



City of Bayport

Municipal Operations
Best Management Practices
&
Standard Operating Procedures

Minimum Control Measure 6: Pollution Prevention/Good Housekeeping for Municipal Operations

March 2020

Municipal Operations BMPs and SOPs

Table of Contents:

1. Introduction
2. Facilities Inventory
3. Municipal Operations BMPs and SOPs
4. BMPs for MS4 Discharges That May Affect Source Water Protection Areas
5. Pond Assessment Procedures and Schedule
6. Structural Stormwater BMP Inspections
7. Maintenance Program
8. Employee Training
9. Documentation
10. Municipal Operations Checklists

Appendix A: Facility Inventory

Appendix B: Source Water Protection Area Maps

Appendix C: Stormwater Pond Inventory

1. Introduction

1.1. Basis of the Standard Operating Procedures (SOPs)

On March 16, 2017, the Minnesota Pollution Control Agency issued a National Pollutant Discharge Elimination System (NPDES) General Permit (GP) to the City of Bayport for Stormwater Discharges from a Small Municipal Separate Storm Sewer System (MS4). The MS4 GP requires the City of Bayport 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 of Bayport in using targeted best management practices that are intended on reducing the discharge of pollutants from municipal activities.

1.2. 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.

2. Facilities Inventory

The City has inventoried all municipal facilities that could potentially contribute pollutants to the City's stormwater system. Appendix A contains this inventory along with a designation of the municipal operations BMP(s) that corresponds to the specific facilities.

3. Municipal Operations BMPs and SOPs

3.1. Waste Disposal and Storage

Improper storage and handling of waste materials can allow a number of pollutants including oils and grease, toxic and chemical compounds (including nutrients), bacteria, metals, and other wastes to enter waterways through stormwater run-off and non-stormwater discharges. Proper handling, along with recycling and waste reduction will reduce the potential for polluting waterways, groundwater, and recharge points. The following BMPs should be followed when handling, storing, and disposing waste.

- Ensure that employees are educated in the proper methods of handling, storing, and disposing of waste based on the type of waste for each circumstance.

- Ensure that all waste areas and dumpsters are covered and are not leaking.
- Place waste receptacles indoors or under a roof overhang whenever possible.
- Keep all container lids closed at all times unless adding or removing material.
- Liquid wastes should be kept out of the dumpster and the lid kept closed to keep storm water out.
- Waste oil, antifreeze, spent solvents, and other liquids from vehicle maintenance activities should be recycled.
- Spent batteries should be disposed of as hazardous waste or returned for reclamation and reuse.
- Arrange for waste to be picked up regularly and disposed of at approved disposal facilities. If the amount of generated waste exceeds the capacity of waste containers, obtain more containers or increase frequency of pickups.
- Do not wash out waste containers or dumpsters outdoors. Return dumpsters to the owners for cleaning at the owner's facility. If municipally owned containers must be washed, do so at a sink or floor drain so that wastewater goes to the sanitary sewer.
- Inspect disposal containers for damage that may result in leaking of liquid material. Damaged containers should be repaired or replaced immediately.

3.2. Management of Stockpiles

Stockpile management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, paving materials such as Portland cement concrete rubble, reclaimed asphalt pavement (RAP), hot mixed-cold laid bituminous mixes, limestone rock asphalt, pre-coated aggregates, and various patching mixes.

Protection of stockpiles is a year-round requirement. To properly manage stockpiles:

- Locate stockpiles away from concentrated flows of stormwater, drainage courses, and inlets.
- Protect all stockpiles from stormwater run-off using temporary perimeter sediment barriers such as berms, dikes, fiber rolls, silt fences, sandbag, gravel bags, or straw bale barriers.
- Manage stockpiles of contaminated soil as follows:
 - Cover stockpiles with plastic sheeting or tarps.
 - Install berms around stockpiles to prevent runoff from leaving the area.
 - Do not stockpile in or near storm drains or water courses.
- Place bagged materials on pallets and under cover.
- While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.

- Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.

Non-active stockpiles of the identified materials are protected further as follows:

- During the rainy season, soil stockpiles should be covered or protected with soil stabilization measures and a temporary perimeter sediment barrier at all times.
- During the non-rainy season, soil stockpiles should be covered or protected with a temporary perimeter sediment barrier prior to the onset of precipitation.

3.3. Vehicle Fueling, Washing, and Maintenance

Activities associated with fueling and cleaning of municipal vehicles and equipment can easily contribute pollutants to stormwater discharges or directly discharge to the municipal separate storm sewer system (MS4). Spills and leaks that occur during vehicle and equipment fueling can contribute hydrocarbons, oils, grease, metals, and other toxic chemicals to stormwater run-off or discharge directly into storm sewers or receiving waters. Pollutants from washing and maintaining vehicles can vary from engine oil to chemicals within detergents such as phosphates. Properly designed and constructed fueling and wash areas will reduce the potential for contaminated discharges.

The ideal location for washing vehicles is at a commercial vehicle wash. Commercial vehicle washes have the ability to recycle their water on-site as well as to contain water so it will not enter the storm drain. If no commercial vehicle washes are available, then vehicles should be washed indoors (that will drain to sanitary sewers) or on grass/pervious surfaces.

General Fueling Practices

- Place drip pans or absorbent pads under direct fueling location if fueling will occur over a permeable surface.
- Do not "top off" fuel tanks.
- Do not place used spill response materials in adjacent trash receptacles. Dispose in a proper manner.
- Do not leave active fueling operations unattended.
- Keep fuel clean up materials within a reasonable distance of fueling areas.

General Washing Practices

- Keep equipment clean; do not allow a buildup of oil/grease.
- Place spill clean-up materials in readily available locations by the wash area (clearly mark location of spill clean-up materials).
- Clean up spills or any wash water that may improperly discharge and cause contamination.
- Consider using phosphate-free detergents.

- The optimal location for a wash area is indoors where connection to the sanitary sewer is more easily achieved and exposure to rain events is eliminated.
- Do not store solvents or degreasers in the wash area.

General Maintenance Practices

- Keep all wash areas neat, clean and orderly.
- Perform monthly inspections and clean and maintain any sumps or oil/water separators installed at the wash area.
- Inspect and maintain washing equipment, especially the hoses, wands and nozzles. Make sure they deliver the proper rate of water and shut-off automatically when not in use.
- For wash areas that are plumbed to a sanitary sewer, inspect the sewer inlet at least monthly to determine need for cleaning.

3.4. Routine Street and Parking Lot Sweeping

Regular street and parking lot sweeping (using sweeping equipment) removes debris, such as dust and pollutants, which typically end up in streams after being washed into catch basins. Sweeping should be performed at least twice a year on all roads and preferably more in areas of concern, including near streams, land use (industrial areas vs. residential) or heavily trafficked areas.

- Operate all sweeping equipment according to the manufacturer's recommended procedures.
- Develop a street sweeping schedule including prioritized roads, secondary roads, and frequency of sweeping.
- Schedule sweeping...
 - In areas where storm drain plugging or high pollutant loadings occur.
 - Immediately following special events like street fairs, art shows, and parades.
 - Immediately after street repair projects that involve saw cutting, chip sealing, or other operations that might have left wastes or debris on road surfaces.
 - After/in correlation with leaf collection in the fall.
 - In spring after salt/sand application throughout the winter.
 - During new construction projects involving temporary storage of construction materials like dirt, sand, and road base along the roadway.
 - Immediately following median grass cutting operations if grass has been distributed onto the streets.
- Make sure brushes and water spray hoses are functional before leaving the shop.
- Clean out solid debris and store in an impervious area or in a temporary disposal area such as a truck or dumpster.

- Scrape out left over debris from the hopper after the last dump of the day. Dispose of waste in trash or dumpster temporary storage area.
- Always wash sweepers in a designated wash area or wash bay that drains to a sanitary sewer.
- Avoid conducting sweeping operations during rainstorms.

3.5. Emergency Response

Spill prevention and response is one of the most important Good Housekeeping Practices for municipal operations. In the course of daily activities, municipal employees handle, transport, load, and use products that can be harmful to our waterways if they enter storm drains.

Hazmat crews need to be notified when spills are hazardous or potentially hazardous to human health.

Call 911 if a spill or leak threatens to escape the facility boundaries or enter any surface water body and contact the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (Metro area), if the source is a spill or leak as defined in Minnesota Statute § 115.061.

115.061 DUTY TO NOTIFY; AVOIDING WATER POLLUTION.

(a) Except as provided in paragraph (b), it is the duty of every person to notify the agency immediately of the discharge, accidental or otherwise, of any substance or material under its control which, if not recovered, may cause pollution of waters of the state, and the responsible person shall recover as rapidly and as thoroughly as possible such substance or material and take immediately such other action as may be reasonably possible to minimize or abate pollution of waters of the state caused thereby.

(b) Notification is not required under paragraph (a) for a discharge of five gallons or less of petroleum, as defined in section [115C.02, subdivision 10](#). This paragraph does not affect the other requirements of paragraph (a).

Clean-Up Procedures

Spilled chemicals should be effectively and quickly contained and cleaned up.

Employees should clean up spills themselves **only if properly trained and protected**.

Employees who are not trained in spill cleanup procedures should report the spill, warn other employees, and wait for proper authorities/clean-up crews to arrive.

The Response Procedures, Section 8, in the Illicit Discharge Detection and Elimination Program should be followed.

3.6. Cleaning of Maintenance Equipment, Building Exteriors, and Dumpsters

Municipal vehicle washing can generate dry weather runoff contaminated with detergents, oils, grease, and heavy metals. Equipment and building washing BMPs can eliminate contaminated wash water discharges to the storm sewer system.

Proper equipment maintenance includes:

- Maintain equipment regularly: Check for leaks or stains, and fix leaks immediately.
- Capture leaks and rips during maintenance activities with a drip pan.
- If equipment is stored outside, provide a tarp or roof to protect the equipment from rainfall.

Proper infrastructure cleaning includes:

- Perform the activity during dry periods.
- Use non-toxic chemicals for maintenance and minimize or eliminate the use of solvents.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work and properly dispose of collected material daily.

Proper dumpster cleaning procedures:

- Do not wash out dumpsters outdoors or in a parking lot.
- Dumpsters should be washed in a wash bay or over a floor drain that goes to the sanitary sewer or return dumpsters to the waste disposal contractor for cleaning at the contractor's facility.
- Route leaks and other wastewaters from dumpsters to the sanitary sewer system.
- Keep spill clean-up materials easy to access.

3.7. Use, Storage, and Disposal of Significant Materials

The storage, use, and disposal of hazardous materials and chemicals require consideration of a number of environmental health and safety factors. These include inventory control, as well as the proper use and disposal of containers and equipment.

Proper BMPs for chemicals and hazardous materials:

- Keep lids on all containers and store under cover.
- Properly close all containers when not in use.
- Use secondary containment for hazardous materials and protect from rain. Store hazardous materials in an area where spills will not reach storm drains.

- Label all hazardous materials according to hazardous waste regulations.
- All hazardous materials should be properly labeled and remain labeled. The purchase date should be placed on the label.
- In general, storage areas should not be hot or humid.

Proper BMPs for flammable materials:

- Flammable materials should be stored in ventilated storage cabinets or approved safety cans. Lids of safety containers should be kept closed, as well as doors of storage cabinets.
- Make sure an adequate spill kit with sufficient equipment and supplies is located near storage areas where spills are possible. Clean up any spills, leaks, or discharges immediately.
- Flammable and combustible materials must be isolated from ignition sources.
- Proper fire suppression equipment should be installed or available in storage or use areas.

General BMPs for significant materials:

- Do not combine wastes when storing them - this decreases safety, recycling, and disposal options and increases disposal costs.
- Never mix waste oil with fuel, antifreeze, or chlorinated solvents.
- Use secondary containment on all bulk fluids stored in amounts in excess of 55 gallons and wastes to prevent accidental discharge. Secondary containment includes, but is not limited to, berm installation around storage areas and use of absorbents.
- Keep storage areas clean and dry. Conduct regular inspections of storage areas to detect leaks and spills.
- Store new or used batteries securely to avoid breakage and acid spills during earthquakes. When stored outdoors, batteries shall be covered with plastic tarp to protect them from rain.
- Recycle old batteries.
- Wood products treated with chromated copper arsenate, ammoniacal copper zinc arsenate, creosote, or pentachlorophenol should be covered with tarps.

3.8. Landscaping, Park, and Lawn Maintenance

Landscaping and lawn care practices have a significant impact on stormwater runoff. Conventional lawn care practices often include watering too frequently, over-fertilizing, and the use of pesticides/herbicides to rid lawns of unwanted pests and nuisance or invasive plants. Excess nutrients and pesticides wash away during rain events or when lawns are over-watered. The stormwater management approach to lawn care uses a variety of techniques to reduce pollution in stormwater runoff from lawns.

General practices include:

- Perform mowing at optimal times, which does not include prior to significant forecasted rain events.
- Protect lakes, ponds, wetlands, and/or lagoons adjacent to landscape maintenance activities.
- Mulch-mow grasses whenever possible.
- Dispose of organic wastes by composting whenever possible. When composting is not possible, dispose of organic wastes in an approved disposal facility. Do not wash down or dispose of lawn clippings, leaves, tree trimmings, or other landscape waste in or near a storm drain, drainage ditch, or open body of water.
- Use mulch or other erosion control methods to prevent erosion of exposed soils and flowerbeds.
- Do not leave grass clippings or trimming residue on impervious areas.
- Use mechanical methods for vegetation removal where possible.
- Avoid loosening soil when removing weeds or vegetation.
- Collect and dispose of lawn trimmings, clippings, vegetation, etc.
- Reduce or prevent exposed soil areas.
- Only irrigate as much water as needed. Never water at rates that exceed the infiltration rate of the soil.

3.9. Road Maintenance

Existing roads and bridges require periodic maintenance. These maintenance activities often generate stormwater pollutants such as heavy metals, sediments, solvents, oils, and fuels.

General BMPs include:

- Always sweep or vacuum dry material wastes during saw cutting, road stripe removal, or other activities that create dust/sediment.
- Locate and block adjacent storm drain inlets during maintenance work such as concrete curb and gutter work, resurfacing, paving, striping/marketing, or saw cutting.
- Use drip pans for paving machines and other equipment that may leak fluids.
- Do not apply road striping paint during windy, wet, or rainy conditions.
- If wet saws must be used:
 - Place drip pans under or use water tight barriers around equipment when not in use.
 - Turn cooling water off when saw is off.
- Wash out mixers, delivery trucks, or other equipment in a designated concrete washout area only.
- Protect storm drains during all activities.

3.10. Right-of-Way Maintenance

Public right-of-way must be maintained to adequately convey traffic. Periodic maintenance of streets, utilities, and vegetation is required to provide acceptable driving surfaces, adequate storm drain capacity, and appropriate sight lines.

General BMPs include:

- Installation of erosion control measures in critical areas prior to start of maintenance to prevent contaminated stormwater runoff from entering the stormwater system.
- Perform mowing during optimal conditions.
- Remove and dispose of organic material at a compost facility when possible. Do not dispose organic materials by washing into storm drain system or dumping in open ditches or creek.
- Dispose of non-organic debris at approved waste management facility.
- Remove any obstructions blocking runoff from entering the storm drainage system.
- Repair/stabilize any channel erosion immediately upon discovery.

3.11. Application of Herbicides, Pesticides, and Fertilizers

Fertilizers, herbicides, and pesticides possess a relatively high potential for contributing pollutants to stormwater runoff and non-stormwater discharges both through storage and application. Proper management of materials, effective training, and proper use of materials will reduce the potential of polluting receiving waterways.

General BMPs include:

- Personnel who participate in the application of pesticides, that contain a Restricted Use Pesticide (RUP), for the City will be trained and obtain non-commercial Certification as required by the Minnesota Department of Agriculture.
- Employees will be trained to follow the safety data sheet(s) (SDS) of pesticides, including herbicides and insecticides, and fertilizers and follow the procedures for storage and use defined therein.
- All mixing and loading operations must occur on impervious surfaces.
- All state, federal, and local regulations and manufacturer requirements are followed in the use of pesticides, herbicides, and fertilizers.
- Pesticides, herbicides, and fertilizers will not be applied during or directly prior to storm events.
- Employ application techniques that increase efficiency and allow the lowest effective application rates. Carefully calibrate application equipment and follow all label instructions.
- Apply fertilizers during the growing season only. Eliminate fertilizers with phosphate.

- Whenever practicable, integrated pest management techniques will be implemented.
- When feasible, use pesticides and herbicides that are quickly absorbed by soil and vegetation.
- Pesticides/herbicides will not be sprayed when there is a high possibility of the spray drifting into non-target areas or onto non-target vegetation, insects, or animals.
- To prevent possible backflow and contamination of a water supply, never submerge a water supply hose in a chemical tank or container.

3.12. Cold Weather Operations

Road salt and deicers are necessary for traffic and pedestrian safety. However, their application directly on impervious surface allows for chlorides and other toxic chemicals to dissolve in runoff and enter the storm drainage system. Since chlorides are extremely difficult to remove from water, they must be judiciously applied and stored.

General BMPs include:

- Use trucks equipped with salt spreading calibration devices.
- Regulate the application of deicing salt at the lowest effective rate.
- Use alternative deicing materials (sand or salt substitute) or minimize amount of salt in sensitive areas (areas with no structural BMPs, areas adjacent to surface waters, etc.)
- Consider temperature when determining application rate. If temperatures above freezing are expected, minimize use of salt.
- Maintain and wash trucks used for deicing in a contained area that drains to the sanitary sewer system.
- Do not dump or plow snow into drainage ditches, ponds or onto frozen water bodies.

4. BMPs for MS4 Discharges That May Affect Source Water Protection Areas

Source water protection areas are delineated within the updated Wellhead Protection Plan Part II that will be completed in 2020 as mandated by the Safe Drinking Water Act. Stormwater discharges as related to the entire Wellhead Protection Plan and within source water protection areas is deliberated within the plan. BMPs for MS4 discharges within these areas includes monitoring of surface and ground water, land use planning, and stormwater regulations. Public education will also play a significant role in raising awareness of stormwater runoff to these protection areas. For a complete overview of this matter, see the existing city Wellhead Protection Plan. See Appendix B for mapping of wells and source water protection areas.

5. Pond Assessment Procedures and Schedule

A specific stormwater pond inventory has been created to identify all ponds that fall under the MS4 defined stormwater pond category. All ponds within the city (public and private) that receive stormwater from an MS4 conveyance have been identified. See Appendix C for a complete list.

The Middle St Croix Water Management Organization (MSCWMO) has assessed all three sub-watersheds that contribute stormwater to the City's MS4 system. These analyses will be used to assist with the calculations required for determining the effectiveness of the current stormwater ponds.

The following procedures and schedule have been developed to determine the total suspended solids (TSS) and total phosphorous (TP) of all ponds constructed and used for the collection and treatment of stormwater.

5.1. Determine Existing Conditions (Completion Year - 2021)

5.1.1. Delineate watersheds for every MS4 identified pond within the system.

- Review Sub-Watershed Analyses (MSCWMO)
- Review Storm Sewer Mapping
- Review LiDAR topographic mapping (contour mapping)
- Perform visual inspections

5.1.2. Define watershed characteristics (land use cover, impervious surface, time-of-concentration, soil types, etc)

- Review Sub-Watershed Analyses (MSCWMO)
- Review aerial mapping
- Review Land Use Plan/Existing Land Use
- Review Storm Sewer Map
- Review LiDAR topographic mapping (contour mapping)
- Perform visual inspections

5.1.3. Define pond characteristics (design volume, existing volume, outlet, water level, sediment level)

- Review construction plans and record plans
- Perform visual inspections
- Perform site surveys
- Perform bathymetric surveys (In coordination with MSCWMO)
- Perform sediment testing for pollutants if required

5.2. Assess TSS and TP Treatment Effectiveness (Completion Year - 2022)

5.2.1. Utilize MIDS calculator for Pond Assessment

- Input information gathered into MIDS calculator

- Calculate TSS and TP removal efficiencies
- 5.2.2. Define TSS and TP treatment effectiveness required for all ponds
- 5.2.3. Rate pond effectiveness/need for maintenance
- MN Stormwater Manual recommends sediment removal after 50% of permanent pool capacity has been lost
 - Compare existing removal efficiencies to required efficiencies
 - Review proximity to surface waters
 - Review proximity to Impaired waters
 - Review TMDL requirements
 - Based on ratings and review, determine maintenance required

6. Stormwater BMP Inspections

Stormwater facilities should be routinely inspected to ensure they continue to function as designed. The guidelines set forth below were developed to provide City staff with practical tools to inspect and maintain the stormwater infrastructure.

6.1. Water Body Inspections

The annual inspection program includes inspection of 20% of known outfalls, sediment basins, structural stormwater BMPs, and/or ponds that fall under the City MS4 permit program. The City's current Stormwater Pond Inspection Worksheet is attached to this document for reference. The basic inspection requirements include observations for items such as:

- Trash, debris, animal burrows, algae, vegetation density, vandalism and odors
- Obstructions of inlets, outlets and pipes by trash, debris or vegetation growth
- Cracks or deterioration of inlets, outlets and pipes
- Malfunctioning valves, gates, locks or access hatches, if present
- Inadequate outlet protection
- Distressed aquatic or shoreline vegetation
- Overgrowth of weeds, grasses or woody plants that are blocking effective stormwater flow
- Excessive erosion or sedimentation
- Depth of sediment, if any
- Cracks or settling in the embankment or berms
- Potential spills or releases of hazardous substances, illegal dumping or illicit discharges.

6.2. Structure Inspections

Regular inspections will be conducted per MS4 permit requirements for catch basins, manholes, closed conduits, and turrets. The Structural Stormwater Pollution Prevention

Inspection sheet is attached to this document for reference. A general description for each inspection is as follows:

- Catch basins – Catch basin castings and grates are checked for debris and repair needs on an as needed basis.
- Sump catch basins and sump manholes – Sump catch basins and sump manholes are checked for repair needs and sediment build-up.
- Closed circuit – Video inspections are conducted on an as needed basis to determine structural integrity of pipe and/or blocked conduit.
- Manholes – Manholes will be checked for damage or missing blocks and mortar.

6.3. Reporting & Record Keeping

All documentation on scheduled inspections and any recommendations for maintenance are submitted to the Public Works Department for review. Observations made at the time of inspection are entered in the City's MS4 database and work orders are prepared as needed for maintenance or repairs.

7. Maintenance Program

Results of the inspection program (Section 6) are used to determine routine and emergency maintenance needs. Emergency repairs would include items such as imminent structure failure or a suspicious discharge that would require the responsible party be notified to take immediate action to remedy the problem. Routine maintenance is to be performed as needed based on the criteria listed below for each BMP. Additional maintenance needs, such as pond dredging, will be scheduled in accordance with Section 5 of this plan.

7.1. Detention Ponds/Retention Ponds/Stormwater Wetlands

Ponding areas and stormwater wetlands provide storage for surface water runoff and are managed to allow for free flow of stormwater through the system. The basins also reduce peak stormwater flows, promote settling of suspended pollutants, and reduce velocities downstream of the outlet structure. The basin may also promote biological uptake of pollutants if vegetated. If problems are identified during the inspection, a work order would be prepared in accordance with the following guidelines:

- Mow grass if required to maintain sight distances for traffic or pedestrian and/or control weeds. A max height of 8" with a minimum of once a year mowing is recommended.
- Clean out sediment accumulation around inlets and outlets when accumulation reaches more than twelve (12) inches or impedes the effectiveness of the stormwater BMP. Re-seed area as needed.
- Clean out pond sediment accumulation in accordance with Section 5 of this Plan. Sediment would also be cleaned out as needed during road construction or drainage improvement projects.

- Stabilize and re-seed banks near inlets when erosion gullies are more than one foot deep.
- Remove vegetation that obstructs flow.
- Correct bank erosion if there is significant sediment contribution to the pond.

7.2. Infiltration/Bioretention Basins

Infiltration basins are normally used in development or regional scale stormwater control that are sized for less frequent large storm events with a drainage area of up to fifty (50) acres. The max ponding depth for these basins is four (4) feet or less and native soils are used for the growing medium. If problems are identified during the inspection, a work order would be prepared in accordance with the following guidelines:

- Replace surface soil or vegetation as needed to maintain a layer of permeable soil or a dense cover of non-woody vegetation in the base of the infiltration area.
- Correct any structural deficiencies that interfere with the function of the basin.
- Remove undesirable vegetation, such as woody vegetation.

Bioretention basins can be located throughout the watershed and are primarily used as BMPs for small storm events. These basins typically have a max drainage area of less than five (5) acres. Bioretention basins are filled with engineered growing media and their max ponding depth is ideally around twelve (12) inches. If problems are identified during the inspection, a work order would be prepared in accordance with the following guidelines:

- Replace surface soil or vegetation as needed to maintain a layer of permeable soil or a dense cover of non-woody vegetation in the base of the infiltration area.
- Correct any structural deficiencies that interfere with the function of the basin.
- Remove undesirable vegetation, such as woody vegetation.

7.3. Swales/Filter Strips/Ditches

Swales or ditches are constructed to direct or convey stormwater runoff. They should be planted with vegetation that will maintain the structure and resist erosion. If problems are identified during the inspection, a work order would be prepared in accordance with the following guidelines:

- Clean out sediment when it blocks culverts or obstructs the pipe or flow of stormwater.
- Stabilize and re-seed when erosion gullies are more than one foot deep.
- Mow to remove vegetation that obstructs flow and to maintain desirable vegetation.

7.4. Inlet/Outlet Structures

These structures are used to regulate storm water flow, including discharge from detention basins into receiving waterways or an offsite storm sewer system. They can also remove pollutants such as suspended solids, nutrients and metals from stormwater runoff. If

problems are identified during the inspection a Work Order would be prepared in accordance with the following guidelines:

- Remove any trash, debris or vegetation that impedes the flow of stormwater.
- Remove sediment if accumulation reaches more than twelve (12) inches or if it blocks the flow of water through the water body.
- Stabilize and re-seed banks near structures when erosion gullies are more than one foot deep.

7.5. Sump Catch Basins/Sump Manholes/SAFL Baffle Structures

Sump catch basins and sump manholes are constructed with a sump structure for collection of sediment and debris. If problems are identified during the inspection a Work Order would be prepared in accordance with the following guidelines:

- Clean when the structure is more than $\frac{3}{4}$ full.
- Replace damaged or missing block and mortar when identified if the damage is impeding or short-circuiting the function of the catch basin.

7.6. Closed Conduits/Catch Basins/Manholes

Closed conduits are conveyances designed to carry storm water runoff and include culverts, closed drains, and pipes. Catch basins are below ground structures designed to collect and convey water into the storm sewer system and are typically located in roadways and boulevards within a development. The manholes are present to allow access to a closed conduit. If problems are identified during the inspection a Work Order would be prepared in accordance with the following guidelines:

- Clean or repair closed conduits, catch basins and manholes as needed.
- Clean problem areas identified during the inspection as needed.

8. Employee Training

8.1. Purpose

Municipal employee training activities provide the applicable knowledge and awareness necessary to facilitate a stormwater management program within a municipality. Education and training of employees provides a municipality with an additional level of preparedness with not only properly implementing and maintaining Best Management Practices (BMPs), but also reacting to situations that require timely attention including spill response and control. A primary goal of this BMP is to increase the knowledge and capabilities of municipal staff with proper stormwater management practices as it relates to the selection of all BMPs in the Stormwater Pollution Prevention Plan (SWPPP).

The time and effort taken to develop a stormwater program and to write a SWPPP is wasted if employees aren't properly trained and clearly understand what is expected of them. Sometimes it is difficult to change how people do things. Training programs are intended to

help City staff realize how their work might impact our waterways. City staff can work together to improve and/or make changes to existing operations to limit stormwater pollution.

8.2. What is Required

Municipalities shall develop and conduct an annual employee training program to educate employees to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and Municipal Separate Storm Sewer System (MS4) maintenance. Training can be performed using formal presentation sessions or short training sessions throughout the year. Training will be performed every year and when significant changes in staffing or practices occur.

8.3. What Does This Mean

Employee training is intended to increase employee awareness of the stormwater program and its importance, as well as their role in its implementation. It is believed that if the employees understand what is required of them and why it is being required, they will be more likely to comply with the conditions of the permit. MS4 employees who manage or are directly involved in the routine maintenance, repair or replacement of public surfaces or infrastructure should receive stormwater management training commensurate with the employee's job duties.

Overall, this training program is very important to the success of the SWPPP required by this permit. Since the goal of this training is to stress the importance of the permit and the required practices, the training should encourage employees to take an active and environmentally responsible role in the SWPPP.

8.4. Municipal Employee Training

8.4.1. Annual Training

The City shall provide refresher training for existing employees directly involved in municipal operation activities at least once every year.

8.4.2. New Employees

The City will provide new employee training during their initial month of hire for employees directly involved in these activities. In the event there are no new employees in a given period, the City will document this information in the Annual Report.

8.4.3. Seasonal Employees

Municipal seasonal employees should receive both general stormwater and targeted BMP training tailored to their activities. Seasonal employees will be advised to read the

activity-specific best management practices in the Municipal Operations Best Management Practices manual and become familiar with these practices.

8.5. Documentation

A roster of the date, nature of training performed and employees in attendance will be maintained as required by the permit for a period of three years. A summary of this information will be submitted with each annual report.

8.6. Considerations

Training and education programs will be executed on an annual basis. Training and education pursuits can be administered in a number of ways including in-house training, in-house presentations, joint training sessions, distribution of relevant printed materials, certification programs, informal "round-table" discussions, and seminars.

Training Schedule

Training Topic	Targeted Audience	Frequency
Illicit Discharge & Detection	Public Works Staff	Annually
	New Public Works Employees	Initial Month of Hire
Spill Response & Prevention	Public Works Staff	Annually
	New Public Works Employees	Initial Month of Hire
Targeted BMP Training	Public Works Staff	As Needed
Municipal Operations BMPs	Seasonal Employee	Initial Hire
	New Public Works Employee	Initial Month of Hire
	Public Works Staff	Annually

9. Documentation

All components of this plan requiring documentation will follow the standards presented within the SWPP permit requirements.

10. Municipal Operations Checklists

The preceding checklists will be used for inspecting the various BMPs related to the multitude of municipal operations.

Stormwater Pond Inspection Checklist City of Bayport

Basin Information

Basin ID:	
Type of Basin:	
Owner:	
Year Constructed:	
Year Last Dredged:	
Normal Water Level:	
Inspector:	
Date:	
Temperature:	
Weather:	
Maintenance Priority: Low = 1 High = 5	1 2 3 4 5

Inspection

Maintenance Item	Mark (X) if Action Required	Specify Action/Comment
Side Slopes (Inspect Annually)		
1. Vegetation		
a. Adequate Cover		
b. Undesirable species/plants		
2. Erosion		
3. Animal Burrows		
4. Unauthorized Plantings		
5. Cracking, Bulging, or Sliding of Side Slopes		
a. Upstream Slopes		
b. Downstream Slopes		
6. Seeps/Leaks on Downstream Slopes		
7. Slope Protection or Rip Rap Failure		
8. Other (specify)		
Principal Spillway (Inspect Annually)		
1. Low Flow Trash Rack		

a. Debris Present		
b. Corrosion Control		
2. Sediment Accumulation Inside Pipe		
3. Condition		
a. Cracks/Displacement		
b. Minor Spalling (<1")		
c. Major Spalling (rebar exposed)		
d. Joint Failures		
e. Water tightness		
4. Sediment Accumulation in Manhole		
5. Sediment Accumulation in Catch Basin		
6. Outfall Channel Functionality		
7. Outlet Channel Scouring		
8. Other (Specify)		
Permanent Pool		
1. Undesirable Vegetative Growth		
2. Floating or Floatable Debris Removal Required		
3. Visible Pollution		
4. Shoreline Problem		
5. Sedimentation		
6. Other (Specify)		
Condition of Outfalls into Pond		
1. Storm Drain Pipes		
2. Riprap at Outfalls		
3. Headwalls		
4. Other (Specify)		
Other		
1. Encroachment on Pond or Easement Area		
2. Complaints from Residents		
3. Aesthetics		
a. Vegetation Height		
b. Litter/Debris		
4. Public Safety Hazards		
5. Illicit Discharge		

Comments: _____

Structural Pollution Control Device Inspection Checklist

City of Bayport

SPCD Information

SPCD ID:	
Type of SPCD:	
Owner:	
Year Constructed:	
Date Last Cleaned:	
Inspector:	
Date:	
Temperature:	
Weather:	
Maintenance Priority: Low = 1 High = 5	1 2 3 4 5

Inspection

Maintenance Item	Mark (X) if Action Required	Specify Action/Comment
1. Level of Sediment in Sump		
2. Sediment Accumulation Inside Pipe(s)		
3. Floating Debris		
4. Corrosion		
5. Manhole Condition		
a. Cracks or Displacement		
b. Minor Spalling (<1")		
c. Major Spalling (Rebar Exposed)		
d. Joint Failures		
e. Water Tightness		
6. Visible Pollution/Illicit Discharge		
7. Complaints from Residents		
8. Public Safety Hazards		
9. Other (Specify)		

Comments _____

Outfall Inspection Checklist

City of Bayport

Outfall Information

Outfall ID:	
Outfall Waterbody:	
Year Constructed:	
Size:	
Material:	
Inspector:	
Date:	
Temperature:	
Weather	
Maintenance Priority Low = 1 High = 5	1 2 3 4 5

Inspection

Maintenance Item	Mark (X) if Action Required	Comments
1. Level of Sediment in Sump		
2. Sediment Accumulation Inside Pipe(s)		
3. Floating Debris		
4. Corrosion		
5. Manhole Condition		
a. Cracks or Displacement		
b. Minor Spalling (<1")		
c. Major Spalling (Rebar Exposed)		
d. Joint Failures		
e. Water Tightness		
6. Visible Pollution/Illicit Discharge		
7. Complaints from Residents		
8. Public Safety Hazards		
9. Other (Specify)		

Comments _____

Stockpile Inspection Form

City of Bayport Quarterly Inspection

Facility (circle one):

Public Works Facility

Material Storage Yard

Stockpile Material (circle one):

Class 5 Gravel

Clean Black Dirt

Woodchip

Sand

Street Sweepings

Crushed Limestone

Sealcoat Trap Rock

Salt

Date: _____

Inspector: _____

Describe Condition of Stockpile (erosion, run-off, tracking, leaching, etc.):

Corrective Actions Required: Yes No

If yes, describe:

Appendix A
Municipal Facility Inventory

Municipal Facility Inventory Map															
MS4 Name:	City of Bayport														
Review Date:	4/9/2020														
Reviewer:	Matthew Kline														
Municipal Operations Best Management Practices															
				1	2	3	4	5	6	7	8	9	10	11	12
Facility ID	Facility Name	Facility Location	Type of Facility	Proper Waste Management, Storage & Disposal	Proper Stockpile Management	Proper Vehicle, Fueling, Washing, & Maintenance	Routine Pavement Sweeping	Proper Emergency Response Procedures	Proper Cleaning of Maintenance Equipment, Buildings, & Dumpsters	Proper Use, Storage, and Disposal of Significant Materials	Proper Lawn and Landscape Maintenance	Proper Road Maintenance	Proper Right-of-Way Maintenance	Proper Application of Herbicides, Pesticides, and Fertilizers	Proper Snow Removal and Deicing Operations
1	Lakeside Park	95 Central Ave	Park/Recreational	X			X				X	X		X	X
2	Beach House	2 Central Ave	Park/Recreational	X					X						
3	Perro Park	374 2nd St No	Park/Recreational	X							X	X		X	X
4	Barkers Alps Park	900 5th Ave No	Park/Recreational	X			X				X			X	X
5	Upper Barkers Alps Playground Park Area	Inspiration Pkwy/	Park/Recreational	X							X			X	
6	Village Green	400 3rd St No	Park/Recreational	X							X			X	
7	LWLP Area	1 Lakeside Drive No	Park/Recreational								X				
8	Argus Square	6th Ave No/MN 95 Intersection	Park/Recreational	X							X			X	
9	City Hall	294 3rd St No	Administrative												
10	Public Works Facility	98 2nd Ave So	Vehicle Storage & Maintenance	X		X	X		X	X	X	X			
11	Salt Storage Facility	98 2nd Ave So	Salt Storage		X										
12	Bone Yard	98 2nd Ave So	Materials Storage Yard		X						X				
13	Old Fire Hall	294 3rd St No	Vehicle Storage & Maintenance	X		X			X						
14	Fire Hall	1012 5th Ave No	Vehicle Storage & Maintenance	X		X	X	X	X	X	X			X	X
15	Library	582 4th St No	Administrative	X					X		X				
16	Nature Center	1215 Inspiration Parkway So	Park/Recreational	X					X		X				
17	Pumphouse #2	200 7th St So	Water Production					X		X	X				
18	Pumphouse #3	400 3rd St No	Water Production					X		X	X				
19	Pumphouse #4	90 Central Ave No	Water Production					X		X	X				
20	Booster Station	1056 Inspiration Parkway No	Water Production			X		X		X					
21	Air Stripper Facility	1055 Inspiration Parkway No	Water Production					X		X					

22	Inspiration Water Tank	1056 Inspiration Parkway No	Water Production					X						
23	Inspiration Lift Station	1132 Inspiration Parkway So	Hazardous Waste Transfer					X		X				
24	Lake St Lift Station	Lake St/2nd Ave So	Hazardous Waste Transfer					X		X				
25	Andersen Parking Lot - Lakeside	90 Central Ave No	Parking Lot				X				X			X
26	City Parking Lot	169 3rd St No	Parking Lot				X				X			X
27	Hazelwood Cemetery	5th Ave No/8th St No	Other - Cemetery	X						X			X	X
28	MN 95 Median	Hwy 95/2nd Ave No	Green Space Median							X		X		X
29	City Open Space	5th Ave So City Entrance	Green Space							X				
30	City Open Space	498 Maine St So	Green Space							X				
31	City Open Space	Met Council Lift Station	Green Space							X				
32	Inspiration Prairie Area	Inspiration Development	Green Space							X				
33	City Open Space	2nd Ave So ROW (Central-2nd)	Green Space							X		X		
34	City Open Space	2nd Ave So ROW (1st No-Central)	Green Space							X		X		

Appendix B
Source Water Protection Area Map

Appendix C
Stormwater Pond Inventory



Minnesota Pollution
Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

MS4 Pond, Wetland, and Lake Inventory Form

Municipal Separate Storm Sewer System (MS4) Program

Doc Type: Plans/Specifications/Maps

Name of MS4 Permittee	Date form completed	Unique ID Number	Type of Feature (Pond, Wetland or Lake)	Feature Common Name (if Applicable)	Y Coordinate (Latitude) Decimal Degrees	X Coordinate (Longitude) Decimal Degrees
City of Bayport	6/26/2019		1 Pond		45.016102	-92.796597
City of Bayport	6/26/2019		2 Pond		45.012578	-92.795517
City of Bayport	6/26/2019		3 Pond		45.015647	-92.794098
City of Bayport	6/26/2019		3A Pond		45.016507	-92.793931
City of Bayport	6/26/2019		4 Pond		45.01528	-92.791116
City of Bayport	6/26/2019		4A Pond		45.015182	-92.787888
City of Bayport	6/26/2019		5 Pond		45.012519	-92.793258
City of Bayport	6/26/2019		5H Pond		45.012263	-92.790219
City of Bayport	6/26/2019		6 Pond		45.012789	-92.792312
City of Bayport	6/26/2019		6F Pond		45.014363	-92.791522
City of Bayport	6/26/2019		6J Pond		45.014071	-92.789422
City of Bayport	6/26/2019		7 Pond		45.010105	-92.793668
City of Bayport	6/26/2019		8 Pond		45.01119	-92.788101
City of Bayport	6/26/2019		9 Pond		45.010954	-92.787074
City of Bayport	6/26/2019		11 Pond		45.007582	-92.788438
City of Bayport	6/26/2019		12 Wetland		45.009345	-92.788962
City of Bayport	6/26/2019		13 Pond		45.02193	-92.794263
City of Bayport	6/26/2019		14 Pond		45.021159	-92.791048
City of Bayport	6/26/2019		16 Pond		45.02462	-92.783453
City of Bayport	6/26/2019		17 Pond		45.025137	-92.783713
City of Bayport	6/26/2019		18 Pond		45.028291	-92.785238
City of Bayport	6/26/2019		19 Wetland		45.028468	-92.784641
City of Bayport	6/26/2019		20 Wetland		45.028215	-92.777888
City of Bayport	6/26/2019		21 Pond		45.025981	-92.781634
City of Bayport	6/26/2019		22 Lake	Lake St Croix	45.016503	-92.770148
City of Bayport	6/26/2019		23 Pond		45.022888	-92.780245
City of Bayport	6/26/2019		29 Pond		45.018379	-92.780193
City of Bayport	6/26/2019		30 Pond		45.018722	-92.77954
City of Bayport	6/26/2019		31 Pond		45.018863	-92.778765
City of Bayport	6/26/2019		32 Pond		45.018756	-92.778604
City of Bayport	6/26/2019		33 Pond		45.017191	-92.778598
City of Bayport	6/26/2019		36 Pond		45.017061	-92.775217
City of Bayport	6/26/2019		37 Pond		45.016933	-92.773142
City of Bayport	6/26/2019		38 Pond		45.015732	-92.774584
City of Bayport	6/26/2019		39 Pond		45.014832	-92.773888
City of Bayport	6/26/2019		41 Pond		45.013101	-92.777087
City of Bayport	6/26/2019		43 Pond		45.010642	-92.777841
City of Bayport	6/26/2019		44 Pond		45.009909	-92.77826
City of Bayport	6/26/2019		45 Pond		45.008692	-92.778249
City of Bayport	6/26/2019		46 Pond		45.007805	-92.778887
City of Bayport	6/26/2019		47 Pond		45.001521	-92.780885

