

**MCM 6 Plan and Standard Operating Procedures**  
**Pollution Prevention/Good Housekeeping for Municipal Operations**

City of Brainerd  
501 Laurel Street, City, MN 56401

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## **I. INTRODUCTION**

### **A. Basis for the Standard Operating Procedures (SOPs)**

The Minnesota Pollution Control Agency (MPCA) issued a National Pollutant Discharge Elimination System (NPDES) General Permit (GP) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). The MS4 GP requires the City to alter their own actions as well as work with other governmental agencies to help ensure a reduction in the amount and type of pollution that:

- Collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways.
- Results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems.

This SOP manual will assist the City in using targeted best management practices that are intended on reducing the discharge of pollutants from municipal activities.

The City must conduct an annual assessment of the operations and maintenance program to evaluate program compliance, the status of achieving the measurable requirements in the MS4 General Permit and determine how the program might be improved. Measurable requirements are activities that must be documented or tracked as applicable to the MCM (e.g., inventory, trainings, inspections, maintenance activities, etc.). The City must perform the annual assessment prior to completion of each annual report and document any modifications made to the program because of the annual assessment.

### **B. Objectives of the SOPs**

This manual is intended to provide guidance on Good Housekeeping Practices for Municipal Operations as follows:

- Provide BMPs used for municipal activities.
- Provide methods for employing spill prevention and response.
- Provide tools for documenting inspections of ponds, outfalls, and municipal facilities.

### **C. Inventory of Facilities**

The City must maintain a written or mapped inventory of permittee owned/operated facilities that contribute pollutants to stormwater discharges. The City must implement BMPs that prevent or reduce pollutants in stormwater discharges from all inventoried facilities. Facilities to be inventoried may include, but is not limited to:

- a. Composting
- b. equipment storage and maintenance
- c. hazardous waste disposal
- d. hazardous waste handling and transfer
- e. landfills
- f. solid waste handling and transfer
- g. parks
- h. pesticide storage
- i. public parking lots
- j. public golf courses
- k. public swimming pools

- l. public works yards
- m. recycling
- n. salt storage
- o. snow storage
- p. vehicle storage and maintenance (e.g., fueling and washing) yards
- q. materials storage yards

**D. Training**

The City must implement a stormwater management training program commensurate with individual's responsibilities as they relate to the permittee's SWPPP, including reporting and assessment activities. The City may use training materials from the United States Environmental Protection Agency (USEPA), state and regional agencies, or other organizations as appropriate to meet this requirement. The training program must:

- a. Address the importance of protecting water quality.
- b. Cover the requirements of the permit relevant to the responsibilities of the individual (see MS4 General Permit).
- c. Include a schedule that establishes initial training for individuals, including new and/or seasonal employees, and recurring training intervals to address changes in procedures, practices, techniques, or requirements.

Each calendar year, the City must ensure all individuals that perform winter maintenance activities for the permittee receive training that includes:

- a. The importance of protecting water quality.
- b. BMPs to minimize the use of deicers (e.g., proper calibration of equipment and benefits of pretreatment, pre-wetting, and anti-icing)
- c. Tools and resources to assist in winter maintenance (e.g., deicing application rate guidelines, calibration charts, Smart Salting Assessment Tool).

**E. Operations and Maintenance Documentation**

The City must document the following information associated with the operations and maintenance program:

- a. Date(s) and description of findings, including whether or not an illicit discharge is detected, for all inspections conducted in accordance with structural stormwater inspections and pods and outfall inspections (see **F**, below).
- b. Any adjustments to inspection frequency as authorized in structural stormwater inspection reports.
- c. Date(s) and a description of maintenance conducted as a result of inspection findings, including whether or not an illicit discharge is detected.
- d. Schedule(s) for maintenance of structural stormwater BMPs and outfalls as required in structural stormwater BMPs and outfalls reports.
- e. Stormwater management training events, including general subject matter covered, names and departments of individuals in attendance, and date of each event.

**F. Pollutant Estimation for BMPs**

The City will use either a P8 Model or MIDS Calculator to determine the TSS and TP treatment effectiveness of all City owner/operated ponds constructed and used for the collection and treatment of stormwater. For any Waste Load Allocation (see I, below) and BMP credit calculations, the above tools may be used individually or to inform the MPCA's TMDL Application Form workbook.

**G. Inspections**

The City must inspect structural stormwater BMPs (excluding stormwater ponds, which are under a separate schedule below) each calendar year to determine structural integrity, proper function, and maintenance needs unless the City determines either of the following conditions apply:

- a. Complaints received or patterns of maintenance indicate a greater frequency is necessary; or
- b. Maintenance or sediment removal is not required after completion of the first two calendar year inspections; in which case the City may reduce the frequency of inspections to once every two (2) calendar years.

Prior to the expiration date of the General Permit, the City must conduct at least one inspection of all ponds and outfalls (excluding underground outfalls) in order to determine structural integrity, proper function, and maintenance needs. Based on inspection findings, the City must determine if repair, replacement, or maintenance measures are necessary in order to ensure the structural integrity and proper function of structural stormwater BMPs and outfalls. The City must complete necessary maintenance as soon as possible. If the City determines necessary maintenance cannot be completed within one year of discovery, the City must document a schedule(s) for completing the maintenance.

**H. Pond Sediment Excavation and Removal Documentation**

The permittee must document pond sediment excavation and removal activities, including:

- a. Unique ID number and geographic coordinates of each stormwater pond from which sediment is removed.
- b. The volume (e.g., cubic yards) of sediment removed from each stormwater pond.
- c. Results from any testing of sediment from each removal activity.
- d. Location(s) of final disposal of sediment from each stormwater pond.

**I. Impaired Waters**

Discharges to impaired waters with a USEPA-Approved TMDL that includes an applicable Waste Load Allocation (WLA) require a plan to meet WLA's. Typical impairments include:

- a. Oxygen demand
- b. Nitrate
- c. TSS
- d. TP
- e. Bacteria
- f. Chloride
- g. Temperature

The City will inventory its spatial database with approved TMDL water resources to inform CIP development with the aim of meeting its WLA. The City will use the MPCA's TMDL Application Form workbook to develop appropriate WLA's and implementation schedules to meet this goal. All documentation, scheduling and strategy requirements will follow the regulations identified within the current MS4 General Permit.

## **II. POLLUTION PREVENTION**

### **A. Dumpsters/Garbage Storage**

#### Issue:

Potential for pollutants can occur if proper garbage management is not in place. An appropriate number of dumpsters should be located throughout the facility to provide enough storage for daily activities. In addition, facility dumpsters are to be marked for proper materials disposal.

#### Best Management Practices:

- a. Train employees on proper trash disposal.
- b. Locate dumpsters and trash cans in convenient, easily observable areas.
- c. Provide properly labeled recycling bins to reduce the amount of garbage disposed.
- d. Locate in areas to best prevent contact with storm water.
- e. Whenever possible store garbage containers beneath a covered structure.
- f. Locate dumpsters on a flat, hard surface that does not slope or drain directly into the storm drain system.
- g. Keep areas around dumpsters clean of all garbage.
- h. Have garbage bins emptied regularly to keep from overflowing.

#### Documentation

- a. Document training of employees.

### **B. Parking Lot Maintenance**

#### Issue:

Parking Lots can potentially generate increased pollutant loads to the stormwater system from run-off. A well-maintained parking surface can help to reduce some of those pollutant concerns.

#### Best Management Practices:

- a. Restrict parking in areas to be swept prior to and during sweeping using regulations as necessary.
- b. Sweep parking areas, at a minimum of twice annually, or as needed, or as directed by the City's responsible official.

#### Documentation:

- a. Track areas swept and approximate quantities removed.
- b. Document training of employees.

### **C. Parks – Chemical Application Pesticides, Herbicides, Fertilizers**

#### Issue:

Chemical applications of pesticides, herbicides and fertilizers are used to keep green space looking aesthetically pleasing but also have the potential to pollute water through storm water runoff.

Best Management Practices:

- a. Train all staff necessary in the proper use and application of fertilizers and pesticides for maintenance of City lands.
- b. Ensure state Chemical Handling Certification are up to date.
- c. Calibrate application equipment to avoid excessive application.
- d. Use pesticides only if there is an actual pest problem and periodically test soils for determining proper fertilizer use.
- e. Time and apply the application of fertilizers, herbicides or pesticides to coincide with the manufacturer's recommendations for best results ("Read the Label").
- f. Know the weather conditions. Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).
- g. Sweep pavements or sidewalks where fertilizers or other solid chemicals have fallen, back onto grassy areas before applying irrigation water.
- h. Triple rinse containers and use rinse water as product. Dispose of unused pesticide as hazardous waste.

Documentation:

- a. Keep copies of MSD sheets for all products used.
- b. Record fertilizing and pesticide application activities, including date, individual who did the application, amount of product used and approximate area covered.

**D. Parks/Public Works – Cleaning Equipment**

Issue:

There are many benefits to taking proper care of the City's equipment. Prolonging the life of the equipment by taking the time to maintain critical parts is an essential part of all departments' daily activities.

Best Management Practices:

- a. Review process with all employees.
- b. Wipe off dirt, dust, and fluids with disposable towel.
- c. Wash equipment in approved wash station.
- d. Sweep floor and dispose of debris.

Documentation:

- a. N/A

**E. Parks/Public Works – Mowing and Trimming**

Issue:

Regular mowing and trimming activities have potential to deposit materials onto hard surfaces. Care should be taken to ensure mowing or trimming refuse is disposed of properly.

Best Management Practices:

- a. Process overview with employees.

- b. Check the oil and fuel levels of the mowers and other equipment. Fill in proper areas if needed.
- c. Install temporary catch basin protection on potentially affected basins.
- d. Put on eye and hearing protection.
- e. Mow and trim the lawn.
- f. Sweep or blow clippings to grass areas.
- g. Remove inlet protection if used.
- h. Mowers are to be scraped and brushed at designated location.
- i. Dry spoils are dry swept and disposed of properly
- j. Wash equipment in approved wash station.

Documentation

- a. N/A

**F. Parks – Open Space Management**

Issue:

Open space provides great value to the park system that go beyond ball fields. This includes stormwater retention and potential flood relief.

Best Management Practices:

- a. Provide a regular observation and maintenance of parks and other public open spaces.
- b. Ensure that any storm drain or drainage system components on the property are properly maintained.
- c. Avoid placing bark mulch (or other floatable landscaping materials) in stormwater detention areas or other areas where stormwater runoff can carry the mulch into the storm drainage system.
- d. Follow all SOPs related to irrigation, mowing, landscaping, and pet waste management.
- e. Pick up trash on a regular basis.

Documentation:

- a. N/A

**G. Parks – Pet Waste**

Issue:

Pet waste has the potential to be a contributor to downstream degradation if not maintained and properly disposed of.

Best Management Practices:

- a. Adopt and enforce ordinances that require pet owners to clean up pet wastes and use leashes in public areas. If public off-leash areas are designated, make sure they are clearly defined. Avoid designating public off-leash areas near streams and water bodies.
- a. Provide ordinance enforcement as needed.
- b. Whenever practical and cost effective, install dispensers for pet waste bags and provide disposal containers at locations such as trail heads or parks where pet waste has been a problem. Provide signs with instructions for proper cleanup and disposal.
- c. Check parks and trails for pet waste as needed.
- d. Remove all pet waste.

Documentation:

- a. N/A

**H. Parks/Public Works – Planting Vegetation (Starters)**

Issue:

Vegetation is a key component of establishing healthy ecosystems that hold water and nutrients on site. During installation there is potential for erosion and runoff.

Best Management Practices:

- a. Dig holes; place spoils near the hole where they may easily be placed back around the roots. Avoid placing spoils into the gutter system.
- b. Backfill the hole with existing spoils, compost, and a litter fertilizer if desired. Do not use excessive amendments.
- c. Remove any extra spoils into truck or trailer. Place the spoils on a tarp if there is likelihood that some of the dirt would be lost through openings in the bed.
- d. Sweep dirt from surrounding pavement(s) into the planter area.
- e. Transport spoils to their designated fill or disposal area.

Documentation:

- a. N/A

**I. Parks/Public Works – Turf Establishment**

Issue:

Vegetation is a key component of establishing healthy ecosystems that hold water and nutrients on site. During installation there is potential for erosion and runoff.

Best Management Practices:

- a. Grade and prepare soil to receive the seed. Place any extra soil in a convenient location to collect.
- b. Place the seed and any cover using the pre-determined application method (and rate).
- c. Remove any extra spoils into truck or trailer. Place the spoils on a tarp if there is likelihood that some of the dirt would be lost through openings in the bed.
- d. Sweep dirt from surrounding pavement(s) into the planter area.
- e. Transport spoils to their designated fill or disposal area.

Documentation:

- a. NA

**J. Public Works – Catch Basin Cleaning**

Issue:

Catch Basin Cleaning needs to be completed on a regular basis to insure the functionality of the storm sewer system.

Best Management Practices:

- a. Clean sediment and trash off of grate.
- b. Do visual inspection on outside of grate.

- c. Make sure nothing needs to be replaced.
- d. Do inside visual inspection to see what needs to be cleaned.

#### Process

- a. Clean using a high-powered vacuum truck to start sucking out standing water and sediment.
- b. Use a high-pressure washer to clean any remaining material out of catch basin, while capturing the slurry with the vacuum.
- c. After catch basin is clean, send the rodder of the vacuum truck downstream to clean pipe and pull back sediment that might have gotten downstream of pipe.
- d. Move truck downstream of pipe to next catch basin.

#### Clean-up/Follow-up

- a. When vacuum truck is full of sediment, take it to the designated location to dump all the sediment out of truck into a drying bed.
- b. When it evaporates, clean it up with a backhoe/skid loader, put it into dump truck and take to permanent disposal site (landfill).

#### Documentation

- a. Keep logs of number of catch basins cleaned.
- b. Record the amount of waste collected.
- c. Keep any notes or comments of any problems.

### **K. Streets/Storm Drain – Curb Painting**

#### Activities and Definition

Storm drains are gateways that allow pollutants in stormwater to flow untreated from local streets to lakes, rivers, and streams. Residual oil, grease, solids, antifreeze, cigarette butts, yard waste, plastic and other wastes found on roads, parking lots and driveways pollute downstream waters by increasing phosphorus levels, reducing oxygen levels, and ultimately impairing aquatic habitat for fish and other organisms as well as drinking water sources.

#### Preparation

- a. Calculate the amount of paint required for the job.
- b. Use water-based paints if possible.
- c. Determine whether the wastes will be hazardous or not and the required proper disposal of said wastes. Prepare surfaces to be painted without generating wastewater by sandblasting and/or scraping.
- d. Thoroughly sweep up all sand, blastings, and/or paint scrapings.
- e. If paint stripping is needed, use a citrus-based paint remover whenever possible since it is less toxic than chemical strippers.
- f. If wastewater will be generated, use curb, dyke, etc. around the activity to collect the filter and collect the debris.

#### Process

- a. Paint curb.
- b. Prevent over-spraying of paints and / or excessive sandblasting.
- c. Use drip pans and drop clothes in areas of mixing paints and painting.
- d. Store latex paint rollers and brushes in airtight bags to be reused later with the same color.
- e. Have available absorbent material and other BMP's ready for an accidental paint spill.

#### Clean-up/Follow-up

- a. Paint out brushes and rollers as much as possible. Squeeze excess paint from brushes and rollers back into the containers prior to cleaning them.
- b. Pour excess paint from trays and buckets back into the paint can containers and wipe with cloth or paper towels. Dispose of the towels according to the recommendations on the paint being used.
- c. Rinse water-based paint brushes in the sink after pre-cleaning. Never pour excess paint or wastewater from cleanup of paint in the storm drain.
- d. Cleanup oil-based paints with paint thinner. Never clean oil-based brushes in a sink or over a storm drain. Filter solvents for reuse if possible and / or store in approved drum for recycling.
- e. Dispose of waste collected by placing it in a garbage container. Left-over paint and solvents should be stored for later use (do not place these liquids in the garbage).

#### Documentation

- a. Write-up / report of any discharges into storm drain system.

### **L. Streets/Storm Drain – Detention Pond Cleaning**

#### Activities and Definition

Storm drains are gateways that allow pollutants in stormwater to flow untreated from local streets to lakes, rivers, and streams. Residual oil, grease, solids, antifreeze, cigarette butts, yard waste, plastic and other wastes found on roads, parking lots and driveways pollute downstream waters by increasing phosphorus levels, reducing oxygen levels, and ultimately impairing aquatic habitat for fish and other organisms as well as drinking water sources.

#### Preparation

- a. Schedule the Pond cleaning work for a time when dry weather is expected.
- b. Remove any sediment and trash from grates, placing it in a truck for disposal.
- c. Do a visual inspection to make sure any grates, structures, manholes, and pipes are in good working order. Remove manhole covers and grates as necessary for inspecting.

#### Process

- a. Annually, inspect 20 percent of all City-owned ponds and outfalls on a rotating basis.
- b. Provide outlet protection where feasible to minimize the number of debris that might leave basin during cleaning process.
- c. Start cleaning basin by using backhoe to remove debris and sediment off the bottom.
- d. Continue cleaning structures and pond bottom as necessary by sweeping and shoveling.
- e. Put all material removed from the pond into a dump truck.

- f. Some structures might require use of a vacuum truck. If so use the same procedures described for cleaning catch basins.
- g. Ensure City-owned ponds are effectively treating total suspended solids and total phosphorus.

Clean-up/Follow-up

- a. After cleaning basins, clean off the concrete pads using dry methods (sweeping and shoveling)
- b. Make sure they are swept up and clean.
- c. Take the material that was removed to the landfill for final disposal.

Documentation

- a. Keep logs of each detention basins/pond cleaned including date, individuals involved in cleaning, and a description of the type of debris removed.
- b. Record the amount of waste collected.
- c. Keep any notes or comments of any problems.

**M. Streets/Storm Drain – Ditch Management**

Activities and Definition

Storm drains are gateways that allow pollutants in stormwater to flow untreated from local streets to lakes, rivers, and streams. Residual oil, grease, solids, antifreeze, cigarette butts, yard waste, plastic and other wastes found on roads, parking lots and driveways pollute downstream waters by increasing phosphorus levels, reducing oxygen levels, and ultimately impairing aquatic habitat for fish and other organisms as well as drinking water sources.

Preparation

- a. Monitor ditches on a regular basis (Annually)
- b. Maintain access to ditch channels wherever possible.
- c. Contact affected property owners and utility owners.

Process

- a. Identify areas requiring maintenance.
- b. Determine what manpower or equipment will be required.
- c. Identify access and easements to area requiring maintenance.
- d. Determine method of maintenance that will be least damaging to the channel and adjacent properties or utilities.

Clean-up/Follow-up

- a. Stabilize all disturbed soils.
- b. Remove all tracking from paved surfaces near maintenance site, if applicable.
- c. Haul all debris or sediment removed from area to approved dumping site.

Documentation

- a. Keep log of actions performed including date and individuals involved.
- b. Record the number of materials removed or imported.
- c. Keep any notes or comments of any problems.
- d. Use “before” and “after” photographs to document activities as applicable.

## **N. Streets/Storm Drain – Overlays and Patching**

### Activities and Definition

Pollutants collect on surfaces in between storm events because of atmospheric deposition, vehicle emissions, winter road maintenance, construction site debris, trash, road wear and tear. Overlays and patching are a part of the maintenance of these surfaces that help prolong the life of the roadway.

### Preparation

- a. Measure and mark locations of manholes and valves on the curb
- b. Apply temporary covers to manholes and catch basins to prevent oil and materials from getting inside of them.
- c. Cracks should be properly sealed. Alligator cracks and potholes should be removed and patched. Rutting should be milled.
- d. Surface should be clean and dry.
- e. Uniform tack coat applied and cured prior to placement of overlay.
- f. If milling is required, install inlet protection as needed.

### Process

- a. Check hot asphalt mix for proper temperature, percentage asphalt, gradation, air voids, and any other agency requirements.
- b. Raise manhole lids and valves to elevation of new asphalt surface with riser rings.
- c. Surface texture should be uniform, no tearing or scuffing.
- d. Rolling should be done to achieve proper in-place air void specification.

### Clean up / follow-up

- a. Covering should be removed as soon as the threat of imported materials entering the system is reduced and prior to a storm event.
- b. After pavement has cooled, sweep gutters to remove loose aggregate.

### Documentation

- a. Record location and date on the maintenance database and map.

## **O. Streets/Storm Drain – Secondary Road Maintenance**

### Activities and Definition

Plans that are submitted to the City for approval will have a review process to guarantee that erosion and sediment control standards are being met. Road maintenance includes pothole repair, road shoulder maintenance, pavement marking, sealing, and repaving.

### Preparation

- a. Determine length amount and type of road base or gravel that will be needed.
- b. Determine proper equipment to be used and or any safety hazards.
- c. Design proper drainage: slopes, berms, etc.
- d. Install temporary inlet protection and/or ditch checks.

### Process

- a. Have truck drivers follow a designated route for hauling in the soil (See SOP for transporting soil and gravel).

- b. If soils are too dry to achieve compaction, loosen surface material and moisture condition.
- c. Smooth or grade soil with the desired crown or cross-slope.
- d. Compact soil.

Clean up/Follow-up

- a. Replace filter fabric with washed rock (if necessary) on monthly maintenance.
- b. Clean up equipment according to the SOP for Cleaning Equipment
- c. Clean up any debris on traveled roads and dispose of it in the landfill.

Documentation

- a. Fill out daily activity report in logbook or journal. Include date, time, personnel, and location.

**P. Parks/Public Works – Concrete Work**

Activities and Definition

The use of concrete is a common practice for BMP maintenance, proper management of those materials is critical for pollution prevention.

Preparation

- a. Train employees and contractors in proper concrete waste management.
- b. Store dry and wet materials under cover, away from drainage areas.
- c. Remove any damaged concrete that may need to be replaced.
- d. Prepare and compact sub-base.
- e. Set forms and place any reinforcing steel that may be required.
- f. Determine how much new concrete will be needed.
- g. Locate or construct approved concrete washout facility.

Process

- a. Install inlet protection as needed.
- b. Avoid mixing excess amounts of fresh concrete on-site.
- c. Moisten sub-base just prior to placing new concrete. This helps keep the soil from wicking moisture out of the concrete into the ground.
- d. Place new concrete in forms.
- e. Consolidate new concrete.
- f. Screed off surface.
- g. Let concrete obtain its initial set.
- h. Apply appropriate surface finish.
- i. Remove forms when concrete will not slump.

Clean-up/Follow-up

- a. Perform washout of concrete trucks and equipment in designated areas only.
- b. Do not washout concrete trucks or equipment into storm drains, open ditches, streets, or streams.
- c. Cement and concrete dust from grinding activities is swept up and removed from the site.
- d. Remove dirt or debris from street and gutter.

Documentation

- a. N/A

**Q. Parks/Public Works – Garbage Storage**

Activities and Definition

Illegal dumping of non-hazardous household waste and improper dumping of yard waste in streets, storm drains, wetlands, lakes, and other water bodies pollutes surface waters. Non-hazardous household waste includes items such as tires, furniture, common household appliances and other bulk items. Yard waste includes any organic debris such as grass clippings, leaves, and tree branches.

Preparation

- a. Locate dumpsters and trash cans with lids in convenient, easily observable areas.
- b. Provide properly labeled recycling bins to reduce the amount of garbage disposed.
- c. Provide training to employees to prevent improper disposal of general trash.

Process

- a. Inspect garbage bins for leaks regularly, and have repairs made immediately by responsible party.
- b. Locate dumpsters on a flat, impervious surface that does not slope or drain directly into the storm drain system.
- c. Install berms, curbing or vegetation strips around storage areas to control water entering/leaving storage areas.
- d. Keep lids closed when not actively filling dumpster.

Clean-up/Follow-up

- a. Keep areas around dumpsters clean of all garbage.
- b. Have garbage bins emptied as often as needed to keep from overfilling.
- c. Wash out bins or dumpsters as needed to keep odors from becoming a problem. Wash out in properly designated areas only.

Documentation

- a. N/A

**R. Parks/Public Works – Snow Removal and De-icing**

Activities and Definition

The concentration of chloride is increasing in our surface and ground water largely due to stormwater runoff from road salt storage piles, areas of excessive application, or simply from years of repeated application since chloride does not degrade in soil and water. Chloride in road salt and road salt additives (e.g., ferrocyanide for anti-caking) can create toxic conditions for fish, insects, and vegetation.

Preparation

- a. Store de-icing material on an impervious surface under a covered or indoor storage area or in an area where water coming off the de-icing materials is collected and delivered to the sanitary sewer or reused as salt brine.
- b. Slope loading area away from storm drain inlets.

- c. Design drainage from loading area to collect runoff before entering stormwater system.
- d. Washout vehicles (if necessary) in approved washout area before preparing them for snow removal.
- e. Calibrate spreaders to minimize amount of de-icing material used and still be effective.
- f. Train employees in spill cleanup procedures and proper handling and storage of de-icing materials.

Process

- a. Load material into trucks carefully to minimize spillage.
- b. Periodically dry sweep loading area to reduce the number of de-icing materials exposed to runoff.
- c. Install diversions and containment structures for salt-laden runoff to direct flow away from conveyance structures.
- d. Distribute the minimum amount of de-icing material to be effective on the roads.
- e. Do not allow spreaders to idle while distributing de-icing materials.
- f. Park trucks loaded with de-icing materials inside when possible.

Clean-up/Follow-up

- a. Sweep up all spilled de-icing material around loading area.
- b. Clean out trucks after snow removal duty in approved washout area.
- c. Provide maintenance for vehicles in covered areas.
- d. If sand is used in de-icing operations, sweep up residual sand from streets when weather permits.

Documentation

- a. Fill out daily activity report in logbook or journal. Include date, time, personnel, and location.

**S. Parks/Public Works – Street Sweeping**

Activities and Definition

Pollutants collect on surfaces in between storm events because of atmospheric deposition, vehicle emissions, winter road maintenance, construction site debris, trash, road wear and tear, and litter from adjacent lawn maintenance (grass clippings). Sweeping of materials such as sand, salt, leaves and debris from city streets, parking lots and sidewalks prevents them from being washed into storm sewers and surface waters. Timing, frequency, and critical area targeting greatly influence the effectiveness of sweeping.

Preparation

- a. Prioritize cleaning routes to use at the highest frequency in areas with the highest pollutant loading.
- b. Restrict street parking prior to and during sweeping using regulations, as necessary.
- c. Increase sweeping frequency just before the rainy season, unless sweeping occurs continuously throughout the year.
- d. Perform preventative maintenance and services on sweepers to increase and maintain their efficiency.

Process

- a. Streets are to be swept at a minimum of twice annually, or as needed or specified by the city; Street maps are used to ensure all streets are swept at a specific interval.
- b. Drive street sweeper safely and pick up debris.
- c. When full take the sweeper to an approved street sweeper cleaning station.

Clean-up/Follow-up

- a. Street sweepers are to be cleaned out in an approved street sweeper cleaning station.
- b. Street sweeping cleaning stations shall separate the solids from the liquids.
- c. Once solids have dried out, haul them to the local landfill.
- d. Decant water is to be collected and routed to an approved wastewater collection system area only.
- e. Haul all dumped material to the landfill.

Documentation

- a. Keep accurate logs to track streets swept and streets still requiring sweeping.
- b. Log the amount of debris collected and hauled off.

**T. Parks/Public Works – Transporting Soil and Gravel**

Activities and Definition

Transportation of materials should be handled with pre-planning and contingency planning.

Preparation

- a. Dry out wet materials before transporting.
- b. Spray down dusty materials to keep from blowing.
- c. Make sure you know and understand the SWPPP requirements for the site you will be working at.
- d. Determine the location that the truck and other equipment will be cleaned afterwards.

Process

- a. Use a stabilized construction entrance to access or leave the site where materials are being transported to/from.
- b. Cover truck bed with a secured tarp before transporting.
- c. Follow the SWPPP requirements for the specific site to /from which the materials are being hauled.
- d. Make sure not to overfill materials when loading trucks.

Clean-up/Follow-up

- a. Use sweeper to clean up any materials tracked out on the roads from site.
- b. Washout truck and other equipment when needed in properly designated area.

Documentation

- a. Keep records of any material that is tracked out of site and what was done to clean it up and how long it took to clean up and what the weather conditions were at the time.

**U. Vehicles – Fueling**

Activities and Definition

Fueling of equipment and vehicles should always occur in designated areas when possible. Spill prevention and planning should occur before any fueling takes place.

Preparation

- a. Train employees on proper fueling methods and spill cleanup techniques.
- b. Install a canopy or roof over aboveground storage tanks and fuel transfer areas.
- c. Absorbent spill clean-up materials and spill kits shall be available in fueling areas and on mobile fueling vehicles and shall be disposed of properly after use.

Process

- a. Shut off the engine.
- b. Ensure that the fuel is the proper type of fuel for the vehicle.
- c. Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut off to prevent overfill.
- d. Fuel vehicle carefully to minimize drips to the ground.
- e. Fuel tanks shall not be topped off.
- f. Mobile fueling shall be minimized. Whenever practical vehicles and equipment shall be transported to the designated fueling area in the Facilities area.
- g. When fueling small equipment from portable containers, fuel in an area away from storm drains and water bodies.

Clean-up/Follow-up

- a. Immediately clean up spills using dry absorbent (e.g., kitty litter, sawdust, etc.) sweep up absorbent material and properly dispose of contaminated clean up materials.
- b. Large spills shall be contained as best as possible, and the Duty officer and Hazmat team should be notified as soon as possible.

Documentation

- a. Comply with underground storage tank records and monitoring requirements.
- b. Document training of employees.

**V. Vehicles – Vehicle and Equipment Storage**

Activities and Definition

When hazardous material comes into contact with rain or snow, the pollutants are washed into the storm sewer system and, ultimately, to surface water bodies and/or ground water. Hazardous materials have negative impacts on fish habitat, ground water drinking water sources, and recreational uses.

Preparation

- a. Inspect parking areas for stains/leaks on a regular basis.
- b. Provide drip pans or absorbents for leaking vehicles.

Process

- a. Whenever possible, store vehicles inside where floor drains have been connected to sanitary sewer systems.
- b. When inside storage is not available, Vehicles and equipment will be parked in the approved designated areas.
- c. Maintain vehicles to prevent leaks as much as possible.

- d. Address any known leaks or drips as soon as possible. When a leak is detected a drip pan will be placed under the leaking vehicle.
- e. The shop will provide a labeled location to empty and store drip pans.
- f. Clean up all spills using dry methods.
- g. Never store leaking vehicles over a storm drain.

Clean-up/Follow-up

- a. Any leaks that are spilled on the asphalt will be cleaned up with dry absorbent; the dry absorbent will be swept up and disposed of in the garbage.

Documentation

- a. N/A

**W. Vehicles – Washing**

Activities and Definition

MS4 vehicle washing involves the removal of dust and dirt from the exterior of trucks, boats, and other vehicles, as well as the cleaning of cargo areas and engines and other mechanical parts. Washing of vehicles and equipment generates oil, grease, sediment, and metals in the wash water as well as degreasing solvents, cleaning solutions and detergents used in the cleaning operations.

Preparation

- a. Provide wash areas for small vehicles inside the maintenance building that has a drain system which is attached to the sanitary sewer system.
- b. Provide wash areas for large vehicles on an approved outside wash pad that has a drain system which is attached to the sanitary sewer system.
- c. No vehicle washing will be done where the drain system is connected to the storm sewer system.

Process

- a. Minimize water and soap use when washing vehicles inside the shop building.
- b. Soap should not be used when washing vehicles outside the shop building.
- c. Use hoses with automatic shut off nozzles to minimize water usage.
- d. When washing outside the building, it is the operator's responsibility to make sure all wash water is contained on the wash pad and does not have access to the storm drain.
- e. Never wash vehicles over a storm drain.

Clean-up/Follow-up

- a. Sweep wash areas after every washing to collect what solids can be collected to prevent them from washing down the drain system.
- b. Clean solids from the settling pits on an as needed basis.

Documentation

- a. N/A

**X. Parks/Public Works – Planned Waterline Excavation Repair/Replacement**

Activities and Definition

Waterline Excavation and repair of an MS4 system can potentially involve activities that could affect the health of the MS4 system. Planning is critical.

Preparation

- a. Determine where discharge flow will go.
- b. Place inlet protection at nearest downstream storm drain inlets.
- c. Clean gutters leading to inlets.
- d. Isolate waterline to be worked on.
- e. Neutralize any chlorine residual before discharging water.

Process

- a. Make efforts to keep water from pipeline from entering the excavation.
- b. Direct any discharge to pre-determined area.
- c. Backfill and compact excavation.
- d. Haul of excavated material or stockpile nearby.

Clean-up/Follow-up

- a. Clear gutter /waterway where water flowed.
- b. Clean up all areas around excavation.
- c. Clean up travel path of trucked material.

Documentation

- a. Complete paperwork.

**Y. Water – Unplanned Waterline Excavation Repair/Replacement**

Activities and Definition

Waterline Excavation and repair of an MS4 system can potentially involve activities that could affect the health of the MS4 system. Unplanned excavations can be additionally tricky and pre-planning is critical.

Preparation

- a. Make sure service trucks have wattles, gravel bags, or other materials for inlet protection.

Process

- a. Slow the discharge.
- b. Inspect flow path of discharge water.
- c. Protect water inlet areas.
- d. Follow planned repair procedures.
- e. Haul off spoils of excavation.
- f. Consider use of silt filter bags on pumps.

Clean-up/Follow-up

- a. Repair eroded areas as needed.
- b. Follow planned repair procedures.
- c. Clean up the travel path of trucked excavated material.

Documentation

- a. Complete paperwork.

**Z. Water – Transporting Dry Excavated Materials and Spoils**

Activities and Definition

Transportation of materials should be handled with pre-planning and contingency planning.

Preparation

- a. Utilize truck with proper containment of materials.
- b. Determine disposal site of excavated materials.

Process

- a. Load
- b. Check truck after loading for possible spillage.
- c. Transport in manner to eliminate spillage and tracking.
- d. Utilize one route for transporting.

Clean-up/Follow-up

- a. Clean loading area.
- b. Clean transporting route.
- c. Wash off truck and other equipment in a designated equipment cleaning area.

Documentation

- a. Complete paperwork.

**AA. Water – Transporting Wet Excavated Materials & Spoils**

Activities and Definition

Transportation of materials should be handled with pre-planning and contingency planning.

Preparation

- a. Utilize truck with containment for material.
- b. Determine disposal site of excavated material.

Process

- a. Load and Transport in manner to minimize spillage & tracking of material.
- b. Check truck for spillage.
- c. Utilize one route of transport.

Clean-up/Follow-up

- a. Clean route of transport to provide cleaning of any spilled material.
- b. Washout equipment truck and other equipment in designated wash area.

Documentation

- a. Complete paperwork.

**BB. Water – Waterline Flushing for Routine Maintenance**

Activities and Definition

Flushing is a process that rapidly removes water from the city's water piping system. Flushing uses water force to scour out materials that accumulate in the city's pipes. Water pipes are usually flushed by opening fire hydrants, where the discharged water flows off the streets the same as rainwater.

Preparation

- a. Determine flow path of discharge to inlet of waterway.

Process

- a. Clean flow path.
- b. Protect inlet structures.
- c. Use diffuser to dissipate pressure to reduce erosion possibilities.

Clean-up/Follow-up

- a. Clean flow path.
- b. Remove inlet protection.

Documentation

- a. Complete paperwork.

**CC. Water – Waterline Flushing after Construction/System Disinfection with Discharge to Storm Drain.**

Activities and Definition

Flushing is a process that rapidly removes water from the city's water piping system. Flushing uses water force to scour out materials that accumulate in the city's pipes. Water pipes are usually flushed by opening fire hydrants, where the discharged water flows off the streets the same as rainwater.

Preparation

- a. Determine chlorine content of discharge water and select de-chlorination equipment to be used.
- b. Determine flow path of discharge.

Process

- a. Protect inlets in flow path.
- b. Install de-chlorination equipment.
- c. Sweep and clean flow path.
- d. Use diffuser to reduce velocities.

Clean-up/Follow-up

- a. Pick up inlet protection.
- b. Clean flow paths.
- c. Remove equipment from flush point.

Documentation

- a. Residual tests of discharge water.
- b. Complete paperwork.

**DD. Water – Chemical Handling/Transporting and Spill Release**

Activities and Definition

Hotspot facilities are facilities that produce higher levels of stormwater pollutants and/or present a higher potential risk for spills, leaks, or illicit discharges. Hazardous material storage and handling is of particular concern in these areas.

Preparation

- a. Understand MSDS sheets for handling of product.
- b. Determine proper place of handling.
- c. Have necessary containment and spill kits at handling place.

Process

- a. Begin transfer process.
- b. Discontinue operations if a spill level occurs.
- c. Disconnect and store handling equipment.

Clean-up/Follow-up

- a. Clean up spills with proper material.
- b. Dispose of contaminated material at appropriate facility.

Documentation

- a. Report spills to duty officer.
- b. Complete paperwork.