - Storm Drain Inlet Protection E3.35 - Straw Wattles E3.70 - Street Sweeping and Vacuuming	BMP32 - Dust Control at Manufacturing Sites	C220 - Inlet Protection

SDOT Manual Name	RCAT	RCAT Description
Street Maintenance Surface Repair 1. Concrete Repair	219	Extruded Concrete Curb

Description of Work

Construct new concrete curb using extrusion machine.

Objectives

Contain uncured concrete and prevent chemicals from leaving the work site, contain water from exposed aggregate work areas, and contain water from equipment cleanup to prevent it from entering drainage systems 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 Repair:**
 - Wash off hand tools (e.g., screeds, shovels, rakes, floats, trowels) only into formed areas awaiting installation of concrete or use a temporary sump to collect and contain wash water.
 - 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/or vector trucks.
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 3).



Figure 3. Containment berm example.

Site Cleanup

1. **Storm Drain Covers:** Remove drain covers from any catch basin or storm drain inlets.
2. **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).

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 4).
- Remove waste material from site and dispose of it properly.
- Remove material from temporary sump after cleanup is complete.
- Dispose of collected slurry and cuttings in a manner that does not violate groundwater or surface water quality standards.

4. Optional BMP: Recycle broken concrete.



Figure 4. 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	C1.35 - 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	6A-2.33 - Concrete Handling

SDOT Manual Name	RCAT	RCAT Description
Street Maintenance Surface Repair	801	Haul Aggregate
1. Concrete Repair	804	Haul Rubble

Description of Work

RCAT 801 Hauling of aggregate from vendors to stockpile in the maintenance yards.

RCAT 804 Hauling of debris from the maintenance transfer sites to permanent dump sites or landfill.

Objectives

Prevent aggregate and debris from entering drainage systems and surface 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:** Install drain covers (see Figure 1) over any catch basin or storm drain inlets that are connected to the storm drain system and are located downslope or adjacent to the work area.



Figure 1. Storm drain cover.

BMP Maintenance During Site Work

1. **Loading and Unloading:**
 - Continually monitor operations to determine whether aggregate or debris 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.

- Cover the load with a tarp or temporary plastic sheeting to keep aggregate and debris inside the truck during transportation between sites.
2. **Sweeping:** Frequently sweep surfaces; including those that have been covered with containers, logs, or other material; to remove accumulated debris and other material that could otherwise be washed off by stormwater (see Figure 2). Do not sweep this debris into storm drains.



Figure 2. Mechanical street sweeping.

Site Cleanup

1. **Storm Drain Covers:** Remove drain covers from any catch basin or storm drain inlets.
2. **Sweeping:** Sweep or shovel loose aggregate chunks and dust collect the material for recycling or proper disposal at the end of each workday (see Figure 3).



Figure 3. Manual sweeping.

3. **Material Storage:** Cover stockpiles containing more than 5 cubic yards of erodible or water-soluble materials with tarps or temporary plastic sheeting and anchor to prevent contact with rainfall (see Figure 4). Store stockpiled materials in a building or a covered, paved area, if possible.



Figure 4. Example of a covered stockpile.

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)
2.79 - Inlet Protection 2.152 - Sweeping	C1.45 - Solid Waste Handling and Disposal E3.25 - Storm Drain Inlet Protection E3.70 - Street Sweeping and Vacuuming	BMP 11 - Loading and Unloading of Liquid or Solid Material BMP 24 - Outdoor Storage or Transfer of Solid Raw Materials, Byproducts, or Finished Products

