

# CITY OF MARSHALL

## STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.



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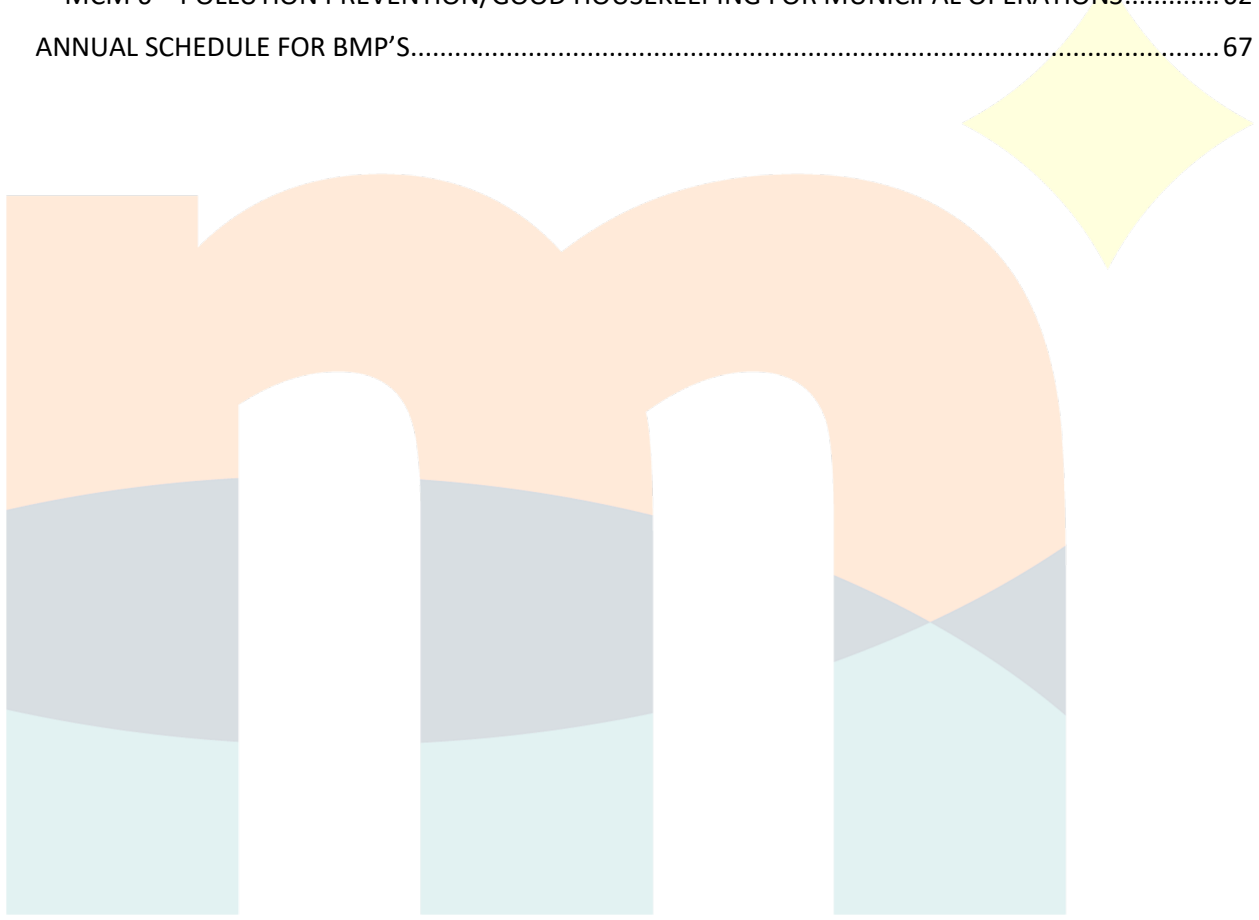
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## EXECUTIVE SUMMARY

The City of Marshall must develop, implement and enforce a Stormwater Pollution Protection Plan (SWPPP) that is designed to minimize the discharge of pollutants from its storm sewer system in order to protect the water quality of the receiving waters in accordance with the Federal Clean Water Act (CWA) and its recent amendments.

This Storm Water Pollution Prevention Plan has been prepared with the purpose of meeting the requirements of the National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) program permit as outlined in the Minnesota Pollution Control Agency (MPCA) General Permit and the most recent modifications to the Federal Clean Waters Act (CWA).

This document is also intended to provide a cursory layout of the steps required to implement the assigned TMDL (Total Maximum Daily Load) requirements for the Redwood, Cottonwood and Minnesota Rivers. Future revisions to the SWPPP will be required as the Waste Load Allocations (WLA) for TMDL's (existing or new) are created, eliminated or modified.

The purpose of this SWPPP is to aim, attain and maintain compliance with current water quality standards. This SWPPP addresses actions that can be taken to help change practices to bring waters that do not meet water quality standards into compliance by minimizing the discharge of pollutants to the Maximum Extent Practicable (MEP). To meet this goal, the City's storm sewer system must be managed, operated and maintained in such a way that minimizes the discharge of pollutants.

## INTRODUCTION

The City covers 6,575 acres of land which support an estimated 14,000 residents. There are nearly 100 miles of paved roadways including local streets, county and state highways. The City of Marshall is in a state of continuous change and this steady growth and development impact the land use within the city. Approximately 4,700 acres (76%) of Marshall's area is developed. The developed land uses are approximately 23% residential, 7% commercial, 11% industrial, 23% transportation, and 36% public/semi public space.

The City of Marshall lies in the Redwood and Cottonwood River drainage basins. Both the Redwood and Cottonwood Rivers drain to the Minnesota River. The Redwood River enters the Minnesota River near Redwood Falls and the Cottonwood River enters the Minnesota River near New Ulm. The Redwood River meanders through the city from the southwest to the northeast and receives the majority of the MS4 storm water runoff. The City has a bypass channel for the Redwood River built by the US Army Corps of Engineers to provide flood protection for much of the city. Marshall has an extensive storm sewer system to collect the storm water runoff throughout the city.

## BACKGROUND

### MS4 NPDES GENERAL PERMIT

The National Pollution Discharge Elimination System/State Disposal System (NPDES/SDS) program is a federally mandated program established by the Environmental Protection Agency (EPA) to implement and maintain storm water management activities for small Municipal Separate Storm Sewer Systems (MS4s). The goal of the NPDES Permit is to restore and maintain the chemical, physical, and biological quality of waters of the state through management and treatment of urban storm water runoff.

This program requires that MS4s develop a Storm Water Pollution Prevention Program (SWPPP). An effective SWPPP program consists of a system of Best Management Practices (BMPs). BMPs include education, maintenance, pollution control techniques, system designs and engineering methods as well as local provisions deemed appropriate. BMPs are to be used to meet the minimum requirements of the NPDES General Permit.

Best Management Practices fall into two categories:

- Structural: including detention ponds, infiltration designs, etc.
- Non-structural: including operational practices like street sweeping, educational programs, etc.

When implementing the required BMPs, the City must consider the sources of the targeted pollutants, the potential pollution creating activities in the various watersheds, and the sensitivity of the receiving waters.

### MARSHALL'S STORMWATER PROGRAM

City of Marshall has enacted the following Municipal Codes to Enforce and Regulate our Storm Water Pollution Prevention Program.

Article 30-II Surface Water Management, Ordinance # 693, Adopted in April, 2015

Division 1 Section 1 = Generally

Section 30-21 = Definitions

Section 30-22 = Findings of Fact

Section 30-23 = Purpose of Article

Section 30-24 = Exemptions

Section 30-25 = Waiver

Section 30-26 = Lawn Fertilizer Regulations

Section 30-41 = Applicability

Section 30-42 = Application

Section 30-43 = Surface Water Management Plan

Section 30-44 = Plan Review Procedure

Section 30-45 = Surface Water Management Criteria Ordinance # 22-007, Adopted July 2022

Section 30-46 = Illicit Connection

Article 14-1 = Animals Ordinance # 591 2<sup>nd</sup> Series Adopted April 2008

Section 14-1 = Definitions

Section 14-2 = General Regulations

## GENERAL INFORMATION

The City of Marshall lies within the Lower Minnesota River Drainage Basin and has been determined to be a designated MS4. This mandates the City to apply for and operate within the requirements of the NPDES General Permit. One of those requirements is that the City develops a SWPPP plan. The City of Marshall's SWPPP identifies the goals and the Best Management Practices (BMPs) that will be implemented to meet the requirements of the NPDES General Permit. Measurable goals have been established for each of the BMPs included in the SWPPP along with an implementation plan and the persons responsible for implementing the BMPs.

## DEPARTMENTS WITH STORMWATER RESPONSIBILITIES

The City has identified internal departments and divisions that will have some responsibilities in regard to the SWPPP plan and stormwater in general. Those departments and potential responsibilities include:

- Administration Division
  - Provide annual financial resources for SWPPP implementation
  - Collection of fees and disbursement of funds
  - Supply adequately trained individuals to various departments via Human Resources
- Public Works Division
  - Engineering/Community Planning Department
    - Review permit applications and inspection responsibilities for infrastructure projects and building permits
    - Enforce standards through zoning laws
    - Administers development agreements including setting and enforcing development standards for the city
    - Inspect and enforce requirements for private utility operations

- Provide annual budgets for labor, equipment and materials required for enforcement of the SWPPP
    - Create, monitor and update ordinances relating to the implementation of the SWPPP
  - Street Department
    - General street maintenance including tasks such as sweeping, etc.
    - Provide maintenance to the city's storm sewer system and minor repairs to drainage structures
  - Wastewater Department
    - Provide assistance to the Street Department in maintenance of the storm sewer system including tasks such as camera inspection, jetting, etc.
- Community Services Division
  - Park Maintenance Department
    - General park maintenance

## MS4 SELF-ASSESSMENT EVALUATION

An evaluation of the storm sewer system was completed to determine the factors affecting the Maximum Extent Practicable (MEP) standards set forth within the NPDES General Permit requirements. Factors which were used in developing the BMPs outlined in the SWPPP were as follows:

- Source of pollutants
- Potential polluting activities being conducted in the watershed
- Sensitivity of receiving waters and wetlands within the system
- Intended uses of receiving waters
- Local concerns and storm water issues
- The size of the MS4, the available staff, and the number of residents
- BMP implementation schedules
- Ability to finance storm water related programs
- Hydraulics and hydrology of the watershed
- Geology
- Ability to finance and perform operation and maintenance of the MS4
- Land uses
- Development and redevelopment expectations
- Watershed characteristics
- Organizational structure of the municipal operator

In conformance with the requirements for the preparation of the SWPPP, a number of non-storm water discharges were evaluated to determine if they are significant contributors of pollutants to the storm sewer system. Non-storm water discharges which were evaluated include:

- Flushing of municipal waterlines
- Residential, commercial and agricultural landscape irrigation
- Stream flow diversions
- Groundwater outputs and rising elevations
- Uncontaminated pumped ground water
- Uncontaminated groundwater infiltration
- Filtration backwash from municipal water treatment facility
- Discharge of foundation drains into the MS4
- Potable water source discharges
- Condensation from air conditioning units
- Car washing by individual residents
- Discharges from the chlorinated swimming pools
- Wash water from street sweeping activities
- Water discharged from firefighting activities

These sources of non-storm water inputs into the municipal separate storm sewer system were determined not to be significant contributors of pollutants. Therefore, BMPs will not be prepared to address these storm water discharges.

The City of Marshall has developed the SWPPP, and the BMPs within it, to reach the goal of reducing the discharge pollutants to the maximum extent practicable. This SWPPP incorporates new activities and existing practices to develop a program, designed to protect water quality as required by the Clean Water Act. The BMPs included within this SWPPP, are the results of the City carefully and thoughtfully evaluating the storm water discharges within the jurisdiction of the City. As a result, the City believes the implementation of these BMPs meet the prescribed maximum extent practicable standard.

### **MINIMUM CONTROL MEASURES (MCM'S)**

Marshall's SWPPP was first created and implemented in 2007. The SWPPP has been prepared to manage and reduce the discharge of pollutants from our MS4 to the maximum extent practicable (MEP). This will be accomplished through the implementation of the BMPs outlined within this SWPPP. BMPs have been prepared to address each of the six minimum control measures (MCM's) outlined in the General Permit. These six minimum controls measures (MCM's) are:

- Public education and outreach on stormwater impacts.
  - Distribute educational materials and perform outreach activities to inform residents of Marshall about how stormwater becomes polluted and the impacts polluted stormwater discharges can have on water quality.
- Public participation and involvement.
  - Provide opportunities for the residents of Marshall to participate in program development and implementation, including holding public hearings.
- Illicit discharge detection and elimination.



- Develop and implement a plan to detect and eliminate illicit discharges to the storm sewer system including updating the current storm sewer system map and informing the residents of Marshall about illegal discharges and improper disposal of waste.
- Construction site stormwater runoff control.
  - Develop, implement, and enforce an erosion and sediment control program including ordinances for construction activities.
- Post-construction stormwater management in new development and redevelopment.
  - Develop, implement, and enforce a program to address discharges of post-construction storm water run-off from new development and redevelopment areas.
- Pollution prevention/good housekeeping for municipal operations.
  - Develop and implement a program that either reduces or eliminates pollutant runoff from the City's operations.

For each of these six minimum control measures, appropriate BMPs have been identified along with measurable goals, an implementation schedule, and the persons responsible to complete each measure. The City of Marshall reserves the right to amend and/or delete the described BMPs based on the availability of funding for this program. Furthermore, the City may coordinate the responsibility of selected BMPs with other governing agencies such as community groups, non-profit organizations, soil and water conservation districts, watershed districts, watershed management organizations, school districts, University of Minnesota Extension, or county, regional, state, and federal government programs, which represent storm water within the City.

### MCM 1 - PUBLIC EDUCATION AND OUTREACH ON STORM WATER IMPACTS

The public education program has been developed to distribute educational materials to the community or conduct equivalent outreach activities. The BMPs identified will focus of the impact of storm water discharges on streams, rivers, and wetlands, and the steps that the public can take to reduce pollutants in storm water runoff.

These activities have been prepared to individually address each of the six minimum control measures. For each minimum control measure, the education program identifies the audience or audiences involved, educational goals for each audience, activities used to reach educational goals for each audience, activity implementation plans, including responsible persons in charge, entities responsible for given activities, and schedules and performance measures that can be used to determine success in reaching educational goals.

The public education and outreach BMPs that will be undertaken include:

- 1) Produce and distribute information on illicit discharges, erosion, shoreline management, composting and pollution prevention and other applicable BMPs

- utilized in the SWPPP. This information may be distributed through City mailings, newsletters, utility bill stuffing, and on the City's Public Works website.
- 2) Incorporate public information on the SWPPP issues into a separate page on the City's website. The web page would specifically describe the SWPPP, each minimum control measure, the goals and actions planned by the City, provide links to BMPs, articles on each control measure, and collect feedback from site visitors.
  - 3) Provide training opportunities for the City Public Works and Community Services Department staff including erosion control, BMPs, good housekeeping, and pollution prevention. Training topics could include, but are not limited to:
    - a) MnDOT Erosion Control Certification
    - b) Storm Water Pollution Prevention Program Workshops
    - c) Best Management Practices Workshops
    - d) Brochures and publications distributed to staff
    - e) Smart Salting Training and Certification

## MCM 2 - PUBLIC PARTICIPATION/INVOLVEMENT

This minimum control measure requires that the City provide measures to receive public input and opinion on the adequacy of the SWPPP. This input can be received from public meetings, oral testimony, and written correspondence. To reach this goal, the City anticipates implementing the following BMPs:

- 1) Conduct an annual public meeting of the City's Storm Water Pollution Prevention Program and solicit opinion on the plan and consider written and oral input on the adequacy of the SWPPP.
- 2) The City intends to incorporate public information on SWPPP issues into a separate page on the City's website. The web page would specifically describe the SWPPP, each minimum control measure, the goals and actions planned by the City, provide links to BMPs, articles on each control measure, and collect feedback from site visitors.

## MCM 3 - ILLICIT DISCHARGE DETECTION AND ELIMINATION

A number of BMPs have been developed to implement and enforce a program to detect and eliminate illicit discharges into the municipal separate storm sewer system. These BMPs include:

- 1) Review existing city ordinances relating to illicit discharges and enforce illicit discharge ordinance(s).
- 2) Annually update all identified City-owned storm sewer conveyances (12" or greater) to reflect changes or additions to the storm sewer system. This will also identify all outfalls and discharge points leaving the City.
- 3) Continue to visually inspect and record all reported non-stormwater discharges within 24 hours of discovery and/or report.

- 4) Train City staff, implement procedures, and incorporate BMPs in handling equipment and hazardous materials used by the City.

#### MCM 4 - CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

A number of the BMPs have been developed and will be implemented and enforced to reduce pollutants and storm water runoff construction activities. These BMPs include:

- 1) Review and update current permit stipulations/City codes relating to project specific erosion and sediment control.
- 2) Every applicant for a City permit to allow land disturbing activities must submit a project specific stormwater management plan (if applicable) and/or erosion control plan to the City.
- 3) Provide a phone number, website, and point of contact for the public to report storm water pollution issues. Staff procedures for stormwater non-compliance are included in the BMP Summary Sheets.
- 4) Construction site operators must conform to NPDES Permit requirements and City ordinances pertaining to erosion and sediment controls and waste controls.
- 5) All erosion control inspections, violations, and remedial action taken by the City will comply with NPDES construction permit guidelines. New City Public Works and Community Services Department staff will be provided erosion control training within 3 years of the individual's hire date.

#### MCM 5 - POST CONSTRUCTION STORM WATER MANAGEMENT FOR NEW DEVELOPMENT AND REDEVELOPMENT

A program of BMPs has been prepared to address storm water runoff from new development and redevelopment projects that disturb equal to or greater than one acre of land. This program ensures that controls are in place that would prevent or minimize water quality impacts from development activities. These BMPs include:

- 1) Continue to use existing development review policies currently in place to address water quality, erosion control, and BMPs
- 2) City staff will document and record all repairs, maintenance or new construction of structural and non-structural BMPs used on City construction projects.
- 3) Annually review and document modifications to the BMP schedule as defined in the Public Works work schedule.

#### MCM 6 - POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

To meet the requirements of the pollution prevention and good housekeeping for municipal operations, a number of BMPs have been prepared. These BMPs include:

- 1) Perform annual inspection in a rotating schedule for the outfalls, sediment basins, and ponds within the city's storm sewer system as to all structural BMPs will have

- been inspected a minimum of once per permit cycle. The results of these inspections will be compiled in a report and include sediment levels, watershed information and record recommended maintenance and maintenance schedules.
- 2) Evaluating, annually inspecting, and modifying (if necessary) current BMPs in place on all exposed stockpiles, storage, and materials located within City owned property.
  - 3) The City will annually evaluate landscaping and lawn-care practices, which may include the use of fertilizers, pesticides, herbicides, lawn mowing, grass clipping collection, mulching and composting, and develop BMPs to reduce storm water pollution.
  - 4) The City will annually review practice and policies of road salt applications. The City will consider alternative products, calibration of equipment, inspection of vehicles and staff training to reduce pollutants from road deicing activities.
  - 5) The City will continue with the current street sweeping program, identify improvements, and implement changes to reduce storm water pollutants.
  - 6) The City will continue to utilize "Snow and Ice Management Policy, dated Jan 2023.
  - 7) The City will continue annual inspections of designated Salt Storage Sites, to ensure they are maintained to meet compliance.

## SWPPP PROGRAM

### GENERAL INFO

Marshall's SWPPP has been prepared to manage and reduce the discharge of pollutants from our MS4 to the maximum extent practicable (MEP) and to protect water quality. This will be accomplished through the implementation of a number of Best Management Practices (BMPs). BMPs have been prepared for each of the six minimum control measures. A description of each BMP, an implementation schedule, measurable goals that determine the success of benefit, and the person responsible to complete each BMP is included in the Appendix.

### TOTAL MAXIMUM DAILY LOADS (TMDL'S)

Specific water resources are especially sensitive to certain pollutants and the responsibility to protect, preserve and maintain these resources has been assigned, by law, statute and rule, to be borne by all or part of the upstream watersheds. Assignment of proportionate responsibility is accomplished by regulatory establishment of a Total Maximum Daily Load (TMDL), a scientific study process that determines the capacity of the water resource to accommodate specific pollutants and/or water quality components.

Several TMDLs have been established and approved that apply to the City of Marshall's MS4. Each TMDL addresses specific pollutants and the requirements of the city to reduce its contribution of those pollutants to certain water resources. Below are the approved TMDLs that apply to Marshall:

<b>TMDL Project Name</b>	<b>Pollutant</b>	<b>Approval Date</b>
Cottonwood River Watershed Fecal Coliform	Fecal Coliform	1/8/2014
Lower Minnesota River – Dissolved Oxygen	Phosphorus	Orig. 9/28/2004, modified 6/5/19
Redwood River Fecal Coliform	Fecal Coliform	1/21/2014
South Metro Mississippi TSS	Suspended Solids	4/26/2016
Minnesota River and Greater Blue Earth River TMDL for TSS	Suspended Solids	2/12/2020

Currently, there are two pending TMDL projects that will likely include the City of Marshall in the studies. The Statewide Chloride Management Plan is a statewide study aimed to help local government units, winter maintenance professionals, decision-makers, and others take action to protect Minnesota's water resources from chloride pollution. The other project in progress is the Lake Pepin Watershed – Excess Nutrients: TMDL project. This TMDL will likely include requirements for reduction of phosphorus into the Minnesota River Basin that drain into Lake Pepin.

## STORMWATER MAPPING

MPCA requires that all permittees develop, update and maintain a storm sewer map that includes the following:

- 1) The permittee's entire MS4 as a goal, but at a minimum, all pipes 12 inches or greater in diameter, including stormwater flow direction in those pipes;
- 2) Outfalls, including a unique identification (ID) number assigned by the permittee, and an associated geographic coordinates;
- 3) Structural stormwater BMPs that are part of the permittee's MS4; and
- 4) All receiving waters.

Marshall, in coordination with Marshall Municipal Utilities (MMU), maintains a GIS map that depicts all of the requirements as outlined by the MPCA. The city continually aims to update information included in the map including corrections, additions of new infrastructure, and addition of additional details as necessary.

## STORMWATER MODELING

In 2020, the city contracted with Bolton & Menk to prepare a city-wide storm water model. There were several objectives of the development of the model including:

- Evaluation of the function and efficiency of the current storm sewer system
- Identification of watershed areas and creation of watershed map of the city
- Areas of concern during variable precipitation events
- Recommendations for improvements for storm sewer main

- Function, treatment volume, and analysis of structural BMPs within the city's MS4 (both city-owned and privately-owned)
- Ascertain the City's level of compliance with existing TMDL's associated with Total Suspended Solids (TSS) and Total Phosphorous (TP)

Development and utilization of the stormwater model allows City staff to evaluate the existing system and identify current inefficiencies that exist within the storm water system. Staff will also be able to identify, prioritize, and scope stormwater improvement projects and their effect on the overall storm sewer system. This model will also allow for more effective evaluation of proposed BMPs within the MS4 and weighing their potential benefit against estimated cost. With these improvements to efficiency and evaluation, City staff can more effectively identify projects with limited funding sources and evaluate the current level of compliance with MPCA-mandated TMDL's.

## TYPES OF BMP'S

As mentioned previously, BMPs are categorized in two ways, Structural and Non-Structural. All of the city's BMPs are described in the BMP Summary Sheets included in the Appendix.

The potential number of Non-Structural BMPs available for implementation is incredibly large. Non-Structural BMPs focus on operational practices like street sweeping, educational programs, etc. MS4s have the potential to create and implement countless non-structural BMPs based on facets including targeted pollutants, involved parties, funding potential, targeted audiences, and other considerations.

The MPCA has released a list of Structural BMPs that have quantifiable reductions to several pollutants. Structural BMPs include infrastructure such as constructed basins, filters, infiltrators, swales/strips, manufactured devices, chemical treatment systems, and others. As of 2022, within the City of Marshall MS4, there are 37 wet detention ponds, 13 dry ponds, 9 wetlands, and several other structural BMPs.

## SWPPP FUNDING

The City of Marshall uses a combination of funding mechanisms to finance various stormwater projects within the MS4 system. The Surface Water Management Utility fund was implemented to finance the administration, planning, implementation and maintenance of surface water programs. The utility can finance water quality monitoring, sediment and erosion control projects, stream and pond management activities, drainage system maintenance and improvement, and wetland protection. The utility fee is typically charged against all parcels within a city. The fee is based on how much water runoff is contributed by a particular parcel.

Stormwater projects that provide benefit to only a few properties may be partially funded through Special Assessments. Those assessments will be calculated based upon several factors including, but not limited to, construction cost, contributing property area, and implied

benefit. When City staff prioritizes stormwater improvement projects and selects those projects for construction, a thorough review of the estimated cost will be completed including identification of appropriate funding sources and availability of funds.

## SUMMARY

The city values public involvement both in the implementation of the SWPPP but also in the planning and review of the plan. Each year, staff will hold an annual meeting to collect public input on the plan to identify potential improvements from its citizens. Outside of the public meeting, public input will be collected whenever residents, property owners and other interested parties provide comments regarding the SWPPP. Any comments collected will be evaluated and potentially included in future revisions of the city's SWPPP to ensure that the plan continues to be up-to-date and relevant to the needs of the community and environment.

The City of Marshall has prepared this SWPPP plan to provide an approach to restrict, reduce and potentially eliminate sources of pollutant and illicit discharges into area wetlands, streams, ditches and rivers. The approach laid out throughout this SWPPP includes the combination of public education, operational practices, enforcement of regularly mechanisms, infrastructural components, and other Best Management Practices.





# APPENDIX



## GLOSSARY AND ACRONYMS

The following glossary has been prepared as part of the League of Minnesota Cities (LMC) NPDES Guide Plan and contains terms used within the NPDES permit document, the LMC Guide Plan Material, and this Storm Water Pollution Prevention Plan. Although some specific terms have been added from the Minnesota Pollution Control Agency (MPCA) pertaining to the general permit requirements, most came directly from the Environmental Pollution Control Agency (EPA) Compliance Assistance Guide.

**Best Available Treatment (BAT)/Best Control Technology (BCT):** A level of technology based on the very best (state of the art) control and treatment measures that have been developed or are capable of being developed and that are economically achievable within the appropriate industrial category.

**Best Management Practices (BMPs):** Activities or structural improvements that help reduce the quantity and improve the quality of storm water runoff. BMPs include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

**Clean Water Act (Water Quality Act):** (formerly the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972). Public law 92-500; 33 U.S.C. 1251 et seq.; legislation which provides statutory authority for the NPDES program. Also known as the Federal Water Pollution Control Act.

**Common Plan of Development or Sale:** Means a contiguous area where multiple separate and distinct construction activities are planned to occur at different times on different schedules under one plan, e.g., a housing development of five ¼ acre lots (40 CFR Sec. 122.26 (b)(15)(i)).

**Conveyance:** The process of water moving from one place to another.

**Discharge:** The volume of water (and suspended sediment if surface water) that passes a given location within a given period of time.

**Discharge Monitoring Report:** The required annual report to be submitted by an MS4.

**Discretionary MS4:** A small MS4 who is required to comply with the NPDES General Permit due to the permitting agency's (MPCA's) designated criteria.

**Dry Weather Flow:** Continued flow through the storm sewer system drains during dry weather conditions that usually indicate illicit connections into the storm sewer system.

**Erosion:** When land is diminished or worn away due to wind, water, or glacial ice. Often the eroded debris (silt or sediment) becomes a pollutant via storm water runoff. Erosion occurs

naturally but can be intensified by land clearing activities such as farming, development, road building, and timber harvesting.

**Excavation:** The process of removing earth, stone, or other materials from land.

**General Permit:** A permit issued under the NPDES program to cover a certain class or category of storm water discharges whose operations, emissions, discharges, or facilities are the same or substantially similar. These permits reduce the administrative burden of permitting storm water discharges.

**Grading:** The cutting and/or filling of the land surface to a desired slope or elevation.

**Illicit Discharge:** Any discharge to a municipal separate storm sewer that is not composed entirely of storm water, has measurable flow and are significant contributors of pollutants; and is not authorized by a separate NPDES permit or included in an approved SWPPP.

**Industrial Activity:** Any activity that is directly related to manufacturing, processing, or raw materials storage at an industrial plant.

**Large Municipal Separate Storm Sewer System (MS4):** An MS4 located in an incorporated place or county with a population of 250,000 or more, as determined by Appendix A Page A-3 Storm Water Phase II Compliance Assistance Guide the latest U.S. Census.

**Light Manufacturing Facilities:** Described under Category (xi) of the definition of "storm water discharges associated with industrial activity." [40 CFR 122.26(b)(14)(xi)] Under the Phase I NPDES Storm water Program, these facilities were eligible for exemption from storm water permitting requirements if certain areas and activities were not exposed to storm water. As a result of the Phase II Final Rule, these facilities must now certify to a condition of no exposure.

**Mandatory MS4:** A small MS4 who is required to comply with the NPDES General Permit due to the criteria set by the USEPA. Any publicly owned MS4 with a population greater than 10,000 located in an UA (Urbanized Area).

**Maximum Extent Practicable (MEP):** A standard for water quality protection that applies to all MS4 operators regulated under the NPDES Storm water Program. Since no precise definition of MEP exists, it allows for flexibility on the part of MS4 operators as they develop and implement their programs.

**Measurable Goals:** Goals required for the NPDES Phase II permit under each Minimum Control Measure and intended to gauge permit compliance and program effectiveness.

**Medium Municipal Separate Storm Sewer System (MS4):** MS4 located in an incorporated place or county with a population of 100,000 or more but less than 250,000, as determined by the latest U.S. Census.

**Minimum Control Measure:** If coverage is obtained under a general permit or an individual permit under the Phase II regulations, the operator of a regulated small MS4 is required to implement a storm water management program that includes, at a minimum, the six minimum control measures.

**Municipal Separate Storm Sewer System (MS4):** A publicly-owned conveyance or system of conveyances that discharges to waters of the U.S. or waters of the State, and is designed or used for collecting or conveying storm water, is not a combined sewer, and is not part of a publicly-owned treatment works (POTW).

**No exposure:** All industrial materials or activities that are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product.

**Non-authorized States:** Any State that does not have the authority to regulate the NPDES Stormwater Program.

**Non-point Source (NPS) Pollutants:** Pollutants from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even our underground sources of drinking water.

**Notice of Intent (NOI):** An application to notify the permitting authority of a facility's intention to be covered by a general permit; exempts a facility from having to submit an individual or group application.

**NPDES (National Pollutant Discharge Elimination System):** The name of the surface water quality program authorized by Congress as part of the 1987 Clean Water Act. This is EPA's program to control the discharge of pollutants to waters of the United States (see 40 CFR 122.2). In Minnesota, the MPCA is the permitting authority and also controls the discharge of pollutants to the waters of the State.

**O&M Expenditures:** The operating and maintenance costs associated with the continual workings of a project.

**Outfall:** The point where storm water discharges from a sewer pipe, ditch, or other conveyance to a receiving body of water.

**Permitting Authority (PA):** The NPDES-authorized state agency or EPA regional office that administers the NPDES Storm water Program. PAs issue permits, provide compliance assistance, and inspect and enforce the program.

**Physically interconnected MS4:** This refers to an MS4 that is connected to a second MS4 in such a way that it allows for direct discharges into the second system.

**Point Source Pollutant:** Pollutants from a single, identifiable source such as a factory or refinery.

**Pollutant Loading:** The total quantity of pollutants in storm water runoff discharged to receiving waters.

**Regulated MS4:** Any MS4 covered by the NPDES Storm water Program (regulated small, medium, or large MS4s).

**Retrofit:** The modification of storm water management systems through the construction and/or enhancement of wet ponds, wetland plantings, or other BMPs designed to improve water quality.

**Runoff:** Surface water drainage or flood discharge that leaves an area as surface flow or as pipeline flow and can reach a channel or pipeline by either surface or sub-surface routes.

**Sanitary Sewer:** A system of underground pipes that carries sanitary waste or process wastewater to a treatment plant.

**Sediment:** Soil, sand, and minerals washed from land into water, usually after rain and snowmelt. Sediment can destroy fish-nesting areas and clog animal habitats. It can also cloud waters so that sunlight does not reach aquatic plants, predators cannot find prey, and water temperatures increase.

**Sheet flow:** The portion of precipitation that moves initially as diffuse overland flow in very shallow depths before eventually reaching a stream channel.

**Site Plan:** A graphical representation of a layout of buildings and facilities on a parcel of land.

**Site Runoff:** Any surface drainage or flood discharge that is released from a specified area.

**Small Municipal Separate Storm Sewer System (MS4):** Any MS4 that is not regulated under Phase I of the NPDES Storm water Program and Federally-owned MS4s.

**Stakeholder:** An entity that holds a special interest in an issue or program -- such as the storm water program -- since it is or may be affected by it.

**Standard Industrial Classification (SIC) Code:** A four-digit number, which is used to identify various types of industries.

**Storm Drain:** A slotted opening leading to an underground pipe or an open ditch intended to carry surface water runoff, such as a catch basin.

**Storm water Management:** Functions associated with planning, designing, constructing, maintaining, financing, and regulating the facilities (both constructed and natural) that collect, store, control, and/or convey storm water.

**Storm water Pollution Prevention Program (SWPPP):** A program to describe a process whereby an MS4 thoroughly evaluates potential pollutant sources and selects and implements appropriate measures designed to prevent or control the discharge of pollutants in storm water runoff.

**Surface Water:** Water that remains on the surface of the ground, including rivers, lakes, reservoirs, streams, wetlands, impoundments, seas, estuaries, etc.

**Total Maximum Daily Load (TMDL):** The maximum amount of pollutants that can be released into a water body without adversely affecting the water quality.

**Tool Box:** A term to describe the activities and materials that EPA plans to perform/produce to facilitate implementation of the storm water program in an effective and cost-efficient manner. The eight components include: 1) fact sheets; 2) guidance documents; 3) menu of BMPs; 4) compliance assistance; 5) information clearing house; 6) training and outreach efforts; 7) technical research; and 8) support for demonstration projects.

**Urbanized Area (UA):** A Census Bureau determination of a central place (or places) and the adjacent densely settled surrounding territory that together have a minimum residential population of 50,000 people and a minimum average density of 1,000 people/square mile. This is a simplified definition of a UA, the full definition is very complex.

**Urban Runoff:** Storm water from urban areas, which tends to contain heavy concentrations of pollutants from urban activities.

**Watershed:** That geographical area which drains to a specified point on a watercourse, usually a confluence of streams or rivers (also known as drainage area, catchment, or river basin).

**Waters of the State:** All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or

accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof.

**Waters of the US:** All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide and all interstate waters including interstate wetlands. For a full description, visit the US Army Corps of Engineering website (40 CFR 122.2) at [www.usace.army.mil](http://www.usace.army.mil)

**Wet Weather Flows:** Flow that enters storm drains during rainstorms or wet weather events.

## ACRONYMS

As the regulatory world develops, it becomes increasingly difficult to remember acronyms. The following list has been prepared as part of the League of Minnesota Cities (LMC) NPDES Guide Plan and contains acronyms used within the NPDES permit document, the LMC Guide Plan Material and this Storm Water Pollution Prevention Plan.

**BAT** ..... Best Available Technology Economically Achievable (applies to non-conventional and toxic pollutants)

**BCT** ..... Best Conventional Pollutant Control Technology (applies to conventional pollutants)

**BMP** ..... Best Management Practice

**BPJ** ..... Best Professional Judgment

**BPT** ..... Best Practicable Control Technology Currently Available (generally applies to conventional pollutants and some metals)

**CFR** ..... Code of Federal Regulations

**COD** ..... Chemical Oxygen Demand

**CSO** ..... Combined Sewer Overflow

**CWA** ..... Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972)

**CZARA** ... Coastal Zone Act Reauthorization Amendments

**D.O.** ..... Dissolved Oxygen

**DMR** ..... Discharge Monitoring Report

**ELG** ..... Effluent Limitations Guidelines

**EPA** ..... Environmental Protection Agency

**FR** ..... Federal Register

**GIS** ..... Geographic Information Systems

**HAZMAT** Hazardous Material

**LMC** ..... The League of Minnesota Cities

**MCD** ..... Minor Civil Division

**MCM** ..... Minimum Control Measure  
**MEP** ..... Maximum Extent Practicable  
**MEPA** ..... Minnesota Environmental Policy Act  
**MPCA** ..... Minnesota Pollution Control Agency  
**MS4** ..... Municipal Separate Storm Sewer System  
**MSGP** ..... Multi Sector General Permit

**NEPA** ..... National Environmental Policy Act  
**NOI** ..... Notice of Intent  
**NOT** ..... Notice of Termination  
**NPDES** .... National Pollutant Discharge Elimination System  
**NPS** ..... Non-point Source

**O&M** ..... Operation and Maintenance  
**OW** ..... Office of Water  
**OWM** ..... Office of Wastewater Management  
**ORVW** .... Outstanding Resource Value Waters

**PA** ..... Permitting Authority  
**POTW** .... Publicly Owned Treatment Works

**SIC** ..... Standard Industrial Classification  
**SWPPP** .... Storm Water Pollution Prevention Program

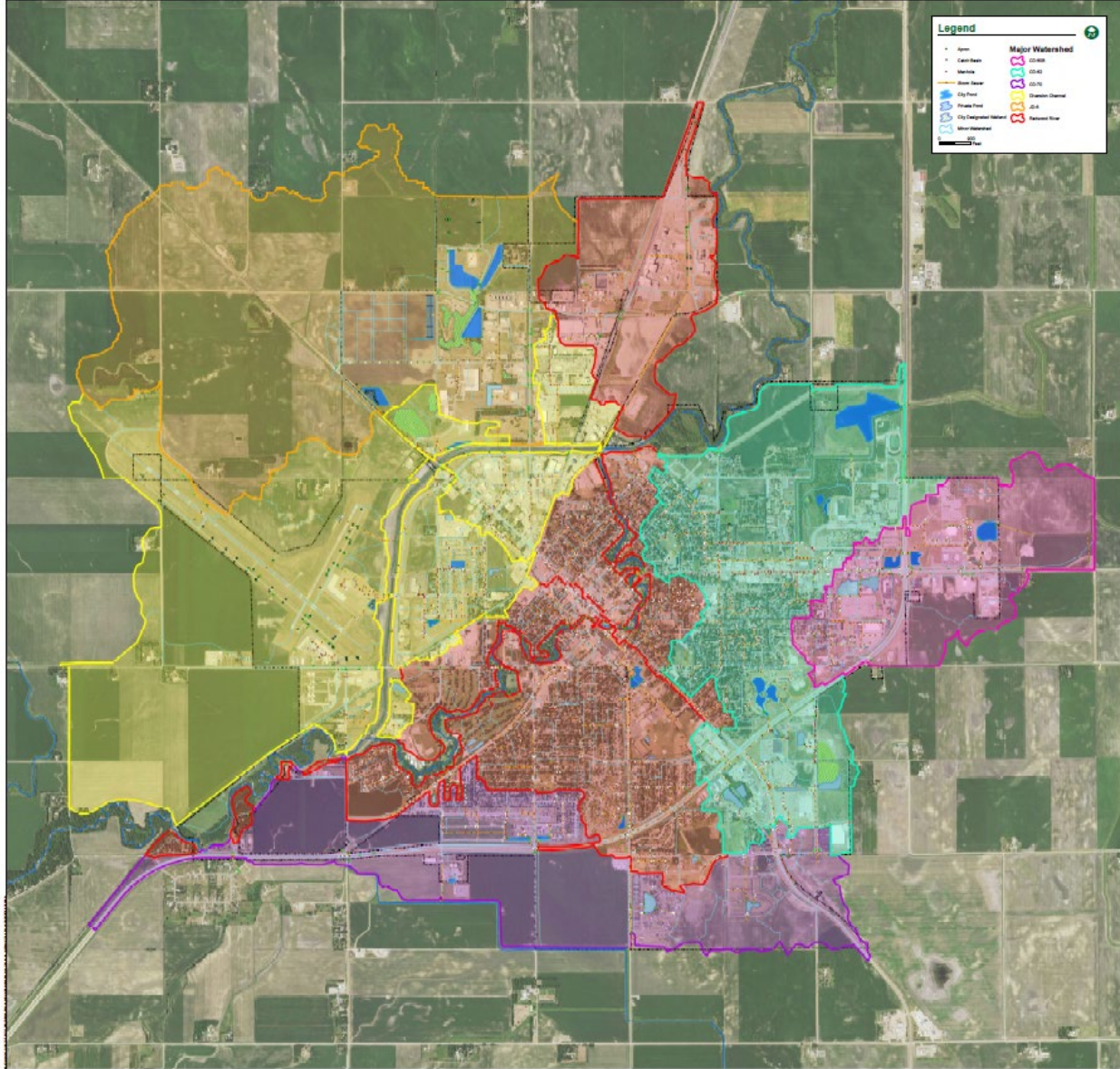
**TMDL** ..... Total Maximum Daily Load  
**TSS** ..... Total Suspended Solids

**UA** ..... Urbanized Area  
**USEPA** .... United States Environmental Protection Agency  
**USGS** ..... United States Geological Survey



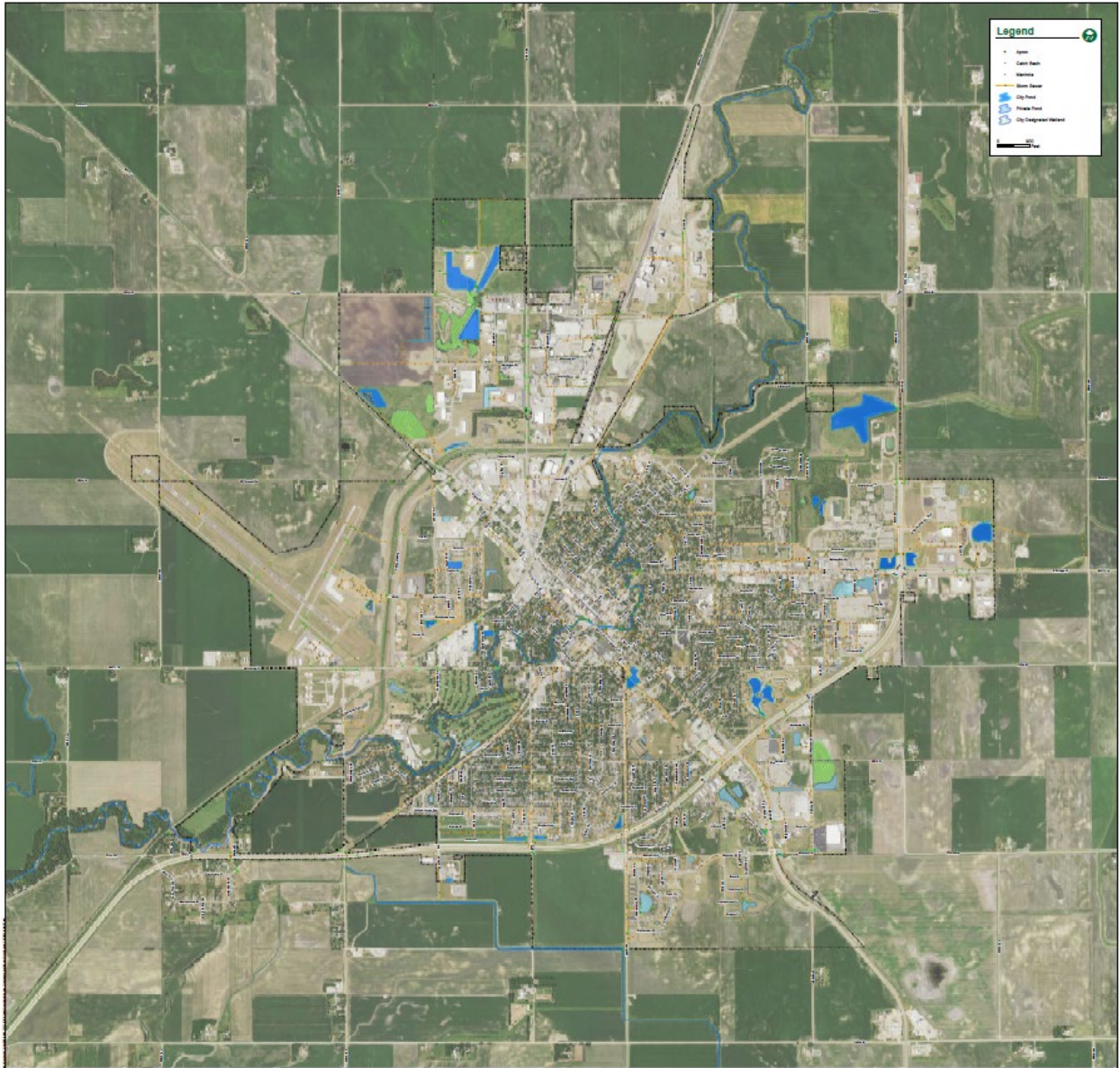
# STORMWATER MODELING

## WATERSHED MAP

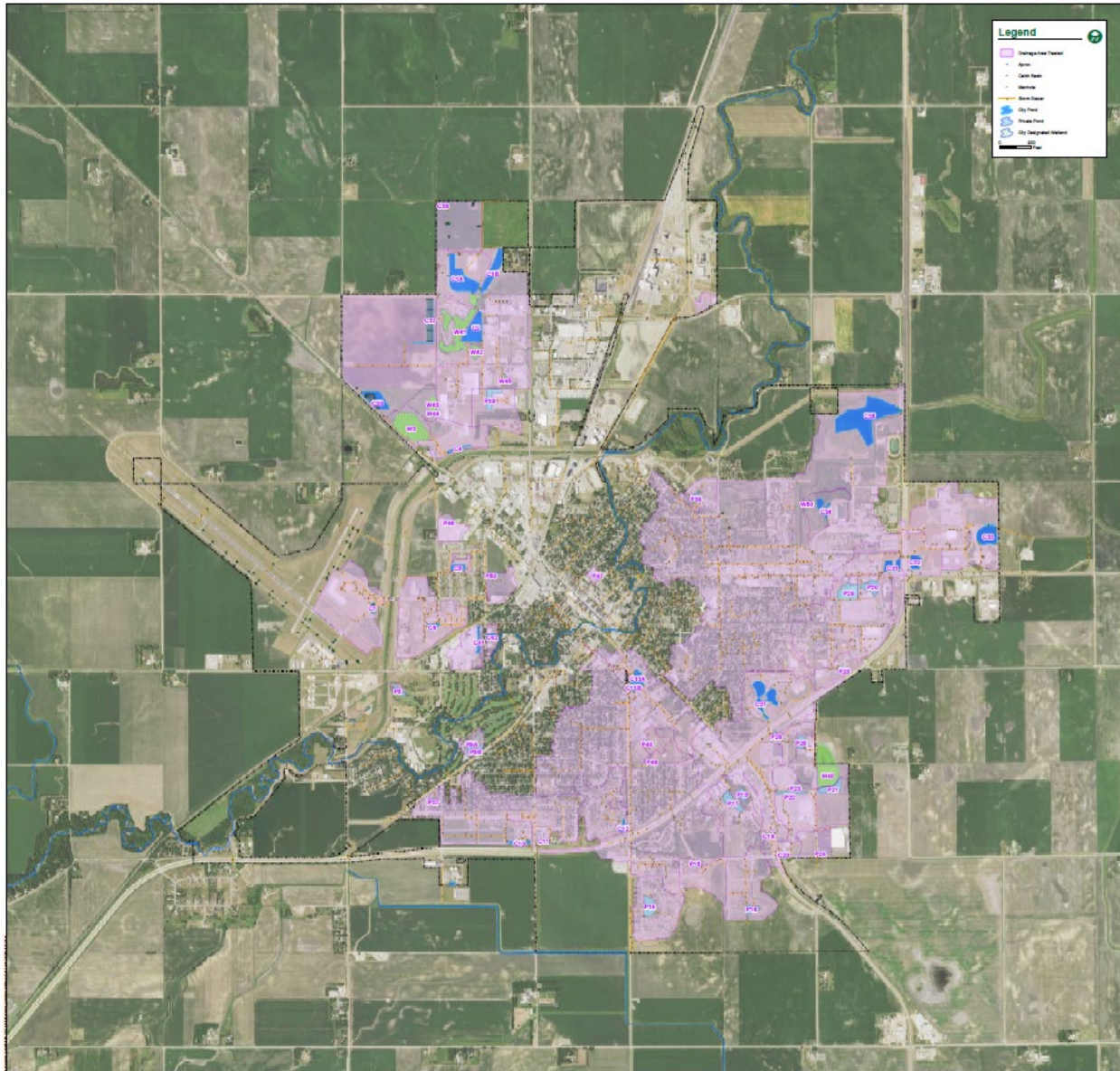




# STORMWATER SYSTEM MAP



# STORMWATER TREATMENT MAP



# STRUCTURAL BMP INVENTORY

## Stormwater BMP Inventory City of Marshall, Minnesota 4/16/2021



BMP ID Number	BMP Type	BMP Common Name	Drainage Area (Acres)	Impervious Area (Acres)	Pervious Area (Acres)	TSS Loading (Lbs)	TP Loading (Lbs)	TH Loading (Lbs)	TSS Removed (Lbs)	TP Removed (Lbs)	TH Removed (Lbs)
C-1A	Pond (Dry)	Merit Track Pond #1 West of Driving Track	47.96	1.29	46.67	1,105	5.3	41	939	3.2	21
C-1B	Pond (Dry)	Merit Track Pond #1 East of Driving Track	26.09	0.32	25.78	502	2.4	18	427	1.4	9
C-2	Pond (Wet)	Merit Center Pond South of CORO 33 adjacent to Merit Office Bldg	132.47	62.58	69.89	19,538	93.2	717	16,807	46.6	215
W-3	Wetland	North of TH 68 and West of Lake Road Wetland Bank	21.86	2.29	19.57	979	4.7	36	715	1.8	11
C-4	Pond (Dry)	Senatogon Pond # 2 East of Lake Road (hot dog pond)	31.30	3.29	28.01	1,405	6.7	52	1,194	4.0	26
C-5	Pond (Dry)	Abrakona Park Pond north of Dublin Street	5.40	0.44	4.96	207	1.0	8	176	0.6	4
C-6	Pond (Wet)	South and adjacent to Stockholm Ave	65.47	16.55	48.92	5,639	26.9	207	4,793	13.5	62
C-7	Pond (Dry)	Alport Ind. Park Pond	70.86	7.30	63.56	3,139	15.0	115	2,868	9.0	58
P-8	Pond (Wet)	Marshall Golf Course West of Fairgrounds Road	2.17	0.04	2.13	45	0.2	2	38	0.1	1
P-9A	Pond (Wet)	Marshall Golf Course East of Club House North of Country Club Drive North Pond	5.27	0.51	4.76	224	1.1	8	190	0.6	2
P-9B	Pond (Wet)	Marshall Golf Course East of Club House North of Country Club Drive South Pond	3.00	0.21	2.79	105	0.5	4	89	0.3	1
C-10	Pond (Wet)	Cam Club One Addition Pond North of TH 23 and West of South 4th Street	86.57	31.50	55.07	30,143	48.4	372	8,622	24.2	112
C-11	Pond (Wet)	Stephen Ave Pond east of south 4th street near TH 23	51.48	18.75	32.73	6,037	28.8	222	5,131	14.4	67
C-12	Pond (Wet)	Saratoga Street Pond west of Saratoga Street and North of TH 23	46.76	16.69	30.07	5,388	25.7	198	4,580	12.9	59
C-13A	Pond (Dry)	Tiger Lake Pond East side of rock weir	18.51	8.92	9.59	2,779	13.3	102	2,362	8.0	51
C-13B	Pond (Wet)	Tiger Lake Pond West side of rock weir also Outfall for both ponds located north side of this pond	402.44	147.32	255.12	47,399	226.1	1,739	40,289	113.1	522
P-14	Pond (Wet)	Majestic Pond East side of Thunderbird Road near intersection of Denall Street	45.54	14.10	31.44	4,646	22.2	170	3,949	11.1	51
P-15	Pond (Wet)	Windstar Pond North of Windstar Street and West of Iowa State Drive	27.90	4.05	23.85	1,564	7.5	57	1,329	3.8	17
P-16	Pond (Wet)	Stonebridge Pond North of Granite Trail and East of Gnyx Drive	53.09	12.79	40.30	4,397	21.0	161	3,737	10.5	48
P-17	Pond (Wet)	Canoga Park Pond East of Canoga Park Drive and North of Canoga Park Circle	45.03	12.37	32.66	4,154	19.8	152	3,531	9.9	46
P-18	Pond (Wet)	Lyon Coop Addition Pond West side of Parcel South of TH 23	16.22	8.44	7.78	2,609	12.4	96	2,218	6.2	29
C-19	Pond (Wet)	Floyd Wild Drive Pond South of Boyer Drive West of TH 59	12.61	6.86	5.75	2,112	10.1	78	1,795	5.1	23
C-20	Pond (Wet)	East Main Pond, East of TH 59 and South of Windstar Street	12.61	6.16	6.45	1,916	9.1	70	1,629	4.6	21
P-21	Pond (Wet)	Minerals Pond North of Boyer Drive and East of Clarice Ave	25.96	0.27	25.68	478	2.3	18	406	1.2	5
P-22	Pond (Wet)	Walnut Pond North of Stone Parking Lot	36.17	30.68	5.49	9,076	43.3	333	7,715	21.7	100
P-23	Pond (Wet)	Shoiko Pond located behind store in the South East Corner of Parcel	7.62	4.27	3.35	1,311	6.3	48	1,114	3.2	14
P-24	Pond (Wet)	Clarice Ave Pond East of Clarice Ave and North of Windstar Street	15.75	8.83	6.92	2,711	12.9	99	2,304	6.5	30
P-25	Pond (Wet)	Baseline Road Pond West of Clarice Ave North of Susan Drive Newkama Addition	29.53	8.12	21.41	2,727	13.0	100	2,318	6.5	30
P-26	Pond (Wet)	Running Pond South of TH 23 and West of Baseline Road	14.75	5.55	9.20	3,779	8.5	65	3,512	4.3	20
C-27	Pond (Wet)	Independence Park Pond North of TH 23 and South of East Lynn Street	175.83	88.12	87.71	27,345	130.5	1,009	23,243	65.3	301
P-28	Pond (Wet)	American Inn Pond South of East Lynn Street and North of TH 23	16.42	6.79	9.63	2,152	10.3	79	1,829	5.2	24
P-29	Pond (Wet)	KMH Radio Pond South of East College Drive and West of Market Street	10.54	3.29	7.25	1,083	5.2	40	921	2.6	12
P-30	Pond (Wet)	McFarland Pond South of East College Drive and West of Oconnell Street	111.25	59.44	51.81	18,331	87.5	673	15,581	43.8	202
C-31	Pond (Wet)	SMSU Pond North of East College Drive and West of TH 23	34.54	22.48	12.06	6,816	32.5	250	5,794	16.3	75
C-32	Pond (Wet)	Minnesota Pond East of TH 23 and North of TH 19	38.14	19.84	18.30	6,134	29.3	225	5,214	14.7	68
C-33	Pond (Wet)	Arenasue Softball Complex North of TH 19 and East Tiger Drive	110.84	37.36	73.48	12,296	58.7	451	10,452	29.4	125
C-34	Pond (Wet)	SMSU Metrix Stadium Complex West of Stadium North of Birch Street	26.56	1.01	25.55	894	3.3	25	590	1.7	8
C-35	Pond (Wet)	University Pond West of TH 23 and North of SMSU Complex	717.36	246.93	470.43	80,113	382.2	2,940	68,096	191.1	882
C-36	Pond (Wet)	Merit Center Pond Northwest corner of Parcel	42.64	0.00	42.64	662	3.2	24	563	1.6	7
P-36	Pond (Wet)	North Street Pond West of Dano Circle South of North 4th Street	15.46	4.70	10.76	1,553	7.4	57	1,320	3.7	17
P-37	Pond (Wet)	On the Golden Pond South of Country Club Drive and West Travis Road	2.98	0.88	2.10	237	1.1	9	201	0.6	3
C-37	Pond (Dry)	Commerce Industrial Park South of CORO 33 and West of Merit Center Office Complex	120.51	3.58	116.93	3,610	14.4	110	2,558	8.6	45
C-38	Pond (Dry)	Commerce Industrial Park North TH 68 and West of Lake Road	72.06	4.72	67.33	2,437	11.6	89	2,071	7.0	45
P-39	Pond (Dry)	Titan Machinery Pond West of TH 68 and South of Michigan Road	34.63	7.96	26.67	2,781	13.2	101	2,347	7.9	51
W-41	Wetland	Merit Center Wetland South and North of CORO 33	39.87	1.87	38.00	1,141	5.4	42	833	2.1	13
W-42	Wetland	MMIA Wetland North of Michigan Road and West of Harbor Road	6.08	0.45	5.63	220	1.0	8	161	0.4	2
W-43	Wetland	Beverage Wholesaler Wetland West of Lake Road west portion of their Parcel	9.86	0.00	9.86	153	0.7	6	112	0.3	2
W-44	Wetland	Action Track Chain Wetland West of Lake Road west portion of their Parcel	2.96	0.00	2.96	46	0.2	2	34	0.1	1
W-45	Wetland	Westman Freightliner Pond West of TH 59 and South of Michigan Road	3.47	1.55	1.92	487	2.3	18	356	0.9	5
P-46	Pond (Wet)	Marshall Truss East of London Road North of Paris Road	10.97	8.67	2.30	2,592	12.4	95	2,203	6.2	29
P-47	Pond (Wet)	Heritage Point Pond West of North 4th Street and located in front of their Main Building	2.58	2.58	0.00	761	3.6	28	647	1.8	8
P-48	Pond (Dry)	Southview School Site South Pond North of Southview Drive and Northwest of Building	8.53	6.43	2.10	1,529	9.2	71	1,640	5.5	26
P-49	Pond (Dry)	Southview School Site South Pond North of Southview Drive and Southwest of Building	13.00	13.00	0.00	3,833	18.3	141	3,258	11.0	71
P-50	Pond (Wet)	Legion Field Apartment Complex Pond east of Legion Field Road North of Madrid Road	14.25	1.06	13.19	517	2.5	19	439	1.3	6
W-48	Wetland	Wetland East Clarice Ave and South of Susan Drive Township Road which is heading East	11.11	0.64	10.47	351	1.7	13	256	0.6	4
W-49	Wetland	Verkhoren Wetland Area East of Clarice Ave North of Susan Drive Township Road Heading East	23.93	1.17	22.76	698	3.3	26	510	1.3	8
W-50	Wetland	SMSU Wetland West of Stadium Complex	1.70	0.00	1.70	26	0.1	1	19	0.0	0
C-41	Pond (Dry)	Legion Field	20.91	17.30	3.61	5,157	24.6	189	4,363	14.6	95
C-42	Pond (Dry)	Legion Field	5.28	0.15	5.13	124	0.6	5	105	0.4	3
<b>BMP Totals</b>			<b>3,074.23</b>	<b>1,403.54</b>	<b>2,070.69</b>	<b>127,773</b>	<b>1,554.8</b>	<b>12,828</b>	<b>116,114</b>	<b>794.5</b>	<b>3,823</b>

City of Marshall Totals  
 Estimated Total Suspended Solids Removal = 40.5%  
 Estimated Total Phosphorus Removal = 24.2%  
 Estimated Total Suspended Solids Removal = 15.2%

# STORMWATER OUTFALL INVENTORY

## Stormwater Outfall Inventory

City of Marshall, Minnesota

4/16/2021



Outfall ID	DESC.	Total Drainage Area (Acres)	Impervious Area (Acres)	Perforated Area (Acres)	BMFs	Treated Area (Acres)	TSS Loading (lb/a)	TP Loading (lb/a)	TN Loading (lb/a)	TSS Removal (lb/a)	TP Removal (lb/a)	TN Removal (lb/a)
1	Unknown	4.49	0.10	4.39	-		162	0.8	6			
2	Unknown	3.99	0.71	3.28	-		109	1.6	12			
3	2-22" RCP	4.30	0.01	4.29	-		58	0.8	3			
4	Unknown	2.84	0.09	2.75	-		71	0.3	3			
5	Unknown	2.91	0.16	2.75	-		90	0.4	3			
6	Unknown	1.45	0.06	1.39	-		38	0.2	1			
7	12" RCP	26.45	4.19	22.26	-		1,038	6.4	49			
8	8" RCP	11.00	4.80	6.20	-		1,452	6.9	53			
9	5" Ina	715.79	54.88	660.91	-		27,025	129.9	992			
10	18" RCP	1.86	1.49	0.37	-		445	2.1	16			
11	36" RCP	2.49	1.45	1.04	-		581	2.8	21			
12	36" RCP	70.85	7.40	63.45	C-7	70.85	4,159	15.0	115	2,600	6.0	18
13	2-Unknown	65.31	51.53	13.78	-		15,404	78.5	565			
14	12" RCP	2.81	0.35	2.46	-		76	0.8	6			
15	54" RCP	187.04	63.53	123.51	C-5, C-6, P-60	85.12	18,818	94.5	727	5,408	15.4	72
16	24" RCP	1.82	0.22	1.60	-		460	2.3	16			
17	48" RCP	551.39	21.43	529.96	-		14,544	68.4	534			
18	36" RCP	14.01	4.01	10.00	-		1,384	6.4	49			
19	36" RCP	20.49	5.12	15.37	-		1,859	8.8	68			
20	Unknown	187.75	5.31	182.44	-		4,029	19.4	143			
21	36" RCP	1.44	1.41	0.03	-		362	2.7	21			
22	36" RCP	75.41	6.14	69.27	C-80	75.05	2,284	13.8	106	2,071	7.0	45
23	36" RCP	21.88	3.29	18.59	W-9	21.88	679	4.7	36	715	1.8	11
24	Unknown	11.30	6.29	5.01	C-4	15.80	1,405	6.7	52	1,194	4.0	26
25	24" RCP	15.52	6.81	8.71	-		2,082	14.2	109			
26	18" RCP	2.78	2.44	0.34	-		697	3.4	26			
27	24" RCP	4.93	0.41	4.52	-		163	0.8	6			
28	18" RCP	0.18	0.08	0.10	-		31	0.4	3			
29	54" RCP	85.41	55.77	29.64	P-65	93.97	16,613	80.7	631	2,309	6.2	29
30	18" RCP	2.18	1.40	0.78	-		545	2.7	21			
31	42" RCP	97.20	64.53	32.67	-		20,452	94.5	728			
32	36" RCP	26.50	4.47	22.03	-		1,680	7.9	61			
33	36" RCP	14.70	6.99	7.71	-		2,185	10.8	79			
34	36" RCP	29.60	6.11	23.49	-		2,195	10.2	79			
35	48" RCP	261.69	194.45	67.24	-		14,624	70.4	549			
36	24" RCP	0.90	0.02	0.88	-		1,109	5.6	42			
37	48" S-S4" RCP	1,822.86	444.76	1,378.10	C-17, C-38, C-39, P-17, P-18, P-21, P-22, P-23, P-25, P-26, P-28, W-48, W-49, W-50	1,167.02	144,404	659.8	5,902	112,848	216.7	1,464
38	18" RCP	49.21	24.99	24.22	-		7,289	36.0	279			
39	18" RCP	17.48	8.10	9.38	-		2,544	12.1	91			
40	36" RCP	146.77	103.93	42.84	C-61, C-62, C-63, P-29, P-30	421.73	50,741	252.1	2,002	26,791	112.0	516
41	18" RCP	36.44	18.27	18.17	-		6,170	27.0	208			
42	36" RCP	18.69	17.28	1.41	P-34	45.54	3,748	27.4	211	3,949	11.1	51
43	24" RCP	4.49	1.79	2.70	-		554	2.6	20			
44	12" RCP	6.21	2.41	3.80	-		176	0.8	17			
45	24" RCP	64.98	24.02	40.96	C-11	54.48	2,679	26.6	202	5,181	14.4	67
46	42" RCP	161.30	60.19	101.11	C-92	85.57	18,217	92.3	708	8,622	24.2	112
47	24" RCP	6.89	6.20	0.69	-		1,226	8.8	67			
48	12" RCP	11.88	6.84	5.04	-		1,045	5.4	41			
49	24" CMP	150.90	14.09	136.81	-		8,827	40.4	313			
50	24" RCP	12.99	4.44	8.55	-		1,634	6.7	52			
51	36" RCP	17.61	7.14	10.47	-		2,288	10.8	83			
52	24" RCP	0.86	2.07	1.21	-		720	3.5	27			
53	36" RCP	34.80	12.54	22.27	P-64, P-68, P-67	11.25	4,025	19.2	148	480	1.5	6
54	Unknown	1.43	0.95	0.48	-		369	1.4	11			
55	Unknown	14.29	1.45	12.84	-		751	8.6	28			
56	18" RCP	124.45	79.62	44.83	C-5A, C-5B, C-4, C-47, P-39, W-41, W-45	430.68	28,429	147.5	1,029	24,229	71.1	371
57	36" RCP	18.79	16.81	1.98	-		11,599	53.8	426			
58	12" RCP	1.57	1.05	0.52	-		329	2.0	19			
59	8" PVC	0.38	0.22	0.16	-		67	0.9	2			
60	12" CMP	1.13	0.71	0.42	-		270	1.0	8			
61	12" HDPE	1.15	1.77	1.88	-		543	2.6	20			
62	36" RCP	26.16	24.61	1.55	C-41, C-42	26.16	6,490	24.6	202	4,480	15.2	68
63	Unknown	1.48	0.54	0.94	-		179	0.4	6			
64	Unknown	0.06	0.06	0.00	-		19	0.1	1			
65	Unknown	0.40	0.29	0.11	-		87	0.4	3			
66	8" PVC	7.42	2.27	5.15	-		1,017	4.9	38			
67	12" RCP	2.70	1.81	0.89	-		549	2.0	19			
68	24" RCP	19.84	24.01	24.45	-		10,256	48.9	376			
69	Unknown	4.48	1.25	3.23	-		418	2.0	15			
70	36" RCP	40.62	24.99	15.79	-		2,290	16.8	130			
71	36" RCP	16.41	9.91	6.50	-		2,672	14.6	104			
72	18" RCP	4.17	5.00	1.83	-		1,030	5.4	42			
73	18" RCP	4.12	3.12	1.00	-		937	4.5	34			
74	15" RCP	2.51	2.11	0.40	-		762	3.5	27			
75	Unknown	0.25	0.21	0.04	-		64	0.3	2			
76	Unknown	0.85	0.29	0.56	-		91	0.4	3			
77	48" RCP	15.25	15.25	0.00	-		4,697	23.5	180			
78	12" HDPE	1.09	1.09	0.00	-		621	5.5	42			
79	Unknown	0.40	0.40	0.00	-		161	0.6	4			
80	36" RCP	128.76	104.75	24.01	C-13, C-14, C-15, P-31, P-32	517.14	42,401	201.0	1,344	13,410	104.2	759
81	Unknown	4.42	4.76	0.34	-		1,118	5.4	41			
82	12" RCP	2.90	2.90	0.00	-		855	4.1	31			
83	Unknown	5.69	4.25	1.44	-		1,276	6.1	47			
84	18" RCP	0.90	0.29	0.61	-		95	0.5	3			
85	36" RCP	45.69	24.96	20.73	-		2,445	16.5	125			
86	Unknown	2.53	1.72	0.81	-		521	2.5	19			
87	62" Arch RCP	17.07	7.54	9.54	-		2,671	13.8	87			
88	15" RCP	2.16	0.08	1.88	-		187	0.8	6			
89	48" RCP	44.49	24.65	19.84	-		2,282	16.7	127			
90	Unknown	1.29	0.66	0.63	-		259	1.0	7			
91	8" PVC	1.54	0.84	0.70	-		259	1.2	9			
92	18" RCP	2.87	1.41	1.46	-		441	2.1	16			
93	15" RCP	11.46	9.41	1.85	-		2,282	16.7	125			
94	15" RCP	0.48	0.27	0.21	-		62	0.4	3			
95	Unknown	6.44	2.34	4.10	-		1,039	4.9	38			
96	36" RCP	19.04	14.99	4.05	P-47	2.19	4,296	20.1	154	647	1.8	8
97	15" RCP	3.47	3.00	1.47	-		811	3.9	32			
98	54" RCP	46.26	42.07	4.19	-		12,790	62.0	489			
99	36" RCP	17.73	8.44	9.29	-		2,619	12.4	87			
100	15" RCP	2.77	0.81	1.96	-		269	1.3	10			
101	36" RCP	29.86	24.05	5.81	-		3,438	18.4	124			
102	Unknown	1.27	0.69	0.48	-		295	1.4	10			
103	Unknown	21.50	3.79	17.71	-		1,094	5.2	40			
104	36" RCP	42.67	0.90	41.77	C-80	42.66	662	2.2	14	564	1.4	7
105	12" Tile	18.11	11.79	6.32	P-36	53.00	4,897	23.0	181	8,737	10.8	48
106	24" RCP	25.22	14.02	11.20	C-19, C-20	25.22	4,029	19.2	148	3,424	9.7	44
107	12" Tile	15.73	8.44	7.29	P-36	15.73	2,724	12.9	100	2,404	6.5	30
108	Unknown	0.17	0.04	0.13	P-8	0.17	3.7	0.2	2	19	0.1	1
109	Unknown	12.82	0.00	12.82	W-41, W-44	12.82	199	0.9	7	166	0.4	3
<b>Outfall Totals</b>		<b>6,407.29</b>	<b>1,867.22</b>	<b>4,540.07</b>		<b>8,074.29</b>	<b>642,066</b>	<b>4,110.8</b>	<b>24,125</b>	<b>279,116</b>	<b>794.3</b>	<b>5,429</b>
Estimated Total Suspended Solids Removal =											43.1%	
Estimated Total Phosphorus Removal =											35.2%	
Estimated Total Suspended Solids Removal =											15.8%	

**BMP SUMMARY SHEETS**

**MCM 1 – PUBLIC EDUCATION AND OUTREACH**

MS4 Name:	City of Marshall
MCM:	1 – Public Education and Outreach
Permit Section(s):	16.3, 16.8
BMP ID Number:	1-1
BMP Title:	Distribute Educational Materials
BMP Description:	<p>The City will distribute educational materials to the community or equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps the public can take to reduce pollutants in the storm water runoff.</p> <p>The City will work collaboratively with Community Services and local organizations like the Lyon County Public Works Department, Lyon County Soils Conservation, and the Redwood Cottonwood River Control Area in distributing educational materials and outreach programs within the City of Marshall and the surrounding area. Programs will consist of website development, distribution of flyers with the utility billings, public presentations, storm water educational materials, etc.</p>
Measurable Goals:	<ol style="list-style-type: none"> <li>1. Generate support for storm water management programs.</li> <li>2. Increase public awareness and understanding of the impacts of storm water pollution on public waters.</li> <li>3. Achieve greater compliance with the storm water management programs by the public and the development community.</li> </ol>
Timeline/ Implementation Schedule:	Annual - Post SWPPP and related information on the City's website. Publish articles related to BMPs in the Public Works Division's Quarterly Newsletter. Develop educational materials for distribution to the public directly including flyers and brochures. Conduct the Annual Public Meeting to report the programs status and collect public comments. Revisions to the educational materials will be performed annually whenever relevant changes are needed.
Additional Comments:	The City will document the number of publications and households served by the outreach programs. The effectiveness of this BMP will be measured by the number of articles and brochures published in newsletters and distributed via City mailings/website. Success of this BMP will be derived by developing then implementing the educational materials and outreach methods throughout the year.
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	1 – Public Education and Outreach
Permit Section(s):	16.2, 16.4, 16.5, 16.6, 16.7, 16.9
BMP ID Number:	1-2
BMP Title:	Implement an Education Program
BMP Description:	<p>The City will develop and implement an educational program providing an overview of the MS4 program and the six minimum control measures contained within the City's SWPPP. Educational materials shall cover storm water issues, potentially consisting of (but not limited to) non-point source pollution, construction site erosion and sediment control, post-construction storm water management for new development and redevelopment, illicit discharge detection and elimination, deicing salt reduction, management of pet waste, and pollution prevention and good housekeeping operations. The educational program will also outline the storm water pollution goals of the City, provide local agency contact information and additional storm water information website links.</p> <p>The Public Works Staff will be responsible for the development of all storm water education and outreach activities within the City. Responsibilities will consist of the following:</p> <ol style="list-style-type: none"> <li>1. Develop educational activities schedule and materials (webpage, brochures, articles, workshops, etc.)</li> <li>2. Collaborate educational activities and outreach programs with other County and Watershed entities.</li> <li>3. Determine the annual funding budget for the educational program.</li> <li>4. Annually implement the education programs.</li> <li>5. Conduct an annual assessment of the program and make revisions to continue relevancy and compliance.</li> </ol>
Measurable Goals:	Provide public education and outreach programs which will generate public participation and increase public awareness and knowledge of storm water pollution issues and prevention methods. The City will document the number and types of outreach activities, and the number of attendees as a way of measuring their success. The City will then evaluate the effectiveness of the programs and revise them if necessary.
Timeline/ Implementation Schedule:	<p>Initial Year – City staff will develop the educational program including materials, staff, budget, and timeline for each activity. All activities will be posted to the City's website for accessibility.</p> <p>Subsequent Years – City staff will evaluate the program for effectiveness. Revisions will include activity details, budgeting, and other considerations.</p>
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	1 – Public Education and Outreach
Permit Section(s):	16.9, 17.3, 17.5, 17.7
BMP ID Number:	1-3 / 2-1
BMP Title:	Annual Public Meeting
BMP Description:	<p>The City will hold an Annual Public Meeting to present an overview of the MS4 program and the City's SWPPP. The date for the public hearing will be scheduled by City Council action. A notice will be published for the public with date, time, location and contact information regarding the meeting.</p> <p>The Public Works staff report will include a brief summary of the City's stormwater management strategies as well as report on the accomplishments of the preceding year. The City will accept written or oral statements from the public concerning the current stormwater policies and will consider their inclusion in the SWPPP by City staff. The City will also distribute any appropriate educational materials to the public at the meeting.</p>
Measurable Goals:	<p>The City will document the number of people attending the meeting, date, and location of the meeting, all written or oral comments received, notices provided to the public, and the discussion on each comment in the recorded minutes of the meeting. The success of the of the Annual Public Meeting will be found in the public's increased awareness about stormwater pollution and the City's stormwater management program.</p>
Timeline/ Implementation Schedule:	<p>The Annual Public Meeting and annual report will be presented each year (typically June).</p>
Responsible Party:	Assistant City Engineer

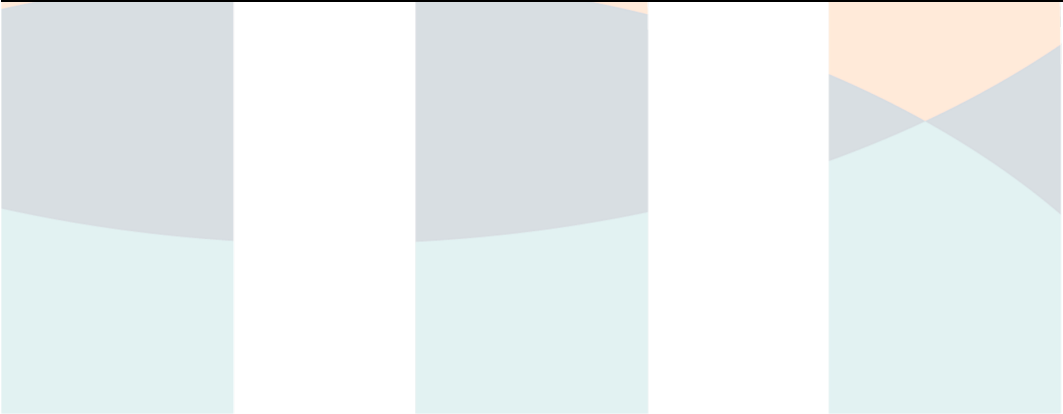
MS4 Name:	City of Marshall
MCM:	1 – Public Education and Outreach
Permit Section(s):	16.2, 16.3, 16.4, 16.5, 16.6
BMP ID Number:	1-4
BMP Title:	MS4 Website and Social Media
BMP Description:	<p>The City has developed a MS4 web page on the City's website that contains information regarding Marshall's MS4 program. General information regarding the program is available on this page. City staff will work to include additional items for public information including a copy of the updated SWPPP, Annual Report, comment web form, and other relevant information.</p> <p>The Public Works Staff is reviewing the concept and thus establishment of a social media page (FACEBOOK) that could include posts of various storm water topics, public educational stormwater related event announcements, stormwater related public outreach events, and additional outreach activities across the City.</p>
Measurable Goals:	<p>Provide public education and outreach via electronic mediums which will generate public participation and increase public awareness and knowledge of storm water pollution issues and prevention methods. The City will document the number and types of outreach mediums, and the number of views, followers, and other measurements of traffic as a way of measuring their success. The City will then evaluate the effectiveness of the programs and revise them if necessary.</p>
Timeline/ Implementation Schedule:	<p>Initial Year – City staff will develop the educational program including staff time, budget, and timeline for each activity.</p> <p>Subsequent Years – City staff will evaluate the program for effectiveness. Revisions will include activity details, frequency of updates and posts, budgeting, and other considerations.</p>
Responsible Party:	Assistant City Engineer



MS4 Name:	City of Marshall
MCM:	1 – Public Education and Outreach
Permit Section(s):	16.2, 16.3, 16.5, 16.6
BMP ID Number:	1-5
BMP Title:	Public Works Quarterly Newsletters
BMP Description:	<p>The City has developed a Quarterly Newsletter that includes information from various areas of Public Works (Streets, Wastewater, Water, MS4/Stormwater). The MS4/Stormwater section will highlight a stormwater topic relevant to the season. For example, reducing deicing salt in winter, grass clippings/pet waste in the spring/summer, leaf collection in fall, etc.</p> <p>The newsletter is currently posted on the City's Public Works web page on the City's website. City staff will evaluate if the newsletter will also be included in a mailer to all addresses within the municipality.</p>
Measurable Goals:	Distribute newsletters via the City's web page which will generate public participation and increase public awareness and knowledge of storm water pollution issues and prevention methods. The City will document the distribution mediums, number of views/mailings, and other measurements of distribution as a way of measuring their success. The City will then evaluate the effectiveness of the newsletter and revise the distribution medium if necessary.
Timeline/ Implementation Schedule:	<p>Initial Year – City staff will continue distribution of the newsletter electronically through the website. Additional mediums of distribution will be evaluated for potential inclusion, including materials, staff, and budget for each medium.</p> <p>Subsequent Years – City staff will evaluate the newsletter distribution for effectiveness. Revisions will include distribution mediums, budgeting, and other considerations.</p>
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	1 – Public Education and Outreach
Permit Section(s):	16.2
BMP ID Number:	1-6
BMP Title:	Utility Bill Brochures
BMP Description:	<p>The City has developed a brochure titled “Resident’s Guide to Stormwater Pollution”. This brochure is distributed bi-annually within Marshall Municipal Utilities (MMU) monthly utility billing (typically April and September). An electronic copy of the brochure is also made available on the City’s MS4 web page.</p> <p>The brochure describes stormwater, runoff, nearby watersheds, MS4 requirements, and other relevant information. The City explains the effects of polluted stormwater and the two watersheds that the City’s area discharges to. The brochure lists several best management practices that residents and property owners can implement to help prevent stormwater pollution.</p>
Measurable Goals:	Distribute brochures via MMU’s monthly utility billing at least once annually. The brochure will also be made available electronically via the City’s web page which will generate public participation and increase public awareness and knowledge of stormwater pollution issues and prevention methods. The City will document the number of mailings and other measurements of distribution as a way of measuring their success. The City will then evaluate the relevance of the information included, effectiveness of the distribution, and revise the brochure if necessary.
Timeline/ Implementation Schedule:	<p>Initial Year – City staff will post the flyers in the City Hall and refresh the distribution with seasonally appropriate informational sheets.</p> <p>Subsequent Years – City staff will evaluate the program for effectiveness. Flyers will be updated as updated information becomes available. Revisions will include flyer information, program updates, and other considerations.</p>
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	1 – Public Education and Outreach
Permit Section(s):	
BMP ID Number:	1-7
BMP Title:	Newspaper Notices
BMP Description:	The City publishes several regulatory mechanisms, specifically ordinances, related to seasonal issues within the municipality. The ordinances are published twice annually, once in spring and once in the fall. Many of these ordinances are related to stormwater issues. For example, construction stormwater controls, lawn fertilizer and clippings, illicit connections, and salt storage sites.
Measurable Goals:	Provide public education and outreach via newspaper printed and electronic mediums which will generate public participation and increase public awareness and knowledge of storm water ordinances. The City will document the dates of publishment and number of subscribers to the distribution. The City will then evaluate the effectiveness of the program and revise if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will continue publishing the selected ordinances through the local newspaper.  Subsequent Years – City staff will evaluate the newspaper publishment for effectiveness. Revisions will include selected ordinances, budgeting and other considerations.
Responsible Party:	Assistant City Engineer



MS4 Name:	City of Marshall
MCM:	1 – Public Education and Outreach
Permit Section(s):	
BMP ID Number:	1-8
BMP Title:	Fact Sheet Flyer Distribution
BMP Description:	The City will display and make available to the public several fact sheet flyers including, but not limited to, Marshall’s SWPPP, Public Works Quarterly Newsletters, Rain Barrel information, Adopt-a-Storm Drain information, Smart Salting information, and others. The City will display seasonal appropriate flyers and change them as seasons change. Flyers will likely include informational sheets from the MPCA and EPA.
Measurable Goals:	Distribute informational sheets via display in City Hall. The flyers will be changed out according to the appropriate season. The City will document the type and number of flyers and other measurements of distribution as a way of measuring their success. The City will then evaluate the relevance of the information included, effectiveness of the distribution, and revise the flyers if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will develop the educational program including materials, staff, budget, and timeline for each activity. All activities will be posted to the City’s website for accessibility.  Subsequent Years – City staff will evaluate the program for effectiveness. Revisions will include activity details, budgeting and other considerations.
Responsible Party:	Assistant City Engineer

**MCM 2 – PUBLIC PARTICIPATION/INVOLVEMENT**

MS4 Name:	City of Marshall
MCM:	2 – Public Participation/Involvement
Permit Section(s):	16.9, 17.3, 17.5, 17.7
BMP ID Number:	1-3 / 2-1
BMP Title:	Annual Public Meeting
BMP Description:	<p>The City will hold an Annual Public Meeting to present an overview of the MS4 program and the City's SWPPP. The date for the public hearing will be scheduled by City Council action. A notice will be published for the public with date, time, location and contact information regarding the meeting.</p> <p>The Public Works staff report will include a brief summary of the City's stormwater management strategies as well as report on the accomplishments of the preceding year. The City will accept written or oral statements from the public concerning the current stormwater policies and will consider their inclusion in the SWPPP by City staff. The City will also distribute any appropriate educational materials to the public at the meeting.</p>
Measurable Goals:	The City will document the number of people attending the meeting, date, and location of the meeting, all written or oral comments received, notices provided to the public, and the discussion on each comment in the recorded minutes of the meeting. The success of the of the Annual Public Meeting will be found in the public's increased awareness about stormwater pollution and the City's stormwater management program.
Timeline/ Implementation Schedule:	The Annual Public Meeting and annual report will be presented each year, typically June.
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	2 – Public Participation/Involvement
Permit Section(s):	17.2, 17.4, 17.7
BMP ID Number:	2-2
BMP Title:	Solicit & Consider Public Input and Opinion on the City's SWPPP
BMP Description:	<p>The City will host a public meeting annually to report and discuss the City's Stormwater Pollution Prevention Program. At the annual meeting, the City will make a presentation on the purpose, goals, and requirements of the SWPPP to educate, inform, and encourage citizens to provide input and comment on the SWPPP. The City will an opportunity for interested persons to make oral statements or provide written comments on the SWPPP at the meeting. A reasonable amount of time will be provided at the meeting for questions and comments relating to the SWPPP. Persons not able to attend the meeting may submit written comments on the SWPPP within the time identified in the public notice for the meeting.</p> <p>The City will also solicit public input and provide the opportunity for comments on the SWPPP via alternative methods. The City will post the most current SWPPP, Annual Report and other relevant documentation on an MS4 web page on the City's website. That webpage will also have the ability to provide input on the SWPPP using an online form. Interested parties will also be provided the Public Works phone number and e-mail address, if those methods are preferred.</p>
Measurable Goals:	The City will document the number of people attending the meeting, date and location of the meeting, all written or oral comments received, notices provided to the public, and the discussion on each comment in the recorded minutes of the meeting. The success of the of the Annual Public Meeting will be found in the public's increased awareness about stormwater pollution and the City's stormwater management program. All comments collected through the City's website or via phone/e-mail will also be documented and included in the Annual Report.
Timeline/ Implementation Schedule:	The Annual Public Meeting and annual report will be presented each year, typically June.
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	2 – Public Participation/Involvement
Permit Section(s):	17.6
BMP ID Number:	1-11 / 2-3
BMP Title:	Rain Barrel Program
BMP Description:	<p>The City will develop and implement a public educational and participation program providing informational materials on benefits, construction, operation, and maintenance of rain barrels. Staff will also post these informational materials on the Stormwater page on the Public Works website.</p> <p>In addition to the educational program, the City will develop a cost participation program for citizens to implement rain barrels on their properties. Staff would develop a form to be filled out and returned with proof of purchase and installation. Proof of installation would be accomplished by photo or City inspection. Once verification is complete, the City would issue a check to the property owner for an amount to be determined and reviewed annually.</p>
Measurable Goals:	The City will document the number of participants in the program including name and address. The City will then evaluate the effectiveness of the program and revise if necessary.
Timeline/ Implementation Schedule:	<p>Initial Year – City staff will develop the educational program including materials, website updates, budget, and timeline for each activity. City staff will provide an annual budget, create, and post the form for the cost participation program.</p> <p>Subsequent Years – City staff will evaluate the program for effectiveness. Revisions will include revising informational materials, budgeting, and other considerations.</p>
Responsible Party:	Assistant City Engineer

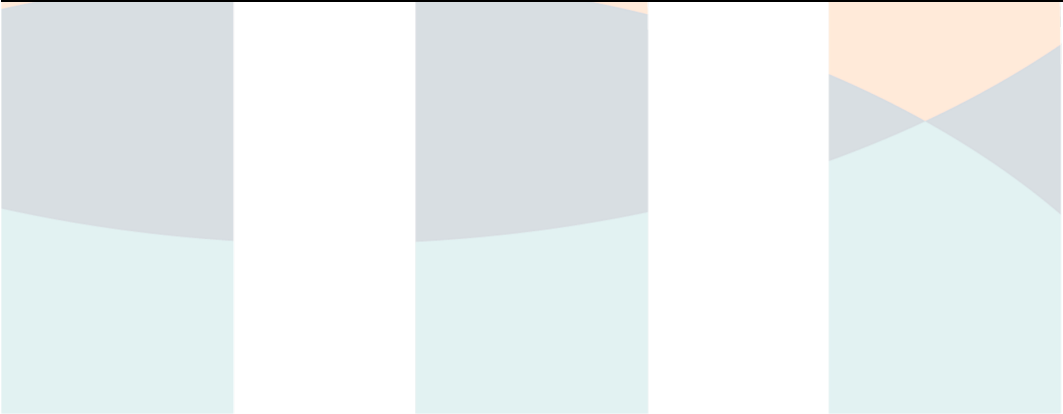
MS4 Name:	City of Marshall
MCM:	2 – Public Participation/Involvement
Permit Section(s):	17.6
BMP ID Number:	1-12 / 2-4
BMP Title:	Rain Garden Program
BMP Description:	<p>The City will develop and implement a public educational and participation program providing informational materials on benefits, construction, operation, and maintenance of rain gardens. Staff will also post these informational materials on the Stormwater page on the Public Works website.</p> <p>Annually, the City will host a Rain Garden workshop. The workshop will include a quick presentation on rain gardens. Information will be presented as well as a step-by-step example for sizing a rain garden for a home. After the presentation, staff will be made available for residents to come in and receive assistance with sizing, layout, and designing their rain garden. A recording of this presentation will be posted to the Stormwater page on the Public Works website.</p> <p>In addition to the educational program, the City will develop a cost participation program for citizens to implement rain gardens on their properties. Staff would develop a form to be filled out and returned with proof of purchase and installation/construction. Proof of installation would be accomplished by photo or City inspection. Once verification is complete, the City would issue a check to the property owner for an amount to be determined and reviewed annually.</p>
Measurable Goals:	<p>The City will document the number of participants in the program including name and address. The City will also document the number of people attending the workshop, date, and location of the workshop, all written or oral comments received, and notices provided to the public.</p> <p>The success of the of the rain garden program will be found in the public's increased awareness about stormwater pollution, the City's stormwater management program, and participation in the cost participation program. The City will then evaluate the effectiveness of the programs and revise them if necessary.</p>
Timeline/ Implementation Schedule:	<p>Initial Year – City staff will develop the educational program including materials, website updates, budget, and timeline for each activity. City staff will provide an annual budget, create, and post the form for the cost participation program. Staff will also schedule and post notifications for the annual rain garden workshop (typically in April).</p> <p>Subsequent Years – City staff will evaluate the program for effectiveness. Revisions will include revising informational materials, budgeting, and other considerations.</p>
Responsible Party:	Assistant City Engineer



MS4 Name:	City of Marshall
MCM:	2 – Public Participation/Involvement
Permit Section(s):	17.6
BMP ID Number:	2-5
BMP Title:	Adopt-a-Storm Drain Program
BMP Description:	<p>The City will develop and implement a public participation program providing opportunity to residents to “adopt” a storm drain inlet within the City’s stormwater system. Staff will advertise, provide information, and encourage participation on the Adopt-a-Drain.org website. Residents will be able to use mapping to identify a storm drain and provide their information to adopt storm drains in the Marshall.</p> <p>Residents who adopt storm drains would be committing to keep the drain and area around it clear of leaves, trash and other debris for a period of time (likely one year). Guidance would be given to residents on frequency of inspection and cleaning.</p>
Measurable Goals:	The City will document the number of participants in the program including name and address. Staff will document any reported quantities of debris removal from program participants. The City will then evaluate the effectiveness of the program and revise if necessary.
Timeline/ Implementation Schedule:	<p>Initial Year – City staff will develop the participation program including informational materials, budget, and timeline. City staff will provide the Adopt-a-Drain website and informational materials on the Public Works website.</p> <p>Subsequent Years – City staff will evaluate the program for effectiveness. Staff will add storm drains to the Adopt-a-Drain map when able. Revisions will include revising informational materials, budgeting, and other considerations.</p>
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	2 – Public Participation/Involvement
Permit Section(s):	17.6
BMP ID Number:	2-6
BMP Title:	Community Clean-Up Event
BMP Description:	Marshall Green-Step hosts an annual Community Cleanup event where community members, local businesses, and students volunteer to clean up areas of the city that accumulate unwanted debris throughout the year. Areas in need are highlighted by City Staff and volunteer groups are assigned to each location. All debris is collected and weighed at the end of the clean-up event. Multiple dates may be provided based on need and participation.
Measurable Goals:	The City will document the number of participants in the event. Staff will document any reported quantities of debris removal from the event. The City will then evaluate the effectiveness of the program and revise if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will continue to notify the public of the participation program including flyers annually (typically June). Staff will provide the areas of need for cleanup.  Subsequent Years – City staff will evaluate the program for effectiveness. Staff will revise areas of need for subsequent events. Revisions will include revising dates/times, budgeting, and other considerations.
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	2 – Public Participation/Involvement
Permit Section(s):	17.6
BMP ID Number:	2-7
BMP Title:	Community Leaf Raking Event
BMP Description:	City staff will host an annual Community Leaf Raking event where residents, businesses, and others volunteer to assist with raking leaves in areas where leaf buildup occurs in the city. Areas in need are highlighted by City Staff and volunteer groups are assigned to each location. All leaf debris is collected and weighed at the end of the event and disposed of at the city compost site.
Measurable Goals:	The City will document the number of participants in the event. Staff will document any reported quantities of leaf debris removal from the event. The City will then evaluate the effectiveness of the program and revise if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will publish notice to the public of the participation program including flyers annually (typically November). Staff will provide the areas of need for leaf raking.  Subsequent Years – City staff will evaluate the program for effectiveness. Staff will revise areas of need for subsequent events. Revisions will include revising dates/times, budgeting, and other considerations.
Responsible Party:	Assistant City Engineer

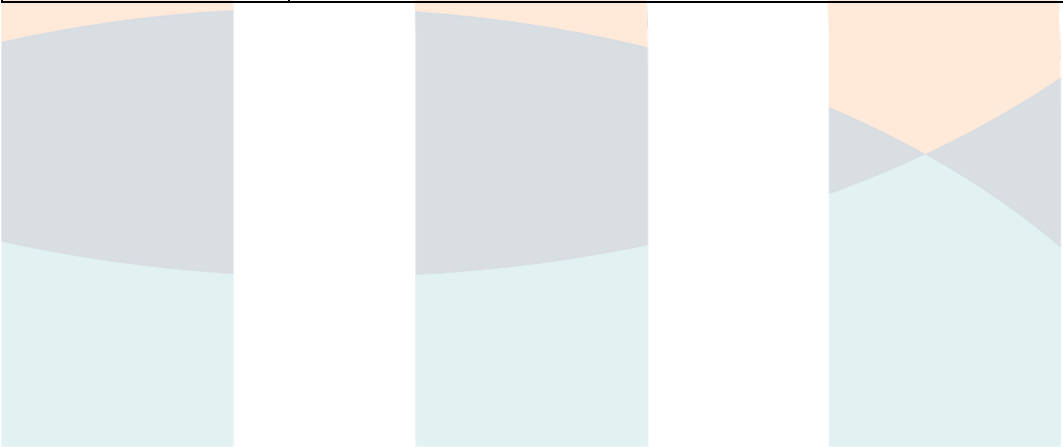


**MCM 3 – ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)**

MS4 Name:	City of Marshall
MCM:	3 – Illicit Discharge Detection and Elimination (IDDE)
Permit Section(s):	18.4, 18.6
BMP ID Number:	3-1
BMP Title:	Illicit Discharge Regulatory Mechanisms
BMP Description:	<p>The City will update and enforce ordinances and other regulatory mechanisms to prohibit illicit connections, illegal dumping and other non-stormwater discharges. The ordinances and codes shall provide authority to inspect systems and facilities, prevent illicit connections and discharges and allow for punitive measures.</p> <p>The City ordinance review shall include the enforcement procedures and actions associated with illicit discharges. The City will then develop enforcement procedures, policies, and remedial actions as necessary to address the illicit connections or discharge.</p>
Measurable Goals:	Review current ordinances. Adopt new ordinances or amend existing ones to address illicit discharges as needed. In conjunction with the development of new or amended ordinances the City shall distribute educational materials on illicit discharges to property owners, businesses, and the general public.
Timeline/ Implementation Schedule:	<p>Initial Year – Review existing regulatory ordinances and mechanisms and review external examples for comparison. Draft new ordinances or amendments to existing ones. Conduct Public Hearings on new or amended ordinances. Adopt new ordinances or amendments to existing ordinances as needed. Enact necessary enforcement procedures, policies, and remedial actions.</p> <p>Subsequent Years – Review existing regulatory ordinances and mechanisms for relevance and compliance with the City’s MS4 and SWPPP program.</p>
Responsible Party:	Assistant City Engineer

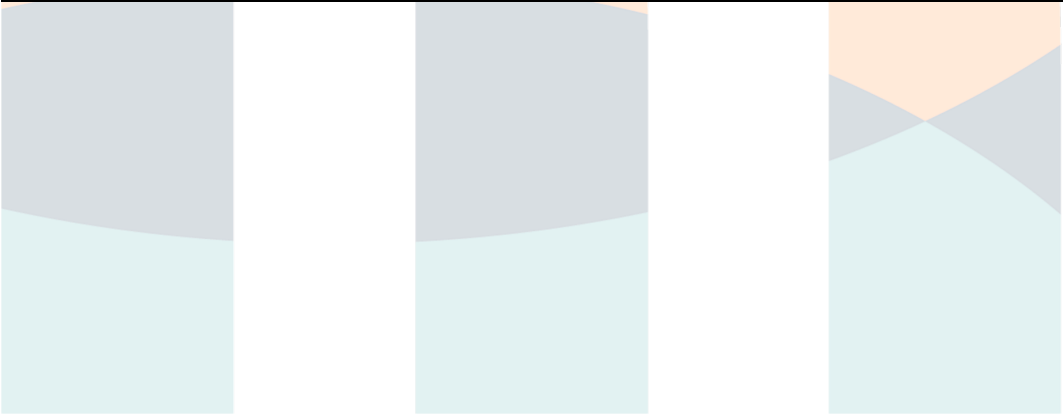
MS4 Name:	City of Marshall
MCM:	3 – Illicit Discharge Detection and Elimination (IDDE)
Permit Section(s):	18.5
BMP ID Number:	3-2
BMP Title:	Pet Waste Regulatory Mechanisms
BMP Description:	<p>The City will update and enforce ordinances and other regulatory mechanisms to require owners or custodians of pets to remove and properly dispose of feces on permittee owned land areas.</p> <p>The City will review the pet waste regulatory mechanisms to ensure that they shall include the enforcement procedures and actions associated with pet waste on city-owned lands. The City will then develop enforcement procedures, policies, and remedial actions as necessary.</p>
Measurable Goals:	Review current ordinances. Adopt new ordinances or amend existing ones to address pet waste on city-owned lands as needed. In conjunction with the development of new or amended ordinances the City shall distribute educational materials on pet waste to the general public.
Timeline/ Implementation Schedule:	<p>Initial Year – Review existing regulatory ordinances and mechanisms and review external examples for comparison. Draft new ordinances or amendments to existing ones. Conduct Public Hearings on new or amended ordinances. Adopt new ordinances or amendments to existing ordinances as needed. Enact necessary enforcement procedures, policies, and remedial actions.</p> <p>Subsequent Years – Review existing regulatory ordinances and mechanisms for relevance and compliance with the City’s MS4 and SWPPP program.</p>
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	3 – Illicit Discharge Detection and Elimination (IDDE)
Permit Section(s):	18.8, 18.9, 18.16
BMP ID Number:	3-3
BMP Title:	Illicit Discharge Recognition Training
BMP Description:	The City will develop a program to provide training to City staff. The training will focus on activities out in the community conducted by the Public Works, Engineering, or Parks and Recreation Departments which may impact stormwater quality. Training will include illicit discharge recognition, reporting, eliminating, and/or enforcement. Training will be provided at least once every 3 calendar years.
Measurable Goals:	The City will document the subject matter, names and departments of participants, and date of the training event. The City will then evaluate the effectiveness of the program and revise if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will develop training handouts and presentation materials. Required staff will be notified of the date and time of the training event.  Subsequent Years – Review of the training materials to ensure relevance and compliance with the City's MS4 and SWPPP program.
Responsible Party:	Assistant City Engineer



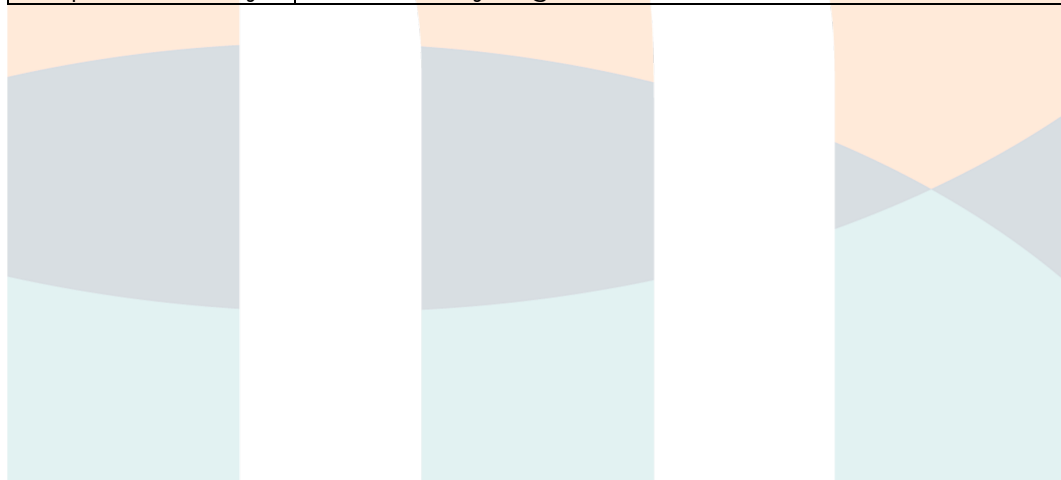
MS4 Name:	City of Marshall
MCM:	3 – Illicit Discharge Detection and Elimination (IDDE)
Permit Section(s):	18.7, 18.11, 18.12, 18.15
BMP ID Number:	3-4
BMP Title:	IDDE Inspection Program
BMP Description:	The City will develop a program for performing illicit discharge detection inspections within the city. Staff will have a set of written procedures for investigating, locating, and eliminating the source(s) of illicit discharges. Frequent inspections will include structural BMP's, areas around business or industrial activities, areas of past illicit discharges, and storage areas that could result in illicit discharge(s).
Measurable Goals:	The City will document the date/location of IDDE inspections, reports of alleged illicit discharges, date of discovery of illicit discharges, identification of areas where illicit discharges have been discovered, sources of illicit discharges, and actions taken by City staff to address discovered illicit discharges. The City will evaluate the effectiveness of the program and revise if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will review the existing inspection program to ensure relevance and compliance with the City's MS4 and SWPPP program. Inspection roles will be clearly identified with City staff.  Subsequent Years – Review of the inspection program and procedures to ensure relevance and compliance with the City's MS4 and SWPPP program.
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	3 – Illicit Discharge Detection and Elimination (IDDE)
Permit Section(s):	18.13, 18.14, 18.17
BMP ID Number:	3-5
BMP Title:	IDDE Emergency Response Procedures (ERP's)
BMP Description:	The City will develop procedures for responding to spills within the city. Those procedures will include responses to prevent spills from entering the City's MS4. The ERP's will also include enforcement tools, guidelines of those tools, timeframes for corrective actions, and responsible person(s) for conducting enforcement.
Measurable Goals:	The City will document the name of the person violating the City's ordinances relating to illicit discharges, date/location of observed violation(s), description, corrective action (including dates), referrals to other regulatory organizations, and date(s) of resolution. The City will evaluate the effectiveness of the program and revise if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will review the existing emergency response procedures to ensure relevance and compliance with the City's MS4 and SWPPP program. Inspection and enforcement roles will be clearly identified with City staff.  Subsequent Years – Review of the inspection and enforcement procedures to ensure relevance and compliance with the City's MS4 and SWPPP program.
Responsible Party:	Assistant City Engineer





MS4 Name:	City of Marshall
MCM:	3 – Illicit Discharge Detection and Elimination (IDDE)
Permit Section(s):	18.7, 21.8, 21.9, 21.10, 21.11
BMP ID Number:	3-6 / 6-4
BMP Title:	Structural BMP Inspection Program
BMP Description:	The City will develop a program for performing inspections on city-owned ponds, outfalls, and other structural BMP's. Staff will have a set of written procedures, forms, and schedule for performing inspections. Inspections will include treatment effectiveness, structural integrity, function, maintenance needs, and other necessary items.
Measurable Goals:	The City will document the date/location of inspections, repair, replacement, or maintenance requirements, date of completed maintenance, and evidence of illicit discharges. The City will evaluate the effectiveness of the program and revise if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will review the existing inspection program to ensure relevance and compliance with the City's MS4 and SWPPP program. Inspection roles will be clearly identified with City staff.  Subsequent Years – Review of the inspection program and procedures to ensure relevance and compliance with the City's MS4 and SWPPP program.
Responsible Party:	Assistant City Engineer



MS4 Name:	City of Marshall
MCM:	3 – Illicit Discharge Detection and Elimination (IDDE)
Permit Section(s):	14.2, 18.2
BMP ID Number:	3-7
BMP Title:	Stormwater GIS Map
BMP Description:	The City will maintain and update a GIS map of the city's stormwater infrastructure system within the entire MS4. Included in the map will be all the stormwater pipes, flow direction, outfalls, structural BMP's, and receiving waters. Staff will also develop a method of quality control to ensure that mapped information is accurate and updated.
Measurable Goals:	The City will continue to update the map to include any changes, additions, or removals to the storm sewer system. The City will evaluate the effectiveness of GIS map and revise if necessary.
Timeline/ Implementation Schedule:	City staff will continuously review the existing GIS map throughout the year including updates based on City or private construction projects.
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	3 – Illicit Discharge Detection and Elimination (IDDE)
Permit Section(s):	18.10, 21.3
BMP ID Number:	3-8 / 6-5
BMP Title:	SWPPP GIS Map
BMP Description:	The City will develop, maintain, and update a GIS map that includes information specifically regarding the city's SWPPP program. The map will include the city's stormwater infrastructure system within the entire MS4 (including pipes and flow direction), illicit discharge priority areas, outfalls, structural BMP's, receiving waters, city-owned facilities that contribute pollutants to stormwater discharges, waste load allocations, and other relevant items. Staff will also develop a method of quality control to ensure that mapped information is accurate and updated.
Measurable Goals:	The City will continue to update the map to include any changes, additions, or removals to the storm sewer system. The City will evaluate the effectiveness of GIS map and revise if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will develop the SWPPP GIS map utilizing existing stormwater GIS map elements.  Subsequent Years – Staff will continuously review the SWPPP GIS map for updates and accuracy throughout the permit cycle according to the City's quality control methods.
Responsible Party:	Assistant City Engineer

**MCM 4 – CONSTRUCTION SITE STORMWATER RUNOFF CONTROL**

MS4 Name:	City of Marshall
MCM:	4 – Construction Site Stormwater Runoff Control
Permit Section(s):	19.3, 19.4, 19.5
BMP ID Number:	4-1
BMP Title:	Construction Site Runoff Control Regulatory Mechanisms
BMP Description:	<p>The City will update and enforce ordinances and other regulatory mechanisms which address construction site erosion and sediment control within the City of Marshall. City staff will review the current regulatory mechanisms to determine if existing ordinances must be revised or new ordinances adopted. Regulatory mechanisms that establish requirements for erosion, sediment, and waste controls will be at least as stringent as the City's most current Construction Stormwater General Permit.</p> <p>Planning for erosion and sediment control measures and procedures in advance of beginning construction is crucial in reducing sediment in public waters. The City works proactively with property owners, developers, consultants, and contractors to require and review site plans and ensure the appropriate erosion and sediment control measures are incorporated into the plans. The City further evaluates the effectiveness of the control measures once they have been installed.</p>
Measurable Goals:	Review current ordinances. Adopt new ordinances or amend existing ones to address construction site erosion and sediment control as needed. In conjunction with the development of new or amended ordinances the City shall distribute educational materials on construction site erosion and sediment control to property owners, developers, consultants, and contractors.
Timeline/ Implementation Schedule:	<p>Initial Year – Review existing regulatory ordinances and mechanisms and review external examples for comparison. Draft new ordinances or amendments to existing ones. Conduct Public Hearings on new or amended ordinances. Adopt new ordinances or amendments to existing ordinances as needed. Enact necessary enforcement procedures, policies, and remedial actions.</p> <p>Subsequent Years – Review existing regulatory ordinances and mechanisms for relevance and compliance with the City's MS4 and SWPPP program.</p>
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	4 – Construction Site Stormwater Runoff Control
Permit Section(s):	19.6, 19.11, 19.13, 19.14
BMP ID Number:	4-2
BMP Title:	Site Plan Review Program
BMP Description:	<p>Every applicant for a City permit to allow land disturbing activities is required to submit a project specific stormwater management plan (if applicable) and/or erosion control plan to the City Public Works/Engineering/Planning Department for review and approval. The City's review process must consider the potential impact(s) to stormwater quality posed by the proposed land disturbing activities. The review process provides an opportunity for the City to discuss with owners and developers the erosion and sediment control requirements and other construction site permit requirements as they apply to each individual project.</p> <p>Construction projects disturbing one or more acres of area are required to have a NPDES Phase II Permit from the MPCA and all requirements for erosion and sediment control shall apply as well as any applicable City ordinances and codes.</p> <p>The City will develop a program to provide training to City staff. The training will focus on site plan reviews conducted by the Public Works staff. Training will include site plan review requirements, process, and other requirements as needed. Training will be provided at least once every 3 calendar years.</p>
Measurable Goals:	<p>Define the criteria needed for plan reviews and establish the requirements for stormwater management plan and/or erosion control plan submittals, including a timeline for plan review.</p> <p>Ensure owners and developers understand the requirements of the NPDES Phase II Permit and the BMPs needed to address erosion and sediment control.</p> <p>Work pro-actively with owners and developers to design and implement the appropriate BMPs for their project.</p> <p>The City will document the subject matter, names of participants, and date of the training event. The City will then evaluate the effectiveness of the program and revise if necessary.</p>
Timeline/ Implementation Schedule:	<p>Initial Year – The City will implement the plan review process immediately.</p> <p>Subsequent Years – Review process will be evaluated and revised as necessary. This BMP will continue until the expiration of this permit. Ongoing training will be provided to site plan reviewers as required.</p>
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	4 – Construction Site Stormwater Runoff Control
Permit Section(s):	19.7, 19.8, 19.9, 19.10, 19.11, 19.12, 19.14, 19.15
BMP ID Number:	4-3
BMP Title:	Construction Site Inspection Program
BMP Description:	<p>The City has established procedures for construction site inspection and enforcement (land disturbance permitting and inspection) as related to the stormwater management and/or erosion control plan. The inspection program shall review the compliance of the applicable City ordinances and codes or construction site permit requirements.</p> <p>The City will develop an inspection report form to record the pertinent data regarding the inspection of construction site compliance. The inspection report will be copied to all relevant parties to the construction site and will identify all deficiencies requiring maintenance or remediation. The responsible parties shall then correct the deficiencies within 24 hours of notice and/or in accordance with the permit or other contract provisions which govern the work.</p> <p>The inspection process will provide an opportunity to further educate owners, developers, and contractors on the need for erosion and sediment control practices. Construction sites must conform to all NPDES Phase II requirements (if applicable) and the appropriate City ordinances and codes pertaining to construction site erosion control and waste disposal. Inspection procedures established shall also meet the requirements of the NPDES Phase II Permit. Non-compliance for any requirements shall be enforced by the MPCA or the City.</p> <p>The City will develop a program to provide training to City staff. The training will focus on construction site inspections conducted by the Public Works staff. Training will include site inspection procedures, requirements, documentation, enforcement, and other requirements as needed. Training will be provided at least once every 3 calendar years.</p>
Measurable Goals:	<p>The City will annually evaluate the effectiveness of site inspections and enforcement procedures via the enforcement actions taken during the year. Additional and/or revised procedures will be added if necessary or found to be in non-compliance with the current NPDES Phase II requirements.</p> <p>The City will document the subject matter, names of participants, and date of the training event. The City will then evaluate the effectiveness of the program and revise if necessary.</p>
Timeline/ Implementation Schedule:	Initial Year – The City will continue the Construction Site Inspection program using the procedures and forms as currently operating under.

	Subsequent Years – The Site Inspection Program will be evaluated and revised as necessary. This BMP will continue until the expiration of this permit. Ongoing training will be provided to site plan reviewers as required.
Responsible Party:	Assistant City Engineer



MS4 Name:	City of Marshall
MCM:	4 – Construction Site Stormwater Runoff Control
Permit Section(s):	
BMP ID Number:	4-4
BMP Title:	Residential Construction Erosion and Sediment Control (ESC) Standards
BMP Description:	<p>The City will develop and implement a set of standard erosion and sediment control practices for typical residential construction. These standards will be established for contractors performing residential construction to understand the City's requirements, contractor responsibilities, typical BMP's, and other pertinent information.</p> <p>These standards will be provided for each residential construction permit. Staff will also post these informational materials on the Stormwater page on the Public Works website.</p>
Measurable Goals:	Provide contractor education and outreach via printed and electronic mediums which will generate contractor participation and increase awareness and knowledge of erosion and sediment control practices on residential construction sites. The City will document the number of printed and electronic materials distributed to new housing construction projects. The City will then evaluate the effectiveness of the land disturbance program and revise if necessary.
Timeline/ Implementation Schedule:	<p>Initial Year – The City will revise the Residential Construction ESC Standards and post those standards to the Public Works website. Standards will also be provided to residential construction permit applicants.</p> <p>Subsequent Years – The Residential Construction ESC Standards will be evaluated and revised as necessary.</p>
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	4 – Construction Site Stormwater Runoff Control
Permit Section(s):	
BMP ID Number:	4-5
BMP Title:	Annual Construction Site Contractor Training
BMP Description:	<p>The City will hold an annual training session for local contractors that perform most of the building and site construction within Marshall. The training is intended to present an overview of the MS4 program and the City's SWPPP, regulatory mechanisms, site BMP's, and other relevant information. The date for the training will be scheduled by City staff and distributed to contractors.</p> <p>The City will also distribute any appropriate educational materials to contractors at the meeting. A recording of the annual training will be made available on the Public Works web page for those unable to attend at the time and date of the training.</p>
Measurable Goals:	The City will document the number of people attending the training, date, and location of the training. The success of the of the annual training will be found in the contractors' increased awareness about stormwater pollution and the City's stormwater management program.
Timeline/ Implementation Schedule:	<p>Initial Year – The annual training will be presented each year. The City will post the presentation, distribution materials, and recording of the training on the City's Public Works web page.</p> <p>Subsequent Years – The annual training and distribution materials will be evaluated for effectiveness and revised as necessary.</p>
Responsible Party:	Assistant City Engineer

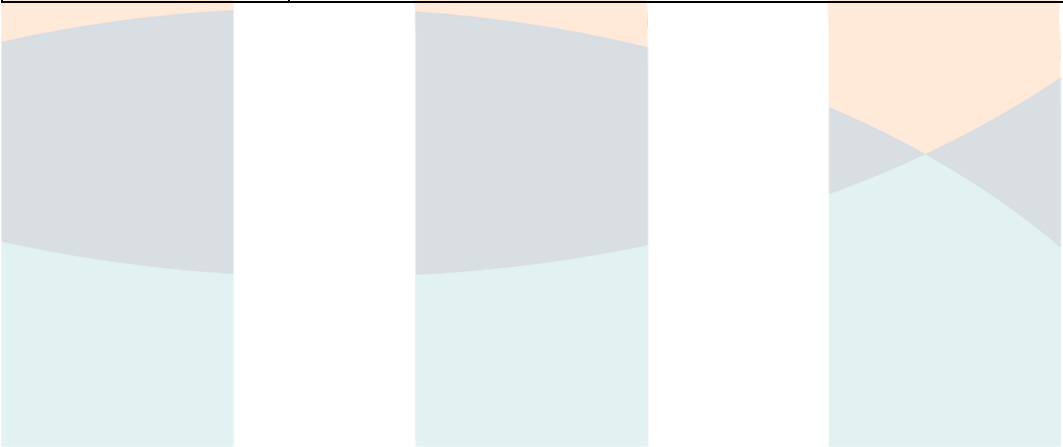


**MCM 5 – POST-CONSTRUCTION STORMWATER MANAGEMENT**

MS4 Name:	City of Marshall
MCM:	5 – Post-Construction Stormwater Management
Permit Section(s):	20.1, 20.16
BMP ID Number:	5-1
BMP Title:	Development and Implementation of Structural and/or Non-Structural BMP's
BMP Description:	<p>The City has several ordinances in place to provide for the development and implementation of Structural and/or Non-structural BMPs as the City continues to grow. The City has ordinance provisions governing Surface Water Management Plans, Zoning District Regulations for construction/development in the Floodway District, and requirements for a drainage and surface water management plan in the Final Plans for new development and redevelopment areas for Subdivisions.</p> <p>The City's stormwater management policy implements structural BMPs which offset the impacts of increased impervious surfaces and their associated sediment and pollution attributes effecting surface water quality. Regional wet detention ponds or on-site ponds in areas not served by a regional pond are constructed to reduce the peak discharges to pre-development conditions, settle suspended solids, and pre-treat the pollutants by promoting biological activity prior to discharging the stormwater runoff into the receiving stream. Additional structural BMPs may include swales, buffer strips, infiltration basins, etc.</p> <p>The City also promotes non-structural BMPs such as parks, green space, preservation of wetlands, stream bank stabilization, etc.</p>
Measurable Goals:	The City will evaluate all structural and non-structural BMPs during plan reviews for all new development and redevelopment projects in the city. The City will actively consider new BMP opportunities when feasible. Records will be kept for the additional impervious areas created by new projects and the amount of wet detention ponds and other BMPs implemented each year.
Timeline/ Implementation Schedule:	<p>Start evaluating, promoting, and implementing both structural and non-structural BMPs during the plan reviewing process.</p> <p>Annually record the BMP's incorporated into the City's stormwater management program and consider new or revised BMPs for implementation on future projects.</p>
Responsible Party:	Assistant City Engineer

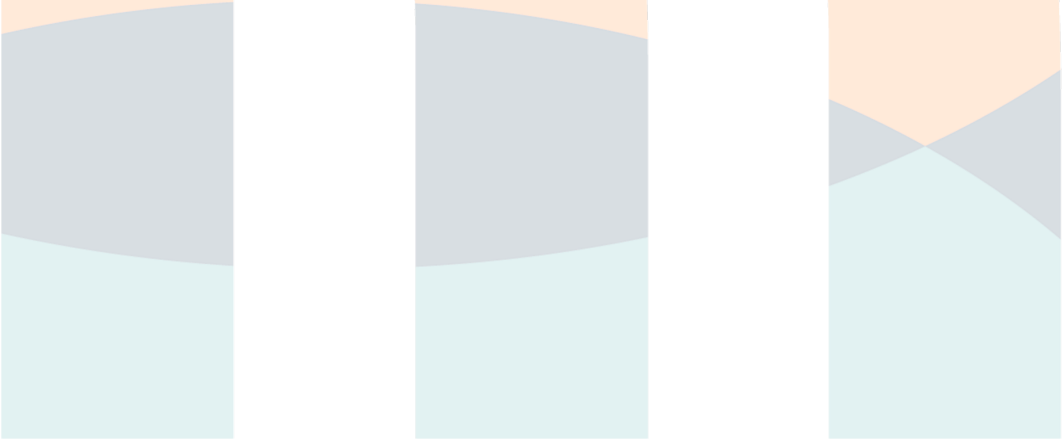
MS4 Name:	City of Marshall
MCM:	5 – Post-Construction Stormwater Management
Permit Section(s):	20.3, 20.4, 20.5, 20.6, 20.7, 20.8, 20.9, 20.10, 20.11, 20.12, 20.13, 20.14, 20.15
BMP ID Number:	5-2
BMP Title:	Construction Site Runoff Control Regulatory Mechanisms
BMP Description:	<p>The City will update and enforce ordinances and other regulatory mechanisms which address construction site erosion and sediment control within the City of Marshall. City staff will review the current regulatory mechanisms to determine if existing ordinances must be revised or new ordinances adopted. Regulatory mechanisms that establish requirements for stormwater management will be at least as stringent as the City's most current Construction Stormwater General Permit.</p> <p>The City works proactively with property owners, developers, consultants, and contractors to require and review site plans and ensure the appropriate post-construction stormwater management measures are incorporated into the plans. The City further evaluates the effectiveness of the management measures once they have been installed.</p>
Measurable Goals:	Review current ordinances. Adopt new ordinances or amend existing ones to address post-construction stormwater management as needed. In conjunction with the development of new or amended ordinances, the City shall distribute educational materials on post-construction stormwater management to property owners, developers, consultants, and contractors.
Timeline/ Implementation Schedule:	<p>Initial Year – Review existing regulatory ordinances and mechanisms and review external examples for comparison. Draft new ordinances or amendments to existing ones. Conduct Public Hearings on new or amended ordinances. Adopt new ordinances or amendments to existing ordinances as needed. Enact necessary enforcement procedures, policies, and remedial actions.</p> <p>Subsequent Years – Review existing regulatory ordinances and mechanisms for relevance and compliance with the City's MS4 and SWPPP program.</p>
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	5 – Post-Construction Stormwater Management
Permit Section(s):	20.17, 20.18, 20.20, 20.21
BMP ID Number:	5-3
BMP Title:	Post-Construction Stormwater Management Inspection Training
BMP Description:	The City will develop a program to provide training to City staff. The training will focus on post-construction stormwater management site plan reviews and site inspections conducted by the Public Works staff. Training will include site plan review requirements and documentation, inspection procedures, enforcement, and other requirements as needed. Training will be provided at least once every 3 calendar years.
Measurable Goals:	The City will document the subject matter, names and departments of participants, and date of the training event. The City will then evaluate the effectiveness of the program and revise if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will develop training handouts and presentation materials. Required staff will be notified of the date and time of the training event.  Subsequent Years – Review of the training materials to ensure relevance and compliance with the City's MS4 and SWPPP program.
Responsible Party:	Assistant City Engineer



MS4 Name:	City of Marshall
MCM:	5 – Post-Construction Stormwater Management
Permit Section(s):	20.19, 20.20, 20.22
BMP ID Number:	5-4
BMP Title:	BMP Enforcement Response Procedures (ERP's)
BMP Description:	The City will develop a program for performing inspections on post-construction stormwater management BMP's to ensure compliance with the City's requirements. Staff will have a set of written procedures, forms, and schedule for performing inspections. Inspections will include treatment effectiveness, structural integrity, function, maintenance needs, violations, corrective actions, and other necessary items.
Measurable Goals:	The City will document the name of the person violating the City's ordinances relating to stormwater management, date/location of observed violation(s), description, corrective action (including dates), referrals to other regulatory organizations, and date(s) of resolution. The City will evaluate the effectiveness of the program and revise if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will review the existing enforcement response procedures to ensure relevance and compliance with the City's MS4 and SWPPP program. Inspection and enforcement roles will be clearly identified with City staff.  Subsequent Years – Review of the inspection and enforcement procedures to ensure relevance and compliance with the City's MS4 and SWPPP program.
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	5 – Post-Construction Stormwater Management
Permit Section(s):	20.19, 20.20, 20.22
BMP ID Number:	5-5
BMP Title:	Long-Term Operation and Maintenance of BMP's
BMP Description:	The City will develop a program to implement the routine inspection and maintenance of the City owned facilities. City staff will inspect post-construction BMPs, then evaluate inspection records for the corrective maintenance actions (if required) for the long-term operation of all storm water management facilities owned and operated by the City. A complete list of long-term BMPs, their locations, along with the reported site conditions will be recorded and filed for reference during the next annual inspection.
Measurable Goals:	The City will continue to annually inspect all the storm sewer outfalls, detention ponds and other storm water management facilities, then evaluate and record the required maintenance measures taken (if any). The program will be modified as needed to provide the adequate operation of all storm water management facilities.
Timeline/ Implementation Schedule:	The post-construction inspections will be done on an annual basis for the term of the permit. The inspection schedule will be evaluated and revised if necessary.
Responsible Party:	Assistant City Engineer



**MCM 6 – POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS**

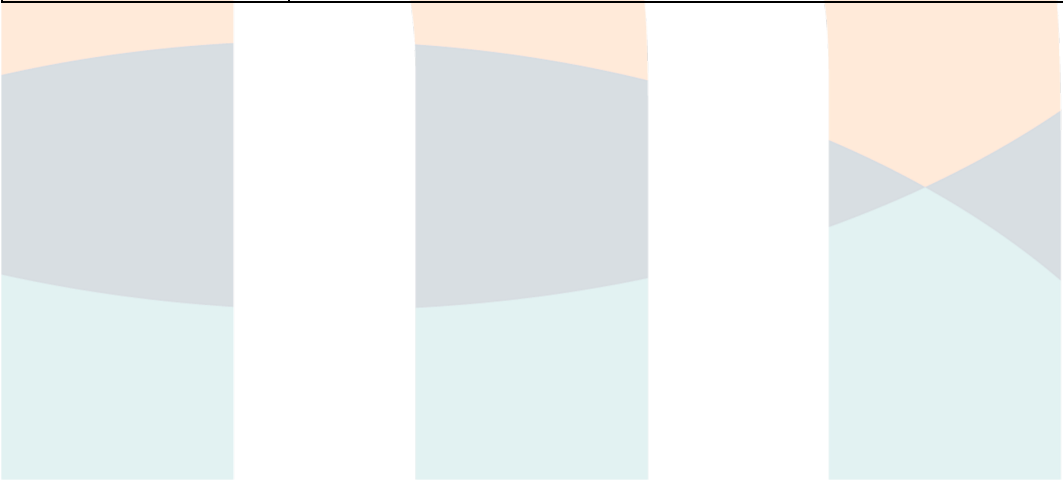
MS4 Name:	City of Marshall
MCM:	6 – Pollution Prevention/Good Housekeeping for Municipal Operation
Permit Section(s):	21.2, 21.4, 21.13
BMP ID Number:	6-1
BMP Title:	Municipal Operations and Maintenance Program
BMP Description:	<p>The City's Public Works Department will develop and implement a municipal operations pollution prevention control program consistent with the BMPs included in the City's SWPPP.</p> <p>The program will consist of training materials, workshops and operational procedures on the implementation of appropriate BMPs for the reduction of stormwater pollution. The program will address such pollution issues caused by street maintenance, fleet and building maintenance, park and other City greenspace maintenance, new construction and land disturbances, and storm sewer system maintenance.</p>
Measurable Goals:	<p>Train the City staff on the appropriate BMPs and their implementation for the reduction of stormwater pollution.</p> <p>The City staff will meet annually to evaluate their conformance to the municipal operations pollution prevention control program and revise the plan components if needed.</p>
Timeline/ Implementation Schedule:	<p>Initial Year – City staff will review the existing operations and maintenance program to ensure relevance and compliance with the City's MS4 and SWPPP program. Performance roles will be clearly identified with City staff.</p> <p>Subsequent Years – Review of the operations and maintenance program and procedures to ensure relevance and compliance with the City's MS4 and SWPPP program.</p>
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	6 – Pollution Prevention/Good Housekeeping for Municipal Operation
Permit Section(s):	
BMP ID Number:	6-2
BMP Title:	Street Sweeping
BMP Description:	<p>The City currently sweeps City owned streets and parking lots a minimum of two times per year to pick up sediment, leaves, trash, and other debris from these surfaces and reduce the amount of pollutants reaching the storm sewer system. Typically, the first sweeping effort begins at the completion of the spring thaw (April-May) and the second sweeping begins in the fall (September-November). Due to the variety of tree species and tree density the fall sweeping usually requires multiple sweeping cycles over much of the City to collect the fallen leaves. All the sweepings are taking to a City owned dumping site.</p> <p>In addition, the City sweeps the downtown business district more frequently (weather permitting) due to the concentrated traffic and pedestrian use. City staff will also sweep areas as necessary needs arise or in response to specific complaints which are reported to City Hall.</p>
Measurable Goals:	The City will update its current program to include record keeping of all sweeping activities and quantify the amount of sediment, trash and debris collected per day of operation. This data will be summarized in the City's SWPPP Annual Report.
Timeline/ Implementation Schedule:	<p>Initial Year – City staff will continue sweeping City streets throughout the duration of the current permit term.</p> <p>Subsequent Years – City staff will evaluate the frequency and areas of street sweeping for effectiveness.</p>
Responsible Party:	Assistant City Engineer

MS4 Name:	City of Marshall
MCM:	6 – Pollution Prevention/Good Housekeeping for Municipal Operation
Permit Section(s):	21.5, 21.6, 21.7
BMP ID Number:	6-3
BMP Title:	Snow and Ice Management Program
BMP Description:	<p>The City currently owns, operates, and maintains a salt and sand storage area for snow and ice control operations during the winter season. Public Works staff has implemented BMP's to minimize risk of pollutant discharge into the City's stormwater system.</p> <p>The City will develop a program to provide training to City staff involved with snow and ice control operations. This training will likely include the Smart Salting training course. The training will focus on winter practices and operations, BMP's, and other pertinent information. Training will be provided at least once every 3 calendar years.</p>
Measurable Goals:	The City will document the number of people attending the training, date, and location of the training. The success of the of the annual training will be found in staff's awareness of stormwater-related issues related to snow and ice control operations and conformance to the snow and ice management policy.
Timeline/ Implementation Schedule:	<p>Initial Year – City staff will review the existing operations and maintenance program to ensure relevance and compliance with the City's MS4 and SWPPP program. Performance roles will be clearly identified with City staff.</p> <p>Subsequent Years – Review of the operations and maintenance program and procedures to ensure relevance and compliance with the City's MS4 and SWPPP program.</p>
Responsible Party:	Assistant City Engineer



MS4 Name:	City of Marshall
MCM:	6 – Pollution Prevention/Good Housekeeping for Municipal Operation
Permit Section(s):	18.7, 21.8, 21.9, 21.10, 21.11
BMP ID Number:	3-6 / 6-4
BMP Title:	Structural BMP Inspection Program
BMP Description:	The City will develop a program for performing inspections on city-owned ponds, outfalls, and other structural BMP's. Staff will have a set of written procedures, forms, and schedule for performing inspections. Inspections will include treatment effectiveness, structural integrity, function, maintenance needs, and other necessary items.
Measurable Goals:	The City will document the date/location of inspections, repair, replacement, or maintenance requirements, date of completed maintenance, and evidence of illicit discharges. The City will evaluate the effectiveness of the program and revise if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will review the existing inspection program to ensure relevance and compliance with the City's MS4 and SWPPP program. Inspection roles will be clearly identified with City staff.  Subsequent Years – Review of the inspection program and procedures to ensure relevance and compliance with the City's MS4 and SWPPP program.
Responsible Party:	Assistant City Engineer



MS4 Name:	City of Marshall
MCM:	6 – Pollution Prevention/Good Housekeeping for Municipal Operation
Permit Section(s):	18.10, 21.3
BMP ID Number:	3-8 / 6-5
BMP Title:	SWPPP GIS Map
BMP Description:	The City will develop, maintain, and update a GIS map that includes information specifically regarding the city's SWPPP program. The map will include the city's stormwater infrastructure system within the entire MS4 (including pipes and flow direction), illicit discharge priority areas, outfalls, structural BMP's, receiving waters, city-owned facilities that contribute pollutants to stormwater discharges, waste load allocations, and other relevant items. Staff will also develop a method of quality control to ensure that mapped information is accurate and updated.
Measurable Goals:	The City will continue to update the map to include any changes, additions, or removals to the storm sewer system. The City will evaluate the effectiveness of GIS map and revise if necessary.
Timeline/ Implementation Schedule:	Initial Year – City staff will develop the SWPPP GIS map utilizing existing stormwater GIS map elements.  Subsequent Years – Staff will continuously review the SWPPP GIS map for updates and accuracy throughout the permit cycle according to the City's quality control methods.
Responsible Party:	Assistant City Engineer

## ANNUAL SCHEDULE FOR BMP'S

- January
    - Public Works Quarterly Newsletter
  - February
    - Illicit Discharge Recognition Training
  - March
    - Construction Site Inspection Training
    - Construction Site Contractor Training
    - Update City Hall Educational Distribution Materials
  - April
    - Public Works Quarterly Newsletter
    - Utility Bill Brochure
    - Street Sweeping
  - May
    - Rain Garden Workshop
  - June
    - Annual Public Hearing
  - July
    - Public Works Quarterly Newsletter
  - September
    - Post-Construction Stormwater Management Inspection Training
    - Structural BMP Inspections
  - October
    - Public Works Quarterly Newsletter
    - Utility Bill Brochure
    - Street Sweeping
    - Snow and Ice Management Training
    - Update City Hall Educational Distribution Materials
  - November
    - Community Leaf Raking Event
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