City of Conway

Storm Water Management Plan

March 2003

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1.0 Introduction

The health of natural water bodies such as rivers, lakes, oceans, marshes and streams are of great public concern. In an attempt to address pollution problems of the past and as a preventative measure to insure healthy and aesthetically pleasing water resources for future generations, the U.S. Environmental Protection Agency (EPA) has developed a storm water program aimed at preserving and enhancing the nation’s water resources.

Phase I of the EPA storm water program was promulgated in 1990 under the Clean Water Act and became effective in 1992. Phase I addresses storm water runoff from large and medium size cities, defined to be populations of 100,000 or greater as of the 1990 census, and 10 categories of industrial activity. Phase I relies on National Pollutant Discharge Elimination System (NPDES) permit coverage to address storm water issues from these affected categories. NPDES permits are highly technical in nature and have strictly defined performance criteria and extensive monitoring requirements.

Phase II of the EPA storm water program mandating storm water pollution controls for cities with populations less than 100,000 were promulgated under the Clean Water Act in December 1999 and go into effect in March 2003. The Phase II program, under which the City of Conway falls, relies more on Best Management Practices (BMPs) and allows for a general permitting procedure. The criteria for being categorized as a Phase II city is to be located in an urbanized area and have a population of 10,000 or more as of the 2000 census. The City of Conway meets both of these criteria and is therefore included in the Phase II program.

BMPs are measures and techniques identified by the EPA as being beneficial to minimize or prevent pollution associated with storm water runoff from reaching receiving water bodies. A general permit is a simplified mechanism authorizing the continued discharge of storm water to the waters of the U.S. by MS4s, which fall under the requirements of the NPDES Phase II Program. The general permit is prepared by the State of South Carolina in accordance with US EPA regulations and is made available to MS4s in the state. In order to apply for coverage under the general permit, the MS4 must submit a “Notice of Intent” (NOI) to be so covered. The NOI must include an appropriate Storm Water Management Plan (SWMP) to discharge storm water under the state permit from the EPA.

The Phase II program identifies six areas of concern labeled as Minimum Control Measures (MCMs) that must be addressed in the community’s SWMP. These MCMs include: 1) Public Education and Outreach, 2) Public Participation and Involvement, 3) Illicit Discharge and Detection, 4) Construction Site Runoff Control, 5) Post-Construction Runoff Control, and 6) Pollution Prevention and Good Housekeeping in Municipal Operations. For each of these MCMs, the EPA has developed a menu of BMPs to select
from. Communities are given the latitude to evaluate and determine which BMPs are most appropriate for their individual circumstances. Besides selecting the most suitable BMPs, the SWMP must include measurable goals and timetables for implementing of the BMPs.

As stated above, each small MS4 operator in the state falling under the Phase II program must prepare and submit a SWMP for review and approval by the S.C. Department of Health and Environmental Control (SCDHEC). A further requirement of the Phase II program is that the small MS4 operator must assess the effectiveness of the BMPs selected and report on the status of implementation of the SWMP on an annual basis. In addition, permittees are required in their annual reports to evaluate whether the selected BMPs are reducing the discharge of pollutants from their systems to the “maximum extent practicable” (MEP). Based on this evaluation and gained experience, if there is an indication of a need for improved control, permittees can revise their selected mix of BMPs to create a more effective program. MS4s will have up to 5 years from the time that the general permit becomes effective to fully develop and implement its SWMP.

A necessary and critical component of the SWMP is the financial commitment to the program. This requires identification of revenue sources that will provide adequate levels of funding to support the proposed measures. Many options are possible and include: general tax revenue, permit fees, developer fees and storm water utility revenues. While all of these sources can be looked at to generate revenue, due to the amount of funding that likely will be required, the creation of a storm water utility will be the most reliable and equitable means to ensure compliance with these new federal requirements. An added benefit to the implementation of a storm water utility is that problems such as localized flooding and existing system maintenance can be addressed with funds generated by the utility, if so approved.
2.0 Need and Purpose Statements

The challenges involved in adequately dealing with the many facets of the storm water issue suggests that it is important to have clear direction and purpose in pursuing a proper set of solutions for the City of Conway. Therefore the following statements are presented as guiding reference points in the development of this Storm Water Management Plan.

Need:

Storm water runoff can negatively impact the health, environment, safety and economic vitality of a community if not properly dealt with. Therefore in addition to meeting the regulatory requirements of the EPA NPDES Phase II Program, these negative potentials must be considered during the process of preparing the City of Conway Storm Water Management Plan.

Purpose:

The purpose of this Storm Water Management Plan is to develop an appropriate and reasonable framework to deal with the problem of storm water management in the City of Conway. This result is to be achieved with proper consideration and input from the public as well as city staff. The end goals of this process are to: educate the public and city staff regarding storm water issues, preserve the natural environment, protect property, and enhance the opportunity for economic development in and around the City of Conway.
3.0 Proposed Storm Water Management Plan

The persons responsible for implementing the City of Conway Storm Water Management Plan are the Public Utilities Director, the City Engineer and the City Administrator. These positions are currently held by Jerry Barnhill, Fred Akel, P.E. and Steve Thomas, respectively.

3.1 Public Education and Outreach

A. Regulatory Requirement 40 CFR 122.34 (b) (1)

Implement a public education program to distribute educational materials to the community of contact, equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps the public can take to reduce pollutants in storm water runoff.

B. Minimum Control Measures

Public education and outreach is a major key to the success of a storm water management program. Through public education, the citizens of Conway will gain an understanding of how their actions can affect storm water quality and become more informed about storm water quality issues in the community. When the public is aware of the impacts that they have on their surroundings, they gain a sense of responsibility for those actions. This can lead to greater compliance for the storm water management program.

The objectives of this part of the SWMP are to:

- Inform individuals and homeowners of steps they can take to improve storm water quality.
- Educate commercial, industrial, and institutional groups about the impacts of their work on the storm water quality and the steps needed to reduce these effects.
C. **Selected BMPs and Goals**

**Year 1**

- Start mailing of utility bill stuffers on a quarterly basis.
- Sponsor the Carolina Clear Program developed by the Clemson University Extension Service.
- Establish links from the City web page to various storm water web sites.

**Year 2**

- Target commercial/business establishments to receive periodic mailings.
- Start attending Neighborhood Coalition meetings and present a program of storm water education. Several of the Neighborhood Coalitions in Conway are in minority neighborhoods.
- Start placing storm water education material/information on the City of Conway public access television station.
- Provide educational materials to local schools.

**Year 3**

- Start quarterly mailings to targeted commercial/business establishments.

**Year 4**

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.

**Year 5**

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.
3.2 Public Participation and Involvement

A. Regulatory Requirement 40 CFR 122.34 (b) (2)

At a minimum, comply with state, tribal, and local public notice requirements when implementing a public involvement/participation program. EPA recommends that the public be included in developing, implementing, and reviewing your storm water management program and that the public participation process should make efforts to reach out and engage all economic and ethnic groups.

B. Minimum Control Measures

Public Involvement/Participation is important for the development of the storm water management program. By encouraging input from the public there can be beneficial impacts to the development of the program. One such benefit is that early and frequent public input can lead to a shorter implementation schedule and greater support for the program. As with public education, people who take an active roll in the development of the program also feel a sense of responsibility for the program’s success.

The objectives of this part of the SWMP are to:

- Include the citizens of Conway in the development, implementation, and review of the storm water management program.
- Include input from different economic and cultural groups.

C. Selected BMPs and Goals

Year 1

- Hold a public hearing on the SWMP and proposed Storm Water Utility Ordinance.
- Start a citizen storm water advisory committee.
- Establish a storm water hot line.
- Sponsor the Carolina Clear program developed by the Clemson University Extension Service.
**Year 2**

- Start holding/attending stakeholder meetings.

**Year 3**

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.

**Year 4**

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.

**Year 5**

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.
3.3 Illicit Discharge Detection and Elimination

A. Regulatory Requirement 40 CFR 122.34 (b) (3)

Develop, implement, and enforce a program to detect and eliminate illicit discharges into your small MS4. Develop a storm sewer system map, showing the location of all outfalls and the names and locations of all water of the U.S. that receive discharges from those outfalls. To the extent allowable under state, tribal or local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into your storm sewer system and implement appropriate enforcement procedures and actions. Develop and implement a plan to detect and address non-storm water discharges including illegal dumping to your system. Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

B. Minimum Control Measures

The illicit discharge detection and elimination minimum control measure is intended to reduce improper waste and management practices. Based on research conducted as part of the National Urban Runoff Program (NURP), it is believed that most of the flow during dry weather conditions is due to illicit and/or inappropriate discharges and connections to MS4s, such as mistaken or deliberate connections of wastewater lines. These dry weather discharges were found to have pollutant levels high enough to significantly impact the water quality of the receiving water bodies. MS4s may also receive illicit discharges through indirect connections such as infiltration or spills flowing into storm drains.

There are four parts to this minimum control measure. The first part is to develop a map that identifies all outfalls and the name and location of waters of the United States that receive discharges from the outfalls from the City of Conway MS4. The second part of the illicit discharge and elimination control measure is to prohibit the discharge of non-storm water discharges to the storm sewer system through regulatory avenues and to develop a means to enforce these regulations. The third part is to execute a plan to detect and address non-storm water discharges within the City of Conway. Dry weather screening is one method for localizing illicit discharges in MS4s. Finally, the public should be educated about the hazard of improper waste disposal and non-storm water discharges.
The objectives of this part of the SWMP are to:

- Develop procedures to locate areas in the City of Conway suspected of having illicit discharges.
- Develop procedures to track down the source of an illicit discharge.
- Develop procedures to remove the illicit discharge.
- Develop procedures to evaluate the program’s performance.

C. Selected BMPs and Goals

Year 1

- Start storm sewer mapping project.

Year 2

- Develop a plan for detection and elimination of illicit discharges.

Year 3

- Pass a storm water ordinance which includes a prohibition of and penalties for illicit discharges.
- Implement illicit discharges detection and elimination program.

Year 4

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.

Year 5

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.
3.4 Construction Site Runoff Control

A. Regulatory Requirement 40 CFR 122.34 (b) (4)

Develop, implement and enforce a program to reduce pollutants in any storm water runoff to your small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. 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, requirements for construction site operators to implement appropriated erosion and sediment control BMPs, requirements for construction site, procedures for site plan review which incorporate consideration of potential water quality impacts, procedures for receipt and consideration of information submitted by the public.

B. Minimum Control Measures

Construction site storm water runoff control is a minimum control measure designed to address the pollution of storm water runoff from construction sites. Activities that are performed on construction sites usually disturb a large amount of land and generate large amounts of waste. This type of activity has been found to lead to high levels of sediment, phosphorus, nitrogen, pesticides, petroleum derivatives, construction chemicals, and solid wastes making their way into receiving streams.

Several actions must be taken under this minimum control measure to deal with these pollutants. First, construction sites must be required through regulations or ordinances to establish erosion and sediment controls. A mechanism to enforce compliance must also be established by regulation or ordinance to ensure that the necessary controls are implemented. Next, the City of Conway must establish the necessary requirements for erosion and sediment control BMPs and methods to control other waste generated on construction sites. Finally, the City must establish procedures for site plan review, and inspection and enforcement of controls.
The objectives of this part of the SWMP are to:

- Develop erosion and sediment control and waste control requirements for construction sites in the City of Conway
- Develop procedures for site plan review to ensure consistency with erosion and sediment control requirements.
- Develop procedures for inspection and enforcement.

C. Selected BMPs and Goals

Year 2

- Develop construction site plan review and inspection procedures.

Year 3

- Pass a storm water ordinance.
- Adopt the SC Sediment and Erosion Control Manual as part of the storm water ordinance.
- Start implementation of plan review and inspection procedures.

Year 4

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.

Year 5

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.
3.5 Post-Construction Runoff Control

A. Regulatory Requirement 40 CFR 122.34 (b) (5)

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, including projects that are less than one acre that are part of a larger common plan of development or sale, that discharge into your small MS4. Develop and implement strategies, which include a combination of structural and/or non-structural BMPs appropriate for your community. Use an ordinance or other regulatory mechanism to address post-construction runoff. Ensure adequate long-term operation and maintenance of BMPs.

B. Minimum Control Measures

Post-construction storm water management in new development and redevelopment focuses on implementation of controls that will try to maintain good water quality conditions after an area has been developed or after construction. Many studies have shown that it is much easier and more cost-effective to control pollution at its source rather than after it enters into an MS4. For this reason it is important to consider BMPs that may be needed for post-construction pollution control prior to the construction of an area. The BMPs that are chosen should be appropriate for the community that it is to serve, minimize water quality impacts, and strive to maintain pre-development runoff conditions.

This minimum control includes two parts. First, the City of Conway will develop or adopt a set of structural and non-structural BMPs relating to development or redevelopment projects and implement these measures through an ordinance. Second, the City will develop a mechanism to ensure that there is long-term operation and maintenance of the BMPs.

The objectives of this part of the SWMP are to:

- Develop ordinances or regulations for runoff from new development and redevelopment projects in the City of Conway.
- Develop/adopt and implement structural and non-structural BMPs.
- Develop a mechanism to ensure long-term operation and maintenance of the BMPs.
C. Selected BMPs and Goals

Year 2

- Start development of a storm water ordinance, long term O & M procedures and pre-construction plan review process.
- Develop procedures for pre-construction review of BMP designs, site inspections of BMPs during construction, post-construction inspection, and long-term O & M procedures of BMPs.

Year 3

- Pass a storm water ordinance.
- Implement procedures for pre-construction reviews, site inspection, post-construction inspection and long-term O & M procedures for BMPs.

Year 4

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.

Year 5

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.
3.6 Pollution Prevention and Good Housekeeping in Municipal Operations

A. Regulatory Requirement 40 CFR 122.34 (b) (6)

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.

B. Minimum Control Measures

Pollution prevention/good housekeeping for municipal operations is a minimum control measure designed to emphasize the operation and maintenance of MS4s and proper training of municipal employees. Performing municipal activities in a careful and proper manner prevents or reduces pollutant runoff. Municipal operations include parks, open space maintenance, fleet maintenance, new construction or land disturbance, planning, and storm water system maintenance.

The following items will be considered when developing this portion of the City of Conway program:

- Maintenance activities.
- Maintenance schedule.
- Long-term inspection procedures for structural and non-structural storm water controls to reduce floatables and other pollutants discharged from the separate storm sewer.
- Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, fleet or maintenance shops with outdoor storage areas.
- Procedures for properly disposing of waste removed from the separate storm sewers and areas listed above.

The objectives of this part of the SWMP are to:

- Develop and implement good housekeeping practices.
- Develop and implement an employee training program.
C. Selected BMPs and Goals

**Year 1**

- Continue street sweeping operations.
- Develop a program for employee education and training.
- Identify appropriate procedures for proper disposal of waste.
- Develop a program for operation, maintenance and inspection/evaluation of various City facilities and functions.

**Year 2**

- Implement employee training program.
- Implement operation, maintenance and inspection/evaluation program.
- Identify problem areas in the operation of the City’s MS4.
- Implement proper waste disposal methods.

**Year 3**

- Implement measures to correct identified problem area in operation of the City’s MS4.

**Year 4**

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.

**Year 5**

- Evaluate plan effectiveness for this MCM and revise SWMP as necessary to achieve pollution reduction by the MEP.