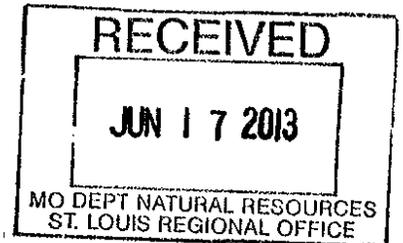




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WATER PROTECTION PROGRAM



STORM WATER MANAGEMENT PROGRAM

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I. REGULATORY BACKGROUND

This Storm Water Management Program (SWMP) is required under U.S. Environmental Protection Agency (U.S. EPA) Phase II storm water regulations, declared under the Federal Clean Water Act. In the past, communities less than 100,000 in population have not been required to have an operating SWMP. The Phase II regulations require the City of Cottleville to obtain coverage under a National Pollutant Discharge Elimination System (NPDES) permit as a small MS4 (Municipal Separate Storm Sewer System). The permit covers storm water discharges associated with the City's storm sewer system and requires the City of Cottleville to develop a SWMP and report annually on its progress.

This SWMP for the City of Cottleville has been prepared in response to requirements of the NPDES Phase II Small MS4 Storm Water Permit. The Phase II Permit requires applicable dischargers to prepare and implement a SWMP in order to perform the following:

- Reduce the amount of discharged material/pollutant to the "maximum extent practicable"
- Protect water quality
- Satisfy the appropriate water quality requirements of the Clean Water Act

II. MISSION AND PURPOSE OF THE PROGRAM

The Cottleville SWMP's mission is to provide direction that will assure a coordinated and balanced approach to reducing pollution caused by storm water discharge. The SWMP supports the City of Cottleville in its implementation of citywide storm water drainage improvements and best management practices (BMPs). Specifically, as abovementioned, the program is designed to oversee the implementation of the NPDES Phase II requirements within the City. The Phase II Permits are obtained from the permitting authority, which in Missouri, is the Missouri Department of Natural Resources. The City is currently operating under MDNR NPDES Phase II Permit No. MOR040053; which was approved in April, 2003.

Storm water discharges are generated by runoff from land and impervious areas such as paved streets, parking lots, and building rooftops during rainfall and snow events. The discharges from such areas often contain pollutants in quantities that could adversely affect water quality. Therefore, in order to help eliminate water quality impact from storm water, which could contain harmful pollutants, the City plans to continue its efforts to implement this revised SWMP described herein.

The purpose of the SWMP establishes an action plan that will lead Cottleville through the next five years. By establishing an action plan this will lead to:

1. Identify pollutant sources potentially affecting the quality and quantity of storm water discharges.
2. Improving storm water runoff quality through the use of best management practices.
3. Provide measurable goals to assess the effectiveness of BMPs that are designated to reduce the discharge of the pollutants into the storm drain system along with associated waterways.
4. Limiting the role that storm water runoff plays as a vehicle for polluting associated waterways.

5. Storm Water pollution will be considered in all aspects of City development by coordinating efforts with developers/builders alike to meet water quality objectives.

Therefore, the SWMP outlines all of the BMPs that the City is going to undertake and describes their anticipated impact.

III. GEOGRAPHIC LOCATION

Cottleville is located approximately 25 miles northwest of downtown St. Louis and approximately 8 miles southwest of downtown St. Charles in central St. Charles County. The City is located among rolling hills between the Mississippi River floodplain and the bluffs along the Missouri River to the south. It is located between Interstate 70 to the north, Routes 40/61 (Interstate 64) to the south and west, Highway K to the west, and Missouri Route 94 to the east. Dardenne Creek and Missouri State Highway N, east of Highway K, extend through the central part of the City.

IV. NATURAL RESOURCES

The natural environment of an area often defines the parameters of development and land use. Features such as soils, topography and hydrologic features will greatly affect what the City is attempting to preserve, how the City manages storm water run-off, and what practices the City plans to implement in their SWMP.

Cottleville is located between the Missouri and Mississippi Rivers. The original part of the city was built overlooking Old Dardenne Creek along a ridge to the east and south of the Dardenne Creek flood plain where the Boonslick Trail crossed the creek. This creek is a tributary to the Missouri River and is the main discharge point of the City.

The Cottleville area contains gently rolling land, and most of the area has slopes of less than ten percent. The City's elevation varies from approximately 450 to 570 feet above sea level. This rolling topography provides many residential development opportunities because of the gently sloping highlands. The nearby transportation corridors provide significant commercial development opportunities as well.

Dardenne Creek is the major drainage basin for the entire area of the city and extends diagonally, from southwest to northeast, through the central part of the city. A few smaller streams, many of which are dry in the summertime, drain into Dardenne Creek and provide effective and inexpensive means of handling surface storm water drainage. Much of the area along these streams is well wooded, and thus the channels not only carry storm water drainage but also provide attractive, natural woodland areas. These physical features, the rolling topography, and the streams and valleys, are very important assets to Cottleville and their preservation is of significant importance in the SWMP.

The actual legal description of the main point where storm water leaves the City is:

The SW ¼ of the NW ¼ of Section 1, Township 46 North, Range 3 East of the 5th Principal Meridian

This storm water outlet is shown in Appendix A.

V. POTENTIAL SOURCES OF POLLUTION

The City of Cottleville has a number of components that can contribute as sources of pollution. With the City covering approximately four (4) square miles as mentioned above, contributors range from vehicular traffic, retail shopping centers, parking facilities, underground storm water sewer systems, numerous construction sites, four (4) educational facility locations, and approximately 73 acres of park area.

Vehicular traffic would be one of the major contributors of storm water contaminants. With an approximate average daily traffic count of 15,000 vehicles along Highway N, there is a potential for a large amount of vehicle debris, oil, gasoline, wear and tear, and most likely, trash that ultimately ends up in the storm drainage system.

With 73 acres of park area along with the impervious areas of retail shopping center and parking facilities storm water runoff carries a multitude of contaminants including, but surely not limited to, sediment, vehicular oils, pet waste, and trash to our water bodies.

With water quality in mind the SWMP targets these areas by implementing various control measures, the effectiveness of which will be evaluated as the SWMP is implemented.

VI. MINIMUM CONTROL MEASURES

There are six minimum control measures (“MCM”) that each MS4 must implement within their SWMP as part of their NPDES Phase II Permit. These are:

1. Public Education and Outreach on Storm Water Impacts
2. Public Involvement and Participation.
3. Illicit Discharge Detection and Elimination.
4. Construction Site Storm Water Runoff Control.
5. Post-construction Storm Water Management in New Development and Redevelopment.
6. Pollution Prevention and Good Housekeeping for Municipal Operations.

The SWMP identifies how each of these control measures will be addressed through the BMPs that the City has determined to utilize. The BMP’s described in the following sections will be implemented by City staff and outside contractors. Whenever City staff or contractors perform work at various sites, procedures outlined for each relevant BMP, or other proven technique that reaches the same goal, must be used in order to ensure compliance with storm water discharge regulations. Full development of BMPs will be completed within a five-year period.

1. Public Education and Outreach on Storm Water Impacts

The Phase II storm water plan of the EPA program is to ensure that storm water related educational efforts adequately reach all types or categories of citizens within the community and that special emphasis is placed on the steps that can be taken to reduce pollutants in storm water runoff. The EPA believes that as various sectors of the community are educated and informed, their support for program initiatives will grow and they will become more aware of the personal responsibilities expected of them and others in the

“community.” The goals of the plan are to 1) educate the public on local bodies of water and how to protect those bodies of water; 2) change behaviors that negatively impact watersheds; and 3) promote public involvement in watershed stewardship. The City will continue to utilize existing internal BMP’s and further expand outreach tools.

Permit Requirement: Implement a coordinated public education program which involves the distribution of education materials to the community, as well as equivalent outreach activities about the impacts of stormwater discharges on water bodies and steps the public can take to reduce pollutants in the stormwater runoff.

BMP 1.1 - Storm Water Website

Continue efforts in updating and expanding a storm water web page to provide the public with information on storm water pollution and storm water management within Cottleville. The site features access to a storm water problem reporting form that can be used to notify the City of storm water concerns, detect illicit discharges, and provide input from the community on storm water management within Cottleville. It is planned to add various public awareness articles to the storm water page quarterly. Articles include Do-it-yourselfers information for car care, landscaping, pest control, and home maintenance. In addition, links to other websites containing storm water information will be made available as well.

MG 1.1

This parameter will be measured by the number of articles placed on the website along with incorporation of using the City’s GIS system to monitor storm water related work orders. It will be an ongoing goal.

BMP 1.2 – Flyers and Educational Materials

Education is the biggest role to a better understanding of storm water and how it impacts our community as well as others. Cottleville will post various informative flyers at local shops and restaurants. Local restaurants can provide kid-friendly placemats with educational games and puzzles related to storm water awareness. The City will continue to provide articles to the City Newsletter that will inform citizens of storm water pollution and pollutant runoff. The City’s newsletter goes to each Cottleville resident. In addition, the City will provide the local school system flyers on storm water quality and what the effects are to the community.

MG 1.2

This parameter will be measured by the number of distributed brochures, coloring books, and miscellaneous handouts. It will be an ongoing goal

2. PUBLIC INVOLVEMENT AND PARTICIPATION

The public can provide valuable input and assistance to a stormwater management program; therefore, the public should be given opportunities to play an active role in both the development and implementation of the program. Specific goals of this minimum control measure are to: (1) ensure that public notice requirements are met, and (2) that citizens have both a voice and involvement in the ongoing storm water program so that they feel they have a stake in the success in the program and a sense of ownership.

Permit Requirement: Implement an effective public involvement/participation program that complies with the State and local public notice requirements.

BMP 2.1 – Observe All Public Notices

At a minimum, the City of Cottleville will give sufficient public notice on actions developing, implementing, updating, and reviewing the stormwater management program(s). The City continues to develop/evolve public notice procedures in support of ongoing programs such as advertising group meetings, providing public notices of storm water management policy hearings, and other informational meetings in accordance with State requirements.

MG 2.1

Having various public notices to the City web page. It will be an ongoing goal

Maintain documentation (i.e. copies of postings, news releases, and public notice ads) of public notices for storm water related ordinances and other actions if required by the State. It will be an ongoing goal

BMP 2.2 - Volunteer Water Quality Monitoring

Education is the biggest role to a better understanding of storm water and how it impacts our community as well as others. Cottleville will recruit volunteers to monitor the quality of water at the local parks and provide the City with valuable data. This information, if necessary, can be posted in the City newsletter to inform residents of the impacts on our community.

MG 2.2

Cubscouts/Boyscouts participate to achieve community involvement badges. They receive first-hand knowledge of the importance of water quality. It will be an ongoing goal

BMP 2.3 – Community Participation

Encouraging the community to participate in a City wide cleanup will educate its residents how important it is to throw trash away or recycle to keep items out of our creeks and streams. This will also give residents the opportunity to share ideas about ways to keep our watersheds clean.

MG 2.3

Provide amount of trash collected or recycled. Ongoing

3 ILLICIT DISCHARGE DETECTION AND ELIMINATION

The primary thrust of this Minimum Control Measure is to identify and eliminate illicit discharges to the City storm water system. The most significant sources of illicit discharges are:

- Cross-connections with a wastewater system
- Infiltration of wastewater to the stormwater sewer system from cracked sanitary sewer systems of malfunctioning septic systems
- Inappropriate discharges from industrial or commercial areas
- Paint, used oil or other pollutants dumped directly into storm drains

Permit Requirement: Develop, implement and enforce a program to detect and eliminate illicit discharges in to the MS4.

BMP 3.1 City Ordinance Requirements

Development and implementation of an ordinance prohibiting illicit discharges to the storm water system, including funding, inspection, and enforcement mechanisms (perhaps incorporated into an overall storm water management ordinance).

MG 3.1

Provide documented Ordinance.

BMP 3.2 Citizen Reporting

Continue to provide storm water web page with access to a Storm Water Problem Reporting Form on the City’s existing web site. The storm water problem reporting form will also be made available with the City Clerk

MG 3.2

Document number of citizen reports. It will be an ongoing goal

BMP 3.3 Develop a Storm Sewer Map

Development of a plan for the creation of a storm sewer system map showing major storm sewer discharge points, outfalls, and topography. Part of this plan will include the requirement that all new developments provide as built drawings (including CAD files) which display state plane coordinates at all property corners and at all storm water discharge points for consolidation in a master database. In addition, this plan will require that business license applications include a line for a storm water runoff ranking (to be determined in the plan). These rankings will be documented in order to detect areas of concentrated activities of potential storm water pollution.

MG 3.3

Documented map and as-built plans of all new developments will be on record with the City Engineer, which display state plane coordinates of storm sewer outfalls.

4 CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

The primary thrust of this program is to ensure that construction sites control on-site erosion and sedimentation during construction activities, and limit the exposure of storm water to pollutants.

Required Permit: Develop, implement and enforce a program that reduces pollutants in stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre.

BMP 3.1 City Ordinances

The City of Cottleville has already taken a number of steps that will contribute toward compliance with the Program Area of Construction Site Storm Water Runoff Control. These were done prior to issuance of the Phase II Permit and include City ordinances that:

- Prohibit the release of any material except water from property.
- Require the person(s) responsible for any material release to remove said material.
- Require any person(s) performing any earth moving activity to comply with minimum erosion and siltation control standards.
- Create instructions for proper installation and maintenance of various techniques for sediment and erosion control.
- Require all subdivision and commercial developments to install temporary sedimentation basins.
- Require the establishment of separate escrows for sediment and erosion control.
- Establish penalties for non-compliance with any of these items in the amount of \$500 per day per violation.
- Establish a written procedure for the development, review, and approval of sediment and erosion control plans for all developments.
- Provide for regular inspections of sediment and erosion control.

MG 3.1

Continue requirement and enforcement of land disturbance plans. Document plans and inspection reports.

5 POST CONSTRUCTION STORMWATER MANAGEMENT

The purpose of this Minimum Control Measure is to ensure that land development and redevelopment projects meet storm water BMP requirements, and that structural and non-structural BMPs are maintained in functional condition so that removal of storm water pollutants is not compromised. This will be done by zoning ordinances, subdivision regulations, the comprehensive planning process, construction site plan review and inspections, design criteria and guidance, the use of regional BMPs and master plan implementation.

Permit Requirement: Develop, implement and enforce a program to address stormwater runoff from new

development and redevelopment projects that disturb greater than or equal to one acre. This includes projects less than one acre which are part of a larger common plan for development or sale.

BMP 5.1 Identify BMP's for Post Construction Runoff Control

Evaluate and revise as necessary the strategies identified for structural and non-structural BMP's and incorporate into the SWMP

MG 5.1

Complete the preparation of the BMP list and revise SWMP to include list. Constantly updating the SWMP with new technology as it becomes available. Ongoing.

BMP 5.2 Codify and Publish Recommended BMP's

Evaluate and amend as necessary local codes to require implementation of Post construction Runoff Controls. Draft recommended revisions to the Stormwater Ordinance and the Subdivision Regulations to include the recommend BMP list.

MG 5.2

Update Stormwater Ordinance and Subdivision Regulations to list approved BMP's. Implement a Stream Buffer Ordinance. Ongoing

6 POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS.

The purpose of this Minimum Control Measure is to ensure that municipalities plan and implement good housekeeping procedures to limit introduction of pollutants that might result from municipal activities to storm water, and to educate municipal employees in this area.

Permit Requirement: Develop an operation and maintenance program that includes a training component and has the ultimate goal of preventing and reducing pollutant runoff from municipal operation, including those not currently required to be permitted as associated with industrial activities.

BMP 6.1 Develop / Acquire Training Information for Staff

Develop information related to pollution prevention awareness. Information should be related to the specific work area.

MG 6.1

Develop and participate in annually training programs, Ongoing

waste.

VII. RECORD KEEPING

Records must be maintained of all inspections, monitoring activities, and laboratory analyses for a minimum period of three years.

SWMP Updating

The City of Cottleville will review the SWMP annual and updated whenever changes in activities or operations occur that may significantly impact and/or affect the discharge of storm water pollutants.

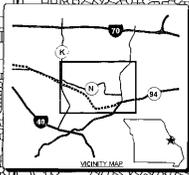
SWMP Public Access

The SWMP is intended to be a public document and for use by City staff and officials. A copy of the SWMP will be available for viewing at the City's website (www.cityofcottleville.com).

SWMP Annual Reports

The City of Cottleville will submit an annual report to the Missouri Department of Natural Resources by April 1st of each year after acceptance of this program, for the life of the permit.

The SWMP after acceptance by the City of Cottleville will be revised, if necessary, on a yearly basis following the City calendar year of January 1st to December 31st. A draft revision of the SWMP will be prepared by City staff by November 15th for budget consideration. The updated plan will begin implementation on January 1st of the upcoming year.



- LEGEND**
- Roadways**
- Local
 - Minor Arterial
 - Principal Arterial
 - Urban Major Collector
 - Proposed Expressway
- City Information**
- City Limits
 - Corporate Limits
 - Parcels

Revised October 2011
Note: Property locations and modified boundaries are considered approximate and are subject to change.

