

Stormwater Management Plan

Kingsport, Tennessee

Table of Contents

Chapter 1: Introduction

- 1.1 Background
 - 1.1.1 City Water Resource Characteristics
 - 1.1.2 The Public Stormwater Conveyance System
 - 1.1.3 The Evolution of the City Stormwater Management Program
- 1.2 Purpose and Scope

Chapter 2: Overview of Stormwater Program

- 2.1 Program Goals
- 2.2 Organization
 - 2.2.1 Primary Responsible Parties
 - 2.2.2 Inter-divisional and Inter-departmental Cooperation
 - 2.2.3 Other Partnerships
 - 2.2.4 Areas of Focus

Chapter 3: NPDES Phase II Compliance Program

- 3.1 General Information
 - 3.1.1 Relevant Permit Dates
 - 3.1.2 Notice of Intent and Notice of Coverage Information
 - 3.1.3 Relevant City Regulations and Policies
- 3.2 Special Conditions
 - 3.2.1 Discharges to Water Quality Impaired Waters
 - 3.2.2 EPA-Approved or Established TMDL
- 3.3 Minimum Control Measures
 - 3.3.1 Public Education and Outreach
 - 3.3.2 Illicit Discharge Detection and Elimination
 - 3.3.3 Construction Site Stormwater Management
 - 3.3.4 Permanent Stormwater Management
 - 3.3.5 Pollution Prevention/Good Housekeeping for Municipal Operations
- 3.4 Other NPDES Phase II Permit Activities

Chapter 4: Drainage Control and Floodplain Management Program

- 4.1 Activity Listing

Chapter 5: Plan Summary

List of Tables

- Table 1. Functional Areas of the Stormwater Management Program
- Table 2. Kingsport Stormwater Management Program Goals
- Table 3. Stormwater Responsibilities for Divisions within the Department of Public Works
- Table 4. Stormwater Responsibilities of Other City Departments
- Table 5. External Partners for Stormwater Management Activities
- Table 6. Relevant Dates of the NPDES Phase II Permit (TNS000000)
- Table 7. Impaired Waters in Kingsport
- Table 8. EPA-Approved TMDLs in Kingsport
- Table 9. Pollutants and Target Activities
- Table 10. Summary of Public Education and Outreach
- Table 11. Summary of Illicit Discharge Detection and Elimination
- Table 12. Summary of Construction Site Stormwater Management
- Table 13. Summary of Permanent Stormwater Management
- Table 14. Other NPDES Phase II Permit Requirements
- Table 15. Stream Monitoring Plan
- Table 16. Drainage Control and Floodplain Management Activities
- Table 17. Stormwater Management Summary Plan

Chapter 1: Introduction

The Kingsport Stormwater Management Plan (SWMP) was prepared to document the activities and functions that comprise the Kingsport Stormwater Management Program. This Stormwater Management Plan describes that program and any known future changes or enhancements. Secondly, the SWMP was written in order to comply with State water quality permit requirements.

1.1 Background

In order to understand Kingsport's local stormwater management program and the activities included in this SWMP, it is necessary to be aware of the water resource characteristics of the City, a history of the City's stormwater management program and the regulations and policies that form the basis for stormwater management activities.

1.1.1 City Water Resource Characteristics

Kingsport is rich in water resources. Local watersheds drain to streams which then carry their water to the South Fork Holston River. The characteristics of the City's watersheds and streams are highly variable. Watershed topography varies widely, ranging from broad, flat floodplains to gradually rolling hills surrounded by steep, and sometimes rocky, ridges. Watershed soils are comprised largely of loams and clays, varying in their ability to soak up rainfall and in their propensity to erode when exposed to rainfall. Streams in the wide floodplains are typically slow moving and can provide a significant amount of floodwater storage, while many of the streams in hilly areas can dry completely during the late summer and fall. These hillside streams can also be "flashy" during storm events, filling rapidly and moving water quickly to downstream areas. Streambed and bank materials can range from exposed bedrock to easily erodible silts and clays.

According to the Metropolitan Planning Commission archives, Kingsport's population has grown from 40,694 in 1980 to 58,169 in 2010. As more people have moved into the City, the corresponding development of buildings, roads and other areas has changed the natural hydrologic characteristics of City watersheds and streams. As areas urbanize, roof and pavement now covers areas that once allowed rain water to infiltrate into the ground, thus increasing the volume of Stormwater runoff that is delivered to local streams. The result is that local streams must carry more water at a faster rate and for a longer amount of time. Consequently, stream beds and banks that cannot tolerate these changes begin to erode, often significantly widening the stream and sometimes moving its location altogether.



Stream bank erosion is also a contributor of sediment to local streams and lakes, resulting in a decrease in water quality and aquatic habitat. Stormwater runoff from development can impact Kingsport's streams in other ways. Rain water falling on buildings, roadways and construction activities can become contaminated with sediments, suspended solids, nutrients phosphorous and nitrogen, metals, pesticides, organic material and floating trash. These pollutants are then carried into local streams. Unlike sanitary wastewater and industrial wastewater, most stormwater is not treated prior to entering streams. Pollution of stormwater runoff must be prevented at the source.

Clearly, development and its potential impact on local streams, human safety and health lead to the need for formalized stormwater management at the local level. Prior to the early 2000s, the Kingsport stormwater management program focused almost exclusively on street and lot drainage control (e.g., ditches, culverts and detention ponds). This was the case in most small and medium-sized communities in the United States, where the conveyance of stormwater runoff quickly and safely away from developed areas and roadways was the only stormwater-related priority. Across the nation, Federal, state and local government priorities have expanded over time with the recognition that this narrow focus contributes to the deterioration and loss of natural drainage ways, floodplains, riparian areas and other water resources, all of which are valuable for drainage control and water quality management. Kingsport's program now has a more comprehensive charge, which is the management of stormwater quantity and quality.

1.1.2 The Public Stormwater Conveyance System

The public stormwater conveyance system that is managed by Kingsport is comprised of a system of streets, inlets, catch basins, gutters, pipes and ditches that convey stormwater runoff through the jurisdiction, eventually discharging in a stream or lake. The private stormwater system includes the "feeder" streets, gutters, pipes and ditches that collect and carry stormwater from privately owned properties to the public system, or discharges directly to a stream or lake. In state water quality regulations and permits, the public stormwater conveyance system is often called a "storm sewer system". However, the use of the word "sewer" often results in the mistaken beliefs by the general public that sanitary and storm systems are one in the same and that stormwater is treated for pollutants in much the same manner as sanitary wastewater. In fact, this is not the case in the City of Kingsport, where the stormwater and sanitary systems are separated.

Extent of Service – The extent of stormwater service is a policy that defines the stormwater structures for which the City provides services. The City performs construction, inspection and

maintenance of the system components that are located in the public right-of-way, but will not maintain stormwater facilities that are located on private property. The City may choose to work out of the public right-of-way in cases of emergencies such as a threat to public health, personal safety or to ensure the safety of roadways.

Level of Service – The level of service afforded to the stormwater system as a whole is defined by the types of services that the City provides to the different parts of the system. The City is committed to a high level of service within right-of-way areas that are highly susceptible to flooding and where private property can be easily impacted by public stormwater runoff. Services provided in such areas may include periodic inspections, cleaning or clearing during dry weather or increased vigilance by Public Works maintenance crews during and after storm events. In contrast, the level of service for maintenance in right-of-ways that are not highly susceptible to flooding consists of inspections and maintenance on an as-needed or complaint driven basis. When taken individually, routine and remedial maintenance projects typically require limited labor, equipment and funding resources that can be handled on a daily work order basis by Public Works Department crews. No formal design and construction process is required. Drainage issues that require more substantial resources to repair are addressed as a Capital Improvement Project (CIP) where a project manager from the Public Works Department facilitates the design and construction of the CIP using both internal and external (i.e., contractor) resources. The level of service for stream floodplains consists of the implementation of regulatory controls and other activities through participation in the Federal flood management system program (to be discussed later in this SWMP). The level of service for private property is limited to regulatory controls only. Because stormwater runoff on private property is likely to ultimately discharge to the City stormwater system, the City regulates stormwater controls on private properties located within its jurisdiction through a local stormwater management ordinance (Chapter 382, Article III of the Kingsport Code of Ordinances, entitled *Stormwater Management*). The ordinance targets the prevention of pollution from private properties that can enter the public stormwater conveyance system and the management of stormwater controls on newly developing land or re-developing land, both during and after construction. The ordinance addresses both stormwater quantity and stormwater quality.

Private Property Owner Responsibilities – It follows that private property owners are responsible for the control of stormwater runoff on their property. This responsibility includes the regular inspection and maintenance of stormwater management facilities to ensure their proper operation, as implied in the City-approved design for such facilities.

1.1.3 The Evolution of the City Stormwater Management Program

In the last two decades, the Kingsport stormwater management program has evolved beyond limited stormwater system (i.e., highway) maintenance. Ordinance, the provisions of which have been reviewed and approved by FEMA. These ordinances provide the regulatory framework for the City of



Kingsport's initiation into stormwater quality management began with the promulgation in 1999 of the National Pollutant Discharge Elimination System (NPDES) Phase II Municipal Separate Storm Sewer System (MS4) permit, herein called "the NPDES Phase II permit". This permit falls under the Federal Clean Water Act (CWA) and addresses sources of stormwater pollution in small and medium-sized local governments and other entities. The overarching requirement of this permit is the development, implementation and enforcement of a Stormwater Management Program "*designed to reduce the discharge of Pollutants from the MS4 to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.*" The Tennessee Department of Environment and Conservation (TDEC) implements the NPDES Phase II regulations in Tennessee.

In 2003, Kingsport was one of more than 85 local governments in Tennessee that were required by TDEC to obtain coverage under the NPDES Phase II permit. Since then, the requirements of the permit and other related water quality regulations have led to significant change in Kingsport's stormwater management program. The stormwater program now includes an active water quality public education and outreach program which provides education on watershed stewardship and the impact of stormwater runoff to local citizens and students on an annual basis. Further, the City now requires property owners to consider and control stormwater pollution from new developments and redevelopments both during and after construction. In addition a multitude of tools, procedures and processes have been added to provide oversight of land development activities, prevent stormwater pollution caused by City operations and maintenance activities, map, inspect and regulate the City's stormwater conveyance system, and educate and involve the public in stormwater pollution prevention.

1.2 Purpose and Scope

This SWMP documents the elements of Kingsport's stormwater management program. The scope of the SWMP is driven primarily by the NPDES Phase II permit (General Permit for Discharges by a Small Municipal Separate Storm Sewer System, Tracking Number TNS075388). The SWMP includes

information regarding the approach that Kingsport will use to operate the functional areas of the stormwater management program. These functional areas are listed in Table 1 below.

Public Education and Outreach	Stream Monitoring
Public Involvement and Participation	Total Maximum Daily Load Management
Illicit Discharge Detection and Elimination	Drainage Control and Floodplain Management for New Developments
Construction Site Stormwater Runoff Control	Stormwater Conveyance System Maintenance
Permanent Stormwater Management in New Development and Redevelopment	Ancillary Activities
Pollution Prevention/Good Housekeeping for Municipal Operations	

The SWMP summarizes the goals, policies and implementation actions that will aid Kingsport in achieving long-term objectives as they relate to water quality, drainage and flooding in a manner that meets regulatory requirements but is also understandable to the public and usable by City staff. Lastly, the SWMP establishes a means for measuring, reporting, and managing Kingsport's water resources by presenting objectives that will ensure meaningful progress toward improving water quality and addressing drainage problems, as well as ensuring compliance with applicable laws and permit requirements.

Chapter 2: Overview of Stormwater Program

2.1 Program Goals

The current goals of the Kingsport Stormwater Management Program are presented below. These goals were developed by the Stormwater Management Division based on the vision, mission, priorities and recommendations developed in 2011 by the Kingsport Stormwater Advisory Committee, with due consideration given to the current state of the City stormwater program and its available resources.

- Protect citizens and property from the negative impacts of stormwater runoff
- Ensure Compliance with State and Federal requirements
- Proactively address stormwater issues by including the use of green infrastructure, low impact development techniques, water quality best management practices and mitigation methods for runoff volume and flow rate reduction on all public and private developments that require a land disturbing permit
- Engage citizens, businesses and industries in understanding the need to protect water quality and the functionality of the drainage system in Kingsport
- Promote preservation of connected open space in public and private developments to meet or exceed requirements for stormwater treatment
- Provide regulatory certainty and consistency in plans review, guidance and enforcement for the development community
- Foster inter-agency, inter-jurisdictional, and regional cooperation to advance watershed master planning

2.2 Organization

2.2.1 Primary Responsible Parties

Kingsport's stormwater management program is housed within the Department of Public Works. Figure 9 presents the current organization of the Stormwater Management Division. Responsibilities for each

position in the Division are indicated in the detailed explanation of each Stormwater management program activity, which are presented in detail in Chapters 3 and 4 of this SWMP.

Figure 9. 2012 Organization Chart – Kingsport Stormwater Management Division

Kingsport City Manager
Director of Public Works
Stormwater Manager
Technical Services Director (1)
Engineer (1)
Streets & Drainage (9)
Codes Enforcement (1)

2.2.2 Inter-divisional and Inter-departmental Cooperation

While Stormwater Management performs the majority of stormwater management activities, a number of other divisions with the Department of Public Works have responsibilities related to the stormwater management program. Table 3 lists these divisions and broadly identifies their stormwater-related responsibilities.

Division	Role/Responsibility
Stormwater Management	Overall management of the City stormwater management program - Primary oversight and implementation of NPDES Phase II activities - Primary oversight and implementation of NFIP and CRS activities - Planning and construction management for stormwater-related capital improvements
Streets Maintenance	Routine and remedial management of the City stormwater conveyance system. The implementation of pollution prevention/good housekeeping practices related to highway and stormwater system maintenance
Fleet Maintenance	The implementation of pollution prevention/good housekeeping practices related to fleet and equipment maintenance
Engineering & Development Services	Oversight of development plans reviews
Codes Administration & Enforcement	Secondary oversight of stormwater-related construction at the lot development level
Wastewater Treatment Plant	The implementation of pollution prevention/good housekeeping practices related to the treatment of sanitary sewage
Water & Sewer Maintenance	The implementation of pollution prevention/good housekeeping practices related to utility operation and maintenance
Traffic	The implementation of pollution prevention/good housekeeping practices related to transportation related services

When considering stormwater responsibilities of local governments, it is important to recognize that elements of the NPDES Phase II permit pertain to all City operations that have the potential to discharge pollutants to the stormwater system. Specifically, the permit requires the implementation of pollution prevention/good housekeeping measures for these operations, which include park, grounds or facilities management, event management and fleet maintenance. These operations are a daily part of the operation of a number of City departments, therefore stormwater responsibilities extend to them as

well. While each department carries the responsibility for performing their operations in keeping with permit requirements, the Stormwater Management Division maintains availability to provide training, advisory and documentation assistance to these departments with regards to the permit conditions. Table 4 lists these departments and identifies their stormwater-related responsibilities.

Division	Responsibility
Parks & Recreation	<ul style="list-style-type: none"> • Ensure Parks & Recreation parks, recreational areas, facilities and operations are compliant with NPDES Phase II permit requirements, specifically the Pollution Prevention/Good Housekeeping for Municipal Operations minimum control measure • Cooperation with the Stormwater Management Division as needed for illicit discharge detection and elimination
Kingsport City Schools	<ul style="list-style-type: none"> • Ensure school facilities and operations are compliant with NPDES Phase II permit requirements, specifically the Pollution Prevention/Good Housekeeping for Municipal Operations minimum control measure
Kingsport Fire and Police	<ul style="list-style-type: none"> • Ensure Department facilities and operations are compliant with NPDES Phase II permit requirements, specifically the Pollution Prevention/Good Housekeeping for Municipal Operations minimum control measures for hazardous spill containment and clean up

2.2.3 Other Partnerships

Kingsport partners with a number of other agencies and entities in order to implement or enhance activities. These partnerships are either low-cost or zero cost to Kingsport and can help to ensure the cost-effectiveness of stormwater management program activities. Table 5 presents a list of current City stormwater partnerships.

Partner	Role
Stormwater Advisory Committee (SWAC)	<ul style="list-style-type: none"> • The SWAC assists with planning and guidance for the City's utility.
Holston River Watershed Alliance	<ul style="list-style-type: none"> • The goals are to educate and involve local citizens about the value of the watershed and to implement watershed and stream restoration activities. The Alliance is facilitated by Kingsport Tomorrow.
Natural Resources Conservation Service	<ul style="list-style-type: none"> - External partners provide their time, assistance and other resources for watershed activities when possible
Local engineering consulting firms	
East Tennessee State University	<ul style="list-style-type: none"> - Provide volunteers for stream clean-up and restoration activities
Keep Kingsport Beautiful	<ul style="list-style-type: none"> - Provide volunteers for stream clean-up activities
Eastman Chemical Company	<ul style="list-style-type: none"> - Provide additional stream monitoring and support activities

2.2.4 Areas of Focus

Kingsport's stormwater management program addresses stormwater quality management along with drainage and flooding management practices that are currently and/or will be implemented within City's jurisdiction. Specifically, the areas of focus for the program include:

• **Public education geared toward understanding watershed stewardship principles and the impacts of stormwater pollution.** The NPDES permit places significant emphasis on public education as part of the long term solution to stormwater pollution. The SWMP will detail Kingsport's permit compliance commitment to conducting general as well as targeted educational campaigns. Kingsport's Public Information and Education Plan (see Section 3.3.1) details City-specific goals and public information events/activities that will comprise the City's public education and outreach program.

• **Public awareness and involvement in Kingsport's stormwater management program.** Opportunities for the public to participate in stormwater program development and implementation are a key component to increasing the effectiveness of the SWMP. The City's stormwater management program includes a public involvement element that meets Phase II permit requirements. Further, this element makes use of mutually beneficial partnerships between the City with local organizations that have similar goals for watershed stewardship and/or Stormwater quality. Kingsport offers a variety of opportunities for the public to participate in Stormwater management and watershed stewardship. Kingsport's Public Involvement and Participation program is detailed in Section 3.3.1.

• **Illicit discharges to Kingsport's stormwater conveyance system.** Illicit discharges is defined by 40 CFR 122.26(b) (2) and refers to any discharge to a municipal separate storm sewer system that is not entirely composed of stormwater, except those authorized under and NPDES permit and discharges resulting from firefighting activities. Illicit discharges can occur continuously, intermittently or just one time. Such discharges can be comprised of liquid or solid substances or items. They can be deliberately dumped in a stream, storm drain or other area where the pollutant is exposed to rainfall or stormwater runoff, or pollutants can be exposed unintentionally through an accidental spill or through poor pollution prevention practices. Illicit discharges are caused by a variety of sources, including accidental spills, sediment discharges due to poor construction site management, polluted runoff from parking lots, discharges from commercial, residential or industrial outfalls, and intentional dumping into the storm drainage system or catch basins. Kingsport has the authority to regulate these discharges within its jurisdiction, and the NPDES permit requires that Kingsport implement a program to detect and eliminate illicit pollutant discharges. Section 3.3.2 provides more detail on Kingsport's Illicit Discharge Detection and Elimination Program.

• **On-site management of stormwater during and after construction.** Inadequacies in the type and design of infrastructure, poor maintenance, inadequate erosion prevention and sediment control practices, and increases in impervious area without proper on-site stormwater management practices can increase flooding potential and pollutant loading of the storm drainage system. Kingsport regulates these issues within its jurisdiction through the Stormwater Management Ordinance. The NPDES permit requires Kingsport to implement and enforce a program that addresses site inspection and enforcement, runoff reduction using green infrastructure, project plan review procedures, Best Management Practice(BMP) maintenance, and owner/operator inspections of BMPs in order to address the impacts of active construction and other land disturbance on stormwater quality. Sections 3.3.3 and 3.3.4 detail Kingsport's Construction Site Runoff Control and Permanent Stormwater Management programs.

• **Reduction and prevention of stormwater pollution from municipal operations.** Kingsport provides services to the public that have a high potential for creating water pollution if not properly managed. These services include activities such as road right of way maintenance, construction on public property, as well as maintenance of City-owned facilities, vehicles and equipment, and vehicle

and equipment fueling. The NPDES permit requires that Kingsport implement pollution prevention practices that reduce or eliminate stormwater pollution from City activities. Beyond this regulatory motivation, it is important that Kingsport and contractors working on behalf of the City, lead by example in areas where similar practices and behaviors from citizens and business are required. Detailed information about Kingsport’s Pollution Prevention/Good Housekeeping Program for Municipal Operations can be found in Section 3.3.5.

• **Monitoring for impaired streams and streams with EPA approved TMDLs.** Kingsport conducts a variety of stream monitoring activities as part of the EPA approved Total Maximum Daily Load (TMDL) program and for MS4 permit compliance. Monitoring must be performed as prescribed in any approved EPA TMDL for stream segments subject to TMDLs for parameters other than siltation, habitat alteration or pathogens, where discharges from the MS4 have been identified as a source of the impairment. Further, the MS4 permit requires analytical and/or non-analytical monitoring for all streams listed on the State 303(d) list as being impaired for pathogens, siltation and/or habitat alteration where discharges from the MS4 have been the identified as the cause of impairment. The required analytical monitoring (i.e., sample collection and analysis) includes biological stream sampling at streams impaired for siltation and/or habitat alteration, and bacteriological stream sampling at streams listed as impaired for pathogens. Non-analytical monitoring is performed via visual stream assessments at all MS4 outfalls, for the purpose of identification and prioritization of the MS4’s stream impairment sources. Section 3.4 contains information on Kingsport’s monitoring programs.

• **Drainage control and floodplain management.** Kingsport participates in the National Flood Insurance Program and in the Community Rating System, and provides routine and remedial maintenance and repair of the public stormwater conveyance system to prevent or eliminate flooding. Kingsport also conducts a cost share service (the Environmental Stewardship Program) for the repair of drainage or erosion problems on private property, if performed in an environmentally-friendly manner. Information on Kingsport’s drainage control and floodplain management activities can be found in Chapter 4.

Chapter 3: NPDES Phase II Compliance Program

3.1 General Information

3.1.1 Relevant Permit Dates

Table 6 provides a list of dates relevant to the current NPDES Phase II permit.

Date	Relevance to Kingsport
August 31, 2010	Issue date of the permit
May 19, 2011	Effective date of the permit
December 22, 2010	Notice of Intent submitted by Kingsport, TN
May 19, 2011	Notice of Coverage (NOC) issued to Kingsport, TN
September 1, 2015	Expiration date of the permit
June 30	Last day of each permit year
July 1	First day of each permit year
September 30	Day that the Annual Report is due, each permit year

3.1.2 Notice of Intent and Notice of Coverage Information

In order to become authorized to discharge stormwater from the public stormwater conveyance system, Kingsport must seek coverage under the NPDES Phase II permit, which is issued by TDEC. The first requirement under the permit is the completion and submittal by the City of a Notice of Intent (NOI). The NOI is a specific document, with stated signatory requirements, that identifies Kingsport as the legal MS4 operator responsible for carrying out permit requirements. Once completed by the City, the NOI describes the stormwater conveyance system and the City's current activities in light of permit requirements. Moreover, it includes a listing of the Best Management Practices (BMPs) and measurable goals that the City proposes to implement over the five-year permit period to comply with each of the Stormwater Minimum Control Measures (MCMs) that are described in sub-part 4.2 of the permit. Roles and responsibilities for entities that are partnering or sharing in the meeting of permit requirements are also identified, along with compliance milestones and identification of the person(s) responsible for implementing or coordinating BMPs. Kingsport's most recent NOI was submitted on December 22, 2010. Though the NOI is a static document, the NPDES Phase II permit allows the City the flexibility to modify the Stormwater Management Program to change or replace ineffective or infeasible BMPs, or to add new BMPs. Thus, these modifications to the program do not constitute permit modifications. During a five-year permit period, program implementation may vary from the information that was submitted in the City's NOI. These program modifications are typically captured in the permit's Annual Report, which is completed and submitted by the City in order to document the status of compliance activities for the previous permit year. The Annual Report is discussed in greater detail in Section 3.4 of this SWMP. A Notice of Coverage (NOC) is issued by TDEC. Issuance of a NOC implies that the NOI was reviewed by TDEC, who therefore determined that permit coverage could be granted. The NOC communicates the effective date of coverage under the current NPDES Phase II permit. It is significant because several permit requirement deadlines are triggered by the date specified in the NOC. For the current permit period, Kingsport's NOC was issued on May 19, 2011, under permit ID# TNS075388. Kingsport's NOI and NOC are kept on-file at the Kingsport Stormwater Management offices.

3.1.3 Relevant City Regulations and Policies

Relevant to NPDES Phase II permit compliance, the Kingsport Stormwater Management Ordinance (originally adopted March 4, 2008) provides the City with the authority required by the permit to:

- effectively prohibit non-stormwater discharges into the stormwater conveyance system and implement enforcement measures to eliminate such discharges;
- require construction site runoff stormwater runoff control in new development and redevelopment projects;
- address permanent runoff from new development and redevelopment projects.

The Kingsport Stormwater Management Manual includes written stormwater management policies and guidance that, when combined with the Stormwater Management Ordinance, play an important role in City compliance with the NPDES Phase II permit. Specifically, the manual provides:

- policies and procedures for obtaining a land development (i.e., grading) permit;
- policies, guidance and checklists on the preparation and submittal of erosion prevention and sediment control (EPSC) design plans and stormwater facility design plans;
- policies, guidance and checklists on the preparation and submittal of operations & maintenance plans and BMP maintenance covenants for permanent stormwater management facilities;
- technical standards and design criteria for the design, construction and maintenance of permanent stormwater management facilities;
- guidance on construction site management inspections; and,

- guidance and checklists for inspection and maintenance of permanent Stormwater management facilities.

The Kingsport Stormwater Management Ordinance and the Manual can be found on the Stormwater Management Division website, <http://www.kingsporttn.gov/stormwater/>.

3.2 Special Conditions

3.2.1 Discharges to Water Quality Impaired Waters

Under section 303(d) of the Clean Water Act, states are required to develop lists of impaired waters. A waterbody (i.e., stream reaches, lakes, waterbody segments) is considered “impaired” when the results of monitoring by TDEC indicate chronic or recurring violations of the applicable numeric and/or narrative water quality criteria. The list, commonly called “the 303(d) list” also provides information on the pollutant(s) for which the stream is not meeting criteria and the source(s) of those pollutants. The 303(d) list is typically updated every other year. In the State of Tennessee, the NPDES Phase II permit requires that each MS4 maintain awareness of the streams and other waterbodies in their jurisdictions that are on the 303(d) list. More importantly, the permit includes a provision for monitoring the streams on the 303(d) list for which “Discharges from the MS4” is designated as a pollutant source. Additionally, some streams on the 303(d) list have sources that have a direct relation to requirements of the NPDES Phase II permit. For example, a stream that is included on the 303(d) list for the pollutant “sediment” and the source of the sediment is “land development” would be a stream of special interest to a permitted MS4 due to the permit’s focus on management of pollutants at land development (i.e. construction) sites. MS4s are required to implement best management practices to control pollutants, including sediment from land developments. Table 7 provides a listing of impaired streams in Kingsport, as identified in the EPA Approved Final Year 2012 303(d) List for the State of Tennessee. The table is divided in three priority tiers depending upon the source(s) of the stream’s pollutant and the relevance of that source to the requirements of the NPDES Phase II permit, as explained below.

- **Tier 1** includes those streams where discharges from the City’s public stormwater conveyance system (i.e., the MS4) are considered as the *sole* source of pollutant(s). *Tier 1 streams are of primary focus in the City’s water quality program, therefore permit compliance activities target the impairments in these waterbodies.* The City’s stormwater management program includes activities that target the pollutant(s) causing the impairment(s).
- **Tier 2** includes those streams where discharges from the City’s public stormwater conveyance system are one of several sources of pollutant(s). *Tier 2 streams are also a strong focus of the City’s water quality program; therefore permit compliance activities target the impairments in these waterbodies.* However, water quality improvements in these waterbodies likely cannot be achieved by the City’s efforts alone.
- **Tier 3** includes those streams where discharges from Kingsport’s public stormwater conveyance system are NOT considered a source of pollutant(s). Water quality in these waterbodies are addressed by the City’s stormwater management ordinance, general public education/outreach efforts and by other City stormwater program activities (e.g., illicit discharge enforcement), but the City’s stormwater management resources are typically not highly focused on these streams.

TIER 1 STREAMS

Waterbody Name	Cause of Impairment	Source of Impairment
Madd Branch	Physical substrate habitat alterations Escherichia coli	Discharges from MS4 area
Tranbarger Branch	Other anthropogenic habitat alterations Escherichia coli	Discharges from MS4 area

TIER 2 STREAMS

Waterbody Name	Cause of Impairment	Source of Impairment
Reedy Creek	Loss of biological integrity due to siltation. Other anthropogenic habitat alterations. Escherichia coli.	Discharges from MS4 areas Pasture grazing
Little Horse Creek	Alteration in stream-side vegetative cover. Loss of biological integrity due to siltation. Escherichia coli.	Pasture grazing Discharges from MS4 areas
Horse Creek	Alteration in stream-side vegetative cover. Escherichia coli.	Discharges from MS4 areas Pasture grazing
Fall Creek	Alteration in stream-side vegetative cover. Loss of biological integrity due to siltation. Escherichia coli.	Discharges from MS4 areas Pasture grazing
Unnamed Tributary to Reedy Creek	Physical substrate habitat alterations. Loss of biological integrity due to siltation	Discharges from MS4 areas
Unnamed Tributary to Reedy Creek	Alterations in stream-side vegetative cover. Loss of biological integrity due to siltation.	Discharges from MS4 areas
Clark Branch	Loss of biological integrity due to siltation Escherichia coli	Discharges from MS4 areas
Gravelly Creek	Alterations in stream-side or littoral vegetative cover. Nitrate+Nitrite.	Discharges from MS4 areas
Miller Branch	Loss of biological integrity due to siltation Escherichia coli.	Discharges from MS4 areas
Gammon Creek	Alteration in stream-side vegetative cover Nitrate+Nitrite. Low dissolved oxygen. Loss of biological integrity due to siltation Escherichia coli.	Channelization Discharges from MS4 areas Pasture grazing
Kendrick Creek	Alterations in stream-side or littoral vegetative cover. Escherichia coli.	Discharges from MS4 areas Pasture grazing
Rock Springs Branch	Alterations in stream-side or littoral vegetative cover.	Discharges from MS4 areas Pasture grazing
Gaines Branch	Alterations in stream-side or littoral Vegetative cover.	Discharges from MS4 areas

TIER 3 STREAMS

Unnamed Tributary to South Fork Holston River	Alteration in stream-side vegetative cover Loss of biological integrity due to siltation Eschericia coli.	Pasture grazing
Timbertree Branch	Loss of biological integrity due to siltation Alterations in stream-side vegetative cover Eschericia coli.	Pasture grazing
Booher Creek	Eschericia coli.	Pasture grazing
Bear Creek	Alteration in stream-side or littoral vegetative cover. Eschericia coli.	Pasture grazing

3.2.2 EPA-Approved or Established TMDLs

The Clean Water Act also requires that states establish priority rankings for waters that are included on the impaired waters lists and develop TMDLs for these waters. A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards. TMDLs can be expressed in terms of mass per time, toxicity, or other appropriate measures that relate to a state's water quality standard. The TMDL also includes identification of the entities that are considered to be dischargers of the pollutant(s) for which the TMDL was developed and are charged with implementing BMPs that target the pollutant(s). Table 8 provides a listing of the EPA-Approved or Established TMDLs in Kingsport.

TMDL Name	Kingsport Waterbody Segments
TMDL for Pathogens in the South Fork Holston River Watershed (HUC 06010102)	Wagner Creek Unnamed Tributary to South Fork Holston
TMDL for Siltation and Habitat Alteration in the South Fork Holston River Watershed (HUC 06010102)	Madd Branch Gammon Creek Wagner Creek Unnamed Tributary to South Fork Holston Tranbarger Branch Reedy Creek

- 1 - The sources of impairment for these streams do not directly include *Discharges from MS4 area*.
- 2 - Receives discharges from multiple MS4s, including Kingsport.
- 3 - Kingsport is not identified as a pollutant discharger in the TMDL and therefore has no responsibility for meeting a wasteload allocation requirement.

Part 3.1.3 of the 2010 NPDES Phase II permit includes special documentation requirements for waterbodies that are on the 303(d) list but do not have a Total Maximum Daily Load (see next section). Specifically, the permit requires Kingsport to document in the SWMP how it's compliance activities will control the discharge of the pollutants of concern. While all the water quality-related activities implemented by Kingsport have the potential to control pollutant discharges, some activities target specific pollutants or types of pollutants discharges. Table 9 provides a listing of these activities, the pollutants targeted and a narrative of the pollutant control approach provided by the activities. To this end, Kingsport determines the following BMPs will be implemented to control the discharge of pollutants as identified below:

Pollutant(s)	Pollutant Targeting Activities	Pollutant Control Approaches
Siltation Loss of biological integrity due to siltation Habitat alteration	Pre-construction Conferences Construction Site Inspections Stormwater Ord. Amendments Qualifying Local Program Enforcement Response Plan MS4 Staff Training Construction Site Planning Construction Site Plans Review Pre-construction Conferences Permanent Stormwater Management Program Plans Review Updates and Enforcement Response Plan BMP Maintenance Owner/Operator Inspections	Kingsport implements a cradle to grave approach to construction site stormwater management including site planning, permitting, plans review, inspections and enforcement of erosion prevention and sediment control measures. Permanent stormwater management activities target siltation. Implementation of the runoff reduction and pollutant removal performance standards will decrease runoff volumes and prevent the discharge of, or remove pollutants from the MS4.
Pollutant(s)	Pollutant Targeting Activities	Pollutant Control Approaches
Pathogens (including Escherichia coli)	Hotline/Website IDDE Outreach and Education Public Information/Education Plan Social Media/Website Development Hot spot inspections Stormwater Outfall/Inlets Map Enforcement Response Plan Outfall monitoring	Public education/outreach programs address illicit discharges, including sources of bacteria. Kingsport's illicit discharge detection and elimination activities include inspection of suspected or identified septic discharges.
Other pollutants (including nutrients, dissolved oxygen, metals, etc.)	Adopt-A-Watershed Program Public Information/Education Plan Social Media/Website Development Grab Bag Programs and Events Pre-construction Conferences Permanent Stormwater Management Program Plans Review Updates Enforcement Response Plan BMP Maintenance Owner/Operator Inspections	Public education/outreach programs address general pollution prevention for a wide range of sources (homeowners, restaurants, businesses, etc.). Permanent stormwater management activities target siltation which is known to transport other pollutants such as nutrients and metals. Implementation of the runoff reduction and pollutant removal performance standards will decrease runoff

3.3 Minimum Control Measures

This section provides the information required by section 4.1 of the NPDES Phase II permit. This section provides information for the BMPs (herein called "activities") that are identified in Kingsport's NOI to comply with the conditions of the six Minimum Control Measures. These minimum control measures are:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Control
- Permanent Stormwater Management in New Development & Redevelopment
- Pollution Prevention/Good Housekeeping for Municipal Operations

3.3.1 Public Education and Outreach

Program Summary

Kingsport has been required to implement a public education and outreach program since the 2003 NPDES Phase II permit. The focus of the program, as defined in part 4.2.1 of the permit, is on impacts of stormwater discharges to water bodies and the steps that the public, commercial, industrial and institutional entities can take to reduce pollutants in stormwater runoff. The permit has few specific requirements for this minimum control measure, which are provided verbatim from the permit in Table 10 below. Beyond these requirements, MS4s are given substantial flexibility in determining and implementing the suite of activities that comprise their public education and outreach program.

Permit Requirement

Implementation Status

Implement a public education and outreach program that focuses on impacts of stormwater discharges to waterbodies and the steps that the public can take to reduce pollutants in stormwater discharges. The program must target educational activities to the specific pollutants and sources of pollution that contribute to impairment of waterbodies. For example, in hotspot areas the MS4 must focus education and outreach on the particular pollutant(s) of concern.

On-going

Develop a Public Information and Education (PIE) Plan.

2010 Completed

Track and maintain records of public education and outreach activities.

On-going

Kingsport's list of BMPs to fulfill the requirements of the Public Education and Outreach are listed below.

- Watershed Program
- Public Information and Education Plan
- Social Media and Website Development
- Programs and Events

Activity: Local Watershed Program

Responsible Party(s)

Stormwater Manager/Engineer

Regulatory Reference

NPDES Phase II Permit. Part 4.2.1

BMP Description

The NPDES Phase II permit generally requires the implementation of a public education and outreach program. There is no specific requirement to implement a watershed program. Kingsport implements this activity as one of several actions that, when considered together, comprise the City's program to comply with the public education and outreach control measure.

Existing Condition

Kingsport has a local watershed program that is implemented through the Holston River Watershed Alliance which is sponsored by Kingsport Tomorrow, a non-profit, community-based organization. The group implements the program in participating schools along with volunteer cleanup projects and other water quality education and outreach efforts. The program teaches watershed education through hands-on and place-based service learning activities and projects.

Proposed Activity(s)

No new activities are proposed.

Measurable Goals and Milestones

Activity

Sponsor water quality team

Approximate Schedule/Timeframe

On-going. Funded annually.

Activity: Public Information and Education (PIE) Plan

Responsible Party(s)

Stormwater Manager

Technical Services Director

Regulatory Reference

NPDES Phase II Permit, Part 4.2.1

BMP Description

The NPDES Phase II permit requires the development of a Public Information and Education (PIE) Plan that details specific goals and specific public information events/activities that will occur during the permit cycle. Specific requirements relevant to the PIE Plan are listed below.

- The plan shall incorporate components from outreach campaigns and communications and shall incorporate a method to evaluate the plan's effectiveness so adjustments can be made (if necessary);
- The plan shall include targeted educational campaigns addressing the following target audiences and topics:
 - a. General public awareness on the impacts on water quality from general housekeeping maintenance/activities.
 - b. Home owner associations and other operators of permanent BMPs awareness of the importance of maintenance activities.
 - c. Local engineering and development community awareness of the stormwater ordinances, regulations and guidance materials related to long-term water quality impacts.
 - d. General public and professional chemical applicators awareness on the proper storage, use, and disposal of pesticides, herbicides and fertilizers use.
 - e. General public and professional chemical applicators awareness on the proper storage, use, and disposal of oil and other automotive-related fluids.
 - f. General public and municipal employees on the awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.
 - g. Local engineering, development, and construction community awareness of stormwater ordinances, regulations and guidance materials related to construction phase water quality impacts.
 - h. Municipal employee/contractor awareness of water quality impacts from daily operations.

Existing Condition

Kingsport performs a number of public education and outreach activities which address the requirements of the PIE Plan and are documented therein.

Proposed Activity(s) and Measurable Goals and Milestones

None

Relevant Documents

The Kingsport Public Information and Education Plan can be found on the Stormwater Management Division's website, www.kingsporttn.gov/stormwater.

Activity: Website Development and Maintenance

Responsible Party(s)

Stormwater Manager
Technical Services Director

Regulatory Reference

NPDES Phase II Permit, Part 4.2.1

BMP Description

The NPDES Phase II permit generally requires the implementation of a public education and outreach program. There is no specific requirement pertaining to social media and website activities. The activities described below comprise a part of the City's program to comply with the public education and outreach control measure.

Existing Condition

Kingsport's Stormwater Management Division oversees the content provided on the City's Stormwater Management website. For the general public, the website provides general educational information on watershed management, stormwater runoff impacts, and water quality. More detail is provided in the areas of the City's MS4 permit and the general water quality management program activities, with special attention paid to public outreach events. The website also serves as a primary source of information for the local developers and site design engineers. Toward this end, the website has links to the City's Stormwater Management Ordinance and Stormwater Management Manual, as well as stormwater and stream-related local permits (i.e., grading, small/single lot grading agreement and special pollution abatement plan).

Proposed Activity(s)

No new activities are identified at this time. Once completed, the PIE Plan may include actions and activities that may remove or add items to the above list.

Measurable Goals and Milestones

Activity

Website maintenance

Approximate Schedule/Timeframe

Ongoing. Improve as deemed appropriate.

Activity: Special Programs and Events

Responsible Party(s)

Stormwater Manager
Technical Services Director

Regulatory Reference

NPDES Phase II Permit Part 4.2.1

BMP Description

The NPDES Phase II permit generally requires the implementation of a public education and outreach program. There is no specific requirement to implement any particular event. The activities described below comprise a part of the City's program to comply with the public education and outreach control measure.

Existing Condition

The following public education and outreach activities are performed by the Kingsport MS4:

- Speaking Engagements: City staff are often invited to speak to various civic and church groups about water quality within the City.
 - Newspaper articles
 - Local cable public access channel PSAs
 - Public notice requirements
 - Workshops and Trainings: Kingsport hosts and participates in periodic workshops. Topics range from regulatory updates to proper BMP selection. Various groups within the community are targeted to participate in the workshops.
 - Classroom education: The City provides the Project WET (Water Education for Teachers) pamphlet, Discover the Waters of Tennessee, annually to all fourth grade students.
 - Adopt-A-Stream: In partnership with the East Tennessee State University Student In-Service Learning Program, Kingsport performs an annual clean-up of Madd Branch.
 - TAB Program: Kingsport participates in this multi-media (radio and TV) public service advertisement campaign promoting the merits of water quality.
 - Stormy campaign: Whether using our mascot or the character representation, Kingsport benefits greatly from the attention created by this icon.
 - Trout in the Classroom: Sponsored and participated with Ross N. Robinson Middle School in the breeding, raising and release of 75 rainbow trout into local waters.
- Recognition and Awards: By using the website and public venues, Kingsport recognizes excellence and creativity in stormwater best management practices.
- Promote Household Hazardous Waste Days:
- Require stamped storm drains: Provides a message to protect public waters.
- Signage: Place information in targeted areas such as Memorial Park and the Greenbelt corridor.

Proposed Activity(s)

No new activities are identified at this time. Once completed, the PIE Plan may include actions and activities that may remove or add items to the above list.

Measurable Goals and Milestones

None

3.3.2 Illicit Discharge Detection and Elimination

Program Summary

Kingsport has been required to implement a formal illicit discharge detection and elimination (IDDE) program since the 2003 NPDES Phase II Permit. The objective of the IDDE program is to detect, identify and eliminate non-stormwater discharges, including illegal disposal, to the MS4. Toward this end, Kingsport’s IDDE program is comprised of a number of activities and tools, many of which are explicitly required as BMPs by the permit. In addition, a number of program “upgrades” are required by the 2010 permit, and will soon be included in the City’s IDDE program. Table 11 provides a summary of the requirements of the illicit discharge, detection and elimination.

Permit Requirement	Implementation Status
Regulatory authority to:	
a. prohibit non-stormwater discharges into the storm sewer system; and,	2003 Completed
b. identify allowable non-stormwater discharges, such as rising groundwaters and water from lawn watering activities; and,	
c. prohibit contamination by stormwater runoff from hotspots; and,	
d. implement appropriate enforcement measures to eliminate non-stormwater discharge.;	
• standard procedures and documentation for the investigation of potential illicit discharges.	2010 Completed
• coordination with other agencies on hazardous waste or material spills response and cleanup.	2010 Completed
• a stormwater system map of outfalls (2003)	2008
• add system inputs and direction of flow (2010)	Under development
• a hotline and website for the public to report suspected illicit discharges or illegal dumping.	2010 Completed
• educational activities that target public employees, businesses and the general public of hazards associated with illegal discharges and improper disposal of waste.	2003/2010 Completed

Kingsport’s list of BMPs to fulfill the requirements of the Illicit Discharge Detection and Elimination (IDDE) are listed below.

- Storm Sewer System Mapping
- Enforcement Response Plan
- IDDE Planning
- IDDE Outreach and Education
- Hotline/Website
- Emergency Spill Response

Activity: Storm Sewer System Mapping

Responsible Party(s)

Stormwater Manager, GIS Database Administrator

Regulatory Reference

NPDES Phase II Permit Part 4.2.3

BMP Description

Kingsport must continue to develop, update and maintain a storm drainage system (note that TDEC refers to this as a storm sewer system map) that shows:

1. the location of all outfalls where the MS4 discharges into waters of the state or conveyances owned or operated by another MS4;
2. the names and location of all waters of the state that receive discharges from those outfalls;
3. inputs into the storm drainage system, such as inlets, catch basins, drop structures or other defined contributing points to the outfalls; and,
4. the general direction of flow.

Existing Condition

Kingsport has developed and maintained a city-wide outfall map that shows items 1 and 2 above. This information is maintained by the GIS Database Administrator in ESRI ArcGIS Format, and is stored by the City Stormwater Management Division and Kingsport Geographic Information Services (KGIS). The following information is kept for each outfall, along with a digital photo:

- identification code
- location (latitude and longitude)
- type (pipe, channel, culvert, other)
- last rainfall date (prior to inspection)
- material, shape and dimensions
- presence of dry weather flow (or not)
- flow characteristics (if flowing)
- submergence in water or sediment coverage

Data on new outfalls (i.e., those constructed as a result of new development) are added by the GIS Database Administrator based on information provided in approved site plans and/or as-built plans. The map is updated with new outfall data periodically throughout the year.

Proposed Activity(s)

The City will continue to update and maintain the existing storm drainage system map as information becomes available from new development and redevelopment, dry weather screening and infrastructure updates.

Measurable Goals and Milestones

The City will perform a comprehensive update of its mapping every permit cycle.

Activity: Enforcement Response Plan

Responsible Party(s)

Stormwater Manager

Regulatory Reference

NPDES Phase II Permit Parts 4.2.3 and 4.5

BMP Description

Kingsport must develop and implement an Enforcement Response Plan (ERP) for enforcement actions undertaken for purposes of the elimination of illicit discharges and illegal dumping. The ERP provides a “roadmap” for Kingsport’s potential responses to illicit discharge violations, thereby promoting

application of a consistent and robust enforcement approach and addresses the escalation of enforcement responses for persistent noncompliance, repeat or escalating offenses, or incidents of major environmental harm. The ERP provides guidance to inspectors on the different enforcement responses available, when and how to refer violations to other City or State agencies, and how to track enforcement actions.

Existing Conditions

Kingsport has an Enforcement Response Plan that is supported by the authority provided by the Stormwater Management Ordinance. The Ordinance includes guidance for illicit discharges (residential, non-residential and residential wastewater), while the Plan provides for graduated enforcement using best judgment and a formulaic severity index with an associated civil penalty amount range. Enforcement actions include written warnings, notices of violation, and administrative orders with civil penalties up to \$5000.00 per day, and liability for costs associated with damages and clean-up.

Proposed Activity(s) and Measurable Goals and Milestones

The City will comply with this permit requirement as follows:

- Protocol Update – The existing Enforcement Response Plan provides a strong basis for compliance with the permit requirements. The Plan will be updated and expanded, then reviewed and finalized by the appropriate City agencies.
- ERP Training – Informal training on the ERP will be provided for all City enforcement staff whose duties include illicit discharge detection and/or elimination/enforcement.
- ERP Implementation – The ERP will be implemented by all City staff whose duties include illicit discharge detection and/or elimination/enforcement.
- Review/Revise ERP – The ERP will be periodically reviewed (and potentially revised) to ensure that the guidance and policies contained in the ERP remain in compliance with permit conditions and effective and appropriate for Kingsport.

Activity

Existing ERP update
ERP Training
Implement ERP
Review/Revise ERP

Approximate Schedule/Timeframe

Completed by November 19, 2012
Conducted during MS4 staff pollution prevention training
Continuous activity, after November 19, 2012
Periodic activity, performed on an as needed basis

Activity: IDDE Plan

Responsible Party(s)

Stormwater Manager
Stormwater Engineer

Regulatory Reference

NPDES Phase II Permit Part 4.2.3

BMP Description

Kingsport will continue to develop and implement a plan to detect, identify and eliminate non-stormwater discharges, including illegal disposal, to the City's storm sewer system. This BMP consists of the following activities:

- detection, through field screening of City outfalls and hotspots, stream monitoring, and response to information received from the public and other City staff (e.g., work crews);
- identification, with efforts led by, or coordinated with City stormwater staff (in cooperation with other agencies as appropriate);
- elimination, through discharger education and/or enforcement actions, in keeping with the Kingsport Stormwater Management Ordinance and the ERP. Primarily this will be done through field screening of City outfalls during dry weather and inspections of City identified hotspots.

Existing Conditions

Detection: Stream monitoring is performed on all City streams for which a TMDL exists in accordance with the City's TMDL Monitoring Plan. With regards to illicit discharge detection, stream monitoring is most advantageous for the detection of potential septic, sewer or related (e.g., animal waste) discharges. Further, the City receives and responds to information on suspected illicit discharges from the public, other City staff (e.g., work crews) and other agencies or jurisdictions. Suspected discharges are inspected within 2 to 5 days of notification to staff. Confirmed discharges to a stream are given the highest priority and are inspected as soon as possible (often immediately) after notification to City staff.

Identification: Stormwater construction inspectors perform identification and tracking of suspected illicit discharges. The Stormwater Outfall Inventory map and Standard Operating Procedures (SOPs) are used for this purpose. Inspections are documented via pictures, report(s), and sample collection (if warranted). Illicit discharge investigations are tracked in the City's database.

Elimination: Illicit discharge elimination and enforcement is performed under the authority of the Kingsport Stormwater Management Ordinance and in accordance with the Stormwater Management Enforcement Response Plan. Confirmed illicit discharges are also viewed by the Kingsport Stormwater Management Division as an opportunity for education of the discharger(s), which is typically handled on an informal basis. Repeat inspections to confirm permanent elimination of the discharge are performed on an as needed basis based on the best professional judgment of City staff.

Proposed Activity(s)

The City will continue to comply with this permit requirement as follows:

- IDDE Plan Scope of Work – The existing IDDE detection, identification and elimination program will be examined in light of the requirements of the 2010 NPDES Phase II Permit. City staff will be convened to review the need for potential program changes, to identify priorities and an approach to implement these changes in keeping with other, related BMPs (e.g., ERP development) and to assess any changing resource needs. The result of this examination will be a scope of work for development of the City's IDDE Plan.
- IDDE Plan Implementation – The IDDE Plan will be implemented in accordance with permit requirements and the approach determined by City staff. Staff training will continue with updates incorporated as they are instituted.

Measurable Goals and Milestones

The Stormwater Manager will be responsible for tracking the effectiveness of the IDDE Plan and making revisions where necessary.

Activity: IDDE Education and Outreach

Responsible Party(s)

Stormwater Manager
Technical Services Director

Regulatory Reference

NPDES Phase II Permit Part 4.2.3

BMP Description

Kingsport must inform public employees, businesses and the general public of hazards associated with illegal discharges and improper disposal of waste.

Existing Conditions

Although a number of educational activities related to IDDE are performed on occasion as a result of requirements of the NPDES Phase II permit, Kingsport currently does not have a formal schedule of activities for IDDE education and outreach. That said, education on illicit discharges and pollution prevention is incorporated into most educational programs and therefore is addressed in these activities. More information on Kingsport's integrated water quality education activities is included in the *Kingsport Public Information and Education Plan*, located on the City's Stormwater Management website.

The education and outreach activities that are related (either entirely or partly) to IDDE are listed below.

- Education on pollution prevention and control are given to businesses that are required to have a Special Pollution Abatement Plan (SPAP). These businesses are primarily food service establishments and automotive-related facilities. The education consist of a review of the SPAP requirements and how to incorporate good housekeeping and pollution prevention practices into operating procedures.
- Educational presentations are given to City staff on pollution prevention, spill prevention and clean-up and identifying illicit discharges as part of annual TMSP and MS4 training.
- Kingsport's Stormwater Management Division inspects automotive-related businesses and the Wasterwater Pretreatment Program inspections food service establishments for violations of the SPAP-related provisions of the City's stormwater management ordinance. Kingsport stormwater management staff is responsible for follow-up of SPAP-related violations.
- The City's stormwater management website includes educational information on IDDE and related links and includes a link to contact the City Stormwater Management Division.

Proposed Activity(s)

The Stormwater Engineer will continue the IDDE-related education and outreach activities that are currently performed by the City as appropriate. No new activities are proposed.

Measurable Goals and Milestones

No measureable goals/milestones at present.

Activity: Hotline/Website

Responsible Party(s)

Stormwater Manager
Technical Services Director

Regulatory Reference

NPDES Phase II Permit Part 4.2.3

BMP Description

Kingsport must develop a mechanism for the public to report (e.g., via hotline or website) suspected illicit discharges.

Existing Conditions

Kingsport has several methods for public contact regarding an illicit discharge. The Public Works and/or Stormwater Management Division general phone number can be called. Whether the call is handled by administrative staff or an automated response, directions are provided on leaving information about an illicit discharge. The Stormwater Management Division website has an active link to the hotline.

Proposed Activity(s)

Kingsport will review and improve the current mechanisms used for public reporting of suspected illicit discharges. The existing website services will be reviewed for the purpose of improving the efficiency and effectiveness for the reporting of and response to suspected illicit discharges. Potential upgrades are evaluated, based on perceived effectiveness and resource (staff, funding and equipment) requirements. Upgrades to the system will be made as resources are become available.

Measurable Goals and Milestones

The table below presents a schedule for the proposed activities outlined above.

Activity	Approximate Schedule/Timeframe
Existing website evaluation	Under development
Reporting mechanism upgrade	Under development

Activity: Emergency Spill Response

Responsible Party(s)

Stormwater Manager
Stormwater Engineer
KFD Hazmat Representative
Stormwater Maintenance

Regulatory Reference

NPDES Phase II Permit Part 4.2.3

BMP Description

Kingsport must foster interagency coordination of hazardous waste or material spills response and cleanup. The City shall inform local spill-response agencies and/or the Tennessee Emergency Management Agency of the potential for the response to cause pollutants to enter waters of the state. If

not already in place, the City should initiate a cooperative effort to develop a set of guidelines and procedures that local responders will follow to minimize damaging effects that spill response activities might have on water resources.

Existing Conditions

Kingsport currently has a relationship with the City’s Emergency Management Agency regarding spill responses. The EMA contacts Kingsport Stormwater Management when a spill occurs that requires a stormwater response within the City’s jurisdiction.

Proposed Activity(s)

Kingsport intends to work with appropriate City agencies to develop a written memorandum of understanding (MOU) that document the relationship between City Stormwater Management and emergency response agencies, and provides guidelines and procedures for interagency coordination on spills that have the potential to negatively impact waters of the state.

Measurable Goals and Milestones

The table below presents a schedule for the proposed activities outlined above.

Activity	Approximate Schedule/Timeframe
MOU Development	Completed by June 30, 2014
MOU Implementation	On-going

3.3.3 Construction Site Stormwater Management

Program Summary

Kingsport has been required to implement a formal construction site stormwater management program since the 2003 NPDES Phase II permit. The objective of the program, as defined in the permit, is to address pollutants in stormwater runoff from construction activities that result in a land disturbance of equal to or greater than one acre, including construction activities that disturb less than one acre but are part of a larger common plan of development or sale that disturbs one acre or more. Toward’s this end, Kingsport’s construction site stormwater program is comprised of a number of activities and tools, many of which are explicitly required as BMPs by the permit.

Table 12 presents the items and activities that are required by TDEC for a compliance with the Construction Site Stormwater Management minimum control measure.

Permit Requirement	Implementation Status
<ul style="list-style-type: none"> • regulatory authority to require erosion prevention and sediment control (EPSC), as well as sanctions to ensure compliance. 	Completed
<ul style="list-style-type: none"> • requirements for construction site operators to implement appropriate EPSC BMPs, consistent with those described in the TDEC EPSC Handbook. 	Completed
<ul style="list-style-type: none"> • requirements for design storm and special conditions for unavailable parameter waters or exceptional Tennessee waters that are consistent with those of the current effective Tennessee Construction General Permit (TNR100000) 	Completed
<ul style="list-style-type: none"> • requirements for construction site operators to control waste materials, such as discarded building materials, litter, etc. 	Completed

- requirements and procedures for priority construction activities. The permit defines these as construction activities that discharge directly into, or immediately upstream of, waters the state recognizes as impaired for siltation or habitat alteration, or Exceptional Tennessee Waters. (Note: impaired renamed to unavailable parameters in 2016.) Completed
- an inventory of all active public and private construction sites that result in a land disturbance of equal to or greater than one acre. Completed
- procedures for construction site plan review and approval. Completed
- procedures for site inspection and enforcement (via an Enforcement Response Plan in 2010 permit). Completed
Revised 2016
- procedures for receiving and considering public input on projects, and mechanisms for public access to information on projects. Completed
- the completion of State-based training for all City site inspectors and construction site plan reviewers. Completed

Kingsport's list of BMPs intended to fulfill the requirements of construction site stormwater management are listed below.

- Pre-construction Conferences
- Enforcement Response Plan
- MS4 Staff Training
- Construction Site Planning
- Construction Site Plans Review
- Construction Site Inspections
- Stormwater Ord. Amendments
- Qualifying Local Program

Activity: Pre-Construction Conferences

Responsible Party(s)

Stormwater Engineer, City Engineer or designee

Regulatory Reference

NPDES Phase II Permit Part 4.2.4.j

BMP Description

The NPDES Phase II permit requires Kingsport to provide for pre-construction meetings with construction-site operators for priority construction activities.

Existing Condition

The Kingsport stormwater management ordinance includes a requirement for owners or operators to attend a pre-construction conference for priority construction activities. As a matter of policy, Kingsport

performs pre-construction conferences for all sites that are required to have a land disturbance permit, regardless of the type of construction activity.

The objective of the pre-construction conference is to review the proposed grading or development for the site, the general EPSC measures, and other site-specific topics or issues. The conference is documented on a standard form. The pre-construction conference is scheduled when the site owner is ready to obtain a land disturbance permit.

Proposed Activity(s)

The City will evaluate the policies and procedures for pre-construction conferences as the other activities described in this SWMP are implemented. Changes will be made to the pre-construction process as determined appropriate to meet permit conditions and the defined objective.

Measurable Goals and Milestones

Preconstruction conferences will be held for all applicable new developments and redevelopments as defined by the stormwater management ordinance. This activity is performed on a continuous basis, therefore no milestones are identified.

Activity: Construction Site Inspections

Responsible Party(s)

Stormwater Engineer
Construction Inspector Supervisor or designee

Regulatory Reference

NPDES Phase II Permit Parts 4.2.4.h and 2.4.2.j

BMP Description

The NPDES Phase II permit requires Kingsport to have procedures for City site inspectors to evaluate construction site compliance. The City must also provide for inspections of priority construction sites at least once per month.

Existing Conditions

Kingsport Stormwater Management Division's internal policy is to perform site inspections at a minimum frequency of once per month for all sites which are required to have a land disturbance permit. This inspection is done explicitly for the purposes of evaluating compliance with the approved EPSC Plan/SWPPP and observing the construction and maintenance of on-site EPSC and pollutant control practices. In practice, City site inspectors are trained to observe issues every time they are on-site, regardless of the purpose of their visit (e.g., roads or infrastructure inspections). As well, site inspections are performed more frequently than once per month when complaints are received about a particular site, or before/after rainfall events at sites where the City site inspector has judged that more inspection attention is needed. Notices of violation and other enforcement actions for non-compliance with City regulations can be initiated at any of these inspections. Follow-up inspections are performed when an enforcement action has been initiated and a time and frequency appropriate for the situation. Inspections are documented at the time of the event on a standard checklist. The information contained on the checklist is then transferred to a standard database by the City site inspector at the office.

Proposed Activity(s)

No new activities are proposed.

Measurable Goals and Milestones

Site inspections will be performed for all applicable new developments and redevelopments as defined by the stormwater management ordinance. This activity is performed on a continuous basis, therefore no milestones are identified.

Activity: Stormwater Ordinance Amendments

Responsible Party(s)

Stormwater Manager

Stormwater Engineer

Regulatory Reference

NPDES Phase II Permit Part 4.2.4.a

BMP Description

The NPDES Phase II permit requires local requirements to be consistent with State level requirements, as set forth in the Tennessee Construction General Permit (TN-CGP).

Existing Conditions

The Kingsport Stormwater Management Ordinance addresses the construction site stormwater runoff control requirements of the NPDES Phase II Permit. The ordinance:

- defines the new developments and redevelopments that must prepare an EPSC plan/SWPPP and apply for a land disturbance permit;
- requires construction site operators to implement appropriate EPSC BMPs in accordance with the TDEC EPSC Handbook;
- requires the control of other construction waste materials;
- provides for additional requirements to be implemented at priority construction activities, as per the TN-CGP;
- requires a performance bond for construction work related to stormwater management facilities, channel protection, buffer zones and any BMPs;
- requires submittal and approval of an EPSC plan/SWPPP;
- requires site owner/operator inspection and maintenance of on-site BMPs and other pollutant controls; and,
- authorizes the City to perform site inspections; and,
- authorizes the City to enforce in cases of non-compliance. Authorized enforcement actions include establishing requirement(s) for corrective action(s), the issuance of a stop work order, withholding of a permit, withholding of permit inspections, withholding of a certificate of occupancy, and/or civil penalties and/or damage assessments.

Since its adoption in 2008, the provisions of Kingsport's Stormwater Management Ordinance related to construction site runoff control have been generally consistent with, and in some cases more stringent than, the TN-CGP (TNR100000). However, after reissuance of the TN-CGP in May 2011 and the effective

TN-CGP in October 2016, updates are needed to the City ordinance to better align it with current TN-CGP requirements. The ordinance allows for the maximum penalties per day as specified in TCA 68-221-1106.

Proposed Activity(s)

The City will amend the stormwater management ordinance using the approach defined below.

- Ordinance Review/Revision - The Stormwater Manager will work with the City Legal Department to review the existing ordinance and relevant sections of the Stormwater Management Manual and determine the necessary amendments. Draft ordinance language will be prepared for review and comment by legal staff and a stormwater advisory committee before finalizing the ordinance changes.
- Revised Ordinance Adoption – The ordinance will be considered for adoption through two public meetings and votes by the Kingsport Board of Mayor and Aldermen.
- Ordinance Revision Training – Once adopted, the Stormwater Manager will provide informal training on the revisions for all City staff whose duties include construction site inspection/enforcement. The City may also provide educational material and/or training on the ordinance revisions to the local engineering, development and construction communities.

Measurable Goals and Milestones

The table below presents a schedule for the proposed activities outlined above.

Activity	Approximate Schedule/Timeframe
Ordinance Review/Revision	Completed by November, 2016
Revised Ordinance Adoption	Completed by December, 2016
Ordinance Revision Training	Periodic activity generally performed within 6 months of adoption

Activity: Qualifying Local Program

Responsible Party(s)

Stormwater Manager

Regulatory Reference

NPDES Phase II Permit Part 4.3

BMP Description

Under CFR §122.44(s), TDEC can formally recognize a Phase I or II MS4 as a Qualifying Local Program (QLP) that has been shown to meet or exceed the provisions of the construction general permit. A QLP could administer its own storm water construction permitting program without TDEC duplicating the permit and review process, thus eliminating TDEC from the site level permitting process. Kingsport has obtained QLP status with TDEC to establish a construction site Stormwater runoff control program that is consistent with all of the provisions of the TN-CGP (TNR100000). The objective is to establish a single set of requirements, procedures and design criteria/guidance which satisfy both State and local regulations when implemented by site owners and operators in Kingsport. One advantage of this is the streamlining of the development process that will result, with SWPPPs requiring reviews and approval at the local level only.

Existing Conditions

Kingsport applied for acceptance as a QLP MS4 in Spring of 2016. After TDEC review, Kingsport was granted provisional status as a QLP in August, allowing the City to begin participation in the program. Following a three month advertising/education period for local stakeholders, and an additional period of time to finalize needed modifications or enhancements to the City's construction site management program, full QLP status was achieved in December, 2016.

Proposed Activity(s)

The City will perform activities necessary to continue participation in the QLP Program. These will be required to demonstrate City regulatory, procedural and enforcement consistency with State requirements, and to identify and implement changes to the City construction site stormwater program where needed to gain consistency in these areas.

Measurable Goals and Milestones

The primary measurable goal is recognition of Kingsport by TDEC as a QLP. Additional measurable goals and milestones have not yet been identified.

Activity: Enforcement Response Plan

Responsible Party(s)

Stormwater Manager
Stormwater Engineer
Code Enforcement Officer

Regulatory Reference

NPDES Phase II Permit Parts 4.2.4.h and 4.5

BMP Description

Kingsport has developed and implements an Enforcement Response Plan (ERP) for violations of the Stormwater Management Ordinance by site owners and/or operators. The ERP provides a "roadmap" for Kingsport's potential responses to ordinance violations, thereby promoting application of a consistent approach and addresses the progression of enforcement responses for persistent non-compliance, repeat or escalating offenses, or incidents of major environmental harm. The ERP provides guidance to inspectors on the different enforcement responses available, when and how to refer violations to other City or State agencies, and how to track enforcement actions.

Existing Conditions

Kingsport has an Enforcement Response Plan that is supported by the authority provided by the Stormwater Management Ordinance. The Plan includes guidance for violations of erosion prevention and sediment control BMPs, inspections, SCM maintenance, stormwater management, illicit discharges and also provides for graduated enforcement using best judgment and a formulaic severity index with a commensurate civil penalty range. Enforcement actions include written warnings, notices of violation and administrative orders with civil penalties up to \$5000.00 per day per violation, and liability for costs associated with damages and clean-up.

Proposed Activity(s)

The City will comply with this permit requirement as follows:

- Existing Protocol Update – The existing Enforcement Response Plan provides a strong basis for compliance with the permit requirements. The Plan will be updated and expanded by the Stormwater Manager, then reviewed and finalized by appropriate City staff.
- ERP Training – Prior to implementation, the Stormwater Engineer will provide informal training on the ERP for all City enforcement staff whose duties include construction site stormwater inspections/enforcement.
- ERP Implementation – The ERP will be implemented by all City enforcement staff whose duties include construction site stormwater inspections/enforcement.
- Review/Revise ERP – The ERP will be periodically reviewed (and potentially revised) by the Stormwater Manager and other appropriate City staff to ensure that the guidance and policies contained in the ERP remain in compliance with permit conditions and effective and appropriate for Kingsport.

Measurable Goals and Milestones

The table below presents a schedule for the proposed activities outlined above.

Activity	Approximate Schedule/Timeframe
Existing Protocol update	Completed by November 19, 2012
ERP Training	Completed by November 19, 2012
Implement ERP	Continuous activity, after November 19, 2012
Review/Revise ERP	Periodic activity, performed most recently on December 6, 2016

Activity: MS4 Staff Training

Responsible Party(s)

Stormwater Manager
Stormwater Engineer
Technical Services Director

Regulatory Reference

NPDES Phase II Permit Part 4.2.4.i

BMP Description

Kingsport construction site inspectors must maintain certification under the Tennessee Fundamentals of Erosion Prevention and Sediment Control Level 1 (or equivalent). City construction site plan reviewers must receive a certification of completion from the Tennessee Erosion Prevention and Sediment Control Design Course, Level 2. TDEC also recommends that MS4 staff receive training under both courses.

Existing Conditions

- Commercial and residential plans reviewers are responsible for site plan reviews and have certificates of completion from the Tennessee Erosion Prevention and Sediment Control Design Course, Level 2.
- All City construction site inspectors have certificates of completion from the Tennessee Fundamentals of Erosion Prevention and Sediment Control Level 1 course.
- All Stormwater Management Division staff (other than administrative personnel) have certificates of completion from the Tennessee Fundamentals of Erosion Prevention and Sediment Control Level 1 course, at a minimum.

Proposed Activity(s)

The Stormwater Manager will continue to monitor staff training needs in light of the requirements of the NPDES Phase II Permit, and will coordinate training with City staff as appropriate. Should the State develop other required construction site management-related courses, Kingsport will send staff as appropriate for compliance with the permit.

Measurable Goals and Milestones

No measurable goals and milestones are identified for this activity.

Activity: Construction Site Tracking

Responsible Party(s)

Stormwater Engineer

Regulatory Reference

NPDES Phase II Permit Part 4.2.4.d

BMP Description

The NPDES Phase II Permit requires Kingsport to develop and maintain an inventory of all active private and public construction activities that result in a total land disturbance as defined in Part 4.2.4 of the permit (i.e., one acre or greater). The inventory must be updated as new construction activities are permitted and as activities are completed. The inventory must contain relevant information for each project as defined in the NPDES Phase II Permit, Part 4.2.4.d.

Existing Conditions

The Kingsport Stormwater Management Division currently maintains a standard database inventory of all construction activities (public and private) that have applied for or have already received a land disturbance permit. The following information is included for every construction activity entry that is placed in the inventory:

- Tracking number;
- Relevant contact information (owner name; verifiable address at which correspondence will be accepted; phone; and email);
- TN-CGP coverage information
- Construction site plan approval date

Information on each construction activity is maintained and updated with inspection and enforcement information by the Stormwater Engineer and/or City Site Inspector that is assigned to the construction activity.

Proposed Activity(s)

Incorporate Cartegraph as inventory mechanism.

Measurable Goals and Milestones

Cartegraph to become main source of information.

Activity: Construction Site Plans Review

Responsible Party(s)

Stormwater Engineer, Technical Services Director, Engineering Development Plans Reviewer(s)

Regulatory Reference

NPDES Phase II Permit Part 4.2.4.f

BMP Description

The NPDES Phase II permit requires Kingsport to have procedures for construction site plan (including erosion prevention and sediment controls) review and approval. The permit also requires that City procedures include an evaluation of plan completeness and overall BMP effectiveness.

Existing Conditions

Kingsport has procedures for compliance with this requirement. City site plan reviewers evaluate the compliance of EPSC plans/SWPPPs with the relevant requirements in the Stormwater Management Ordinance and the policies contained in the Stormwater Management Manual for every site that is required to obtain a land disturbance permit. These requirements and policies address: 1) the technical standards and criteria for construction site management BMPs to control erosion, sediment discharges and construction waste materials; and 2) the contents, completeness and submittal/approval of construction site plans. BMP appropriateness and effectiveness is evaluated during the plan review process. Such plans must receive approval by the City prior to issuance of a land disturbance permit. Information for construction site owners regarding the construction site plan approval process is contained in the Stormwater Management Manual and on the City website. Site plan reviews are documented via a NOI/SWPPP checklist process, where reviews are "checked-off" only when they are deemed satisfactory. The City Development Engineer stamps plans when they are fully approved.

Proposed Activity(s)

Kingsport will continue to implement site plan review procedures as per NPDES permit requirements and as described above. The City will continue to evaluate and update these procedures as appropriate.

Measurable Goals and Milestones

Site plan reviews will be performed for all applicable new developments and redevelopments as defined by the Stormwater Management Ordinance. This activity is performed on a continuous basis, therefore no milestones are identified.

3.3.4 Permanent Stormwater Management

Program Summary

Kingsport’s program for permanent stormwater management addresses pollutants in stormwater runoff from new developments and redevelopment projects after construction activities have been completed. The program applies only to new developments and redevelopment projects that, when constructed, resulted in a land disturbance of equal to or greater than one acre, including projects that disturbed less than one acre but are part of a larger common plan of development or sale that disturbed one acre or more. The 2010 NPDES permit included a number of new requirements (as compared to the 2003 permit) for permanent stormwater management. As a result, the City will continue to modify its permanent stormwater management compliance measures to accommodate the new requirements as indicated in this SWMP.

Table 13 presents the items and activities that are required by TDEC for a compliance with the Permanent Stormwater Management minimum control measure.

Permit Requirement	Implementation Status
<ul style="list-style-type: none"> • have regulatory authority to address permanent runoff (previously post-construction runoff) from new development and redevelopment projects to the extent allowable under state or local law, allowing for maximum penalties per day for each day of violation as specified in TCA 68-221-1106. 	Completed
<ul style="list-style-type: none"> • implement and enforce permanent stormwater controls that are comprised of runoff reduction (i.e., green infrastructure) and pollutant removal (80% total suspended solids), in accordance with performance standards as prescribed in section 4.2.5.2 of the NPDES Phase II permit. Runoff reduction is the preferred control practice. 	Under development
<ul style="list-style-type: none"> • review local codes and ordinances using the EPA Water Quality Scorecard and “shall ensure that a reasonable suite” of green infrastructure practices are implemented. 	Scorecard completed, Implementation of GI practices under development
<ul style="list-style-type: none"> • develop and implement project review, approval and enforcement procedures to support the permanent stormwater management program. 	Completed
<ul style="list-style-type: none"> • ensure the long-term maintenance of permanent stormwater management BMPs through a local ordinance or other enforceable policy, maintenance agreements and maintenance verification requirements. 	Completed
<ul style="list-style-type: none"> • develop and utilize an inventory for permanent stormwater management BMPs. 	In progress
<ul style="list-style-type: none"> • require owners and operators to perform and document routine inspections of permanent stormwater management BMPs. 	In progress

Kingsport has had a permanent stormwater management program (formerly called the “post-construction stormwater program”) since the adoption of the Stormwater Management Ordinance and corresponding recognition of the Kingsport Stormwater Management Manual in 2008. These two documents provide the framework of the City program with regards to the permit requirements listed in

the table. The activities that the City performs (or will perform) to comply with the permanent stormwater management minimum control measure are listed below and described in detail in the following sections.

- Pre-Construction Conferences
- Permanent Stormwater Management Program
- Plans Review Updates and Enforcement Response Plan
- BMP Maintenance
- Owner/Operator Inspections

Activity PSWM-4A: Difficult Terrain Regulations

Responsible Party(s)

Kingsport through the activities of the Planning Commission

Regulatory Reference

NPDES Phase II Permit Part 4.2.5

BMP Description

The NPDES Phase II permit requires Kingsport to develop, implement and enforce a program to address permanent stormwater management from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, which discharge into the MS4. The program must ensure that controls are in place that would prevent or minimize water quality impacts. In addition, the permit requires the City to develop and implement strategies for permanent stormwater management which include a combination of structural and /or nonstructural BMPs.

In January 2012, Kingsport adopted the Difficult Terrain requirements, which includes density and land disturbance guidelines. The implementation of policies and/or plans designed to address the potential negative environmental impacts, including impacts related to stormwater runoff, of uncontrolled development on hillsides and ridge tops is considered to be a non-structural BMP useful for stormwater quality management. The Kingsport Difficult Terrain provisions can be found on the website for the Kingsport Planning Commission.

Existing Conditions

Implementation of the Difficult Terrain provisions occurs through the Planning Commission (PC) who oversees land use, zoning and subdivision level planning. The plan is used as a guide during the subdivision and Use on Review processes.

Proposed Activity(s)

Through the PC, Kingsport will continue to implement the Difficult Terrain provisions as described above. The City will continue to evaluate and update this process as appropriate.

Measurable Goals and Milestones

This activity is performed on a continuous basis, therefore no milestones are identified.

Activity: Permanent Stormwater Management Program

Responsible Party(s)

Stormwater Manager
Stormwater Engineer

Regulatory Reference

NPDES Phase II Permit Parts 4.2.5.1, 4.2.5.2, 4.2.5.3 and 4.2.5.6

BMP Description

The NPDES Phase II permit includes very detailed requirements for permanent stormwater management. Several of these requirements and the current status of Kingsport's compliance with them are summarized in the tables below. (It should be noted that Activity PSWM-4B only partially addresses the permanent stormwater management requirements of the permit. Activities PSWM-4C, 4D and 4E focus on the remaining permanent Stormwater management requirements.)

Title	Summary of Requirement
Program Applicability	<p>Requirement: Kingsport must develop, implement and enforce a program to address permanent stormwater management from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, which discharge into the MS4.</p> <p>Existing Condition: Together, sections 42-81 and 42-82 of the Stormwater Management Ordinance require permanent stormwater management measures to be implemented in new development and re-development projects that disturb one or more acre. This includes projects less than one acre that are part of a larger common plan of development or sale, which discharge into the MS4.</p>
Permanent Stormwater Controls	<p>Requirement: Kingsport must ensure that permanent stormwater management controls are in place that would prevent or minimize water quality impacts. In addition, the permit requires the City to develop and implement strategies for permanent stormwater management which include a combination of structural and /or nonstructural BMPs.</p> <p>Existing Condition: Section 42-81 of the Stormwater Management Ordinance requires the design, construction and maintenance of stormwater controls at applicable new development and redevelopment projects for purposes of preventing or minimizing water quality impacts. The ordinance also requires the use of the Kingsport Stormwater Management Manual. The manual provides design criteria and technical standards for design, construction and maintenance of these structural controls. The manual also provides incentives, in the form of stormwater volume control reductions, through the use of better site design practices. Further, the manual provides educational information on site design techniques that can serve to reduce stormwater runoff volumes or pollutants.</p>
Water Quality Buffer	<p>Requirement: Kingsport must develop and implement a set of requirements to establish, protect and maintain a permanent water quality buffer along all waters of the state at new development and redevelopment projects. The required width of the buffer is dependent upon the size of the upstream drainage area. Buffer averaging can be used for buffers on streams with drainage areas greater than 1 square mile using a required average width of 60-feet and a minimum allowed width of 30-feet.</p> <p>Existing Condition: Section 42-82(d) of the Stormwater Management Ordinance provide the requirements and technical standards for establishing, protecting and maintaining permanent water quality buffers at applicable new development and redevelopment projects. Currently, Kingsport requires a minimum buffer width of 25 feet along all waterbodies and does allow buffer averaging using a required average width of 60 feet for priority streams affected by siltation and a minimum allowed width of 25 feet. There is no consideration of the upstream drainage area.</p>
Maximum Penalties	<p>Requirement: Kingsport's Stormwater Management Ordinance must address enforcement for permanent stormwater management to the extent allowable under state law and must allow for the maximum penalties per day for each day of violation as specified in TCA 68-221-1106.</p> <p>Existing Condition: Section 42-111 and 112 of the Stormwater Management Ordinance provides for penalties and appeals to the extent allowable under state law. This section allows for the maximum penalties per day for each day of violation (\$5,000) as specified in TCA 68-221-1106 (a).</p>

Codes and Ordinances Review and Updates	<p>Requirement: Kingsport must review local codes and ordinances using the EPA Water Quality Scorecard.</p> <p>Existing Condition: Kingsport Stormwater Management completed the EPA Water Quality Scorecard, with the assistance of the Public Works and Development Services staffs.</p>
Inventory and Tracking of Management Practices	<p>Requirement: Knox City must develop a system to track BMPs deployed at new development and redevelopment projects. The system shall include BMP-specific information as listed in section 4.2.5.6 of the NPDES Phase II permit.</p> <p>Existing Condition: This requirement has been implemented via the ASIST and GIS databases.</p>

For all applicable new developments and redevelopments, the permit requires adherence to specific performance standards for onsite stormwater controls or land use planning. The standards are required so that stormwater controls can consistently meet state guidelines for water quality control. These standards are listed in the table below.

Title	Summary of Standard
Runoff Reduction	<p>Requirement: Kingsport site design standards for all new developments and redevelopments must require, in combination or alone, BMPs that are designed, constructed and maintained to infiltrate, evapotranspire, harvest and/or reuse, at a minimum, the first inch of every rainfall event preceded by 72 hours of no measureable precipitation. The permit identified potential limitations for runoff reduction and allows for incentive standards for redevelopment sites.</p> <p>Existing Condition: Kingsport's Permanent Stormwater Management Program does not currently include a runoff reduction performance standard. Note that Kingsport must implement this requirement before May 19, 2015, in accordance with Section 4.1.2 of the NPDES Phase II permit.</p>
Pollutant Removal	<p>Requirement: For projects that cannot meet 100% of the runoff reduction requirement (unless subject to incentive standards), the remainder of the first one inch of every rainfall must be treated prior to discharge with a technology reasonably expected to remove 80% total suspended solids (TSS). The treatment technology must be designed, installed and maintained to continue to meet this performance standard.</p> <p>Existing Condition: Kingsport's Permanent Stormwater Management Program currently includes a pollutant removal performance standard, which is presented in Chapter 3 of the Stormwater Management Manual. The standard requires applicable developments to treat the runoff from 85% of the rainfall events that occur in an average year to a load reduction goal of 80% average annual post-development total suspended solids (TSS). This equates to treating the first 1.04 inches of runoff using one or more of structural controls, or a combination of structural and non-structural controls. TSS removal percentages, technical standards and design specifications for these controls are provided in the Manual. Sections 42-81 and 82 of the Stormwater Management Ordinance require the controls be designed, constructed and maintained in accordance with the Manual. If these requirements are met, the control is presumed to meet its assigned TSS removal percentage.</p>
Off-site Mitigation	<p>Requirement: For projects that cannot meet 100% of the runoff reduction requirement, MS4s may allow runoff reduction measures to be implemented at another location within the same USGS 12-digit HUC as the original project. This option should be avoided in areas of new-development. Off-site mitigation must be a minimum of 1.5 times the amount of water not managed on site. If the MS4 provides off-site mitigation as an alternative option for runoff reduction, the MS4 must have a program/process that addresses all aspects of running an off-site mitigation program (e.g., location identification and prioritization, tracking and inspections, standards, etc.).</p> <p>Existing Condition: Kingsport's Permanent Stormwater Management Program does not currently include the option for off-site mitigation. Note that Kingsport may implement this requirement before May 19, 2015, in accordance with Section 4.1.2 of the NPDES Phase II permit.</p>
Payment into Public Stormwater Project Fund	<p>Requirement: For projects that cannot meet 100% of the runoff reduction requirement (unless subject to incentive standards) and cannot provide off-site mitigation, MS4s may allow the owner to make payment into a public stormwater project fund established by the MS4. The payment must be at a minimum 1.5 times the estimated cost of on-site runoff reduction controls.</p> <p>Existing Condition: Kingsport's Permanent Stormwater Management Program does not currently include the option for payment into a public stormwater project fund in lieu of attainment of performance standard(s). Note that Kingsport may implement this requirement before May 19, 2015, in accordance with Section 4.1.2 of the NPDES Phase II permit.</p>

Proposed Activity(ies)

The City will comply with these permit requirements as follows:

Title	Summary of Existing Condition
Program Applicability	No action is needed for this requirement.
Permanent Stormwater Controls	Action required: 1. The City's existing Permanent Stormwater Management Program will be modified to fulfill the performance standard requirements of the NPDES Phase II permit. This action will likely include the modification of the Stormwater Management Ordinance and the Stormwater Management Manual to accommodate the new performance standards. 2. The City will also investigate the potential development of policies and procedures for the off-site mitigation and payment into a stormwater project fund options, and will implement these as deemed appropriate for the MS4 program.
Water Quality Buffer	Action required: The City will revise current requirements to meet buffer width standards included in the NPDES Phase II permit. This action will likely include the modification of the Stormwater Management Ordinance and the Stormwater Management Manual to accommodate the new performance standards.

Title	Summary of Existing Condition
Maximum Penalties	Already implemented. No action is needed for this requirement.
Codes and Ordinances Review and Update	Will continue to implement as required.
Inventory and Tracking of Management Practices	Already implemented. No action is needed for this requirement.

Measurable Goals and Milestones

The table below presents a schedule for the proposed activities outlined above.

Activity	Approximate Schedule/Timeframe
Program Applicability	No activities - No milestones
Permanent Stormwater Controls	The performance standard for runoff reduction will be included in the program by May 19, 2015. The City will complete its investigation of the potential to implement the offsite mitigation and/or the payment to a stormwater project fund options by May 19, 2015.
Water Quality Buffer	The City's current water quality buffer requirements will be revised to be in accordance with NPDES Phase II permit requirements by May 19, 2015.
Maximum Penalties	No activities - No milestones
Codes and Ordinances Review and Update	No activities - No milestones
Inventory and Tracking of Management Practices	No activities - No milestones

Relevant Documents

The following documents can be found on the Kingsport Stormwater Management Division website.

- Kingsport Stormwater Management Ordinance
- Kingsport Stormwater Management Manual
- EPA Water Quality Scorecard

Activity: Plans Review Updates & Enforcement Response Plan

Responsible Party(s)

Stormwater Engineer
Development Plans Reviewer
Stormwater Manager
Codes Enforcement Officer

Regulatory Reference

NPDES Phase II Permit Part 4.2.5.4

BMP Description

The NPDES Phase II permit requires Kingsport to develop project (plans) review, approval and enforcement procedures to all development site projects that require a Tennessee Construction General Permit. This procedure shall be detailed in the Enforcement Response Plan (ERP) for permanent stormwater management. The procedures must include:

- a. procedures for development site plan review and approval that include inter-departmental consultations, and a re-submittal process when an owner requests changes to an approved stormwater management plan;
- b. requirements for development site plans to specifically address the City's permanent stormwater management performance standards and long-term maintenance;
- c. a verification and enforcement process to ensure that permanent stormwater BMPs have been installed in accordance with design specifications, that includes enforceable procedures for bringing noncompliant projects into compliance.

Existing Conditions

Kingsport has a well-established set of policies and procedures for development project plans review, approval and enforcement. Division 3 of the Stormwater Management Ordinance provides the regulatory basis for site plans and stormwater designs at applicable development projects. The Stormwater Management Manual provides associated policies for plan content and submittal, including performance standards for water quality control facilities, provides detailed technical design criteria and guidance. The City's site plan review process targets conformance with these regulatory requirements, policies and procedures.

Kingsport has an Enforcement Response Plan that is supported by the authority provided by the City's Stormwater Management Ordinance. The Plan includes guidance for illicit discharges and also provides for graduated enforcement using best judgment and a formulaic severity index with an associated civil penalty amount range. Enforcement actions include written warnings, notices of violation, administrative orders with civil penalties up to \$5000.00 per day, and liability for costs associated with damages and clean-up. The Plan will likely need to be expanded to include consideration of issues related to permanent stormwater management, such as long-term maintenance issues and the potential lack of familiarity of residential property owners with permanent stormwater BMPs.

Proposed Activity(s)

Kingsport will assess and update the program for project review, approval and enforcement as the new performance standards (e.g., runoff reduction) and associated BMPs are added to the program. The

procedures will apply at a minimum to all projects requiring a construction general permit or Kingsport small/single lot requirements. The ERP will be addressed as follows:

- Protocol Update – The existing Enforcement Response Plan provides a strong basis for the future ERP. The Plan will be updated and expanded by the Stormwater Manager, then reviewed and finalized by the appropriate City agencies.
- ERP Training – Prior to implementation, the Stormwater Engineer will provide informal training on the ERP for all City enforcement staff whose duties include permanent stormwater BMP inspections/enforcement.
- ERP Implementation – The ERP will be implemented by all City enforcement staff whose duties include permanent stormwater BMP inspections/enforcement.
- Review/Revise ERP – The ERP will be periodically reviewed (and potentially revised) by the Stormwater Manager and other appropriate City staff to ensure that the guidance and policies contained in the ERP remain in compliance with permit conditions and effective and appropriate for Kingsport.

Measurable Goals and Milestones

The table below presents a schedule for the proposed activities outlined above:

Activity	Approximate Schedule/Timeframe
Existing Protocol update	Completed by November 19, 2012
ERP Training	Completed by November 19, 2012
Implement ERP	Continuous activity, after November 19, 2012
Review/Revise ERP	Periodic activity, performed on an as needed basis
Site Plan Review/Approval Process Review	Periodic activity, performed on an as needed basis

Activity: BMP Maintenance

Responsible Party(s)

Stormwater Manager
Stormwater Engineer

Regulatory Reference

NPDES Phase II Permit Part 4.2.5.5

BMP Description and Existing Conditions

The NPDES Phase II permit requires the maintenance in perpetuity of all permanent stormwater management BMPs through the follow specific requirements.

Title	Summary of Requirement and Existing Condition
Ordinance	Requirement: Long-term maintenance of stormwater BMPs must be ensured through a local ordinance or other enforceable policy. Existing Condition: Section 38-263 of the Kingsport Stormwater Management Ordinance requires maintenance of stormwater management facilities (i.e., BMPs) to maintain their full function.
Maintenance Agreement	Requirement: Kingsport must execute a maintenance agreement with BMP owners/operators. The agreement must address owner/operator maintenance, inspections and corrective actions.

Existing Condition: Section 38-139 of the Kingsport Stormwater Management Ordinance requires the development of an Operations and Maintenance Plan and execution of Covenants for Permanent Maintenance of Stormwater Management Facilities. Together, the ordinance and covenants address maintenance responsibilities and requirements, and grant Kingsport the authority to inspect the BMPs and perform enforcement actions when the owner neglects to meet the terms of the maintenance agreement. Chapter 4 of the Kingsport Stormwater Management Manual provides guidance on maintenance of pollutant removal BMPs.

Proposed Activity(s)

Kingsport will continue to require the Operation and Maintenance Plan already in use to ensure the long-term maintenance of stormwater BMPs through the Covenants for Permanent Maintenance of Stormwater Facilities and Best Management Practices agreements as per the Stormwater Ordinance. These requirements and tools for BMP maintenance will be updated if necessary as the new performance standards (e.g., runoff reduction) and associated BMPs are added to the City's program.

Measurable Goals and Milestones

The table below presents a schedule for the proposed activities outlined above.

Activity	Approximate Schedule/Timeframe
Review/Revise BMP maintenance requirements and policies	Completed by November 19, 2015

Relevant Documents

The following documents can be found on the Kingsport Stormwater Management Division website.

- Kingsport Stormwater Management Ordinance
- Covenants for Permanent Maintenance of Stormwater Facilities and Best Management Practices
- Kingsport Stormwater Management Manual (Chapter 4)

Activity: Owner/Operator Inspections

Responsible Party(s)

Stormwater Manager
Stormwater Engineer

Regulatory Reference

NPDES Phase II Permit Part 4.2.5.7

BMP Description

The NPDES Phase II permit requires that Kingsport require owners or operators of stormwater management BMPs to perform routine and comprehensive inspections to ensure that the BMPs are properly functioning and to maintain documentation of these inspections.

Existing Conditions

Section 38-263 of the Kingsport Stormwater Management Ordinance requires maintenance of stormwater management facilities (i.e., BMPs) to maintain their full function and requires the preparation of an Operation and Maintenance Plan for these BMPs. The Stormwater Management Manual provides policies and guidance on the development of the O&M Plan (Chapter 7) and provides

guidance on the maintenance of pollutant removal BMPs (Chapter 4). Annual inspections are required and every 5 years the MS4 will conduct its own inspection.

Proposed Activity(s)

Kingsport will continue to use the existing requirements, policies and tools (e.g., covenants and manual guidance) to ensure the long-term maintenance of stormwater BMPs. These requirements and tools will be updated and enhanced to include specific requirements for BMP inspections and to provide education on BMP maintenance as the new performance standards (e.g., runoff reduction) and associated BMPs are added to the program.

Measurable Goals and Milestones

The table below presents a schedule for the proposed activities outlined above.

Activity	Approximate Schedule/Timeframe
Develop BMP inspections requirements, policies and educational tools	Completed by November 23, 2015

3.3.5 Pollution Prevention/Good Housekeeping for Municipal Operations

Program Summary

The NPDES Phase II permit required the implementation of an operation and maintenance program that has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. The only specific conditions of this minimum control measure are:

- the City's program must include employee pollution prevention training; and,
- the City's program must consider all aspects of the municipal operations relevant to pollution prevention.

Beyond these requirements, the means by which the City implements a pollution prevention/good housekeeping program is not predicated by the permit. The BMPs performed by Kingsport to comply with this minimum control measure are listed below and presented in the following pages.

- Staff Training
- Policies & Procedures
- Stormwater Pollution Prevention Plans

Activity: Staff Training

Responsible Party(s)

Stormwater Manager
Stormwater Engineer

Regulatory Reference

NPDES Phase II Permit Part 4.2.6

BMP Description

Kingsport's pollution prevention/good housekeeping program must include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

Existing Condition

Kingsport has implemented activities for the purpose of training City employees on pollution prevention and good housekeeping as listed below.

- Annual Training Associated with TMSP and SWPPP Sites – The MS4 conducts training for targeted staff associated with the Wastewater Treatment Plant, Fleet Maintenance, Streets and Sanitation, Traffic and Transportation, Property and Grounds Maintenance, and Water and Sewer Maintenance facilities. This is typically accomplished through video presentations that include topics such as good housekeeping and spill prevention, vehicle and equipment washing and maintenance, spill reporting and response, street maintenance, outdoor storage of materials and wastes, landscaping and lawn care, and illicit discharge detection and elimination.
- Level I and Level II Training – Kingsport's development plans review and site inspection staff receive State-based training and certification relevant to construction site stormwater management, as follows:
 - Commercial and Residential Plans Reviewers are responsible for site plan reviews and have certificates of completion from the Tennessee Erosion Prevention and Sediment Control Design Course.
 - All City construction site inspectors have certificates of completion from the Tennessee Fundamentals of Erosion Prevention and Sediment Control Level 1 course.
 - All MS4 staff have certificates of completion from the Tennessee Fundamentals of Erosion Prevention and Sediment Control Level 1 course, at a minimum.

Proposed Activity(s)

The City will enhance compliance with this permit requirement as follows:

- Pollution Prevention Presentation Expansion – The pollution prevention presentation module will be modified to address pollution prevention/good housekeeping topics relevant to other City departments, agencies and officials.

Measurable Goals and Milestones

The Kingsport Stormwater Management Division will continue to aid in the development of training programs by working with departments and other branches of Kingsport Government where there is pollution potential. The table below presents the current schedule for the City activities outlined above.

Activity	Approximate Schedule/Timeframe
Online Training	Develop and modify or update this medium to provide pollution prevention and good housekeeping awareness.
Expand training module for City Departments	To be determined
TDEC Level 1 and Level 2 training	Ongoing. Staff are trained as certification or recertification is needed.

Activity: Policies and Procedures

Responsible Party(s)

Stormwater Manager
Stormwater Engineer

Regulatory Reference

NPDES Phase II Permit Parts 4.2.6

BMP Description

Kingsport must consider the following in developing the pollution prevent/good housekeeping program: maintenance activities, maintenance schedules, and long-term inspection procedures for structural and non-structural stormwater controls to reduce floatable and other pollutants discharged from the MS4's separate storm sewers; 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, salt/sand storage locations and snow disposal areas operated by the MS4, and waste transfer stations; procedures for properly disposing of waste removed from the separate storm sewers and areas listed above (such as dredge spoil, accumulated sediments, floatable, and other debris); and ways to ensure that new flood management projects assess the impacts on water quality and examine existing projects for incorporating additional water quality protection devices or practices. Operation and maintenance must be an integral component of all Stormwater Management Programs. The permit requires that the SWMP include information on the pollutant control efforts for all municipal-operated facilities that maintain or store motorized equipment, oils or other hazardous materials.

Existing Conditions

Currently, Kingsport has standard operating procedures written expressly for the purposes of pollution prevention and good housekeeping for City operation and maintenance activities. In addition, standard safety training received by many City employees is relevant for pollution prevention purposes.

- City employees whose standard job responsibilities include working with or around oils, greases, petroleum products, cleaning agents and other chemicals are generally trained on the safe storage, use and disposal of these products through safety videos, presentations, staff mentoring and oversight, and reading product safety guidance.
- Materials Safety Data Sheets (MSDS) that provide detailed guidance on spill response and clean-up are maintained wherever such products are used.
- City employees are generally trained on spill response from the standpoint of maintaining a safe work environment.
- Employees that are responsible for vegetation maintenance using herbicides and pesticides work within the guidelines provided by the chemical manufacturer.

Other relevant activities include the following.

- Targeted City employees are trained on erosion prevention and sediment control methods on an annual basis.
- Construction sites owned or operated by Kingsport receive are subject to the environmental requirements and site inspections in accordance with the Stormwater Management Ordinance.

Kingsport Streets and Sanitation is located at 609 W. Industry Drive, Kingsport, TN 37660. This location houses salt storage, a wash bay, two fueling stations, Grounds and Parks Maintenance, a lay down yard, Property and Building Maintenance, Public Works equipment and materials storage. Below is a list of best management practices (BMPs) for this site:

- SWPPP (kept on file)
- Sta-dry and Spill Kits
- Quarterly Inspections
- Catch Basin Inserts (to be installed as funding becomes available)
- Covered salt sheds
- Wash bay with sediment trap and oil/grease separator

Fleet Maintenance is located at 625 W. Industry Drive, Kingsport, TN 37660. BMPs for this site are:

- Sta-dry and Spill Kits
- Drains connected to oil-water separator and sanitary sewer
- Quarterly Inspections
TMSP (kept on file)
- Covered vehicle/equipment wash area that drains to oil-water separator and sanitary sewer
- Regular Maintenance Check-ups on Equipment
- ASTs labeled w/secondary containment
- All parking areas are swept periodically w/street sweeper

The Wastewater Treatment Plant is located at 620 W. Industry Drive, Kingsport, TN 37660. BMPs for this site are:

- TMSP (kept on file)
- Separate storm and sanitary sewer systems (except as allowed)
- Quarterly inspections
- Sta-dry and spill kits
- Regular maintenance inspections

The Traffic/Transportation facility is located at 1155 Konnarock Road. The BMPs for this site are:

- SWPPP kept on file
- Covered paint cleaning area connected to sanitary sewer
- Quarterly inspections
- Sta-dry and spill kits

The Water/Sewer Maintenance facility is located at 1313 Konnarock Rd., Kingsport, TN 37664. The BMPs for this site are:

- SWPPP kept on file
- Quarterly inspections
- Proposed water quality unit

Beyond these standard activities, City operations and maintenance procedural modifications for water quality purposes, when appropriate, are handled by interaction between supervisors from each Division in conjunction with Stormwater Services staff.

Proposed Activity(s)

The existing operations and maintenance program will be examined in light of the requirements of the NPDES Phase II Permit. A group consisting of appropriate City staff will be convened to review the formal Standard Operating Procedures (SOPs), to identify pollution prevention priorities for City operations and determine an approach to develop and implement any needed SOPs, with the end goal being pollution prevention SOPs implemented through memorandums of understanding with the affected departments and/or agencies. The result of this examination will be a scope and schedule for development of the City's operations and maintenance SOPs.

Measurable Goals and Milestones

The table below presents a schedule for the proposed activities outlined above.

Activity	Approximate Schedule/Timeframe
SOPs and MOUs	Completed by May 19, 2014

Activity: Stormwater Pollution Prevention Plans

Responsible Party(s)

Technical Services Director
Stormwater Engineer

Regulatory Reference

NPDES Phase II Permit Part 4.2.6 and Part 4.1.d

BMP Description

Kingsport is required to maintain SWPPPs at all facilities where NPDES permits are required. The Stormwater Management Division maintains availability to provide support to City facilities with regards to NPDES permitting and/or general pollution prevention.

Existing Conditions

Kingsport maintains SWPPPs at all facilities where NPDES permits are required and/or the possibility of stormwater pollution is deemed sufficiently high to require a Plan. These documents are kept on-file at each facility.

Proposed Activity(s)

None

Measurable Goals and Milestones

None

3.4 Other NPDES Phase II Permit Activities

The NPDES Phase II permit includes a number of other requirements for the City’s Stormwater Management Program that are not included in the permit’s six minimum control measures. These requirements are identified in Table 14, along with the City activity(s) that are implemented to comply with each requirement. Activities are documented in the following pages.

Permit Section	Permit Requirement	Implementation Status
4.1	Stormwater Management Plan	Completed
4.5.1	Development of an Enforcement Response Plan	Completed
4.5.2	NPDES Permit Referrals	Completed
4.5.3	Enforcement Tracking	Completed
4.5.4	Requirements for Chronic Violators	Completed
5.1, 5.2	Analytical & Non-Analytical Monitoring	On-going
5.3	Record keeping	On-going
4.4	Reviewing and Updating Stormwater Management Programs	On-going
5.4	Reporting (Annual Report)	On-going

Activity: Stormwater Management Plan

Responsible Party(s)

Stormwater Manager
Stormwater Engineer

Regulatory Reference

NPDES Phase II Permit Part 4.1

BMP Description

Kingsport is required to document all the elements of the City Stormwater Management Program in a stormwater management plan (SWMP). The SWMP must be compiled in the first year of the permit cycle and must include the following information for each of the six minimum control measures described in sub-part 4.2 of the permit. The table below outlines the required elements of the SWMP.

Minimum Control Measures

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Permanent Stormwater

The SWMP must include documentation of:

Best Management Practices (BMPs), programs, processes for implementation, Including measurable goals for each BMP, months and years in which the required actions will be taken, interim milestones and frequencies, person(s) responsible for implementing or coordinating the BMPs.

Management in New Development and Redevelopment

6. Pollution Prevention/Good Housekeeping for Municipal Operations

Non-MCM Requirements

Pollutant control efforts for all municipal-operated facilities that maintain or store motorized equipment, oils, or other hazardous materials and a detailed description of all inspection and monitoring programs

Existing Condition

This document comprises the Kingsport Stormwater Management Plan. This SWMP includes the elements required by the NPDES Phase II permit. It also includes documentation of activities performed by the Kingsport Stormwater Management Division that are outside the scope of the NPDES Phase II permit.

Proposed Activity(s)

Kingsport will informally review and maintain the SWMP on as needed basis to ensure that the SWMP is reflective of the current Stormwater Management Program. It is anticipated that this review will occur on an annual basis, likely in tandem with the review and update of the Stormwater Management Program and preparation of the Annual Report.

Measurable Goals and Milestones

None

Activity: Stream Monitoring

Responsible Party(s)

Stormwater Manager
Stormwater Quality Control Technician
Technical Services Director

Regulatory Reference

NPDES Phase II Permit Parts 5.1 and 5.2

BMP Description

Part 5.1 of the permit requires Kingsport to perform analytical monitoring as described in the table below. The permit also provides specifications for monitoring records.

Stream	Pollutant Source	Impairment	Type of Monitoring	Frequency
On 303(d) list of impaired waters or has EPA-approved TMDL	Discharges from the MS4 area	Siltation and/or habitat alteration	Biological stream sampling ¹	One sample per stream segment every 5 years
		Pathogens	Bacteriological sampling ²	One sample per stream segment every 5 years
	Discharges from the MS4 (and related) are NOT identified as a pollutant source		Analytical monitoring is not required	

Not impaired

Analytical monitoring is not required

1. Biological stream sampling must be performed utilizing the Semi-Quantitative Single Habitat (SQSH) Method as identified in TDEC's *Quality System Standard Operating Procedure for Macroinvertebrate Stream Survey*, revised October 2006.
2. Bacteriological stream sampling must be performed utilizing methods identified in TDEC's *Quality System Standard Operating Procedure for Chemical and Bacteriological Sampling of Surface Water*, revised December 2009.

Part 5.2 of the permit requires Kingsport to perform non-analytical monitoring as described in the table below. The permit also provides specifications for monitoring records.

Stream	Discharger	Impairment	Type of Monitoring	Frequency
On 303(d) list of impaired waters	Discharges from the MS4 area	Siltation and/or habitat alteration	Visual stream surveys and impairment inventories ¹	One survey per impaired segment every 5 years
		Pathogens		

Stream	Discharger	Impairment	Type of Monitoring	Frequency
		Other	Non-analytical monitoring is not required	
	Discharges from the MS4 (and related) are NOT identified as a pollutant source		Non-analytical monitoring is not required	

Not impaired

Non-analytical monitoring is not required

1. The permit requires that MS4 refer to existing survey protocols such as the ones available through EPA, Natural Resources Conservation Service and State of Maryland Department of Natural Resources. MS4s have the flexibility to select or modify a protocol to complement the existing MS4 program.

Existing Condition

Kingsport currently performs monitoring on stream segments with EPA approved TMDLs, where the City is identified as a source of the impairment in accordance with the TDEC-approved TMDL Monitoring Plans. This activity includes analytical and non-analytical monitoring on the majority of City streams included on the 303(d) list for MS4-sourced impairments. Many City streams have already undergone one round of monitoring. Monitoring results are maintained by the City Stormwater Management Division.

Proposed Activity(s)

Activities planned by Kingsport include:

- Analytical Monitoring Schedule – Kingsport will continue its monitoring program in accordance with the Stream Monitoring Plan shown in Table 15.
- Documentation Improvements – Kingsport will improve the current monitoring data collection and storage approach to ensure compliance with Part 5.1 of the NDPES Phase II permit and to facilitate better analysis of analytical monitoring data.

Stream/ID	Monitoring Type ^{1, 2, 3}	Approximate Date(s) for Monitoring	TMDL Required
South Holston River Watershed			
Madd Branch TN06010102001-0100	Analytical (SQSH) Non-analytical (Visual)	Fall 2011 Fall 2011	Yes

	Analytical (Bacteriological)	July-September 2015	
Little Horse Creek TN06010102003-0600	Analytical (SQSH) Non-analytical (Visual) Analytical (Bacteriological)	July-September 2015 October-December 2015 July-September 2015	No
Horse Creek TN06010102003-1000	Analytical (SQSH) Non-analytical (Visual) Analytical (Bacteriological)	Fall 2011 Fall 2011 Fall 2011	No
Gammon Creek TN06010102006T-0100	Analytical (SQSH) Non-analytical (Visual) TBD Analytical (Bacteriological)	Fall 2011 Fall 2011	Yes
Wagner Creek TN06010102006T-0200	Analytical (SQSH) Non-analytical (Visual) Analytical (Bacteriological)	Fall 2011 Fall 2011 Fall 2011	Yes
Fall Creek TN06010102045-1000	Analytical (SQSH) Non-analytical (Visual) Analytical	Fall 2011 Fall 2011 July-September 2015	No
Tranbarger Branch	Analytical (SQSH) Non-analytical (Visual) Analytical (Bacteriological)	Fall 2011 Fall 2011 July-September 2015	Yes
Gravelly Creek TN06010102046-0200	Analytical (SQSH) Non-analytical (Visual) Analytical (Nitrate+Nitrite)	Fall 2011 Fall 2011 July-September 2015	No
Miller Branch TN06010102046-0300	Analytical (SQSH) Non-analytical (Visual) Analytical (Bacteriological)	Fall 2011 Fall 2011 Fall 2011	No
Unnamed Tributary to Reedy Creek TN06010102046-0600	Analytical (SQSH) Non-analytical (Visual) Analytical (Bacteriological)	Fall 2011 Fall 2011 July-September 2015	No
Unnamed Tributary to Reedy Creek TN06010102046-0500	Analytical (SQSH) Non-analytical (Visual)	July-September 2015 October-December 2015	No
Clark Branch TN06010102046-0600	Analytical (SQSH) Non-analytical (Visual) Analytical (Bacteriological)	Fall 2011 Fall 2011 July-September 2015	No
Reedy Creek TN060101046-1000	Analytical (SQSH) Non-analytical (Visual) Analytical (Bacteriological)	Fall 2011 Fall 2011 July-September 2015	Yes
Kendrick Creek TN06010102057-1000	Analytical (SQSH) Non-analytical (Visual) Analytical (Bacteriological)	July-September 2015 October-December 2015 July-September 2015	No
Rock Springs Branch	Analytical (SQSH) Non-analytical (Visual)	July-September 2015 October-December 2015	No
Gaines Branch	Analytical (SQSH) Non-analytical (Visual)	July-September 2015 October-December 2015	No

1. Analytical (SQSH) = The Semi-Quantitative Single Habitat (SQSH) Method as identified in TDEC's *Quality System Standard Operating Procedure for Macroinvertebrate Stream Survey*

2. Analytical (Bacteriological) = Bacteriological stream sampling performed using methods identified in TDECs *Quality System Standard Operating Procedures for Chemical and Bacteriological Sampling of Surface Water*.
3. Non-Analytical (Visual) = *The Stream Corridor Assessment (SCA) Survey* developed by the State of Maryland Department of Natural Resources

Measurable Goals and Milestones

The table below presents a schedule for the proposed activities outlined above.

Activity	Appropriate Schedule/Timeframe
Stream Monitoring	Continue in accordance with permit requirements and TMDL Monitoring Plans
Documentation Improvements	Completed by May 19, 2013

Activity: Program Review and Annual Report

Responsible Party(s)

Stormwater Manager
Stormwater Engineer

Regulatory Reference

NPDES Phase II Permit Part 4.4 and Part 5.4

BMP Description

The NPDES Phase II permit requires Kingsport to review its Stormwater Management Program during preparation of the annual report. Any changes to the Stormwater Management Program should be reported as required in the annual report form. The table below summarizes the types of program updates that can be made.

Entity initiating change	Reason	When	Notes
Kingsport	<ol style="list-style-type: none"> a. To add components, controls or requirements to the stormwater management program b. To replace an ineffective or unfeasible BMP already specified in the stormwater management program 	Any time	<ul style="list-style-type: none"> • Any planned physical alteration or additions to a permitted facility require notice to TDEC. • Kingsport must analyze <ul style="list-style-type: none"> ○ why the BMP is ineffective or infeasible (cost prohibitive) ○ why the replacement BMP is expected to achieve the goals of the BMP
TDEC	<ol style="list-style-type: none"> a. To address impacts on receiving water quality that are caused, or contributed to, by discharges from the City b. To comply with new federal statutory or regulatory requirements c. To include such other conditions deemed necessary by TDEC to comply with the Clean Water Act 	When set forth in writing	<ul style="list-style-type: none"> • Kingsport may be offered the opportunity to propose alternative program changes to meet the objective of the TDEC requested modification; • All changes requested by TDEC must have a regulatory basis.

Kingsport must submit an annual report to TDEC by September 30 of each calendar year that covers the permit-related activities of the previous compliance year (July 1 to June 30). The City is required to present the annual report at a public hearing prior to submitting it to TDEC.

Existing Condition

Since 2003, Kingsport’s Stormwater Management Division has routinely made informal evaluations of its stormwater management program activities and made updates to program activities as needed throughout the year. A more formalized review is done primarily during the months of July, August and September of each year, when Stormwater Management Division staff are preparing the City’s Annual Report for NPDES Phase II permit activities performed during the previous compliance year. Preparation of the Annual Report requires action and input from the Responsible Party(s) identified in this SWMP. Although the review itself is not formally documented, the results of these reviews (i.e., the program updates and changes) are documented in the City’s Annual Report. On occasion since 2003, TDEC has audited the City’s compliance with the NPDES Phase II permit, with the most recent audit occurring in April 2011. City Stormwater Management Division staffs actively participate in this formal program review, providing documentation and other information pertaining to City permit compliance activities, and meeting with TDEC to review and analyze audit results. Stormwater Management Division staff prepare the Annual Report by August 31st of each year. The report is made available for public review prior to its submittal to TDEC by September 30th and is kept on file at the Stormwater Management Division office.

Proposed Activity(s)

No new activities are proposed.

Measurable Goals and Milestones

None

Chapter 4: Drainage

4.1 Activity Listing

A significant portion of Kingsport’s stormwater management program is dedicated to drainage control and floodplain management. These activities are listed in Table 16 below, and are summarized in the following pages.

Activity Name	Activity Driver(s)
Drainage Complaint Response	Level of Service
Routine and Remedial Drainage Maintenance	System Maintenance
Level of Service Reviews	Level of Service

Activity: Pre-Concept Plan Consultations

Responsible Party(s)

Stormwater Manager
Stormwater Engineers

Regulatory Reference

None

BMP Description

Kingsport provides consultations to on potential developments to review and discuss any potential floodplain management and drainage concerns. This is done to provide education on drainage regulations, and to avoid delays in the development process due to floodplain management and/or drainage issues that are unforeseen by the land developer.

Existing Condition

See BMP description.

Proposed Activity(s)

No new activities are proposed.

Measurable Goals and Milestones

Not applicable. This activity is not performed for permit compliance purposes.

Activity: Drainage Complaint Response

Responsible Party(s)

Stormwater Manager
Streets & Drainage Staff
Stormwater Engineer

Regulatory Reference

None

BMP Description

Kingsport Stormwater Management Division's staff receive, review and respond to drainage and flooding complaints from City citizens and business owners.

Existing Condition

The process below is followed when a drainage or flooding complaint is received by Kingsport staff:

1. City staff determines if the drainage or flooding issue voiced by the complainant is located on public property or in a defined easement, or is caused by the public stormwater conveyance system.
2. Drainage problems caused by new construction are often examined for potential regulatory violations. These issues are quickly referred to the appropriate staff.

3. Drainage problems that are not located on public property, are not caused by public stormwater, and are clearly a matter between a limited number of property owners are typically not addressed by the City. Stormwater Management Division staff will advise the complainant as to why the issue cannot be resolved by the City and may also provide suggestions or references to other agencies for resolution of the problem.

4. If the drainage issue is determined to be a public stormwater issue, it is forwarded to the appropriate party for resolution. Kingsport Stormwater Maintenance Division handles issues that can be resolved by routine or remedial maintenance using field crews via the Cartegraph work order system. Issues that require a higher level of planning, funding and/or resources (e.g., engineering design services and/or specialized labor or equipment) are placed on the Capital Improvement Projects list for prioritization and planning.

5. Drainage issues that do not fall under items 2, 3 or 4 above are likely flooding or erosion issues located on private property and caused by the increase in development located upstream, as opposed to being caused by the actions of a single property owner. Such issues are handled on a case by case basis.

Proposed Activity(s)

No new activities are proposed.

Measurable Goals and Milestones

Not applicable. This activity is not performed for permit compliance purposes.

Activity: Routine and Remedial Drainage Maintenance

Responsible Party(s)

Stormwater Manager
Maintenance Supervisor
Stormwater Engineer

Regulatory Reference

None

BMP Description

This activity is comprised of the ongoing maintenance and repair of the public stormwater conveyance system. The system that is managed by Kingsport is comprised of a system of streets, inlets, catch basins, gutters, pipes and ditches that convey stormwater runoff through the jurisdiction. Specific maintenance activities include, but are not limited to, street sweeping, catch basin and gutter cleaning, debris removal, erosion repair or prevention in ditches and at bridge crossings, and culvert repair or replacement.

Existing Condition

See BMP description.

Proposed Activity(s)

No new activities are proposed.

Measurable Goals and Milestones

Not applicable. This activity is not performed for permit compliance purposes.

Activity: Level of Service Reviews

Responsible Party(s)

Stormwater Manager
Technical Services Director
Maintenance Supervisor

Regulatory Reference

None

BMP Description

The City level of service policy is briefly summarized as follows: Kingsport maintains the public stormwater conveyance system located in public rights-of-way or in an appropriate easement, but will not maintain stormwater facilities that are located on private property, such as a detention basin, except when the issue is causing a significant danger to life, safety or health. The City has a Level of Service (LOS) Review to evaluate potential resolutions to stormwater problems located on private property, whether caused by the public stormwater conveyance system or by a “significant discharge” from adjacent or upstream private property⁷. The LOS Review is an informal review where the City assesses its position with regards to the issue, and determines whether any City resources can or will be used to resolve the issue.

Existing Condition

Kingsport currently performs LOS Reviews on an as needed basis (usually no less than an annual review). When appropriate, the City will refer the affected property owner(s) to the Building Official.

Proposed Activity(s)

No new activities are proposed.

Measurable Goals and Milestones

Not applicable. This activity is not performed for permit compliance purposes.

⁷ Significant discharge is loosely defined as a stormwater issue that is caused by multiple upstream properties, and/or affects multiple downstream properties, and where City regulatory authority and extent of service policies do not support a resolution. Engineering analysis, construction assistance and/or legal assistance may be needed by the affected property owners to resolve the issue.

Activity: Environmental Stewardship Program

Responsible Party(s)

Stormwater Manager

Regulatory Reference

None

BMP Description

Kingsport's Environmental Stewardship Program (ESP) is intended to provide assistance to private property owners for selected projects that will mitigate flooding, erosion or water quality issues on private properties. Potential projects are referred to the program through the Level of Service Review process. The ESP is a resource sharing program, where the City will provide design guidance and/or repair materials (such as culverts, gravel, etc.) and the repair is funded by one or more property owners. A typical ESP project includes multiple impacted or causative private properties, thus making a resolution of the problem between property owners highly unlikely.

Existing Condition

See BMP Description.

Proposed Activity(s)

No new activities are proposed.

Measurable Goals and Milestones

Not applicable. This activity is not performed for permit compliance purposes.

Chapter 5: Plan Summary

Table 17 presents a summary of the activities performed as part of the Kingsport Stormwater Management Program.

Program Category	Activity Title	Regulatory Driver	Activity Status (Deadline, if applicable)
Public Education and Outreach and Public Involvement and Participation	PIE Plan	NPDES Phase II Permit Sections 4.2.1	Completed May 19, 2012 Updated as needed
	Website Development	NPDES Phase II Permit Sections 4.2.1	On-going
	Special Programs and Events	NPDES Phase II Permit Sections 4.2.1 & 4.2.2	Performed as opportunities and resources allow
	Watershed Support	NPDES Phase II Permit Sections 4.2.1, 4.2.2	On-going
Illicit Discharge Detection and Elimination	Stormwater Mapping	NPDES Phase II Permit Section 4.2.3	Updated every permit cycle
	Enforcement Response Plan	NPDES Phase II Permit Sections 4.2.3 and 4.5	Completed
	IDDE Planning	NPDES Phase II Permit Section 4.2.3	Under development
	Outreach/Education	NPDES Phase II Permit Section 4.2.3	On-going
	Hotline/Website	NPDES Phase II Permit Section 4.2.3	On-going
	Emergency Spill Response	NPDES Phase II Permit Section 4.2.3	Under development

Construction Site Stormwater Runoff Control	Pre-construction conferences	NPDES Phase II Permit Section 4.2.4	Conferences occur prior to issuance of grading permit
	Construction Site Inspections	NPDES Phase II Permit Section 4.2.4	Inspections performed in accordance with development
	Stormwater Ordinance Amendments	NPDES Phase II Permit Section 4.2.4	Under development (Nov 19, 2012)
	Qualifying Local Program	NPDES Phase II Permit Sections 4.2.3 and 4.3	Kingsport to apply in 2014
	Enforcement Response Plan	NPDES Phase II Permit Sections 4.2.4 and 4.5	Completed Nov 19, 2012
	EPSC Note on Design Plans	NPDES Phase II Permit Section 4.2.4	On-going
	MS4 Staff Training	NPDES Phase II Permit Section 4.2.4	Updated as employee certifications and/or renewals are required
	Construction Site Planning	NPDES Phase II Permit Section 4.2.4	Actions performed in keeping with development procedures
	Construction Site Plans Review	NPDES Phase II Permit Section 4.2.4	Actions performed in keeping with development procedures
Permanent Stormwater Management in New Development & Redevelopment	Pre-construction conferences	NPDES Phase II Permit Section 4.2.5	Conferences performed in keeping with development procedures
	Permanent Stormwater Management Program	NPDES Phase II Permit Section 4.2.5	Actions performed in keeping with development procedures Program updates needed by May 19, 2015
	Plans Review Updates and ERP	NPDES Phase II Permit Section 4.2.5.4 and 4.5	Plan reviews are performed in keeping with development procedures. ERP may require further modification prior to May 19, 2015
	BMP Maintenance	NPDES Phase II Permit Section 4.2.5.5 and 4.5	Maintenance agreements are executed in keeping with land development procedures
	Owner/Operator Inspections	NPDES Phase II Permit Sections 4.2.5.7 and 4.5	On-going
Pollution Prevention/Good Housekeeping for Municipal Operations	Staff Training	NPDES Phase II Permit Section 4.2.6	On-going
	Policies and Procedures	NPDES Phase II Permit Section 4.2.6	Under development (May 19, 2015)
	SWPPPs	NPDES Phase II Permit Section 4.2.6	SWPPPs reviewed/updated annually
Other NPDES Phase II Permit Activities	Stormwater Management Plan	NPDES Phase II Permit Section 4.1	Completed May 19, 2012
	Stream Monitoring	NPDES Phase II Permit Section 5.1	On-going, monitoring is performed once every 5 years required

Program Review and Annual Report	NPDES Phase II Permit Sections 4.4 and 5.4	Annually by September 30 th of each year
Drainage Control and Floodplain Program	None	Ongoing
Pre-concept Plan Consultations	None	Consultations performed in keeping with land development procedures
Drainage complaint Response	None	Ongoing
Routine and Remedial Maintenance	None	Ongoing
Level of Service Review	None	Ongoing
Environmental Stewardship Program	None	Actions performed as opportunities arise