

City of Marshall Stormwater Pollution Prevention Program (SWPPP)



2022 Contractor Construction Site Training
May 11, 2022

Background

- NPDES Phase II program is federally mandated program established by Environmental Protection Agency (EPA)
- The NPDES Phase II program was developed in 1999 as part of the 1972 Clean Water Act.
- The City of Marshall is designated as a regulated small Municipal Separate Storm Sewer System (MS4) under the National Pollutant Discharge Elimination Systems (NPDES) Phase II Regulations.



Background (cont'd.)

- At the state level the Minnesota Pollution Control Agency has implemented the NPDES Permit Program to cities with a population of more than 5,000 people.
- The Redwood and Minnesota Rivers are listed as impaired waters by the MPCA and EPA.
- The impaired status mandates the MPCA establish load limits for each permitted city.



Marshall's NPDES Permit & SWPPP

- The City of Marshall has operated under its NPDES Permit and Stormwater Pollution Prevention Plan (SWPPP) since February 2007.
- The permit was recently re-issued in November 2020 for the next 5-year permit term.
- The permit requires the City to develop, implement, and enforce a stormwater management program.
- The SWPPP must be designed to reduce the discharge of pollutants from MS4s to Maximum Extent Practicable (MEP)



Marshall's NPDES Permit & SWPPP

- The City must reduce its phosphorus output from stormwater by 30% and suspended solids to 154 lbs./acre/year to achieve compliance under the permit.
- Phosphorus contributes to algae blooms which in turn cause dissolved oxygen depletion in waters downstream.
- The dissolved oxygen depletion contributes to fish kills and stresses in aquatic animal life.
- Suspended solids are noticeable when you see a brown lake or river which lead to issues with aquatic plants and habitats.



Marshall's NPDES Permit & SWPPP

- The City's Stormwater Management Program goal is to restore and maintain the chemical, physical and biological integrity of the Redwood, Cottonwood and Minnesota Rivers through pollution prevention and reduction.
- The City intends to continue to implement its Stormwater Management Program to meet the requirements of the NPDES Phase II permit.



Marshall's NPDES Permit & SWPPP

- The City of Marshall SWPPP identifies the goals and Best Management Practices (BMPs) that will be implemented to meet the requirements of the NPDES Phase II rules.
- In doing so, the City will enhance aquatic and wildlife habitats and improve the urban environment to enhance the quality of life for its citizens.



How Do We Accomplish NPDES Goals?

- Primarily through public education programs like this presentation.
- Work with Developers and Contractors on proper construction site management for stormwater control and quality.



How Do We Accomplish NPDES Goals?

- Staff reviews the City's SWPPP to evaluate compliance with the current NPDES permit.
- BMP's are reviewed, revised and added to ensure that they are relevant and effective.
- The City collects input from stakeholders, property owners, developers, and other interested parties on its SWPPP and BMP's using several mediums, including at the Annual Meeting.



How Do We Accomplish NPDES Goals?

- The City will review current ordinances and other regulatory mechanisms for the appropriate language and requirements with regard to erosion and sediment control practices.
- The City will adopt new ordinances or amend existing ones to address any deficiencies in current ordinances.
- For example, in December 2011, the City passed an ordinance which addresses Illicit Connections or Discharges.



Illicit Discharge Ordinance

- This ordinance establishes methods for controlling the introduction of pollutants into the MS4 in order to comply with the requirements of the NPDES permit process. The objectives of the ordinance are:
 1. To regulate the contribution of pollutants to the MS4 by storm water discharges.
 2. To prohibit illicit connections and discharges to the MS4.
 3. To establish legal authority to carry out inspections, monitoring & enforcement to ensure compliance.



What Impact Will This Be On You?

- City's Policies and Process
 - Maintain and follow the site plan review process.
 - Verify erosion control measures are included in the plan and appropriate for the type of planned work.
 - Conduct inspections to verify that erosion control measures are installed as included in the site plan.
 - Routine inspections including additional inspections after rain events and reports of violations.
 - Verify compliance with the Land Disturbance and NPDES permits.



What Impact Will This Be On You?

- Developer/Contractor
 - Important items to include in a Site Plan
 - Project Description
 - Existing Conditions
 - Adjacent Area Impacts
 - Soils
 - Critical Areas
 - Erosion and Sediment Control Measures
 - Permanent Stabilization
 - Maintenance Issues



What Impact Will This Be On You?

- Developer/Contractor
 - Erosion and Sediment Control Plans should include...
 - Existing and Final Drainage Flow Patterns
 - Clearing and Grading Limits
 - Existing and Final Pervious/Impervious Areas
 - Erosion and Sediment Control Measures
 - Existing Storm Sewer Infrastructure (e.g. inlets, pipes, etc.)
 - Detail Drawings
 - Design Calculations and Assumptions



What Impact Will This Be On You?

- Developer/Contractor
 - Implement BMPs to comply with NPDES Phase II permit.
 - Conduct weekly site inspections and following 0.5" rain events.
 - Maintain a separate daily diary or log with photo record and reports for erosion control management.
 - Develop project specific Erosion and Sediment Control (ESC) Plan including implementation schedule.
 - Proper management of construction site wastes and debris, such as concrete truck washout, building waste, garbage, etc.



What Impact Will This Be On You?

- Developer/Contractor (cont.)
 - Implement Temporary BMPs for Runoff Control and Erosion Control, including but not limited to the following: Rock Entrance to site, Erosion Control Blankets or Stabilization Mats, Sediment Basins, Biorolls, Sediment Barriers, Silt Fence, Silt Curtains, Check Dams, and Inlet Protection.
 - Implement Permanent BMPs for Runoff Control and Erosion Control, including but not limited to the following: Riprap Inlets/Outlets, Check Dams, Dikes, Sediment Basins/Ponds, and Turf Establishment.
 - Provide consistent notice and follow-up information regarding non-compliance issues and repair requests.



Most Common Construction Site Erosion and Sediment Control Issues

- Site Dewatering
- Waste and Material Disposal
- Tracking of Sediments
- Drain Inlet Protection
- Site Erosion Control Measures
- Protection of Stockpiles
- Failure to Provide/Maintain Concrete Washout Facility
- Maintenance of Temporary Sediment Ponds
- Failure to Conduct Site Inspection and Keep Records



Poor Practice Examples

- Dirt gets washed or tracked onto streets



Poor Practice Examples

- Even gravel gets tracked onto streets



Poor Practice Examples

- Dirt in the gutter, no erosion control



Poor Practice Examples

- Unprotected piles lead to erosion and other issues



Poor Practice Examples

- Dirt on the gutter will get washed into intakes down the street.



Poor Practice Examples

- Does soil make it into intakes... Yes!



Poor Practice Examples

- Needs some help with erosion control and cleanup



Poor Practice Examples

- Needs some help with erosion control and cleanup



Poor Practice Examples

- Dumpster is great, but does it get windy in Marshall?



Poor Practice Examples

- MPCA does not allow this for concrete wash-outs



Poor Practice Examples

- MPCA does not allow this for concrete wash-outs



Poor Practice Examples

- MPCA does not allow this for concrete wash-outs



Poor Practice Examples

- Looks great today... But?



Poor Practice Examples

- All this dirt washed into the street before they prevented the erosion



Good BMP Examples

- Seeding, Mulch, and Bioroll



Good BMP Examples

- Hydro-seeding includes seed and mulch together



Good BMP Examples

- Good hydro-seeding example



Good BMP Examples

- Bioroll used near the riverbank



Good BMP Examples

- Good example of storm sewer inlet protection



Good BMP Examples

- Stormwater pond seeded and mulched



Good BMP Examples

- Stormwater pond with erosion blankets



We hope things are done better today than yesterday...



Questions/Comments/Input??

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