

**Texas Pollutant Discharge Elimination System
Phase II MS4 General Permit
Storm Water Management Program**



City of Roanoke, Texas

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Acronyms

BMP	Best Management Practice
CWA	Clean Water Act
EPA	United States Environmental Protection Agency
ISWM	Integrated Storm Water Management
MCM	Minimum Control Measure
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
NOC	Notice of Change
NOI	Notice of Intent
NOT	Notice of Termination
NCTCOG	North Central Texas Council of Governments
NPDES	National Pollutant Discharge Elimination System
SWMP	Storm Water Management Program
SWPPP	Storm Water Pollution Prevention Plan
TCEQ	Texas Commission on Environmental Quality
TPDES	Texas Pollutant Discharge Elimination System
UA	Urbanized Area

1.0 INTRODUCTION

1.1 Regulatory Requirement

The Clean Water Act (CWA) is a federal law that establishes environmental programs, including the National Pollutant Discharge Elimination (NPDES) program, to protect the Nation's waters and directs the U.S. Environmental Protection Agency (EPA) to issue rules on how to implement this law. Under the NPDES program, a municipal storm water program was developed in two phases, Phase I and Phase II.

Phase I of the EPA municipal storm water program was promulgated in 1990 under the authority of the CWA. Phase I relied on the NPDES permit coverage to address storm water runoff from medium and large municipal separate storm sewer systems (MS4s), serving populations of 100,000 and greater.

The NPDES Storm Water Phase II regulations, which target small MS4s located fully or partially within an "urbanized area"¹ and construction activities disturbing more than one acre of land, were promulgated by the Environmental Protection Agency (EPA) on December 8, 1999. These regulations apply to all jurisdictions within a delineated urbanized area regardless of individual population. The latest decennial census (2000) by the U.S. Census Bureau identified the City of Roanoke as a community that is operating an MS4 within an urbanized area, and thus is regulated under the NPDES Storm Water Phase II regulations.

The Texas Commission on Environmental Quality (TCEQ) was granted the authority in 1998 from the EPA to administer the Texas Pollutant Discharge Elimination System (TPDES). This authority is granted through a Memorandum of Agreement with the EPA to administer the NPDES system as it applies to the State of Texas. The TPDES requirements must be at least as stringent as those set forth by the NPDES program.

This program requires that the City of Roanoke:

- Reduce the discharge of pollutants to the maximum extent practicable (MEP);
- Protect water quality;
- Satisfy the appropriate water quality requirements of the Clean Water Act; and,
- Manage storm water quality activities through the Storm Water Management Program (SWMP).

The City of Roanoke has developed the SWMP in accordance with the requirements of the TPDES Small MS4 General Permit TXR040000 for obtaining authorization for storm water discharges and certain non-storm water discharges. The SWMP has been developed to reduce the amount of pollutants carried into the MS4 by storm water runoff as required by the TPDES General Permit.

¹ A revised list of urbanized areas based on the new criteria and Census 2000 data was published in the Federal Register on May 1, 2002 (67 FR 21962).

The City of Roanoke is required to develop a SWMP that describes specific actions that will be taken over a five-year period to reduce pollutants and protect the City's storm water quality to the MEP. The specific activities to be implemented are Best Management Practices (BMPs). The SWMP must also set measurable goals and provide a schedule for the implementation of the BMPs. Various BMPs must be developed for each of the six minimum control measures (MCMs) that are required by the Phase II Rule. The six required MCMs are:

1. Public Education and Outreach on Storm Water Impacts;
2. Public Participation and Involvement;
3. Illicit Discharge Detection and Elimination;
4. Construction Site Runoff Control;
5. Post-Construction and Redevelopment Runoff Controls; and
6. Pollution Prevention and Good Housekeeping.

The MS4 General Permit includes an optional seventh MCM that addresses storm water from municipal construction activities. The City of Roanoke deems this MCM inappropriate for consideration at this time.

2.0 PROGRAM OVERVIEW

2.1 Background Information for the City of Roanoke

The City of Roanoke, located in Denton County Texas, is part of the Dallas/ Fort Worth metropolitan area. The City was incorporated in 1933, and currently has a land area of approximately six square miles. The population of Roanoke was estimated at 5,450 in the 2005 U.S. Census.

The City is located in the Trinity River Watershed, and has approximately eight stream miles within the City limits. The stream miles within Roanoke are comprised of Cade Branch and Denton Creek. Cade Branch flows in a northeasterly direction before discharging into Denton Creek, which flows in an easterly direction. Denton Creek collects all drainage from the City and is impounded 13 miles downstream from Roanoke to form Grapevine Lake.

2.2 Storm Water Management Program Development

The hydrology and water quality concerns of the City of Roanoke have been considered in developing this Storm Water Management Program. The Plan herein describes the development and implementation of the Storm Water Management Program. In preparing this Plan, the City of Roanoke has considered different activities, municipal and public, that have storm water impacts. Some of the municipal departments that have been identified as having storm water impacts include Public Works, Police, Fire, Parks and Recreation, and Building Inspections.

This SWMP includes the six MCMs required by the TPDES program and the EPA Phase II Final Rule. Each of the six required MCMs includes a summary that outlines the TCEQ requirements for that component of the plan. The summary is followed by specific BMPs that include measurable goals and target dates, and the implementing responsibility within the City of Roanoke.

2.3 Public Review and Comment of the Storm Water Management Program

In accordance with the general permit TXR040000, Part II, Section D, Number 12, the SWMP will be available for review at the City Hall, located at 108 S. Oak Street and at the Roanoke Public Library, located at 308 S. Walnut, Roanoke, Texas 76262.

2.4 Annual Reporting

The City of Roanoke will track all BMP activities, results, and changes to the SWMP through an annual report that will be submitted to the TCEQ within 90 days of the end of each permit year. The annual report will include all factors required by Part IV, Section B, Number 2 of the general permit, including the status of the compliance with permit conditions, assessments of BMPs, and any changes to the SWMP, as assessed to keep the City of Roanoke in compliance with the general permit conditions.

2.5 Recordkeeping and Tracking

In accordance with the general permit TXR040000, Part IV, Section A, the City of Roanoke will retain all records, a copy of the TPDES General Permit, and records of all data used to complete the application (NOI) for the general permit for a minimum of three years or the term of this general permit, whichever is longer, and make this information available to the public if requested to do so in writing within 10 days of the request.

3.0 CITY OF ROANOKE STORM WATER MANAGEMENT PROGRAM

This section recommends specific methods to implement during the next five years in order to develop storm water management programs that match community priorities and also enable the City to comply with the TCEQ General Permit as an operator of a small MS4.

3.1 Introduction

The City of Roanoke's Storm Water Management Program must address the six MCMs outlined in TCEQ's General Permit TXR040000 for small municipal separate storm sewer systems (MS4s). As stated in Section 1, each MCM has permit requirements, actions that the City *must* take, to maintain compliance with the TPDES General Permit.

The BMPs presented herein have been proposed because they are appropriate for the City of Roanoke's storm water system, are measurable, are anticipated to make significant improvements in the City's storm water quality, and are achievable. The City is committed to a proactive approach to storm water management for the community's health and to be good environmental stewards. Based on the General Permit's requirements and recommendations, the following recommended actions are categorized by the six Phase II Minimum Control Measures.

3.2 Minimum Control Measure No. 1:

Public Education and Outreach

Public education and outreach is an important MCM for which the City of Roanoke has resources and experience. This MCM can be accomplished in a number of different ways, most of which are already established and/or accessible. In the past, the City has found that print, radio, and television are effective ways to reach the City's residents.

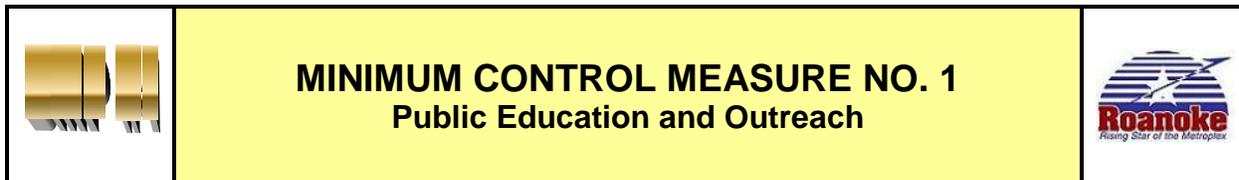
General Permit Requirements:

(a) A public education program must be developed to distribute educational materials to the community or conduct equivalent outreach activities that will be used to inform the public. The City of Roanoke may determine the most appropriate sections of the population at which to direct the program. The City must consider the following groups and the SWMP shall provide justification for any listed group not included in the program:

- 1) Residents;*
- 2) Visitors;*
- 3) Public Service Employees;*
- 4) Businesses;*
- 5) Commercial and Industrial Facilities; and*
- 6) Construction Site Personnel.*

The outreach must inform the public about the impacts that pollution in storm water run-off can have on water quality, hazards associated with illegal discharges and improper disposal of waste, and ways they can minimize their impact on storm water quality.

- (b) The City of Roanoke must document activities conducted and materials used to fulfill this control measure. Documentation shall be detailed enough to demonstrate the amount of resources used to address each group. This documentation shall be retained in the annual reports required in Part IV.B.2 of the General Permit.*



Distribute Storm Water Educational Materials

Activity

Distribute storm water educational materials to relevant sectors of the community as required by the Small MS4 General Permit.

Objective

Educate residents; visitors; public service employees; businesses; commercial, and industrial activities; and construction site personnel about storm water pollution-potential of common activities and hazards associated with illegal discharges and improper disposal of waste. Provide community clear guidance on steps and specific actions that they can take to reduce the potential for storm water pollution.

Responsible Department

Marketing/ Communications Office

Responsible Position

Marketing/ Communications Office

Work Actions

- i. Based on schedule, procure and/ or develop storm water educational materials for each sector of the community for distribution; and
- ii. Distribute materials to relevant community sector by placing in public buildings or direct mailing.

Annual Reporting Documentation

Discussion of approximate number of educational materials developed or procured; general nature of messages on printed materials; date on which materials were first made available; method of distributing materials and number of materials distributed to each sector of the community.

Document Retention

Written documentation of date on which materials are procured; date on which materials were first available; copy of materials distributed, method of distributing materials; location materials available to the community, meeting minutes and relevant letters, e-mails, memos, and phone conversation records.

Action Items with Measurable Goals and Schedules

- i. Distribute storm water educational materials targeted towards residents and visitors by May 1, 2008. A total of 250 educational pamphlets and/ or brochures Will be printed and distributed annually until end of permit. Educational materials will be placed in public areas or distributed at community events. This action item may be implemented with MCM No. 3, BMP No. 4.
- ii. Distribute storm water educational materials targeted towards public service employees by May 1, 2009. Materials will be distributed annually until end of permit term with a goal to reach all public service employees each year. This action item goal may be implemented with MCM No. 6, BMP No. 2; and MCM No. 3, BMP No. 4.
- iii. Distribute storm water educational materials targeted towards businesses, commercial and industrial activities by May 1, 2010. A total of 150 educational pamphlets and/ or brochures will be printed and distributed annually until end of permit. This action item may be implemented with MCM No. 3, BMP No. 4.
- iv. Distribute storm water educational materials targeted towards construction site personnel by May 1, 2011. A total of 150 educational pamphlets and/ or brochures will be printed and distributed annually until end of permit. This action item may be implemented with MCM No. 5, BMP No. 3; and MCM No. 4, BMP No. 5.

Helpful Suggestions



The EPA, TCEQ, and NCTCOG have storm water educational information available for municipalities to use with minor modifications. Also, to reduce costs and resource commitments, it is possible to develop materials with other local Phase II MS4's or NCTCOG municipalities and share printing and distribution costs.

To meet permit requirements, ensure message targets specific areas of concern, for example consider targeting the storm water pollution-potential of over fertilizing yards and proper disposal of waste for residences and visitors.



Educational Messages on Television

Activity

Telecast storm water educational information on cable television.

Objective

Inform residents; visitors; public service employees; businesses; commercial and industrial activities; and construction site personnel about storm water pollution-potential of common activities and pollution prevention of the Roanoke storm water system.

Responsible Department

Marketing/ Communications Office

Responsible Position

Marketing/ Communications Office

Work Actions

- i. Based on schedule, develop and/or procure educational storm water message for each relevant sector of community.

Air message on cable channel.

Annual Reporting Documentation

Discussion of messages distributed, including approximate number of times messages were telecast; dates during which message was telecast; transcript of messages.

Document Retention

Written record of date on which specific video message was completed and distributed; television station on which messages were telecast; copy of materials aired, approximate dates and times on which messages were telecast; transcripts of messages; meeting minutes, relevant letters, memos, e-mails, and phone conversations.

Action Items with Measurable Goals and Schedules

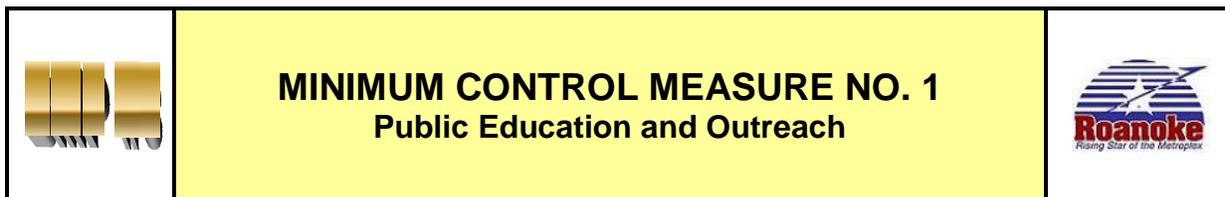
- i. Begin airing storm water educational message targeted towards residents and visitors by May 1, 2009. Message will be continuously aired until end of permit term with a goal to have 10-messages aired each quarter.

- ii. Begin airing storm water educational message targeted towards construction site personnel by May 1, 2010. Message will be continuously aired until end of permit term with a goal to have 10-messages aired each quarter. This action item may be implemented with MCM No. 5, BMP No. 3.
- iii. Begin airing storm water educational message targeted towards businesses, commercial and industrial activities by May 1, 2011. Message will be continuously aired until end of permit term with a goal to have 10-messages aired each quarter.

Helpful Suggestions



The EPA, TCEQ, and NCTCOG have storm water educational information available for municipalities to use. To reduce costs, consider sharing development costs with other local Phase II MS4's for regional distribution. Ensure message targets specific areas of concern, for example consider targeting the storm water pollution-potential of construction site sediment runoff for the message targeted at construction site personnel.



Storm Water Message(s) with Links on City of Roanoke Website

Activity

Implement, maintain, and update as necessary storm water educational messages on City website to inform residents; visitors; public service employees; businesses; commercial, and industrial activities; and construction site personnel about storm water pollution-potential of common activities and pollution prevention of the Roanoke storm water system. Webpage should have appropriate information with links to outside web sources such as EPA, TCEQ, NCTCOG, and a link to the e-mail of the City's contact person. Information available on website should be pertinent to all sectors of the community.

Objective

Provide public forum for disseminating and collecting storm water and SWMP related information via City's website to all sectors of the community.

Responsible Department

Information Technology Manager

Responsible Position

Information Technology Manager

Work Actions

- i. Determine general message to be conveyed;
- ii. Generate written materials and necessary graphics;
- iii. Implement and maintain storm water informational page on website; and
- iv. Develop procedure for responding to e-mail comments or questions from public.

Annual Reporting Documentation

Description of website storm water information and links, with beginning dates and dates of any modifications. Description of the number of e-mails received regarding storm water issues and number of hits on webpage.

Documentation Requirements

Date on which storm water webpage and links are made available; prints of appropriate materials; prints of e-mail messages received that refer to storm water; dates of additions or modifications to storm water webpage; relevant meeting minutes and memos, letters, and records of phone conversations.

Action Items with Measurable Goals and Schedules

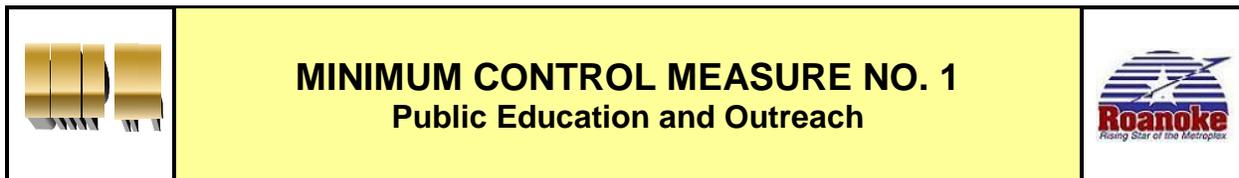
- i. Establishment of storm water webpage on City website with community storm water message and links to storm water related information by November 1, 2009. Maintain webpage continuously until end of permit term.
- ii. Make City SWMP available for viewing on storm water webpage by May 1, 2010. Maintain on webpage until end of permit term. This action item should be implemented with MCM No. 2, BMP No. 4.
- iii. Post storm water pollution prevention “fact sheets” for all relevant sectors of the community (residences and visitors, public service employees, businesses, commercial and industrial, and construction site personnel) by November 1, 2010.
- iv. Designate city contact for receiving and responding to storm water related emails and post email address of contact on storm water webpage by May 1, 2011. Maintain on webpage until end of permit term. This action item should be implemented with MCM No. 2, BMP No. 2; and MCM No. 4, BMP No. 4.

Helpful Suggestions



The storm water website may be an efficient mechanism to publicly display the NOI and SWMP as mandated by the MS4 General Permit. Promotion of website could be done on water bill in conjunction with MCM No. 1, BMP No. 5.

Web links to consider are NCTCOG Storm Water page, EPA’s Storm Water page, Keep America Beautiful, or TCEQ’s websites. There are lots of resources available to use, just ensure they are appropriate for the City’s concerns.



Storm Water Message Printed on Water Bill

Activity

Utilize water bills as mechanism to display storm water related information to; residents; public service employees; businesses; commercial and industrial activities; and construction site personnel.

Objective

Distribute storm water pollution prevention messages to water customers.

Responsible Department

Utilities Department

Responsible Position

Utilities Director

Work Actions

- i. Determine general storm water message to be conveyed in cooperation with Utilities Department; and
- ii. Arrange for printing and distribute to water customers.

Annual Reporting Documentation

Discussion of water bill message, including dates on which message was printed and distributed, and copy of printed message(s).

Document Retention

Written documentation regarding design, printing, and distribution of message; copy of message(s) printed, meeting minutes and relevant letters, memos, e-mails and phone conversation records.

Action Items with Measurable Goals and Schedules

- i. Begin printing storm water pollution prevention related messages on all water bills by May 1, 2008. Repeat printing of message once per year until end of permit term.

Helpful Suggestions



Messages on water bill can also promote other BMPs. For example, consider advertising City storm water website or promoting public volunteer activities

3.3 Minimum Control Measure No. 2:

Public Involvement and Participation

The City of Roanoke recognizes the benefits of direct involvement in the City's storm water program by members of the public. The City involves its residents by obtaining feedback from them in a number of established forums, including on-line communication, and public notices. Public involvement differs from public education in that it not only informs the public, but also provides opportunities for direct citizen action. When citizens participate in a project's decision-making process, they are more likely to support the final outcome. This plan describes ways in which the community can play an active role in developing and implementing the City's storm water management program. An informed and involved public can be a valuable information resource and can help build compliance with the program. The public involvement and participation program is also a requirement of the TPDES program and EPA NPDES Phase II Final Rule.

General Permit Requirement

The City must, at a minimum, comply with any state and local public notice requirements when implementing a public involvement/ participation program. It is recommended that the program include provisions to allow all members of the public within the small MS4 the opportunity to participate in SWMP development and implementation. Correctional facilities will not be required to implement this MCM.

The Texas Government Code Chapter 2051, Section 44 defines the requirements for a newspaper in which a public notice will be published as:

- (a) *The newspaper in which a notice is published must:*
- (1) *devote not less than 25 percent of its total column lineage to general interest items;*
 - (2) *be published at least once each week;*
 - (3) *be entered as second-class postal matter in the county where published; and*
 - (4) *have been published regularly and continuously for at least 12 months before the governmental entity or representative publishes notice.*
- (b) *A weekly newspaper has been published regularly and continuously under Subsection (a) if the newspaper omits not more than two issues in the 12-month period.*

Public meetings will be conducted according to the Texas Government Code Title 5, Subtitle A, Chapter 551.



River/Storm Water System Volunteer Cleanups

Activity

Facilitate river and storm water outfall volunteer cleanups.

Objective

Involve businesses, public employees and local citizens in hands-on cleanup of Roanoke's storm water system.

Responsible Department

Parks and Recreation

Responsible Position

Parks Director

Work Actions

- i. Develop promotional materials for "Keep Texas Beautiful", "Corporate Challenge" or similar volunteer cleanups; and
- ii. Organize volunteers and implement volunteer cleanup of local creeks and streams including storm water outfalls; emphasize cleanup of floatables.

Annual Reporting Documentation

Discussion of cleanup, including publicity materials, number of participants, length of storm water system cleaned, and general results.

Document Retention

Documentation of publicity materials, approximate number of persons participating, instructions for cleaning trash from storm water outfalls, memos, letters, e-mails, and phone conversations.

Action Items with Measurable Goals and Schedules

- i. Perform business, citizen, and public employee volunteer clean-up of 1-mile of stream by November 1, 2009. Repeat annually until end of permit term.
- ii. Perform business, citizen, and public employee volunteer clean-up of all City storm water outfalls by November 1, 2011. Repeat annually until end of permit term.

Helpful Suggestions



Consider promoting events on City website or water bill with MCM No. 1, BMP No. 4.



Storm Water Hotline or Dedicated Email

Activity

Develop and implement a “hotline” or email address for citizens to provide input/ feedback pertaining to storm water related issues. Provide mechanisms for addressing comments from public.

Objective

Give the public opportunities to provide input and feedback regarding Roanoke’s Storm Water Management Program.

Responsible Departments

Marketing/ Communications Office

Responsible Position

Marketing/ Communications Office

Work Actions

- i. Develop and publicize storm water hotline or email;
- ii. Solicit and receive verbal and/ or written input from the community; and
- iii. Develop method to address feedback or comments received.

Annual Reporting Documentation

Public input and actions by the City.

Document Retention

Date on which storm water hotline or email are made available; prints of appropriate materials; prints of e-mail messages received that refer to storm water; dates of additions or modifications to storm water hot line or email; relevant meeting minutes and memos, letters, and records of public correspondence conversations.

Action Items with Measurable Goals and Schedules

- i. Development of hotline or email forum where the community can discuss storm water issues by May 1, 2011. This action item may be implemented with MCM No. 1, BMP No 3; and MCM No. 4, BMP No. 4.
- ii. Development of procedure to address comments or questions by July 1, 2011. This action item goal may be implemented with MCM No. 4, BMP No. 4.



Designate Selected Storm Drains for Storm Water Only

Activity

Organize volunteers to affix informational message to storm drains that read “Storm Water Only” or similar message.

Objective

Inform the general public, businesses, construction site personnel; and commercial and industrial facilities that storm water drains are for storm water use only and should not be used for other purposes including dumping.

Responsible Department

Utilities Department

Responsible Position

Utilities Director

Work Actions

- i. Promote storm water drain marking activity to community;
- ii. Procure informational tiles from contractor or develop stencil;
- iii. Identify storm drains that will have message affixed; and
- iv. Organize volunteers and provide with marking materials, have volunteers affix message to drains.

Annual Reporting Documentation

Discussion of drain marking program, including description and method of marking; map of storm drains that have been marked with rationale for selection of drains; written documentation of the dates on which messages were affixed to drains.

Document Retention

Written documentation describing procurement of informational tiles or stencil; rationale for selection of storm drains; documents indicating locations of drains and dates on which message was affixed; sample photograph of a marked drain; written records of correspondence related to drain marking, including e-mails, letters, and phone conversations.

Action Items with Measurable Goals and Schedule

- i. Develop and document rationale for selection method of storm water drains to be marked by May 1, 2009. Repeat annually in preparation of volunteer storm drain marking occurring in November.
- ii. Perform Volunteer storm drain marking by November 1, 2009. A total of 5 storm water drains will be marked annually until end of permit term.



Display Storm Water Management Program on City Website for Public Review and Comment

Activity

Display SWMP on City website for public review and comment

Objective

To allow the community to comment on the SWMP and participate in the development and implementation process.

Responsible Department

Marketing/ Communications Office

Responsible Position

Marketing/ Communications Office

Work Requirements

- i. Post SWMP on City website;
- ii. Create email or similar outlet for gathering public comments; and
- iii. Develop method for reviewing and implementing public comments.

Annual Report Requirements

Public input and actions by the City

Documentation Requirements

Documentation of public comments and response or actions by the City with relevant meeting minutes. Include; numbers and lists of attendees, nature of discussions; including letters, memos, and phone conversation records.

Action Items with Measurable Goals and Schedules

- i. Display SWMP on city website by May 1, 2010. This action item should be implemented with MCM No. 1, BMP No. 3.
- ii. Create email or similar outlet on City website for commenting on SWMP and method for addressing community comments by May 1, 2011. This action item should be implemented with MCM No. 2, BMP No. 2; and MCM 4, BMP No. 4.

3.4 Minimum Control Measure No. 3

Illicit Discharge Detection and Elimination

The City of Roanoke recognizes the potential for illicit discharges to the City's storm water system and is committed to addressing these discharges. The BMPs in this section are targeted toward known and potential illicit discharges.

Non-storm water discharges will be addressed on a case-by-case basis. Allowable non-storm water discharges, as identified in Part II. B. of the TPDES General Permit, are not required to be addressed by the minimum control measures unless they are determined by the City or TCEQ to be significant contributors of pollutants to the small MS4.

General Permit Requirements

(a) *Illicit Discharges*

A section within the SWMP must be developed to establish a program to detect and eliminate illicit discharges to the small MS4. The SWMP must include the manner and process to be used to effectively prohibit illicit discharges. To the extent allowable under state, and local law, an ordinance or other regulatory mechanism must be utilized to prohibit and eliminate illicit discharges. Elements must include:

(i) *Detection*

The SWMP must list techniques used for detecting illicit discharges; and

(ii) *Elimination*

The SWMP must include appropriate actions and to the extent allowable under state and local law, establish enforcement procedures for removing the source of an illicit discharge.

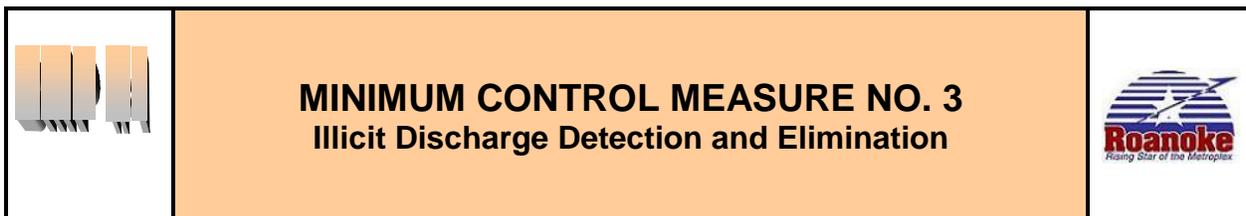
(b) *Allowable Non-Storm Water Discharges*

Non-storm water flows listed in Part II.B and Part VI.B of the General Permit do not need to be considered by the City as an illicit discharge requiring elimination unless the City or TCEQ identifies the flow as a significant source of pollutants to the small MS4. In lieu of considering non-storm water sources on a case-by-case basis, the MS4 operator may develop a list of common and incidental non-storm water discharges that will not need to be addressed as illicit discharges requiring elimination. If developed, the listed sources must not be reasonably expected to be significant sources of pollutants either because of the nature of the discharge or the conditions that have been established by the City prior to accepting the discharge to the small MS4. If this list is developed, then all local controls and conditions established for these listed discharges must be described in the SWMP and any changes to the SWMP must be included in the annual report described in Part IV.B.2 of this general permit, and must meet the requirements of Part II.D.3. of the general permit.

(c) *Storm Sewer Map*

- i. A map of the storm sewer system must be developed and must include the following:*
 - i. The location of the outfalls;*
 - ii. The names and locations of all waters of the U.S. that receive discharges from the outfalls; and*
 - iii. Any additional information needed by the permittee to implement its SWMP.*

- ii. The SWMP must include the source of information used to develop the storm sewer map, including how the outfalls were verified and how the map will be regularly updated.*



Development of City Ordinance and Enforcement Procedures to Prohibit and Remove Illicit Discharges

Activity

Develop, finalize, and implement City of Roanoke ordinance that prohibits non-storm water discharges to the City storm water system, include exceptions for allowable non-storm water discharges as identified in Part II.B or Part VI.B of the General Permit.

Develop, finalize and implement enforcement procedures for removing the source of illicit discharges in a timely manner.

Objective

Provide the City with a regulatory mechanism and enforcement procedures to prohibit and remove illicit discharges.

Responsible Department

City Manager

Responsible Position

City Manager

Work Actions

- i. Write, review, and finalize City ordinance prohibiting non-storm water discharges to the MS4, including exceptions for allowable non-storm water discharges as identified in Part II.B or Part VI.B of the General Permit;
- ii. Write, review, and finalize enforcement procedures for removing illicit discharges.

Annual Report Documentation

Description of process by which ordinance, and enforcement procedures were developed, discussed and finalized; ordinance and enforcement procedures milestone dates, description of ordinance and enforcement procedures, and dates which ordinance and enforcement procedures were finalized and approved by City Council; copy of ordinance.

Document Retention

Copies of meeting agendas and minutes for meetings at which ordinance and enforcement procedures were discussed; copies of all correspondence related to ordinance and enforcement procedures, including e-mails, letters, and phone conversations.

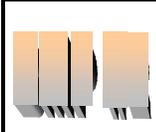
Action Items with Measurable Goals and Schedules

- i. Develop draft version of city ordinance prohibiting illicit discharges and send for legal counsel review by November 1, 2009.
- ii. Incorporate legal counsel changes and prepare for City Council agenda by May 1, 2010.
- iii. Develop draft version of enforcement procedures and send to legal counsel review by May 1, 2010.
- iv. Have approved final ordinance prohibiting illicit discharges and incorporate legal counsel remarks into enforcement procedures by December 1, 2010
- v. Have approved final enforcement procedures for eliminating illicit discharge by May 1, 2011.

Helpful Suggestions



The EPA has example model City ordinances available to develop language adequate to meet the General Permit requirements.



MINIMUM CONTROL MEASURE NO. 3 Illicit Discharge Detection and Elimination



Visual Inspection of Selected Storm Water Outfalls During Dry Weather

Activity

Perform dry weather screening of selected storm water outfalls to determine the existence of illicit discharges. If necessary, determine source of suspected illicit discharge and report to City's enforcement mechanism for elimination of illicit discharge.

Objective

Develop program to identify and remove potential illicit discharges to Roanoke's storm water system.

Responsible Department

Public Works

Responsible Position

Public Works Director

Work Actions

- i. Develop criteria for ranking storm water pollution-potential of storm water outfalls;
- ii. Develop inspection procedures, including illicit discharge reporting procedures, for City staff to perform storm water outfall dry weather inspections;
- iii. Based on the outfall pollution-potential ranking criteria have City staff members visually inspect storm water outfalls during dry weather to check for possible illicit discharges and document observations;
- iv. Develop procedure for tracing any flows upstream to identify source and determine if flow is result of illicit discharge; and
- v. Develop procedure for reporting any discovered illicit discharge to enforcement body for removal.

Annual Reporting Documentation

Description of outfalls selected and rationale for their selection; description of inspection procedure and dates on which outfalls were inspected; written description of any discharges observed and actions taken.

Document Retention

Documentation of rationale for selection of outfalls to be inspected; documentation of development of inspection procedure; map showing inspected outfalls; written report for each

outfall inspected including date, time, and description of any observed discharges; actions taken if suspected illicit discharge is detected; memos, letters, e-mails, and photographs.

Action Items with Measurable Goals and Schedules

- i. Develop, finalize, and document criteria for ranking storm water pollution potential of storm water outfalls, and rank outfalls by November 1, 2010. Repeat ranking annually until end of permit term.
- ii. Develop and finalize dry weather outfall inspection procedures and forms, including methods for following flows upstream and reporting illicit discharges, by May 1, 2011.
- iii. Implement dry weather screening program by inspecting only the top five (5) ranked storm water outfalls and following inspections procedures by November 1, 2011. Continue inspections annually until end of permit term.

Helpful Suggestions



The EPA has example IDDE programs available to develop language adequate to meet the General Permit requirements.



Development of Storm Sewer Map Showing All Outfalls and Names of Waters of the United States

Activity

Develop a Roanoke storm sewer map showing all outfalls and names of Waters of the United States.

Objective

A complete and current map of all storm water facilities in Roanoke to demonstrate a basic awareness of the intake and discharge areas of the system.

Responsible Department

Public Works

Responsible Position

Public Works Director

Work Actions

- i. Compile storm water map data from necessary sources;
- ii. Review data to locate outfalls and conduct field verification of all outfall locations;
- iii. Create paper and electronic versions of outfall maps;
- iv. Update map as necessary.

Annual Reporting Documentation

Discussion of compilation of map data, field verification process, and generation of map. Documentation of any changes/updates to the map.

Document Retention

Written documentation of process to compile necessary storm water system data; documentation of field verification; documentation of correspondence including e-mails, letters, and phone conversations; and documentation of other additional sources used to develop and update the map.

Action Items with Measurable Goals and Schedules

- i. Compile all relevant storm water outfall location data from existing records by May 1, 2008.

- ii. Conduct field verification of all storm water outfalls and document results by January 1, 2009.
- iii. Develop draft electronic and paper maps of all storm water outfalls and receiving waters by August 1, 2009.
- iv. Finalize electronic and paper storm water outfall location map with receiving waters by January 1, 2010. Maintain current map until end of permit term.

Helpful Suggestions



A paper and electronic USGS quadrangle map showing outfall locations is a simple solution to meeting the General Permit requirements.



Educate City Employees, Businesses, and the General Public Regarding Hazards Associated with Illegal Discharges to Storm Water Systems

Activity

Educate City employees, businesses, and the general public about illicit discharges to the MS4.

Objective: To inform City employees, businesses, and the general public about the hazards of illegal discharges to the storm water system.

Responsible Department

Marketing/ Communications Office

Responsible Position

Marketing/ Communications Office

Work Actions

- i. Develop and/ or procure educational materials discussing the storm water hazards of illicit discharges; and
- ii. Distribute materials to City employees, businesses and the general public.

Annual Reporting Documentation

Discussion of development or procurement of materials; discussion of distribution methods.

Document Retention

Written documentation of materials developed or procured; written documentation of any correspondence related to distribution.

Action Items with Measurable Goals and Schedule

- i. Distribute storm water educational materials targeted towards Residents and Visitors by May 1, 2008. A total of 250 educational pamphlets and/ or brochures will be printed and distributed annually until end of permit. Educational materials will be placed in public areas or distributed at community events. This action item may be implemented with MCM No. 1, BMP No. 1.
- ii. Distribute storm water educational materials targeted towards public service employees by May 1, 2009. Materials will be distributed annually until end of permit term with a goal

to reach all public service employees each year. This action item may be implemented with MCM No. 6, BMP No. 2; and MCM No. 1, BMP No. 1

- iii. Distribute storm water educational materials targeted towards businesses, commercial and industrial activities by May 1, 2010. A total of 150 educational pamphlets and/ or brochures will be printed and distributed annually until end of permit. This measurable goal may be implemented with MCM No. 1, BMP No. 1

Helpful Suggestions



The EPA, TCEQ, and NCTCOG have storm water educational information available for municipalities to use with minor modifications. Also, to reduce costs and resource commitments, it is possible to develop materials with other local Phase II MS4's or NCTCOG municipalities and share printing and distribution costs.

3.5 Minimum Control Measure No. 4

Construction Site Runoff Controls

In the absence of proper management, construction sites can release significant amounts of sediment into storm water and eventually into a municipality's storm water drainage system. Other construction site activities such as storage and handling of construction materials also can release pollutants into the storm drain system. In addition, increases in compaction and impervious surfaces at construction sites impact storm water. The fact that construction and construction-related activities are reaching all-time high levels in the Dallas/ Fort Worth metropolitan area is cause to evaluate the methods and procedures currently in place to address storm water runoff. Pollutants from construction sites that may impact storm water runoff include sediment, solid and sanitary wastes, fertilizer, pesticides, oil and grease, truck washout debris, and construction debris.

At present the City of Roanoke does not have institutional controls related to storm water at construction sites. Construction storm water runoff controls will be an important element in Roanoke's Storm Water Management Program.

General Permit Requirements:

The City, to the extent allowable under State and local law, must develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre or if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more of land. The City is not required to develop, implement, and/or enforce a program to reduce pollutant discharges from sites where the construction site operator has obtained a waiver from permit requirements under NPDES or TPDES construction permitting requirements based on low potential for erosion.

- (a) The program must include the development and implementation of, at a minimum, an ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State and local law.*
- (b) Requirements for construction site contractors to, at a minimum:*
 - (1) Implement appropriate erosion and sediment control BMPs; and*
 - (2) Control waste such as discarded building materials, concrete truck washout water, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.*
- (c) The City must develop procedures for:*
 - (1) Site plan review which incorporate consideration of potential water quality impacts;*
 - (2) Receipt and consideration of information submitted by the public; and*
 - (3) Site inspection and enforcement of control measures to the extent allowable under State and local law.*



Establish Roanoke City Ordinance and Enforcement Mechanism to Require Erosion and Sediment Controls at Construction Sites \geq 1 Acre

Activity

Establish a City ordinance and enforcement mechanism (including sanctions) to require waste, erosion, and sediment controls at construction sites that disturb one acre or more. Ordinance must address waste such as discarded building materials, concrete washout water, litter, and sanitary waste.

Objective

To regulate and control waste, erosion, and sedimentation from construction sites within the City of Roanoke.

Responsible Department

Building Inspection; City Clerk; City Council

Responsible Position

City Clerk

Work Actions

- i. Write, review, and finalize City ordinance requiring waste, erosion, and sediment controls at construction sites \geq 1 acre; and
- ii. Write, review, and finalize procedures for enforcing the requirements of waste, erosion, and sediment controls at construction sites \geq 1 acre.

Annual Reporting Documentation

Discussion of development of ordinance and enforcement mechanism, including opportunities for public input; copy of ordinance and enforcement policy and procedures; discussion of any important issues related to ordinance.

Document Retention

Written minutes of relevant City Council meetings; copies of agendas; copies of correspondence, including e-mails, letters, memos, and phone conversations.

Action Items with Measurable Goals and Schedule

- i. Develop draft version of city ordinance requiring waste, erosion, and sediment controls at construction sites ≥ 1 acre, and send for legal counsel review by November 1, 2009.
- ii. Incorporate legal counsel changes and prepare for City Council agenda by May 1, 2010.
- iii. Develop draft version of enforcement procedures and send to legal counsel for review by May 1, 2010.
- iv. Have approved final ordinance requiring waste, erosion, and sediment controls at construction sites ≥ 1 acre, and incorporate legal counsel remarks into enforcement procedures, by December 1, 2010
- v. Have approved final enforcement procedures for requiring waste, erosion, and sediment controls at construction sites ≥ 1 acre by May 1, 2011.

Helpful Suggestions



The EPA has example model City ordinances available to develop language adequate to meet the General Permit requirements.

Requiring contractors to comply with the NCTCOG ISWM manual may be a simple solution to meeting the requirements of the General Permit.



Require Submittal of Construction Site SWPPP for Review by City Staff

Activity

Require contractors to submit TCEQ approved Construction SWPPP for City review.

Objective: Incorporate site plan review with considerations of water quality impacts

Responsible Department

Building Inspection

Responsible Position

Chief Building Official

Work Actions

- i. Develop policy, or ordinance that requires contractors to submit TCEQ approved Construction SWPPP;
- ii. Create new construction plan checklist for City site plan reviewers which has a specific item requiring submittal of Construction SWPPP; and
- iii. Review of all submitted Construction SWPPPs for compliance with City ordinance. Ensure that SWPPPs include temporary controls for waste, sediment, and erosion, as well as controls for allowable non-storm water discharges and post-construction storm water controls.

Annual Reporting Documentation

Discussion of policy development, discussion of construction plan checklist development and any changes made to ensure compliance with erosion and sediment control ordinance.

Document Retention

Documentation of checklist, both before and after changes are made; documentation of phone calls, memos, letters, and e-mails regarding checklist modification.

Action Items with Measurable Goals and Schedules

- i. Develop policy, or ordinance requiring all contractors to submit TCEQ approved Construction SWPPP, as mandated by the TPDES program, by November 1, 2008.

- ii. Develop and implement new construction site plan review checklist that considers potential impacts of water quality by December 1, 2010. Once implemented, continue review of all Construction SWPPPs to ensure compliance with City ordinance until end of permit term.



Develop Procedures for Construction Site Inspection of Runoff Controls

Activity

Create and implement storm water runoff inspection procedures for City inspectors to follow at construction sites.

Objective

Reduce storm water pollution-potential from construction sites.

Responsible Department

Building Inspection

Responsible Position

Chief Building Official

Work Actions

- i. Develop procedures for construction site inspections for proper waste, erosion, and sediment controls. Ensure controls documented in SWPPP are in-place. Enforcement of control measures should follow those outlined through MCM No. 4, BMP No. 1.

Annual Reporting Documentation

Discussion of creation of inspection procedures, including dates and nature of procedures finalized.

Document Retention

Documentation regarding creation of construction runoff control inspection procedures; including copies of relevant correspondence, including letters, e-mails, memos, and phone conversations.

Action Item with Measurable Goal and Schedule

- i. Develop and finalize construction site inspection procedures by July 1, 2010



Train Roanoke City Inspectors in Conducting Proper Site Inspections

Activity

Train City inspectors in procedures for ensuring construction site has required storm water runoff controls.

Objective

Reduce storm water pollution-potential from construction sites.

Responsible Department

Building Inspection

Responsible Position

Chief Building Official

Work Actions

- i. Develop training materials for construction site inspections;
- ii. Perform City inspectors training on proper waste, erosion, and sediment controls at construction sites; and
- iii. Have City inspectors implement inspection procedures during construction site inspections.

Annual Reporting Documentation

Discussion of creation of training materials; discussion of inspection training, including dates and nature of training.

Document Retention

Documentation of training program, including copies of any materials distributed during training; attendees, copies of relevant correspondence, including letters, e-mails, memos, and phone conversations.

Action Item with Measurable Goal and Schedule

- i. Begin training City inspectors in procedures for ensuring construction site has required storm water runoff controls by May 1, 2011. Continue training annually until end of permit term.



Establish Mechanism for Contractor Comment and Procedures for Comment Consideration in Regards to Construction Site Runoff Controls

Activity

Provide mechanisms for commenting and review. Determine if incorporation of comment(s) is in the common interest of the City and Public.

Objective

Ensure construction contractors have a mechanism to communicate concerns related to the construction site runoff controls with the City.

Responsible Department

Building Inspection

Responsible Position

Chief Building Official

Work Actions

- i. Develop construction storm water controls hotline or email for receiving comments from construction contractors; and
- ii. Solicit and receive verbal and/ or written input from contractors;
- iii. Develop method to address feedback or comments received.

Annual Reporting Documentation

Discussion of the development and establishment of communication mechanism developed, and review procedures.

Document Retention

Documentation of sessions including agendas, summaries, numbers and lists of attendees, and nature of discussions; including letters, memos, and phone conversation records.

Action Items with Measurable Goals and Schedules

- i. Develop hotline or email forum where the community can discuss storm water issues by May 1, 2011. Maintain public forum until end of permit term. This action item may be implemented with MCM No. 1, BMP No 3; and MCM No. 2 BMP No.2.
- ii. Develop procedure to address comments or questions by November 1, 2011.



Stage Educational Seminar Targeted at Area Stakeholders on Construction Storm Water Controls

Activity

Develop and perform educational seminar at local contractor's organization to inform area developers, contractors, and other relevant stakeholders about construction storm water controls.

Objective

Inform area developers, contractors, and relevant stakeholders about construction storm water controls, including relevant changes in Roanoke City Code.

Responsible Department

Marketing/ Communications Office; Building Inspection

Responsible Position

Marketing/ Communications Office; Chief Building Official

Work Actions

- i. Using Roanoke City ordinance as a guide, create seminar materials relating to Roanoke's construction storm water control requirements;
- ii. Contact local contractors organization about hosting training seminar;
- iii. Advertise to area developers and contractors; and
- iv. Conduct Seminar.

Annual Reporting Documentation

Discussion of creation of materials, discussion of advertising the seminar; discussion of dates and number of attendees at seminar; discussion of any feedback from participants of seminar.

Document Retention

Documentation of the creation of seminar materials, including any comments received from developers and contractors; copy of written materials; documentation of dates and place where seminar held, document names of attendees present, including any feedback received; documentation of any relevant correspondence.

Action Items with Measurable Goals and Schedules:

- i. Seminar materials developed and local contractor organization contacted to host seminar by March 1, 2010.
- ii. Advertise and hold training seminar by August 1, 2010. Training seminar will be held annually each year until end of permit term. This action item may be implemented with MCM No. 5, BMP No. 3; and MCM No. 1 BMP No. 1.

3.6 Minimum Control Measure No. 5

Post-Construction Storm Water Management in New Development and Redevelopment

At present, the City of Roanoke has no institutional controls related to post-construction storm water management. This component is very important given Roanoke's location in the Dallas/Fort Worth metropolitan area.

There generally are two forms of substantial impacts from post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in storm water runoff. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants become suspended in storm water runoff and have the ability to impact the food chain and eventually impact humans. The second kind of post-construction runoff impact occurs by increasing the quantity of water delivered to the receiving water body during storms. Increased impervious surfaces interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. This can result in scouring of natural drainage pathways and flooding of areas resulting in property damage.

General Permit Requirements:

To the extent allowable under State and local law, the City must develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre of land, including projects less than one acre that are part of a larger common plan of development or sale that will result in disturbance of one or more acres, that discharge to the small MS4. The program must ensure that controls are in place that would prevent or minimize water quality impacts. The permittee shall:

- (a) Develop and implement strategies which include a combination of structural and/ or non-structural BMPs appropriate for the community;*
- (b) Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State and local law; and*
- (c) Ensure adequate long-term operation and maintenance of BMPs.*



Establish Roanoke City Ordinance and Enforcement Mechanism to Require Erosion and Sediment Controls at New Development and Re-Development Sites \geq 1 Acre

Activity

Establish a City ordinance and enforcement mechanism to require erosion and sediment controls at new development and redevelopment sites that disturb one acre or more.

Objective

Develop an ordinance or regulatory mechanism to address post-construction run-off from new development and redevelopment projects.

Responsible Department

Building Inspection; City Clerk; City Council

Responsible Position

City Clerk

Work Actions

- i. Write, review, and finalize City ordinance requiring erosion and sediment controls at new development and redevelopment sites \geq 1 acre; and
- ii. Write, review, and finalize procedures for enforcing the requirements of erosion and sediment controls at new development and redevelopment sites \geq 1 acre.

Annual Reporting Documentation

Discussion of development of ordinance and enforcement mechanism, including opportunities for public input; copy of ordinance and enforcement policy and procedures; discussion of any important issues related to ordinance.

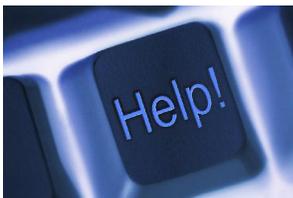
Document Retention

Written minutes of relevant City Council meetings; copies of agendas; copies of correspondence, including e-mails, letters, memos, and phone conversations.

Action Items with Measurable Goals and Schedules

- i. Develop draft version of city ordinance requiring erosion and sediment controls at new development and redevelopment sites ≥ 1 acre, send for legal counsel review by November 1, 2009.
- ii. Incorporate legal counsel changes and prepare for City Council agenda by May 1, 2010.
- iii. Develop draft version of enforcement procedures and send to legal counsel review by May 1, 2010.
- iv. Have approved final ordinance requiring erosion and sediment controls at new development and redevelopment sites ≥ 1 acre, and incorporate legal counsel remarks into enforcement procedures by December 1, 2010
- v. Have approved final enforcement procedures for requiring erosion and sediment controls at new development and redevelopment sites ≥ 1 acre by May 1, 2011.

Helpful Suggestions



The EPA has example model City ordinances available to develop language adequate to meet the General Permit requirements. Requiring contractors to comply with the NCTCOG ISWM manual may be a simple solution to meeting the requirements of the General Permit.



Create and Distribute Educational Materials for Area Developers Regarding Post-Construction Storm Water Controls

Activity

Create and distribute educational materials regarding post-construction storm water controls to developers, contractors, and relevant stakeholders.

Objective

Inform area developers, contractors, and stakeholders about post-construction storm water controls, including relevant changes in Roanoke City Code.

Responsible Department

Marketing/ Communications Office; Building Inspection

Responsible Position

Marketing/ Communications Office; Chief Building Official

Work Actions

- i. Using Roanoke City ordinance as a guide, create written educational materials regarding Roanoke construction storm water control requirements; and
- ii. Mail educational materials to area developers and contractors when issuing building permits.

Annual Reporting Documentation

Discussion of creation and distribution of educational materials, including the date materials were finalized and the date on which distribution began; discussion of any feedback from recipients of materials.

Document Retention

Documentation of the creation of educational materials, including date on which they were finalized and any comments received from developers and contractors; copy of written materials; documentation of distribution of materials, including starting date and any feedback received; documentation of any relevant correspondence.

Action Items with Measurable Goals and Schedules

- i. Educational materials will be distributed with each building permit issued by March 1, 2010. Distribution will continue until end of permit term. This action item may be implemented with MCM No. 5, BMP No. 3; and MCM No. 1 BMP No. 1.



Develop Long-Term Operation and Maintenance Program for Post-Construction Existing Storm Water Controls

Activity

Develop and implement a long-term post-construction controls maintenance strategy; create mechanism to ensure that maintenance is addressed.

Objective

Ensure adequate long-term operation and maintenance post-construction storm water runoff controls.

Responsible Department(s)

Building Inspection

Responsible Position

Chief Building Official

Work Actions

- i. Conduct inventory of structural runoff controls;
- ii. Map structural controls based on inventory;
- iii. Develop schedules for regular inspection and maintenance for each structural control; and
- iv. Notify owner of storm water control(s) in their possession with prescribed inspection and maintenance; and
- v. Inspect control(s) to ensure maintenance is being addressed.

Annual Reporting Documentation

Discussion of strategy development and various options for ensuring long-term maintenance of post-construction storm water controls.

Document Retention

Documentation of strategy development; copy of written strategy with various options for ensuring long-term maintenance of controls; documentation of any relevant correspondence and feedback from property owners.

Action Items with Measurable Goals and Schedule

- i. Develop map of structural controls by May 1, 2009.
- ii. Develop schedules for regular inspection and maintenance for each structural control by January 1, 2010.
- iii. Notify owner's of storm water controls in their possession with related inspection and maintenance schedule by March 1, 2010
- iv. Begin conducting inspections and maintenance as prescribed for each type of control by September 1, 2010.

3.7 Minimum Control Measure No. 6

Pollution Prevention/Good Housekeeping for Municipal Operations

The City of Roanoke recognizes that any Storm Water Management Program requires good housekeeping and pollution prevention to be successful.

The City of Roanoke owns and operates six municipal parks, one municipal swimming pool, and a public works storage yard. None of the properties owned by the City are covered under the TPDES Industrial Storm Water Permit. Other municipal operations of the City are not as extensive as other Dallas Fort-Worth Metropolitan communities and have a light impact on storm water quality.

Nevertheless, pollution prevention and good housekeeping practices of the City government are critical to maintaining progress and achieving continued improvement with respect to environmental quality, not just water quality. A pollution prevention and good housekeeping program requires operators to examine and subsequently alter their own actions to help ensure a reduction in the type and amount of pollution. This includes pollution that collects on streets, parking lots, open spaces, and storage areas and is discharged into local waterways, as well as from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm drainage systems and detention and retention areas.

General Permit Requirements:

(a) Good Housekeeping and Best Management Practices (BMPs)

Housekeeping measures and BMPs (which may include new or existing structural and non-structural controls) must be identified and either continued or implemented with the goal of preventing or reducing pollutant runoff from municipal operations. Examples of municipal operations and municipally owned areas include, but are not limited to:

- (1) Park and open space maintenance;*
- (2) Street, road, or highway maintenance;*
- (3) Fleet and building maintenance;*
- (4) Storm water system maintenance;*
- (5) New construction and land disturbances;*
- (6) Municipal parking lots;*
- (7) Vehicle and equipment maintenance and storage yards;*
- (8) Waste transfer stations; and*
- (9) Salt/ sand storage locations.*

(b) Training

A training program must be developed for all employees responsible for municipal operations subject to the pollution prevention/ good housekeeping program. The training program must include training materials directed at preventing and reducing storm water pollution from municipal operations. Materials may be developed, or obtained from the

EPA, states, or other organizations and sources. Examples or descriptions of training materials being used must be included in the SWMP.

(c) Structural Control Maintenance

If BMPs include structural controls, maintenance of the controls must be performed at a frequency determined by the MS4 operator and consistent with maintaining the effectiveness of the BMP. The SWMP must list all of the following

- (1) Maintenance activities;*
- (2) Maintenance schedules; and*
- (3) Long-term inspection procedures for controls used to reduce floatables and other pollutants.*

(d) Disposal of Waste

Waste removed from the MS4 and waste that is collected as a result of maintenance of storm water structural controls must be properly disposed. A section within the SWMP must be developed to include procedures for the proper disposal of waste, including:

- (1) Dredge spoil;*
- (2) Accumulated sediments; and*
- (3) Floatables.*

(e) Municipal Operations and Industrial Activities

The SWMP must include a list of all:

- (1) Municipal operations that are subject to the operation, maintenance, or training program developed under the conditions of this section; and*
- (2) Municipally owned or operated industrial activities that are subject to TPDES storm water regulations.*



Assess Municipal Properties for Appropriate Storm Water Pollution Prevention Controls

Activity

Inspect six municipal parks, public works storage yard, and City administrative buildings to determine what storm water controls are in place, and what pollution prevention controls are warranted.

Objective

To reduce pollution in Roanoke's storm water system from municipally owned properties.

Responsible Department

Public Works

Responsible Position

Public Works Director

Work Actions

- i. Inspect City properties to determine what storm water controls are in place and determine what additional controls are warranted;
- ii. Identify any illicit discharges, and determine if existing structural controls are properly maintained; and
- iii. Generate written report with recommendations; and
- iv. Install and implement additional storm water pollution prevention controls at City owned properties.

Annual Reporting Documentation

Discussion of inspections, including properties inspected and materials stored and handled; description of report development and recommendations. Pollution controls installed

Document Retention

Written field logs of inspections, including contact persons at each property; times and dates of inspections; any relevant correspondence; pollution prevention controls installed; and existing pollution prevention controls.

Action Items with Measurable Goals and Schedules

- i. Develop procedure for performing municipal owned property inspections by November 1, 2009.
- ii. Inspect 50% of municipal owned properties by May 1, 2010.
- iii. Inspect remaining 50% of municipal owned properties and generate recommendations report by May 1, 2011.
- iv. Implement at least one storm water pollution prevention control on municipal owned property based on recommendations of inspection report by January 1, 2012.



Train Roanoke City Employees Responsible For Municipal Operations Subject To Pollution Prevention/ Good Housekeeping

Activity

Train Roanoke City employees responsible for municipal operations subject to pollution prevention/ good housekeeping program.

Objective

Reduce storm water pollution from municipal operations.

Responsible Department

Public Works

Responsible Position

Public Works Director

Work Actions

- i. Develop and/or procure training materials from NCTCOG; and
- ii. Conduct training directed at preventing and reducing storm water pollution from municipal operations.

Annual Reporting Documentation

Description of training, including training materials; discussion of number of employees trained and City Departments from which employees were selected.

Document Retention

Written record of names and City Departments of employees trained; record of dates training took place; copies of training materials; records of any relevant correspondence.

Action Items with Measurable Goals and Schedules

- i. Develop and/ or procure materials. Conduct training with selected employees by May 1, 2008. This action item may be implemented with MCM No.1, BMP No. 1; and MCM No. 3, BMP No. 4. Continue training annually until end of permit term

Helpful Suggestions



The NCTCOG has storm water training materials available for municipalities to use with minor modifications. Also, to reduce costs and resource commitments, it is possible to develop materials and train a regional group in combination with other local Phase II MS4's to help manage costs.



Written Policy, Procedures, and Schedule for Periodic Inspection and Maintenance of Storm Water System

Activity

Create policy, procedures, and schedule for periodic maintenance of storm water system including cleaning and disposal of floatables, dredge spoil, and accumulated sediments.

Objective

A written policy which will establish maintenance procedures and schedule for Roanoke's storm water system.

Responsible Department

Public Works

Responsible Position

Public Works Director

Work Actions

- i. Research existing storm water system regarding potential cleaning and maintenance requirements; and
- ii. Write policy, procedures, and schedule for system maintenance including proper disposal of waste removed from MS4.

Annual Reporting Documentation

Discussion of storm water system research required; discussion of creation and finalization of policy, procedures, and schedule for system maintenance.

Document Retention

Written documentation of system research and maintenance procedures and schedule creation; documentation of any relevant correspondence.

Action Item with Measurable Goals and Schedule

- i. Develop policy, procedures, and schedule, including proper disposal of waste as defined in the General Permit, for storm sewer maintenance by May 1, 2011.

- ii. Begin performing periodic inspections and maintenance according to developed schedule by November 1, 2011. Continue inspections according to schedule until end of permit term.

4.0 REFERENCES

Texas Commission on Environmental Quality, TPDES General Permit No. TXR040000, General Permit to Discharge Under the Texas Pollutant Discharge Elimination System, May 2007.

North Central Texas Council of Governments, Storm Water Management Program Webpage, <http://www.nctcog.org/envir/SEEClean/Stormwater/index.asp>.

United States Environmental Protection Agency, National Pollutant Discharge Elimination System Storm water Website, http://cfpub.epa.gov/npdes/home.cfm?program_id=6

5.0 DEFINITIONS

Best Management Practices (BMPs) - Schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spills or leaks, waste disposal, or drainage from raw material storage areas.

Clean Water Act (CWA) - The Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972, Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483 and Pub. L. 97-117, 33 U.S.C. 1251 et. seq.

Discharge - When used without a qualifier, refers to the discharge of storm water runoff or certain non-storm water discharges as allowed under the authorization of this general permit.

Illicit Connection - Any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

Illicit Discharge - Any discharge to a municipal separate storm sewer that is not entirely composed of storm water, except discharges pursuant to this general permit or a separate authorization and discharges resulting from emergency fire fighting activities.

Maximum Extent Practicable (MEP) - The technology-based discharge standard for municipal separate storm sewer systems to reduce pollutants in storm water discharges that was established by CWA § 402(p). A discussion of MEP as it applies to small MS4s is found at 40 CFR § 122.34.

MS4 Operator - The public entity, and/ or the entity contracted by the public entity, responsible for management and operation of the municipal separate storm sewer system that is subject to the terms of this general permit.

Notice of Change (NOC) - Written notification from the permittee to the executive director providing changes to information that was previously provided to the agency in a notice of intent.

Notice of Intent (NOI) - A written submission to the executive director from an applicant requesting coverage under this general permit.

Notice of Termination (NOT) - A written submission to the executive director from a permittee authorized under a general permit requesting termination of coverage under this general permit.

Outfall - A point source at the point where a municipal separate storm sewer discharges to surface water in the state and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other waters of the U.S. and are used to convey waters of the U.S.

Permittee - The MS4 operator authorized under this general permit.

Permitting Authority - For the purposes of this general permit, the TCEQ.

Point Source - (from 40 CFR § 122.22) any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

Pollutant(s) of Concern - Include biochemical oxygen demand (BOD), sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation), pathogens, oil and grease, and any pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from an MS4. (Definition from 40 CFR § 122.32(e)(3)).

Redevelopment - Alterations of a property that changes the “footprint” of a site or building in such a way that there is a disturbance of equal to or greater than one (1) acre of land. This term does not include such activities as exterior remodeling.

Small Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre and less than five (5) acres of land. Small construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) and less than five (5) acres of land. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, and original purpose of a ditch, channel, or other similar storm water conveyance. Small construction activity does not include the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities.

Small Municipal Separate Storm Sewer System (MS4) - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by the United States, a state, city, town, borough, county, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under § 208 of the CWA; (ii) Designed or used for collecting or conveying storm water; (iii) Which is not a combined sewer; (iv) Which is not part of a publicly owned treatment works (POTW) as defined at 40 CFR § 122.2; (v) Which was not previously authorized under a NPDES or TPDES individual permit as a medium or large municipal separate storm sewer system; and (vi) Which does not include very discrete systems such as those serving individual buildings. For the purpose of this permit, a very discreet system includes storm drains associated with municipal office and education

complexes, where the complexes serve a transient (nonresidential) population, and where the buildings are not physically interconnected to an MS4 that is also operated by that public entity.

Storm Water - Storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm Water Associated with Construction Activity - Storm water runoff from an area where there is either a large construction activity or a small construction activity.

Storm Water Management Program (SWMP) - A comprehensive program to manage the quality of discharges from the municipal separate storm sewer system.

Structural Control (or Practice) - A pollution prevention practice that requires the construction of a device, or the use of a device, to capture or prevent pollution in storm water runoff. Structural controls and practices may include but are not limited to: wet ponds, bioretention, infiltration basins, storm water wetlands, silt fences, earthen dikes, drainage swales, sediment traps, check dams, subsurface drains, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins.

Surface Water in the State - Lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state (from the mean high water mark (MHW) out 10.36 miles into the Gulf), and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or non-navigable, and including the beds and banks of all water-courses and bodies of surface water, that are wholly or partially inside or bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems which are authorized by state or federal law, regulation, or permit, and which are created for the purpose of waste treatment are not considered to be water in the state.

Urbanized Area (UA) - An area of high population density that may include multiple MS4s as defined and used by the U.S. Census Bureau in the 2000 decennial census.

Waters of the United States - (from 40 CFR § 122.2) Waters of the United States or waters of the U.S. means:

- (a) all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (b) all interstate waters, including interstate wetlands;
- (c) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds that the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - (1) which are or could be used by interstate or foreign travelers for recreational or other purposes;
 - (2) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

- (3) which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) all impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) tributaries of waters identified in paragraphs (a) through (d) of this definition;
- (f) the territorial sea; and
- (g) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Appendix A

TPDES General Permit TXR 040000

Appendix B

Notice of Intent (NOI) for Coverage Under TPDES Permit

Appendix C

Annual Report

Appendix D
BMP Implementation Schedule

Appendix E

Forms