



## MS4 Stormwater Management Plan (2019)

The City of Maryville, Missouri has updated the Storm Water Management Plan (SWMP) in conjunction with the permit renewal application to discharge under the Missouri State Operating Permit (MSOP) MO-R040071. This SWMP is developed as required in Section 1.4.2 of the MSOP as a part of the City's Municipal Separate Storm Sewer System (MS4) Program.

The City of Maryville encompasses three (3) square miles and its population is 11,757 according to the 2017 estimation of the Census Bureau. The City is drained by three (3) main streams, the White Cloud, Peach Creek, and the 102 River. These streams and rivers convey storm water generally south to the Missouri River. The land use is primarily residential with pockets of commercial and industrial development as shown on the enclosed map. The community has six (6) main industrial contributors within their MS4 boundaries, and contains one (1) State University that is not covered under the MS4 program.

There are six (6) Minimum Control Measures (MCM's) defined in the MS4 permit. The City has developed Best Management Practices (BMPs) and measurable goals to evaluate and ensure compliance of the MCMs.

### I. Public Education and Outreach on Storm Water Impacts

**Section 4.2.1.1 of the operating permit requires MS4 permittees to implement a public education program to distribute educational material to the community, or conduct equivalent outreach activities about the impacts of stormwater discharges on waterbodies and steps the public can take to reduce pollutants in stormwater runoff.**

The City of Maryville maintains a strong communication practice with its citizens. Primary means of communication include dissemination of information through the city's website ([www.maryville.org](http://www.maryville.org)), two (2) local newspapers, three (3) local radio stations, and public city council meetings. These diverse avenues allow for a large percentage of the community to be reached with educational information on storm water impacts.

The target audience for the public education program are the residents, school age children, project developers, and business owners. The target audiences include the majority of the people living and working in the Maryville area that would impact the municipal storm sewer system. An emphasis on the education of school age children about storm water pollution and prevention methods will help develop good habits and best practices early in their lives.

Primary pollutant sources in the City include the general population and commercial and industrial operations. The focus of the general education program will be pollution prevention. The storm water impact education program will help its residents understand the impact of pollution and how to prevent it from happening.

Measurable goals for the Public Education and Outreach on Storm Water Impacts require the use of BMPs to complete specific tasks. The effectiveness of public education, especially in the early years of implementation is difficult, therefore the completion of proposed SWMP tasks related to this MCM will provide the City a means to track progress in the development of the program.

### **BMPs & Goals**

The City of Maryville will inform the community and local developers of storm water requirements and impacts through the following action items:

1. Publish one (1) article annually in the local print media regarding storm water impacts. Subjects will include an introduction to the National Pollutant Discharge Elimination System (NPDES) Permit Program Phase 2, program requirements, opportunities for community participation in the SWMP, and the location of additional storm water information and contacts. The article will also include a link to a survey on stormwater management which will also allow participants to make additional comments.

*Schedule:* Publish an annual article in the summer of each year.

*Measurement:* Number of survey responses and website traffic upon article releases.

2. Develop a landing page ([www.maryville.org/stormwater](http://www.maryville.org/stormwater)) on the City's website to promote education, outreach and information regarding the SWMP. The stormwater page will provide an easy to deliver method of outreach to citizenry through digital media. The webpage will summarize info SWMP, include links to critical storm water documents, and a frequently asked questions (FAQs) section.

*Schedule:* Launch the webpage in the Fall of 2019 following approval of the SWMP 2019 update.

*Measurement:* Track traffic to site and selection of FAQs which will assist in further refinement of this MCM.

3. The City of Maryville will develop a log form for citizens to register concerns and document responses to stormwater matters.

*Schedule:* Spring 2019.

*Measurement:* The completed log form track increasing or decreasing trends with concerns regarding stormwater management.

4. The City of Maryville will regularly update information about the SWMP and provide links to updates and information supplied by the Missouri Department of Natural Resources (MDNR) and the United States Environmental Protection Agency (USEPA) and how that relates to the MS4 program.

*Schedule:* Following creation of [www.maryville.org/stormwater](http://www.maryville.org/stormwater), information on the page will be updated quarterly at a minimum.

*Measurement:* Tracking the number of updates and click through rates on links.

5. The City of Maryville will distribute educational brochures and letters to waste haulers and restaurant owners regarding the proper management of waste grease, maintenance of grease traps, and waste disposal. The information will include a questionnaire for recipients to explain their current disposal process.

*Schedule:* The educational brochure, letter, and questionnaire will be distributed on an annual basis beginning Spring 2020.

*Measurement:* Number of brochures printed and response rate to questionnaires.

6. The City of Maryville will initiate an educational program to residents targeting dumping of yard waste into the storm system. The educational program will include “door knockers” to inform residents on the stormwater quality impacts of decomposing litter in the water along with city ordinances. The “door knockers” will be provided when receiving or observing a residential concern in an area.

*Schedule:* Program will be implemented beginning Fall 2019.

*Measurement:* Number of “door knockers” and locations to measure increase or decrease of dumping incidents in an area.

7. The City of Maryville will stencil stormwater inlets to indicate that materials entering the inlets discharge directly into the surrounding creeks, streams, or lakes and not the sanitary sewer system.

*Schedule:* Begin stenciling of stormwater inlets in Spring 2020.

*Measurement:* Number of inlets stenciled and specific survey question responses regarding the stormwater inlets included in BMP #1.

***Responsible person: Public Works Director***

## II. Public Involvement and Participation

**Section 4.2.2.1 of the permit requires the permittee to implement a public involvement and participation program that provides opportunity for the public involvement in the development and oversight of the permittee's Stormwater Management Program, and provides opportunity for public involvement of the permittee's renewal application. The permit requires all permitted MS4s to provide opportunities and work with citizen volunteers to educate the public about the SWMP.**

The City of Maryville will implement a public involvement and participation program that is designed to increase public involvement and oversight of the SWMP. The plan for further increasing participation will include public meetings, identification of volunteers to serve on a citizen's panel, and working with volunteers on active projects that engage citizens in the process of stormwater BMPs and education.

The level of public involvement and volunteerism in the development and oversight of SWMP and related activities is difficult to accurately predict. Therefore, the City has developed BMPs and measurable goals related to the volume of activities completed.

### **BMPs & Goals**

The City of Maryville will encourage public involvement and participation in the SWMP through the following action steps:

1. Promote and hold an annual public meeting regarding education of and soliciting input for the continued development of the SWMP. Public hearings will include a fourteen (14) day public notice printed in a local newspaper and announced on social media.

*Schedule:* Annual public meetings will be held in the Spring. The first meeting will occur in March 2019 with the draft SWMP update.

*Measurement:* Public meeting attendance.

2. Develop an ordinance requiring a fourteen (14) day public notice period prior to the submission of the SWMP or MSOP renewal application to the Department of Natural Resources. In addition to the annual public meeting, this will ensure citizens are notified about the process.

*Schedule:* Spring 2019.

*Measurement:* Completion of ordinance and annual compliance for prior notice.

3. Hold and organize an annual stormwater clean up day with organized volunteers. Clean up efforts for trash and debris in local waterways will assist with public involvement and education on BMPs.

*Schedule:* April 2019 and annually based on volunteer scheduling.

*Measurement:* Number of volunteers and interest in additional events.

4. The City of Maryville will create a log sheet to document volunteer work performed for the SWMP and to collect contact information for future involvement opportunities.

*Schedule:* The log sheet will track volunteer work beginning April 2019.  
*Measurement:* Number of volunteers.

***Responsible person: Public Works Director***

### **III. Illicit Discharge Detection and Elimination**

**Section 4.2.3.1 of the permit requires the permittee to develop, implement, and enforce a program to detect and eliminate illicit discharges, as identified in 10 CSR 20-6.200 and 40 CFR 122.34(b)(3), into the permittee's regulated MS4. The permittee must develop and implement a storm sewer map showing the location of all constructed outfalls and the names and locations of all receiving Waters of the State that receive discharges from those outfalls.**

The City of Maryville will develop, implement, and enforce a program to detect and eliminate illicit discharge in the MS4. Constructed outfalls will be identified through a storm sewer map and illicit discharges will be prohibited by ordinance or other regulatory mechanisms. The City will inform the general public of hazards of illegal discharges and improper disposal of waste.

Maryville currently attempts to minimize illicit discharges through several mechanisms. An existing ordinance, copy attached, is the legal mechanism used to prevent illicit discharges. Also attached to the SWMP is a continuously updated map showing all constructed outfalls. City streams are not on the 303(d) list nor do they have TMDLs which indicates the City's streams are in relatively good condition. Therefore, the focus of the illicit discharge detection and elimination program is to identify during field inspections and through community involvement the presence of dry weather discharges. Any dry weather discharges will be field tested by our Sanitary Sewer Maintenance Division of Public Works for the presence of typical pollutants found in storm water or traced to their origin, and appropriate measures undertaken to eliminate them if found to be illicit.

The measurable goals for Illicit Discharge Detection and Elimination include phased completion of mapping, inspection, investigations, and resolution. The constructed outfall map is up-to-date, but requires continuous modifications as local projects occur. City staff inspects outfalls twice each year and follows up with resolution to any issues.

#### **BMPs and Goals**

The City of Maryville will develop, implement, and enforce a program to detect and eliminate illicit discharges and update the program through the following action steps:

1. The City of Maryville will properly train staff to identify and report potential dry weather illicit discharges. Staff will complete EPA webinars and contact MDNR for any Compliance Assistance Visits necessary.

*Schedule:* Summer 2019 and for any new hires.

*Measurement:* Number of employees trained through EPA and other sources.

2. Conduct field investigation of the open channel system throughout the City. Field investigation will include walking the Waters of the State, inspecting outfalls, and noting whether a dry weather discharge was occurring. If an illicit discharge is found, the city must document the procedure of finding the source of and how it was eliminated.

*Schedule:* Beginning Spring 2019.

*Measurement:* Documentation of areas inspected, volume of incidents of illicit discharge, and how they were eliminated.

3. The City of Maryville will conduct an annual update of the storm sewer system map with field located outfalls and any new drainage systems constructed. Identify all outfalls and add to GIS mapping databases.

*Schedule:* Spring 2020 update and ongoing

*Measurement:* Number of outfalls field located and updated.

4. The City of Maryville will pursue grants/funding for a household hazardous waste pick-up day. This event will encourage residents to attend and dispose of those wastes properly.

*Schedule:* Secure funding by Summer 2020 and seek annually.

*Measurement:* Utilization of the household hazardous waste day.

5. Review existing ordinance prohibiting illicit discharges and recommend modifications to ordinance as required.

*Schedule:* Annually beginning Fall 2019.

*Measurement:* Ordinance amendments or accuracy upon review.

***Responsible person: Public Works Director***

#### IV. Construction Site Storm Water Runoff Control

**Section 4.2.4 of the current general MS4 permit requires the permittee to develop, implement, and enforce a program to reduce pollutants in any storm water runoff to their regulated small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre, or if less than one acre if that activity is part of a large common plan of development or sale that would disturb one acre or more. The requirements of the construction site storm water runoff control program are listed in Sections 4.2.4.1.1 through 4.2.4.1.6 of permit MOR040058.**

The City of Maryville shall implement a program to reduce pollutants in any storm water runoff to its small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. If the NPDES permitting authority waives requirements for storm water discharges associated with small construction activity in accordance with 10 CSR 206.200, Maryville is not required to implement a program to reduce pollutant discharges from such sites.

The City of Maryville minimizes pollutants in storm water runoff from construction activities through several existing mechanisms. Section 560.060 of the Municipal Code of is the legal mechanism used to require erosion and sediment controls at construction sites. Other areas of the code outline the review process of pre-construction development plans and subdivision improvement plans. These ordinances will be regularly reviewed with regard to water quality and amended to reflect the requirements of this SWMP.

#### **BMPs and Goals**

The City of Maryville will develop, implement, and enforce a program to reduce pollutants in any storm water runoff from construction activities per requirements of the MSOP and improve the program through the following action steps:

1. The City of Maryville will review and update any stormwater related sections of the code as needed.

*Schedule:* Annually in the Summer beginning 2019.

*Measurement:* Amendments and accuracy of stormwater related code sections.

2. Perform site inspections prior to, during, and with final inspection of construction related activities. The City will establish an inspection form to include site identifier, date of inspection, status of project, and compliance determination for each construction project. Inspection sites will be prioritized according to their proximity to major streams.

*Schedule:* Summer 2019, and ongoing.

*Measurement:* Number of inspections performed.

3. Establish a grading permit that will be issued for construction activities to allow recourse for if problems arise on the project. Propose specific sanctions and action within the permit to ensure compliance with erosion control and water quality ordinance requirements.

*Schedule:* Fall 2019.

*Measurement:* Permits issued and compliance results.

4. Develop log form to register citizen complaints, specific to construction site activity. The log form will be developed in conjunction with records created through MCM #1 of the MSOP. The log will include the citizen's concern, location of the concern, and the follow-up efforts conducted staff.

*Schedule:* Spring 2019.

*Measurement:* Number of concerns logged and addressed.

***Responsible person: Public Works Director***

## **V. Post Construction Storm Water Management in New Development and Redevelopment**

**Section 4.2.5.1 of the permit requires the permittee to develop, implement and enforce a program to address the quality of long-term stormwater runoff from new development and redevelopment projects that disturb equal to and greater than one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the permittee's regulated Small MS4.**

The city will develop, implement and enforce a program to address the quality of long-term stormwater runoff from new development and redevelopment projects per the MSOP.

### **BMPs and Goals**

The City of Maryville strive to ensure that controls are in place enforce post construction storm water management BMPs and minimize water quality impacts through the following actions:

1. The City of Maryville will review and update ordinances to ensure post construction storm water management is included for redevelopment activities.

*Schedule:* Spring 2019.

*Measurement:* Ordinance amended.

2. The city will develop a plan designed to ensure adequate long-term operation and maintenance of selected stormwater control practices, including, as appropriate, types of agreements between the city and other parties such as post-development landowners.

*Schedule:* Spring 2019.

*Measurement:* Number of documented agreements and compliance of said agreements.

3. The City of Maryville will inspect and document post-construction stormwater BMPs to ensure they are implemented and effective.

*Schedule:* Spring 2019.

*Measurement:* Number of reports showing post-construction inspections.

***Responsible person: Public Works Director***

## **VI. Pollution Prevention/Good Housekeeping for Municipal Operations.**

**Section 4.2.6 of the current general Small Municipal Separate Storm Sewer Systems (MS4) permit requires the permittee to develop and implement an operation and maintenance program that includes training a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. The requirements for the pollution prevention/good housekeeping program listed in Sections 4.2.6.11 through 4.2.6.2 of permit MOR040071.**

The City of Maryville ensures compliance with this regulation through many of the BMPs outlined in other MCMs. Using materials available from EPA and MDNR, the City includes employee training to prevent and reduce storm water pollution from public activities such as park and open space, fleet and maintenance buildings, new construction and land disturbances, as well as maintenance of the storm water system.

A list of municipal operations that are impacted by this operation and maintenance program is attached. The City of Maryville will continue to education its staff and elected officials on the impacts of storm water pollution and prevention BMPs.

### **BMPs and Goals**

To ensure storm water pollution prevention and good housekeeping for municipal operations, the City of Maryville will be utilizing the following action steps:

1. The City of Maryville will develop, review, and maintain storm water pollution prevention plans for all municipal owned facilities. The plans will include items such as proper storage of chemicals, proper disposal methods, spill control/containment, clean-up procedures, and proper equipment maintenance practices to prevent fluid spills.

*Schedule:* Fall 2019.

*Measurement:* Plans developed with annual inspection reports.

2. Gather or develop training materials for staff to address pollution prevention plans and other good housekeeping requirements.

*Schedule:* Summer 2019 and annually.

*Measurement:* Documented annual training meetings.

3. Develop and review procedures for items such as inlet cleaning designed to reduce sediments and debris entering streams through the storm sewers.

*Schedule:* Spring 2020.

*Measurement:* Procedures developed and documented inspection reports of cleaning and any known issues.

4. Continue regular street sweeping to prevent debris from entering the stormwater system.

*Schedule:* Ongoing.

*Measurement:* Miles of street swept and debris tons delivered to Transfer Station for disposal.

5. The City of Maryville will complete a listing of all municipal operations that are impacted by the operation and maintenance program and include in annual municipal inspections for stormwater compliance.

*Schedule:* Annually, beginning Fall 2019.

*Measurement:* Inspection reports from each facility.

***Responsible person: Public Works Director***