

## MCM 4 and 5 Plan and Standard Operating Procedure

### Construction Site Erosion and Sediment Control and Post Construction Stormwater Management

City of Brainerd  
501 Laurel Street, Brainerd, MN 56401

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**PLAN MANAGER:** City Engineer

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#### I. INTRODUCTION

The City of Brainerd owns and operates an MS4 (Municipal Separate Storm Sewer System). Under the MS4 General Permit (MS4 Permit), the Minnesota Pollution Control Agency requires that the develop a plan with written procedures for the purpose of eliminating pollutants associated with construction activity and due to new development and redevelopment on project with land disturbance greater or equal to 1-acre, including projects that are less than 1-acre that are part of a common plan of development or sale. Regulations associated with NPDES Construction Stormwater General Permit (CSW) also dictates stormwater treatment requirements with the goal to reduce pollutant levels in point source discharges and protect water quality in accordance with the U.S. Clean Water Act, Minnesota statutes and rules, and federal laws and regulations. All implementation of elements of this plan need to be done in coordination with a review of both the current MS4 Permit and CSW requirements. Key elements of those documents are provided herein.

This MCM 4/5 Plan is a guide to meet the goals of the MS4 Permit and CSW by presenting SOPs (Standard Operating Procedures), plan manager contacts information, and other information described within the City MS4 permit (referred to as the SWPPP Document) by incorporating guidance on the following topics:

- Plan Review
- Training
- Inspections
- Long-term Operations and Maintenance

The SOPs are intended to provide guidance on Construction Site Erosion and Sediment control and Post Construction Stormwater Management as per the City Code found in section 430 and 725.

The City's regulatory mechanism(s) must require the owners and operators of construction activity to keep site plans up to date about stormwater runoff controls. The regulatory mechanism(s) must require that site plans incorporate the following erosion, sediment, and waste controls that are at least as stringent as described in the CSW Permit:

- Erosion prevention practices
- Sediment control practices
- Dewatering and basin draining
- Inspection and maintenance
- Pollution prevention management measures
- Temporary sediment basins

- Termination conditions. [Minn. R. 7090]

The following list below is a general outline of what these SOP' s will provide City staff:

- Plan review procedures.
- Prioritize where construction site inspections may need to occur on a more frequent basis.
- Construction site inspection guidelines.
- Maintenance of post construction stormwater BMPs to help ensure their longevity.
- Dealing with non-compliant construction sites.
- BMP operation and maintenance.

In the event of any conflict between this guideline and the City ordinances /code, the ordinance /code shall govern.

The City must conduct an annual assessment of the Construction Site Stormwater Runoff Control program and its Post-Construction Stormwater Management Program to evaluate program compliance, the status of achieving the measurable requirements in the current MS4 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, site plan reviews, inspections, enforcement, etc.). The permittee 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.

## **II. SITE PLAN REVIEW PROCEDURES**

The City must implement written procedures for site plan reviews conducted by the permittee prior to the start of all construction activity, to ensure compliance with requirements of the regulatory mechanism(s). At a minimum, the procedures must include:

- Written notification to owners and operators proposing construction activity, including projects less than 1-acre that are part of a larger common plan of development or sale, of the need to apply for and obtain coverage under the CSW Permit.
- Use of a written checklist, consistent with the requirements of the regulatory mechanism(s), to document the adequacy of each site plan required for:
  - Erosion prevention practices
  - Sediment control practices
  - Dewatering and basin draining
  - Inspection and maintenance
  - Pollution prevention management measures
  - Temporary sediment basins
  - Termination conditions

Plans that are submitted to the City for approval will have a review process to guarantee that erosion and sediment control standards and post construction stormwater standards are being met. The permittee must implement an inspection program that includes written procedures for conducting site inspections, to determine compliance with the permittee's regulatory mechanism(s) (see **V** below).

City staff will review all City Ordinances related to Sediment and Erosion Control, Stormwater and Urban Runoff Pollution Control, and Stormwater Management (Sections 430, 720, and 725 respectively). City

staff will also review the requirement as per the most current Minnesota Pollution Control Agency (MPCA) Construction Stormwater General Permit and the MS4 post construction stormwater rules and regulations as defined within the MPCA MS4 General Permit. The City will be responsible for enforcement of their stormwater rules and regulations.

For each site plan review conducted by the permittee, the permittee must document the following:

- Project name
- Location
- Total acreage to be disturbed
- Owner and operator of the proposed construction activity
- Proof of notification to obtain coverage under the CSW Permit or proof of coverage under the CSW Permit
- Any stormwater related comments and supporting completed checklist, as required in item 19.6, used by the permittee to determine project approval or denial. [Minn. R. 7090]

When comments are submitted by the City to the applicant, City staff will follow up in 7-10 business days to ensure all comments were addressed by the applicant. The City has 60 days to make a final decision on a development or redevelopment plan.

The following will be the minimum documentation for each plan submittal:

- Keep logs of number of plan reviews per calendar year in City files.
- Copies of plans, BMP quantities, proposed BMPs.
- Logs of maintenance agreements that get filed with the City, along with their locations.
- Any correspondence with the applicant regarding the above.

### **III. HIGH PRIORITY SITES**

The permittee must maintain written procedures for identifying high-priority and low-priority sites for inspection. At a minimum, the written procedures must include:

- A detailed explanation describing how sites will be categorized as either high-priority or low-priority.
- A frequency at which the permittee will conduct inspections for high-priority sites.
- A frequency at which the permittee will conduct inspections for low-priority sites.
- The name(s) of individual(s) or position title(s) responsible for conducting site inspections. [Minn. R. 7090].

The City defines priority sites as follows, and maintains a spatial database for planning purposes:

1. High Priority
  - a. Subwatershed draining to impaired water resources.
  - b. History of stormwater and erosion control negligence at a site.
  - c. Active construction sites.
  - d. Public facilities and storage areas.
  - e. Industrial land uses.
  - f. Gas stations and other high-potential land uses.

2. Medium Priority
  - a. Commercial land uses.
  - b. Institutional land uses.
3. Low Priority
  - a. Residential land uses.
  - b. Open spaces.

#### **IV. TRAINING**

The City must ensure that individuals receive training commensurate with their responsibilities as they relate to the permittee's Construction Site Stormwater Runoff Control program. Individuals includes, but is not limited to, individuals responsible for conducting site plan reviews, site inspections, and/or enforcement. The permittee must ensure that previously trained individuals attend a refresher-training every three (3) calendar years following the initial training. [Minn. R. 7090]

Training of City staff is important so that they are aware of the importance of erosion and sediment control BMPs and well as proper installation techniques of post stormwater BMPs. The training provided will include knowledge in installation and inspection techniques along with good record keeping and maintenance activities. It is important for City staff to be able to recognize deficiencies in BMPs at construction sites. City staff will be responsible for the tracking and enforcing of permit requirements.

Employee training will consist of general PowerPoint presentations prepared by the City, Minnesota Department of Transportation erosion and sediment control certification courses, and a hands-on process to discuss and teach the activities that are occurring in the field and how these activities can impact the City's MS4.

For each training, the City must document:

- General subject matter covered.
- Names and departments of individuals in attendance.
- Date of each event. [Minn. R. 7090].

#### **V. INSPECTIONS AND ENFORCEMENT**

Construction site inspections will determine compliance with the City's regulatory mechanism(s). The City must implement a written checklist to document each site inspection when determining compliance with the permittee's regulatory mechanism(s). At a minimum, the checklist must include the permittee's inspection findings on the following areas, as applicable to each site:

- Stabilization of exposed soils (including stockpiles)
- Stabilization of ditch and swale bottoms
- Sediment control BMPs on all downgradient perimeters of the project and upgradient of buffer zones
- Storm drain inlet protection
- Energy dissipation at pipe outlets
- Vehicle tracking BMPs

- Preservation of a 50-foot natural buffer or redundant sediment controls where stormwater flows to a surface water within 50 feet of disturbed soils
- Owner/operator of construction activity self-inspection records
- Containment for all liquid and solid wastes generated by washout operations (e.g., concrete, stucco, paint, form release oils, curing compounds, and other construction materials)
- BMPs maintained and functional. [Minn. R. 7090]

The following is a list of preparation techniques before a construction site stormwater inspection:

- Identify priority sites for inspections based upon topography, soil characteristics, type of receiving waters, stage of construction, compliance history, weather conditions, or other local characteristics and issues (see III, above).
- Ensure City staff has proper training pertaining to erosion and sediment control techniques and post construction stormwater BMPs.

The process for the actual inspection of the site should follow the general guidelines below:

- Identify sites that require erosion and sediment control inspections. Develop a map of all private stormwater BMPs and a program with an inspection schedule.
- Perform the inspection using the Outfall Inspection Form, Pond /Sediment Basin Inspection Form /or the Construction Site Erosion Control Inspection Form.
- Document construction activities and follow up with the site permittee /owner the findings from the inspection. If feasible, prior to leaving the site, talk with the responsible person to ensure corrections will be made in a timely fashion.
- Perform a follow up inspection of site if deficiencies are found during the initial inspection. Ensure the correction items have been completed.
- Failure to comply with the permit requirements may require initiating enforcement action as described in the City' s Enforcement Response Plan (ERP).

The following is the minimum documentation for each site:

- Name of the person responsible for violating the terms and conditions of the permittee's regulatory mechanism(s).
- Date(s) and location(s) of the observed violation(s).
- Description of the violation(s).
- Corrective action(s) (including completion schedule) issued by the permittee.
- Referrals to other regulatory organizations (if any).
- Date(s) violation(s) resolved.
- All logs and inspection records and track the number of inspections performed at each site.
- Record all correspondence and documentation with the permittee /owner.
- Keep records of escalations and penalties.
- Informal Notices (IN).
- Written Notice of Violations (NOV).
- Stop Work Orders (SWO).
- Criminal Penalties (CP).
- Abatement of Violation (AB) and record of time /hours.

- Referrals to other Departments /Agencies (RF).
- Non-Compliance Inspection Charges (IC) Suspensions of Service (SS).

The City must maintain written enforcement response procedures (ERPs) to compel compliance with the permittee's regulatory mechanism(s) in item 19.3. To the extent allowable under state or local law, the City must develop, implement, and enforce a regulatory mechanism(s) that establishes requirements for erosion, sediment, and waste controls that is at least as stringent as the Agency's most current. The current City Ordinances and Enforcement Response Procedures meet these requirements. At a minimum, the written ERPs must include:

- A description of enforcement tools available to the permittee and guidelines for the use of each tool
- Name or position title of responsible person(s) for conducting enforcement. [Minn. R. 7090]

## **VI. EROSION AND SEDIMENT CONTROL BMPs**

City projects that disturb any amount of soil will use proper erosion and sediment control BMPs.

The City will ensure staff has the proper erosion and sediment control certification and /or have been trained by a certified staff person on proper erosion and sediment control techniques.

The following are the minimum control required on all City construction projects:

- Construction projects that have the potential to impact the MS4 system or any natural resource will have BMPs available prior to the construction activity.
- All perimeter control BMPs are required to be fixed, substituted, or enhanced if they are no longer working or sediment fills one -half (1/ 2) of the height of the BMP. This must be done by the end of the next business day or as soon as the site conditions permit.
- Temporary or permanent sediment basins are required to be drawn down and have sediment removed when the depth of the captured sediment reaches one-half (1/2) the storage volume of the basin.
- Tracked sediment from the construction site entrance /exit is required to be removed from all paved surfaces both on and off the site. This must be done as soon as possible within 24 hours of being found.
- Install down gradient perimeter controls where needed on the site.
- Block adjacent inlets and outlets, if necessary, to prevent sediment and debris from discharging into the storm sewer.
- Stabilize all exposed soil areas upon completion of the work. If work is not complete, temporary stabilization methods will be used.
- After work is completed, clean out sediment that might have entered the MS4 system.
- Encourage the use of structural and non-structural BMPs, structural or hard engineering techniques and bio- engineering.
- Require wet and dry stormwater detention ponds when surface drainage discharges into receiving waters.

The following is the minimum documentation for each site:

- Keep logs showing when the BMPs were inspected and properly maintained during the active construction period until the period where final stabilization has been achieved.
- Sites should be inspected weekly or after a rainfall event greater than 0.5 inches in 24 hours when the soil disturbance is equal or greater than 1-acre.
- Document maintenance performed on perimeter control, erosion control BMPs, stabilization methods, sediment control BMPs.
- If applicable, record the amount of waste collected, the number of catch basins cleaned, and the area they were cleaned. Keep any notes or comments of any problems.
- If applicable, document the final location of where material was disposed of and any paperwork received from the disposal location.

## **VII. PRIVATE PROJECTS**

Private projects that require a building permit, demolition permit, grading/excavation, and tree removal will use the proper sediment and erosion control BMPs. Depending on the proposed improvements, these sites may also be requiring to install BMPs for post-construction stormwater management.

- The City's regulatory mechanism(s) must require owners of construction activity to treat the water quality volume on any project where the sum of the new impervious surface and the fully reconstructed impervious surface equals one or more acres.
- For construction activity (excluding linear projects), the water quality volume must be calculated as one (1) inch times the sum of the new and the fully reconstructed impervious surface.
- For linear projects, the water quality volume must be calculated as the larger of one (1) inch times the new impervious surface or one-half (0.5) inch times the sum of the new and the fully reconstructed impervious surface. Where the entire water quality volume cannot be treated within the existing right-of-way, a reasonable attempt to obtain additional right-of-way, easement, or other permission to treat the stormwater during the project planning process must be made. Volume reduction practices must be considered first. Volume reduction practices are not required if the practices cannot be provided cost effectively. If additional right-of-way, easements, or other permission cannot be obtained, owners of construction activity must maximize the treatment of the water quality volume prior to discharge from the MS4.
- Volume reduction practices (e.g., infiltration or other) to retain the water quality volume on-site must be considered first when designing the permanent stormwater treatment system. The CSW does not consider wet sedimentation basins and filtration systems to be volume reduction practices. If the CSW prohibits infiltration (or refer to MS4 Permit), other volume reduction practices, a wet sedimentation basin, or filtration basin may be considered.

The following requirements are considered for off-site treatment:

- For non-linear projects, where the water quality volume cannot cost effectively be treated on the site of the original construction activity, the permittee must identify, or may require owners of the construction activity to identify, locations where off-site treatment projects can be completed. If the entire water quality volume is not addressed on the site of the original construction activity, the remaining water quality volume must be addressed through off-site treatment and, at a minimum, ensure the requirements of the current MS4 Permit are met.

- The permittee must ensure off-site treatment project areas are selected in the following order of preference:
  - Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
  - Locations within the same Department of Natural Resource (DNR) catchment area as the original construction activity.
  - Locations in the next adjacent DNR catchment area up-stream.
  - Locations anywhere within the permittee's jurisdiction.
- Off-site treatment projects must involve the creation of new structural stormwater BMPs or the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP. Routine maintenance of structural stormwater BMPs already required by the General Permit cannot be used to meet this requirement.
- Off-site treatment projects must be completed no later than 24 months after the start of the original construction activity. If the permittee determines more time is needed to complete the treatment project, the permittee must provide the reason(s) and schedule(s) for completing the project in the annual report.
- If the permittee receives payment from the owner of a construction activity for off-site treatment, the permittee must apply any such payment received to a public stormwater project, and all projects must comply with the requirements in of the current MS4 Permit.

Building officials and the Engineering Department will be responsible for inspecting building permit activities and sites that require state NPDES permits.

The City has staff that actively inspects construction sites throughout the City' s jurisdiction. The City also oversees the installation of BMPS for post construction stormwater management.

The City's regulatory mechanism(s) must include the establishment of legal mechanism(s) between the permittee and owners of structural stormwater BMPs not owned or operated by the permittee, that have been constructed to meet the current MS4 Permit requirements (this is achieved by reference in City Code). The legal mechanism(s) must include provisions that, at a minimum:

- Allow the permittee to conduct inspections of structural stormwater BMPs not owned or operated by the permittee, perform necessary maintenance, and assess costs for those structural stormwater BMPs when the permittee determines the owner of that structural stormwater BMP has not ensured proper function.
- Are designed to preserve the permittee's right to ensure maintenance responsibility, for structural stormwater BMPs not owned or operated by the permittee when those responsibilities are legally transferred to another party.
- Are designed to protect/preserve structural stormwater BMPs. If structural stormwater BMPs change, causing decreased effectiveness, new, repaired, or improved structural stormwater BMPs must be implemented to provide equivalent treatment to the original BMP.

Any private projects that are within City limits will be inspected by a qualified City employee. Inspections will occur at a frequency that is commensurate of the activities being performed. The field inspector should use the field erosion control inspection form. Using the standardized inspection form will create consistency in all inspections.



The following is the minimum documentation for each private site:

- Supporting documentation used to determine compliance with MS4 Permit, including any calculations for the permanent stormwater treatment system.
- The water quality volume that will be treated through volume reduction practices (e.g., infiltration or other) compared to the total water quality volume required to be treated.
- Documentation associated with off-site treatment projects authorized by the permittee, including rationale to support the location of permanent stormwater treatment projects in accordance with items of the MS4 Permit.
- Payments received and used in accordance with the MS4 Permit
- All legal mechanisms drafted in accordance MS4 Permit (see above, this section), including date(s) of the agreement(s) and name(s) of all responsible parties involved.
- Keep track of private projects locations and obtaining contact information for owners and operators at the City offices. The permittee must maintain a written or mapped inventory of structural stormwater BMPs not owned or operated by the permittee that meet all the following criteria:
  - The structural stormwater BMP includes an executed legal mechanism(s) between the permittee and owners responsible for the long-term maintenance, as required in item 20.15.
  - The structural stormwater BMP was implemented on or after August 1, 2013.
- Keep records of long-term maintenance agreements on file.
- Keep records of inspections should the City be required to perform compliance erosion/sediment control inspections.
- Keep records of escalation penalties (Informal Notice, Notice of Violation, Stop Work Orders).

#### **VIII. PRIVATE PROJECT LONG TERM OPERATION AND MAINTENANCE**

All permanent stormwater management BMPS for the purpose of meeting post construction stormwater management are required to develop maintenance agreements and maintenance plans. After the maintenance agreement is executed, the City is required to ensure the conditions for post construction stormwater management continue to be met.

The City may conduct inspections of post construction stormwater BMPs once during each MS4 permit cycle to determine if the system(s) are functioning and permitted. The City will notify the owners of the post construction stormwater BMPs of the deficiencies and determine a proper repair plan and timeline. If the post construction stormwater BMP is repaired in the required timeline set forth by City staff, the City' s Enforcement Response Plan may take effect.

The following is the minimum documentation for each private post construction stormwater BMP:

- Keep logs of all maintenance agreements that are filed with the City, along with their BMP locations.
- Annually update the GIS system to include public and private structural BMPs installed within the City.
- Obtain as -built plans for all the public and private post construction stormwater BMPs that are installed within the City.

- Keep copies of inspection reports on file.

## **IX. CONCLUSION**

The guidelines provided are intended as a tool to be used by City staff as a guide to the practices of construction site erosion and sediment control along with post construction stormwater management.

The City has the authority to revise this guideline at any time. The City also has the authority to make special guidelines and responses where circumstances justify a special guideline.