City of St. Peters

Storm Water Management Program

October 2007

City of St. Peters

Storm Water Management Program

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I - 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 Phase II is simply a continuation of previous efforts to reduce the discharge of pollutants from urban storm water runoff and improve the quality of life for St. Peters residents. 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 take to reduce pollutants in storm water runoff. City sponsored events such as Earth Day and 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, and news releases are used for pollution prevention education.

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

  The City's public involvement/participation program actively involve's the public in the development, implementation, and maintenance of the storm water management program. Through City sponsored events like Clean Stream Day, Public Works Week activities at area schools, and the storm drain stenciling program, 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 public education and outreach programs with businesses. 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. The City uses its dry weather storm sewer system inspection program to help identify illicit discharges and will notify the offender to get the problem corrected.

- **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. An education outreach program targeting developers and contractors has been used to explain proper use of BMP's.

- **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. An education outreach program targeting developers and contractors has been used to explain proper use of BMP's.

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

The City has implemented several programs and practices that have addressed pollution prevention at municipal operations including waste product recycling and the use of aqueous based solvents at the Fleet Maintenance facility, the construction of a salt storage dome, the installation of trapped curb inlets in a high grit area, and implementation of a street sweeping program. 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 six minimum control measures. It does not include storm water management programs covering other jurisdictions that will require an NPDES permit such as the Missouri Department of Transportation on State owned right-of-ways and facilities.

BACKGROUND

The City of St. Peters has a population of 51,381 as of the 2000 census and encompasses nearly 14,000 acres. The City is located in St. Charles County in the western portion of the St. Louis metropolitan area. 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 hiking and biking trails connected to the City-wide and regional trail systems.

None of the creeks in St. Peters are considered impaired to warrant listing on the federal Environmental Protection Agency section 303-d list of impaired waterways.

The City of St. Peters operates and maintains a Municipal Separate Storm Sewer System (MS4) that consists of approximately 8,000 storm water inlets and drainage structures, 132 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 180 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 two (2) 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 67 locations where the MS4 discharges to receiving streams within the municipal corporate limits with pipes that are 36-inch or greater.

STORM WATER MANAGEMENT POLICY

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 75% 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 should 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.

The City of St. Peters is located in the lower reach of the Dardenne Creek Watershed including a portion of the Mississippi River floodplain. Additionally portions of several other smaller watersheds fall within the City limits. The health of Dardenne Creek and the other watersheds are dependent on not only the actions of St. Peters, but also on the actions of its neighbors. Therefore, cooperative programs among communities within the watersheds will result in more protections for the streams than can be accomplished by any individual community. The

City will endeavor to identify and take advantage of all available opportunities to cooperate with other communities to effectively manage storm water and protect the shared watersheds.

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 citywide 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 has been proceeding with the design and restoration of the highest priority projects. Each of the projects are using bio-engineering techniques for stream bank restoration.

Storm water maintenance is budgeted from the City's General Revenue Fund while capital improvement projects are budgeted from a special Parks and Storm Water Fund that receives dedicated revenue from a 1/10 of one-cent sales tax. This fund provides approximately $500,000 annually for storm water projects. The Storm Water Phase II Minimum Control Measures will be implemented using these funding sources.

III – Minimum Control Measures

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

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 to our community and conduct equivalent outreach activities about the impacts of polluted storm water discharges on area streams. Our 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 Special Projects Engineer 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 the importance of pollution prevention 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 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 Earth Day, Clean Stream Day, Citizens Academy and Public Works Week, as well as others. 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 and Missouri Department of Conservation as well as other education 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 52,000 residents and approximately 2,000 businesses using a mix of strategies such as mailings, newsletters and media, and is tailored to target these audiences with specific pollution prevention education.

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, to include illicit discharge and good housekeeping. Specific target pollutants that are addressed include: landscape and garden waste, landscape and garden chemicals, used motor oil, and household hazardous waste.
- Design of a web page on the City's website that highlights storm water pollution prevention activities.
- Broadcasting mini-public service announcements about storm water pollution prevention on the City's cable channel.
- Distribution of educational materials at the annual clean stream event targeted at residents, businesses and organizations.
- Distribution of educational materials at the annual public works week outreach program targeted toward educational institutions.
- Distribution of educational materials targeting businesses (e.g., grease clogging storm drains, disposal of cleaning agents, etc.).
- Distribution of educational materials relating to construction practices to contractors and developers with projects in the City.
- Distribution of educational materials at Ward Meetings, targeting residents living adjacent to creeks.
- Educational displays at 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**
Identify & distribute appropriate educational materials to Public Officials & City employees	Educate	Collect feedback and improve housekeeping methods
Coordinate Clean Stream Event	Increase community involvement & remove litter	Record tonnage of waste collected and attendance
Identify appropriate educational materials and distribute at Public Works Week Student Outreach Program	Educate students on storm water pollution prevention	Provide teachers comment cards and handouts for in-class follow up, collect feedback, and measure attendance
Evaluate success of previous year's activities	Continuous Improvement	Feedback and comment cards
Identify, design, and broadcast public service announcements (PSA) regarding target pollutants	Develop PSA's	Airtime of PSA
Design of educational materials relating to construction practices targeted toward contractors and developers	Include educational information with permits issued for construction	Number of permits issued with educational information, collect feedback and note improvement during site inspections.
Provide enhancements to the web page highlighting pollution prevention topics	Provide periodic reviews of the web page in-house.	Collect feedback from City personnel
Development and distribution of educational materials targeting businesses	Majority of businesses reached	Number of businesses reached and any feedback received.
Launching of web page highlighting pollution prevention topics	Web page active	Measure the number of hits.
Develop a resident questionnaire to measure the public's knowledge of storm water pollution prevention and effectiveness of education program	Develop & mail questionnaire	Record number of surveys mailed and number of responses returned and compare to findings previous survey

Minimum Control Measure #2
Public Involvement/Participation

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 Special Projects Engineer 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 52,000 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 the annual public works week outreach program targeted toward educational institutions,
- Storm drain stenciling
- Participation in water monitoring

- Community Hotline
- 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		
Specific BMP	**Goal**	**Measurement Method**
Establish Community Hotline to report illegal activities impacting our creeks.	Establish Community Hotline through the City's existing Concern System	Record and track number of concerns filed.
Evaluate success of previous year's activities	Continuous Improvement	Feedback and comment cards
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 area schools to participate in Public Works Week Student Outreach Program	Educate students on storm water pollution prevention	Comment cards and handouts for in-class follow up, collect feedback, and measure attendance
Invite residents to volunteer to stencil storm drains throughout the City	All storm drains in Ward 4	Record the number of volunteers and number of storm drains stenciled in Ward 4.
Invite residents to volunteer for water quality monitoring of area creeks	As resources allow, co-host water monitoring training for residents	Record number of volunteers trained in water quality monitoring and creek segments monitored.

Minimum Control Measure #3
Illicit Discharge Detection and Elimination Program

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 Director of Utilities 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 8,108 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. The City's Engineering 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 storm water outlets as part of its BMP for this control measure. City Staff field verify outlets and record any discharges from outlets during dry weather and follow-up investigations determine if the discharge is illicit and whether enforcement or penalties are required.

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.

The City has also worked with a local mobile car-washing contractor to treat discharge by removing any sediment from his discharge before it is discharged to the storm sewer system.

Educational Outreach

The City currently has education outreach associated with illicit discharges. The City has a storm drain stenciling program that is performed by volunteers, civic organizations, and City staff.

The City also 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 also 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.

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	Record Sampling events in GIS
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. Collect feedback

Minimum Control Measure #4
Construction Site Storm Water Runoff Control

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 December 2000 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 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. The City's Engineering 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 investigates 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 erosion control and sediment control
    - A manual for adoption with the listed activities among others
      - Temporary and permanent seeding
      - Silt fence
      - Inlet protection
      - Diversion dikes
      - Stabilized construction entrance
      - Sediment traps
      - Dust control
  - o Requirements for plan preparations
  - o Requirements for site inspections and enforcement of control measures
  - o Requirements for site waste management

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 Grading ordinance	To ensure that it provides the most effective reduction of construction site pollutants	City updates ordinance periodically
Update City standards	For reduction of construction site pollutants to ensure they are adequate and effective	City is using the state of the art standards within the industry
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
Evaluate current erosion control and sediment standards for potential modifications to City's ordinances or standards	For reduction of construction site pollutants to ensure they are adequate and effective	City updates standards periodically
Review number of sites inspected and corrective actions issued to construction sites	Review number of sites inspected and corrective actions issued to construction sites	Number of sites inspected and corrective actions issued
Develop web page highlighting construction site pollution prevention topics	Web page designed and reviewed in-house	Collect feedback from the public, developers, engineers and City personnel
Evaluate success of the previous year's activities and continue effective actions	Continuous Improvement	Record number of surveys mailed and number of responses returned and compare to findings of previous year survey

Minimum Control Measure #5
Post-Construction Site Storm Water Management

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 or other regulatory mechanism requiring the implementation of post-construction runoff controls.
- 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 December 2000 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 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

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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 procedures
- An outreach program

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	Provide structural and non-structural BMPs that are suited for both redevelopment and new development areas	City is using the state of the art standards within the industry
Publication of BMPs	For reduction of construction site pollutants to ensure they are adequate and effective	City updates standards periodically
Develop outreach program with contractors and developers to aid in construction site activities	Develop & mail educational material and survey	Record number of surveys mailed and number of responses returned. Organize feedback
Evaluate success of the previous year's activities and continue effective actions	Continuous Improvement	Record number of surveys mailed and number of responses returned and compare to findings of previous year survey
Evaluate effectiveness of BMPs	Reduce the percent of new impervious surfaces associated with new development projects	Review construction permits to evaluate impervious area

Minimum Control Measure #6
Pollution Prevention/Good Housekeeping for Municipal Operations

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 Director of Utilities 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

Construction of a Salt Storage Dome
Installation of trapped curb inlets in high grit areas.
Development and Implementation of a Street Sweeping Program to reduce the amount of sediment and floatables in the streams.

Fleet Maintenance

The use of aqueous base solvents in Fleet Maintenance activities.
Recycle and reclaim of antifreeze.
Recycle of used tires for supplemental energy.
Disposal of waste oil to an oil recycler.

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

Storm water monitoring in compliance with NPDES permits.
Installation of a Waste Oil Furnace

Yard Waste and BioSolids Composting

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

Storm Water Infrastructure Maintenance

The City developed a Storm Water Master Plan in 2000 and have commenced implementing improvements to open channels to reduce erosion and improve water quality. These improvements consist of bio-engineering techniques.

The City also developed and implemented a program for residential concerns related to erosion from storm water runoff on private property. If the projects meet the program's criteria, the property owner receives assistance from the City to repair, reduce, or eliminate the erosion and improve water quality.

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.

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

- Document all environmental controls currently use good housekeeping procedures for fleet and vehicle maintenance activities.

Municipal Facilities Maintenance

- Good Housekeeping procedures for each municipally owned site.

Street Maintenance

- Continue current street sweeping program.
- Review and evaluate existing Snow and Ice Control Policy to ensure best management practices for pollution prevention.

Storm Sewer Maintenance

- Storm Sewer and Open Channel Maintenance Program

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.	Develop pollution prevention procedures.	Develop procedures.
Educate municipal employees on the goals of the BMPs.	Educate	Feedback
Document, review, and evaluate, Fleet and Equipment Maintenance and Vehicle washing procedures for pollution prevention and good housekeeping practices.	Evaluate procedures.	Document, review and evaluate.
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

Appendix A

USGS Map

Storm Water System Map