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July 2, 2013

Ms. Ruth Wallace
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Department of Natural Resources
Water Protection Program, NPDES Permits & Engineering Section
1101 Riverside Drive
Jefferson City, MO 65101

RE: St. Peters Small MS4 Permit Renewal Application – Permit #MO-R040044
City of St. Peters Storm Water Management Program Update

Dear Mr. Wallace:

Enclosed for your review is the City of St. Peters Storm Water Management Program submittal to accompany the Storm Water Phase II Permit application Forms K and M sent to you on May 10, 2013.

If you have any questions or comments regarding the application, please contact me at (636) 477-6600, extension 1304.

Sincerely,

Russell W. Batzel, P.E.
Manager, Transportation & Development Services Group

Enclosures

cc: Bill Malach, Manager, Water Environment Services Group
Liane Sargent, Director of Engineering

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WATER PROTECTION PROGRAM

City of St. Peters

Storm Water Management Plan



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WATER PROTECTION PROGRAM

June 2013

City of St. Peters
Storm Water Management Program

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- Executive Summary

A successful storm water management program must find its basis in the values the community places on itself and its concept of quality of life. Protecting water quality and the riparian environment must be a sustaining community value that is supported through participation of the community-at-large. While proper management of storm water requires a systems-based approach toward watershed and storm water policies and programs, each individual's actions can have either a beneficial or an adverse affect. The City must, therefore, develop policies that address environmental concerns and needs of the watershed that can be successfully supported and implemented by the community through local government or individual actions.

The City of St. Peters has been active for many years developing ordinances, policies, and programs to manage storm water and protect the environment. The Storm Water Management Program outlined in this document to comply with the requirements of the Clean Water Act and the Missouri DNR Small MS4 General Permit is simply a continuation of previous efforts to reduce the discharge of pollutants from urban storm water runoff. Through implementation of best management practices for the six minimum control measures, the City will find ways to improve existing programs and to develop new methods to address pollution prevention. Some key areas that will be addressed include:

- **Minimum Control Measure No. 1 – Public Outreach and Education**

The City uses a public education program to distribute educational materials and conduct outreach activities that include measures the public can use to reduce pollutants in storm water runoff. City sponsored events such as Clean Steams Day along with ongoing recycling programs are used to promote storm water pollution prevention awareness. The monthly resident newsletter, the City operated cable channel, employee newsletter, City website, news releases and participation in Homeowner Association meetings are used for pollution prevention education.

- **Minimum Control Measure No. 2 – Public Involvement/Participation**

The City's public involvement/participation programs have actively involved the public in the development, implementation, and maintenance of the storm water management program in the past and will continue to do so. Through City sponsored events like Clean Stream Day, the public can be involved in hands on activities that are educational as well as practical. The public can also be actively involved in reporting problems through the City's Citizen Action Center.

- **Minimum Control Measure No. 3 – Illicit Discharge Detection and Elimination**

The City addresses the potential problem of illicit discharges into the storm sewer

system through by following the guidelines of our Illicit Discharge Detection and Elimination Plan. The City will continue updating the geographical information system storm sewer maps with field verified information that includes each outfall and receiving stream as development continues. To help prevent illicit discharges, the City will continue to operate a used motor oil and anti-freeze waste drop off center.

- **Minimum Control Measure No. 4 – Construction Site Storm Water Runoff Control**

The existing site grading Ordinance and Standards for Erosion and Sedimentation Management Practices are used to ensure best management practices are incorporated to prevent polluted runoff from construction sites. Staff routinely attends training opportunities to be up to date on the correct procedures for the installation of BMPs and proper maintenance. Staff use this knowledge to educate homeowners and contractors prior to construction on a site..

- **Minimum Control Measure No. 5 – Post Construction Site Storm Water Management**

The program developed addresses long term operation and maintenance of storm drainage facilities that control storm water runoff at pre-development levels. The existing storm water discharge Ordinance incorporates best management practices to prevent polluted runoff or large quantities of runoff that may affect the receiving stream. The City has adopted the Mid America Regional Council (MARC) Manual of Best Management Practices as a standard for development within the City. The City frequently teams with other agencies and hosts seminars that target developers, engineers and contractors to educate them on the purpose and function of water quality features such as rain gardens, bioswales, extended detention, etc. and their proper installation and maintenance.

- **Minimum Control Measure No. 6 – Pollution Prevention/Good Housekeeping for Municipal Operations**

The City has developed a Pollution Prevention/Good Housekeeping Operations Manual for all City facilities. Several programs and practices have addressed pollution prevention at municipal operations including waste product recycling and the use of aqueous based solvents at the Fleet Maintenance facility, BMPs for equipment and vehicle fueling, storage of equipment and materials, and outdoor material storage and handling areas. Bioswales and rain gardens have been constructed at some City facilities to treat storm water runoff. The City will review and enhance these programs and practices annually and provide training for City employees on the importance of pollution prevention.

It is the responsibility of local government to assume the role of leader in the stewardship

of water quality and storm water management practices and demonstrate best management practices to encourage similar actions throughout the community. Through implementation of this Storm Water Management Program, the City of St. Peters will fulfill that role.

II - Introduction

PURPOSE

This document presents the City of St. Peters' Storm Water Management Program designed to reduce discharge of pollutants from urban storm water runoff and comply with federal and state Clean Water Act Storm Water Phase II requirements. This document also provides detailed goals and objectives that the City has identified to address the small municipal separate storm sewer system (MS4) six minimum control measures

BACKGROUND

The City of St. Peters is located in St. Charles County in the western portion of the St. Louis metropolitan area and has a population of 53,264 as of the 2010 census. The corporate limits encompasses nearly 14,000 acres. The City is primarily within the lower portion of the Dardenne Creek Watershed (13,575 acres) with a small section of the City located in the Missouri River watershed (425 acres). Important subwatersheds within the City include the Spencer Creek, Belleau Creek, Sandfort Creek and Cole Creek in the Dardenne Creek watershed and Duckett Creek in the Missouri River Watershed. The urban creeks and drainage ways in St. Peters are mostly on private property and serve the function of storm water conveyance, but include riparian habitat features that are beneficial to the community. On the publicly owned portions of the creeks, the City has developed linear parks which include over 20 miles of paved hiking and biking trails connected to the City-wide and regional Great Rivers Greenway trail system.

The City of St. Peters operates and maintains a small Municipal Separate Storm Sewer System (MS4) that consists of approximately 8,400 storm water structures, 166 miles of drainage pipe, and four (4) storm water pump stations. The pump stations are part of a federally funded flood protection system which includes a levee around approximately 640 acres between Dardenne Creek and Spencer Creek protecting Old Town St. Peters, Interstate 70, and surrounding property mostly north of Interstate 70. Additionally, there are 249 privately maintained storm water detention basins owned by subdivision associations and commercial developments and an unknown quantity of private storm water piped systems serving primarily commercial and industrial developments. There are five (5) publicly owned detention basins that are maintained by the City.

The Storm Water Outlet Locations Map in the appendix shows the corporate limits of St. Peters on a USGS map and the locations of the municipal discharge points. There are a total of 154 locations where the MS4 discharges to receiving streams within the municipal corporate limits with pipes that are 36-inch or greater.

The 2012 EPA approved 303(d) list of impaired waters includes portions of Dardenne Creek and a segment of Spencer Creek. The pollutants of concern for Dardenne Creek include dissolved oxygen, inorganic sediment and unknown pollutants. For Spencer Creek the pollutant of concern is chloride. A TMDL has not been developed for either of these streams.

STORM WATER MANAGEMENT

The management of storm water requires a systems-based approach toward municipal watershed and storm water policies and programs. The policies must also find their basis in the values the community places on itself and its concept of quality of life. The City must employ policies that address environmental concerns and needs along with the ability to sustain economic vitality.

Storm water policies and programs are dependent on the support and participation of the community-at-large. Water quality protection starts literally in everyone's back yard. An individual's actions can have either a beneficial or an adverse affect on storm water flowing to the municipal drainage system and our nation's waterways. Additionally, municipal programs and projects must represent the desires of the community for sustained success. Therefore, a successful program must involve public education and involvement in all segments of the community.

In developed areas of the community, storm water management must fit within the framework of the developed environment. St. Peters is currently 87% developed based on current land use zoning with limited redevelopment occurring in mostly commercial areas. Many of the storm water management tools used in the developing areas may not be feasible in a fully developed area. Further, past storm water management practices in developed areas may have eliminated the natural stream system. Therefore, the focus of storm water management changes in developed areas and must be viewed in relation to the overall storm water management program.

Problem areas where storm water runoff results in significant property damage or degraded water quality often drive the need for immediate improvements. The improvements may focus on stability of the stream banks in order to improve water quality and protect natural stream systems further downstream. Where feasible, projects should attempt to restore degraded stream segments and re-establish natural biological systems.

Being proactive is fundamental to the successful implementation of the City's storm water policies. Applying the storm water practices called for by this Storm Water Management Program will involve time, labor, and financial support. Coordination among all City departments is essential for successful implementation. The City must define those instances where storm water issues are the responsibility of the private property owner and where they are a public concern. The role of the City should be to assume the role of leader in the stewardship of water quality and storm water management practices and demonstrate best management practices to encourage similar actions throughout the community.

PROGRAM FOUNDATION

As the City proceeds with implementation of this Storm Water Management Program, it is important to recognize the work that has already been accomplished that will serve as the foundation for further improvements.

For over 20 years, the City has had ordinances and policies in place to address the issues of storm water management including construction site runoff and erosion control, post-construction

runoff, and illicit discharges. The City has acquired and developed over 1000 acres of parks along creeks and in floodplains, which provides a unique opportunity to preserve or restore riparian features. The City has enacted a Tree and Landscape Ordinance and been recognized as a “Tree City USA” and is active in planting and managing trees along City right of ways. The City offers solid waste and curbside collections services for recycled wastes on a twice a week basis. In addition, yard waste is picked up at curbside once a week and recycled into mulch and compost. Bulky trash items are picked up quarterly citywide or as scheduled by an individual resident and appliances are picked up weekly through a new tag program. Used oil, tires, and batteries from the municipal fleet are recycled by outside contractors and the Fleet Maintenance Department uses all aqueous based solvents and recovers and recycles all antifreeze. For many years the City has sponsored events such as Earth Day and Clean Streams Day, where the public can be actively involved in pollution prevention and education.

In 2000, the City completed a storm water management plan with the goal of creating a hydraulic model of the Spencer Creek Watershed and to identify problems associated with flooding and stream bank erosion. Over 21 projects were identified for stream bank stabilization and storm water facility improvements with an estimated cost of \$6 million. The City completed 14 of the projects before funding ran out.

In 2006, St. Peters through a partnership with the US Army Corps of Engineers (USACE), Great Rivers Greenway, and the Cities of O’Fallon, St. Charles, Cottleville, and Dardenne Prairie, was instrumental in the completion of a hydraulic study of the entire 29 mile long Dardenne Creek watershed.

In 2011, St. Peters completed a city-wide storm water management plan building upon the 2006 USACE hydraulic study of the Dardenne watershed, completing a comprehensive field survey of 47 miles of streams, and evaluating 75 detention basins. From the study, over 100 projects were identified that will address flooding, stream restoration, stream preservation, and detention basin retrofits that will implement BMPs to improve water quality. The estimated cost of this long term plan is over \$120 million. To secure funding for implementation of the storm water management plan, the City went to the voters in August 2012 after an extensive public outreach and education program with a request to increase the local parks and stormwater sales tax by an additional 4/10 of one percent. The voters passed the proposition with a 68 % majority with the new sales tax beginning in January of 2013. The portion of the tax collected currently allocated to storm water will be used for capital projects, and operation and maintenance of the storm water system.

MINIMUM CONTROL MEASURE #1

Public Education And Outreach On Storm Water Impacts

PERMIT REQUIREMENT

The City of St. Peters has implemented a public education program to distribute educational materials about the impacts of polluted storm water discharges on area streams to our community and conduct outreach activities. The education program includes steps the public can take to reduce pollutants in storm water runoff. In addition, the City of St. Peters has determined the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

GENERAL APPROACH

The Civil Engineer (assigned to storm water) is responsible for the development of the BMPs to comply with the Minimum Control Measure #1 (Public Education and Outreach on Storm Water Impacts) as well as the overall management and implementation of the City of St. Peters current storm water public education and outreach program.

The City of St. Peters education program is designed to inform residents, business owners, and organizations about the impacts of polluted storm water on area streams. The program provides guidance on how to reduce pollutants in storm water runoff as well as information as to how individuals and groups can become involved in our storm water program.

The City of St. Peters education program includes forming partnerships with civic organizations, educational institutions, businesses and residents to educate them about urban storm water management, and the importance of pollution prevention and water quality in storm water runoff. In addition to general pollution prevention, education activities address target pollutants directly impacting area streams, such as trash, yard waste, fertilizer use, and proper disposal of household hazardous waste. The education program is prioritized according to citizen concerns, community benefits, economic importance, and available resources.

The City of St. Peters has a strong public education and outreach program. Residents and businesses are encouraged to participate in annual City-sponsored events such as Clean Streams Day, or special activities such as Adopt-a-Stream program, or streamside tree planting events. In addition, the City has a successful Citizen Action Center, which allows residents to call in concerns, report violations or request additional information about projects or developments.

The City utilizes storm water education materials provided by MDNR Environmental Protection Agency, and Missouri Department of Conservation as well as other educational materials proven to be effective by other municipalities or organization to strengthen our existing education program. The educational materials provide guidelines for proper disposal and management of storm water pollutants. The program reaches out to the City's residents and businesses using a mix of strategies such as direct mailings, newsletters and media. The educational material is tailored to the targeted audiences with specific pollution prevention education for example, letters regarding proper disposal of yard waste are mailed to residents

living adjacent to stream channels, where dumping has occurred.

As the City continues to implement its 2011 city-wide storm water management plan with the design and construction of stream stabilization, stream restoration and detention basin retrofit projects, we will continue to educate residents within those project areas on urban storm water management and related topics, such as, water quality, use of native plants, and general storm water pollution.

SPECIFIC BMPs

While implementing these BMPs, the City continually investigates other methods to disseminate information to assure a larger percentage of the target audiences are receiving the educational information.

Specific BMPs include:

- Distribution of educational materials using available citywide resources such as resident and employee newsletters, public access cable television, and other avenues to educate public officials, City employees, and residents on pollution prevention, good housekeeping practices, use of native landscaping practices, and illicit discharge. Specific target pollutants that are addressed include: landscape and garden waste, landscape and garden chemicals, used motor oil, and household hazardous waste.
- The City's website contains a storm water management webpage which provides links to our storm water master plan, our SWMP permit, applicable ordinances, as well as storm water pollution prevention education, fun links for kids and links to volunteer opportunities.
- Educational displays at the annual clean stream event targeted at residents.
- The City's Central Materials Processing Facility provides brochures to new residents educating them on trash management, recycling and pollution prevention.
- The Water and Environment Services Group distributes educational materials targeting businesses and residents (e.g., grease clogging storm drains, disposal of cleaning agents, etc.).
- Educational displays at environmentally-themed community events

MEASUREMENT

These BMPs will be continually implemented, with the ultimate goal to reduce storm water discharge pollution. The specific activities and measurements are outlined in Table 1-1. Each BMP is reviewed annually to evaluate its effectiveness at reaching and informing the target audience and to determine whether it should be continued or modified in the years following.

Table 1-1 MCM #1 Public Education And Outreach On Storm Water Impacts Implementation and Measurement of BMPs		
Specific BMP	Goal	Measurement Method
Educate Public Officials & City employees on storm water pollution prevention	Educate	Collect feedback
Coordinate Clean Stream Event	Increase community involvement & remove litter	Record tonnage of waste collected and attendance
Identification of storm drains with cast-in-place markers stating “No Dumping. Leads to Stream.”	Education	Number of marked structures added
Identify specific topics and develop educational article(s) to increase resident knowledge about pollution prevention.	Include educational information in resident newsletters or other media	Collect feedback
Maintain the City’s storm water web page highlighting pollution prevention topics and storm water education	Provide periodic reviews of the web page in-house.	Collect feedback

MINIMUM CONTROL MEASURE #2 Public Involvement/Participation

PERMIT REQUIREMENT

The City of St. Peters satisfies this minimum control measure by complying with State and local public notice requirements, and determining the appropriate best management practices (BMPs) and measurable goals. The City of St. Peters has implemented a public involvement/participation program for storm water pollution prevention activities.

GENERAL APPROACH

The Civil Engineer assigned to storm water is responsible for developing the BMPs to comply with the Minimum Control Measure #2 (Public Involvement/Participation) as well as the management of the City of St. Peters public involvement/participation program.

The City of St. Peters public involvement/participation program is designed to actively involve the public in the development, implementation, and maintenance of our storm water management program. The program is built on the existing City's successful Citizen Action Center, which allows residents to call in concerns, report violations or request additional information about projects or developments.

Similar to the public education program, the City of St. Peters has formed partnerships with civic organizations, educational institutions, businesses and residents to educate them about the importance of pollution prevention in storm water runoff and the importance of their active involvement. In addition to general pollution prevention, our activities address target pollutants directly impacting our area streams, e.g., trash, yard waste, fertilizer use, and proper disposal of household hazardous waste. The program is prioritized according to community benefits, economic importance, and available resources.

The program reaches out to our 53,000 residents, numerous schools, and approximately 2,000 businesses and is tailored, using a mix of strategies, to target these audiences to encourage their involvement with specific pollution prevention activities.

SPECIFIC BMPs

The City continually investigates other methods to involve more of our residents, schools and businesses in pollution prevention activities.

Our specific BMPs include:

- Participation in the annual clean stream event targeted at residents, businesses and organizations
- Participation in special events such as streamside plantings, or homeowner meetings discussing storm water improvements in their neighborhood
- Citizens Action Center
- Recycling

MEASUREMENT

Each BMP is evaluated for effectiveness at reaching and involving the target audience to determine whether it should be continued or modified in future years. Specific activities and measurements are outlined in Table 2-1.

TABLE 2-1 MCM #2 Public Involvement/Participation Implementation and Measurement of BMPs		
Host resident meetings in conjunction with storm water improvement project areas (stream stabilization, stream restoration, detention basin retrofits) to educate residents on urban storm water management topics	Educate residents about urban storm water management	Feedback
Invite area stream teams, residents, organizations, scouts and schools to participate in the annual clean stream event	Increase community involvement and remove litter from stream	Record tonnage of waste collected and attendance
Invite residents to volunteer for special volunteer opportunities such as streamside tree plantings or other projects that will promote awareness of storm water throughout the City	Increase community involvement and promote storm water awareness	Record the number of volunteers
Invite residents to volunteer for Adopt-a-Stream program	Increase community involvement and promote storm water awareness	Record number of volunteers

MINIMUM CONTROL MEASURE #3 Illicit Discharge Detection and Elimination Program

PERMIT REQUIREMENT

The permit requirements for this section of the general MS4 permit requires the City to develop, implement, and enforce a program to detect and eliminate illicit discharges (as defined in 10 CSR 20-6.200).

10 CSR 20-6.200(1)(C)(7) defines an illicit discharge as “any discharge to a municipal separate storm sewer that is not composed entirely of storm water, except discharges pursuant to a state operating permit, other than storm water discharge permits and discharges from fire fighting activities.”

The program includes the following:

- A storm sewer map showing the location of all outlets and the names and location of all waters of the State that receive discharges from those outlets;
- An ordinance or other regulatory mechanism to effectively prohibit non-storm water discharges into the City’s storm sewer system and implement appropriate enforcement procedures and actions;
- A plan to detect and address non-storm water discharges, including illegal dumping, to the City’s system;
- Informing public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste;

GENERAL APPROACH

The Water Environment Services Director is responsible for the overall management and implementation of the City’s Illicit Discharge and Elimination Program. The City’s current program is discussed below.

Storm Sewer Map

The City has identified all storm water structures, pipes, and outfalls. The location of outfalls and structures were identified from aerial mapping, GPS coordinates, and field verification. A copy of this map is in Appendix A. This information is assessable through the City’s GIS mapping system. The City currently has 8,415 storm water structures, which 463 of these structures are identified as end of pipes that discharge within 100-feet of a stream.

The City has identified waters of the State that receive discharge from these outfalls. These waters are the Dardenne Creek, Spencer Creek, Belleau Creek, Sandfort Creek, and Cole Creek tributaries to the Mississippi River and Duckett Creek, a tributary to the Missouri River.

Ordinances

The City has the following storm water ordinances in effect. A copy of each of these Ordinances can be found on the City's website www.stpetersmo.net.

City Ordinance No. 3369 regulates the amount of runoff that can discharge to an open stream channel. This code was recently updated and adopted as City Ordinance No. 5852 in December, 2012. The City's Transportation and Development Services Group enforces this ordinance through plan review of detention and retention facilities, construction inspection, and post-construction inspection. Violations of this ordinance or failure to comply with any of its requirements, constitutes a misdemeanor.

City Ordinance No. 46 states the following: *"It shall be unlawful to discharge to any natural outlet within the City or within any area under the jurisdiction of the City any sanitary sewage, industrial wastes or other polluted waters, except where suitable treatment has been provided in accordance with this Chapter."* Any person found to be in violation are served by the City with written notice, stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations.

Illicit Discharges

City staff performs preventative maintenance on storm water structures and open channels within City right-of-way or City easement. Currently, when illicit discharges are detected during these maintenance activities or when reported to the City, appropriate action is taken according to City Ordinances.

The City inspects all outfalls for illicit discharges in priority areas on an annual basis. Priority areas include all City facilities and industrial areas within the City. All other outfalls are inspected on a 5-yr cycle. Therefore, the City inspects over 20% of its outfalls annually.

The City has worked with other local jurisdictions to reduce the number of failing septic tanks by providing a public sanitary sewer and treatment as a cost effective solution for this aging problem.

Educational Outreach

The City currently has education outreach associated with illicit discharges. As concrete storm water inlet tops are replaced due to the concrete failing, the tops are replaced with cast-in-place stenciled tops, stating: "No Dumping. Leads to Stream" with a fish logo.

The City has a drop off center for commonly dumped wastes, such as motor oil, and antifreeze. This facility is available 24-hours a day, seven days a week. The City has scheduled bulky trash pickup for all subdivisions at no additional cost. This program provides an avenue for residents to properly dispose of large items including white goods that are not accepted during weekly trash collection.

The City has curb side yard waste collection and a yard waste disposal facility to minimize

the amount of yard waste disposal along stream banks.

SPECIFIC BMPs

The City developed the following BMPs to proactively detect and eliminate any illicit discharges to the natural streams.

- Maintain and enhance the storm water maps by identifying each natural stream that receives discharge from storm water outlets. Identify the size of all major storm water pipes 36-inches and larger in diameter.
- An illicit discharge and enforcement plan is reviewed and updated annually.

The plan includes the following:

- Reviewing resident concerns, visual screening, GIS spatial analyses, and water quality monitoring to identify location of problem areas.
- If an illicit discharge is found at an outlet, the source will be determined tracing the discharge upstream by either visual inspection or by closed-circuit television inspection.
- Once the source is identified, the contributor will be notified and given a reasonable amount of time to correct the problem. If the City determines efforts are not being made in a timely manner, legal actions will commence.
- All findings, identifications, correspondence, and results will be documented and recorded.
- Educational Outreach efforts inform City staff, elected officials, and the general community regarding ways to detect, report, and eliminate illicit discharges. All efforts made on this part will be coordinated with the BMPs for Public Education and Outreach.

MEASUREMENTS

Measurable Goals are required to gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, should reflect the needs and characteristics of the community. The measurable goals for the Illicit Discharge and Elimination Program are listed in Table 3-2.

Table 3-2		
MCM #3 Illicit Discharge Detection and Elimination Program Implementation and Measurement of BMPs		
Specific BMP	Goal	Measurement Method
Maintain the storm water map by adding locations of any newly constructed structures.	Update and maintain the storm water map	Number of structures added
Determine the number of outlets and identify the natural receiving stream for each outlet.	Update and maintain the storm water map	Number of outlets recorded
Promote the County's recycling program including household hazardous wastes and paints.	Continuous Improvement	Document number of County Flyers distributed to various facilities and events
Educate City staff and Public Officials on detecting, reporting and eliminating illicit discharges.	Educate	Collect feedback
Water quality monitoring and performing sampling activities in natural streams at strategic locations.	Provide base line for future measurements	Electronically Record Sampling events
Identify illicit discharges during dry weather periods by field investigations.	Identify illicit discharges	Field investigations during dry weather
Maintain Illicit Discharge and Elimination Program.	Maintain Illicit Discharge and Elimination Program	Review and modify ordinances if necessary.
Educate the general public on the implementation of the Illicit Discharge and Elimination Program.	Educate general public.	Review Program with City staff, Public officials and general public.

MINIMUM CONTROL MEASURE #4 Construction Site Storm Water Runoff Control

PERMIT REQUIREMENT

The permit requirements for this section of the general MS4 permit requires the City 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.

The program currently consists of:

- An ordinance that requires erosion and sediment controls, as well as sanctions to ensure compliance.
- Requirements for construction site operators to implement appropriate erosion and sediment control best management practices.
- Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste as the construction site that may cause adverse impacts to water quality.
- Procedures for site plan review, which incorporate consideration of potential water quality impacts.
- Procedures for receipt and consideration of information submitted by the public.
- Procedures for site inspection and enforcement of control measures.

GENERAL APPROACH

The Director of Engineering is responsible for developing and managing the best management practices to ensure compliance with the Minimum Control Measure #4 (Construction Site Storm Water Runoff Control).

Ordinances

The City has the following ordinances in effect. A copy of each of these ordinances can be found on the City's website www.stpetersmo.net.

City Ordinance No. 3380 established chapter 530 of the St. Peters City Code that regulates grading activities in the City. The ordinance has adopted the January 2001 version of the Standards For Erosion and Sediment Management Practices for the City. This document includes many aspects of erosion and sediment management control that are necessary to be in compliance with today standards. The City's Engineering Division of the Transportation and Development Services Group enforces this ordinance through plan review of development sites, construction inspection, and post-construction inspection. Violations of this ordinance or failure to comply with any of its requirements, constitutes a misdemeanor

City Ordinance No. 3369 established chapter 550 of the St. Peters City Code that regulates the amount of runoff that can discharge to an open stream channel. This code was recently

updated and adopted as City Ordinance No. 5852 in December of 2012. The City's Engineering Division of the Transportation and Development Services Group enforces this ordinance through plan review of detention and retention facilities, construction inspection, and post-construction inspection. Violations of this ordinance or failure to comply with any of its requirements, constitutes a misdemeanor.

City Ordinance No. 2894 established a municipal tree and landscape ordinance that regulates the installation, removal, and maintenance of trees, shrubs and other plant material in the City of St. Peters. The intent of the ordinance is through the maintenance, placement, preservation, and protection of plant materials that will conserve and enhance the City's physical and aesthetic environment. The City's Parks and Recreation Services group enforce this ordinance. Violations of this ordinance or failure to comply with any of its requirements are subject to a fine.

SPECIFIC BMPs

The City will continually investigate other methods/BMPs to determine if modifications to our standards should be required to reduce pollutant discharges into our area streams.

Our specific BMPs include:

- An ordinance to require erosion and sediment controls for construction activities.
 - o Requirements for the installation of erosion control and sediment control prior to land disturbance
 - A manual for adoption with the listed activities among others
 - Temporary and permanent seeding
 - Silt fence and/or Silt Socks
 - Inlet protection
 - Diversion dikes
 - Stabilized construction entrance
 - Sediment traps and/or Sediment basins
 - Dust control
 - o Requirements for plan preparations
 - o Requirements for site inspections and enforcement of control measures
 - o Requirements for site waste management
 - Record keeping
 - Training Opportunities

MEASUREMENT

Our BMPs are continually monitored for their effectiveness in reducing stormwater discharge pollution. Below we have outlined specific activities and measurements that enable us to evaluate a specific BMP's effectiveness to determine whether it should be continued or modified in the years following.

Table 4- 1		
MCM #4 Construction Site Storm Water Runoff Control Implementation and Measurement of BMPs		
Specific BMP	Goal	Measurement Method
Update Stormwater and Grading ordinances	To ensure that the ordinances provide for the most effective reduction of construction site pollutants	Completion of updated ordinances
Update City standards for Erosion and Sediment Management	For reduction of construction site pollutants to ensure they are adequate and effective	Completion of new standard
Develop a permit system and database to document projects, construction sites and inspections	To ensure that staff is adequately tracking projects	Completion of installation of new permit system and database
Record number of corrective actions issued to construction sites	To ensure that contractors are installing BMPs prior to land disturbance and managing their BMPs during construction	Number of sites inspected and corrective actions issued
Evaluate success of the previous year's activities and continue effective actions	Continuous Improvement	Record number and type of development/construction related concerns that are entered into the City's Concern System and compare to number of concerns filed from previous year

MINIMUM CONTROL MEASURE #5 Post-Construction Site Storm Water Management

PERMIT REQUIREMENT

The permit requirements for this section of the general MS4 permit requires the City to enforce a program addressing storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the regulated small MS4.

The program currently includes the following:

- Strategies, which include a combination of structural and/or non-structural best management practices (BMPs).
- An ordinance requiring the implementation of post-construction runoff controls.
- Routine inspections to ensure adequate long-term operation and maintenance of controls.

GENERAL APPROACH

The Director of Engineering is responsible for developing and managing the best management practices to comply with the Minimum Control Measure #5 (Post-Construction Site Storm Water Management).

Ordinances

The City has the following ordinances in effect. A copy of each of these ordinances can be found on the City's website www.stpetersmo.net.

City Ordinance No. 3380 established chapter 530 of the St. Peters City Code that regulates grading activities in the City. The ordinance has adopted the January 2001 version of the Standards For Erosion and Sediment Management Practices for the City. This document includes many aspects of erosion and sediment management control that are necessary to be in compliance with today standards. The City's Engineering Division of the Transportation and Development Services Group enforces this ordinance through plan review of development sites, construction inspection, and post-construction inspection. Violations of this ordinance or failure to comply with any of its requirements, constitutes a misdemeanor

City Ordinance No. 3369 established chapter 550 of the St. Peters City Code that regulates the amount of runoff that can discharge to an open stream channel. This code was recently updated and adopted as City Ordinance No. 5852 in December of 2012. As part of the code changes, the City has adopted the Mid America Regional Council (MARC) Manual of Best Management Practices as a standard to ensure implementation of water quality practices. The City's Engineering Division of the Transportation and Development Services Group enforces this ordinance through plan review of detention and retention facilities, construction inspection, and post-construction inspection. Violations of this ordinance or failure to comply with any of its

requirements, constitutes a misdemeanor.

City Ordinance No. 2894 established a municipal tree and landscape ordinance that regulates the installation, removal, and maintenance of trees, shrubs and other plant material in the City of St. Peters. The intent of the ordinance is through the maintenance, placement, preservation, and protection of plant materials that will conserve and enhance the City's physical and aesthetic environment. The City's Parks and Recreation Services group enforce this ordinance. Violations of this ordinance or failure to comply with any of its requirements are subject to a fine.

SPECIFIC BMPs

The City continually investigates other methods to determine if modifications to our standards should be required to reduce pollutant discharges into our area streams.

Our specific BMPs include:

- An ordinance to require structural and non-structural BMPs for redevelopment and new development areas.
- Record keeping
- Training opportunities

MEASUREMENT

Our BMPs are continually evaluated for their effectiveness in an effort to reach our ultimate goal of reduced storm water discharge pollution. Listed below are specific activities and measurements.

**Table 5-1
MCM #5 Post-Construction Site Storm Water Management Implementation and Measurement of BMPs**

Specific BMP	Goal	Measurement Method
Identification of BMPs/Water Quality features	Provide structural and non-structural BMPs/Water Quality features that are suited for both redevelopment and new development areas	Tracking through GIS system
Evaluation of Post Construction BMPs/Water Quality features	For reduction of site pollutants and to ensure they are adequate and effective	Record result of periodic inspections
Evaluate success of the previous year's activities and continue effective actions	Continuous Improvement	Record the number and type of stormwater concerns entered into the City's Concern System and compare to number of concerns filed in previous years
3-year annual inspection of Post Construction BMPs (basins, rain gardens, bioswales, etc.)	To ensure continued maintenance and function of water quality systems	Correction of deficiencies to systems
Evaluation of site designs to maximize green areas/naturalized areas and infiltration opportunities	Reduce the percent of new impervious surfaces associated with new development projects through predesign meetings with consultants and developers	Review construction plans to evaluate impervious areas

MINIMUM CONTROL MEASURE #6

Pollution Prevention/Good Housekeeping for Municipal Operations

PERMIT REQUIREMENT

The permit requirements for this section of the general MS4 permit requires the City to develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.

The permit also requires the City to use training materials that are available from EPA, State, or other organizations. The City shall develop employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.

The program includes the following:

- Maintenance activities, maintenance schedules, and long-term inspection procedures for structural and non-structural controls to reduce floatables and other pollutants discharged from the separate storm sewers.
- Controls for reducing or eliminating the discharge of pollutants from areas such as roads and parking lots, maintenance and storage yards (including salt/sand storage and snow disposal areas), and waste transfer stations. These controls include programs that promote recycling, minimize pesticide use, and ensure the proper disposal of animal waste.
- Methods to examine existing and new flood management projects for impacts on water quality.

GENERAL APPROACH

The Water Environment Services Director is responsible for the overall management and implementation of the City's Pollution Prevention/Good Housekeeping Program. The City's has taken the initiative in recent years to improve operations and maintenance in order to remove pollutants from municipal operations and maintenance activities. These recent improvements are listed below.

Pollution Prevention from Municipal Operations

The City has addressed the following areas of potential storm water pollutants.

Street Maintenance

Development and Implementation of a Street Sweeping Program to reduce the amount of sediment and floatables in the streams.

BMPs for Equipment and Vehicle Fueling.

BMPs for Material Handling and Storage.

HES Operations and Fleet Maintenance Facility

The use of aqueous base solvents in Fleet Maintenance activities.

Recycle and reclaim of antifreeze.

Disposal of waste oil to an oil recycler.

Bioswales to treat storm water runoff.

Central Material Processing Facility (CMPF-Solid Waste Transfer Station)

Storm water monitoring in compliance with NPDES permits.

Yard Waste and BioSolids Composting

Storm water runoff from this facility is collected and treated before being released.

City Centre Park

Bioswales to treat parking lot storm water runoff.

Rec-Plex South

Rain garden to treat storm water runoff from facility roof.

Police Justice Center

Modified detention basin to improve water quality from parking lot runoff.

Storm Water Infrastructure Maintenance

The City completed a Storm Water Master Plan in 2012, and have commenced implementing improvements to open channels to reduce erosion and improvements to storm water basins to improve water quality. These improvements consist of bio-engineering techniques.

The City has also developed a program for residential detention basins. This program allows home owner associations to enter into an agreement with the City to manage their storm water detention basin for water quality improvements.

SPECIFIC BMPs

The City has developed the following BMPs to promote pollution prevention and good housekeeping for municipal operations.

Pet Waste Controls

- Animal Control Ordinance to address the proper disposal of pet fecal wastes.
- Installation of pet waste kiosks along park trails.

Vehicle/Equipment Washing

- Commercial washing facilities or capture and treatment of all vehicle wash water will be used for on-site washing.

Vehicle/Equipment Maintenance and Good Housekeeping

- BMPs for vehicle and equipment fueling.
- Where possible, vehicles and equipment are stored under cover.

Municipal Facilities Maintenance

- Good Housekeeping procedures for each municipally owned site.
- BMPs for outdoor material storage and handling.
- Site Inspection of storm water control and pollutant prevention.

Street Maintenance

- Continue current street sweeping program.
- Review and evaluate existing Snow and Ice Control Policy to ensure best management practices for pollution prevention.
- Monitor Chloride levels in streams after road salt applications.

Storm Sewer Maintenance

- Storm Sewer and Open Channel Maintenance Program.
- IDDE Inspections.

Landscaping and Lawn Care

- Irrigation plans and procedures.
- Use mulches and compost effectively
- Minimize use of fertilizers, pesticides, and herbicides

Materials Management

- Rock Salt
- Sand
- Fill Dirt
- Chemicals
- Develop Spill Prevention and Control Program

Employee Education and Training

- Educate Municipal Employees on Pollutant Prevention and Good Housekeeping practices.

MEASUREMENTS

Measurable Goals are required to gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, should reflect the needs and characteristics of the community. The measurable goals for Pollution Prevention and Good Housekeeping for Municipal Operations are listed in Table 6-1.

**Table 6-1
MCM #6 Pollution Prevention/Good Housekeeping for Municipal Operations Implementation and Measurement of BMPs**

Specific BMP	Goal	Measurement Method
Review Municipal Facilities and develop procedures for pollution prevention, material management, and, good housekeeping practices.	Quarterly site reviews and annual inspections.	Document Inspection Reports.
Educate municipal employees on the goals of the BMPs.	Educate	Document Training
Review and evaluate Snow and Ice Control Policy for pollution prevention and good housekeeping practices.	Evaluate procedures.	Document, review and evaluate.
Storm sewer and open channel maintenance procedures.	Implement pollution prevention procedures	Implementation of procedures
Landscaping and lawn care standards for municipally owned parks and open spaces.	Improve pollution prevention procedures	Implementation of procedures

TICKLER

St. Charles County Small MS4 SWMP
June 2013 #MOR040044
St. Charles County

Tickler includes:
Maps

This document is located at
T:_SLRO\St_Charles\MOR040044_St_Peters_MS4\SWMP\R0400
44_SWMP\2013.pdf

Supporting Documentation is saved in hard file at SLRO:
St. Charles County
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MOR040044 SWMP 2013