

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

Street Maintenance Surface Repair
Asphalt Repair

December 2008

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(BMP) REFERENCE MANUAL**

**Street Maintenance Surface Repair
Asphalt Repair**

Prepared for

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December 31, 2008

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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 2. Asphalt Repair	203B	Standard Cut Repair of Rigid Base Pavement - Asphalt
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Description of Work

- RCAT 203B Permanent repair of utility street cuts on rigid base asphalt pavement up to 18 SF.
- RCAT 204B Permanent repair utility street cuts on rigid base asphalt pavement greater than 18 SF.
- RCAT 205 Temporary plant mix or Class B asphalt patching of all paved or oiled streets, asphalt shoulders, and curbs with bituminous patch material.
- RCAT 206 Removal and replacement of deteriorated asphalt or temporary asphalt patches on both rigid and flexible base pavement including the removal and replacement of any failed base material and the permanent repair of raised joints.
- RCAT 207 Permanent asphalt repair of rigid and flexible base pavement that does not require the removal of existing pavement or where the subgrade has been prepared by others.
- RCAT 227 Minimum grading and placing of large rock or asphalt grindings to prepare a 5 foot walkway suitable for paving.
- RCAT 228 The application of asphaltic concrete to a depth of two or three inches on unimproved walkways that have been previously prepared under RCAT 227.
- RCAT 229 Repair of concrete stairways, including steps and slab patching and replacement as necessary to eliminate hazards.
- RCAT 230 Permanent asphalt repair of street cuts on flexible base pavement up to 18 SF.

av /08-04067-000 rcats 203b, 204b, 205, 206, 207, 227, 228, 229, 230, 231, 232, 233, 237.doc

- RCAT 231 Shimming of settlements and irregularities in street crosswalks and on city-maintained concrete sidewalks, the removal and replacement of failed asphalt walkway sections, and the correction of subgrade failures.
- RCAT 232 Permanent asphalt repair of street cuts on flex base pavement resulting from utility work greater than 18 SF.
- RCAT 233 & RCAT 237 The complete overlay of deteriorated pavement with asphaltic concrete to improve the riding surface and increase the life of the street.

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, 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. **Asphalt Repair:**
 - Vacuum slurry and cuttings during the activity to prevent migration off site; do not allow the material to remain on permanent concrete or asphalt paving overnight (see Figure 3).
 - 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.
 - Wash off hand tools (e.g., screeds, shovels, rakes, floats, trowels) only into formed areas awaiting installation of asphalt concrete or use a temporary sump to collect and contain wash water.



Figure 3. Sawcutting and vacuuming.

3. *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. **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.



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 2. Asphalt Repair	208	Asphalt 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 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 2. Asphalt 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 2. Asphalt 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 2. Asphalt Repair	215	Chip Seal Streets

Description of Work

Applying a single application of asphaltic emulsion and crushed rock seal over stabilized streets.

Objectives

Prevent emulsion and aggregate material from entering streams, lakes, wetlands, 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.

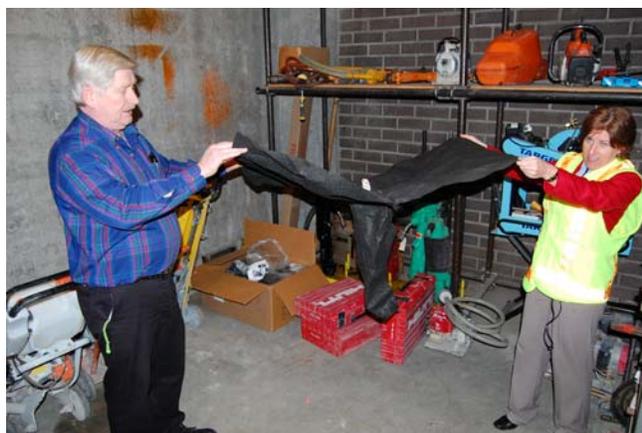


Figure 2. Catch basin filter sock.

3. Filter Fence:

- Install a filter fence adjacent to the roadway if there are sensitive areas nearby (e.g., wetlands or streams) that must be protected during the work (see Figure 3).
- Place the filter fence along contours and make sure the bottom of the fabric is continuously and securely anchored for its entire length to reduce undermining.
- Ensure that the height of the filter fence is adequate to reduce the potential for silt to leave the work site. Overlap vertical seams at least 3 feet to avoid leakage and secure both ends of the overlap to posts.
- Increase the elevation at the ends of the BMP installation to prevent “end runs.”

4. Sweeping:

- Sweep before and after sealing (see Figure 4).
- 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. Silt fence.



Figure 4. 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 the 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 the storm drain system.

3. *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.

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. **Filter Fence:** Spread out any sediment deposits that remain after the filter fence is removed so that the restored surface conforms to the existing grade.
4. **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.

5. **Waste Disposal:** Remove waste material from site and dispose of it properly.

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 2.114 - Silt Fence 2.152 - Sweeping	E3.10 - Filter Fence E3.70 - Street Sweeping and Vacuuming C1.20 - Use of Chemicals During Construction C1.45 - Solid Waste Handling and Disposal	BMP 9 - Washing, Pressure Washing, and Steam Cleaning of Vehicles, Equipment, and Building Structures BMP16 - Concrete Pouring, Concrete/Asphalt Cutting, and Asphalt Application BMP 32 - Dust Control at Manufacturing Sites	C220 - Inlet Protection

SDOT Manual Name	RCAT	RCAT Description
Street Maintenance Surface Repair 2. Asphalt Repair	216	Prepare Oiled Streets

Description of Work

Preparation of streets to be oiled by reshaping and loosening surface prior to the oil application including the re-loosening (tight blading) of streets which were previously torn up but not immediately oiled.

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.

BMP Maintenance During Site Work

1. **Oil Application:** 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.

2. *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. **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 any 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 4).



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)
2.79 - Inlet Protection 2.152 - Sweeping	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 2. Asphalt Repair	217 221 222 250	Grade Dirt Streets and Alleys Reshaping Gravel Shoulders Gravel Patching 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 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. **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:** Filter fences, coir logs, or other BMPs may be 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 2. Asphalt 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 2. Asphalt Repair	236	Dust Palliative Application

Description of Work

Apply a dust palliative to previously prepared dirt streets for the purpose of limiting the emission of dust into the air and eliminating the need for constant restoration with grader.

Objectives

Prevent sediment and oil from palliative application from entering storm drain systems and 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. 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 inlet 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. **Loading and Unloading:** Check loading and unloading equipment such as valves, hoses, pumps, flanges, and connections regularly for leaks when loading

tanker truck with water and CMS-2 and repair as needed. Document and keep all inspection records.

4. Dust Palliative Application:

- Do not apply oil on a wet surface or when the temperature is below 60°F.
- Use only the recommended amounts of chemical materials and apply them in a proper manner to reduce the potential for polluting stormwater and surface waters.

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. *Optional BMPs:* 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 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.

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)
2.61 - Dust Control 2.152 - Sweeping	E2.45 - Dust Control E3.25 - Storm Drain Inlet Protection C1.20 - Use of Chemicals During Construction	BMP 11 - Loading and Unloading of Liquid or Solid Material BMP 32 - Dust Control at Manufacturing Sites	C140 - Dust Control	6A-2.15 - Dust Control

SDOT Manual Name	RCAT	RCAT Description
Street Maintenance Surface Repair	801	Haul Aggregate
2. Asphalt 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 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:** Install drain covers (see Figure 1) over any catch basin or storm drain inlets that 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

