CITY OF SPRINGFIELD STORMWATER MANAGEMENT PLAN

Municipal Separate Storm Sewer System Permit 2017-2022

CITY OF Springfield

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Introduction

Background and Purpose

In 1987, the federal Clean Water Act was amended to require the U.S. Environmental Protection Agency (USEPA) to implement a two-phase program to address stormwater discharges as part of the National Pollutant Discharge Elimination System (NPDES) permit program. Phase 1, promulgated in 1990, generally required medium and large municipal separate storm sewer systems (MS4s) serving populations of 100,000 or more to be permitted. The responsibility for issuing MS4 permits is delegated by USEPA to the Missouri Department of Natural Resources (MDNR). The City of Springfield, Missouri (City) is a Phase 1 Medium MS4 and was issued its first MS4 permit (Permit No. MO-0126322) on July 26, 2002. The City operated under this permit until it was revised and reissued by MDNR on April 1, 2017.

The permit requires the City to implement best management practices (BMPs) to reduce pollutants in stormwater discharges to the Maximum Extent Practicable (MEP) from the MS4 to waters of the state for the goal of attainment with Missouri's water quality standards. The City is required to implement BMPs for the following nine minimum control measures (MCMs):

1. Public Education and Outreach of Stormwater Impacts
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention and Good Housekeeping for Municipal Operations
7. Industrial and High Risk Runoff
8. Flood Control Projects
9. Monitoring

The permit requires that the City have a Stormwater Management Plan (SWMP) document describing the BMPs for each MCM and the purpose or expected result of each BMP, measurable goals for each BMP, the person(s) primarily responsible for the SWMP or for each MCM, and an iterative process to evaluate and replace or modify BMPs as needed for reasonable further progress. The permit allows one year from the effective date of April 1, 2017 for updating the SWMP to comply with the terms and conditions of the permit and submitting it to MDNR for review and rating. This SWMP is being submitted to MDNR to replace the previous SWMP that implemented the 2002 permit.

SWMP Format

The SWMP covers the 5-year permit term. Per Section F.1. of the permit, the annual reporting period covers the City's fiscal year (July 1 – June 30). The schedules in the SWMP are based on the annual reporting periods as follows:

- Year 1: April 1, 2017 – June 30, 2018
- Year 2: July 1, 2018 – June 30, 2019
- Year 3: July 1, 2019 – June 30, 2020
- Year 4: July 1, 2020 – June 30, 2021
- Year 5: July 1, 2021 – March 31, 2022

The SWMP is organized based on the nine MCMs in the permit. BMPs, measurable goals, and an iterative process for BMP evaluation are described for each MCM. As required by the permit, BMPs will be evaluated using an iterative process every 5 years (i.e. the life of the permit) at a minimum, and more frequently where appropriate. In addition to the MCM-specific iterative process criteria, the SWMP as a whole will be evaluated based on the following iterative process criteria consistent with the City's Integrated Plan for the Environment as referenced in Section B. item 5 of the permit:

1. Are program resources being allocated appropriately among the MCMs to address the most significant sources of pollution?
2. Are BMPs based on consideration of community priorities, solution effectiveness, and affordability?

Watershed Description and TMDL Applicability

The City of Springfield is the third largest city in Missouri with a population of 159,498 according to the 2010 U.S. Census. The approximate area within the city limits is 82 square miles. Springfield is located on a plateau situated in two major watersheds – the James River and the Little Sac River. The James River begins upstream of Springfield and flows along the southern edge of the city. Because Springfield is located on a plateau, several tributaries begin within the city limits and flow out into the county. The majority of the city drains into tributaries of the James River. A smaller portion of the city drains into tributaries of the Little Sac River which is located north of the city. In 2001, a Total Maximum Daily Load (TMDL) was completed for the James River to address its impairment due to nutrients. In 2005, a TMDL was completed for the Little Sac River to address its impairment due to bacteria. Neither TMDL contains a Waste Load Allocation for the City's MS4; therefore, a TMDL Assumptions and Requirements Attainment Plan (ARAP) is not required per Section C. of the MS4 permit. Although an ARAP is not required, several of the BMPs in this plan are intended to target nutrients and bacteria as common urban pollutants in stormwater runoff. Targeting nutrients is also consistent with Missouri's Nutrient Reduction Strategy.

SWMP Responsibility

The position primarily responsible for the SWMP is the Water Quality Compliance Officer in the Water Quality Division of the Department of Environmental Services. Some BMPs are primarily implemented by other City divisions or departments noted in the BMP description. The Water Quality Compliance Officer

coordinates with these other divisions or departments on BMP implementation and reporting. The contact information for the Water Quality Compliance Officer is as follows:

Carrie Lamb
Water Quality Compliance Officer
Water Quality Division
Department of Environmental Services
290 E. Central Street
Springfield, MO 65802
Phone: 417-864-1996
Email: clamb@springfieldmo.gov

The position responsible for certification of applications and annual reports in accordance with Part H. of the permit is the Assistant Director of the Department of Environmental Services. The contact information for this position is as follows:

Errin Kemper, P.E.
Assistant Director
Department of Environmental Services
840 N. Boonville Avenue
Springfield, MO 65802
Phone: 417-864-1910
Email: ekemper@springfieldmo.gov

Minimum Control Measure 1: Public Education and Outreach

Permit Requirements

a. *The permittee shall implement a public education and outreach program to inform the public about the impacts of stormwater discharges on waterbodies and steps the public can take to reduce pollutants in stormwater runoff. As part of the SWMP, the program shall include the following, at a minimum:*
   i. *A description of how the public is targeted based on the specific group's potential to have significant stormwater impacts;*
   ii. *A list of pollutants the program is developed to address, including at a minimum:*
      1. *Pollutants associated with the application of pesticides, herbicides, and fertilizers; and*
      2. *Pollutants associated with the management and disposal of used oil and toxic materials.*
   iii. *A description of education and outreach activities and materials specific to targeted audiences and pollutants;*
   iv. *A description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from the MS4.*

BMPs and Measurable Goals

Target Pollutants

The public education and outreach program is designed to primarily address the following target pollutants and pollutant sources.

1. **Pesticides and herbicides.** Incorrect application and/or improper storage and disposal of pesticides and herbicides may result in water quality issues such as toxicity to aquatic life.
2. **Fertilizers.** Over-application of fertilizers may result in runoff of nutrients that contribute to algae blooms in receiving waters.
3. **Yardwaste.** Dumping of leaves and grass clippings in streets and drainageways may contribute to water quality issues as these materials decay, contributing to low dissolved oxygen and releasing nutrients that contribute to algae blooms.
4. **Sediment.** Sediment is the primary pollutant from construction activities. Streambank erosion is also a major source. It may impact aquatic habitat through sedimentation of streams and is a source of nutrients that may contribute to algae blooms.
5. **Household chemicals.** Household chemicals includes automotive products (used oil, etc.), pesticides, cleaners, home improvement products, and other chemicals that often have signal words like toxic, corrosive, and flammable. If disposed on the ground or in a storm drain, these chemicals may impact stormwater runoff.
6. **Pet waste.** Pet waste that is left on the ground may contribute bacteria and nutrients to stormwater runoff.
7. **Trash.** Trash is the most visible form of pollution, affecting the use and enjoyment of waterways. Trash may impact aquatic life through leaching of pollutants and physical harm (ingestion, etc.).

Target Audiences

The public education and outreach program is designed to address the following target audiences.

1. **Residents.** Residents have the potential to impact stormwater primarily through yard care practices, improper disposal of household chemicals, and pet waste.
2. **Youth.** Educating youth is important for behavior change in the next generation. In addition, they often carry messages home to their parents, improving knowledge and behavior change with current decision makers.
3. **Teachers.** Educating teachers about water quality issues and providing them with curriculum tools to teach water education can be an effective way to educate youth.
4. **Commercial property owners.** Commercial property owners have the potential to impact stormwater through management practices for grounds and parking lots.
5. **Landscape professionals.** Landscape professionals that care for residential and commercial properties have the potential to impact stormwater with the use of pesticides, herbicides, and fertilizers, and other grounds management practices.
6. **General public.** The general public (citizens who live, work, play, etc. in Springfield) have the potential to impact stormwater through everyday practices. Raising awareness among the general public is important for public support of programs and projects that address the impacts of stormwater discharges on waterbodies.

Additional audiences are addressed under other MCMs, such as education of construction site operators under MCM 4.

Iterative Process

The iterative process for this MCM will consist of evaluating each of the BMPs below according to the following criteria as applicable:

1. Does the BMP focus on the target pollutants and audiences?
2. Is participation by target audiences adequate enough to continue the BMP?
3. Can changes be made to the BMP that may improve the distribution of information or the participation by target audiences?
4. Based on available data (observations, pollution reports, other data at the City's discretion), should the City target different pollutants or audiences?

BMP 1: General Stormwater Education and Outreach

The City and partners will provide stormwater education and outreach with the purpose of informing the public about the impacts of stormwater discharges on waterbodies and steps the public can take to reduce pollutants in stormwater runoff. Education and outreach topics and strategies will focus on the target pollutants, green infrastructure practices such as rain gardens, tree planting, and healthy riparian corridors, and general awareness of watersheds, water quality, and the value of water. Topics will also include BMPs 2, 3, and 4. This BMP will focus on the general public as the target audience but may focus on the other listed target audiences as well. The City provides funding to James River Basin Partnership, Watershed Committee of the Ozarks, and Ozark Greenways for stormwater/water quality education and outreach. A

variety of education and outreach methods and activities will be used including but not limited to distribution of print materials, website content, social media, event tabling, signage, and educational tours.

An important part of raising awareness about stormwater and water quality is providing opportunities for the public to connect with the outdoors, and specifically with the waterbodies that can be impacted by stormwater. The City and partners provide these opportunities in a number of ways. The Watershed Center at Valley Water Mill Park not only serves as a destination for water education field trips (BMP 5) but as a community park open to the public and designed to encourage connection and learning about water resources and green infrastructure. Stream cleanups (MCM 2, BMP 2) provide opportunities for the public to actively engage in water quality efforts and connect with streams. Greenway trails provide opportunities for outdoor recreation along streams and education opportunities through showcasing green infrastructure and riparian corridor benefits.

Measurable Goals:

1. Years 1-5: Distribute information through a minimum of 50 activities annually.
2. Year 2: Develop an updated stormwater education brochure.
3. Year 3: Install 2 educational signs along greenway trails.
4. Year 4: Develop and implement an anti-littering education campaign.
5. Year 5: Develop and implement an educational scavenger hunt to engage the public in learning about stormwater through critical thinking and outdoor experiences.

BMP 2: Environmentally-Responsible Yard Care Program

The City will implement an updated program to educate the public about the steps it can take to reduce the impacts of stormwater runoff on receiving waters through environmentally responsible yard care practices. The target audiences are residents, commercial property owners, and landscape professionals. The target pollutants are pesticides, herbicides, fertilizers, yardwaste, and sediment. The program will also promote green infrastructure practices including rain gardens and landscaping with native plants and trees. The overall program will include specific components for the target pollutants and practices. One specific component will be a program to provide soil testing and nutrient management plans for lawns that will be developed and implemented by James River Basin Partnership with funding provided by the City. Program education and outreach will be provided through various methods and activities including but not limited to print materials, website content, social media, and event tabling. Education and outreach may be done in conjunction with other topics as part of BMP 1 or through program-specific activities.

Measurable Goals:

1. Year 1:
    a. Develop and launch a program to provide lawn soil testing and nutrient management plans.
2. Year 2:
    a. Develop and launch a website and print materials for the environmentally-responsible yard care program.
    b. Offer lawn soil testing and nutrient management plans for a minimum of 8 participants.

3. Years 3-5:
    a. Provide program information through education and outreach activities as part of BMP 1 or through activities specific to this BMP.
    b. Offer lawn soil testing and nutrient management plans for a minimum of 8 participants annually.
    c. Implement additional measurable goals to be determined as part of the program development.

BMP 3: Rain Barrel Rebate Program

The City will continue its support of a rain barrel program that provides education/outreach on rain barrel benefits and a rebate for property owners who install rain barrels. The program is implemented by James River Basin Partnership with funding provided by the City. The target audience is residents and commercial property owners. Rain barrels may reduce the overall loading of multiple pollutants associated with residential and commercial properties by reducing the volume of stormwater runoff. A rain barrel rebate program has been in place since 2007 and an iterative process has been used to evaluate the goals and structure of the rebate program and make changes to it over time. The current program allows participants to purchase the rain barrel or larger rainwater harvesting system of their choice and submit documentation of installation for a per gallon rebate. The program is promoted through an education and outreach plan that includes print materials, a webpage, social media, and event tabling.

Measurable Goals:

1. Years 1-5:
    a. Provide program information through education and outreach activities as part of BMP 1 or through activities specific to this BMP.
    b. Offer rebates for a minimum of 2,000 gallons annually.

BMP 4: Program for Public Reporting of Illicit Discharges and Water Quality Impacts

The City has a program in place to promote, publicize, and facilitate public reporting of illicit discharges, water quality impacts associated with discharges from the MS4, and discharge of pollutants from construction sites (MCM 4). Public reporting is facilitated through the City's Citizen Resource Center. The staff of the Citizen Resource Center are dedicated to receiving and directing citizen requests, questions, and problems to the appropriate departments. Citizens can report illicit discharges or water quality impacts via telephone, email, or through an online form. The Citizen Resource Center staff enter the reports into a database and route them to the Water Quality Division. Division staff address the reports in accordance with standard operating procedures for illicit discharge investigation and enforcement (MCM 3) or in accordance with inspection procedures for the land disturbance permit program (MCM 4). Public reporting is promoted and publicized through the Water Quality Division webpage on the City's website, and is one of the key messages included in print materials, event tabling, and other education/outreach opportunities under BMP 1. The target pollutants in promotional materials about public reporting include sediment, chemicals, trash, and yardwaste. The target audience is the general public.

Measurable Goals:

1. Years 1-5: Facilitate public reporting through the Citizen Resource Center and promote and publicize public reporting through education and outreach activities as part of BMP 1.

BMP 5: Youth and Teacher Education and Outreach

The City provides funding to Watershed Committee of the Ozarks and Missouri Project WET (Water Education for Teachers) for education and outreach for youth and teachers on stormwater and water quality topics. The Watershed Center, located at Valley Water Mill Park, is the home base of Watershed Committee of the Ozarks and serves as a destination for school field trips to learn about water quality protection. The natural resources of the site, including a lake, spring, wetland, and forest, provide unique learning and recreational opportunities. The building and site also include several stormwater green infrastructure practices including a rain garden, rainwater harvesting, and pervious pavement. Watershed Committee staff plan, facilitate, and support age-appropriate field trips to the Watershed Center for various grade levels. They also provide outreach through other place-based learning activities. Field trips and outreach activities are tailored to the interests of the group with available topics including stormwater, watersheds, and stream chemistry. Missouri Project WET, a partnering organization of the worldwide Project WET Foundation, is a water education program that provides curriculum resources and workshops for teachers and other educators working with K-12 children. The program is housed at Missouri State University in Springfield and works with local and regional schools as well as state-wide. Project WET staff also provide water education activities for schools and support for field trips at the Watershed Center.

Measurable Goals:

1. Years 1-5:
    a. Watershed Committee of the Ozarks will offer a minimum of 100 field trips to the Watershed Center for schools annually.
    b. Project WET will provide water education for teachers and schools through a minimum of 10 activities annually.

Minimum Control Measure 2: Public Involvement and Participation

Permit Requirements

a. The permittee shall implement a public involvement/participation program that shall at a minimum, include the following:

i. Opportunities for public involvement in the development of the permittee's SWMP and renewal application; and

ii. Opportunities for public participation in implementation activities such as volunteer stream clean-up events.

BMPs and Measurable Goals

BMP 1: Public Involvement in SWMP Development and Renewal Application

Opportunities for public involvement in SWMP development will be provided when the SWMP is updated per the permit in Years 1 and 5, and for specific MCMs during the permit term through a stormwater technical committee.

Measurable Goals:

1. Year 1: Post the proposed SWMP on the City website for a public comment period and provide information to key stakeholder groups.
2. Year 2: Form a stormwater technical committee to provide input on the post-construction program for MCM 5 and other related SWMP components.
3. Years 3-5: Hold a minimum of one meeting of the stormwater technical committee annually.
4. Year 5: Post the proposed SWMP for the permit reapplication on the City website for a public comment period and provide information to key stakeholder groups.

Iterative Process Criteria:

1. What was the level of participation in public involvement opportunities and what was the outcome of public input received?

BMP 2: Adopt-A-Stream Program

The City will continue an Adopt-A-Stream program to provide opportunities for citizen volunteers to adopt a section of stream with a commitment by the volunteers to complete a minimum of 3 stream cleanups per year. The City will provide cleanup supplies and trash pickup and disposal. Volunteers will be recognized with signage. The City will work with James River Basin Partnership to organize additional cleanups on priority streams to provide expanded opportunities for public involvement.

Measurable Goals:

1. Years 1-5: Facilitate adoption by volunteers of 8 miles of stream on City-owned property annually and provide supplies and trash pickup for cleanups. Track the number of stream cleanups and estimate the amount of trash collected.
2. Years 1-5: Organize 1 additional cleanup annually on a priority stream.

Iterative Process Criteria:

1. Are there additional stream sections that can be included in the program?
2. Are program changes needed to encourage and support volunteers in completing the commitment of 3 cleanups annually?

Minimum Control Measure 3: Illicit Discharge Detection and Elimination

Permit Requirements

a. *The permittee shall develop, implement, and enforce a program to detect and eliminate illicit discharges, as defined in 10 CSR 20-6.200(1)(C)7, into the permittee's MS4. As part of the SWMP, the permittee's illicit discharge detection and elimination program shall include the following at a minimum to the extent allowable under state or local law:*

   i. *A storm sewer map showing the locations of all constructed outfalls and the names and locations of all receiving waters of the state that receive discharges from the permittee's MS4. The permittee shall describe the source of information they used for the map(s), and how the permittee plans to verify the outfall locations with field survey or field screening points. If already completed, the permittee shall describe how the map was developed and how the map will be regularly updated. The permittee shall make the map and the map information available to the Department upon request.*

   ii. *A plan to prohibit through ordinance, orders, or similar means illicit discharges into the permittee's MS4, and implement appropriate enforcement procedures and actions.*

   iii. *Inspection and investigation procedures for detecting and eliminating illicit discharges;*

   iv. *A program to conduct field screening at field screening points or major outfalls with the purpose of finding and eliminating illicit discharges and illegal dumping. The program shall include the following:*

      1. *A description of areas or locations that will be evaluated by field screening including a description of how locations are established;*
      2. *A description of the number of locations that will be screened annually and how locations will be selected;*
      3. *A description of field screening procedures, including recording of visual observations and testing or sampling if flow is observed;*

   v. *Procedures to prevent, contain, and respond to spills that discharge or have potential to discharge into the MS4; and*

   vi. *A description of controls to limit infiltration of seepage from municipal sanitary sewers to the permittee's MS4.*

BMPs and Measurable Goals

BMP 1: Storm Sewer Map

The City maintains a storm sewer map. The purpose of the map is to serve as a tool to support illicit discharge detection and elimination, MS4 cleaning and maintenance, and other permit activities. The MS4 was mapped during the first permit term using GIS software. The sources of information used for the map included construction plans, aerial photography, and field verification. The map includes linear features (storm sewer pipes, box culverts, channels) and point features (inlets, junction boxes, and manholes). Post-construction stormwater control measures are also mapped, including those that are part of the MS4 as well as privately-owned and operated stormwater control measures. The map is regularly updated through input

of new construction plans. The 2002 permit required mapping of all known major outfalls. Major outfall is defined in 40 CFR 122.26(b)(5). This requirement was completed in the first permit term. The current permit requires mapping of all constructed outfalls, which includes major and minor outfalls. This is a measurable goal for Year 1, including updating existing mapping of major outfalls as needed. Verification of the outfalls will be accomplished through the field screening program described in BMP3, or through other field surveys. The storm sewer map also includes the names and locations of all receiving waters of the state. The source of this information is the Missouri Use Designation Dataset.

Measurable Goals:

1. Year 1: Map all constructed outfalls, including updating existing mapped major outfalls as needed.
2. Years 1-5: Verify mapped constructed outfalls through the field screening program (BMP 3) or other field surveys to complete verification of all mapped constructed outfalls by Year 5.
3. Years 1-5: Update the mapping of the MS4 and post-construction stormwater control measures as new construction plans and as-builts are filed.

Iterative Process Criteria:

1. Number of MS4 features, stormwater control measures, and outfalls mapped.
2. Are changes to the map or to the process used to update the map needed for reasonable further progress with this BMP?

BMP 2: Illicit Discharge Investigation, Inspection, and Enforcement

City Code Chapter 96 Article II Discharge of Pollutants (https://library.municode.com/mo/springfield) was adopted by City Council in 2001 to prohibit illicit discharges to the MS4 and provide enforcement authority to address illicit discharges. Illicit discharges are detected through public reporting (BMP 4 of MCM 1) and through dry weather field screening (BMP 3 of MCM 3). Written procedures are in place for detecting and investigating illicit discharges through the dry weather field screening program, investigating public reports of illicit discharges, and inspections and enforcement to eliminate illicit discharges.

Measurable Goals:

1. Years 1-5: Address or investigate as appropriate public reports of illicit discharges and track the number of reports received and enforcement actions.
2. Years 1-5: Investigate illicit discharges detected through the dry weather field screening program and track the number of investigations and enforcement actions.

Iterative Process Criteria:

1. Number of illicit discharges detected and eliminated.
2. Are changes needed to illicit discharge investigation, inspection, and enforcement procedures for reasonable further progress?

BMP 3: Dry Weather Field Screening Program

The dry weather field screening program will be updated and implemented with the purpose of finding and eliminating illicit discharges and illegal dumping. In Year 1, the dry weather field screening program from the first permit term will be evaluated and updated using the iterative process criteria. The updated program will describe the locations to be screened and how the locations were established, the number of locations to be screened annually and how locations are selected annually, and field screening procedures.

Measurable Goals:

1. Year 1: Update the field screening program. Complete dry weather field screening at 50 locations.
2. Years 2-5: Complete dry weather field screening at 50 locations annually.

Iterative Process Criteria:

1. Are changes in screening locations and procedures needed to improve outcomes (i.e., identification of illicit discharges)?
2. Are there trends in the number and type of illicit discharges over time and are program changes needed based on these trends?

BMP 4: Spill Prevention, Containment, and Response Procedures

The purpose of this BMP is to have procedures in place to prevent, contain, and respond to spills. The Springfield Fire Department is a first responder for reports of spills in the community. The Fire Department's Hazardous Materials Team is trained to respond and contain spills that may involve hazardous materials. The Fire Department notifies the Water Quality Division for spills that discharge to the MS4 and the two departments coordinate as needed on the spill response. The City's Department of Public Works provides support for spill containment and cleanup when appropriate through delivery of materials and equipment. Spill containment and cleanup may be conducted by the responsible party. The Fire Department and the Water Quality Division also coordinate with the MDNR Emergency Response team for spills that may impact public health and safety and the environment. Spill prevention, containment, and response at City facilities is addressed through MCM 6. Spill prevention, containment, and response at construction sites is addressed through the Stormwater Pollution Prevention Plan (SWPPP) requirements of the land disturbance program under MCM 4. Spill prevention, containment, and response at industrial facilities is addressed through the industrial inspection checklist used in MCM 7. City Code Chapter 96 Article II Discharge of Pollutants (https://library.municode.com/mo/springfield) provides authority to address spills as prohibited illicit discharges and to require any person to adopt and implement an accidental spill plan.

Measurable Goals:

1. Years 1-5: Track reports of spills that discharge to the MS4 and any resulting enforcement actions.

Iterative Process Criteria:

1. Number of spills that discharged to the MS4.
2. Are changes needed to spill prevention, containment, and response procedures for reasonable further progress?

BMP 5: Controls to Limit Sanitary Sewer Infiltration to MS4

The permit requires a description of controls to limit infiltration of seepage from municipal sanitary sewers to the MS4. The illicit discharge investigation, inspection and enforcement program (BMP 2) and the dry weather field screening program (BMP 3) are used to detect and investigate illicit discharges including sewage that could seep into the MS4. The primary control to limit infiltration of seepage from sanitary sewers into the MS4 is the City's Sanitary Sewer Overflow Control Plan (OCP). The OCP is intended to address infiltration of stormwater into the sanitary sewer to reduce sanitary sewer overflows but the infrastructure deficiencies that would allow stormwater to get into the sanitary sewer are the same deficiencies that could allow seepage from the sanitary sewer into the MS4; therefore, the OCP addresses both potential issues. The OCP is implemented by the Clean Water Services Division of the Department of Environmental Services. It includes identification of infiltration and inflow (I/I) sources through visual and TV inspection, dye testing, and smoke testing. Identified sources are then addressed through a variety of methods including but not limited to manhole frame and lid replacement and in-place pipe relining of the public system, and cleanout repairs and downspout disconnections on the private side. The Division also implements a Fats, Oils and Grease (FOG) management program. FOG in sanitary sewer lines can cause dry weather sanitary sewer overflows to the MS4. Food Service Establishments are inspected and issued permits that require a maintenance and clean-out schedule for the grease interceptors that serve these facilities. Sanitary sewer overflows are addressed in accordance with the City's Amended Consent Judgment and the OCP incorporated therein.

Measurable Goals:

1. Years 1-5: Conduct illicit discharge investigation, inspection, and enforcement in accordance with BMP 2 and dry weather field screening in accordance with BMP 3 to detect and investigate illicit discharges to the MS4 including sewage.

Iterative Process Criteria:

1. Were any illicit discharges found that were a result of infiltration of seepage from municipal sanitary sewers?

Minimum Control Measure 4: Construction Site Stormwater Runoff Control

Permit Requirements

a. *The permittee shall develop, implement, and enforce a program to reduce pollutants in stormwater runoff to their MS4 from construction activities on land disturbance sites that disturb one or more acres or disturb less than one acre when part of a larger common plan of development or sale that will disturb a cumulative total of one or more acres over the life of the project. As part of the SWMP, this program shall include the development and implementation of the following:*

i. *Ordinances, orders, or similar means to require entities conducting land disturbance activities, in accordance with section a of this part to implement and maintain erosion and sediment control BMPs at construction sites including sanctions designed to ensure compliance, to the extent allowable under state or local law;*

ii. *Requirements for construction site operators to control construction site waste that may cause adverse impacts to water quality, such as discarded building material, concrete truck washout, chemicals, litter and sanitary waste;*

iii. *Procedures for the permittee to review all construction site stormwater pollution prevention plans for potential water quality impacts;*

iv. *Procedures for the permittee to receive and respond to public reporting of the discharge of pollutants from construction sites in coordination with the permittee's public education and outreach program;*

v. *Procedures for the permittee to inspect construction sites and enforce control measures, including prioritization of site inspections;*

vi. *A plan designed to ensure compliance with the permittee's erosion and sediment control ordinances, orders or similar means including sanctions and enforcement mechanisms the permittee will use to ensure compliance and procedures for when certain sanctions will be used. Possible sanctions include non-monetary penalties (such as stop work orders), fines, bonding requirements, and/or permit denials for non-compliance; and*

vii. *A description of appropriate educational and training measures for construction site operators.*

BMPs and Measurable Goals

BMP 1: Land Disturbance Permit Program

City Council adopted City Code Chapter 96 Article III Land Disturbance Activity (https://library.municode.com/mo/springfield) in 2008 to establish authority for a land disturbance permit program. The purpose of the program is to reduce the discharge of sediment and other construction-related pollutants to the MS4. Per City Code, a City land disturbance permit is required for sites that disturb one or more acres or disturb less than one acre when part of a larger common plan of development or sale that will disturb a cumulative total of one or more acres over the life of the project. This is consistent with MDNR's state-wide land disturbance permitting program and the MS4 requirement for this MCM stated above. City Code also provides specific authority for the following:

- Erosion and sediment control BMPs designed, constructed, and maintained in accordance with the City's erosion and sediment control manual;
- Stormwater pollution prevention plan (SWPPP);
- Self-inspections conducted by an individual with a thorough and demonstrable knowledge of the site's SWPPP and erosion and sediment control practices in general;
- Inspections by City staff;
- Permit fee;
- Security requirement based on 150% of the value of erosion and sediment control BMPs and authority to use the security to correct violations which the permittee has failed to address;

- Enforcement and penalty provisions.

In accordance with City Code, SWPPPs are reviewed and approved prior to issuance of a land disturbance permit. A SWPPP template is provided for SWPPP preparers to use. The template is consistent with the SWPPP components required in the state land disturbance permit. In addition to erosion and sediment controls, the SWPPP requires BMPs to control construction site waste including concrete washout, petroleum products, chemicals, trash, and sanitary waste. A checklist is used to conduct SWPPP reviews. Once the SWPPP is approved, the applicant must pay the permit fee and security requirement, complete a pre-permit meeting, and verify BMP installation. The purpose of the pre-permit meeting is to provide a brief training on the requirements of the SWPPP for the construction site operator.

The SWPPP requires the permittee to conduct self-inspections at the frequency required in the state land disturbance permit. The Water Quality Division conducts complaint-based inspections and routine inspections. Procedures are in place to receive and respond to public reporting of the discharge of pollutants from construction sites as described in BMP 4 of MCM 1. Routine inspections are prioritized based on the size of the site and the presence of sensitive environmental conditions such as proximity to streams. Written procedures are in place for conducting inspections and enforcement. The enforcement tools authorized in the City Code include a notice of violation, stop work order, summons, and penalty. Prior to termination of the permit, a final inspection is conducted to ensure adequate vegetation cover, removal of temporary BMPs, and removal of construction-related sources of pollutants to the MS4 such as accumulated sediment and trash.

In addition to the training provided for construction site operators through the required pre-permit meetings, an education opportunity such as a seminar or webinar is provided on land disturbance-related topics for various audiences annually.

The City has a state land disturbance permit (Permit No. MOR100005) that provides permit coverage for land disturbance projects by the City. These City projects are also required to get a City land disturbance permit from the Water Quality Division.

Measurable Goals:

1. Years 1-5: Implement the land disturbance permit program and track the number of SWPPPs, inspections, public reporting of complaints, construction site operators trained, and enforcement actions.
2. Conduct a minimum of one education activity annually on land disturbance-related topics for various audiences.

Iterative Process Criteria:

1. Are changes needed in SWPPP review procedures and BMP standards to address common compliance issues?

Minimum Control Measure 5: Post-Construction Stormwater Management in New Development and Redevelopment

Permit Requirements

a. *The permittee shall develop, implement, and enforce a program to address the quality of long-term stormwater runoff from new development and redevelopment projects that disturb one or more acres or disturb less than one acre when part of a larger common plan of development or sale that will disturb a cumulative total of one or more acres over the life of the project. This program shall ensure that stormwater controls are in place that have been designed and implemented to prevent or minimize water quality impacts. This program, at a minimum, shall include:*

   i. *Ordinances or other regulatory mechanisms to address post-construction runoff from new development and redevelopment projects to the extent allowable under state or local law. If the permittee needs to develop an ordinance or mechanism, the permittee shall describe the plan and a schedule for implementation. If the permittee's ordinance or regulatory mechanism is already developed, the permittee shall include a copy of the relevant sections within the SWMP;*

   ii. *A plan to ensure adequate long-term operation and maintenance of selected BMPs, including types of agreements between the permittee and other parties (e.g., post-development landowners, regional authorities, etc.);*

   iii. *Strategies developed with the purpose to minimize water quality impacts, minimize the creation of stormwater pollution, and/or utilize BMPs that remove or reduce stormwater pollution that include a combination of structural and/or non-structural BMPs appropriate for the permittee's community. In developing these strategies, the permittee shall consider:*

      1. *The assessment of site characteristics at the beginning of the development design phase to ensure adequate planning for stormwater program compliance;*
      2. *The development and implementation of a stormwater design criteria manual to contain standard sustainable site design criteria and BMP selection and design criteria to reduce water quality impacts;*
      3. *Buffer criteria for streams, karst topography, and other environmentally sensitive areas (e.g., wetlands, floodplains, etc.);*
      4. *Provisions for preservation of undisturbed natural areas, trees, and steep slopes, when feasible;*
      5. *The development of floodplain management controls to minimize pollution with floodplain management controls; and*

   iv. *Inspect or require the inspection of post-construction BMPs that functions to remove or reduce pollution of stormwater and ensure that all BMPs are implemented and effective.*

BMPs and Measurable Goals

BMP 1: Stormwater Plan Review

The City has a stormwater plan review process in place for development projects. The purpose of stormwater plan review, as it relates to the MS4 permit, is to ensure that stormwater controls are designed and implemented on development projects to prevent or minimize water quality impacts from post-construction long-term stormwater runoff. Stormwater plan review also addresses flood control and proper design of stormwater infrastructure. The stormwater requirements for development are contained in the *Flood Control and Water Quality Protection Manual* which was updated through a two-year stakeholder input process that began in 2015. The updated manual was adopted by ordinance in December 2017 (Year 1 of this SWMP) as part of City Code Chapter 96 (https://library.municode.com/mo/springfield). Amendments to City Code Chapter 96 Article I will be proposed to City Council in Year 1 to make the code consistent with the adopted manual and provide updated authority and enforcement provisions.

The manual is available on the City's website at www.springfieldmo.gov/stormwater. It provides authority to require post-construction stormwater control measures (SCMs) to address the water quality of stormwater runoff on new development projects that disturb one or more acres or disturb less than one acre when part of a larger common plan of development or sale that will disturb a cumulative total of one or more acres over the life of the project. The Stormwater Engineering Division of the Department of Public Works conducts stormwater plan review for developments to ensure compliance with the manual. The manual includes a major focus on green infrastructure as well as preservation of streams and riparian corridors that not only provide water quality benefits but also opportunities for trails that connect people and places to these streams and the outdoors. Chapters 8, 10, and 11 of the manual contain the following specific strategies that address this MCM:

- Site planning and design principles to be considered in the beginning phase of design based on a Low Impact Development (LID) approach;
- Requirement to manage the Water Quality Volume, defined as the volume from a 1" rainfall, using SCMs that reduce the discharge of pollutants through treatment or runoff reduction and are properly designed, constructed, and maintained;
- SCM selection and design criteria for a variety of structural SCMs (e.g., extended detention basins, rain gardens, pervious pavement);
- Credits that incentivize non-structural SCMs including natural area conservation and restoration, and tree preservation and planting;
- Stream buffer requirements that apply to streams with a drainage area of 40 acres or more, encompassing small ephemeral and intermittent streams as well as larger streams and their associated floodplains;
- As-built certification requirements for SCMs to ensure they are constructed properly;
- Required operation and maintenance plan and agreement for SCMs to ensure their long-term functionality, including submittal of annual self-inspection reports by the property owner.

In addition to the floodplain protections provided by the stream buffer requirements in Chapter 8 of the manual, the City has had floodplain management requirements in place for many years. City Code Chapter 36 Land Development Code Article XVII Floodplain Management ((https://library.municode.com/mo/springfield) regulates development in floodplains to reduce flood hazards, including the storage and processing of materials and equipment that could be injurious to human, animal, or plant life.

Requirements for redevelopment were proposed as part of the manual during the two-year stakeholder input process. Based on stakeholder input, further study is needed to determine appropriate redevelopment requirements and is proposed to be completed in Year 3. As discussed in BMP 1 of MCM 2, a stormwater technical committee will be formed to provide input on the post-construction program, including redevelopment requirements, and other related SWMP components.

Measurable Goals:

1. Years 1-5: Conduct stormwater plan reviews to ensure compliance with the *Flood Control and Water Quality Protection Manual*.
2. Year 1: Propose amendments to City Code Chapter 96 Article I to City Council for adoption.
3. Year 2: Form a stormwater technical committee under BMP 1 of MCM 2.
4. Year 3: Complete further study and stakeholder input on redevelopment requirements.
5. Year 4: Propose redevelopment requirements to City Council for adoption.

Iterative Process Criteria:

1. Are changes needed to the manual to address design and maintenance issues or to add or remove particular SCMs for water quality reasons?

BMP 2: Long-Term Operation and Maintenance Program

The City will develop and implement a long-term operation and maintenance program with the purpose of ensuring adequate long-term operation and maintenance of post-construction SCMs. The *Flood Control and Water Quality Protection Manual* adopted in Year 1 requires submittal and approval of an operation and maintenance plan and agreement for SCMs as part of the stormwater plan review process. The manual also requires the property owner to submit self-inspection reports to the City annually. Development and implementation of a program to track, inspect, and enforce long-term operation and maintenance of SCMs will be completed in Year 2.

Measurable Goals:

1. Year 1: Develop templates for the operation and maintenance plan, agreement, and SCM inspection checklists.
2. Year 2: Develop and implement a program to track, inspect, and enforce long-term operation and maintenance of SCMs, including property owner self-inspections and establishment of frequencies and priorities for City inspections.

3. Years 3-5: Conduct inspections and enforcement to ensure the long-term operation and maintenance of SCMs. Track the number of self-inspection reports, City inspections, and enforcement.

Iterative Process Criteria:

1. Are changes needed to inspection frequencies, criteria, or enforcement procedures to address long-term operation and maintenance?

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

Permit Requirement

a. The permittee shall develop and implement an operation and maintenance program for municipal operations owned or operated by the permittee. The program shall, at a minimum, include the following:

i. An employee training program to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. The permittee shall describe any existing, available material the permittee plans to use such as those available from EPA, the state, or other organizations. The permittee shall describe how this plan will coordinate with all other minimum control measures, monitoring and TMDL implementations where applicable;

ii. A list of all municipal operations that are impacted by this operation and maintenance program. The permittee shall also include a list of industrial facilities that the permittee owns or operates that are subject to NPDES permits for discharges of stormwater associated with industrial activity that discharge to the permittee's MS4. The permittee shall include the permit number of a copy of the No Exposure Certification (if applicable) for each facility. NPDES permitted facilities not owned or operated by the permittee are not required to be part of the list;

iii. Maintenance BMPs, maintenance schedules, and long-term inspection procedures for structural controls to reduce floatables and other pollutants in discharges from the MS4;

iv. Controls for reducing or eliminating the discharge of pollutants from street, roads, highways, municipal parking lots, maintenance and storage yards, waste transfer station, fleet or maintenance shops with outdoor storage areas, and salt/sand storage locations and snow disposal areas the permittee operates. The permittee shall, at a minimum, conduct the following:

1. Store and cover deicing chemicals and implement deicing practices to reduce the discharge of pollutants to the MS4;

2. Street sweepings or similar activities on all curb and gutter streets, and ensure the proper disposal of the street sweepings;

3. Street design, construction, and maintenance practices that reduce the discharge of pollutants to the MS4; and

4. Routinely clean grated inlets, roadway stormwater inlets, and catch basins;

v. *Storage of all paints, solvents, petroleum products and petroleum waste products (except fuels) under the control of the permittee shall not be exposed to stormwater. Sufficient practices of spill prevention, control, and/or management shall be provided to prevent any spill of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.*

vi. *A plan to reduce pollutants in discharges from the permittee's MS4 associated with the application of pesticides, herbicides, and fertilizers. The plan shall include controls such as educational activities, permits, certifications and other measures determined appropriate by the permittee for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities.*

BMPs and Measurable Goals

BMP 1: Municipal Facilities Stormwater Pollution Prevention Plan

The City owns and operates facilities with maintenance and storage yards, fleet maintenance shops with outdoor storage areas, salt storage locations, and snow disposal areas. The Water Quality Division maintains a SWPPP for these facilities which include the following:

- Phil Broyles Public Works and Environmental Services Complex
- Household Chemical Collection Center
- Kauffman Salt Facility
- Hazelwood Maintenance Compound
- Park Board Operations Compound
- 3 golf courses
- 1 snow disposal area

Fire Department facilities have also been assessed as part of the SWPPP but do not include the above described conditions.

The purpose of the SWPPP is to reduce the discharge of pollutants to the MS4 from these facilities. The SWPPP contains the following major components:

- SWPPP team with names, titles, and contact information for each facility;
- Potential pollutant types and sources and BMPs to address these pollutants for each facility, including but not limited to the following specific pollutants and BMPs required by the permit:
    - Storage of chemicals such as paint, solvents, petroleum, and petroleum waste products so that these materials are not exposed to stormwater;
    - Storage of salt and liquid deicers to reduce the discharge of pollutants to the MS4. See BMP 4 for deicing practices;
    - Street sweepings storage and disposal.
- Spill prevention and control procedures;
- Inspection frequency for each facility based on the prevalence of potential pollutants;

- Employee training (BMP 2).

The permit requires a list of industrial facilities that the City owns or operates that are subject to NPDES permits for discharges of stormwater associated with industrial activity that discharge to the City's MS4. The Springfield-Branson National Airport and the Springfield Sanitary Landfill are owned and operated by the City and are covered under NPDES Permits MO-0134830 and MO-0106658, respectively, for stormwater discharges associated with industrial activity. Neither of these facilities discharges to the City's MS4. Therefore, the City is not required by its MS4 permit to include these facilities on the list.

Measurable Goals:

1. Years 1-5: Conduct facility inspections at the frequency described in the SWPPP and update the SWPPP as needed.

Iterative Process Criteria:

1. The SWPPP will be updated annually based on changes in facility operations and using an iterative process to adjust BMPs described in the SWPPP based on inspection report findings.

BMP 2: Employee Training

Employee training will be provided for employees who work at facilities addressed in the SWPPP under BMP 1 which includes employees involved in stormwater system maintenance. The purpose of employee training is to educate employees about stormwater pollution and the MS4 permit and train them to use BMPs related to their facilities and activities. They are also educated about illicit discharges, including what to look for and how to report it (MCM 1, BMP 4). Employees involved in project management for municipal projects that involve land disturbance permits are provided training under BMP 1 of MCM 4. Training materials for employees who work at facilities addressed in the SWPPP are primarily developed by the Water Quality Division to be tailored to activities, materials, and BMPs at these facilities.

Measurable Goals:

1. Year 1:
    a. Provide training for employees associated with priority facilities and activities based on potential for discharge of pollutants to the MS4.
    b. Establish an appropriate frequency for employee training for each workgroup based on potential for their facilities and activities to discharge pollutants to the MS4.
2. Years 2-5: Provide employee training at the established frequency for each workgroup.

Iterative Process Criteria:

1. Do the training frequency or training materials need to be modified to address issues observed during inspections?

BMP 3: MS4 Inspection and Maintenance

The City will conduct inspection and maintenance of structural controls with the purpose of reducing floatables and other pollutants in discharges from the MS4. Inspection and maintenance is a joint effort by

the Departments of Environmental Services and Public Works. Beginning in Year 1, the Department of Environmental Services is funding the hiring of two additional crews to focus solely on water quality-related maintenance. Inspection and maintenance of structural controls will include the following activities:

1. City-owned water quality SCMs will be inspected by Water Quality Division staff. Maintenance is performed based on these inspections as well as routine maintenance such as mowing and plant maintenance. Maintenance is also performed in response to citizen service requests. Inspection and maintenance of privately-owned SCMs is addressed under MCM 5.
2. Roadway grated inlets are grouped into routes. Crews drive these routes and remove debris from the grates as needed. Inlets are also cleaned in response to citizen service requests.

In Year 2, the City will evaluate inspection and maintenance needs and priorities, and develop an updated plan and schedule for inspection and maintenance of structural controls to reduce floatables and other pollutants in discharges from the MS4.

Measurable Goals:

1. Years 1-2:
    a. Inspect City-owned SCMs annually and perform maintenance as needed based on inspection results, routine maintenance needs, and citizen service requests.
    b. Complete each grated inlet route a minimum of once annually and clean grates as needed on each route and in response to citizen service requests.
2. Year 2: Evaluate inspection and maintenance needs and priorities and develop an updated plan and schedule.
3. Years 3-5: Implement the updated plan and schedule for inspections and maintenance of structural controls.

Iterative Process Criteria:

1. Number of inspection and maintenance activities completed annually and amount of floatables/debris removed.
2. Are changes to inspection and maintenance schedules needed to ensure functionality of structural controls?

BMP 4: Deicing Practices

The City will continue to implement deicing practices to reduce the discharge of pollutants to the MS4. The Street Operations Division of Public Works performs deicing of municipal streets and City-owned or operated parking lots in winter weather. The City's deicing practices include application rates and procedures for determining application timing to provide safe driving conditions while also reducing the discharge of deicing materials into the MS4. Deicing practices and storage and handling of deicing materials are detailed in the SWPPP under BMP 1.

Measurable Goals:

1. Years 1-5: Update the SWPPP to reflect any changes in deicing practices.

Iterative Process Criteria:

1. Have any changes in deicing practices been made?

BMP 5: Street Sweeping

The Department of Public Works implements a street sweeping program with the purpose of reducing the discharge of pollutants and keeping city streets clean and safe. Public Works sweeps all curbed streets in the city on a rotating schedule. On average, all curbed streets are inspected and cleaned if needed 3 times per year. During peak leaf season, the street sweepers also clean out ditches along the routes. Temporary storage of street sweepings is addressed in the SWPPP under BMP 1.

Measurable Goals:

1. Years 1-5: Track and report the number of times sweeper routes are ran and the amount of material collected.

Iterative Process Criteria:

1. Are changes to priorities or frequencies needed to most effectively utilize street sweeping resources for reducing the discharge of pollutants?

BMP 6: Street Design, Construction, and Maintenance

The Department of Public Works is responsible for the design of street projects such as road widening projects and streetscape projects. The Water Quality Division works with Public Works through the project scoping and plan review process to incorporate green infrastructure or other post-construction SCMs into the design of these projects when feasible to reduce the discharge of pollutants from streets. BMPs for street construction to address construction site runoff are addressed through MCM 4. BMPs for street maintenance are included in the SWPPP under BMP 1.

Measurable Goals:

1. Years 1-5: Provide input on the design of street projects and report the number of post-construction SCMs constructed as part of street projects.
2. Years 1-5: Update the SWPPP to reflect any changes in BMPs for street maintenance practices.

Iterative Process Criteria:

1. Has the percentage of street design projects that include post-construction SCMs increased over time?
2. Are changes to street maintenance BMPs needed to reduce the discharge of pollutants?

BMP 7: Application of Pesticides, Herbicides, and Fertilizers

The Public Grounds Section of Public Works follows annual work plans based on Integrated Pest Management principles to reduce the discharge of pollutants from the application of pesticides, herbicides, and fertilizers on City right-of-way and at municipal facilities. Annual work plans include soil testing to identify soil amendments needed. If chemicals are needed, the annual work plan specifies the chemical

types, application rates, and frequencies. Public Grounds primarily uses non-restricted use pesticides that do not require a pesticide applicator license; however, Public Grounds personnel responsible for applying or overseeing the application of pesticides are licensed pesticide applicators to ensure best practices are followed. BMPs such as compost amendments in place of chemical fertilizers and the use of horticultural vinegar as an alternative to herbicides will be implemented where feasible. The Springfield-Greene County Parks Department uses pesticides, herbicides, and fertilizers on parks properties based on the usage of the property to maintain optimal surfaces for sports activities or to address persistent pest problems. Educational activities to address the application of pesticides, herbicides, and fertilizers by commercial applicators and the public are addressed through BMPs 1 and 2 of MCM 1.

Measurable Goals:

1. Years 1-5: Report changes in annual work plans and BMPs for the application of pesticides, herbicides, and fertilizers on City right-of-way and municipal facilities to reduce the discharge of pollutants.

Iterative Process Criteria:

1. Have changes in BMPs been made over time to reduce the discharge of pollutants?

Minimum Control Measure 7: Industrial and High Risk Runoff

Permit Requirements

a. *The permittee shall implement a program to monitor and control pollutants in stormwater discharges to the MS4 from industrial and high risk runoff facilities. The program shall include, at a minimum, the following:*
   i. *Identify all of the activities below that discharge into the MS4:*
      1. *Municipal landfills;*
      2. *Hazardous waste treatment, storage, and disposal facilities;*
      3. *Industries subject to reporting requirements pursuant to Title III Section 313 of the Superfund Amendments and Reauthorization Act of 1986; and*
      4. *Industrial facilities that the permittee determines are contributing a substantial loading of pollutants to the MS4.*
   ii. *Identify priorities and procedures for inspections and establishing and enforcing control measures for such discharges; and*
   iii. *A monitoring program for stormwater discharges associated with the facilities listed under items…1-4.*

BMPs and Measurable Goals

BMP 1: Identification of Industrial and High Risk Runoff Facilities

The Water Quality Division maintains a list of the following facilities in the city limits and updates this list annually. The purpose of the list is to identify industrial and high risk runoff facilities to focus on with BMPs 2 and 3.

1. Municipal landfills – There are no municipal landfills in the city limits.
2. Hazardous waste treatment, storage, and disposal (TSD) facilities – Facilities in this category are identified by obtaining a list of facilities with TSD permits from MDNR.
3. Industries subject to reporting requirements pursuant to Title III Section 313 of the Superfund Amendments and Reauthorization Act of 1986 – Facilities in this category are identified by obtaining a list of facilities that report through EPA's Toxics Release Inventory (TRI) program.
4. Industrial facilities that the permittee determines are contributing a substantial loading of pollutants to the MS4 – Facilities in this category are identified by evaluating the list of facilities with NPDES state operating permits issued by MDNR for stormwater discharges associated with industrial activity and determining the types of facilities that are contributing a substantial loading of pollutants to the MS4 based on information from BMPs 2 and 3 or other information at the City's discretion.

Measurable Goals:

1. Years 1-5: Update the list of facilities annually.

Iterative Process Criteria:

1. Have the types of facilities determined by the City to be contributing a substantial loading of pollutants to the MS4 changed based on information from BMPs 2 and 3 or other information at the City's discretion?

BMP 2: Inspection and Enforcement for Industrial and High Risk Runoff Facilities

The Water Quality Division will continue to implement an inspection program for the identified list of facilities. Inspection and enforcement is conducted with the purpose of controlling pollutants in stormwater discharges to the MS4 from these facilities. Each year, a list of facilities to inspect is generated to include: 1) facilities that have never been inspected; 2) facilities due for an inspection based on an inspection frequency established from past inspection results; 3) facilities that are upstream from a monitoring location with substantial pollutant concentrations under BMP 3. An inspection checklist is used to conduct inspections. Discharge monitoring reports required by their NPDES permit may be considered in the inspection process. City Code Chapter 96 Article II (https://library.municode.com/mo/springfield) provides authority to inspect properties with stormwater discharges associated with industrial activity, address the discharge of pollutants and exercise enforcement powers, including but not limited to issuance of a Notice of Violation and establishing and requiring SWPPP elements. The code also provides authority for sampling, which may be done as part of the inspection and enforcement process. Written procedures are in place for inspections and enforcement.

Measurable Goals:

1. Years 1-5: Inspect the list of facilities generated annually based on the priorities described above, up to 25 facilities per year. The number of facilities inspected per year may be less than 25 based on the priorities described above. Track the number of inspections and enforcement actions.

Iterative Process Criteria:

1. Is facility compliance improving based on changes in inspection frequencies and number of enforcement actions?

BMP 3: Monitoring Program for Industrial and High Risk Runoff

The Water Quality Division will continue a monitoring program to collect stormwater samples at locations that receive industrial and high risk runoff. The purpose of the monitoring program is to collect data to assist in determining inspection priorities for BMP 2. Samples will be collected from the MS_4 in areas that receive runoff from facilities identified in BMP 1. As a means of evaluating the data, the Water Quality Division establishes benchmarks for the sampling parameters as indicators of substantial pollutant loading. The data is evaluated to determine inspection priorities and track trends over time. A written monitoring plan and protocol is in place for this program as it was implemented in the first permit cycle. In Year 1, this plan and protocol will be evaluated and updated based on data gathered in the first permit cycle and program priorities.

Measurable Goals:

1. Year 1: Continue the program from the previous SWMP to conduct monitoring at 25 locations, dependent on qualifying rain events. Evaluate the existing monitoring program and update it as needed. Report the updated monitoring program in the Year 1 annual report.
2. Years 2-5: Implement the updated monitoring program and report the results in the annual reports.

Iterative Process Criteria:

1. Is the monitoring program effective in providing meaningful data to control pollutants in stormwater discharges associated with industrial and high risk runoff facilities?
2. What trends do the data show and are BMP changes needed based on these trends?

Minimum Control Measure 8: Flood Control Projects

Permit Requirements

a. *The permittee shall consider the impacts on the water quality, including adverse physical and hydrological changes, of receiving water bodies in the design of new flood management projects, consider controls that can be used to minimize impacts, and provide a description of procedures; and*

b. *The permittee shall evaluate existing structural flood control devices to determine if retrofitting the device to provide additional pollutant removal from stormwater is feasible. The permittee shall establish a schedule for implementing retrofits of flood control devices owned and operated by the permittee that have been determined to be feasible.*

BMPs and Measurable Goals

BMP 1: Water Quality Design in Flood Control Projects

The Stormwater Engineering Division is responsible for the design of flood control capital improvement projects to address flooding problems. The Stormwater Engineering and Water Quality Divisions work together through the project scoping and plan review process to design these projects in a way that minimizes water quality impacts when feasible based on engineering considerations, stakeholder input, and cost. Flood control projects vary in scope and size, ranging from stream daylighting to detention basin improvements to small neighborhood drainage projects. The water quality strategies that will be considered vary with the type of project, such as stream improvements that utilize natural channel design and provide opportunities for trails to connect people with streams, detention basin improvements that provide water quality treatment, or drainage improvements that incorporate vegetated channels or other green infrastructure. Flood control projects may also involve the voluntary acquisition of flood prone properties which provides a water quality benefit through preserving or restoring flood prone areas as green space.

Measurable Goals:

1. Years 1-5: Implement the project scoping and plan review procedures for consideration of water quality impacts in the design of flood control projects and report completed projects annually.

Iterative Process Criteria:

1. Has the percentage of projects with water quality controls increased over time?
2. Are changes needed to improve procedures and outcomes?

BMP 2: Retrofitting Flood Control Structures

Flood control detention basins that are owned and operated by the City will be evaluated on a priority basis to determine if retrofitting the basin to provide additional pollutant removal from stormwater is feasible. They will be prioritized for evaluation based on relevant factors, such as drainage area characteristics and Integrated Plan considerations. A schedule for implementation of feasible retrofits will be established.

Measurable Goals:

1. Years 1-5: Evaluate 1 City-owned and operated detention basin annually to determine if retrofitting the basin to provide additional pollutant removal from stormwater is feasible. If the evaluated basin is determined to be feasible to retrofit, establish a schedule for implementation.

Iterative Process Criteria:

1. How many flood control detention basins were feasible to retrofit?
2. Are there other City-owned and operated flood control devices that could be evaluated for retrofitting?

Minimum Control Measure 9: Monitoring

Permit Requirements

a. Representative monitoring shall be conducted by the permittee on representative outfalls, internal sampling stations, or instream monitoring locations with the purpose of characterizing the quality of stormwater discharging from the permittee's MS4. The monitoring program shall include the following:

i. Stormwater samples shall be collected from stormwater discharges from three (3) storm events annually occurring at least one (1) month apart;

ii. The permittee shall conduct storm event representative sampling at a minimum of six separate locations to be described in the permittee's SWMP. The Department may allow changes to the monitoring locations upon notification to the Department by the permittee in accordance with Section D, item 5 of this permit;

iii. Parameters to be sampled shall include the following at a minimum. The Department may allow changes to the parameters upon notification by the permittee in accordance with Section D, item 5 of this permit: 1) Total Suspended Solids; 2) Specific Conductivity; 3) Chemical Oxygen Demand; 4) Biochemical Oxygen Demand; 5) Oil and Grease; 6) E.coli; 7) pH; 8) Total Kjeldahl Nitrogen; 9) Nitrate + Nitrite; 10) Dissolved Phosphorus; 11) Total Phosphorus; and 12) additional limited quantitative data required by the Department for determining permit conditions. The Department may also request additional parameters along with sampling conditions such as locations, season of sample collection, form of precipitation, and other parameters to ensure representativeness. If the Department requires additional parameters to be provided, then the Department will submit an official written request at least one year prior to the expiration date of this permit; 13) Storm event data records shall be maintained of all analytical results, the date and duration (in hours) of the storm event(s) samples, rainfall measurements or estimates (in inches) of the storm event with generated the runoff that was sampled, and the duration (in hours) between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event.

b. Biological Assessments. The permittee shall continue to conduct macroinvertebrate assessment of two urban streams for a minimum of one year during the life of this permit. Assessments shall be conducted twice within the same year (fall and spring), using the Department's protocol…The streams that are

candidates for assessments and a rationale for the selection of two streams for assessments shall be included in the SWMP. The results of the assessments shall be included in the annual report.

c. *Analysis and collection of samples shall be conducted in accordance with methods specified in 40 CFR 136. Where an approved Part 136 method does not exist, any available method may be used unless a particular method or criteria for method sections (such as sensitivity) has been specified in this permit.*

BMPs and Measurable Goals

BMP 1: Representative Monitoring

The permit requires that representative monitoring be conducted on representative outfalls, internal sampling stations, or instream monitoring locations with the purpose of characterizing the quality of stormwater discharging from the permittee's MS4. During the previous permit term from 2009-2017, 12 in-stream locations were monitored and the results indicated that the Jordan Creek watershed produced the highest concentrations of nutrients and sediment in first flush stormwater samples compared to the other streams sampled. Based on the iterative process criteria, the monitoring plan for Year 1 will focus on representative monitoring in the Jordan Creek watershed as a high priority watershed for further characterization of stormwater discharges. Monitoring is proposed at the following locations:

1. Jordan Creek at Fort – instream location representative of a majority of the Jordan Creek watershed with multiple land uses;
2. South Branch of Jordan Creek at Fremont – instream location representative of the south branch watershed with multiple land uses;
3. North Branch of Jordan Creek at Division – instream location representative of the north branch watershed with multiple land uses;
4. Channel at Nichols/Broadway – MS4 internal sampling station representative of residential land use in the Jordan Creek watershed;
5. Channel at 600 block N. Burton Ave. – MS4 internal sampling station representative of industrial land use in the Jordan Creek watershed;
6. Channel at 300 block N. Main Ave. – MS4 outfall representative of high density urban land use in the Jordan Creek watershed.

Stormwater samples will be collected from a minimum of three storm events occurring at least one month apart and analyzed for the parameters listed in the permit requirement. The monitoring locations and/or parameters may change in Years 2-5 of the permit based on the iterative process criteria. MDNR will be notified of changes in monitoring locations or parameters through written notification submitted as a stand-alone notification or included in the annual report as required in Section D. item 5 of the permit.

Measurable Goals:

1. Years 1-5: Implement the monitoring plan for each year and report the results in the annual report. Include notification of any changes to the monitoring plan for the next year in the annual report.

Iterative Process Criteria:

1. Based on previous monitoring data, target pollutants, and program BMPs and priorities, what monitoring locations and parameters should representative monitoring focus on for the purpose of characterizing the quality of stormwater discharges?

BMP 2: Biological Assessments

The permit requires macroinvertebrate assessments of two urban streams for a minimum of one year during the life of the permit. This will be completed in Year 4 of the permit.

Measurable Goals:

1. Year 3: Determine streams that are candidates for assessments and a rationale for the selection of two streams for assessments and include this information in the SWMP and the annual report. Consult with MDNR staff at the Environmental Services Program for updated protocol on biological assessments and data reviews.
2. Year 4: Conduct macroinvertebrate assessments of two urban streams in the fall and spring using MDNR's protocol and report the results in the annual report.

Iterative Process Criteria:

1. Based on previous monitoring data and program priorities, are changes to the biological assessments program needed?