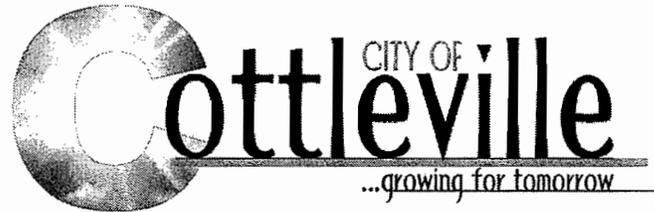


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Cottleville Small 1115T
MOR 420053

St. Charles County



STORM WATER MANAGEMENT PROGRAM

(Revised: 4/1/2008)

PREPARED BY:

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1.0 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 new Phase II regulations now require the City of Cottleville to obtain coverage under a National Pollutant Discharge Elimination System (NPDES) permit by April 30, 2008 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

2.0 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 it's 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.

3.0 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.

Since the Program was implemented in April, 2003, Cottleville has performed the following annexations, adding to its total geographic area:

1. Ordinance 594 – 27.0 acres
2. Ordinance 601 – 65.0 acres
3. Ordinance 605 – 2.5 acres
4. Ordinance 609 – 9.0 acres
5. Ordinance 627-A – 21.0 acres (deannexed), 43.0 acres (annexed)
6. Ordinance 637 – 1.5 acres
7. Ordinance 642 – 10.5 acres

This has resulted in a total increase of approximately 137 acres to the City's boundaries. Please refer to Appendix "A" for the City's current boundary map.

4.0 DEMOGRAPHICS

The City covers nearly four (4) square miles and has a population of approximately 3000 persons. According to the year 2000 census, roughly 5% of Cottleville's population is ethnic minorities, 50% are male and female, 34% are under the age of 18, 62% are between the ages of 18 and 65, and only 4% are over the age of 65. The unemployment rate in Cottleville in 2000 was 1.6% and the majority of those employed (32%) were employed in the private services area. In addition, 46% of the population works outside of St. Charles County.

5.0 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.

6.0 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, you can imagine the 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.

7.0 MINIMUM CONTROL MEASURES

There are six minimum control measures 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.

8.0 PUBLIC EDUCATION AND OUTREACH ON STORM WATER IMPACTS

The overall thrust 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 intercepting those sources of pollution particular to Bettendorf and its waters. The EPA believes that as various sectors of the community are educated and informed, their support for program initiatives will grow.

There is a single mandatory component requiring:

- M1. Implementation of a public education program to distribute educational materials to the community, or conduct equivalent outreach activities regarding the impacts of storm water discharge on water bodies and steps that can be taken to reduce storm water runoff.

8.1 Implementation Status

8.1.1 General Summary

In accordance with the permit, there are two or three action items the City will implement to address this minimum control measure:

8.1.1a 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.

Measurable Goal: Add various public awareness articles to the storm water web page.

Measurable Goal: Incorporate GIS system to monitor and track storm water problem reporting.

8.1.1b 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 as well as the City parks. 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.

Measurable Goal: City residents receiving storm water awareness sections in their newsletter semi-annually.

Measurable Goal: City restaurants provide kid-friendly placemats with educational games and puzzles related to storm water awareness.

8.1.2 Implementation Schedule

Yr. 1 (8.1.1a): Post public awareness articles on the City's website and update quarterly if necessary. Incorporate GIS system to monitor and track storm water problem reporting.

Yr. 2-5 (8.1.1a): Maintain City's website and update if necessary. Maintain, monitor, and update GIS system.

Yr. 1 (8.1.1b): Research additional storm water awareness articles for newsletter and educational materials. Order or provide 200 placemats for City restaurants.

Yr. 2-5 (8.1.1b): Provide public with said newsletter articles, educational materials, and placemats.

8.1.3 Program Elements Refined

No program elements have been refined for the area of public education.

8.1.4 Status of Measurable Goals

Yr. 1 (8.1.1a):

Yr. 2-5 (8.1.1a):

Yr. 1 (8.1.1b):

Yr. 2-5 (8.1.1b):

8.2 Overall Compliance with Permit Conditions

8.2.1 Assessment of the Appropriateness

These program elements should serve well to educate the public. Cottleville is a small community with a great deal of information exchanged to homeowner's and builders through the website and newsletter.

8.2.2 Progress Towards Achieving the Overall Goal

The overall effectiveness of the public education area for this permit should be most beneficial to homeowners, educators, and home builders in the City. Homeowners and home builders are probably the main contributors to any potential storm water pollution; even more so than agricultural users in the City.

8.3 Information Collection and Analysis

8.3.1 Assessment of Data

No information has been collected or analyzed for this program area as neither of the items have been implemented.

8.4 Summary of Activities for Reporting Cycle

8.4.1 Activities Performed

No activities are scheduled for the upcoming reporting cycle in accordance with the permit schedule.

8.5 Proposed Changes to the Program

8.5.1 Changes to BMPs

No changes are scheduled at this time.

8.5.2 Changes to Measurable Goals

No changes are scheduled at this time.

8.6 Supplementary Reliance

8.6.1 Other Government Agencies

Cottleville is not relying on any other agency for the implementation of its public education program area.

8.7 Summary of Inspections and Formal Enforcement Actions

8.7.1 Number and Nature of Inspections and Enforcement Actions

No inspection or formal enforcement actions have been taken for this program area.

14. RECORD KEEPING

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

14.1 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.

14.2 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).

14.3 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.

no fee

CITY OF COTTLEVILLE

STORM WATER MANAGEMENT

PROGRAM

Growing for a Safer Environment

**A Part of the Environmental Protection Agency's
National Pollution Discharge Elimination System Phase II Storm Water Management**

THE CITY OF COTTLEVILLE

City of Cottleville Mayor and Board of Aldermen Members

Mayor	Bob Powers
Ward 1	Mike Underwood Marie Mannino
Ward 2	Donald Buchheit Donald Yarber

Planning and Zoning Commission

Wayne Litwiller, Chairman	Marie Mannino
Bob Powers	Lloyd Woods
Bonita Garvey	Matt Jacobs
Buddy Hall	Sally Faith

Administration Department

Scott Lewis, City Administrator
Sandra Barklage, City Clerk
Amy Spencer, Treasurer

Engineering Department

Jerry Hurlbert, City Engineer
Kevin Corwin, Assistant City Engineer

Finance Department

Michael Sommers, Director

Police Department

Scott Lewis, Chief

Legal Department

David Hamilton, City Attorney

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INTRODUCTION

MISSION AND PURPOSE OF THE PROGRAM

The Cottleville Storm Water Management Program (SWMP) provides a comprehensive approach to storm water management within the City. Specifically, the program is designed to oversee the implementation of the NPDES Phase II requirements within the City. Until this point, communities less than 100,000 in population have not been required to have an operating SWMP. Under the Phase II requirements smaller communities (known as Small MS4s) are required to obtain NPDES Phase II Storm Water Permits and establish an SWMP as part of this permit. The Phase II Permits are obtained from the permitting authority, which in Missouri, is the Missouri Department of Natural Resources.

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 implement the SWMP described herein.

The Program establishes an action plan that will lead Cottleville through the next five years. The primary means of improving storm water runoff quality is through the use of best management practices (BMPs). Therefore, the SWMP outlines all of the BMPs that the City is going to undertake and describes their anticipated impact. There are six minimum control measures 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/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/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 Cottleville SWMP's mission is to provide direction that will assure a coordinated and balanced approach to reducing pollution caused by storm water discharge.

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.

COTTLEVILLE DEMOGRAPHICS

The City covers nearly 4 square miles and has a population of approximately 2000 persons. According to the year 2000 census, roughly 5% of Cottleville's population is ethnic minorities, 50% are male and female, 34% are under the age of 18, 62% are between the ages of 18 and 65, and only 4% are over the age of 65. The unemployment rate in Cottleville in 2000 was 1.6% and the majority of those employed (32%) were employed in the private services area. In addition, 46% of the population works outside of St. Charles County.

COTTLEVILLE 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.

STORM WATER MANAGEMENT PROGRAM

As previously discussed, this program will implement the following measures aimed at the reduction of storm water pollution:

- 1. Public education and outreach on storm water impacts.**
- 2. Public involvement/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/good housekeeping for municipal operations.**

SECTION 1

Minimum Control Measure 1 – Public Education and Outreach on Storm Water Impacts

NPDES Phase 2 Discussion

The overall thrust 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 intercepting those sources of pollution particular to Bettendorf and its waters. The EPA believes that as various sectors of the community are educated and informed, their support for program initiatives will grow.

There is a single mandatory component requiring:

- M1. Implementation of a public education program to distribute educational materials to the community, or conduct equivalent outreach activities regarding the impacts of storm water discharge on water bodies and steps that can be taken to reduce storm water runoff.

City of Cottleville – Proposed Activities

The City of Cottleville does not currently have NPDES Phase II public education programs. However, there are several channels in place that will allow the City to take quick action on this minimum control measure. Action items the City will implement to address this minimum control measure include:

- A. Create a storm water web page to provide the public with information on storm water pollution and storm water management within Cottleville. The site will also feature 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. The storm water problem reporting form will be filed with the City Clerk for citizens to access.
 - Measurable Goal: Availability of the storm water web page.
 - Measurable Goal: Documented and filed storm water problem reporting forms.
- B. Addition of a storm water impact section to the City's Newsletter. Twice each year, Cottleville will include a storm water impact section to the City Newsletter that will inform citizens of the website and the problem reporting form, describe where citizen's may obtain information related to storm water pollution, request volunteers for Clean Stream activities (See Section 2, Item B), and describe a different issue with each publication related to storm water pollutant runoff. The City's newsletter goes to each Cottleville resident.
 - Measurable Goal: City residences receiving storm water awareness sections in their newsletter semi-annually.

SECTION 2

Minimum Control Measure 2 – Public Involvement and Participation

NPDES Phase 2 Discussion

The 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.

This Minimum Control Measure is designed to support the public education component described in Minimum Control Measure 1 by:

- M1. Ensuring adequate public notice be provided by municipalities regarding storm water related activities;
- M2. Developing and implementing formal procedures designed to provide organized citizen input to the decision making process, and;
- M3. Empowering citizens and citizen organizations, to enhance community support for city activities related to storm water management.

This is a single mandatory component that requires the City to comply with State and local public notice requirements. There are also three *suggested* components;

- S1. Inclusion of the public in developing, reviewing, and implementing the City storm water management program;
- S2. Efforts to involve all economic and ethnic groups in the public participation process, and;
- S3. Development of a formalized citizen work group (stakeholders) to participate in decision-making, hold public hearings, and work with volunteers.

City of Cottleville – Proposed Activities

At a minimum, Cottleville will develop sufficient public notice actions to be in compliance with NPDES public notice permit requirements. The City will develop 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. This measure will be broadly based, to include a variety of interest groups. To document compliance with this component, the City will:

- A. Describe and document public notice procedures for storm water related activities in accordance with Missouri public notice requirements. These may include public notice being provided for adopting the storm water management policy, new ordinances related to storm water management, or major development projects that could have an impact to

storm water runoff.

- Measurable 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.
- B. Enlist volunteers and continually participate in the Dardenne Creek Clean Stream Day. Volunteers from area municipalities and organizations remove trash, debris, and other pollutants from Dardenne Creek.
- Measurable Goal: Notification of the event in the City's newsletter.
 - Measurable Goal: Participation in the Dardenne Creek Clean Stream Day yearly.
- C. Development of a Storm Water Problem Reporting Form that will be accessible from the storm water section of the City's web site and made available with the City Clerk and provide regular notification of this form (See Section 1, Item A).
- D. Participation in the creation of the Dardenne Creek Greenway Commission which is undertaking the comprehensive study and planning of a new Greenway along Dardenne Creek. The Dardenne Creek Greenway Study is to improve water quality and storm water management; provide community trails and connections; improve, restore, expand and ensure safe local parks; increase public access to the greenway experience; and preserve wildlife habitats. This study shall be used by each community involved in the project to program the above described purposes. The Communities involved are:

St. Charles County, City of St. Peters, City of O'Fallon, City of Dardenne Prairie, City of Cottleville and the City of St. Charles.

Other interested and participating organizations include the Corps of Engineers, The Greenway Network, St. Charles County Land Trust, USDA Natural Resources Conservation Service, the Missouri Department of Conservation and the Metropolitan Parks and Recreation District.

- Measurable Goal: Completed Dardenne Creek Greenway Study

SECTION 3

Minimum Control Measure 3 – Illicit Discharge Detection and Elimination

NPDES Phase 2 Discussion

The primary thrust of this Minimum Control Measure is to identify and eliminate illicit discharges to the City storm water system. There are four mandatory program components to achieve this goal. The EPA has also made two suggestions pertaining to the program.

The mandatory components require:

- M1. Development of a storm sewer system map, or equivalent, showing locations of major pipes, outfalls, and topography. In addition, if data already exists (*the City is to*) show areas of concentrated activities likely to be a source of storm water pollution;
- M2. Effective prohibition of illicit discharges to the City storm sewer system through ordinance, order, or similar means (to the extent allowable under State law), including implementation of appropriate enforcement procedures and actions;
- M3. Implementation of a plan to detect and address illicit discharges, including illegal dumping, to the City storm sewer system; and
- M4. Actions to inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of wastes.

The *suggestions* include:

- S1. Development of recycling or other public outreach programs to address potential sources of illicit discharges including used motor oil, antifreeze, pesticides, herbicides, and fertilizers, and
- S2. Implementation of a program to address discharges or flows from other identified sources, and assess whether such discharges or flows should be identified as significant sources of pollutants.

City of Cottleville – Proposed Activities

The City of Cottleville will develop several action items related to this control measure. Using a combination of resources, these will be planned and developed over the next five years. These include the following:

- A. 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).
 - Measurable Goal: Documented ordinance.
- B. Development of a 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 (See Section 1, Item A.).

C. Addition of a storm water impact section to the City's Newsletter (See Section 1, Item B.).

D. 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.

- Measurable Goal: Documented plan on record with the City Engineer.
- Measurable Goal: Documented as-built plans of all new developments on record with the City Engineer, which display state plane coordinates of storm sewer outfalls.
- Measurable Goal: Documented business related storm water runoff rankings and revised business license application including storm water runoff ranking.

SECTION 4

Minimum Control Measure 4 – Construction Site Storm Water Runoff Control

NPDES Phase 2 Discussion

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. There are four mandatory and *no suggested* components of this minimum control measure. The mandatory components are:

- M1. Development, implementation, and enforcement of a program to reduce pollutants in storm water runoff to the City storm sewer system from construction activities that result in land disturbance greater than or equal to one acre;
- M2. Development and implementation of an ordinance or other regulatory mechanism to control erosion and sedimentation to the maximum extent practicable and allowable under State law;
- M3. Requirements for construction site owners or operators to implement appropriate BMPs (i.e., silt fences, temporary detention ponds, hay bales, etc.); and
- M4. Pre-construction review of site management plans, regular inspections during construction, penalties to ensure compliance, and formal procedures for receipt and consideration of information and inquiries submitted by the public.

City of Cottleville – Current Activities

The City of Cottleville has taken a number of steps that will contribute toward compliance with Control Measure 4. These include:

- A. The development of ordinances that
 - Prohibits the release of any material except water from property
 - Requires the person(s) responsible for any material release to remove said material.
 - Requires any person(s) performing any earth moving activity to comply with minimum erosion and siltation control standards.
 - Creates 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.

- Measurable Goal: Documented Cottleville Ordinance Nos. 52, 271, and 580 (See Appendix B).

City of Cottleville – Proposed Activities

The City of Cottleville will take the additional measure of developing and documenting a formal procedure for information and inquiries submitted by the public related to compliance with City erosion and sediment control requirements. This will be handled through the Storm Water Problem Reporting Form that will be made available to the public.

SECTION 5

Minimum Control Measure 5 – Post Construction Storm Water Management in New Development and Redevelopment

NPDES Phase 2 Discussion

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. In order to accomplish this, the City will need to undergo a major reorientation in its development methods and approach. The approach will need to begin to incorporate full consideration of water quality impacts of development from the initial planning stages through post-construction maintenance and operation. This reorientation will affect 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. This will be a long-term process of change that needs to be masterminded and appropriately guided every step of the way. There will be a great need for consensus building and public education.

Development of a complete description of this Minimum Control Measure is not possible at this time without much more detailed discussions. However, the main points contained within this Measure will be briefly discussed.

There is one, programmatic mandatory component and a lengthy set of suggestions for this minimum control measure. The mandatory component includes development of a complete post-construction BMP-based water quality program including:

- M1. Development, implementation, and enforcement of a program to address storm water runoff from new development and redevelopment projects that result in land disturbance of greater than or equal to one acre and that discharge to the City storm sewer system;
- M2. Implementation of site-appropriate and cost-effective structural and nonstructural BMPs,
- M3. Provisions ensuring adequate long-term BMP operation and maintenance; and
- M4. Inclusion of in-place controls that would prevent or minimize water quality impacts.

Suggestions include:

- S1. Consideration of water quality at the inception of development or redevelopment projects;
- S2. Use of locally-based watershed planning and preventive measures, including non-structural BMPs, to minimize water quality impacts and help contain costs associated with structural BMPs; and

That post-development storm water conditions not differ from predevelopment conditions in a way that adversely affects water quality.

City of Cottleville – Current Activities

The City of Cottleville has taken some steps that will contribute toward compliance with Control Measure 5. These include:

- A. The development of ordinances that prohibit the release of any material except water from property, require documented minimum erosion and siltation control standards, and establish penalties for non compliance (See Section 4, Item A.).
- B. Participation in the creation of the Dardenne Creek Greenway Commission which is undertaking the comprehensive study and planning of a new Greenway along Dardenne Creek. (See Section 2, Item D.).

City of Cottleville – Proposed Activities

The City of Cottleville will take additional measures for addressing long-term post-construction management after new development and redevelopment through:

- C. Development of a plan for the creation of a storm sewer system map showing major storm sewer discharge points, outfalls, and topography. This map will also include the storm water impact rankings of developments throughout the City. The comprehensive map and database will assist in determining priorities of long range planning and BMP implementation. It will also assist in tracking maintenance inspections. Overall the map will be an in place tool that should help prevent or minimize water quality impacts. (See Section 3, Item D.).
- D. A comprehensive storm water policy that seeks to integrate storm water considerations in current regulations and comprehensive planning. In order to be successful, the program will need to include, to some extent, all of the following elements. Thus, the City of Cottleville will need to develop and coordinate program aspects in each of these key areas. This will include the development of internal policies, modification of ordinances, educational materials, inter-staff coordination and education, etc. The City should also document all activities sufficient for permit application and annual update purposes. This policy will be finalized with the update to the City's Comprehensive Plan. The key areas will be as follows:
 1. Ordinance Controls
 - Review existing ordinances (detention and retention pond maintenance and retrofitting of redevelopment) for compliance with Phase II requirements and amend as needed, including addition of sections to require water quality monitoring and BMP facility maintenance following development or contribution to a City fund that will be used for long-term maintenance.
 - Develop and coordinate comprehensive storm water ordinance language and incorporate it in appropriate places in subdivision regulations, zoning ordinances,

- etc.
 - Develop a comprehensive storm water policy document concerning this minimum control that directs activities for the five-year permit term.
2. Dedicated and Adequate Funding
 - Ensure adequate funding from the potential storm water utility, and other sources, is available to implement the program.
 3. Long Range Comprehensive Planning and Implementation
 - Incorporate changed criteria and ordinances in the master planning process.
 - Develop and implement policies on BMPs.
 - Require major developments to perform “mini” storm water masterplans for their sites to assess impacts and evaluate the proper use of BMPs.
 - Incorporate an identification of sensitive waters and floodplains, along with master plans, into the comprehensive long-range land use plan.
 4. Public Education and Training
 - Follow through with plans to implement storm water awareness through the website and the City’s newsletter.
 5. Incentives for Use of Non-Structural and Land Use Controls
 - Work with local and regional legal and planning resources in development of land use control incentives for structural BMP implementations such as tax breaks, transferable development rights, density trading, etc.
 6. Long-Term Maintenance Inspections and Enforcement
 - Develop and document plans to implement semi-annual review of storm water facilities, to include maintenance that may be required by the landowner(s).
 - Develop and document plans for a contract for maintenance of existing storm water facilities.
 7. A Program for Preservation, Acquisition and/or Multi-Objective Use of Riparian and Sensitive Areas through continued participation in the Dardenne Creek Greenway Commission.
 - Measurable Goal: Documentation of the completed policy within five years.
 - Measurable Goal: Documented Revised Ordinances for compliance with the policy.
 - Measurable Goal: Establishment of a means for long-term maintenance funds through the policy.

SECTION 6
***Minimum Control Measure 6 – Pollution Prevention and Good Housekeeping for
Municipal Operations***

NPDES Phase 2 Discussion

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. There are two mandatory and four *suggested* components of this minimum control measure.

Mandatory components include:

- M1. Development and implementation of a cost-effective operation and maintenance program with the ultimate goal of preventing or reducing, pollutant runoff from municipal operations; and
- M2. Training of City employees, using available training materials approved by the City, to prevent or reduce storm water pollution from government operations such as park and open space maintenance, planning, building oversight, and storm water system maintenance.

Suggested program components include:

- S1. Maintenance activities, maintenance schedules, and long-term inspection procedures for structural and non-structural BMP;
- S2. Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance storage yards, and waste transfer stations;
- S3. Procedures for properly disposing of waste material (i.e., dredge spoil, accumulated sediments, floatables, and other debris) from the storm sewer system and areas mentioned in the preceding blocks; and

Measures to ensure that new flood management projects assess impacts on water quality, and that existing projects be examined to incorporate additional water quality protection devices or practices.

City of Cottleville – Proposed Activities

Currently, the City of Cottleville has a very small amount of municipal operations and therefore, municipal operations very likely do not contribute to pollutant runoff. Sanitary sewer service and water service is provided by private companies and street maintenance is conducted by St. Charles County. The only possible contributor would be the municipal building and the police force. However, it is possible that in the future the City could have municipal operations that contribute more significantly to pollutant runoff; therefore, the City plans to undertake the following activities:

- A. Developing an operations manual for storm water pollutant control, to be supplemented

with employee training consisting of documents, handouts, and a certification of employee review.

- Measurable Goal: These materials will be available for new employees within three years.
- B. Develop or improve post-development best management practices at government-owned facilities as appropriate.
- Measurable goal: A review will be conducted of each existing and planned government-owned facility to evaluate if additional best-management practices should be implemented to control storm water pollution.

SUMMARY TABLE:

Many of the proposed action items address a number of the minimum control measures. The following table provides an overall summary of each of the City's proposed or current action items, what areas of the minimum control measures they will impact, and what the details of the implementation of these action items will be:

Municipal/Action Items		Control Measure Components Addressed				Details		
Section - Item No	Description	Control Measure	Components		Current/Proposed	Est. Implementation Time	Mandatory Components	
			Mandatory	Suggested				Est. Cost of Implementation
1 - A	Storm Water Web Page w/ Storm Water Problem Reporting Form	1 - M1 2 - M1, M2, M3 3 - M3, M4	M1, M2, M3, M4	S1, S2 S2	Proposed	4 years	\$3,000 set-up + \$1,000/yr	
1 - B	Newsletter Insert	1 - M1 2 - M1, M3 3 - M4	M1, M3, M4	S1, S2	Proposed	4 years	\$1,500/yr	
2 - A	Public Notice Procedures	2 - M1	M1		Proposed	3 years	\$1,000	
2 - B	Dardenne Creek Clean Stream Day	2 - M3	M3		Proposed	Annual Event (October)	\$200/yr	
2 - C	Same as 1-A	N/A			Proposed			
2 - D	Dardenne Creek Greenway Study	2 - M3 5 - M2, M4	M3, M4	S2	Current	3 years	N/A	
3 - A	Illicit Discharge Ordinance	3 - M2, M3, M4 2 - M1 5 - M1, M4	M2, M3, M4, M1, M4	S2	Proposed	1 year	\$1,000	
3 - B	Same as 1-A	N/A			Proposed			
3 - C	Same as 1-B	N/A			Proposed			
3 - D	Storm Sewer System Map and Database	3 - M1, M3, M4 5 - M4	M1, M3, M4, M4	S1, S2	Proposed	5 years	\$30,000*	
4 - A	Existing Development Ordinances	4 - M1, M2, M3, M4 5 - M1, M2	M1, M2, M3, M4, M1, M2		Current	Existing		
5 - A	Same as 4-A	N/A			Current			
5 - B	Same as 2-D	N/A			Current			
5 - C	Same as 3-D	N/A			Current			
5 - D	Comprehensive Storm Water Policy	5 - M2, M3, M4 1 - M1 2 - M3 4 - M1, M2, M3, M4 6 -	M2, M3, M4, M1, M3, M1, M2, M3, M4	S1, S2 S1, S2 S1, S3, S4 S2, S3	Proposed	5 years	\$10,000 (Costs will be included in the update to the Comp. Plan)	
6 - A	City Operations Manual	6 - M1, M2	M1, M2	S2, S3	Proposed	3 years	\$1,500	
6 - B	City Facility Review	6 - M1	M1	S2	Proposed	3 years	\$500	

* Estimate. May vary on availability of information and degree of accuracy

APPENDIX A

S.W.M.P. MAP

APPENDIX B

COTTLEVILLE STORM WATER ORDINANCES

The following excerpts were taken from Cottleville Ordinance No. 52 – The City's Subdivision Ordinance:

- i. Plans for sediment control will be submitted to, and approved by, the City Engineer. A dollar amount equal to the proposed cost will be included in the performance guarantee.

- e) Erosion Control: Erosion control for drainage systems within or directly related to the right-of-way will be required in swales, ditches, or creeks and at the discharge points of all pipes where the velocity exceeds five (5) feet per second. Silting basins or diversion channels will be required during the construction period to insure that mud and other debris are not washed into natural water courses or new previously constructed storm sewers.

- 4) Sediment Storage: Shall be designed to provide for 5-years of sediment accumulation calculated by using Figure 1. All other detention facilities shall provide storage for 2-years of sediment accumulation by using Figure 1, except for those using roofs of buildings, paved parking areas or other facilities designed to preclude the deposition or accumulation of sediment. Sediment storage volume shall be in addition to the volume required for temporary storage of storm water to properly size the detention facility on normally wet basins.

- 5) Erosion Control: Principal spillways and outlet works shall be designed to prevent erosion and if necessary equipped with energy dissipating devices to slow the water to normal velocity as called out in Section 5.10 of the Rules for Land Subdivision Ordinance. Special measures shall be taken by the developer to not permit sediment from filling the proposed detention basin during all construction of the proposed development.

BILL NO. 271

ORDINANCE NO. 271

AN ORDINANCE PROVIDING FOR
PROHIBITION OF RELEASE OF MATERIALS
ONTO PUBLIC OR PRIVATE PROPERTY

BE IT ORDAINED BY THE BOARD OF ALDERMEN OF THE CITY OF
COTTLEVILLE, MISSOURI, AS FOLLOWS:

SECTION NO. 1. It shall be unlawful for any person or entity to cause or allow any mud, dirt, silt, debris, litter, waste or other material except water to flow or be released onto public or private property from real estate which such person or entity owns, leases, controls or occupies, or upon which such person is doing or directing any work which causes or allows such flow or release.

SECTION NO. 2. It shall also be unlawful for any person or entity who has violated Section No. 1 of this Ordinance to fail to remove such mud, dirt, silt, debris, litter, waste or other material from the public or private property onto which the same has flowed or been released within 24 hours of such flow or release without causing damage to such public or private property.

SECTION NO. 3. It shall also be unlawful for any person or entity to cause or allow any grading, excavation or earth moving on any real estate zoned Residential, Commercial or Industrial without first complying with the Minimum Siltation Control Standards attached hereto as "Exhibit 1" and incorporated by reference herein. Compliance with the Minimum Siltation Control Standards shall not relieve any person or entity from compliance with the other Sections of this Ordinance.

SECTION NO. 4. Violation of any Section of this Ordinance shall be a separate offense from violation of other Sections of this Ordinance. Each day during which any Section of this Ordinance is violated shall be a separate offense. Violation of this Ordinance, and of each Section hereof, shall be punishable by a fine of not more than \$500.00 and/or imprisonment of not more than six months.

SECTION NO. 5. Ordinance No. 200 and Section 3 of Ordinance No. 93 are hereby repealed.

SECTION NO. 6. This Ordinance shall be in full force and effect from and after the day of its final passage and approval.

Read and passed this 5th day of September, 1996.

SS Steve K.
Mayor and Presiding Officer

Attest: SS Sandra B.
City Clerk

Approved this 5th day of September, 1996.

SS Steve K.
Mayor

Attest: SS Sandra B.
City Clerk

EXHIBIT 1

MINIMUM SILTATION CONTROL STANDARDS

Geotextile siltation control fence, straw bales, and support fencing, or any combination thereof, shall be installed and maintained to control siltation. The following standards shall apply:

1. Silt Fence

a. Materials:

This criteria shall apply to wire-supported geotextile silt fence as well as a self-supporting geotextile silt fence.

Fibers used in the manufacture of geotextiles shall consist of longchain synthetic polymer, composed of at least 85 percent by weight polyolefins, polyesters, or polyamides. They shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including selvages. The geotextile shall be free of any treatment or coating which might adversely alter its physical properties after installation. Unless otherwise specified, geotextiles shall be furnished in 36 inch width rolls.

Posts: Either wood, steel, or synthetic posts may be used. Posts shall have a minimum length of 24 inches plus embedment depth and be of sufficient strength to resist damage during installation and to support applied loads.

Support Fence: Wire or other support fence shall be at least 24 inches high and strong enough to support applied loads.

Prefabricated Fence: Prefabricated fence systems may be used provided they meet all of the above material requirements.

b. Construction Requirements:

Fence construction shall be adequate to handle the stress from hydraulic and sediment loading. Geotextile at the bottom of the fence shall be buried 6 inches vertically and toed-in at 6 inches horizontally resulting in a fence at least 19 inches in height above adjacent ground. The trench shall be backfilled and the soil compacted over the geotextile. The geotextile shall be spliced together with at least a 2 foot splice overlap.

Post spacing shall not exceed 8 feet for wire support fence installations or 5 feet for self-support installations. Posts shall be driven a minimum of 24 inches into the ground. Closer spacing, greater embedment depth and/or wider posts shall be

used as necessary in low areas and soft or swampy ground to insure adequate resistance to applied loads.

When support fence is used, the mesh shall be fastened securely to the up-slope side of the post. The mesh shall extend into the trench a minimum of 2 inches and extend a maximum of 36 inches above the original ground surface.

When self-supported fence is used, the geotextile shall be securely fastened to fence posts.

c. Maintenance and Removal of Accumulated Silt:

It is the installer's responsibility to maintain the integrity of silt fences as long as they are necessary to contain sediment runoff. The responsible party shall inspect all temporary silt fences immediately after each rainfall and at least daily during prolonged rainfall. Any deficiencies shall be immediately corrected by the responsible party. Where deficiencies exist, additional silt fences shall be installed.

The responsible party shall remove and dispose of sediment deposits when the deposit approaches one-half the height of the fence. If required by heavy sediment loading, a second silt fence shall be installed.

The silt fence shall remain in place until adequate revegetation has been established to prevent erosion and siltation runoff.

2. Straw Bales

a. Materials:

This criteria shall apply to straw bales and straw bales with silt fence stapled to the bales.

Posts/Stakes: Stakes shall be a minimum of 3 feet in length and placed on 2 foot centers and shall be strong enough to support the applied loads.

b. Construction Requirements:

The wire or twine binding shall be oriented around the sides of the bales, and countersunk not less than 3 inches.

When silt fence is used in combination with straw bales, the silt fence shall be securely stapled to the straw bales.

c. Maintenance and Removal of Accumulated Silt:

It is the installer's responsibility to maintain the integrity of straw bales as long as they are necessary to contain sediment runoff. The responsible party shall inspect all straw bales immediately after each rainfall and at least daily during prolonged rainfall. Any deficiencies shall be immediately corrected by the responsible party. Where deficiencies exist, additional straw bales shall be installed.

The responsible party shall remove and dispose of sediment deposits when the deposit approaches one-half the height of the bale. If required by heavy sediment loading, a second straw bale line shall be installed.

The straw bales shall remain in place until adequate revegetation has been established to prevent erosion and siltation runoff.

The following excerpt was taken from Cottleville Ordinance No. 580 establishing a means for funding siltation control inspections:

SECTION NO. 5. INSPECTION FEES.

A. Site inspection services for all developments within the City are charged to the property developer and/or escrow holder according to the current standard chargeout rates for time and material expenses of the inspection service provider including 15% for City administration services.