City of Hendersonville Stormwater Management Plan (TNS075353)

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Developed May 2021
Revised July 2024

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1. INTRODUCTION

1.1. Overview

This document presents the City of Hendersonville's Stormwater Management Program (SWMP). Preparation and maintenance of this SWMP is required by the Tennessee Department of Environment and Conservation (TDEC) as a condition of the National Pollutant Discharge Elimination System (NPDES) Permit for discharges from Small Municipal Separate Storm Sewer Systems (MS4). Based on criteria outlined in the Phase II Small MS4 Permit, the City of Hendersonville is required to obtain coverage.

The permit covers all portions and areas operated by a municipality, as indicated on the Notice of Intent (NOI). The purpose of the permit is to develop and implement stormwater management practices to reduce the number of discharged pollutants from the MS4, protect water quality, and to comply with the requirements of the federal Clean Water Act (CWA).

1.2. Regulatory Background

In 1948, the United States implemented the first major law to combat water pollution known as the Federal Water Pollution Control Act. In 1972 the Federal Water Pollution Control Act was amended to allow the Environmental Protection Agency (EPA) to implement and enforce water pollution control programs. These amendments resulted in the Clean Water Act and set water quality standards for all contaminants in surface waters. The Clean Water Act made it unlawful to discharge any pollutant from a point source into waters of the United States without a permit. The EPA implemented the National Pollutant Discharge Elimination System (NPDES) through which States could issue permits to allow for point source discharges into waters of the State. The permit allows for an acceptable amount of pollutants to be discharged from sites and it is the responsibility of the permittee to implement best management practices to protect waters of the State. These point source and nonpoint source discharges are monitored and reported to ensure that water quality and public health are not at risk. The Tennessee Water Quality Control Act of 1977 implemented the state's NPDES program.

The City of Hendersonville is currently operating under the Phase II NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (TNS000000). This permit allows the municipality to discharge stormwater runoff from municipal drainage systems into waters of the state. The City of Hendersonville is required to implement programs and best management practices that protect water quality and reduce the amount of pollutants entering our water bodies to comply with the Clean Water Act. The permit requires that the City of Hendersonville outline specific programs and best management practices to protect water quality through a SWMP. The Hendersonville SWMP is required to address stormwater quality through six minimum control measures (MCM):

1. Public Education and Outreach on Stormwater Impacts (Permit Section 4.2.1.)
2. Public Involvement/Participation (Permit Section 4.2.2.)
3. Illicit Discharge Detection and Elimination (Permit Section 4.2.3.)

4. Construction Site Stormwater Runoff and Pollution Control (Permit Section 4.2.4.)
5. Post-Construction/Permanent Stormwater Management at New Development and Redevelopment (Permit Section 4.2.5.)
6. Pollution Prevention/Good Housekeeping (Permit Section 4.2.6.)

The City's Small MS4 Permit (Permit) was issued on August 1, 2022, and became effective on September 1, 2022. The Permit was reissued and became effective on April 1, 2024. The Permit is effective for five years expiring on August 31, 2027. The City's Permit (TNS075353) was issued on November 29, 2022, and became effective on December 1, 2022. The City is required to provide an annual report to TDEC by September 30th of documented actions and progress of the SWMP for the previous year (July 1-June 30). The City is required to review the SWMP and include an overall assessment of Program effectiveness. A plan and schedule must be developed and implemented to address any deficiencies identified by the assessment. Modifications to activities or control measures in the SWMP must be included in the annual report. No activities or control measures will be eliminated from the SWMP without approval of the Division of Water Resources.

1.3. Applicability

This SWMP applies to the City Engineer and their designees as defined under Hendersonville Municipal Code Title 18, the stormwater Ordinance. It applies to all City staff performing duties under the Stormwater Management Program.

1.4. Responsibilities

1.4.1. Compliance

The City Engineer and all designated staff providing stormwater management services are responsible for becoming familiar and complying with the contents of the SWMP. The attached appendices are to serve as reference materials. Supervisors are responsible for ensuring designated staff is familiar with and adhere to procedures outlined in this SWMP.

1.4.2. Other

The Stormwater Coordinator is responsible for initial development, approval, distribution, and maintenance of the proposed SWMP.

1.5. Goals

The goals of the Stormwater Management Program are outlined below:

- To protect, maintain, and enhance the environment of the City of Hendersonville and the public health, safety, and the general welfare of the residents of the city, by controlling discharges of pollutants to the City's stormwater system and to maintain and improve the quality of the receiving waters into which the stormwater outfalls flow, including, without limitation, lakes, rivers, streams, ponds, wetlands, and groundwater of the city. This also includes regulation of non-stormwater discharges to the storm drainage system to the maximum extent practicable (MEP) as required by federal and state law and to establish long term, post-construction runoff management.

- Enable the City to comply with the National Pollution Discharge Elimination System (NPDES) permit and applicable regulations, 40 CFR 122.26 for stormwater discharges.
- To engage the community and encourage water stewardship through best management practices.

1.6. City of Hendersonville Regulated Area

The Small MS4 Permit covers all portions and areas operated by the City of Hendersonville discharging stormwater into waters of the State of Tennessee. Hendersonville is part of the Lower Cumberland-Old Hickory Lake subbasin, and the majority of Hendersonville lies in the Drakes Creek watershed. Currently, the City has approximately 285 miles of roadway and approximately 4400 catch basins with 715 identified MS4 outfalls. The City of Hendersonville is bordered by Davidson County to the west, the City of Gallatin to the east, Sumner County to the north, and Old Hickory Lake to the south.

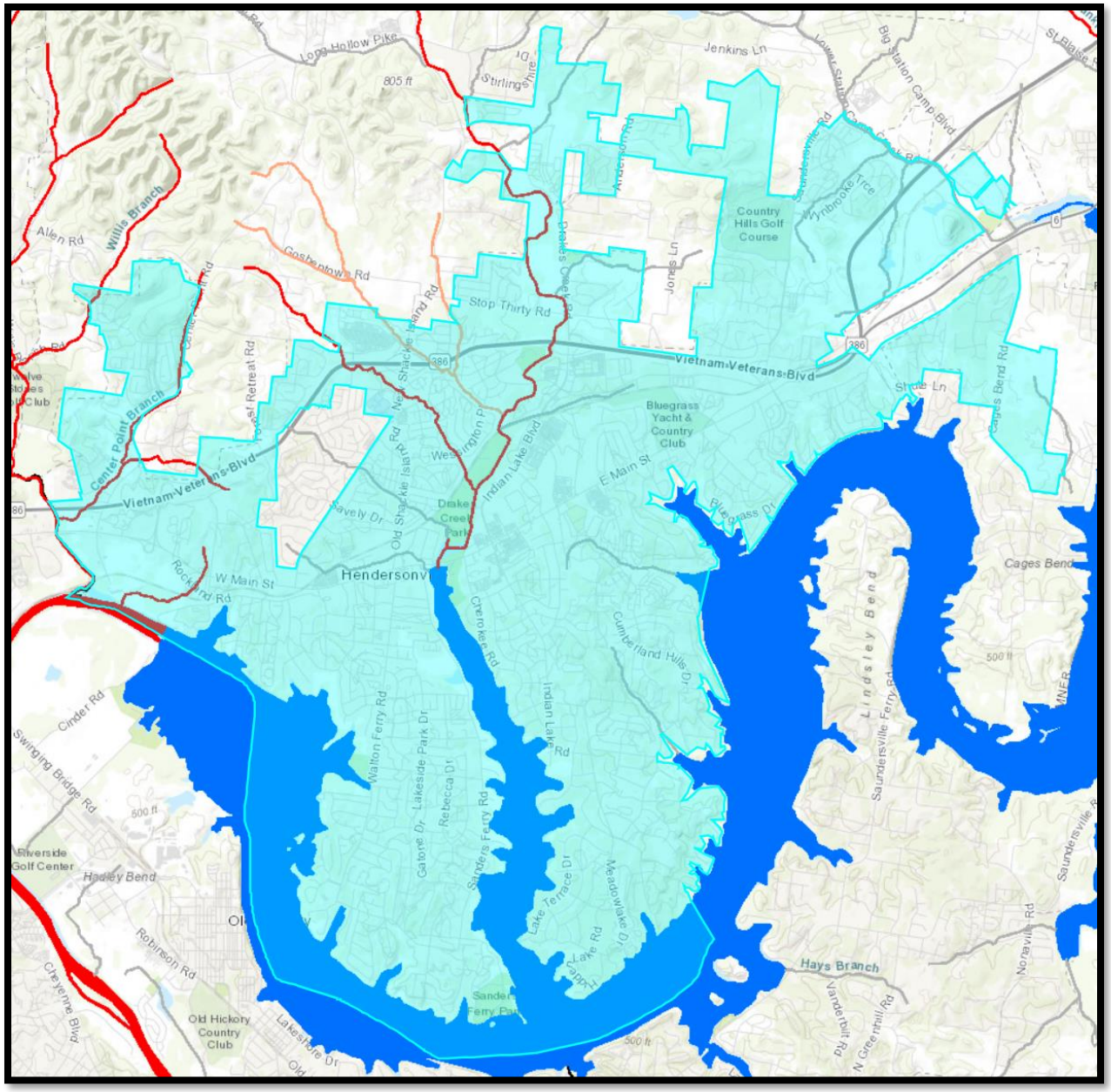

Figure 1. Hendersonville MS4 Regulated Area (Source: TDEC Division of Water Resources Map Viewer, April 2024)

1.7. Special Conditions

1.7.1. Total Maximum Daily Load (TMDL)

A TMDL was established for Mansker Creek for *E. coli* in 2008. A segment of Mansker Creek lies within the City's jurisdiction. The City provides analytical and non-analytical data to TDEC, as required by the MS4 Permit. The City's existing BMPs satisfy the requirements set forth by the TMDL.

1.7.2. Exceptional Tennessee Waters (ETW) and Rare Species

The City of Hendersonville is home to the State Endangered Streamside Salamander (*Ambystoma barbouri*). Due to the presence of the Streamside Salamander many streams in Hendersonville are designated as Exceptional Tennessee Waters. The City makes every effort to ensure the protection of the Streamside Salamander by coordinating survey efforts between staff, developers, and State agencies to identify existing and potential Streamside Salamander populations. The list of current ETWs within the City of Hendersonville is in APPENDIX A.

Currently, the City has a Data Use Agreement (DUA) with the TDEC Division of Natural Areas (DNA) to provide data on Tennessee's Element Occurrence Records of Rare Species in Sumner County (APPENDIX A). This data is provided in GIS format with a map showing the distribution of rare species. Stormwater review staff use the data provided by DNA to ensure compliance with the Stormwater Ordinance minimum design standards for locations identified with rare species.

1.7.3. Waters with Unavailable Parameters

The City has seven (7) waterbodies identified as Waters with Unavailable Parameters. Table 1 below identifies the waterbodies, cause(s), and source name(s) (Source: Tennessee's 2024 List of Impaired or Threatened Waters).

Waterbody Name	Waterbody I.D. #	Cause(s)	Source Name(s)
Center Point Branch	TN05130202220_0500	Nutrient Eutrophication Biological Indicators	Municipal (Urbanized High Density Area)
Drakes Creek	TN05130201047_1000	Sedimentation/Siltation	Municipal (Urbanized High Density Area)
Madison Creek	TN05130202220_0400	Sedimentation/Siltation	Municipal (Urbanized High Density Area)
		Alteration in stream-side or littoral vegetative covers	
Mansker Creek	TN05130202220_1000	Sedimentation/Siltation	Municipal (Urbanized High Density Area)
		Escherichia coli	
Unnamed Trib. to Cheatham Reservoir	TN05130202001T_0600	Chlorine	Municipal Point Source Discharges
		Alteration in stream-side or littoral vegetative covers	Municipal (Urbanized High Density Area)
		Sludge	Municipal (Urbanized High Density Area) & Municipal Point Source Discharges
Unnamed Trib. to Drakes Creek	TN05130201047_0100	Alteration in stream-side or littoral vegetative covers	Municipal (Urbanized High Density Area)
Unnamed Trib. to Drakes Creek	TN05130201047_0200	Alteration in stream-side or littoral vegetative covers	Municipal (Urbanized High Density Area)

Table 1. City of Hendersonville Waters with Unavailable Parameters 2024 (Source: TDEC Division of Water Resources Map Viewer, April 2024)

1.8. SWMP Implementation Responsibilities

The City of Hendersonville Public Works Department is primarily responsible for coordinating the overall administration of efforts to comply with the MS4 Permit. The Stormwater Management Program is administered by the Public Works Director through the City Engineer, City Design Engineer, the Stormwater Coordinator, and Stormwater Construction Inspector.

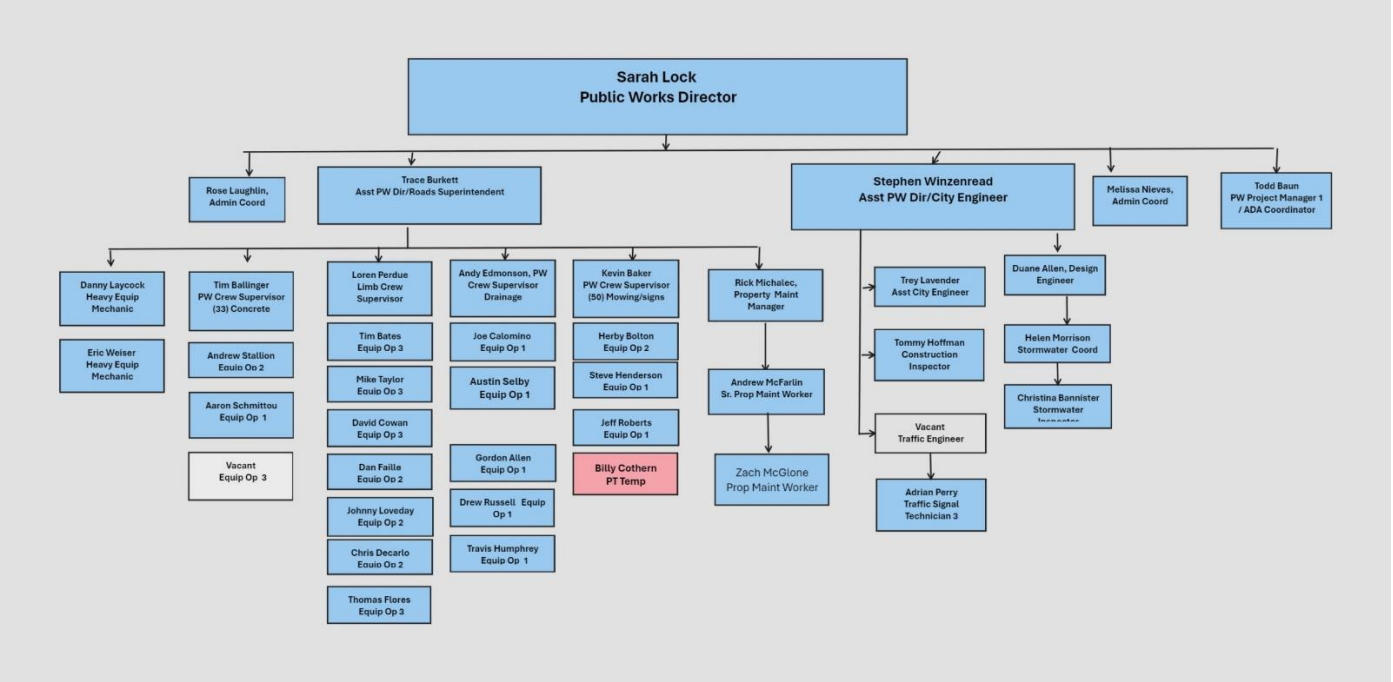

Figure 2. Public Works Organizational Chart (April 2024)

2. STORMWATER MANAGEMENT PROGRAM ADMINISTRATION

2.1. Permit Requirements

The City of Hendersonville must continue to develop, implement, and enforce a Stormwater Management Program to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act (Permit Section 4.1.). The Stormwater Management Program shall minimize the discharge of pollutants to the maximum extent practicable (MEP) and shall not cause or contribute to violations of State water quality criteria of the receiving streams in stormwater runoff from the MS4 system. The Stormwater Management Program will include engineering methods, system design, control techniques and/or management practices appropriate for the control of pollutants of concern. All elements of the program will be documented in this SWMP, reviewed periodically for effectiveness, and provided in the Annual Report.

2.1.1. Stormwater Management Program Elements

The Stormwater Management Program must include the following information documented in a written plan for each of the program elements:

- A detailed written document(s) that describes in detail how the permittee intends to comply with the permit's requirements;
- A detailed narrative description of the BMPs, programs and processes that the permittee or other entity will implement for each of the stormwater control minimum measures;
- The measurable goals for each of the BMPs including, as appropriate, the months and years in which the permittee will undertake required actions, including interim milestones and the frequency of the action;
- Identify by name, job title, or department those with the responsibility for implementing or coordinating the Program elements in the Stormwater Management Program; and
- Specific elements detailed in each subpart of the MS4 Permit

The Stormwater Management Program must include mechanisms for documenting and tracking compliance to the MS4 permit.

2.2. Compliance Activities

The City has developed and implemented several compliance activities to meet the minimum requirements set forth by the Permit. Compliance activities for the next permit cycle will be identified in the sections below.

3. PUBLIC EDUCATION AND OUTREACH ON STORMWATER IMPACTS

3.1. Permit Requirements

Permittees shall develop and implement an education and outreach program that includes public education and outreach on stormwater impacts as a component of the stormwater management program. The objective of this program is to reduce or eliminate behaviors and practices that cause or contribute to the impacts of stormwater discharges on water bodies and the steps that the audiences can take to reduce pollutants in stormwater runoff to the maximum extent practicable. This program will be designed to reach three major audiences, (1) the public (4.2.1.1), (2) engineering and development community (4.2.1.2), and (3) employees (4.2.1.3).

The Public Information and Education (PIE) plan shall include:

a. Specific public information/education activities that are designed to meet the management measure;
b. Identification of job categories and applicable management measures for employee education (see subpart 4.2.1.3);
c. Schedule/calendar of events for each year; and
d. Methodology to evaluate components to assess overall effectiveness and the need for improvement.

3.1.1. Public

Management Measure:

Conduct six (6) activities to address the following issues:

a. General awareness of the impacts on water quality;
b. Awareness of the importance of maintenance activities for operators of permanent Best Management Practices (BMPs)/Stormwater Control Measures (SCMs);
c. Awareness of the proper storage, use, and disposal of pesticides, herbicides, fertilizers oil and other automotive-related fluids; and
d. Awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.

3.1.2. Engineering and Development Community

Management Measure:

Conduct two (2) activities to address the following issues:

a. Awareness of the stormwater ordinances, regulations, and guidance materials related to long-term water quality impacts; and
b. Awareness of stormwater ordinances, regulations, and guidance materials related to construction phase water quality impacts.

3.1.3. Employees

The target audience for municipal, county, educational (college or university), military, and other public employees is dependent on job function and duty location. New employees must be trained within six (6) months of their employment or movement into an applicable job category.

Management Measure:

Conduct one (1) activity each permit cycle to address the following issues:

a. Awareness of water quality impacts from daily operations;
b. Pollution Prevention and Good Housekeeping (see subpart 4.2.6); and
c. The awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer diversions or seepages, spills, etc.(see subpart 4.2.3e)

3.2. Summary of Compliance Activities

The City has partnered with the Cumberland River Compact for the 2022-2027 MS4 Permit cycle. The Cumberland River Compact will be providing education and outreach to the public and engineering and development communities. The Cumberland River Compact has developed an education and outreach plan to satisfy the requirements of MCM1. The City's full plan to satisfy the Public Education and Outreach is documented in the PIE plan (APPENDIX B).

4. PUBLIC INVOLVEMENT/PARTICIPATION

4.1. Permit Requirements

Permittees must develop and implement a program for public involvement and participation as a component of the stormwater management program. The objective is to promote, publicize, and facilitate citizen's participation in the development and implementation of the stormwater management program to reduce the discharge of pollutants to the maximum extent practicable. This program will be designed to reach two major audiences: (1) the general public (4.2.2.1), and the (2) commercial and industrial community (4.2.2.2). This program must include the following at a minimum:

a. Specific public involvement/participation activities that are designed to meet the management measures;
b. Schedule/calendar of events for each year;
c. Methodology to evaluate components to assess overall effectiveness and the need for improvement;
d. A mechanism for citizen reporting of illegal spillage, dumping, or otherwise illicit disposal of materials into the MS4 system;
e. Publicity plan for public involvement and participation opportunities by methods designed to reach the intended audience;
f. Permittees shall create opportunities for the public to participate in the decision-making processes for developing, implementing, and updating the Stormwater Management Program;
g. Mechanisms, procedures, and processes for public access to information on new development and redevelopment projects and receiving and considering comments from the public on those new development and redevelopment projects (See subpart 4.2.4);

h. Develop and implement a public notice process in accordance with subpart 4.4.1; and
i. Permittees shall track and maintain records of public involvement and participation opportunities.

4.1.1. General Public

Management Measures

Conduct six (6) activities to address the following issues:

a. Pollution prevention;
b. Impacts on water quality or local stormwater management issues;
c. Storage, use, and disposal of household hazardous waste, automotive related fluids, pesticides, herbicides, and fertilizers use; and
d. Identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.

4.1.2. Commercial and Industrial Community

Management Measures

Conduct two (2) activities to address the following issues:

a. Pollution prevention; and
b. Impacts on water quality or local stormwater management issues.

4.2. Summary of Compliance Activities

The City's PIE plan provides a summary of specific activities designed to meet items 4.1.a. and 4.1.b. above. The City has a dedicated webpage to educate the public on illicit discharge/illicit connection detection and elimination. Residents can report illegal spillage, dumping, or otherwise illicit disposal of materials into the MS4 system, online using the Illicit Discharge/Illicit Connection Report Form or via the Illicit Discharge hotline at 615-822-1016.

The Stormwater Coordinator works closely with the Public Information Officer (PIO) to promote stormwater activities. The PIO will use City resources to promote and advertise stormwater activities. The Stormwater Publicity Plan can be found in APPENDIX C.

To create opportunities for the public to participate in the decision-making process the City will place the Stormwater Management Program documents on Public Notice. The City will receive and respond to comments and questions and work with the public to develop and implement the most effective Stormwater Management Program. In addition to the Stormwater Management Program, the City will provide the public with access to all active construction sites with guidance on where to send comments and questions related to active construction sites. Stormwater staff will respond to each question or comment accordingly.

5. ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)

5.1. Permit Requirements

Section 4.2.3 of the Permit requires the City to develop, implement and enforce a program to detect and eliminate illicit discharges into the storm sewer system. The Permit requires an ordinance prohibiting non-stormwater discharges into the MS4. An appropriate Enforcement Response Plan must be in place to address non-compliance. A plan must be developed and implemented to detect, identify, and eliminate non-stormwater discharges throughout the MS4, including the identification of priority areas. Illicit discharge complaints will be documented to include location, times, parameters and sampling results, discharge source, and other pertinent information. The general public, businesses and municipal employees must be educated on the negative impact illicit discharges can have on water quality.

5.1.1. Storm Sewer System Map Requirements

The Permit requires the permittee to develop, update and maintain a storm sewer system map displaying the location of system outfalls where the MS4 discharges into waters of the state. At a minimum the map must include:

a. MS4 Outfalls;
b. Inputs into the storm sewer collection system, such as the inlets, catch basins, drop structures, flow(s) from adjacent MS4s or other defined contributing points to the storm sewershed of that outfall;
c. Direction of stormwater flow through the system; and
d. Receiving streams.

5.2. Summary of Compliance Activities

5.2.1. Illicit Discharge Ordinance

The City established an Illicit Discharge Ordinance (Hendersonville Municipal Code 18-208) to prohibit all non-stormwater discharges except those listed in Section 1.3.3.2. of the MS4 Permit.

5.2.2. Public Education

The City partnered with the Cumberland River Compact (CRC) for the 2022-2027 MS4 Permit cycle. The CRC will be providing education and outreach to the public, engineering, and development communities. The CRC has developed an education and outreach plan to satisfy the requirements of MCM3. In addition to the CRC's activities, the City maintains a stormwater webpage to provide information, educational videos, and pamphlets on the dangers of illegal dumping. The webpage also provides a way for residents to easily report incidents of illicit discharges/illicit connections.

5.2.3. Illicit Discharge Reporting and Investigations

The City implemented an ordinance prohibiting non-stormwater discharges into the MS4 to comply with previous Permit requirements. Residents can report illegal discharges to the MS4 by calling the Illicit Discharge Hotline (615-822-1016) or complete an Illicit Discharge/Illicit Connection report on the City's website (www.hvilletn.org). Any illicit discharge complaint

requires an immediate response by Stormwater Staff. The City conducts and documents routine visual inspections of 18 representative outfalls throughout the MS4. The City investigates and tracks illicit discharges in accordance with the Illicit Discharge Detection and Elimination Plan found in APPENDIX D.

5.2.4. Collection of Storm System Mapping Data

The City requires applicable new and redevelopment projects to provide Stormwater As-builts and Asset Management Workbooks to continue storm sewer system mapping. The City is working with Civil & Environmental Consultants, Inc. (CEC) to map the entire storm sewer system through the State Water Infrastructure Grant (SWIG) that is funded by American Rescue Plan (ARP) State dollars. Mapping activities will take place over a two to three (2-3) year period throughout the City. This mapping is intended to be a foundation which the City will continually update as new development and redevelopments submit mapping data. The City's GIS map will be updated at minimum every six (6) months with new development or redevelopment data.

5.3. IDDE Management Measures, Measurable Goals, and Annual Report Requirements

Management Measure	Measurable Goals	Annual Report Requirement
Storm sewer map that contains all required data elements found in subpart 4.2.3.1	Continue to update mapping as new elements are identified.	Provide location for Spatial Rest Service Outfall Map Layer Or Submit the geodatabase/shapefile Or submit a copy of the system map
Identify and investigate the categories of non-stormwater discharges or flows (as indicated in subpart 4.2.3) only if the permittee identifies them as a significant contributor of pollutants to the MS4.	Maintain an inventory of non-stormwater discharges or flows (as indicated in subpart 4.2.3) that the permittee identified as a significant contributor of pollutants to the MS4.	- # of non-stormwater discharges or flows identified as a significant contributor of pollutants to the MS4 - Total # of non-stormwater discharges or flows investigated
	Investigate as an illicit discharge all non-stormwater discharges or flows (as indicated in subpart 4.2.3) that the permittee identified as a significant contributor of pollutants to the MS4	- Yes/No Were all non-stormwater discharges or flows identified as a significant contributor of pollutants to the MS4 investigated?
Illicit discharge reporting and investigations	- Track all potential illicit discharges reported, categorized by reporting source	- The number of potential illicit discharges reported by the public
		- The number of potential illicit discharges reported by internal personnel
	- Initiate 100% of all potential Illicit discharges investigations within 7 days of the receipt of the complaint.	- Total number of potential Illicit discharges reported (from any source) that are under investigation at the time of the annual report
		-Yes/No Were all potential illicit discharges investigated within 7 days of receipt?
	- 100% of all Initial enforcement actions shall be taken within seven (7) calendar days of the investigation on confirmed illicit discharges	-# of identified illicit discharges
		- Yes/No Were all initial enforcement actions on confirmed illicit discharges taken within seven (7) calendar days of the investigation?
	- 100% of all corrective action plans are reviewed in accordance with procedures	- # of corrective actions plans received for confirmed illicit discharges.
		- Yes/No Were all corrective actions plans reviewed in accordance with established procedures?
As indicated in the PIE plan, the permittee must educate public employees, businesses, and the general public concerning the hazards and damage to water quality associated with illegal dumping and connections to the storm sewer, and the improper disposal of waste.	The Measurable Goals and Annual Reporting requirements for this management measures are located in subparts 4.2.1.1 & 4.2.1.3	
As indicated in the Public Involvement/Participate MCM (see subpart 4.2.2), the permittee must encourage and promote citizen reporting of illegal spillage, dumping, or otherwise disposal of materials into the MS4 storm sewer system by developing and implementing a public reporting system e.g. hotline.	The Measurable Goals and Annual Reporting requirements for this management measures are located in subpart 4.2.2	

6. CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

6.1. Permit Requirements

Section 4.2.4 of the Permit requires that the City continue to develop, implement, and enforce a construction site stormwater runoff pollutant control program. The City will focus on sites operating meeting the criteria to obtain a Construction General Permit. The City must have an ordinance requiring the use of erosion prevention and sediment control measures at construction sites, as well as enforcement of the ordinance. The City ordinance must be consistent with the most current Construction General Permit (CGP, TNR100000). The City inspectors must obtain a Level 1 certification in Tennessee Fundamentals of Erosion Prevention and Sediment Control course. All City construction site plan reviewers must receive a Level 2 certification from the Tennessee Erosion Prevention and Sediment Control Design Course. The City must establish protocol for priority construction activities. The City will have a pre-construction meeting with site operators for priority sites, inspect priority sites at least once a month, and document all procedures, meetings, and inspections.

6.2. Summary of Compliance Activities

6.2.1. Land Disturbance Ordinance

The City stormwater ordinance, Hendersonville Municipal Code Title 18, requires that site operators implement erosion prevention and sediment controls (EPSC), and other construction waste controls for land disturbance activities. The ordinance requires that the controls listed above be used on sites meeting the criteria to obtain a Construction General Permit. The ordinance adopted the Tennessee Erosion & Sediment Control Handbook as a reference document for proper design, installation, and maintenance of EPSC measures. The ordinance requires all applicable sites to obtain a Land Disturbance Permit. Revisions to the Stormwater Ordinance were completed in September 2024. The Table 2 below identifies what sites are required to obtain a Land Disturbance Permit.

New Development and Redevelopment Requirements				
	Land Disturbance Permit Required	EPSC Plans Required	Water Quality Riparian Buffer Required	Water Quality Design Required
Any land use* (excluding commercial/ industrial), less than one acre of disturbance, not part of common plan of development or sale.		X	X	
Commercial / industrial, less than one acre of disturbance, not part of common plan of development or sale.	X	X	X	
Any land use, one acre or greater of disturbance or part of a larger common plan of development or sale.	X	X	X	X

Table 2. City of Hendersonville New Development and Redevelopment Requirements

6.2.2. Land Disturbance Permit Reviews

Land Disturbance Permit reviews occur internally or through a third-party consultant on the Planning Commission review cycle (every 2 weeks). Plans and other required documents are submitted to the Planning Department for review and uploaded to the Energov application. The City conducts a thorough review to verify that the site is designed in accordance with the Stormwater Ordinance. Reviews are completed using Bluebeam Studio Revu and comments are provided to the site designers to review and address accordingly. The review continues until all stormwater comments are addressed. Once the review is complete the plans are approved by the City Engineer. The Land Disturbance Permit application, checklist, flowchart, and other supporting documents can be found on the City's Public Works Permits webpage and in APPENDIX E.

6.2.3. Land Disturbance Inspections

The City's Stormwater Inspector manages all active land disturbance permits and inspections within the MS4. All applicable land disturbance permits are tracked and documented using the City's Energov application. All priority construction sites must have a pre-construction meeting. The Stormwater Inspector visits all active construction sites at least once a month. The Stormwater Inspector documents inspections using the Land Disturbance Permit inspection form within the Energov iG Inspect application. Site deficiencies are documented, photographed, and emailed to the permittee, project manager, and other applicable site contacts, for corrective action.

The City tracks stormwater construction complaints through an excel spreadsheet.

6.2.4. Land Disturbance Enforcement

The Enforcement Response Plan (ERP) in APPENDIX I identifies the City's procedures for enforcement for violations of the Stormwater Ordinance. The ERP allows for timely resolution of non-compliance and provides for progressive enforcement actions for continued non-compliance, including, but not limited to Stop Work Orders and Civil Penalties.

6.2.5. Land Disturbance Surety

All construction sites within the City shall provide a Land Disturbance Surety in the form of a cashier's check or a Standby Letter of Credit. The Land Disturbance Surety is calculated by rounding up the total disturbed acreage and multiplying the value by $10,000. The Land Disturbance Surety must be in place prior to scheduling a Land Disturbance Permit Pre-Construction Meeting. The Land Disturbance Surety shall be released in full with the submittal and approval of an as-built plans as specified in Hendersonville Municipal Code 18-203.8. The Land Disturbance Surety amount will be evaluated annually and adjusted as needed using current Consumer Price Index data.

6.3 Construction Site Runoff Management Measures, Measurable Goals, and Annual Report Requirements

Management Measure	Measurable Goals	Annual Report Requirement
Regulatory mechanism are required to be consistent with the currently effective Tennessee Construction General Permit (CGP, TNR100000). Note: This reporting element won't be seen in the annual report until after the subsequent CGP has been issued.	NPDES general permit for construction stormwater runoff with an effective after September 30, 2026, modifications to ordinances or other regulatory mechanisms for construction site runoff control must be effective and implemented within 18 months of the effective date of a Tennessee Construction General Permit (CGP, TNR100000);	Identify if the regulatory mechanisms for construction site runoff control have been updated to be consistent with CGP and are effective & implemented within 18 months of the effective date of the subsequent CGP
An inventory of actively permitted public and private construction sites that result in a total land disturbance as defined in subpart4.2.4.d	Maintain an up-to-date inventory with all information identified subpart 4.2.4.d	-total number of active construction activities
		Total number of active non-priority construction activities with incomplete inventory information
Construction site plans review and approval	Establish policies and/or procedures for review and approval (or denial) of all plans and review 100% of all new development and redevelopment projects accordingly	- Total number of new development and redevelopment projects reviewed in accordance with established policies and procedures
		- Yes/No Were all new development and redevelopment projects reviewed in accordance with the established policy and procedure?
Mechanisms or plans for public access to information on new development and redevelopment projects and receiving and considering comments from the public on those new development and redevelopment projects.	The Measurable Goals and Annual Reporting requirements for this management measures are implemented Public Involvement MCM and reported under subpart 4.2.2	
Procedures for permittee inspectors to evaluate and document construction site compliance.	Inspect a minimum of 10% of active non-priority construction sites in accordance with Stormwater Management Program	- Total number of active non-priority construction activities - Yes/No Were all non-priority active construction activities inspections conducted accordance with Stormwater Management Program
Priority construction activities;	-Conduct Pre-construction meetings at 100% of Priority Construction Activities	- Total Number of Priority Construction Activities
		- Yes/No Did all Priority Construction Activities that have Pre-Construction meetings?
	- Inspect 100% of all of Priority Construction Activities at least once per calendar month	- Yes/No Were all priority Construction Activities inspected at least once per calendar month?

7. PERMANENT STORMWATER MANAGEMENT

7.1. Permit Requirements

Section 4.2.5. of the Permit requires the City to implement a permanent stormwater management program focused on removing pollutants from stormwater discharges. The removal of pollutants should be accomplished through management practices, control techniques, and system design and engineering methods to the maximum extent practicable (MEP). The Permit requirement applies to all new and redevelopment projects having disturbance greater than or equal to one acre, or less than one acre if part of a larger common plan of development or sale and discharging into the MS4. An ordinance or regulatory mechanism must be in place to address permanent stormwater control measures (SCMs) standards listed in the Permit and an enforcement process.

The Permit requires that the City shall develop a set of requirements to establish, protect and maintain the permanent water quality riparian buffers in areas of new development that contain streams. The City must have a review process to review proposed activities within buffers and ensure that buffer function will be retained.

The Permit requires a plan review, site inspection, and a means to ensure permanent SCMs are maintained. A legally binding agreement assigning SCM maintenance responsibility to the owner/operator, a third party, or the permittee, is required. The City is required to maintain an inventory of all private and public new development SCMs including a description of SCMs, responsible party, inspection schedules, maintenance procedures and records. The inventory must be available to the Division of Water Resources upon request.

7.2. Summary of Compliance Activities

7.2.1. Permanent Stormwater Management

The City of Hendersonville requires all applicable sites to provide stormwater quantity and quality treatment. For stormwater quantity, post development outflow from the site must be less than or equal to predevelopment conditions as established by the Stormwater Ordinance. New development and redevelopment projects must be designed to reduce pollutants to the maximum extent practicable. For design purposes, total suspended solids (TSS) will be used as the indicator for the reduction of pollutants. Water quality treatment volumes are determined based on the treatment type specified in Table 3 below. The City's Permanent Stormwater Management Plan and Procedures are in APPENDIX F.

Water Quality Treatment Volume and the Corresponding SCM Treatment Type for the 1-year, 24-hour design storm		
SCM Treatment Type	WQTV	Notes
Infiltration, evaporation, transpiration, and/or reuse	Runoff generated from the first 1 inch of the design storm	Examples include, but are not limited to, bioretention, stormwater wetlands, and infiltration systems.
Biologically active filtration, with an underdrain	Runoff generation from the first 1.25 inches of the design storm	To achieve biologically active filtration, SCMs must provide minimum of 12 inches of internal water storage.
Sand or gravel filtration, settling ponds, extended detention ponds, and wet ponds	Runoff generated from the first 2.5 inches of the design storm or the design or the first 75% of the design storm, whichever is less	Examples include, but are not limited to, sand filters, permeable pavers, and underground gravel detention systems. Ponds must provide forebays comprising a minimum of 10% of the total design volume. Existing regional ponds are not subject to the forebay requirement.
Hydrodynamic separation, baffle box settling, other flow-through manufactured treatment devices (MTDs), and treatment trains using MTDs	Maximum runoff generated from the entire design storm	Flow-through MTDs must provide an overall treatment efficiency of at least 80% TSS reduction.

Table 3. Water Quality Treatment Volume and the Corresponding SCM Treatment Type for the 1-year, 24-hour design storm

7.2.2. Permanent Stormwater Management Review

Permanent stormwater management reviews occur internally or through a third-party consultant on the Planning Commission review cycle (every 2 weeks). Plans and other required documents are submitted to the Planning Department for review and uploaded to the Energov application. The City conducts a thorough review to verify that the site is designed in accordance with the Stormwater Ordinance. Reviews are completed using Bluebeam Studio review and comments are provided to the site designers to review and address accordingly. The review continues until all stormwater comments are addressed. Once the review is complete the plans are approved by the City Engineer. The Permanent Stormwater Management checklists, guidance and other

supporting documents can be found on the City's Public Works Post-Construction / Permanent Stormwater Management | Hendersonville, TN (hvilletn.org) webpage and in APPENDIX F.

7.2.3. Water Quality Riparian Buffer

Hendersonville Municipal Code 18-206 establishes the requirements for the establishment, protection, and maintenance of a water quality riparian buffer along all water resources for developments or redevelopments. There shall be a permanent water quality riparian buffer requirement of fifteen (15) feet for sites that do not require a Construction General Permit. Table 4 below identifies the permanent and temporary water quality riparian buffer requirements for sites requiring a Construction General Permit. The City does not permit any variances for the water quality riparian buffer, however, there are permissible land uses within the buffer subject to approval by the City Engineer.

Temporary and Permanent Water Quality Riparian Buffer Requirements for Sites that Require CGP Coverage			
	Average Buffer Width (feet)	Minimum Buffer Width (feet)	Notes*
Waters with available parameters for siltation or habitat alteration or unassessed waters	30	15	The criteria for the width of the buffer zone can be established on average width basis at a project, as long as the minimum width of buffer zone is more than the required location. If the new development or redevelopment site encompasses both sides of the stream, buffer averaging can be applied to both sides, but must be applied independently.
Exceptional Tennessee Waters, waters with unavailable parameters for siltation or habitat alteration, or waters with threatened and endangered aquatic animal species	60	30	

Table 4. City of Hendersonville Temporary and Permanent Water Quality Riparian Buffer Requirements for Sites that Require CGP Coverage.

7.3. Permanent Stormwater Management Measures, Measurable Goals, and Annual Report Requirement

Management Measure	Measurable Goals	Annual Report Requirements
Stormwater Mitigation and Public Stormwater Fund as outlined in subpart 4.2.5.3 (note this management measure is only required if the permittee has developed such a fund)	100% of all mitigation projects must be completed	- Brief status description status description of Stormwater Mitigation and Public Stormwater Fund
		- # of uncompleted mitigation projects at the end of the previous reporting period
		- # of mitigation projects completed during the reporting period
		-# of uncompleted Projects at the end of the current reporting period
		- # of uncompleted projects at the end of the reporting period that began more than 24 months prior to the end of the reporting period
	100% of all mitigation projects in the Stormwater Mitigation and Public Stormwater Fund are completely funded	- $ in Public Stormwater Fund at the end of the reporting period
		- # of uncompleted projects due to lack of funds
Develop and implement a set of requirements to establish, protect, and maintain permanent water quality riparian buffers	-100% of projects must have the buffer as required by subpart 4.2.5.4	-Yes/No Did all of the projects approved meet the buffer requirements of subpart 4.2.5.4?
	If applicable: -100% of projects with permanent alternative buffer widths must be in accordance with the procedures and criteria approved by the Division	-# of project approved with alternative width Buffer
		- Date Alternative buffer width procedures and criteria most recently approved by Division
Complete Code and Ordinance Review in accordance with subpart 4.2.5.5a (New Permittees Only)	EPA Water Quality Scorecard must be completed and submitted within one year of the effective date on the notice of coverage	A completed copy of the Scorecard shall be submitted with the subsequent annual report. (Note: this is a one-time requirement)
Develop, implement, and enforce policies and procedures for the submittal and review of plans as required by 4.2.5.60	Establish policies and/or procedures for review and approval (or denial) of all plans and review all new development and redevelopment projects accordingly	- Total number of all new development and redevelopment projects reviewed
		- Number of new development and redevelopment projects reviewed in accordance with the established policy and procedure
Develop, implement, and enforce policies and procedures for SCM Installation verification as required by subpart 4.2.5.60	Verify that 100% of SCMs are installed per design specifications in accordance with approved plan within 90 days of installation	- Total number of sites verified
		- Yes/No Were all SCMs are installed per design specifications in accordance with approved plan within 90 days of installation
Establish and maintain adequate legal authority assigning SCM maintenance responsibility and personnel access to the SCM and provide for enforcement action as required by subpart 4.2.5.70	The permittee must have the legal authority to access SCMs and assigned maintenance responsibility for 100% of all SCMs	Yes/No Does the permittee have adequate legal authority as required by 4.2.5.7 for all SCMs installed?
	The permittee must enforce as directed in the appropriate legal authority, for 100% of all SCMs that have not been properly maintained	# of SCMs that have not been properly operated or maintained
		Yes/No Have enforcement actions been taken in accordance with the appropriate legal authority or ERP?
Implement and maintain a system to inventory and track the status of all public and private SCMs as required by subpart 4.2.5.8	The system must be made available to the Division or members of the public upon request.	Total number of requests for inventory
	100% of all SCMs must be included in the inventory tracking system with complete information	- Yes/No Are all SCMs in the inventory tracking system?
		- Yes/No Do all SCMs in the inventory tracking system have complete information? Beginning in the year 3 (2025) annual report submit the SCM inventory tracking system information as a geodatabase or as a file type that is generally accessible e.g. excel, csv, xml, or division supplied EDD, etc. note: - Files may be submitted in a manner approved by the division.

8. POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR MUNICIPAL FACILITIES

8.1. Permit Requirements

Section 4.2.6 of the Permit requires that the City develop and implement an operation and maintenance program to prevent or reduce pollutant runoff from municipal operations. An employee training program must be developed for employees that handle, generate and/or store potential pollutants. The training program will train municipal employees to identify and prevent stormwater pollution from municipal facilities. All training is documented and included in the annual report. All Operation & Maintenance (O&M) Plans are included in the SWMP.

8.2. Summary of Compliance Activities

The City maintains a Facility O&M Plan for each applicable City Facility. The facility supervisor performs monthly inspections and documents applicable maintenance activities within the O&M Plan. Stormwater staff perform annual facility assessments to ensure compliance with O&M Plan and determine stormwater training needs. All applicable employees are trained once per permit cycle or within six (6) months of hire in an applicable position. Municipal Facilities O& M Plans can be found in APPENDIX G.

8.3. Pollution Prevention and Good Housekeeping for Municipal Facilities Management Measures, Measurable Goals, and Annual Report Requirement

Management Measure	Measurable Goals	Annual Report Requirement
Employee training program for employees responsible for Municipal operations at facilities	The Measurable Goals and Annual Reporting requirements for this management measures are implemented Public Education MCM and reported under subpart 4.2.1	
Develop and implement an O&M Facility Plan	All applicable Municipal operations must have an O&M Facility Plan	- # Municipal Operations Facilities
		Yes/No Do all Municipal Operations Facilities have a O&M Facility Plan?
Facility Site Inspections	Conduct a facility site inspection in accordance with the Stormwater Management Program at all municipal operation facilities at least once every 12 months	- # Municipal Operations Facilities NOT inspected in accordance with the Stormwater Management Program in the previous 12 months

9. STORMWATER MANAGEMENT PROGRAM MODIFICATION

9.1. Permit Requirements

The City may modify the Stormwater Management Program during the life of the permit in accordance with the following:

9.1.1. Minor Modifications

Minor Modification are required to be reported in accordance with 4.2.2. These changes do not require a formal public notice.

a. Modifications that add, but neither subtract nor replace, components, controls, or requirements to the Stormwater Management Program may be made by the permittee at any time. A description of the modification shall be included in the subsequent Annual Report.
b. Correct typographical errors
c. Increase in Monitoring
d. Remove an outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits.
e. Modifications that replace an ineffective or infeasible BMP, or SCM which is specifically identified in the Stormwater Management Program along with an alternate BMP or SCM, may be made by the permittee at any time. A description of the replacement BMP or SCM shall be included in the subsequent Annual Report along with the following information:

    An analysis of why the former BMP was ineffective or infeasible; Expectations on the effectiveness of the replacement BMP or SCM; and

    An analysis, if applicable, of why the replacement BMP or SCM will ensure the optimization of equipment use.
f. Addition of Facilities covered under this permit.

9.1.2. Major Modifications

Major Modifications are required to be reported in accordance with subpart 4.2.2 of the MS4 Permit. These are changes that do require formal public notice. The Stormwater Management Program Plan shall include a description of the formal public notice process for the MS4 program.

The documentation made available for comment in the formal public notice process shall include the written plans required by Part 4 of this permit. Individual facility O&M Plans, work instructions, written procedures, or other such documentation are not required to be available for public comment during the formal public notice process described in the Stormwater Management Program Plan.

The formal public notice process described in this subpart is not applicable to the adoption process of any legal authorities. TDEC-DWR shall be included in the distribution list at water.permits@tn.gov. Comments or objections made by the Division on the modifications must be addressed before the changes can be implemented.

a. Modifications that subtract BMPs, SCMs, components, controls, or requirements of the Stormwater Management Program may not be made by the permittee unless it can be clearly demonstrated that with the elimination of this component, the Stormwater Management Program will continue to achieve a reduction in pollutants to the MEP and shall not cause or contribute to violations of State water quality standards in the receiving stream. In the case where this type of modification is appropriate, the permittee may make the required modification and shall include in the subsequent Annual Report a description of the component which has been eliminated along with the following information:

An analysis of why the component was ineffective or infeasible; and A detailed explanation of why, with the elimination of this component, the Stormwater Management Program will continue to achieve a reduction in pollutants to the MEP and shall not cause or contribute to violations of State water quality standards in the receiving stream.

9.2. Stormwater Management Program Modification Management Measures, Measurable Goals, and Annual Report Requirements

Management Measure	Measurable Goals	Annual Report Requirement
Identify Modifications as Minor or Major in accordance with the permit and report as required.	Report all Minor and Major Modifications to Stormwater Management Program as required	- Identify if any changes were made to each program element Yes/No - Include a description of the modification(s) made under 4.4.1.1a - Include a description of the modification(s) made under 4.4.1.1e - Include a description of the modification(s) made under 4.4.1.1f - Include a description of the modification(s) made under 4.4.1.2a

10. ENFORCEMENT

10.1. Permit Requirements

10.1.1. Enforcement Response Plan

The permittee must develop and implement an enforcement response plan (ERP). The written plan must identify the permittee's potential responses to violations and address repeat violations through progressive enforcement as needed to achieve compliance. The permittee must have the legal ability to employ progressive enforcement actions as described below (or their functional equivalent for non-traditional MS4 jurisdictions), and to escalate enforcement responses where necessary to address persistent non-compliance, repeat or escalating violations, or incidents of major environmental harm.

10.1.2. Enforcement Actions

a. Verbal Warnings
b. Written Notice of Violation
c. Citations or Administrative Orders
d. Stop Work Orders
e. Withholding of Plan Approvals or Other Authorizations
f. Civil Penalties
g. Additional Measures

10.1.3. Enforcement Tracking

The permittee must track instances of non-compliance either in paper files or electronically. The enforcement case documentation must include, at a minimum, the following:

- Name of owner/operator;
- Location of new development and redevelopment project or industrial facility;
- Description of violation;
- Required schedule for returning to compliance;
- Description of enforcement response used, including escalated responses if repeat violations occur or violations are not resolved in a timely manner;
- Accompanying documentation of enforcement response (e.g., notices of noncompliance, notices of violations, etc.);
- Any referrals to different departments or agencies; and
- Date violation was resolved (Illicit Discharge only)

10.1.4. Chronic Violators

The permittee must identify chronic violators of any Stormwater Management Program component and reduce the rate of noncompliance recidivism. The permittee must track the violations, apply incentives and/or disincentives, and increase the inspection frequency at the operator's sites. If corrective actions are not taken, the permittee shall pursue progressive enforcement and, if need be, perform the necessary work and assess against the owner/operator the costs incurred for repairs.

10.2. Compliance Activities

10.2.1. Enforcement Response Plan (ERP)

The City of Hendersonville has developed and implemented an enforcement response plan (ERP). The ERP can be found in APPENDIX I and describes the City's procedures for enforcement of stormwater violations. The ERP defines the criteria for chronic violators and describes progressive enforcement procedures for chronic violators.

10.2.2. Enforcement Tracking

The Stormwater Inspector tracks all instances of non-compliance through the Annual Report Tracking Spreadsheet in Excel. When optimal, the City will transition to Energov for all enforcement tracking purposes.

10.3. Annual Report Requirements for Enforcement Actions

Annual Report – Summary of Enforcement Actions Requirement	
Enforcement Action Type	**Total Number of Enforcement Actions Taken**
Verbal Warnings	# Enforcement Actions Taken
Written Notice of Violation	# Enforcement Actions Taken
Citations or Administrative Orders	# Enforcement Actions Taken
Stop Work Orders	# Enforcement Actions Taken
Withholding of Plan Approvals or Other Authorizations	# Enforcement Actions Taken
Civil Penalties	# Civil Penalties Assessed
Additional Measures	# Enforcement Actions Taken

11. STORMWATER MONITORING

11.1. Permit Requirements

Section 4.6.1. of the Permit requires the City to develop and implement a monitoring and assessment program that provides data and information to identify pollutant sources and aids in determining the effectiveness of the stormwater management program. All segments of streams must be sampled and surveyed in the five-year permit period. The monitoring plan must be included in the SWMP. The monitoring and assessment program must be designed to meet the following objectives:

- Assess compliance with the permit;
- Measure the effectiveness of the permittee's stormwater management program;
- Evaluate stormwater impacts to the receiving waters;
- Identify sources of specific pollutants, including nutrients, pathogens, siltation, or other parameters related to stormwater discharges from the MS4 System; and
- Gather data to inform program decisions and prioritization of future activities related to the protection of water quality and identify corrective actions.

The permittee shall perform monitoring in compliance with the requirements in Option1 or develop a jurisdiction-specific monitoring plan in compliance with the objectives of Option 2.

11.2. Compliance Activities

The City of Hendersonville selected Option 1 to satisfy the monitoring requirements. The City Monitoring Plan and Procedures and subsequent reports can be found in APPENDIX H. The City contracted with an environmental consultant to conduct the required monitoring activities. The required components of the monitoring will be completed over the course of the permit cycle (2022-2027) and reported in the corresponding annual report.

12. PROGRAM EVALUATION

The City will evaluate the public education component by making direct evaluations/observations, tracking the number of attendees, documenting feedback with selected surveys, and tracking of stormwater related reports. The City will discuss and evaluate all program components annually prior to the submittal of the annual report. The annual program evaluation will be documented with meeting minutes and all required modifications shall be included in the annual report.

13. ANNUAL REPORTING PERMIT REQUIREMENTS

The annual reporting period runs from July 1- June 30. The Annual Report will be completed and posted with Public Notice for public comment/questions thirty (30) days prior to the submittal to the Division of Water Resources. The annual report must be submitted via MyTDEC Forms prior to the reporting period deadline. Any questions/comments and responses will be included with the report. The report will be completed by stormwater staff and submitted prior to September 30th of each year. The annual report will be included in Appendix I of the Stormwater Management Plan.

14. RECORDS RETENTION PERMIT REQUIREMENTS

The City shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, Stormwater Management Program documentation including but not limited to policies, procedures, forms, checklists, correspondence, records, etc., reports required by this permit, records of all data used to complete the NOI and the Notice of Termination (NOT) for a period of at least **three years**. This period may be extended by written request of the Director of the Division of Water Resources.

15. LEGAL AUTHORITY PERMIT REQUIREMENTS

To the extent allowed by law, the City shall ensure legal authority to reduce the discharge of pollutants to the maximum extent practicable (MEP) from those portions of the MS4 Area over which it has jurisdiction. This legal authority may be a combination of statute, law, rule, ordinance, resolution, permit, contract, order, or interjurisdictional agreements between permittees with adequate existing legal authority to:

a. Prohibit non-stormwater discharges into the storm sewer system and implement appropriate enforcement procedures and actions.
b. Require erosion and sediment controls, as well as sanctions to ensure compliance.
c. Address post-construction/permanent stormwater runoff from new development and redevelopment projects.
d. Obtain remedies for noncompliance, seek injunctive relief, seek, or assess penalties and enact the enforcement response plan as required in subpart 4.5.
e. Require compliance with conditions in ordinance, permits, contract, orders, or other legal authority; and
f. Conduct all inspections, surveillance, and monitoring activities necessary to determine compliance with the conditions of this permit.

15.1. Compliance Activities

The City Attorney will complete a thorough review of the Stormwater Ordinance, Stormwater Management Plan, and all Stormwater Management Program to ensure that the City has adequate legal authority to carry out the Stormwater Management Program as described. The City Attorney will complete a Solicitor's Certification Statement ensuring that the entire MS4 program is operating in accordance with the various laws, regulations, and rules for Stormwater Management. The Solicitor's Certification Statement will be submitted with the 2023-2024 Annual Report. A copy of the Solicitor's Certification Statement can be found in APPENDIX J.

15.2. Annual Report Requirements for Legal Authority

Legal Authority	Annual Report Requirements
Provide a signed solicitor's certification statement that: – Contains the name of the attorney(s) – Confirms that the permittee has the adequate authority (or functional equivalent for non-traditional MS4s) to carry out the Stormwater Management Program (Stormwater Management Program) as described – Lists the documents (such as Ordinance, Rules, Regulations, codes, interjurisdictional agreements, or any other document) that give the permittee that authority – Specifies the document and location of the specific authorities required by subpart 4.7a-f note: For non-traditional MS4, the legal authority for some elements may be inherent as a legal entity and not in a standalone document.	The initial solicitor's statement will be required in the 2024 annual report for existing permittees and in the third annual report for new permittees. If modifications are made to the legal authority that necessitate a new evaluation by a solicitor, a new certification statement must be submitted.

16. DEFINITIONS AND ACRONYMS

16.1. Definitions

The following definitions shall apply: Words used in the singular shall include the plural, and the plural shall include the singular; words used in the present tense shall include the future tense. The word "shall" is mandatory and not discretionary. The word "may" is permissive. Words not defined in this section shall be construed to have the meaning given by common and ordinary use as defined in the latest edition of Webster's Dictionary.

1. "***Agriculture land management activities***" is the practice of cultivating the soil, producing crops, and raising livestock for the preparation and marketing of the resulting products.
2. "***As-built plans***" means a set of engineering or site drawings and documents that delineate and describe the as-built condition of stormwater control measures and stormwater management facilities as actually constructed, including but not limited to elevation, size, type, slope, etc. These drawings and associated documents should be prepared by a registered professional engineer or registered landscape architect that is familiar with the city-approved plans for the property and may be based on as-built survey information prepared by a registered land surveyor.
3. "***Authorized enforcement agency***" is the Hendersonville Director of Public Works shall administer, and the City Engineer shall enforce the provisions of this ordinance.
4. "***Best management practices (BMPs)***" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to Waters of the State. BMPs also include treatment requirements, operating procedures,

and practices to control plant site runoff, spillage, leaks, sludge or waste disposal, or drainage from raw material storage. BMPs include source control practices (non-structural BMPs) and engineered structures designed to treat runoff.

5. "***Clean Water Act***" is the federal Water Pollution Control Act (33 U.S.C.' 1251 et seq.), and any subsequent amendments thereto.
6. "***Clearing***" refers to the removal of vegetation and disturbance of soil prior to grading or excavation in anticipation of construction activities. Clearing may also refer to wide area land disturbance in anticipation of non-construction activities. Clearing, grading, and excavation do not refer to clearing of vegetation along existing or new roadways, highways, dams or power lines for sight distance or other maintenance and/or safety concerns, or cold planning, milling, and/or removal of concrete and/or bituminous asphalt roadway pavement surfaces. The clearing of land for agricultural purposes is exempt from federal stormwater NPDES permitting in accordance with Section 401(1)(1) of the 1987 Water Quality Act and state stormwater NPDES permitting in accordance with the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.).
7. "***The City***" shall mean the City of Hendersonville.
8. "***Common plan of development or sale***" is broadly defined as any announcement or documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design) or physical demarcation (including boundary signs, lot stakes, surveyor markings) indicating construction activities may occur on a specific plot. A common plan of development or sale identifies a situation in which multiple areas of disturbance are occurring on contiguous areas. This applies because the activities may take place at different times, on difference schedules, by different operators.
9. "***Construction Site Operator***" ***Or*** "***Operator***" means any person associated with a construction project that meets either of the following two criteria:
    a. This person has operational or design control over construction plans and specifications, including the ability to make modifications to those plans and specifications. This person is typically the owner or developer of the project or a portion of the project and is considered the primary permittee.
    b. This person has day-to-day operational control of those activities at a project which are necessary to implement compliance with a SWPPP for the site or other permit conditions. This person is typically a contractor or a commercial builder who is hired by the primary permittee and is considered a secondary permittee.

    It is anticipated that at different phases of a construction project, different types of parties may satisfy the definition of the "construction site operator."
10. "***Design storm event***" is the estimated design rainfall amounts, for any return period interval (i.e., 1-yr, 2-yr, 5-yr, 25-yr, etc.) in terms of either 24-hour depths, or intensities for any duration, as defined by Precipitation-Frequency Atlas of the United States. Atlas 14. Volume 2. Version 3.0 U.S. Department of Commerce National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center, Silver Springs, Maryland or its digital product equivalent.
11. "***Discharge***" means dispose, deposit, spill, pour, inject, seep, dump, leak, or place by any means, with direct or indirect entry of any solid or liquid matter into the municipal separate storm sewer system.
12. "***Disturbed area***" means the total area presented as part of the development (and/or of a larger common plan of development) subject to being cleared, graded, or excavated during the life of the development. The area cannot be limited to only the portion of the total area that the site-wide

owner/developer initially disturbs through the process of various land clearing activities or in the construction of roadways, sewers, drainfields and water utilities, stormwater drainage structures, etc., to make the property marketable.

13. "***Division***" means the Division of Water Resources of the State of Tennessee, Department of Environment and Conservation.
14. "***Easement***" means an acquired privilege or right-of-use or enjoyment that a person, party, firm, corporation, municipality, or other legal entity has in the land of another.
15. "***Enforcement Response Plan (ERP)***" is a set of procedures which present the permittee's potential responses to violations and address repeat violations through progressive enforcement as needed to achieve compliance. These enforcement responses should be commensurate with the nature of the violation and must include enforcement responses progressing up to the maximum civil and criminal penalties as described in T.C.A. 69-3-101.
16. "***Erosion***" means the removal of soil particles by the action of water, wind, ice, or other geological agents, whether naturally occurring or acting in conjunction with or promoted by anthropogenic activities or effects.
17. "***Erosion prevention and sediment control (EPSC) plan***" means a written plan (including drawings or other graphic representations) that indicates the specific measures and sequencing to be used to control sediment runoff and minimize erosion on a development or redevelopment site during and after construction.
18. "***Exceptional Tennessee Waters (ETW)***" are surface waters designated by the Division as having the characteristics set forth at Tennessee Rules, Chapter 0400-40-03-.06(4). Characteristics include waters within parks or refuges, scenic rivers, waters with threatened or endangered species, waters that provide specialized recreational opportunities, waters within areas designated as lands, waters with naturally reproducing trout, waters with exceptional biological diversity and other waters with outstanding ecological or recreational value.
19. "***Forestry***" is the cultivation and harvesting of timber for the production of forest products.
20. "***Hazardous materials***" is any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.
21. "***Illicit connection***" defined as either of the following: Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including, but not limited to, any conveyances which allow any non-stormwater discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or, any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.
22. "***Illicit discharge***" means any discharge to the MS4 that is not composed entirely of stormwater and not specifically exempted under Section 18-208.2 of this ordinance.
23. ***"Industrial activity***" is any activity subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26 (b)(14).
24. "***Inspection and Maintenance Agreement (IMA)***" means a document recorded with the office of the register of deeds for Sumner County that acts as a property deed restriction, and which provides

for long-term inspection and maintenance of stormwater control measures and stormwater management facilities.

25. ***"Inspector"*** is a person with one of the following qualifications:
    a. a valid certification for the "Fundamentals of Erosion Prevention and Sediment Control Level I" course,
    b. a registered professional engineer or registered landscape architect,
    c. a Certified Professional in Erosion and Sediment Control (CPESC), or
    d. a valid certification for the "Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites" course.

    An inspector performs and documents the required inspections, paying particular attention to time-sensitive permit requirements such as stabilization and maintenance activities. An inspector may also have the following responsibilities:

    a. Oversee the requirements of other construction-related permits, such as an Aquatic Resources Alteration Permit (ARAP) or U.S. Army Corps of Engineers (USACE) permit for construction activities in or around Waters of the State or Waters of the U.S.
    b. Update field SWPPPs.
    c. Conduct pre-construction inspection to verify that undisturbed areas have been properly marked and initial measures have been installed.
    d. Inform the permit holder of activities that may be necessary to gain or remain in compliance with the Tennessee Department of Environment and Conservation (TDEC) Construction General Permit (CGP) and other environmental permits.

26. "***Land disturbing activity***" means any activity on property that results in a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land-disturbing activities include, but are not limited to, development, re-development, demolition, construction, reconstruction, clearing, grading, filling, trench, and excavation.

27. "***Land Disturbance Permit (LDP) audit***" is a twice-monthly, site-wide inspection to be performed by LDP permittees required for sites disturbing more than 50 acres at any one time, to be completed by a registered professional engineer, registered landscape architect, and/or person with an active TDEC Level 2 certification.

28. "***Linear project***" is a land disturbing activity as conducted by an underground/overhead utility or highway department, including, but not limited to, any cable line or wire for the transmission of electrical energy; any conveyance pipeline for transportation of gaseous or liquid substance; any cable line or wire for communications; or any other energy resource transmission ROW or utility infrastructure, e.g., roads and highways. Activities include the construction and installation of these utilities within a corridor. Linear project activities also include the construction of access roads, staging areas and borrow/spoil sites associated with the linear project. Land disturbance specific to the development of residential and commercial subdivisions or high-rise structures is not considered a linear project.

29. "***Long-Term Maintenance Plan (LTMP)***" is a plan that specifies the schedule of inspections and maintenance activities necessary to ensure that stormwater control measures or facilities remain in proper working condition in accordance with approved design standards, rules, and regulations, and applicable laws that shall be included with the IMA and recorded with the office of the register of deeds for Sumner County.

30. "***Maintenance***" means any activity that is necessary to ensure that stormwater control measures, best management practices, or stormwater management facilities remain in proper working condition in accordance with approved design standards, rules, and regulations, and applicable laws.

Maintenance shall include complete reconstruction of a stormwater facility if reconstruction is needed to restore the facility to its original operational design parameters. Maintenance shall also include the correction of any problem on the site property that may directly or indirectly impair the functions of the stormwater facility.

31. "***Municipal Separate Storm Sewer System*** (***MS4***)" is defined in 40 C.F.R. §122.26(b)(8) to mean a conveyance or system of conveyances (e.g., roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains that are:
    a. owned and operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to Waters of the United States;
    b. designed or used for collecting or conveying stormwater;
    c. not a combined sewer; and
    d. not part of a Publicly Owned Treatment Works (POTW) as defined in 40 C.F.R §122.2.
32. "***National Pollutant Discharge Elimination System permit***" or "***NPDES permit***" is a permit issued by EPA (or by a State under authority delegated pursuant to 33 USC' 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area- wide basis.
33. "***Non-stormwater discharge***" is any discharge to the storm drain system that is not composed entirely of stormwater.
34. "***Peak flow***" means the maximum instantaneous rate of flow of water at a particular point resulting from a storm event.
35. "***Permanent stabilization***" means that all soil disturbing activities at the site have been completed and one of the three following criteria is met:
    a. A perennial, preferably native, vegetative cover with a uniform (i.e., evenly distributed, without large bare areas) density of at least 70 percent has been established on all unpaved areas and areas not covered by permanent structures, and all slopes and channels have been permanently stabilized against erosion.
    b. Equivalent permanent stabilization measures such as the use of riprap; permanent geotextiles; hardened surface materials including concrete, asphalt, gabion baskets or Reno mattresses have been employed.
    c. For construction projects on land used for agricultural or silvicultural purposes, permanent stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural or silvicultural use.
36. "***Person***" means any and all persons, natural or artificial, including any individual, firm, or association and any municipal or private corporation organized or existing under the laws of this or any other state or country.
37. "***Point source*** ***or*** "***Outfall***" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include introduction of pollutants from non-point source agricultural or silvicultural activities, including stormwater runoff from orchards, cultivated crops, pastures, range lands, forest lands or return flows from irrigated

agriculture or agricultural stormwater runoff. In short, outfall is a point where runoff leaves the site as a concentrated flow in a discrete conveyance.

38. "***Pollutant***" means anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sediment; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.
39. "***Premises***" any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.
40. "***Priority areas"*** means an area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater. Examples include, auto repair shops, auto supply shops, fleet storage areas, industrial sites, commercial nurseries, gas stations, car washes, large commercial parking areas, restaurants, and other land uses as determined by the Public Works Department.
41. "***Priority construction activity***" means construction activities discharging directly into, or immediately upstream of, Waters of the State recognized as unavailable parameters for siltation or Exceptional Tennessee Waters.
42. "***Redevelopment"*** means the alteration of developed land that disturbs one acre or more, or less than one acre if part of a larger common plan of development or sale.
43. "***Registered Engineer***" ***and*** "***Registered Landscape Architect***" is an engineer or landscape architect certified and registered by the State Board of Architectural and Engineer Examiners pursuant to Section 62-202, Tennessee Code Annotated, to practice in Tennessee.
44. "***Runoff***" means that portion of the precipitation on a drainage area that is discharged from the area into the MS4.
45. "***Sediment***" means solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice as a product of erosion.
46. "***Sediment basin***" is a temporary basin consisting of an embankment constructed across a wet weather conveyance, an excavation that creates a basin or by a combination of both. A sediment basin typically consists of a forebay cell, dam, impoundment, permanent pool, primary spillway, secondary or emergency spillway and surface dewatering device. The size and shape of the basin depends on the location, size of the drainage area, incoming runoff volume and peak flow, soil type and particle size, land cover, and receiving stream classification (i.e., waters with unavailable parameters, Exceptional Tennessee Waters, or waters with available parameters).
47. "***Sedimentation***" means the action or process of forming or depositing sediment.
48. "***Significant contributor***" is defined as a source of pollutants where the volume, concentration, or mass of a pollutant in a stormwater discharge can cause or threaten to cause pollution, contamination, or nuisance that adversely impact human health or the environment and cause or contribute to a violation of any applicable water quality standards for receiving water.
49. "***Soils report***" means a study of soils on a subject property with the primary purpose of characterizing and describing the soils. The soils report shall be prepared by a qualified geotechnical engineer or geologist.
50. "***Steep slope***" is a natural or created slope of 35% grade or greater. Designers of sites with steep slopes must pay attention to stormwater management in the SWPPP to engineer runoff around or

over a steep slope so as not to erode the slope. In addition, site managers should focus on erosion prevention on the slopes and stabilize the slopes as soon as practicable to prevent slope failure or sediment discharges from the project.

51. "***Stormwater***" means stormwater runoff, snow melt runoff, surface runoff, infiltration, and drainage.
52. "***Stormwater Control Measure (SCM)***" means permanent practices and measures designed to reduce the discharge of pollutants from new development projects or redevelopment projects.
53. "***Stormwater discharge-related activities***" means activities that cause, contribute to, or result in point source stormwater pollutant discharges. These activities may include excavation, site development, grading and other surface disturbance activities; and activities to control stormwater including the siting, construction, and operation of best management practices.
54. "***Stormwater management facilities***" means the drainage structures, conduits, ditches, combined sewers, and all appurtenances by means of which stormwater is collected, transported, pumped, treated, or disposed of.
55. "***Stormwater management program***" refers to a comprehensive program to manage the quality of stormwater discharges from the MS4.
56. "***Stormwater Pollution Prevention Plan (SWPPP)***" is a written site-specific plan required by the Construction General Permit that includes a narrative pollution prevention plan and graphical erosion and sediment control plan. In its basic form, the plan contains a site map, a description of construction activities that could introduce pollutants to stormwater runoff, a description of measures or practices to control these pollutants, and erosion and sediment control plans and specifications. It must be prepared and submitted before construction begins. In order to effectively reduce erosion and sedimentation impacts, best management practices must be designed, installed, and maintained during land disturbing activities. The SWPPP should be prepared in accordance with the Tennessee Erosion and Sediment Control Handbook.
57. "***Stormwater utility***" means the Public Works Department that administers the stormwater management ordinance, and other stormwater rules and regulations adopted by the municipality.
58. ***"Stream"*** is a surface water that is not a wet weather conveyance. Includes lakes, wetlands, and other non-linear surface waters.
59. "***Take***" of an endangered species means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct.
60. "***Temporary stabilization***" is achieved when vegetation or non-erodible surface has been established on the area of disturbance and construction activity has temporarily ceased. Under certain conditions, temporary stabilization is required when construction activities temporarily cease. However, if future construction activity is planned, permit coverage continues.
61. "***Total maximum daily load***" (TMDL) means the sum of the individual wasteload allocations for point sources and load allocations for non-point sources and natural background (40 CFR 130.2(I)). TMDL is a study that quantifies the amount of a pollutant in a stream, identifies the sources of the pollutant and recommends regulatory or other actions that may need to be taken in order for the stream to cease being polluted. TMDLs can also be described by the following equation:

    TMDL = sum of non-point sources (LA) + sum of point sources (WLA)
    + margin of safety

62. "***Treatment train***" is a technique for progressively selecting various stormwater control measures to address water quality, by which groups of practices may be used to achieve a treatment goal while optimizing effectiveness, maintenance needs, and space.

63. "***Waste site***" is an area where material from a construction site is disposed of. When the material is erodible, such as soil, the site must be treated as a construction site, fill site, or spoil material, and shall be permitted based on disturbance.
64. "***Water quality riparian buffer***" is a permanent strip of natural perennial vegetation adjacent to a stream, river, wetland, pond, or lake that contains dense vegetation made up of grass, shrubs, and/or trees. The purpose of a water quality riparian buffer is to maintain existing water quality by minimizing the risk of any potential sediments, nutrients, or other pollutants reaching adjacent surface waters and to further prevent negative water quality impact by providing canopy over adjacent waters.
65. "***Waters of the State or Waters***" means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through or border upon Tennessee or any portion thereof, except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine or effect a junction with natural surface or underground waters.
66. "***Waters with unavailable parameters***" means any segment of surface waters that has been identified by the Division as failing to support one or more classified uses. Unavailable parameters exist where water quality is at, or fails to meet, the levels specified in water quality criteria in Rule 0400-40-03-.03, even if caused by natural conditions. In the case of a criterion that is a single response variable or is derived from measurement of multiple response variables, the unavailable parameters shall be the agents causing water quality to be at or failing to meet the levels specified in criteria. Resources to be used in making this determination include biennial compilations of impaired waters, databases of assessment information, updated GIS coverages, and the results of recent field surveys.
67. "***Watershed***" means all the land area that contributes runoff to a particular point.
68. "***Wet weather conveyances***" are man-made or natural watercourses, including natural watercourses that have been modified by channelization, that meet the following:
    a. The conveyance carries flow only in direct response to precipitation runoff in its immediate locality.
    b. The conveyance's channels are at all times above the ground water table.
    c. The flow carried by the conveyance is not suitable for drinking water supplies.
    d. Hydrological and biological analyses indicate that, due to naturally occurring ephemeral or low flow under normal weather conditions, there is not sufficient water to support fish or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months. (Tennessee Rules, Chapter 0400-40-3-.04(3)).

16.2. Acronyms and Abbreviations

ARAP- Aquatic Resources Alteration Permit

BMP- Best Management Practices

CAP - Corrective Action Plan

DWR- Division of Water Resources

EPSC- Erosion Prevention and Sediment Control

ERP- Enforcement Response Plan

ETW- Exceptional Tennessee Waters

GIS- Geographic Information System

MCM- Minimum Control Measure

MEP- Maximum Extent Practical

MS4- Municipal Separate Storm Sewer System

NON- Notice of Noncompliance

NOV- Notice of Violation

SCI- Stormwater Construction Inspector

SCM- Stormwater Control Measure

SOP- Standard Operating Procedure

SWMP- Stormwater Management Plan or Program

SWO- Stop Work Order

SWPPP- Stormwater Pollution Prevention Plan

TDEC- Tennessee Department of Environment and Conservation

TMDL- Total Maximum Daily Load

TSS- Total Suspended Solids treatment practices

USACE- United States Army Corps of Engineers

WOTUS- Waters of the United States

APPENDICES

APPENDIX A

CITY OF HENDERSONVILLE EXCEPTIONAL TENNESSEE WATERS AND TDEC DATA USE AGREEMENT

The Known Exceptional Tennessee Waters and Outstanding National Resource Waters

Go

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Actions

Row text contains 'Sumner'

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	HUC	Watershed Name	Waterbody	County	Description	Basis for Inclusion	From Lat	To Lat	From Long	To Long	Inclusion Date	Revision Date
	05130201	Cumberland-Old Hickory Lake	Bledsoe Creek	Sumner	Portions in Bledsoe Creek State Park and Cragfront State Historic Area including unnamed tributaries	Bledsoe Creek State Park and Cragfront State Historic Area	36.3728	36.40312	-86.3523	-86.34188		
	05110002	Barren	Caney Fork Creek	Sumner	From confluence with West Fork Drakes Creek to unnamed tributary upstream of HWY 52 near river mile 3.8 including tributaries.	Exceptional biological diversity. Several species deemed in need of management including Splendid Darter Orangefin Darter, Teardrop Darter and Frecklebelly Darter	36.59525	36.5731	-86.45727	-86.4092	6/9/2006	10/22/2020
	05130201	Cumberland-Old Hickory Lake	Taylor Hollow Tributary	Macon, Sumner	Taylor Hollow Tributary within Taylor Hollow State Natural Area	Taylor Hollow State Natural Area.	36.52204	36.5262	-86.23144	-86.2259	4/28/2009	
	05130201	Cumberland-Old Hickory Lake	Drakes Creek Unnamed Tributary	Sumner	Unnamed Tributary from confluence with Drakes Creek near river mile 9.1 to origin including tributaries.	State endangered streamside salamander Ambystoma barbouri.	36.52282	36.35354	-86.52282	-86.57345	1/4/2019	4/14/2021
	05130201	Cumberland-Old Hickory Lake	Drakes Creek Unnamed Tributary	Sumner	Unnamed tributary including all tributaries from confluence with Drakes Creek near river mile 10 to origin.	State endangered streamside salamander Ambystoma barbouri.	36.35643	36.373034	-86.60426	-86.58737	2/4/2019	
	05130201	Cumberland-Old Hickory Lake	Drakes Creek Unnamed Tributary	Sumner	Unnamed tributary from Drakes Creek to origin.	State endangered streamside salamander Ambystoma barbouri.	36.338713	36.344278	-86.595403	-86.573044	2/13/2019	
	05130201	Cumberland-Old Hickory Lake	Deshea Creek Unnamed Tributary	Sumner	Unnamed tributary from confluence with Deshea Creek to origin.	State endangered streamside salamander Ambystoma barbouri	36.44619	36.4547	-86.58737	-86.420863	2/13/2019	
	05130201	Cumberland-Old Hickory Lake	Station Camp Creek	Sumner	Unnamed tributary from Station Camp	State endangered streamside salamander	36.37843	36.393595	-86.5581	-86.545097	2/13/2019	

			unnamed tributaries		Creek to origin including tributaries.	Ambystoma barbouri						
	05130201	Cumberland-Old Hickory Lake	Unnamed Tributary to East Camp Creek Embayment Old Hickory Lake	Sumner	Unnamed tributary from East Camp Creek embayment to origin.	State endangered streamside salamander Ambystoma barbouri	36.336668	36.34037	-86.472972	-86.46312	2/13/2019	
	05130201	Cumberland-Old Hickory Lake	Town Creek Unnamed Tributary	Sumner	Unnamed tributary from Town Creek to origin including unnamed tributaries.	State endangered streamside salamander Ambystoma barbouri.	36.406995	36.41183	-86.425182	-86.408702	2/13/2019	
	05130201	Cumberland-Old Hickory Lake	Station Camp Creek embayment to Old Hickory Lake Unnamed Tributary	Sumner	Unnamed tributary from Station Camp Creek embayment of Old Hickory Lake to origin including tributaries.	State endangered streamside salamander Ambystoma barbouri	36.350167	36.37025	-86.509865	-86.51878	2/13/2019	
	05130201	Cumberland-Old Hickory Lake	Old HIckory Reservoir Unnamed Tributary	Sumner	Unnamed tributary from Old Hickory Reservoir to origin including tributaries.	State endangered streamside salamander Ambystoma barbouri	36.315724	36.33631	-86.576696	-86.56521	2/14/2019	
	05130201	Cumberland-Old Hickory Lake	Rankin Branch and unnamed tributaries	Sumner	Rankin Branch from LA Green Lake to origin including unnamed tributaries.	State endangered streamside salamander Ambystoma barbouri	36.353368	36.37932	-86.495296	-86.530573	2/14/2019	
	05130201	Cumberland-Old Hickory Lake	Station Camp Creek Unnamed Tributary	Sumner	Unnamed tributary from Station Camp Creek to origin including headwater tributaries (do not show up on topo).	State endangered streamside salamander Ambystoma barbouri	36.355043	36.338036	-86.541255	-86.556146	2/14/2019	
	05130201	Cumberland-Old Hickory Lake	East Camp Creek Unnamed Tributary	Sumner	Unnamed tributary from East Camp Creek at River Mile 5 to origin including unnamed tributaries.	State endangered streamside salamander Ambystoma barbouri	36.387333	36.417315	-86.481734	-86.495724	2/14/2019	

NF = National Forest
NM = National Monument
NMP = National Military Park
NP = National Park
NRA = National Recreation Area
NRRA = National River and Recreation Area
NW = National Wilderness
NWR = National Wildlife Refuge
ONRW = Outstanding National Resource Water
RM = River Mile
SAA = State Archaeological Area
SHP = State Historic Park
SNA = State National Area
SP = State Park
WA = Wilderness Area
WMA = Wildlife Management Area
WR = Wildlife Refuge

If you have any questions or comments, call us at (615) 532-0287 or email the TDEC Help Desk at Help_Desk@tn.gov.

DATA USE AGREEMENT

Between

City of Hendersonville
&
Division of Natural Areas
The Tennessee Department of Environment and Conservation

The following terms and conditions exist regarding the use of data from the Tennessee Division of Natural Areas (DNA), Tennessee Department of Environment and Conservation:

1. The information provided to you by DNA is intended for distribution or use only within your department, agency, organization, or business and only for the specific project or purpose for which it has been requested; **which is Tennessee's Element Occurrence Records of rare species in Sumner County.** Should individuals or entities outside your organization/project team ask you for data that we are providing under this agreement, please refer them to DNA.

2. As a professional courtesy, we ask that you acknowledge DNA as a source of your information whenever you use DNA data in your reports, papers, or publications that incorporate DNA data. However, site-specific locational information should not be provided to third parties, published, or otherwise distributed in any way without written permission by DNA.

3. DNA databases are dynamic. We add, delete and change records on a regular basis; consequently, we strongly advise that you contact us to update your DNA data set every year (applicable only for agreements in excess of six months, and where more frequent data updates are not otherwise provided).

4. DNA data require a certain degree of expertise for proper analysis, interpretation, and application. Our staff is available to you by phone to advise you regarding technical aspects of our data.

5. As the data originate from a variety of sources, we cannot guarantee that information provided to us by others was obtained with landowner permission.

6. We do not portray our databases as representing exhaustive or comprehensive inventories for rare species or significant natural features. Field verification of the absence or

presence of sensitive species will always be an important obligation of users of our data.

7. Sources of our data include museum specimens, published and unpublished scientific literature, field surveys, and knowledgeable individuals. We actively solicit and encourage additions, corrections, updates, new observations, or collections, as well as comments, on any data that we provide.

8. We make no warrantees as to the completeness and accuracy of the data presented.

9. Upon execution of this Data Use Agreement, the data requested and covered by this agreement will be transferred to you. At the time of transfer you agree to make yourself, and other appropriate representatives of your organization, available to discuss with DNA in detail the use and interpretation of the data.

10. Each individual authorized by DNA to access data provided under this agreement must read and sign this agreement.

I have read and understand the terms of this Data Use Agreement and will ensure the data are used according to the terms of the Agreement. Upon completion of the specific project or application for which these data are being provided, I agree to remove the data from any and all computer files and to not use any form of the data for any other purposes. This Agreement may be renewed, if needed, at the end of its effective period subject to approval by DNA.

This Data Use Agreement is effective from the date of the last signature below through 31 December 2027.

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Signature: _____ **Date:** 11/21/2023

Name: **David Lincicome**

Title: **Natural Heritage Program Manager, TN Division of Natural Areas**

CITY OF HENDERSONVILLE

Signature: _____ **Date:** 5-1-2023

Name: **Helen Morrison**

Title: **Stormwater Coordinator, City of Hendersonville**

(Principal Contacts and Additional Authorized Users are listed on next page)

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Name and Title	Date
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Sarah Lock	**4/24/2023**
Stephen Winzenread	**4/24/2023**
Trey Lavender	**4/24/2023**
Duane Allen	**4/24/2023**
Keith Free	**4/24/2023**
Christina Bannister	11/27/2023

APPENDIX B

PUBLIC INFORMATION AND EDUCATION PLAN

Public Information and Education (PIE) Plan

Prepared by:

The City of Hendersonville Public Works Department
101 Maple Drive North, Hendersonville, TN 37075

Developed May 2021
Revised May 2024

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Hendersonville Public Information and Education (PIE) Plan

1. Introduction

The PIE plan is a minimum control measure mandated by the State of Tennessee's Small Municipal Separate Storm Sewer System (MS4) Genera National Pollution Discharge Elimination System (NPDES) Permit (hereafter referred to as the "MS4 Permit"). The City of Hendersonville (the City) applied for and received coverage under the MS4 Permit effective December 1, 2022 (Permit No.: TNS075353). The minimum requirements of the PIE plan are set forth in Section 4.2.1. of the NPDES permit. The City will incorporate compliance activities specified in MS4 Permit Section 4.2.1. and 4.2.2. into this PIE plan. The PIE plan will provide a schedule of planned public education and outreach programs.

2. Objective

To reduce or eliminate behaviors and practices that cause or contribute to the impacts of stormwater discharges on water bodies and the steps that the audiences can take to reduce pollutants in stormwater runoff to the maximum extent practicable. To educate public employees, businesses and the general public concerning the hazards and damage to water quality associated with illegal dumping and connections to the storm sewer, and the improper disposal of waste. This program will be designed to reach the three major audiences and management measures in Section 4.2.1. and 4.2.2.

3. Goals

The City believes water quality education on stormwater impacts is our greatest tool to connect with and encourage our residents. The City promotes, participates, and sponsors several educational events annually. The City takes a proactive approach to encourage all age groups to make simple changes in their daily activities to prevent and reduce stormwater pollution. Through various educational means and methods, the City will minimize the discharge of pollutants to receiving streams by providing educational materials and activities to raise awareness and promote behavior change within the community.

4. Target Audience and Management Measures

The MS4 Permit has specified major audiences and management measures that must be presented annually. The City is required to conduct a minimum number of stormwater education activities for each major audience. The audience, management measures, and number of required activities are specified below.

Section 4.2.1. & 4.2.2. Target Audience and Management Measures:

1. Public (6 activities each reporting year)
    a. General awareness of the impacts on water quality;
    b. Awareness of the importance of maintenance activities for operators of permanent Best Management Practices (BMPs)/Stormwater Control Measures (SCMs);
    c. Awareness of the proper storage, use, and disposal of pesticides, herbicides, fertilizers oil and other automotive-related fluids; and
    d. Awareness, identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.
    e. Pollution Prevention;
    f. Impacts on water quality or local stormwater management issues;

2. Commercial, Engineering, and Development Community (2 activities each reporting year)
    a. Awareness of the stormwater ordinances, regulations, and guidance materials related to long-term water quality impacts; and
    b. Awareness of stormwater ordinances, regulations, and guidance materials related to construction phase water quality impacts.
    c. Pollution Prevention; and
    d. Impacts on water quality or local stormwater management issues.
3. Employees (1 activity each permit term)- New employees in required job categories must attend training within 6 months of hire date.
    a. Awareness of water quality impacts from daily operations;
    b. Pollution Prevention and Good Housekeeping (see subpart 4.2.6); and
    c. The awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer diversions or seepages, spills, etc. (see subpart 4.2.3)

5. Employee Training Program

Employees responsible for municipal operations at facilities within the jurisdiction of the City that handle, generate, and/or store materials which constitute a potential pollutant of concern for MS4s must receive training each permit cycle. The goal of the training program is to identify pollutants and prevent and/or 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.

All employees in applicable job categories will view Storm Watch: Municipal Stormwater Pollution Prevention video training course within six months of hire or within six months of reassignment to applicable job category. Existing employees under required job categories will receive training once per permit cycle (5 years). Employees responsible for Municipal Facility Operation & Maintenance (O&M) Plan inspections will be required to attend an additional training course to review City Facility O&M Plans and learn how to perform facility inspections.

Required Job Categories:

- Parks Maintenance
- Building Maintenance
- Road Department
- Stormwater Division

Optional Job Categories:

- Fire Department
- Police Department
- Elected Officials
- City Office Staff

6. PIE Plan Responsible Personnel

Education activities are provided by City staff, the Cumberland River Compact (CRC), and the City's Stormwater Consultant, Civil & Environmental Consultants (CEC), Inc. Table 2 identified the personnel responsible for implementation of the PIE plan.

Table 1. PIE Plan Responsible Personnel

Personnel	PIE Plan Responsibility	Contact Information
Public Works Director	• Administers the provisions of the Stormwater Ordinance • Reviews/approves stormwater education budget • Coordination of employee training with Dept. Heads • Presents stormwater information at Public Works Committee and BOMA	615-822-1016
Design Engineer	• Oversees PIE Plan objectives. • Reviews/Approves all distribution of public information/education materials and website content.	615-822-1016
Stormwater Coordinator	• Reviews PIE Plan objective to be consistent with MS4 requirements. • Coordinates all public education programs and events. • Coordinates participation at community events with other MS4s. • Oversees development of public educational materials. • Documents public education events and activities for Annual Report. • Oversees Stormwater web pages. • Audits City facilities to ensure that appropriate stormwater-related employee training is being conducted and documented.	615-590-4649
Stormwater Inspector	• Promotes education and outreach events through various means • Provides educational programming at special events • Performs priority area inspections. • Performs post construction BMPs/SCM inspections. • Distributes educational material during inspections and/or owner/operator/contractor meetings.	615-590-4659
Public Information Officer	• Promotes and shares education activities and stormwater information with target audiences	615-590-4734
CRC	• Planning/coordination of education activities.	615-837-1151
CEC, Inc.	• Participation/planning of education activities.	615-333-7797
Beautiful Hendersonville	• Hand out educational material to public schools • Hand out educational materials at special events	615-238-7810

7. Schedule of Activities

The City has partnered with the Cumberland River Compact to provide stormwater education activities to target audiences and meet the management measures identified above. The City's planned education efforts and activities are identified in the attached Cumberland River Compact Education Proposal. Table 2. below provides a summary of the City's planned annual activities. The City will also be working with Beautiful Hendersonville to supply stormwater educational booklets/flyers to the public.

Table 2. Planned Education Activities (Annually)	
Activity	**Summary**
Water stewardship programming to local schools	4 qualifying programs a year.1 qualifying program for each school over contract period. A minimum of 20 education events over the 5-year duration
Educational Signage	Install 1 outdoor educational sign per year
Watershed Education to Local Residents	6 Watershed Education Programs and/or Outreach per year (2 for Public and 4 for Development / Commercial)
Water Stewardship Events	2 Stream Stewardship Events Per Year
Waterfest	Annual sponsorship of the summer event
Tennessee Tree Day	Distributor and/or Sponsor
Litter Clean Up	Annual Litter Clean Up hosted by Mayor Clary
Litter Clean Up	Annual Litter Clean Up hosted by Sumner Co. Health Department
Employee Training	New employees within 6 months and existing employees once per permit cycle.

8. Education Resources

The City provides numerous stormwater resources to employees, the general public, commercial and development community. The City uses every available avenue to spread awareness about stormwater impacts and public involvement/participation opportunities. The City has developed and implemented a Public Notice Plan identifying procedures to notify residents of upcoming projects, events, ordinance/policy updates, so that they can ask questions and provide feedback. The City has also developed and implemented a Publicity Plan identifying procedures to inform residents of different stormwater activities available for participation.

9. Annual Report Requirements

The City must conduct or sponsor a minimum number of activities that address each of the issues under "management measures" every reporting year. The details of each activity must be reported in the annual report. The Cumberland River Compact will provide quarterly reports detailing each education activity and those quarterly reports will be submitted with the annual report. The City will track any remaining efforts and provide details in the annual report.

10. Methodology to Evaluate Effectiveness

The City will evaluate the public education component by making direct evaluations/observations, tracking the number of attendees, documenting feedback with selected surveys, and tracking of stormwater related calls, emails, and letters received. The City will discuss and evaluate all program components annually and report any necessary modifications in the annual report.

Consultant Education Agreement and Plan

(Cumberland River Compact Education Agreement and Plan Begins on Next Page)

MASTER SUBCONSULTING AGREEMENT

This Master Subconsulting Agreement ("Agreement") is made between **Civil & Environmental Consultants, Inc. ("CEC")**, a Pennsylvania corporation, with a place of business at 700 Cherrington Parkway, Moon Township, PA 15108 and **[Cumberland River Compact]**, a [501c3 non-profit in Tennessee] with a place of business at [35 Peabody Street #305 Nashville, TN 37210]. Subconsultant agrees to perform Services on an "as needed" basis and in accordance with Work Authorizations issued by CEC and this Agreement.

This Agreement consists of the following documents:

- Attachment A, General Conditions
- Attachment B, Insurance Requirements
- Attachment C, Safety Requirements
- Attachment D, CEC Vendor Information/ACH Enrollment
- Attachment E, Prime Agreement (if applicable)
- Work Authorizations (issued by CEC pursuant to this Agreement)

This Agreement, including attachments and documents incorporated by reference, represents the entire agreement and understanding between the parties and any negotiations, proposals, or previous agreements are hereby integrated and superseded by this Agreement. Any terms or conditions that are included with Subconsultant's Proposal or any other document provided by Subconsultant are hereby rejected by CEC. When the contract between CEC and its Client ("Prime Agreement") is provided as Attachment E or attached to a future Work Authorization, the parties acknowledge and agree that the Subconsultant shall owe to CEC the same duties and obligations, and to the same degree and extent, that CEC owes such duties and obligations to the Client. This Agreement may not be modified or altered, except in writing signed by both parties.

This Agreement shall remain in place for a period of three (3) years, commencing on the date of execution of this Agreement or until completion of any outstanding Work Authorizations.

Civil & Environmental Consultants, Inc.

By: _____

Printed Name: Steven E. Casey

Title: Vice President

Date: 10/7/2022

Cumberland River Compact

By: _____

Printed Name: Mekayle Houghton Mekayle Houghton

Title: Executive Director

Date: 9/22/22

ATTACHMENT A
GENERAL CONDITIONS FOR SUBCONSULTING SERVICES

1. Performance of the Work

CEC and Subconsultant hereby agree that the Services, as set forth in a Work/Service Authorization ("Work Authorization") signed by CEC, shall be performed by Subconsultant in strict accordance with this Agreement. Subconsultant shall begin performing the Services only after receipt of a written Work Authorization from CEC or CEC's oral authorization to begin Services followed by written confirmation. Commencing performance of the Services prior to receipt of the Work Authorization will be at Subconsultant's sole cost and expense. When the Work Authorization includes the Prime Agreement between CEC and its Client, the parties acknowledge and agree that Subconsultant shall owe to CEC the same duties and obligations, to the same degree and extent, that CEC owes such duties and obligations to the Client.

2. Independent Contractor

Subconsultant is an independent contractor and not an agent or employee of CEC or of Client. Subconsultant will be solely responsible for the control, direction, and performance of the Services performed by its employees, agents, and sub-subconsultants. Neither Subconsultant nor any of its employees shall act on behalf of or in the name of CEC or Client.

3. Standard of Care

Subconsultant represents and warrants that it will perform the Services consistent with the professional skill and care ordinarily provided by professionals, such as Subconsultant, practicing in the same or similar locality under the same or similar circumstances. The Services will be performed in accordance with this Agreement, applicable federal, state and local law, and any regulations, codes, or ordinances. Subconsultant will maintain all professional licenses, registrations and/or certifications required or necessary to perform the Services.

4. Invoicing and Payment

Payment will be made to Subconsultant within fifteen (15) days from the date CEC receives payment from Client for Subconsultant's Services. In the event of any breach by Subconsultant of any provision or obligation of this Agreement or in the event of an assertion by other parties of any claim or lien arising out of Subconsultant's performance of this Agreement against CEC, the Client or the Client's premises, CEC shall have the right to retain out of any payment due or to become due to Subconsultant, an amount sufficient to protect CEC and Client from loss, damage, or expenses therefrom, until the breach, claim or lien has been satisfactorily remedied. In the event that the Prime agreement applies retention to CEC's Services for Client, the same percentage of retention shall apply to payments to Subconsultant.

When the Services described in this order are fully complete and CEC has received payment from Client for all of Subconsultant's Services, final payment shall be due to Subconsultant. Before issuance of final payment and if required by CEC or Client, Subconsultant shall submit evidence satisfactory to CEC that all payrolls, and other amounts due and owing to Subconsultant's sub-subconsultants or suppliers and any relevant third party supplier have been fully satisfied and/or paid including execution of lien waivers.

Subconsultant invoices must be submitted to accountspayble@cecinc.com on a quarterly basis and include the CEC Project Number. Any invoices or requests for payment submitted by any other method will not be processed. CEC will not be liable or required to pay any invoices received more than one hundred twenty (120 days) after completion of the Services.

5. Changes and Additional Services

CEC may make changes to the Services or request Subconsultant to perform additional Services by written notification to Subconsultant. Subconsultant will promptly prepare a proposal in response to any request for changes or additional Services. Subconsultant hereby agrees to perform such changed or additional Services subject to the

terms and conditions of this Agreement as if part of the original agreed upon Services. If any change causes an increase or decrease in the amount of compensation or time of performance under this Agreement, based upon Subconsultant's revised proposal, the equitable adjustment agreed and provided by the Client shall be accepted as full compensation by the Subconsultant for the changed or additional Services. Such changed or additional Services shall be set forth in a written Change Order signed by both parties.

If Subconsultant and CEC cannot agree upon the terms of the Change Order, CEC can withdraw the Change Order request, or may issue a Change Directive ordering that the changed or additional Services be performed for the increased or decreased time and /or compensation as estimated by CEC. The difference between CEC's estimates and the terms of Subconsultant's proposal to perform the changed or additional Services shall be a dispute resolved in accordance with this Agreement. During the resolution of the dispute, Subconsultant shall continue to perform all changed or additional Services required by the Change Order or Change Directive.

6. Indemnity

Subconsultant agrees to indemnify, defend and hold harmless CEC, its Client, the affiliates of each and their respective officers, directors, partners, agents, employees, successors and assigns, and any additional indemnitees and additional insureds required by the Prime Agreement (the "CEC Parties"), including their officers, agents, employees, affiliates, and subsidiaries, from and against all claims, demands, causes of action, loss, damage, liability and expense, including attorneys' fees and court costs arising from, or alleged to arise from, the acts, errors or omissions of Subconsultant, its subcontractors, and their respective agents and employees to the extent of Subconsultant's fault.

7. Insurance

Subconsultant shall maintain insurance in accordance and meeting the requirements of Attachment B to this Agreement. In the event the Prime Agreement insurance requirements contain additional terms, or types of insurance coverage, or higher dollar coverage minimums, those items are incorporated herein and shall apply in lieu of the requirements in Attachment B. No payments will be due Subconsultant until evidence of insurance in accordance with this Agreement is provided to CEC.

8. Health and Safety

In accordance with generally accepted practices, the Subconsultant shall be responsible for all matters relating to the health and safety of its personnel and equipment in performance of the work. This includes recognition of the potential health and safety hazards associated with the work. It is understood that protective measures specified in any health and safety plan are minimum requirements for the work. Subconsultant shall be required to complete and return Attachment C prior to providing Services. Subconsultant must provide:

- The Total Recordable Injury Rate ("TRIR") average of Subconsultant's most recent three (3) years must be less than or equal to the most recent rate for Subconsultant's industry classification as reported by the Bureau of Labor Statistics (BLS).
- An Experience Modification Rate ("EMR") less than or equal to 1.0.
- Training and other safety programs appropriate for the Services performed by Subconsultant.

If applicable, Subconsultant warrants that all of its employees that are permitted to engage in hazardous waste operations that could expose them to hazardous substances, safety, or health hazards have obtained the necessary health and safety training specified in OSHA's Final Rule dated March 6, 1989, and published as 54 Fed. Reg. 9294 (1989). Subconsultant shall provide CEC with evidence of the necessary certification before beginning Services on any project site identified by CEC as a potentially hazardous site.

Failure to comply with either general safety practices or health and safety practices as described above are grounds for Termination for Default in accordance with this Agreement. The safety requirements of the work as described above apply without regard to time, place, or presence of CEC's representative.

9. Use of Equipment

Any equipment or other property furnished to Subconsultant by CEC or Client for use in performance of the Services shall be furnished without charge to Subconsultant, except where expressly stated in a Work Authorization. Subconsultant shall hold CEC and Client harmless from all claims, actions, demands, damages, liabilities, or expenses, including attorneys' fees, arising out of Subconsultant's use of such equipment or property.

10. Ownership

The documents prepared by Subconsultant for this Project are Instruments of Service for use solely with respect to this Project and Subconsultant is deemed the author of these documents and shall retain all common law, statutory and other reserved rights, including the copyright, except to the extent CEC is required under the Prime Agreement to transfer ownership of its Instruments of Service to Owner, Subconsultant shall also and to the same extent transfer ownership of its Instruments of Service to CEC.

Upon execution of each Work Authorization, the Subconsultant grants CEC a royalty free, perpetual license to use the Subconsultant's design, reports and/or work product. Subconsultant shall maintain on file, and make available to the CEC, design calculations for its work product, and shall furnish copies to CEC on request.

11. Confidentiality

All documents, reports, disclosures, plans and other information of any nature and description obtained by Subconsultant in the performance of Services hereunder, including any Client information, will be strictly confidential and will not be used for the benefit of Subconsultant or any affiliate, subsidiary or parent organization of Subconsultant, or disclosed to any third party, either during Subconsultant's employment or after its termination, except as may be necessary in order to perform the Services pursuant to this Agreement or as required by law or legal process.

12. Payroll Taxes

Subconsultant shall comply with federal, state, and local tax laws, Social Security Acts, Unemployment Compensation and Workers' Compensation Acts and any and all other taxes applicable to the performance of this Agreement as well as the laws of any other jurisdiction wherein the Services are performed and shall indemnify, defend and hold harmless the CEC Parties against any and all liability for non-compliance.

13. Audit

Subconsultant shall make available to CEC and or to Client if required, and shall cause its sub-subconsultants to make available, all Project related financial books, ledgers, documents, payroll data, time cards and other documents necessary to assure the financial accuracy of the invoices submitted by CEC. All audit requirements imposed upon CEC under its agreement with Client shall also be imposed upon Subconsultant under this Agreement. Subconsultant's financial documents shall be maintained and prepared in accordance with Generally Accepted Accounting Principles or, if required by the Prime Agreement, shall be maintained and prepared in accordance with such accounting standards required by Client.

14. Termination and Suspension

14.1. Suspension of Services. CEC shall have the right to require Subconsultant at any time to suspend performance of all or part of the Work upon providing written notice of same to Subconsultant. Subconsultant shall immediately cease performance of the Work and shall take all measures necessary to mitigate the cost of the suspension. Subconsultant agrees to recommence performance of the suspended Work immediately after receiving CEC's notice to recommence the suspended Work. CEC's liability to Subconsultant hereunder is limited to the extent of CEC's recovery on Subconsultant's behalf under the Prime Agreement.

14.2. Termination for Convenience. CEC, for its convenience or at Client's request, may terminate the Services in whole or in part at any time by written notice to Subconsultant, which shall state the extent and effective date of such termination. On the effective date thereof, Subconsultant shall (a) immediately stop all Services and place no further orders or subcontracts, (b) terminate any service orders and outstanding subcontracts, (c) take any necessary action to protect property in its possession in which CEC has or may acquire an interest, and (d) take any other action that CEC may direct. CEC shall reimburse Subconsultant

for those costs necessarily incurred by Subconsultant because of the termination, provided, however, that the total amount to be paid to Subconsultant shall not exceed the total contract price, and in all cases, payment by Client.

14.3. Termination for Default. If CEC determines that Subconsultant is failing to properly perform any Services or maintain schedule all in accordance with this Agreement ("Default"), then CEC shall require Subconsultant to remedy such Default within three (3) days after receipt of written notice, time being of the essence. If Subconsultant fails to cure the Default or provide satisfactory evidence to CEC that such Default will be corrected, CEC may at its option, terminate this Agreement. CEC shall have the right to complete such Services by whatever method CEC, in its sole discretion, deems expedient, including employing another Subconsultant to re-perform or complete the Services. The expense of completing the Services shall be deducted from any amounts due to Subconsultant. If such expense exceeds the sum which otherwise would have been payable under this Agreement, the Subconsultant shall be liable for, and such amounts shall be due and payable upon notice from CEC providing such payment amount, without demand, and such notice shall be deemed to satisfy any notice requirements of any applicable jurisdiction.

15. Governing Law and Dispute Resolution

The law of the State of Pennsylvania will govern this Agreement, its interpretation and performance. If any of the provisions contained in this Agreement are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions will not be impaired.

15.1. Notice of Dispute: Within fifteen (15) days of the occurrence of any incident, act, or omission upon which a claim for relief may be based, the party seeking relief shall serve the other party with a written notice specifying the nature of the relief sought, the amount of relief sought, a description of the reason relief should be granted, and the provisions of this Agreement that authorize the relief requested.

15.2. Meet and Confer: Within ten (10) days of receipt of the Notice of Dispute, the parties shall meet and confer in a good faith attempt to resolve the dispute. Participants in the meet and confer must have the authority to enter into a binding resolution on behalf of each party.

15.3. Jurisdiction and Venue: After completion of the meet and confer, either party may proceed to litigation. CEC and Subconsultant agrees that any court of record in Allegheny County, Pennsylvania, shall have the exclusive jurisdiction and venue over any claims relating to or arising under this Agreement. **Both CEC and Subconsultant irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement.**

16. Miscellaneous

16.1. Notices. All required notices under this Agreement must be in writing and given by personal delivery, email transmission provided that a hard copy is sent via next day air, or by registered or certified mail, return receipt requested, postage prepaid, to the parties at the addresses listed herein.

16.2. Assignment. This Agreement may not be assigned or further subcontracted by Subconsultant without the prior written consent of CEC, and in the event of any unauthorized assignment, Subconsultant agrees to indemnify, defend and hold harmless CEC and Client from all costs whatsoever, including attorneys' fees resulting from such unauthorized assignment, however required or incurred.

16.3. Waiver. Unless otherwise specified herein, the waiver by any party of any of its rights under this Agreement in any one or more instances will not constitute a waiver by that party of any other rights or of the same rights on a future occasion.

16.4. Compliance with Laws and Non-Discrimination. Subconsultant shall comply with all applicable all applicable federal, state and local laws, rules and regulations in performing this Agreement. Subconsultant shall not discriminate against any person in the performance of any of its obligations hereunder on the basis of race, color, creed, religion, national origin, age, sex, marital status, veteran status, or the presence of any disability.

16.5. Consequential Damages. Except for indemnification pursuant to this Agreement, neither party shall be liable to the other for any special, indirect, punitive or consequential damages.

16.6. Non-Solicitation. Subconsultant shall not, directly or indirectly, induce or attempt to induce any employee, Client, customer, representative, supplier, licensee, or business relation of CEC to cease doing business with CEC, or in any way interfere with the relationship between any Client, customer, representative, supplier, licensee, or business relation of CEC.

16.7. Interpretation of Agreement. It shall be the obligation of the Subconsultant to exercise due diligence to discover and to bring to the attention of CEC at the earliest possible time, any ambiguities, discrepancies, inconsistencies, or conflicts herein, or in or between or among any documents attached hereto or incorporated by reference herein.

16.8. Counterparts. This Agreement may be executed and delivered in the original, by Portable Document Format (PDF), or by any other generally accepted electronic means, in one or more counterparts, and by the different parties in separate counterparts, each of which when executed and delivered will be deemed an original, but all of which taken together will constitute one and the same document.

16.9. No Intended Third Party Beneficiaries. Except as specifically provided for elsewhere in this Agreement, this Agreement shall not be construed to confer any benefit on any third party not a party to this Agreement nor shall it provide any rights to such third party to enforce its provisions.

16.10. Precedence. If the terms of any other document proposed or submitted by Subconsultant in connection with this Agreement or in connection with the Subcontract Documents, conflict with any of the terms of this Agreement, the terms of this Agreement will control.

16.11. Survival. The provisions of this Agreement which by their nature are intended to survive the termination, cancellation, completion or expiration of the Agreement, including but not limited to any expressed limitations of or releases from liability, shall continue as valid and enforceable obligations of the Parties notwithstanding any such termination, cancellation, completion or expiration.

END OF GENERAL CONDITIONS

ATTACHMENT B
INSURANCE REQUIREMENTS

Subconsultant shall maintain continuously during the life of this Agreement, and shall require its lower tier Subconsultants to maintain, the following minimum insurance requirements. **In the event the Prime Agreement insurance requirements contain additional terms, or types of insurance coverage, or higher dollar coverage minimums, those items are incorporated herein and shall apply in lieu of any similar item listed below. The intent being and Subconsultant hereby agrees that Subconsultant shall provide the same types and amounts of insurance coverage under the same terms as CEC is obligated to provide under the Prime Agreement.**

a) Workers Compensation Insurance with statutory limits. If Applicable, this shall include coverage for U.S. Longshoreman's and Harbor Workers Act, the Jones Act, and Outer Continental Shelf Lands Act. Employer's Liability limits shall not be less than $1,000,000 per occurrence aggregate.

b) Commercial General Liability with limits of not less than $1,000,000 applicable to bodily injury, sickness, or death in any one occurrence aggregate and not less than $2,000,000 for loss of or, damage to, property in any one occurrence aggregate. This coverage shall include the following: (1) Comprehensive form; (2) Premises operations; (3) Underground explosion and collapse hazard; (4) Products completed operations; (5) Contractual liability; (6) Independent contractors; (7) Broad form property damage; (8) Personal Injury; (9) Valuable papers and records insurance.

c) Automobile Liability covering all owned, non-owned, or hired vehicles used by Subconsultant with limits of not less than $1,000,000 combined single limit.

d) Professional Liability Insurance with limits of not less than $1,000,000 per claim and $2,000,000 in the annual aggregate covering claims, damages, and liability arising out of, or resulting from, Subconsultant's negligent acts, errors, or omissions.

e) If Subconsultant's scope of Services includes any intrusive subsurface investigation or disturbance, then a Pollution Liability policy with limits of not less than $5,000,000.

The policies under b), c), and e) above shall (1) name CEC ("Civil & Environmental Consultants, Inc."), its Client, the affiliates of each and their respective officers, directors, partners, agents, employees, successors and assigns, and any additional indemnitees and additional insureds required by the Prime Agreement (the "CEC Parties") as Additional Insureds; (2) be primary to any other insurance maintained by the CEC Parties; (3) contain a severability of interest or cross-liability provisions; (4) provide 30 days advance notice to CEC in the event of any non-renewal, cancellation, restriction, or modification of insurance; and (5) provide a waiver of subrogation in favor of the CEC Parties with regard to coverage above. Subconsultant shall provide CEC with satisfactory evidence of the above-stated coverages with CEC listed as the certificate holder prior to commencement or payment for the Services.

ATTACHMENT C
SAFETY QUESTIONNAIRE

As part of Civil & Environmental Consultants, Inc. (CEC) efforts to promote an accident and incident free workplace, we are requesting information about your safety performance and programs and providing information and clarification(s) to our safe operating practices. Please complete the attached form and submit it, along with the following:

- OSHA Form 300A for the most recent three calendar years
- EMR Letter for most recent three calendar years
- Outline/Table of Contents or Summary of your company Safety Program and Safety Policy

Please email this information to dparise@cecinc.com, or mail it to:

David J. Parise, ASP
Safety Manager
Civil & Environmental Consultants, Inc.
333 Baldwin Road
Pittsburgh, PA 15205

Additionally, please acknowledge receipt and review with your staff the General Safety Operating Practice – Stop Work Authority and Process WSM 100.34. This Stop Work Authority and Process applies when working on CEC projects.

Please provide the requested information and acknowledge receipt of WSM 100.34 within 30 days of receipt of this letter.

Questions, clarifications or comment can be directed to Mr. Parise at 412-249-1609.

Very truly yours,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

David J. Parise, ASP
Safety Manager

Enclosures

Safety, Health and Environmental Performance

Company Name: Cumberland River Compact

Address: 35 Peabody Street, #305

Nashville, TN 37213

Number of Employees: 15

Name of Person Completing This Form: Mekayle Houghton

Title: Executive Director

Phone No: 615-837-1151 Fax No: _____

Please respond *Yes* or *No* to the following questions:

(a) Does your company have a written Safety, Health & Environmental (SH&E) Policy? (If yes, please attach a copy)
Yes ☐ No ☒

(b) Does your company have a written SH&E program, including procedures for worker protection, incident/accident investigation and reporting, confined space entry, lockout/tagout, and fall protection? (If yes, please attach a copy of the Table of Contents) Yes ☐ No ☒

(c) Does your company have a Drug and Alcohol Prevention Policy? (If yes, please attach a copy) Yes ☐ No ☒

(d) Does your company have someone assigned full-time to support/implement your company's SH&E program?
Yes ☐ No ☒

If yes, please give name and title:

Mekayle Houghton — Name

Executive Director — Title

Mekayle.Houghton@cumberlandrivercompact.org — Email Address

615-837-1151 — Phone

(e) Do you have a formalized training program designed to instruct your management and employees in health, safety, and environmental issues? (If so, please attach a copy)

Yes ☒ No ☐

(f) For the last three years, please list the number of recordable injuries and Experience Modifier Rate (EMR) for your company. (Please attach copies of OSHA 300 Logs, 300A Summaries and EMR Letter from your carrier)

Year	Total Recordable Injury Rate	EMR
20 20	0	
20 21	0	
20 22	0	

(h) Are any of your personnel who will be on a CEC Project Site trained and qualified in Emergency Response in accordance with 29 CFR 1910.120? (If yes, please attach copies of training certificates). Yes ☐ No ☒

(i) Have you received any citations or violations from any regulatory agency, (i.e. OSHA, EPA, DOT, State, etc.)? If so, please list them below. Yes ☐ No ☒

_____ _____

_____ _____

(j) Does your company handle hazardous waste (i.e. solvents)? If so, please describe your handling procedures. Yes ☐ No ☒

Please use the space provided below to give any additional information about your company's SH&E Policy/Programs/Procedures:

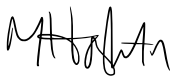
_____

_____

_____

_____

I certify that, to the best of my knowledge, the information provided above is correct and true, and accurately represents the current state of this company.



9/22/22	Mekayle Houghton	Executive Director
Signature	Date	Printed Name	Title

For CEC Use Only

Subcontractor/Subconsultant Safety Qualification and Designation

Subcontractor/Subconsultant is Safety Qualified: Yes No

Comments: _____

_____

Subcontractor/Subconsultant Safety Qualification Designation: Green Yellow Red

Comments: _____

_____

Designation Date: _____ **By:** _____

ATTACHMENT D
New Vendor Information Form

Vendor Name: Cumberland River Compact

Address: 35 Peabody Street, #305 Nashville, TN 37210

Federal Taxpayer ID: 62-1709756

☐ Individual ☒ C Corporation ☐ S Corporation ☐ Partnership
☐ Limited Liability Company (Circle One) C= Corporation S=Corporation P=Partnership

Please select any of the following that apply and attach certification (if applicable):
☐ Minority Business ☐ Woman-Owned Business ☒ Other: Please Specify 501c3 Charitable Organization
☐ Disabled Veteran ☐ Veteran Owned Business

Vendor Accounting/Billing Contact: Name: Mary Frances Moquin
Email: maryfrances.moquin@cumberlandrivercompact.org Phone: 615-837-1151

Payment Remittance Information:

Do you accept credit card payment? Yes/No If yes, Remittance Email: _____

ACH:

Account Type: X Checking or _____ Savings

Bank Name: Bank of America

Bank Address: P.O. Box 25118
Tampa, FL 33622-5118

Bank Contact Name: N/A Phone Number: 800.637.7455

Routing Number: 064000020 Account Number: 444022315711

Remittance Email: N/A

Contact Name: N/A Phone: N/A

To receive payment via ACH, provide a voided check or letter from the bank on bank letterhead emailed to accountspayble@cecinc.com

Authorized by: _____ 9/22/22
(Signature) **(Date)**

ATTACHMENT E
PRIME AGREEMENT

WORK/SERVICE AUTHORIZATION ("Work Authorization")

Date:	09/22/2022	**Prepared by:**	Mekayle Houghton
Subconsultant:	Cumberland River Compact	**Contact Name:**	Mekayle Houghton
Address:	35 Peabody Street #305 Nashville, TN 37210	**Phone:**	615-837-1151
		Email:	Mekayle.houghton@cumberlandrivercompact.org
CEC PM:	Christine Guy-Baker	**CEC Principal:**	Janette Wolf
CEC Project No.:	192-267 Task D	**Project Name:**	Hendersonville Public Education
Location	Hendersonville, TN		

Scope of Work/Services:

The Cumberland River Compact will provide the following services in the City of Hendersonville. The work will occur from October 1st, 2022 to ~~September 30th, 2027.~~
August 31, 2027 (TNS000000 Permit Expiration)

Water stewardships programming to local schools: 4 qualifying programs a year.1 qualifying program for each school over contract period. A minimum of 20 education events over the 5 year duration.

Watershed Education to Local Residents: 6 Watershed Education Programs and/or Outreach per year (2 for Public and 4 for Development / Commercial)

Watershed Stewardships Events: 2 Stream Stewardship Events Per Year

Waterfest: Annual sponsorship of the summer event.

Full details of the project are available in the document sent to CEC entitled, "Hendersonville Public Education 2022 Proposal_updated August 16 2022"

All Services will be performed pursuant to the Master Subconsulting Agreement between Subconsultant and CEC. If the Prime Agreement is included, the parties acknowledge and agree that the Subconsultant shall owe to CEC the same duties and obligations, to the same degree and extent, that CEC owes such duties and obligations to the Client. Subconsultant's proposal, if attached to this Work Authorization, is solely for reference for the Scope of Services to be provided by Subconsultant. Any additional or conflicting terms and conditions included or attached to Subconsultant's proposal are rejected and excluded from this Agreement.

Subconsultant Authorized Amount (Not to Exceed): _____

CEC Authorized Signature: _____ **Date:** 10/7/2022

CHANGE ORDER

Subconsultant: _____ **Contact:** _____

Address: _____ **Phone:** _____

_____ **Email:** _____

Change Order No.: _____ **CEC Project Manager:** _____

Date: _____ **CEC Principal/VP:** _____

CEC Project: _____ **Task:** _____

Client/Project Name: _____

Location: _____

Scope of Services:
Reason(s) for Additional Services:
Proposed Schedule and/or Cost Impact:
The foregoing change order represents full and complete settlement of any and all costs, expenses, impacts and/or delays as a result of this change or addition to the Services and the Agreement.

CEC Principal/VP Signature: _____ **Authorized Amount (Not to Exceed):** $ _____

Subconsultant Authorized Signature: _____ **Date:** _____

25 YEARS OF STEWARDSHIP

THIS PROPOSAL
IS PREPARED FOR

City of Hendersonville
Tennessee

OUR WATER.
OUR FUTURE.

WORKING TO ENSURE ABUNDANT FRESH WATER AND A SUSTAINABLE FUTURE FOR THE CUMBERLAND RIVER BASIN SINCE 1997.

CUMBERLAND
RIVER COMPACT
OUR WATER. OUR FUTURE.

The Cumberland River Compact is pleased to present this partnership opportunity to the City of Hendersonville. For 25 years, the Cumberland River Compact has been an innovative, strategic, and impactful leader in improving water quality for the Cumberland River and its tributaries. Through partnerships with local municipalities, we are able to expand our capacity to serve the people and places that call our watershed home. We have current partnerships with Metro Nashville, the City of Franklin, the City of La Vergne, the City of Goodlettsville, and the City of Clarksville to help them meet their MS4 requirements.

Our proposal is broad and multi-faceted as we have found that these partnerships are most successful at moving the needle in a community when we can present a comprehensive approach. We welcome your input and feedback to refine what will work for the City of Hendersonville.

PROPOSED DELIVERABLES

Updated August 16, 2022

Activity	Deliverable
Water stewardship programming to local schools	4 qualifying programs a year.1 qualifying program for each school over contract period. A minimum of 20 education events over the 5 year duration.
Educational Signage	Install 1 outdoor educational sign per year.
Watershed Education to Local Residents	6 Watershed Education Programs and/or Outreach per year (2 for Public and 4 for Development / Commercial)
Water Stewardship Events	2 Stream Stewardship Events Per Year
Waterfest	Annual sponsorship of the summer event.

Contract Period: ~~September 1,~~ 2022 to August 31, 2027

October 1

PUBLIC EDUCATION ACTIVITIES

WATER STEWARDSHIP FOR SCHOOLS

CRC shall provide local water quality education, outreach, resources, or involvement to local City schools to promote water quality. This shall be in the form of classroom interactions, field trip events, Creek Critters, teacher trainings, resource promotion, or other methods approved by the City's Stormwater Coordinator. We may also host Sumner County Teacher Trainings and invite the teachers from Hendersonville schools. Teachers trained by us reach an average of 75 students per year and are supported by our growing network of educators, ensuring a long-term and lasting impact on their students.

EDUCATIONAL SIGNAGE

Install educational signs about habitats, water quality, stormwater, or related topics on public land (greenways, parks, etc). Signage would be co-branded with the City of Hendersonville and the Cumberland River Compact. Sign locations will be selected in order to target the specific audiences (i.e. signage near the location where building permits are delivered).

COMMUNITY EDUCATION

CRC shall reach out to residents and the development community to promote water quality. This may consist of attending community meetings, hosting River Talks or other workshops, engaging in outreach on Clean Marina practices, distributing written information by email, and/or meeting with community leaders to advocate for practices that are beneficial to water quality. We would also create a custom page on our website with information about Hendersonville's waterways and relevant ways to take action (like rain gardens and native landscaping, etc.). We currently have approximately 280 Hendersonville-area email contacts and expect this number to grow by 125 over the contract period.

PUBLIC EDUCATION ACTIVITIES

WATER STEWARDSHIP EVENTS

A stream stewardship event can be but not limited to: riparian buffer implementation, riparian buffer planting, stream bank live staking, stream clean up, structural BMP implementations, kayak clean-ups, or other activities shown to provide water quality benefits to the City's water resources, as approved by the City's Stormwater Coordinator. Promotion of our Adopt-a-Stream program to community residents, businesses, and organizations. Trash transport and disposal services from clean-ups events to be coordinated by the City of Hendersonville.

WATERFEST

Sponsorship of the Cumberland River Compact's annual Waterfest held in Moss-Wright Park. Waterfest brings kids and their families together for a fun and educational water-focused day. Educational exhibitors provided hands-on and engaging water-themed activities and are combined with splashes of summer fun including waterslides, trivia, music, and prizes.

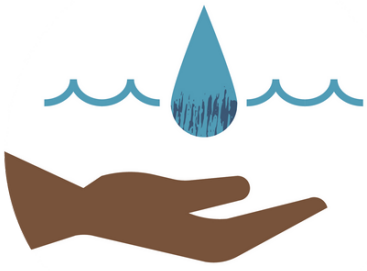
Reporting: The Compact will provide quarterly email updates about the progress of outreach and programs. At the end of the contract year, we will provide an impact report with all necessary metrics including the number of programs, the total number of people engaged, photos, outcomes, and any other pertinent information.

ELIGIBLE SCHOOLS

Elementary Schools:
Beech Elementary (low priority)
Burrus Elementary
Gene Brown Elementary
George Whitten Elementary
Indian Lake Elementary
Jack Anderson Elementary
Lakeside Elementary
Madison Creek Elementary (low priority)
Nannie Berry Elementary
Station Camp Elementary
Walton Ferry Elementary

Middle Schools:
Ellis
Hawkins
TW Hunter
Knox Doss
Station Camp

High Schools:
Beech (low priority)
Hendersonville
Merrol Hyde Magnet
Station Camp



The Cumberland River Compact is committed to helping the communities across the region meet and exceed MS4 requirements. Our partnership with the City of Hendersonville is designed to achieve public education and outreach and public involvement/participation goals.

PROPOSED DELIVERABLES and MS4 Alignment

Activity	Deliverable	MS4 Alignment
Water stewardship programming to local schools	4 qualifying programs a year.1 qualifying program for each school over contract period. A minimum of 20 education events over the 5 year duration.	Audience: Public MCM 4.2.1.1
Educational Signage	Install 1 outdoor educational sign per year.	Audience: Public and Engineering/Development MCM 4.2.1.1 & MCM 4.2.1.2
Watershed Education to Local Residents	6 Watershed Education Programs and/or Outreach per year (2 for Public and 4 for Development / Commercial)	Audiences: Public (2 events) and Engineering / Development (4 events) MCM 4.2.1.1, MCM 4.2.1.2 & MCM 4.2.2.2
Water Stewardship Events	2 Stream Stewardship Events Per Year	Audience: Public MCM 4.2.2.1
Waterfest	Annual sponsorship of the summer event.	Audience: Public MCM 4.2.1.1

OUR VISION IS CLEAN AND ABUNDANT WATER

THE MISSION OF THE CUMBERLAND RIVER COMPACT IS TO ENHANCE THE HEALTH AND ENJOYMENT OF THE CUMBERLAND RIVER AND ITS TRIBUTARIES THROUGH EDUCATION, RESTORATION, AND COLLABORATION.

3 MILLION

3 million people and thousands of species depend on clean and abundant water from the Cumberland River and its tributaries. Our job is to make sure they get it.

The Cumberland River basin, one of the most biodiverse regions on the continent, encompasses cities, farms, schools, factories, and neighborhoods. Our efforts in education, restoration, and outreach all contribute to keeping our water healthy.

OUR STRATEGY

We work on the root causes of water pollution, both urban and rural. Our goal is to give people the tools to be smart impactful stewards of their watershed and to constructively partner with government agencies, businesses, and landowners to achieve conservation outcomes that improve the health of our lands and waters.

We all live downstream. And it's up to all of us to work together to protect the future of our water.

41% Of assessed stream miles in the Cumberland River basin are considered unhealthy by the state - meaning they are unsuitable for drinking, fishing, or swimming.

TOP CAUSES OF WATER POLLUTION

PATHOGENS
SILTATION
NUTRIENTS

TOP SOURCES OF WATER POLLUTION

AGRICULTURE
URBAN STORMWATER
MINING

APPENDIX C

PUBLICITY PLAN AND PUBLIC NOTICE PROCEDURES

Stormwater Publicity Plan and Public Notice Procedures

Prepared by:

The City of Hendersonville Public Works Department
101 Maple Drive North, Hendersonville, TN, 37075

Developed May 2021
Revised June 2024

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Hendersonville Stormwater Publicity Plan and Public Notice Procedures

I. Publicity Plan

1. Permit Requirements

The objective of the Public Involvement/Participation minimum control measure is to promote, publicize, and facilitate resident's participation in the development and implementation of the stormwater management program. Section 4.2.2. (e) of the MS4 Permit requires the permittee to develop and implement a Publicity Plan.

2. Publicity Plan Goals

The City of Hendersonville (City) will develop and implement methods to notify target audiences of public involvement and participation opportunities. These methods will be designed to reach the intended audience. The target audiences identified by the permit are the public, engineering/development community, commercial/industrial community, and employees.

3. Special Events

The City will maintain a calendar of events and use a variety of media platforms to notify the public of stormwater related events, activities, and educational opportunities. The City partnered with the Cumberland River Compact (CRC) to provide quality stormwater education events. The CRC will also provide publicity for educational events through various means and methods (e.g., monthly newsletter, social media, posts, email chains). Methods used by the City for advertising stormwater events may include, but are not limited to:

- City Webpage
- City Calendar
- Social Media
- Mail
- Public Access Channel #3
- Public Meetings
- Public Notice
- Public Information Officer

4. Land Disturbance Projects

The City will provide an inventory of proposed land disturbance projects and active land disturbance projects. This inventory will be posted on the Public Works Land Disturbance Inventory webpage. The inventory will provide basic information of the proposed and active project sites to include the name of project, address, or approximate location (GPS coordinates), and the amount of acreage to be disturbed.

5. Stormwater Management Program (SWMP) Updates

When updates to the City SWMP are necessary, the City will make the necessary amendments to the existing ordinance and provide public notice to residents via the City of Hendersonville Main "Notices and Events" webpage. This notice will provide a comment period of thirty (30) days for residents to review the revisions, provide feedback, and ask questions. All comments/questions will be tracked, and a response provided.

6. Records Request

Residents may obtain and submit records request for all stormwater management documents at Request Information & Records | Hendersonville, TN (hvilletn.org). The City of Hendersonville's applications for Records Requests can be downloaded and filled out. Once completed and printed, they must be brought to Hendersonville City Hall to the Office of the City Recorder for approval and signature. Once the record request is received, reviewed, and approved, you will be notified with a date to retrieve or view the requested records.

7. Tracking

All stormwater special events and activities will be documented using a special events spreadsheet. The tracking spreadsheet will include the total number of activities, description, date, management measures addressed, targeted audience, approximate number of target audience reached.

8. Methodology to Evaluate Effectiveness

The City will evaluate the public education component by making direct evaluations/observations, tracking the number of attendees, documenting feedback with selected surveys, and tracking of stormwater related calls, emails, and letters received. The City will discuss and evaluate all program components annually and report any necessary modifications in the annual report.

II. Public Notice Procedures

1. Permit Requirements

Section 4.2.2 of the MS4 Permit states that permittees must develop and implement a public notice process in accordance with the permit.

2. Public Notice Requirements

The City of Hendersonville will provide formal public notice for the activities described below. All public notices, comments, and responses will be tracked in accordance with the permit.

2.1. Major Modifications

Major modifications to the Stormwater Management Program require formal public notice and must be reported in accordance with subpart 4.2.2 of the MS4 Permit. These are changes that do require formal public notice. The Stormwater Management Program Plan shall include a description of the formal public notice process for the MS4 program.

The documentation made available for comment in the formal public notice process shall include the written plans required by Part 4 of the MS4 Permit. Individual facility O&M Plans, work instructions, written procedures, or other such documentation are not required to be available for public comment during the formal public notice process described in the Stormwater Management Program Plan.

The formal public notice process described in MS4 Permit subpart 4.4.1.2. is not applicable to the adoption process of any legal authorities.

TDEC-DWR shall be included in the distribution list at water.permits@tn.gov. Comments or objections made by the Division on the modifications must be addressed before the changes can be implemented.

2.1 Stormwater Management Program

A draft and final version of the Stormwater Management Program Plan will be posted to the city's webpage for public review, comments, and questions. Formal public notice will be given as part of this process. Public notice will occur prior to 9/1/2024.

2.3 New Development and Redevelopment Construction Sites

The city will provide formal public notice monthly for all active Construction General Permit sites. Information for construction site projects in the city will be available through the Division of Water Resources Permit Data Viewer. At the beginning of each month the city will provide a report or an interactive map with all active construction sites. The post will include a formal public notice.

2.4 Stormwater Ordinance Modifications

As a result of the issuance of the MS4 permit, dated August 2024, the Stormwater Ordinance must be updated to include the minimum requirements in the permit. Once the revisions are complete, a draft ordinance will be posted for the public and TDEC-DWR review and comment. All comments will be considered and required modifications incorporated.

3. Tracking

All public notices will be documented and included in the Stormwater Management Plan. All comments and responses will be tracked and included with the annual report, in accordance with the MS4 Permit.

4. Program Evaluation

The city will review the Publicity Plan and Public Notice Procedures annually to determine effectiveness. Modifications to the plan will be made, if necessary, and tracked in accordance with the MS4 Permit.

APPENDIX D

ILLICIT DISCHARGE DETECTION AND ELIMINATION PLAN AND PROCEDURES

Illicit Discharge Detection and Elimination Plan and Procedures

Prepared by:

The City of Hendersonville Public Works Department
101 Maple Drive North, Hendersonville, TN 37075

Developed May 2021
Revised July 2024

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I. Illicit Discharge Detection and Elimination Plan

1. Purpose

The purpose of the City of Hendersonville's Illicit Discharge Detection and Elimination (IDDE) Plan is to develop and implement a plan to detect, identify, and eliminate non-stormwater discharges, including through illegal disposal, throughout the Hendersonville MS4 jurisdiction. The purpose of the plan is to also comply with the MS4 Permit illicit discharge detection and elimination minimum control measures (Section 4.2.3.). Illicit discharges are defined in the Hendersonville Municipal Code Title 18, Chapter 2, Section 8.

2. Compliance Activities

2.1 Education

The City of Hendersonville provides illicit discharge identification education to employees and residents regularly. Illicit discharge/connection education is provided through the City's webpage (Illicit Discharge Detection & Elimination | Hendersonville, TN (hvilletn.org)), social media, public access Channel 3, videos, and flyers/pamphlets. Stormwater staff distributes an illicit discharge education video and pamphlets to City employees annually to assist in the identification of illicit discharges and the appropriate methods for reporting. An education flyer that provides information to eliminate illicit discharges is included with annual property tax bills sent to City residents. All information included helps residents identify small steps to take to reduce stormwater pollution.

2.2 Mapping

During the 2022-2027 MS4 Permit cycle the City is working with consultants using a Stormwater Infrastructure Grant (SWIG) to complete the mapping of the City's separate storm sewer system. The City requires all applicable new development and redeveloped projects to provide the MS4 Permit required data on all permanent Stormwater Control Measures (SCM). Currently, the City's environmental consultant maintains the storm sewer system map. The map is updated as new workbooks are provided and approved, and at a minimum of every 6 months.

As of November 2023, the City requires all new development and redevelopment projects to provide certified Stormwater As-built plans. In addition to the CAD files, the City of Hendersonville requires the submittal of the Hendersonville Stormwater Asset Management Workbook. The workbook includes two tabs to be populated with linear assets and point assets of the storm sewer system. Linear assets to be included are conveyances (pipes/box) and open channels. Point assets to be included are area drains, catch basins, combo inlets, outlet structures, manholes/cleanouts, headwall IN, headwall OUT, ponds, and any other stormwater system asset. For residential development, the entire storm system must be included in the workbook. For commercial/non-residential development, all permanent stormwater control measures, connections to the MS4, outfalls to the MS4, and installation of storm infrastructure in the right-of-way must be included in the workbook.

2.3 Monitoring

The City of Hendersonville worked with Civil & Environmental Consultants, Inc., to complete all analytical and non-analytical monitoring requirements. These reports are evaluated and used to determine pollutants of concern and identify potential priority area locations within the City.

2.4 Inspections

Inspections are priority area and complaint driven. The City of Hendersonville completes quarterly representative outfall inspections throughout the City. The stormwater inspector completes quarterly priority area inspections. Inspections for Illicit Discharge/Connections follow the City of Hendersonville Illicit Discharge Detection and Elimination Procedures in Section II of this document.

2.5 Tracking

The City of Hendersonville keeps records of illicit discharge complaints and routine inspections in a tracking spreadsheet with a corresponding illicit discharge folder. The City is currently working to set up inspection documents through the Tyler Technologies Energov application. The inspections to be completed will include Priority Area Inspections, IDDE investigations, and Representative Outfall Inspections.

2.6 Enforcement

Enforcement procedures for Illicit Discharges are established in the City's Enforcement Response Plan.

2.7 Reporting

The City of Hendersonville provides residents with a variety of ways to report illicit discharges within the City. Residents can call into the City's Illicit Discharge Hotline 615-822-1016, email complaints to drainage@hvilletn.org, and complete an illicit discharge/illicit connection report form on the City's website (Illicit Discharge Detection & Elimination | Hendersonville, TN (hvilletn.org)).

3. Evaluation

Each year the City of Hendersonville meets to evaluate program components and overall program effectiveness. The Illicit Discharge Detection and Elimination Plan will be evaluated annually. Any modifications will be included in the Annual Report.

4. Guidance

The City of Hendersonville will refer to the Center for Watershed Protection's Illicit Discharges Detection and Elimination Guidance Manual for Program Development and Technical Assessments for program development and guidance for illicit discharge investigations.

II. IDDE Procedures

1. MS4 Permit Requirements

The City of Hendersonville has a permit to operate a Municipal Separate Storm Sewer System (MS4) issued by the Tennessee Department of Environment and Conservation. This permit authorizes the City of Hendersonville to discharge stormwater into the waters of the State of Tennessee pursuant to the Tennessee Water Quality Control Act of 1977. Through the Stormwater Ordinance, the City of Hendersonville has mandated that the discharge of pollutants into the municipal separate storm sewer system is a violation of ordinance and illicit discharges shall be located and eliminated. The City of Hendersonville has established an illicit discharge detection and elimination program to comply with City, State, and Federal water quality regulations. The components of this program involve visual outfall screening, stream testing, identification and inspection of hotspots, and an illicit discharge reporting website.

2. Purpose

The purpose of this procedure is to aid stormwater staff in the identification and elimination of illicit discharges detected during dry weather screening, priority area inspections or illicit discharge/connection investigations. Proper identification and elimination of illicit discharges is a required minimum control measure set forth by the MS4 Permit.

3. Scope

This procedure applies to City staff in Stormwater Division of the Public Works Department, specifically Stormwater Inspectors.

4. Responsibility

4.1 Stormwater Division Staff

The Stormwater Coordinator is responsible for keeping these procedures up to date, overseeing the illicit discharge detection and elimination program for compliance with regulatory requirements, and providing periodic training on illicit discharge detection and elimination.

4.2 Supervisors

Supervisors are responsible for ensuring stormwater staff's compliance with this procedure. Supervisors are required to train their employees on proper application of procedures.

4.3 Stormwater Inspectors

Personnel must follow the correct procedures in accordance with the latest version of this procedure. Specific responsibilities are explained in the procedures described below.

5. Procedures for Tracking, Investigating, and Addressing Potential and Confirmed Illicit Discharges

5.1 Initial Notification

Upon initial notification of an illicit discharge, the stormwater inspector will respond within seven calendar days to investigate the illicit discharge complaint. It is recommended that the inspector follow up with the complainant prior to making a site visit to verify the location of the discharge and complainant's

observations. The inspector will document the complainant, date, time, and location of the suspected illicit discharge in the annual report tracking spreadsheet.

5.2 IDDE Initial Site Investigation

The Stormwater Inspector will complete a site visit and investigate the illicit discharge complaint. The inspector will attempt to identify the substance identified as the illicit discharge and confirm the source of the discharge. If the inspector is unable to identify the pollutant, samples may be collected and sent for testing in a specified lab (at the discretion of the City Engineer). If it is determined that the source of the pollutant is not the MS4, the inspector will forward the complaint to the Tennessee Department of Environment and Conservation for investigation and enforcement.

If the inspector can immediately identify the pollutant and source of the pollutant, he/she shall follow the steps outlined in the enforcement response plan (ERP). The inspector shall collect all pertinent information during the investigation including:

- Property owner/operator
- Locations
- Description of findings
- Description of enforcement actions including referrals to other agencies
- Photographs
- Times
- Parameters and Sampling Results (if applicable)
- Discharge Source
- Date the illicit discharge was resolved

It is important for the inspector to remember to bring and wear PPE when investigating illicit discharges. If the inspector believes the discharge to be hazardous, he/she will leave the immediate area and notify the Hendersonville Fire Department Haz/Mat Response Team and applicable State or Federal Agency.

5.4 Pre-Inspection Preparation

Prior to inspecting illicit discharge complaints, representative outfalls, and hotspot locations, each inspector should ensure that they are prepared for inspections. The inspector should review the previous inspection report and photos to verify that any changes to features or structures are noted. The inspector should ensure that all electronic devices are properly charged and properly functioning. The inspector should dress for the current site and weather conditions and wear all necessary personal protective equipment (PPE). Supplies can be purchased at an approved vendor using the Public Works Credit Card.

The inspector may need the following tools during their inspection:

- PPE (boots, sunscreen, bug spray, face mask, hard hat, reflective vest, eye protection, etc.)
- Inspection Checklist and Report
- Cell phone/Camera
- Surface Pro/Tablet
- Outfall/Priority Area Maps

5.5 Inspection Procedures

Using the accepted methods laid out in the *Center for Watershed Protection Illicit Discharge Detection and Elimination Guidance Manua*l, the inspector should assess the overall site conditions, make observations, and determine if there has been an illicit discharge into the MS4. Prior to and upon arrival to the site the inspector will:

1. Notify the Property Owner/Site Operator (if applicable) of the upcoming inspection and meet him/her on-site for the inspection (if necessary or requested).
2. Travel to and arrive safely at the inspection site.
3. Using tablet; open active inspection report
4. Observe and document any suspected illicit discharges.
5. Observe, locate, and document the source of the illicit discharge; walk, drive, drone, etc.
6. Inspect all on-site and off-site outfall structures discharging stormwater from the active construction site, document conditions in report and with photographs.
7. Once the site inspection is complete, send the inspection report and supporting documentation to the property owner, project manager, and erosion control specialist for correction of existing deficiencies.

5.6 Tracing Illicit Discharges

The Stormwater Inspector should use the existing Storm Sewer Map to assist in tracing illicit discharges. If an updated map is unavailable the Stormwater Inspector should complete a desktop analysis of aerial photography, construction documents, plats, and other data viewers to assist in tracing the source of an illicit discharge.

5.7 Enforcement

Illicit discharge enforcement procedures are identified in the Enforcement Response Plan. Initial enforcement actions (including referrals to other regulatory agencies with appropriate jurisdiction) shall be taken within seven (7) calendar days of the investigation on confirmed illicit discharges.

5.8 Illicit Discharge Elimination

Confirmed illicit discharges shall be eliminated as soon as practicable. If the elimination of the confirmed illicit discharge will take more than fourteen (14) calendar days (from owner/operator's notification of confirmed illicit discharge) a corrective action plan to eliminate identified illicit discharges shall be developed by the owner/operator of the source of the illicit discharge in concurrence with the MS4. Corrective action plan guidance and procedures can be found in the Enforcement Response Plan.

5.9 Follow-Up Inspections

When necessary, a follow up inspection shall be performed to confirm that the existing illicit discharge has been eliminated. The inspector is responsible for scheduling follow-up inspections to correspond with the ERP timeline. During the follow-up inspection, the inspector will inspect and verify that all confirmed illicit discharges listed on the previous inspection report have been eliminated. If the site operator fails to correct the listed deficiencies the inspector will reference the ERP and take appropriate enforcement action.

6. Documentation and Reporting

The inspector must complete an inspection report for each completed site inspection and follow-up inspection. Photographs must be taken of all on-site deficiencies and/or illicit discharges. All inspection documents and evidence shall be stored digitally in the NPDES folder under the specified site project or in the Energov application. All illicit discharge complaints shall be tracked in accordance with Section 4.2.3. of the MS4 Permit. Inspection records must be retained for a period of three (3) years from the date of inspection (MS4 Permit Section 6.1). If applicable, the inspector will forward existing complaints to neighboring jurisdictions or other responsible agencies.

7. Procedures for Locating Priority Areas

Stormwater staff completed a desktop analysis to identify potential priority areas in the City and those areas have been documented in a spreadsheet and corresponding GIS map. Stormwater staff conduct dry weather screening of 18 representative outfalls, routine patrols, and evaluate resident complaints to identify sources of potential illicit discharges. The priority area spreadsheet will be updated as new priority areas are identified. As staffing and time allows, priority areas will be uploaded into the City's GIS database and Energov application for inspection reporting.

7.1 Dry Weather Screening

The City identified eighteen (18) representative outfalls and performs dry weather screening at those outfalls quarterly. The Stormwater Inspector photographs the outfalls and completes an inspection spreadsheet documenting conditions and observations. Any concerns with the condition of the outfall are reported to the Assistant Public Works Director/Road Superintendent.

7.2 Land Use

Stormwater staff should evaluate major land use categories when investigating reports of illicit discharges and attempting to identify priority areas. Table 1 below provides guidance on typical pollutant runoff from major land use categories. Table 2 provides guidance for identifying land use, generating sites and the activities that produce the discharges (Source: Center for Watershed Protection Illicit Discharge Detection and Elimination Manual). The priority area spreadsheet will be updated as new priority areas are identified.

Table 1. Typical Pollutant Runoff from Major Land Use Categories (Source: Metro Nashville Water Services Stormwater Division)			
Major Land Use	**Typical Pollutants**	**Typical Source**	**Resulting Water Quality Degradation to Target in Educational Messages**
Residential	1. Nutrients 2. Sediment 3. Pathogens 4. Organics	1. Over-fertilization, Pet Waste, Human Waste and Detergents from failing septic systems. 2. Grading areas without maintained controls. Removing stream bank vegetation. 3. Failing septic systems, illegal cross-connections of sanitary and stormwater, and pet waste. 4. Dumping of leaves/grass clippings in conveyances	1. Increased algal blooms, depleted dissolved oxygen levels from decaying algae. 2. Reduced water clarity for aquatic plants, smothers aquatic life, transports other pollutants. 3. Potentially harmful to human health. 4. Decomposition depletes dissolved oxygen levels within streams.
Light Commercial	1. Hydrocarbons (Oil & Grease) 2. Trash 3. Nutrients 4. Sediment	1. High-traffic parking lot areas, leaking storage tanks, etc. 2. Poor grounds upkeep, especially in parking areas and around dumpsters. 3. Landscaping/golf courses. 4. Grading/developing without maintained controls. Removing stream bank vegetation.	1. Toxic to aquatic life and impact drinking water supplies. 2. Aesthetically displeasing, can block drainage pipes causing erosion, can be harmful to wildlife. 3. Increased algal blooms, depleted dissolved oxygen levels from decaying algae. 4. Reduced water clarity for aquatic plants, smothers aquatic life, transports other pollutants.
Industrial/Heavy Commercial	1. Metals 2. Sediment 3. Hydrocarbons (Oil & Grease)	1. Exposed industrial processes/improper disposal. 2. Exposed industrial processes/improper disposal. Gravel parking lots with heavy truck traffic. 3. Equipment leakage, leaking storage containers, high-traffic pervious areas.	1. Acute or chronic toxic impacts to aquatic wildlife. 2. Reduced water clarity for aquatic plants, smothers aquatic life, transports other pollutants. 3. Toxic to aquatic life and impact drinking water supplies.

Table 2: Land Uses, Generating Sites and Activities That Produce Indirect Discharges		
Land Use	**Generating Site**	**Activity that Produces Discharge**
Residential	• Apartments • Multi-family • Single Family Detached	• Car Washing • Driveway Cleaning • Dumping/Spills (e.g., leaf litter and RV/boat holding tank effluent) • Equipment Washdowns • Lawn/Landscape watering • Septic System Maintenance • Swimming Pool Discharges
Commercial	• Campgrounds/RV parks • Car Dealers/Rental Car Companies • Car Washes • Commercial Laundry/Dry Cleaning • Gas Stations/Auto Repair Shops Marinas • Nurseries and Garden Centers • Oil Change Shopes • Restaurants • Swimming Pools	• Building Maintenance (power washing) • Dumping/Spills • Landscaping/Grounds Care (irrigation) • Outdoor Fluid Storage • Parking Lot Maintenance (power washing) • Vehicle Fueling • Vehicle Maintenance/Repair • Vehicle Washing • Washdown of greasy equipment and grease traps
Industrial	• Auto recyclers • Beverages and brewing • Construction vehicle washouts • Distribution centers • Food processing • Garbage truck washouts • Marinas, boat building and repair • Metal plating operations • Paper and wood products • Petroleum storage and refining • Printing	• All commercial activities • Industrial process water or rinse water • Loading and un-loading area washdowns • Outdoor material storage (fluids)
Institutional	• Cemeteries • Churches • Corporate Campuses • Hospitals • Schools and Universities	• Building Maintenance (e.g., power washing) • Dumping/Spills • Landscaping/Grounds Care (irrigation) • Parking Lot Maintenance (power washing) • Vehicle Washing
Municipal	• Airports • Landfills • Maintenance Depots • Municipal Fleet Storage Areas • Ports • Public Works Yards • Streets and Highways	• Building Maintenance (power washing) • Dumping/Spills • Landscaping/Grounds Care (irrigation) • Outdoor Fluid Storage • Parking Lot Maintenance (power washing) • Road Maintenance • Spill Prevention/Response • Vehicle Fueling • Vehicle Maintenance/Repair • Vehicle Washing

8. Annual Evaluation

The Stormwater Coordinator is responsible for conducting permit required training and annual review of this procedure with the staff referenced in Section 4.

APPENDIX E

CONSTRUCTION SITE STORMWATER RUNOFF CONTROL PLAN AND PROCEDURES

Construction Site Runoff Control Plan and Procedures

Prepared by:

The City of Hendersonville Public Works Department
101 Maple Drive North, Hendersonville, TN 37075

Developed May 2021
Revised July 2024

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APPENDICES 6

APPENDIX A Land Disturbance Permit Application, Flow Chart, and Checklist

APPENDIX B Land Disturbance Surety Request Letter and Example Letter of Credit

APPENDIX C Pre-Construction Meeting Checklist

APPENDIX D Professional Engineer EPSC Certification Form

APPENDIX E Stormwater Inspection Procedures

APPENDIX F Energov Stormwater Inspection Report

APPENDIX G Standard Erosion Prevention & Sediment Control (EPSC) for Plot Plans

Construction Site Stormwater Runoff Control Plan and Procedures

1. Purpose

The purpose of the Construction Site Stormwater Runoff Control Plan and Procedures document is to comply with Section 4.2.4. of the MS4 Permit. The document serves as a guide for the current procedures the City follows for the compliance activities identified below.

2. Compliance Activities

2.1. Stormwater Ordinance

The City revised its Stormwater Ordinance to be consistent with the August 2024 MS4 Permit and 2021 Construction General Permit. These revisions include at a minimum adoption of the Enforcement Response Plan by reference, updated design storm requirements for all waters as well as special conditions for streams with unavailable parameters and Exceptional Tennessee Waters (ETW), a requirement for construction site operators to control wastes to avoid adverse impacts to water quality, requirements for construction site operators to implement appropriate erosion prevention and sediment control best management practices (BMPs), requirements for site designers to possess a Level 2 certification, and providing a definition for priority construction sites.

2.2. Erosion Prevention and Sediment Control (EPSC) Plan Review

The City of Hendersonville requires all development and redevelopment sites to submit EPSC plans within a Site Plan or Construction Plan, for review through the Planning Department using Energov Citizen Self Service Portal. The plan reviews are assigned to engineering staff for review to ensure compliance with Hendersonville Municipal Code (H.M.C.). Review staff evaluate the completeness of the submittal and evaluate the overall effectiveness of proposed BMPs and consider potential impacts to water quality. The plans are reviewed through a Bluebeam Studio Session by City staff or a third-party consultant. Staff comments from each department are recorded and provided to the site designer to make modifications to the plans and re-submit for approval. A plan checklist is provided to developers/designers to ensure that the minimum design requirements are met. The plan review process occurs on a two-week interval until all comments are resolved. Once all comments are resolved, the City Engineer stamps the plans as approved, the applicant can apply for a Land Disturbance Permit.

2.3. Land Disturbance Permitting and Release Procedures

The Land Disturbance Permit application, review checklists, certifications, flowchart, and other supporting documents can be found on the City's Public Works Permits webpage and in APPENDIX A.

2.3.1 Land Disturbance Application

All applicable new development and redevelopment projects are required to obtain a Land Disturbance Permit (LDP). Once a project has been through the Planning review and has been stamped approved by the City Engineer, the applicant can submit a Land Disturbance Permit Application, the application fee(s), and supporting documents through the Energov Citizen's Self Service Portal or via email to the Stormwater Coordinator. The Stormwater Coordinator reviews the submittal to ensure all required documents are included and accepts the submittal or rejects the submittal. If the submittal is rejected the reviewer shall provide the reasons for the rejection within thirty (30) calendar days. The applicant must obtain all other applicable State and Federal permits prior to applying for the LDP. Failure to provide the required permits/documentation will result in an immediate rejection of the submittal.

2.3.2. Land Disturbance Preliminary Site Visit

Prior to review of the Land Disturbance Permit plans, Stormwater Staff must visit the proposed project location to identify any potential environmentally sensitive areas that may have been missed during the design. Staff will look for evidence of streams, wetlands, and rare species habitat. If staff locates a potential feature, photos of the feature and a request for Hydrologic Determination will be sent to the property owner and site designer in the next comment letter and/or plan mark ups.

2.3.3. Land Disturbance Surety

All construction sites within the City shall provide a Land Disturbance Surety in the form of a cashier's check or a Standby Letter of Credit. Once the project plans are approved, a Land Disturbance Surety Request Letter (APPENDIX B) is sent to the property owner. The Land Disturbance Surety is calculated by rounding up the total disturbed acreage and multiplying the value by $10,000. The Land Disturbance Surety must be in place prior to scheduling a Land Disturbance Permit Pre-Construction Meeting. The Land Disturbance Surety shall be released in full with the submittal and approval of an as-built plan as specified in H.M.C. 18-203.8. The Land Disturbance Surety amount will be evaluated annually and adjusted as needed using current Consumer Price Index data. Surety reductions may be requested once per year, if applicable. Generally, a surety will not be reduced below 50% of the total estimated cost to reclaim the site.

2.3.4. Land Disturbance Pre-Construction Meeting

The Stormwater Inspector will host a pre-construction meeting prior to the installation of initial EPSC measures to review the City's expectations and enforcement procedures. The property owner, developer, contractor(s), and EPSC inspector are required to attend. Depending on the project size and location, the site designer may be required to attend. Each person in attendance must sign the Pre-Construction Checklist in APPENDIX C. At the end of the pre-construction meeting, the applicant is given permission to install the initial EPSC measures.

2.3.5. Professional Engineer EPSC Certification

To avoid confusion and the need for reinspection, the City requires the site designer to conduct a site visit to inspect and certify that the EPSC measures are installed per the approved plan and details. The site designer must stamp and sign the PE EPSC Certification Form (APPENDIX D) and submit it to the Stormwater Coordinator. The Stormwater Coordinator reviews the form and accepts or rejects the form. Once accepted, the Stormwater Coordinator notifies the applicant to schedule an initial inspection with the Stormwater Inspector.

2.3.6. Initial EPSC Inspection and Permit Issuance

The Stormwater Inspector conducts an initial inspection following the process set forth by the Stormwater Inspection Procedures in APPENDIX E. The Stormwater Inspector completes an initial inspection report through Energov and either passes or fails the site. If the site passes, the Stormwater Inspector issues the Land Disturbance Permit. If the site fails, the Stormwater Inspector identifies the site deficiencies for the responsible party to address. Once the responsible party addresses the deficiencies, they can schedule a reinspection with the inspector. The responsible party must pay any associated fees prior to the reinspection.

2.3.7. Routine EPSC Inspections

The inspector will manage an inspection schedule that complies with Section 4.2.4. of the MS4 Permit. At a minimum, 10% of all non-priority construction sites must be inspected at least once during the reporting period. The inspector will document inspections through the Energov Stormwater Inspection Checklist and provide a report to the responsible party (APPENDIX F). Routine inspections of applicable construction sites will continue until the site is stabilized in accordance with H.M.C. and the property owner completes the Land Disturbance Surety Release Process.

2.3.8. Land Disturbance Surety Release Process

At project completion, the City requires submittal and approval of the following documents prior to the release of the Land Disturbance Surety:

1. Professional Engineer Permanent SCM Verification Form
2. As-built Plans
3. Hendersonville Asset Management Workbook
4. Stormwater Inspection and Maintenance Agreement/Long-Term Maintenance Plan

The Stormwater Inspector will perform a final inspection once all documents have been submitted and approved to ensure all temporary EPSC measures were removed, stormwater infrastructure was installed per plan, and the site is stabilized in accordance with H.M.C. 18-206.3. Once the site passes the final inspection, the Land Disturbance Surety will be released, and the permit closed out.

2.4. Building Permit

To protect water quality, the City requires individual lot homebuilders to complete the Standard Erosion Prevention & Sediment Control for Plot Plans Form (APPENDIX G) when they obtain a building permit. The form informs builders of the requirement to comply with the Stormwater Ordinance and allows them to select which EPSC measures they will implement on-site. The form becomes part of the Building Permit and can be suspended or revoked if the responsible party fails to comply with H.M.C.

2.5. Construction Site Inventory

The Stormwater Inspector tracks all active construction sites through an Excel spreadsheet. The site name, location, point of contact, contact information, surety information, Construction General Permit number, special conditions, and total acres of disturbance are included in the spreadsheet. The Stormwater Inspector conducts a weekly review of the spreadsheet to ensure that the information is current and accurate. The tracking spreadsheet is available for review by TDEC upon request.

2.6. Priority Construction Sites

H.M.C. 18-202 defines priority construction activities as construction activities discharging directly into, or immediately up stream of waters the state recognized as unavailable parameters for siltation or habitat alteration or Exceptional Tennessee Waters. Priority construction sites are inspected at a minimum once a month. Pre-construction meetings are required for all priority construction sites prior to installation of EPSC measures.

2.7. Staff Training Requirements

All City of Hendersonville stormwater review and inspection staff must maintain a TDEC Level 1- Fundamentals of Erosion Prevention and Sediment Control for Construction Sites and Level 2- Design Principles for Erosion Prevention and Sediment Control for Construction Sites certifications.

2.8. Public Access

The public can access an inventory of active construction sites within the City at Public Notice of Active Construction Projects in Hendersonville | Hendersonville, TN (hvilletn.org). Each month Stormwater Staff update the active construction site inventory with contact information for the public to provide comments or ask questions. If a person requests additional information beyond what is available on the stormwater website they are directed to complete the Records Request process found at Request Information & Records | Hendersonville, TN (hvilletn.org).

2.9. Enforcement Tracking

Enforcement actions for construction site violations are established in the City's Enforcement Response Plan. The Stormwater Inspector tracks all instances of non-compliance using an enforcement tracking spreadsheet. Once Energov has been fully implemented into stormwater program permitting and inspections, the City will transition all enforcement tracking to the Energov application.

3. Program Evaluation

Each year the City of Hendersonville meets to evaluate program components and overall program effectiveness. The Construction Site Runoff Control Plan will be evaluated annually.

4. Guidance

City stormwater staff will refer to the Tennessee Erosion and Sediment Control Handbook for program development and guidance for construction site runoff control.

APPENDICES

APPENDIX A-Land Disturbance Permit Application, Flow Chart, and Checklist

City of Hendersonville
Public Works Dept.
Engineering Division
101 Maple North Drive
Hendersonville, TN 37075
(615) 822-1016

Land Disturbance Permit

Office Use Only:	Permit #: _____	LDP Fee Received ☐
EPSC Plans ☐	TDEC Notice of Coverage ☐ Y	☐ N/A
Residential ☐	Residential Development ☐	Commercial Permit ☐
Surety Amount:_____	Surety Received ☐	Cashier's Check/LOC #_____

Site Plan Name and Address of Property:

_____

_____

Parcel ID Number:_____

Total Limits of Disturbance(acres) _____

(* If one (1) acre or more, a Notice of Intent must be filed with the State of TN. A copy of the Notice of Coverage must be provided before a grading permit can be issued.)

Owner: _____ Phone: _____

Business Name: _____

Address: _____

Email:_____

Engineering Firm: _____ Phone: _____

Engineer:_____ Email:_____

Project Manager: _____

Email:_____

Contractor: _____ Phone:_____

Address: _____

Email:_____

Contact Name: _____ Phone: (C) _____

Email:_____

Erosion Control Specialist: _____ Employer:_____

TDEC EPSC Level I Certification #:_____ Phone: (C) _____ Email:_____

Emergency Contact:_____ Phone:_____.

**Must be available 24 hours/7 days a week. If no response after 2-hour period, a citation will be issued for violations. **

(*All numbers listed must be <u>direct</u> line of contact for the individual listed.*)

Schedule of Work

Disturbance Activity Date

_____ _____

_____ _____

_____ _____

_____ _____

Stream buffer required? Yes☐ No☐ Required buffer width? 30'☐ 60'☐
Special Conditions? ETW □ Unavailable Parameters □ Reason: _____

Aquatic Resource Alteration Permit (ARAP) required? Yes □ No □ Permit No._____
(Attach a copy of ARAP with this application)
Archaeological, Environmental, or Historical aspects of this property will be altered or changed?
Yes □ No □

State TNR Permit # _____ Effective Date:_____
(Attach a copy of TDEC Notice of Coverage with this application)

I agree that I will comply with all ordinances and laws regulating grading and land disturbance activities. I agree to permit access to said activities for inspection by City Personnel. All erosion and sediment control measures will be installed before land disturbance begins and will be maintained and kept in proper working condition until final site stabilization. No erosion and sediment control measures will be removed without the approval of the City. I further agree to add any additional reasonable erosion and sediment control measures requested by the City. I have read and understand the Hendersonville Municipal Code and NPDES Construction General Permit. I further understand this land disturbance permit does not preclude any requirements by the State of Tennessee or the Federal Government. By signing this application, I grant permission to City staff to access the property indicated above to conduct a site assessment.

_____ _____
Signature of Property Owner Date

Attach a copy of the grading and drainage plan and erosion control plan to this application.

_____ _____
Authorized Public Works Representative Date

Comments and Additional Requirements: _____

_____

A copy of the permit with the latest revision of approved grading, drainage, and erosion control plans shall be kept on site and available to the public at all times. A non-refundable fee of $50.00 payable to the City of Hendersonville shall be required at the time of application. Failure to comply with the terms as noted above may result in the revocation or suspension of this land disturbance permit until necessary corrections are in place and approved by the City Engineer.

Land Disturbance Permitting Process

Land disturbance application, plan review checklist, plans, and application fee submitted

Stormwater Coordinator informs applicant

Incomplete submittal

Sufficiency review

Complete submittal

Send plans to 3rd party reviewer

3rd party review comments and redlines sent back to Stormwater Coordinator

Designer resubmits

Stormwater Coordinator informs applicant

Comments sent to applicant

Accepted

Surety request letter

Pre-construction meeting
- City
- Developer
- Designer
- Contractor
- EPSC Specialist

Permission given to install initial EPSC measures

Contractor installs initial EPSC measures

Site Designer completes an inspection and certifies that all EPSC measures are installed per plan and the details

Site Designer submits a " Site Designer EPSC Certification Form" to the City

City performs initial site inspection

LDP is issued

Added to construction site inventory list

Developer/Designer/Contractor

City of Hendersonville

3rd Party Reviewer

All parties involved

CITY OF HENDERSONVILLE
LAND DISTURBANCE PERMIT CHECKLIST

Project Name:	
Applicant's Name:	
Application Date:	

#	**GENERAL REQUIREMENTS:** **If you do not submit the required documents, the submittal will be rejected. **	**INCLUDED?**	**N/A**
1	Completed Application with Application Fee		
2	Include a copy of all required permits		
	TDEC Permits (NOC CGP, ARAP, Sinkhole UIC, etc.)- You must have your CGP NOC prior to LDP application. Provide copies of any ARAP applications/permits.		
	USACE Permits (Section 404, etc.)		
	TVA Permits		
3	Plans (EPSC, Site Layout, Grading Plan, Landscaping Plan, etc.)		
4	Drainage report		
5	USDA Web Soil Survey for the subject site		
6	FEMA FIRM for the subject site		
7	National Wetlands Inventory Overlay for the subject site		
8	Stormwater Pollution Prevention Plan		
9	TDOT Concept Approval Letter (if access to TDOT's right-of-way is proposed)		
10	Long-Term Maintenance Plan (Visit **Post-Construction/Permanent Stormwater Management | City of Hendersonville (hvilletn.org)** for current forms and guidance.)		

#	**SPECIFIC PLAN REQUIREMENTS:**	**LOCATION OF REQUESTED INFORMATION (e.g., Sheet C3.07)**	**N/A**
11	Show and label the 100-year floodplain		

CITY OF HENDERSONVILLE
LAND DISTURBANCE PERMIT CHECKLIST

12	Label all streams (as defined in Construction General Permit) adjacent to the site. Note if the site drains to waters with unavailable parameters (habitat alteration or siltation) or exceptional TN waters.		
13	Show and label any required buffers. Show the stream buffer sign locations. Hendersonville requires a non-average 30' stream buffer.		
14	Install High Visibility Fencing around the hydrologic features		
15	Show the survey benchmark, property lines, ROW lines, and easements		
16	Label the roadways		
17	Show Limits of disturbance. The limits of disturbance should encompass all EPSC measures and not overlap them in the plans. Note the acreage of the limits of disturbance.		
18	Label the site outfalls. Note the acreage of the watershed to each outfall and approximate slope for each stage		
19	Note the TDEC NOC tracking number on the plans if applicable		
20	Note the FEMA information for the site. List the community map, panel number, and effective date on the plans.		
21	Add a note stating that the Site Designer must certify that all initial EPSC measures are installed per the plan and details prior to beginning grading operations. The site designer must also perform a site assessment after 30 days of construction within watershed(s) for outfalls with drainage areas greater than or equal to 10 acres (or 5 acres if draining waters with unavailable parameters for siltation or habitation alteration or to ETWs).		
22	Add a note stating the Contractor is required to sweep the streets daily when construction is active where the construction exit(s) are located		
23	Add a note stating that all disturbed areas must be stabilized within 14 days of any stoppage in work to the area		
24	Add a note stating that all slopes 35% or steeper shall be stabilized with EPSC matting or sod. Slopes steeper than 35% must be stabilized within 7 days of stoppage in work to the area.		
25	Add a note stating that the Contractor shall repair/replace any EPSC measures that are failing or in disrepair as indicated on the Twice Weekly TDEC Construction Inspection Report (Appendix C of the Construction General Permit) and/or when notified by the City Stormwater Inspector		
26	Add a note stating that dewatering practices comply with the TDEC BMP Manual's dewatering criteria		
27	Add a note stating the proposed construction sequence – A description of when EPSC measures are to be implemented in relation to construction milestones and how permanent stormwater control measure(s) (SCMs) will be protected during construction		

CITY OF HENDERSONVILLE
LAND DISTURBANCE PERMIT CHECKLIST

#	COVER SHEET:	INCLUDED?	N/A
28	Include the project name and site address		
29	Include Owner and Engineer's Information		
30	Provide a vicinity map with north arrow		

#	EXISTING CONDITIONS / DEMOLITION SHEET:	INCLUDED?	N/A
31	Existing Topography		
32	Tree Survey and Tree Removal (To be reviewed by Planning Department)		
33	Existing utilities & easements (storm sewer, gas, electric, sanitary sewer, etc.)		
34	Sufficient survey downstream of outfalls is required to assist in reviewing potential impacts		

#	EPSC STAGE 1 PLAN (PRE-DEVELOPMENT CONDITIONS):	INCLUDED?	N/A
35	Show and label the existing contours		
36	Show the existing site features and stormwater system		
37	Show the existing forest line		
38	Show any haul roads		
39	Show any stream crossings		
40	Show any parking areas, and/or equipment staging areas that may be required prior to the roadway installation. Provide appropriate pollution prevention measures such as fuel tank secondary containment.		
41	Provide perimeter EPSC measures		
42	Provide the construction exit(s) (include a sight triangle)		

43	Provide concrete wash-down location		
44	Provide any required sediment basins or traps		
45	Locate stockpile areas. Provide EPSC measures around stockpile locations.		
46	Provide outlet protection for all concentrated discharges		
47	Provide check dams in all channels receiving drainage from disturbed areas. These do not always need to be rock check dams. Specify weir height and spacing.		
48	Provide all other EPSC measures required to control sediment during the initial stage of construction		

#	**EPSC STAGE 2 PLAN:**	**INCLUDED?**	**N/A**
49	Intermediate contours are required for Pre-Roadway Binder Conditions for projects with roadways to be dedicated to the City		
50	Show and label the existing and proposed contours		
51	Show the proposed site layout as it will exist during pre-binder conditions. Include the outline of the roadway		
52	Show the proposed stormwater features and any existing stormwater features to remain		
53	Adequate perimeter EPSC measures, the construction exit, and concrete wash-down locations must remain in place		
54	Sediment basins/traps should remain in place unless replaced by permanent detention ponds		
55	Sediment should be controlled as close to the disturbance as possible to prevent sediment travelling across the site. Perimeter EPSC measures should be considered secondary treatment.		
56	Provide inlet protection for all proposed inlets that will receive flow at this stage		
57	Provide outlet protection for all concentrated discharges		
58	Provide check dams in all channels receiving drainage from disturbed areas		

CITY OF HENDERSONVILLE
LAND DISTURBANCE PERMIT CHECKLIST

#	EPSC STAGE 3 PLAN (POST ROADWAY ASPHALT CONDITIONS):	INCLUDED?	N/A
59	Show and label the existing and proposed contours		
60	Show the final site layout including all stormwater infrastructure		
61	The concrete wash-down location should remain in place		
62	Show inlet protection for all proposed inlets that will receive flow at this stage. Provide rigid frame inlet filters, meeting specifications for ASTM D8057-17, for inlets located within the ROW.		
63	Provide any temporary EPSC measures that could not be installed until Stage 2 was complete		
64	Note which EPSC measures show in Stage 3 are permanent (such as culvert outlet protection). Call-out all stabilization measures for the site. Include seeding specifications, including temporary and permanent seed, soil amendments based on site specific soil test(s), mulch, seeding schedule and/or sod specifications and planting schedule.		

#	EPSC DETAIL SHEETS:	INCLUDED?	N/A
65	Provide details for all EPSC measures show in Stages 1-3		
66	Details must meet minimum design criteria specified in TDEC EPSC Handbook		
67	Provide a stream buffer sign detail		

#	DRAINAGE REPORT (STAMPED AND SEALED):	INCLUDED?	N/A
68	Include drainage areas to EPSC measures. For example: most down gradient check dam within ditch, each contiguous section of silt fence, sediment trap, sediment basin, diversion ditch, slope drain, inlet protection, outlet protection.		
69	Label the time of concentration, CN Value (or “c” factor), flow arrows, labeled contours, and the drainage area to each outfall on a drainage map.		
70	Provide a plan to mitigate any increased runoff to an outfall		

CITY OF HENDERSONVILLE
LAND DISTURBANCE PERMIT CHECKLIST

#	CHECK DAM CALCULATIONS:	INCLUDED?	N/A
71	Ensure channels with check dams have the capacity to convey the 2-year 24-hour storm (or 5-year 24-hour storm if draining to waters with unavailable parameters for siltation or habitat alteration or exceptional TN waters) without overtopping the channel		

#	SEDIMENT TRAP AND SEDIMENT BASIN CALCULATIONS:	INCLUDED?	N/A
72	Sediment traps/basins must be able to treat the 2-year 24-hour storm (or 5-year 24-hour storm if draining to waters with unavailable parameters for siltation or habitat alteration or exceptional TN waters)		
73	Provide calculations showing sediment traps/basins can safely pass the 25-year 24-hour storm		
74	Include stage/storage tables to show the 2-year 24-hour, 5-year 24-hour, and 25-year 24-hour stormwater elevation in the sediment trap/basin meets the requirements of the Tennessee Erosion and Sediment Control Handbook		

#	DIVERSION DITCH CALCULATIONS:	INCLUDED?	N/A
75	Provide calculations showing ditches are designed to handle the 2-year 24-hour storm (or 5-year 24-hour storm if draining to waters with unavailable parameters for siltation or habitat alteration or exceptional TN waters)		
76	Note the ditch dimensions, slope, manning's n, stabilization method and velocity		
77	Provide supporting calculations for erosion resistance		

#	TEMPORARY CULVERT CALCULATIONS:	INCLUDED?	N/A
78	Provide size and quantity along with supporting calculations		

#	OUTLET PROTECTION CALCULATIONS	INCLUDED?	N/A
79	Provide size and material along with supporting calculations		

CITY OF HENDERSONVILLE
LAND DISTURBANCE PERMIT CHECKLIST

#	SILT FENCE CALCULATIONS:	INCLUDED?	N/A
80	Silt Fence without Backing: -Demonstrate each continuous section of silt fence has a minimum of 100 LF* of silt fence per 1/4 acre of drainage area -The maximum slope length behind the fence on the upslope side should be no greater than 110 feet (measures along the ground surface) Silt Fence with Backing: -Demonstrate each continuous section of silt fence has a minimum of 150 LF* of silt fence per 1 acre of drainage area -The maximum slope length behind the fence on the upslope side should be no greater than 300 feet (measures along the ground surface) ***Only silt fence parallel to the contours should be used in the calculation. ***		

#	TOTAL PROPOSED PERVIOUS/IMPERVIOUS SURFACE AREA:	INCLUDED?	N/A
81	Provide a chart including the total proposed pervious/impervious surface area for the final phase of the project. The chart shall include the total surface area of the parcel in square feet with square footage totals for impervious and pervious area.		

Note 1: All projects are to provide, at a minimum, the items specified in this EPSC Plan Review Checklist and must meet or exceed the requirements of the Tennessee Erosion and Sediment Control Handbook. Check the City of Hendersonville Stormwater website for the most recent Land Disturbance Permit Checklist.

Note 2: Prior to release of the land disturbance surety, you must complete the Land Disturbance Surety Release Request Form. With this form you must submit an Inspection and Maintenance Agreement/Long-Term Maintenance Plan and a stormwater system as built. Guidance, forms, and details can be found at Post-Construction/Permanent Stormwater Management | City of Hendersonville (hvilletn.org).

Note 3: The City's temporary and permanent minimum water quality riparian buffer requirements changed on 5/25/2021. Review City Ordinance for new criteria for temporary and permanent water quality riparian buffers.

Note 4: Effective immediately, to obtain a land disturbance permit the applicant must provide a TDOT Concept Approval Letter if access to TDOT's right-of-way is proposed. For projects with vehicular access on State Route 258 (New Shackle Island Road), State Route 386 (Vietnam Veterans Blvd), or US Hwy 31E (Main Street/Gallatin Pike), provide to the City a signed TDOT Concept approval letter. Make application for the letter by contacting Stanly Sumner, TDOT Region 3 Traffic Office, 6603 Centennial Blvd., Nashville TN 37243-0360; Phone: 615-350-4333.

Note 5: Provide verification that a safe sight distance should be included along with verification that a safe sight triangle is provided.

APPENDIX B- Land Disturbance Surety Request Letter & Example Letter of Credit

City of Hendersonville

101 Maple Drive North • Hendersonville, TN 37075 • Telephone (615) 822-1000
www.hvilletn.org

July 17, 2024

Hendersonville City Hall, LLC
101 Maple Drive North
Hendersonville, TN 37075
e-copy: hmorrison@hvilletn.org

Re: Reclamation of New City Hall- 200 Maple Drive North

Dear Mr. Morrison:

In response to your recent request to begin grading at New City Hall, provide to the City of Hendersonville's Public Works Department a form of surety (Cashier's Check or Standby Letter of Credit) for the non-negotiable amount of **$20,000.00**. This amount represents what the City estimates it will take to reclaim the site to its original state including but not limited to the following items:

- Replace topsoil
- Provide Seed & Mulch
- Sidewalk Repair
- Construction Entrance Maintenance
- Pavement Repair
- Provide and\or Maintain Erosion Control Measures
- Tree Mitigation

Cashier's Check or Standby Letter of Credit are acceptable forms of surety and shall be redeemable upon demand at a financial institute located within 75 miles of Hendersonville City Hall.

If you have any questions regarding the surety, please contact my office at 615-590-4649.

Thank you,

Helen Morrison
Stormwater Coordinator
City of Hendersonville

Mayor	Ward One	Ward Two	Ward Three	Ward Four	Ward Five	Ward Six
Jamie Clary						
Vice Mayor	Mark A. Skidmore	Lee Peterson	Bob Garza	Karen Dixon	Rachel Collins	Jim Waters
Jim Waters	Mark Burgdorf	Michael Martin	Jeffrey Sasse	Terri Goodwin	Janna Garton	Dr. Eddie Roberson

REQUIRED WORDING FOR RECLAIMATION LETTER OF CREDIT REQUIRED BY THE CITY OF HENDERSONVILLE

(MUST BE ON ORIGINAL BANK LETTER HEAD)
IRREVOCABLE STANDBY LAND DISTURBANCE LETTER OF CREDIT NO. #

DATE:

IN FAVOR OF (BENEFICIARY):
City of Hendersonville
Attn: Engineering Department
101 Maple Drive North
Hendersonville, TN 37075

FOR ACCOUNT OF (APPLICANT):

AMOUNT:

NAME OF DEVELOPMENT:

We hereby establish our Irrevocable Standby Letter of Credit (hereinafter "Credit") in you favor available by your draft(s) drawn at SIGHT on (Name of Bank) in (City, County, State) (must be in Sumner County or adjoining county) and accompanied by the documents specified below:

1. Certificate of default, signed by the Public Works Director, City Engineer, Chairman of the Public Works Committee or Mayor certifying that: The applicant has not complied with the Hendersonville Land Disturbance Regulations and approved EPSC plans for (name of subdivision including phase and/or section). The certificate shall also state the approximate dollar amount of damage to the City which amount shall be identical to the face amount of the accompanying draft.

2. Original Letter of Credit and Amendments if any.

This Letter of Credit is valid for an initial period of one (1) year and shall be automatically renewed for successive periods of one (1) year without any effort on the part of the City. We reserve the right to revoke this Letter of Credit, but only after providing the Beneficiary with 90 days notice by certified mail, return receipt requested.

All drafts must be marked: "Drawn under (Name of Bank) in (bank address) Credit No.#_____.

PAGE ONE OF TWO (CONT. ON PAGE TWO)
PAGE TWO OF TWO OF IRREVOCABLE STANDBY LETTER OF CREDIT NO.#_____

Except so far as otherwise expressly stated this Credit is subject to the International Standby Practices/ISP98, International Chamber of Commerce Publication No. 590 or ICC Publication No. 600.

We hereby engage with you that all drafts drawn under and in compliance with the terms of this Credit will be duly honored if drawn and presented for payment on or before the expiration date of this Credit at (**name and address of local branch bank- must be within 75 miles of City Hall, Hendersonville, TN**).

[OR: Include the following language if the alternative method of payment described therein is chosen by the Bank].

The local branch bank shall simultaneously submit the Certificate of Default and Draft by facsimile or e-mail to (**Bank's Letter of Credit Department facsimile number or e-mail address**). The City may elect to submit the Certificate of Default and Draft directly to the Bank at the above state facsimile number or e-mail address. The bank shall wire the funds to the City's account within two (2) business days.

The bank shall wire the funds to the City's account within two business days.

_____

Signed by Officer of Bank with Title

_____

Print Name

APPENDIX C- Pre-Construction Meeting Checklist

Land Disturbance Permit Pre-Construction Meeting Checklist

Stormwater Inspector:		**Phone:**
Date:	**LDP#:**	
Project Name:		
Emergency Contact: ***(Must be available 24 hours)***		**Phone:**

LDP Regulations and Expectations:

☐ **Notice-** The responsible party must provide a minimum of 24-hour notice prior to the start of construction.

☐ **Emergency contact-** The emergency contact must be available 24 hours a day in case of an emergency.

☐ **Change in ownership-** If there is a change in ownership and/or responsible party the City shall be notified as soon as possible, and at minimum within 30 days of the change.

☐ **Installation of EPSC-** Initial EPSC measures must be installed in accordance with the approved plans and details prior to the initial inspection. Any changes to the plan prior to issuance of the permit will result in additional reviews and delays to construction.

☐ **PE EPSC Certification-** Once the initial EPSC measures are installed a Professional Engineer must visit the site, complete an inspection, and certify that all EPSC measures are installed per the approved plans and details. The P.E. will complete and submit the P.E. EPSC Certification Form and submit it to the Stormwater Coordinator.

☐ **Document installation of SCMs-** The responsible party must document the installation of Permanent Stormwater Control Measures (SCM) providing some or all the water quality treatment. The photos must be submitted with the Permanent SCM Certification Form within 90 days of installation of the SCM.

☐ **Contractors NOI-** All contractors (home building, grading, utilities, etc.) are required to sign onto the existing Notice of Coverage for the Construction General Permit (CGP).

☐ **Control wastes-** Pursuant to Hendersonville Municipal Code (H.M.C.) 18-208.6b construction site operators are required to control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at construction sites. Failure to comply with this code will result in withholding of Codes permitting and inspections.

Land Disturbance Permit Pre-Construction Meeting Checklist

☐ **Verify before digging-** Property lines, limits of disturbance, and utilities must be field verified prior to construction. Call 811 before you dig.

☐ **Survey and stake buffers-** Water Quality Riparian Buffers must be field surveyed and staked prior to installation of EPSC measures to ensure compliance with Hendersonville Municipal Code (H.M.C.) 18-205.

☐ **Construction General Permit key points**:

- EPSC measures must be inspected at least twice every calendar week and at least 72-hours apart by qualified individuals as specified in Section 5.5.3.10. of the CGP.
- LDP, twice weekly inspections, NOC, ARAPs, and rain documentation are to be documented and kept with the SWPPP on-site. A rain gage must be on site unless an off-site rain gage is specified, and data provided.
- Temporary or permanent stabilization is required within 14 days if activities have temporarily or permanently ceased. Steep slopes (35% or greater) must be stabilized within 7 days if activities have temporarily or permanently ceased.
- Sediment loss from the site shall be cleaned up immediately. If discharged to Waters of the State, you must coordinate clean-up efforts with TDEC.
- Failure to comply with the terms of the CGP will result in a permit referral to TDEC and enforcement action by the City pursuant to H.M.C. 18-208.9.

☐ **Maintain access for inspections-** The contractor must maintain access to the site.

☐ **Clean up track out-** Sediment track out in the roadway must be removed immediately. This is subject to Police enforcement as a traffic hazard.

☐ **Certify capacity-** Discharge of sediment into the storm sewer system will be documented and the responsible party will be required to TV pipes, verify capacity, and clean storm infrastructure, if necessary, prior to release of the Land Disturbance Surety.

☐ **Facilitate inspection of EPSC measures-** The property owner is responsible for coordinating mowing, weed eating, and maintenance around EPSCs allowing access for proper inspection.

☐ **Approval required-** Sediment traps and/or basins shall not be removed until a formal request for removal has been submitted and approved by the City Engineer.

☐ **Homebuilder meeting required-** Prior to the start of homebuilding, each home builder must schedule a meeting with the Stormwater Construction Inspector.

Land Disturbance Permit Pre-Construction Meeting Checklist

☐ **Withold codes-** Failure to comply with H.M.C. and applicable permits after an initial notification will result in escalated enforcement action. Individual lot violations will have Codes permitting and inspections withheld to ensure timely response.

☐ **Citizen Self Service (CSS) Registration-** CSS is the City's public portal for citizen services including permitting, planning, and code compliance. To get started visit CSS.hvilletn.org.

Land Disturbance Surety Release:

At project completion, the City requires submittal and approval of the following documents prior to the release of the Land Disturbance Surety:

1. Professional Engineer Permanent SCM Certification Form
2. As-built Plans
3. Hendersonville Asset Management Workbook
4. Stormwater Inspection and Maintenance Agreement/Long-Term Maintenance Plan
5. W-9 (when Land Disturbance Surety is submitted as cashier's check)

All forms, examples, and requirements can be found at https://www.hvilletn.org/311/Post-Construction-Permanent-Stormwater-M.

The Stormwater Inspector will perform a final inspection once all documents have been submitted and approved to ensure all temporary EPSC measures have been removed, stormwater infrastructure is installed per plan, and the site is stabilized in accordance with H.M.C. 18-206.3. Once the site passes the final inspection, and all applicable documents have been received and recorded, the Land Disturbance Surety will be released.

Land Disturbance Permit Pre-Construction Meeting Checklist

Acknowledgement:

I certify, under penalty of law, that I have reviewed this document and understand the Land Disturbance Permit expectations herein. I agree to implement and follow the provisions of the Hendersonville Municipal Code (H.M.C.) and all applicable State and Federal permits and laws. I understand and acknowledge I may be subject to Enforcement and Penalties as specified in H.M.C. 18-208 and 18-209 for non-compliance and may be assessed Civil Penalties up to $5,000 per day per violation.

Signature	Print	Email
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		

APPENDIX D- Professional Engineer EPSC Certification Form

PROFESSIONAL ENGINEER EPSC CERTIFICATION FORM

Site Name:	**Date:**
Received by:	**LDP#:**

I,_____, have performed a site visit to certify the proper installation of the initial EPSC measures as shown on the City accepted plan set and as described in the Stormwater Water Pollution Prevention Plan (SWPPP).

I certify that the site meets the required standards set forth by Title 18 of the Hendersonville Municipal Code and is ready for the City Inspector to perform a site visit to concur with my findings and issue the Land Disturbance Permit (LDP). I understand that additional LDP permit fees will be assessed to the applicant if the City must perform more than one initial EPSC inspection to issue the LDP.

Therefore, I am providing to the City the following certification:

"I certify under penalty of law that this form is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury."

Name: _____ Signature: _____
(Professional Engineer)

Comments: _____

_____

Professional Engineer Seal

Professional Engineer License Number_____
Sign and date seal

APPENDIX E- Stormwater Inspection Procedures

Stormwater Inspection Procedures

Prepared by:

The City of Hendersonville Public Works Department
101 Maple Drive North, Hendersonville, TN 37075

Developed May 2021
Revised May 2024

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Stormwater Inspection Procedures

1. Purpose

The purpose of this procedure is to outline the process for scheduling, conducting, and documenting Stormwater Inspections.

2. Scope

This procedure applies to City staff in the Stormwater Division of the Public Works Department, specifically Stormwater Construction Inspector(s).

3. Responsibility

3.1. Stormwater Division Staff

The Stormwater Coordinator, with support from the Stormwater Manager, is responsible for keeping these procedures up to date, overseeing the construction site run-off inspection program for compliance with regulatory requirements, providing periodic training on conducting thorough BMP inspection, and providing technical support for City maintenance activities.

3.2. Supervisors

Supervisors are responsible for ensuring stormwater staff's compliance with this procedure. Supervisors are to train their employees on how to follow these procedures using the most recent version of the Stormwater Inspection Procedures.

3.3. Stormwater Construction Inspectors (SCI)

Personnel must follow the correct procedures in accordance with the latest version of this SOP. Specific responsibilities are explained in the procedures described below.

4. Procedures

4.1. EPSC Plan and SWPPP Review

EPSC plans are reviewed and approved during the Planning review cycle. Once the Hendersonville City Engineer approves the EPSC plans, it is the responsibility of the SCI to review the documents and become familiar with all BMPs in each stage of development. SCIs will review EPSC plan details for each BMP so that proper installation occurs on-site.

The SCI will also review the SWPPP and any applicable permits to verify additional pollution prevention measures to be implemented on-site during the project. The SCI must be knowledgeable about all construction-related permits on the site.

Stormwater staff will discuss environmentally sensitive areas/history before the preconstruction meeting. Staff will review final comments from the EPSC review and ensure all previous comments from the plan review have been implemented.

4.2. Stormwater Preconstruction Meeting

The SCI will meet with the project manager and property owner to review and discuss the proposed project. The SCI will review the City accepted EPSC plans and discuss City's expectations with the site project manager, contractor, and 72-hour inspector (if applicable). The SCI will briefly review the City's Enforcement Response Plan for instances of noncompliance. After the preconstruction meeting the

project manager will install all Stage 1 EPSC measures and have a Professional Engineer (P.E.) visit the site and inspect the erosion prevention and sediment control measures. Once the P.E. submits the P.E. EPSC Certification Form the SCI will schedule an initial inspection.

4.3. Initial EPSC Site Inspection

Prior to any initial EPSC Site Inspections, a P.E. must make a site visit and verify that all initial BMPs are installed per the approved plans and details. After receiving the stamped P.E. EPSC Certification Form, the SCI will schedule an initial inspection on-site with the appropriate responsible parties identified in the preconstruction meeting. Those required to attend include, but are not limited to the permittees, owners, contractors, subcontractors, and twice weekly inspectors. The SCI will verify that all BMPs are properly installed per the plans. The site visit shall be documented with photographs of each installed BMP and existing site outfalls, in addition to completing an initial inspection report through Energov. If, during the initial inspection, the SCI observes improperly installed BMPs or BMPs are missing, the SCI will terminate the initial inspection and notify all applicable site contacts of the deficiencies. Deficiencies should be documented in the initial inspection report with photographs. Documentation and photographic evidence will be provided to contacts registered in the Energov Citizen Self Service portal. Prior to a re-inspection of the site, the SCI will verify that the re-inspection fee has been paid in full to the Stormwater Fund.

4.4. Construction Site Inspection Frequency, Scheduling, and Enforcement Tracking

The SCI is responsible for developing and implementing a schedule to comply with the MS4 requirement to inspect priority sites once a month and 10% of non-priority sites annually. The SCI will schedule site inspections in a manner to allow for follow up inspections for construction sites with existing deficiencies and sites that have been classified as chronic violators as outlined in the City Stormwater Enforcement Response Plan. Sites identified as priority construction sites will be inspected monthly. The SCI is required to keep a schedule that allows for timely reporting and tracking of enforcement activities. Each SCI is required to keep track of all enforcement actions through the Energov application and/or tracking spreadsheets. A monthly inspection summary report will be completed and submitted to the Stormwater Coordinator for review.

4.5. Pre-Inspection Preparation

Prior to conducting a site inspection, each SCI should ensure that they have the City-approved plans. The SCI should review the plans and plan accordingly to inspect critical areas and all site outfalls. The SCI should review the previous inspection report and photos to verify that deficiencies are corrected. The SCI should ensure that all electronic devices are properly charged and properly functioning. The SCI should dress for the current site conditions and wear all necessary personal protective equipment (PPE). Supplies can be purchased at an approved vendor using the Public Works Credit Card.

The SCI may need the following tools during their inspection:

- PPE (boots, sunscreen, bug spray, face mask, hard hat, reflective vest, eye protection, etc.)
- Inspection Checklist
- Cell phone/Camera
- iPad/Tablet
- Construction Documents

4.6. Inspection Procedures

The SCI will conduct a variety of stormwater inspections including, but not limited to, construction site inspections, stormwater complaint inspections, Permanent Stormwater Control Measure (SCM) inspections, illicit discharge/illicit connection inspections, certificate of occupancy, and temporary/permanent use and occupancy inspections. Procedures for illicit discharge/illicit connection inspections are included in the Illicit Discharge Detection & Elimination Plan.

4.6.1. Construction Site Inspection Procedures

Using the accepted EPSC Plans, the SCI should assess the overall site conditions and determine if the site is compliant with Hendersonville Municipal Code Title 18. Upon arrival to the site the SCI should:

1. Notify the Project Manager of the upcoming inspection and meet him/her on-site for the inspection (if necessary or requested).
2. Travel to and arrive safely at the construction site.
3. Check the SWPPP box and verify that all required documents are posted in the box; make note of any missing documents.
4. Review and document the erosion control specialist's previous site inspection reports and note any listed deficiencies and corrective actions.
5. Inspect the active construction site; walk, drive, drone, etc.
6. Inspect controls interior to the site, including erosion prevention measures, sediment control measures, and pollution prevention controls.
7. Inspect all on-site and off-site outfall structures discharging stormwater from the active construction site, document conditions in report and with photographs.
8. Make note of any observations made during the construction stormwater inspection that are not compliant with the current Tennessee Erosion & Sediment Control Handbook and Hendersonville Municipal Code
9. Identify temporary outfall locations. If evidence of sediment loss is observed, recommend coordination with site designer to address sediment loss. Any recommended BMPs by the site designer must be provided in writing and approved by the City Engineer.
10. Verify that operations have not extended past the permitted limits of disturbance.
11. Note if home lots have EPSC deficiencies.
12. Complete the Hendersonville Stormwater Inspection Report in Energov
13. For repeated EPSC failures, inform the responsible party of the need to contact the site designer to complete a site assessment.
14. Once the site inspection is complete, send the inspection report and supporting documentation to the property owner, project manager, and erosion control specialist for correction of existing deficiencies.

If at any point in time during an inspection the SCI believes the site to be unsafe, he/she shall end the inspection and leave the site.

If the SCI locates a previously unidentified potential water feature at an active construction site and believes the feature to be jurisdictional, he/she shall notify the primary permittee and request a Hydrologic Determination. The SCI shall also notify the Tennessee Department of Environment & Conservation Division of Water Resources.

4.6.2. Stormwater Complaint Inspections (Non-construction)

When responding to a reported stormwater issue, the SCI must follow up with the person filing the complaint and get permission from the property owner to access the property to observe the stormwater issue. The SCI should be mindful of his/her safety and, if necessary, request the presence of additional Public Works staff or the Hendersonville Police Department prior to making a site visit. The SCI should utilize all equipment identified in Section 4.5, as needed. The SCI will photograph stormwater violations and complete a stormwater inspection report in Energov.

4.6.3. Permanent Stormwater Control Measure Inspections

The SCI will conduct permanent SCM inspections on an as-needed basis or when a complaint is received. Permanent SCM inspections reports will be completed in Energov. If the SCI identified code violations, they would proceed with enforcement action(s) identified in the Enforcement Response Plan.

4.6.4. Certificate of Occupancy/Use and Occupancy Permit Inspections

The SCI will complete stormwater inspections prior to the issuance of occupancy permits, as assigned. Site deficiencies will be documented and communicated with the applicant by the Review Coordinator.

4.6.5. Illicit Discharge Inspections

The SCI will adhere to these inspection procedures while investigating illicit discharges. The SCI will refer to the IDDE Plan for guidance on identifying and tracing illicit discharges. Illicit discharge investigation reports will be completed in Energov.

4.6.6. Priority Area Inspections

The SCI will regularly patrol identified priority areas to identify potential illicit discharges. The SCI will complete inspections for priority areas if they find evidence of an illicit discharge. If the SCI confirms an illicit discharge, they will take enforcement action(s) identified in the Enforcement Response Plan.

4.7. Follow-Up Inspections

When necessary, a follow-up inspection shall be performed when the responsible party for a construction site has been notified of on-site deficiencies in a previous inspection report. The SCI is responsible for scheduling follow-up inspections to correspond with the ERP timeline. During the follow-up inspection, the SCI will inspect and verify that all deficiencies listed on the previous inspection report have been corrected. If the responsible party fails to correct the listed deficiencies, the SCI will reference the ERP and take appropriate enforcement action.

5. Documentation and Reporting

The SCI should complete an Inspection Report through Energov on iG Inspect or iG Enforce, depending on the type of inspection, for each completed site inspection and follow-up inspection. Photographs should be taken of all deficiencies and illicit discharges observed on-site. All inspection documents and evidence shall be stored digitally in the NPDES folder under the specified site project and/or in Energov. Inspection records must be retained for three years from the date of inspection.

6. Annual Review of Procedure

The Stormwater Coordinator is responsible for conducting an annual review of this procedure. This procedure and any revisions will be included in the Stormwater Management Plan.

6. Training

All stormwater inspection staff will attend and maintain the following certifications:

- TDEC Level 1- Fundamental of Erosion Prevention and Sediment Control for Construction Sites
- TDEC Level 2- Design Principles for Erosion Prevention and Sediment Control for Construction Sites
- SCM Inspection and Maintenance

APPENDIX F- Energov Stormwater Inspection Report

INSPECTION WORKSHEET (ILD-084054-2024)
FOR CITY OF HENDERSONVILLE, TN

Case Number:	LAND-023902-2023	**Case Module:**	Permit
Inspection Date:	05/17/2024	**Inspection Status:**	Partial Pass-Permit
Inspector:	Christina Bannister	**Inspection Type:**	Land Disturbance - Recurring
Job Address:	Construction Site Hendersonville, TN 37075	**Parcel Number:**	

Contact Type	Company Name	Name
Contractor	[redacted]	[redacted]
Developer		
Engineer		

Checklist Item	Results	Comments
SWPPP on site	Pass	
NOC posted (if no, then report to TDEC)	Pass	
Site Contact Information on site	Pass	
Twice weekly inspections on site	Pass	
Rain Gage on site	Pass	
Applicable EPSCs installed/maintained - Are all other applicable EPSCs installed/maintained	Fail	- Perimeter measures need to be installed on active home lots that can drain into the street during rain events. Individual lots should have perimeter measures up, at minimum, at the end of each day. - Perimeter measures need to be maintained at lot 6 near stream since last large rain event.
EPSCs functioning at disturbed/storage areas? - Are EPSCs functioning correctly at all disturbed areas/material storage areas?	Pass	
EPSCs functioning correctly at outfall points - EPSCs functioning correctly at outfall points/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts?	Fail	- Sediment is present in some of the headwalls and needs to be removed per repeated previous reports. - Outlet protection of headwalls need sed8,ent removed, reworked and maintained.
EPSCs functioning correctly at ingress/egress? - Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track-out?	Fail	- Debris and track out was noted in the street during inspection. Sweep and remove debris daily per City of Hendersonville's municipal code.
Slopes >35% been stabilized within 7 days - Have all slopes greater than 35% been stabilized within 7 days?	Fail	- Lots are active. Area southeast of lot 18 needs to be stabilized and has been on repeated reports to be addressed with temporary stabilization. (Near top of bank buffer) - Erosion present and sediment traveling from erosion into detention area from lot 6. This is a repeated item on previous reports.
Inlet protection present	Pass	

INSPECTION WORKSHEET ILD-084054-2024

Checklist Item	Results	Comments
Are sediment basins/traps installed/maintained? - Are sediment basins/traps installed and maintained?	Fail	- Outlet protection at structures K1, G1, C1, and H1 needs to be reworked and maintained. - Headwall needs to be cleaned out (to continue to perform accurate inspections) and sediment removed from previous sediment loss during rain events. - Bottom of detention areas are earthen, however, a substantial amount of sediment has traveled into storm infracture and settled into the detention areas and/or from eroded swales. When removing the orfice perorated pipe extension, the detention areas will need elevation confirmed per plans and adjusted for asbuilts. - Observation - orfice perforated pipe extension has been installed since last inspection to assist with illicit discharge. Pipes are longer than the structure, but seem to be functioning.
Are washout facilities available - Are washout facilities (e.g., concrete, paint, stucco) available, clearly marked and maintained	Pass	

Noncompliance

Code Name	Description	Comments	Deadline	Resolve Date
205.1b - Failure to Maintain BMPs	Failure to Properly Design, Install, or Maintain BMPs		06/01/2024	
207.1 - Land Cover and Stabilization Reqs	Section 18-207 (1) Land Cover and Stabilization Requirements		06/01/2024	

APPENDIX G- Standard Erosion Prevention & Sediment Control (EPSC) for Plot Plans

Standard Erosion Prevention & Sediment Control (EPSC) for Plot Plans and Minor Commercial/Industrial Sites

Project Address:

This form can serve as the EPSC plan if the following conditions are met:

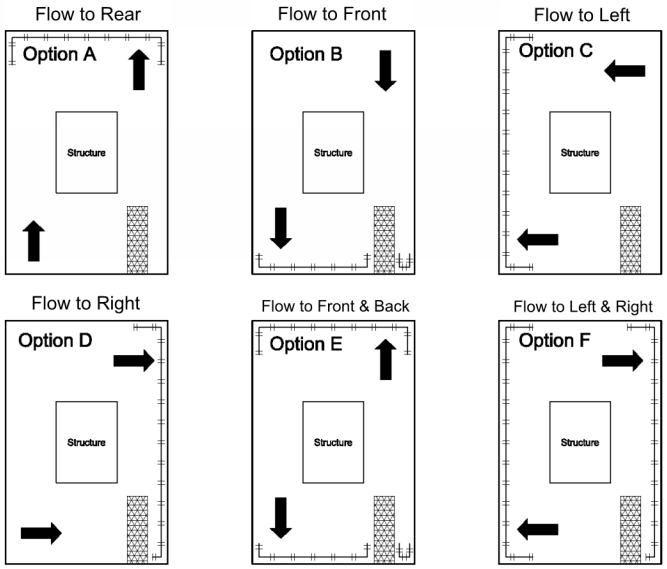
- Disturbs less than 1 acre, and is not part of a larger common plan of development
- If commercial or industrial site- less than 10,000 square feet of land disturbance, and
- Contains no critical slope or flood hazard areas

If these conditions are NOT met, a formal EPSC plan prepared by a Professional Engineer or Landscape Architect will be required. Submit formal EPSC plans with a Land Disturbance Permit (LDP) Application to the Public Works Department

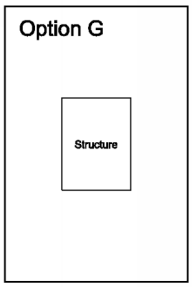
Visit https://www.hvilletn.org/298/Permits for current LDP application, process, and checklist.

Erosion Prevention Sediment Control (EPSC) Site Drawing

The most appropriate EPSC measures for my site are from the options below_____ or a combination of _____ & _____ . If the site has a sinkhole, drainage inlets, streams, or will have excavated materials stored on-site, please indicate the location and additional BMPs on the selection below. All new development and redevelopment are required to provide a Water Quality Riparian Buffer. The required buffer width can be found in Hendersonville Municipal Code 18-205.



For Option G, show flow lines and proposed EPSC measures.



Legend:
Direction of Flow
Sediment Management (silt fence or other)
Construction Entrance

Certified Contractor: _____

Certification No. _____

STANDARD CONDITIONS

The applicant will comply with the following conditions:

1. EPSC must be installed to prevent off-site sedimentation.
2. Perimeter controls shall be installed prior to the start of construction.
3. All EPSC measures shall be installed and maintained as specified by the Stormwater Ordinance (Hendersonville Municipal Code Title 18).
4. The contractor shall be responsible for keeping streets, drainage structures, streams and other properties free of sediment and other construction materials generated by construction activities.
5. Disturbed areas must be temporarily or permanently stabilized within 14 days. Steep slopes (35% or greater) within 7 days.
6. Upon permanent stabilization (70% uniform density), all temporary EPSC measures must be removed.
7. When developing near mapped and unmapped streams, you must comply with the National Flood Insurance Program Regulations set forth by Hendersonville Municipal Code Title 18, Chapter 3.

The undersigned hereby certifies that he/she will follow the Plot Plan EPSC Plan as described above and will protect all storm drainage structures on this lot. Furthermore, the undersigned will fully comply with the specifications in the City of Hendersonville Stormwater Ordinance. The undersigned will take all necessary actions to prevent off-site sedimentation and illicit discharges from occurring. Once the building permit is issued, this document becomes an enforceable EPSC plan for the project site.

Applicant's Signature

Applicant's Printed Name **Date**

APPENDIX F

PERMANENT STORMWATER MANAGEMENT PLAN AND PROCEDURES

Permanent Stormwater Management Plan and Procedures

Prepared by:

The City of Hendersonville Public Works Department
101 Maple Drive North, Hendersonville, TN 37075

Developed May 2021
Revised July 2024

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APPENDICES 6

APPENDIX A Construction Plan Checklist and Site Plan Checklist

APPENDIX B Stormwater As-Built Requirements

APPENDIX C Professional Engineer Permanent Stormwater Control Measure Certification Form

APPENDIX D Stormwater Inspection and Maintenance Agreement/Long-Term Maintenance Plan Form

APPENDIX E City Inspection and Maintenance Checklists

Permanent Stormwater Management Plan and Procedures

1. Permanent Stormwater Standards

The City adopts as its stormwater design and best management practices (BMP) manual the following publications, which are incorporated by reference in Hendersonville Municipal Code Title 18, Chapter 2:

- Tennessee Erosion and Sediment Control Handbook;
- Tennessee Permanent Stormwater Management and Design Guidance Manual;
- Metro Nashville Stormwater Management Manual; and
- Hendersonville Construction Manual

Unless determined by the City Engineer, or their designee, to be exempt, the performance criteria set forth in Hendersonville Municipal Code 18-204 shall be addressed for stormwater management at all developments or redevelopments with disturbances greater than or equal to one (1) acre, or less than an acre, but part of a larger common plan of development.

2. Stormwater Quality Design Standards

To implement the objectives of the Stormwater Ordinance and the Permanent Stormwater Management Plan, the following general stormwater quality policy statements shall apply:

- The design storm for water quality treatment design shall be a 1-year, 24-hour design storm event.
- All roof runoff is presumed to be contaminated and, therefore, is to be included within the water quality treatment volume.
- The water quality treatment volume (WQTV) is the portion of the runoff generated from impervious surfaces at a new development or redevelopment project from the design storm. Stormwater control measures (SCM) must be designed, at a minimum, to achieve an overall treatment efficiency of eight percent (80%) total suspended solids (TSS) removal from the WQTV. The quantity of the WQTV that must be provided from a new development or redevelopment depends on the type of treatment provided.

3. Permanent Stormwater Control Measures Plan Review

The City of Hendersonville requires all development and redevelopment sites to submit Site Plans and Construction Plans for review through the Planning Department using Energov Citizen Self Service Portal. The plan reviews are assigned to engineering staff for review to ensure compliance with Hendersonville Municipal Code. The plans are reviewed through a Bluebeam Studio Session by City staff or a third-party consultant. All staff comments from each department are recorded and provided to site designer to make modifications to the plans and re-submit for approval. The plan review process occurs on a two-week interval. The City provides checklists (APPENDIX A) to developers/designers to ensure that site designers meet the minimum design requirements. For the stormwater quality review, the Metro Nashville LID spreadsheet is not an accepted design tool in Hendersonville.

4. Stormwater As-Built Requirements

The City requires new development and redevelopment projects to provide as-built plans and associated documents. Prior to the release of the Land Disturbance Surety, developers must submit the Stormwater

As-built plans and associated documents to the Assistant City Engineer for review. The Assistant City Engineer completes a review and provides comments, if necessary, until all as-built requirements are satisfied. The Stormwater As-built Requirements can be found in APPENDIX B.

3.1 Permanent Stormwater Control Measure Certification Form

The City requires new development and redevelopment projects to provide verification within 90 days of installation that permanent stormwater control measures (SCM) have been installed per design specifications. The City requires the submittal of a Professional Engineer Permanent Stormwater Control Measure Certification Form (APPENDIX C) to ensure the site designer has conducted a thorough review of the installation and function of Permanent SCMs prior to the release of the site.

5. Permanent Stormwater Control Measure Inspection and Maintenance

The City requires new development and redevelopment projects to record a Stormwater Inspection and Maintenance Agreement (IMA) and Long-Term Maintenance Plan (LTMP). The IMA/LTMP requires site owner/operator to ensure appropriate SCM maintenance procedures to sustain pollutant reduction efficiency for the life of the new development or redevelopment project. The City will use the Energov application to track IMA/LTMPs, inspection reports, and maintenance activities for SCMs.

The City requires all SCMs to be inspected in accordance with the approved LTMP and at least once every five years by a licensed professional engineer or landscape architect. The City IMA/LTMP forms are in APPENDIX D.

4.1 Inspection and Maintenance Agreement

The Inspection and Maintenance Agreement of Private Stormwater Management Facilities is a legally binding agreement made between the City of Hendersonville and the property owner of private or public stormwater management facilities. The property owner is required to submit the completed IMA for review to the City Engineer prior to signing. Once the City Engineer has reviewed the IMA, a meeting is scheduled for the City Engineer to sign the IMA. After signing, the property owner, or their designee, is required to record the IMA and Long-Term Maintenance Plan with the Sumner County Register of Deeds. A copy of the recorded document must then be provided to the City for tracking purposes.

4.2 Long-Term Maintenance Plan

The Long-Term Maintenance Plan specifies the schedule of inspections and maintenance activities necessary to ensure that stormwater control measures or facilities remain in proper working condition in accordance with approved design standards, rules, and regulations and applicable laws that shall be included with the IMA and recorded with the Sumner County Register of Deeds. The LTMP shall include the City's Inspection and Maintenance Checklists (APPENDIX E).

6. Permanent Stormwater Control Measure Inventory

The City requires applicable new development and redevelopment projects to provide basic information about the SCMs installed at the site. The information includes, but is not limited to:

- A brief description of the type of SCM and basic design characteristics.
- The responsible party contact information.
- Inspection schedules (both permittee and responsible party).

- A brief description of or reference to maintenance procedures and frequency.
- Photographs of the installed SCMs; and
- Maintenance and inspection records
- Latitude and longitude of each SCM

The City will populate a map in GIS with the coordinates provided by the developer. The map will be populated within 6 months of the receipt of the data.

5.1 Permanent Stormwater Control Measure and Stormwater Management Facilities Tracking

All permanent SCMs and stormwater management facilities will be tracked using the City's Energov application. Once a project has completed the Land Disturbance Surety Release process, a Post Construction Permit for stormwater discharges will be opened. The Post Construction Permit will track the inspection and maintenance of the SCMs and stormwater management facilities. The responsible party will be able to submit the required annual report through the Citizen Self Service (CSS) Portal.

7. Water Quality Riparian Buffer

The City requires that all applicable development and redevelopment sites establish, protect, and maintain a water quality riparian buffer in accordance with Hendersonville Municipal Code (H.M.C.) 18-205. The buffer width shall be measured perpendicular form the top of bank on each side of the stream; around the perimeter of a pond or lake identified as Waters of the State measured as perpendicular to the contour at which normal pool is located around; and around the perimeter of a wetland identified as Waters of the State.

6.1 Permissible Land Uses or Activities within the Buffer

During the planning review, staff will ensure that proposed activities within buffers will retain the pollutant removal function of the buffer. Trails constructed within the buffer shall prevent or minimize the generation of pollutants. Trails constructed from impervious materials must direct runoff to infiltration based SCMs or the buffer width must be increased by the width of the trail per H.M.C. The water quality riparian buffer is to remain undisturbed for the minimum required buffer width. The following land uses are permissible within the remaining buffer subject to approval by the City Engineer:

a. Greenways, biking trails, and walking trails.
    i. Trails constructed within the buffer should prevent or minimize the generation of pollutants. If trails are constructed from impervious materials, runoff must either be directed to infiltration based SCMs or the buffer width must be increased by the width of the trail.
b. Infiltration-based SCMs.
c. Road and utility crossings. Private drives and private utility crossings may also be approved by the City Engineer, or their designee, upon review of a complete submittal demonstrating that there is no feasible alternative route; and
d. Selective landscaping and/or habitat improvement.

All applicable work within the stream buffer shall be permitted as required by the Tennessee Department of Environment and Conservation and/or the United States Army Corps of Engineers.

8. Program Evaluation

Each year the City of Hendersonville meets to evaluate program components and overall program effectiveness. The Permanent Stormwater Management Plan and Procedures will be evaluated annually.

APPENDICES

APPENDIX A-Construction Plan Checklist and Site Plan Checklist

Construction Plans Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

Project Name:		
Project Address:		
Cover Sheet		
1	Minimum 4" x 8" clear area on top or bottom right of cover sheet for City approval stamps.	Yes
2	Vicinity Map	Yes
3	Name of proposed development, as well as applicable phase and section numbers.	N/A
4	Contact information for professional(s) preparing the plans (including e-mail addresses).	N/A
5	Contact information for developer(s) (including e-mail addresses).	N/A
6	Contact information for the property owner(s) (including e-mail addresses).	N/A
7	Provide a legend identifying all symbols used in the drawings.	N/A
8	List of sheet titles and sheet numbers contained in the construction drawings.	N/A
General Notes		
9	Provide all notes pertaining to construction of the project.	N/A
10	Provide all applicable City of Hendersonville standard general notes.	N/A
11	Submit the Long Term Maintenance Plan for Post-Construction Stormwater Measures to the City of Hendersonville Public Works Department.	N/A
12	Construction and Maintenance of the site must comply with all provisions in the Long Term Maintenance Plan for Post-Construction Stormwater Measures.	N/A
Existing Conditions		
13	Recent site survey (less than 5 years old), stamped by registered surveyor. Survey shall contain (but is not limited to) the following:	N/A
A	Public and private streets, with current names.	N/A
B	Widths and locations of adjacent right-of way.	N/A
C	All existing drainage structures, including inlets, catch basins, junction boxes, culverts, cross drains, headwalls, and outlet facilities with invert elevations, size, type and slope.	N/A
D	All environmental features, streams, wet-weather conveyances, wetlands, sinkholes, outcroppings, cemeteries, or other significant features.	N/A
E	All easements and servitudes burdening the property, including those not disclosed in record documents but observable, such as ditches, drains, communication, power, and gas lines, with locations, dimensions, and designation as to type.	N/A
F	Acreage and square footage of site.	N/A
G	Existing structures, including utility boxes, walls, fences, buildings, and other improvements.	N/A
H	Property lines with bearings and distances, as well as all property line curve data.	N/A
I	Existing iron rods, monuments, and pipes as well as those set by the surveyor.	N/A
J	Existing utilities, including power poles, light poles, gas lines, water lines, sewer lines, and manholes, fire hydrants, water valves and meters, gas valves, transformers, overhead power and communication lines, underground telephone and power lines, etc.	N/A
K	Topographic features and existing contours of not more than two (2) foot interval.	N/A
L	North Arrow	N/A
M	Scale	N/A
N	City name and county	N/A
O	All applicable general notes, such as survey and utility notes	N/A

Construction Plans Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

Q	Location, size, and capacity of the next two drainage structures downstream of the development (regardless if detention is proposed).	N/A
Overall Site Layout Plan		
14	Show street names	N/A
15	Show Public Utility Easements and Minimum Building Setbacks	N/A
16	Show Open Spaces	N/A
17	Show overall map of entire subdivision with all other sections clearly identified.	N/A
18	Names and address of all adjoining property owner(s), along with deed references of each and identify any adjoining subdivision with plat book reference.	N/A
19	Proposed lots with lot numbers	N/A
20	Identification and location of any grave, object, or structure marking a place of burial.	N/A
21	North arrow	N/A
Overall Grading and Drainage Plan		
22	Show street names	N/A
23	Show Public Utility Easements and Minimum Building Setbacks	N/A
24	Show Open Spaces	N/A
25	Show existing and proposed utilities	N/A
26	Show benchmark descriptions and locations with elevation and coordinates (minimum of two (2)). Note vertical and horizontal datum used.	N/A
27	Show minimum floor elevations of proposed structures if lots are adjacent to a stream, pond, or detention pond.	N/A
28	Show detailed grading in intersections (spot elevations) to ensure compliance with ADA requirements.	N/A
29	Swales behind and between all lots needed to divert stormwater.	N/A
30	Use geotextile reinforced stabilization instead of riprap at headwalls and other erosion prone areas	N/A
31	Proposed contours shall be clearly shown and shall be tie into existing contours. Spot finish grade elevations shall be given at locations where necessary to properly grade and drain the site. Place all applicable grading notes on the plans.	N/A
32	Topographic features and proposed contours of not more than two (2) foot interval.	N/A
33	Proposed drainage structures shall be shown on the plans.	N/A
34	Hydrologic and hydraulic calculations based on the twenty-five (25) year, twenty-four (24) hour storm event and for appropriate design conditions and facilities. Post development flow cannot exceed pre-developed flow (pre-development conditions are defined as grass, wooded, or otherwise natural conditions). Provide a written summary that includes all input information such as "c" factors, intensities, design method used (TR-55 or SCS method), and all assumptions. When sizing storm sewers and inlets, the contributing drainage basin shall be delineated on appropriate topographic maps. At no time shall storm drains be designed to be in a pressurized state. Minimum pipe size is 15". (RCP inside right-of-way. Cross culverts under roads shall be designed to convey the 100-year storm.	N/A
35	Minimum slope of a concrete paved drainage ditch should be one percent (1%).	N/A
36	Location and size of detention facilities.	N/A

Construction Plans Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

37	Detention ponds shall be optimized to control the twenty-four (24) hour, two (2) through twenty-five (25) year storm events and shall store or pass the one-hundred (100) year storm as conditions or downstream conditions dictate.	N/A
38	Indicate rip-rap size, pad dimensions, and locations.	N/A
39	Indicate ditches with flow lines and spot elevations.	N/A
40	Proposed lots with lot numbers.	N/A
41	All overland watercourses and drainage structures within the subdivision or within five hundred (500) feet of the subdivision, along with any necessary stream or wetland determinations for identified water features.	N/A
42	Archeological, natural, and historical features and landmarks	N/A
43	Location and size of existing sewer, gas, and water pipelines, and other public utilities within, adjacent to, or near the proposed subdivision.	N/A
44	North arrow	N/A
45	Public utility and drainage easements	N/A
46	Label all open space areas (if applicable)	N/A
47	All wetlands and streams and provide classification of stream types.	N/A
48	Location of all stream buffers and label widths of no-disturbance areas.	N/A
49	100-year floodplain from the most recently adopted Flood Insurance Rate Map (F.I.R.M.) or calculated floodplain from a flood study by an engineer licensed in the State of Tennessee; differentiate the floodway and floodway fringe on the drawings.	N/A
50	Drainage schedule of proposed structures including material type, size of pipe, type of grate, inverts of structures, depth of inlets, length of pipe, slope, design flow, and flow capacity. Note design storm used (25-year minimum).	N/A
51	Location and description of off-site drainage structures and easements including size of pipe, invert elevations, and length of pipe.	N/A
Roadway Plan and Profile		
52	Show street names and classifications	N/A
53	Show Public Utility Easements and Minimum Building Setbacks	N/A
54	Show Open Spaces	N/A
55	Show existing and proposed utilities	N/A
56	Show right-of-way width	N/A
57	Label all components of new roadway- pavement, curb and gutter, sidewalk, grass strip, crosswalks, stop signs, stop bars, curb ramps, signage, etc.	N/A
58	Label existing and proposed grades along centerline of roadway in the profile	N/A
59	Show and label proposed storm sewers in profile (both crossings and parallel with roadway)	N/A
60	Show pavement radii at intersections	N/A
61	Show intersection of centerlines station and elevation.	N/A
62	Type of pavement.	N/A
63	Public sidewalk shall be provided. Width shall conform to the Transportation Plan; where the Transportation Plan is silent, widths shall be 5'.	N/A
64	Proposed drainage structures shall be shown on the plans.	N/A
65	Proposed lots with lot numbers	N/A
66	Location and size of existing sewer, gas, and water pipelines, and other public utilities within, adjacent to, or near the proposed subdivision.	N/A

Construction Plans Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

67	Location, right-of-way width of all proposed streets, common driveways, parking areas, sidewalks, and trails. Proposed streets shall include approved street names.	N/A
68	North arrow	N/A
69	Street centerline bearings and distances; curve data shall include the delta angle in degrees, minutes and seconds, length of curve, tangent length, chord length, and bearing.	N/A
70	Streetlight locations, details of post and fixture type, the type shall be the same as other sections.	N/A
71	Public utility and drainage easement.	N/A
72	Plan scale shall be a minimum of one-inch equals fifty feet (1"=50') (include bar scale)	N/A
73	Profile scale shall be a minimum horizontal one-inch equals fifty feet (1"=50') and vertical one inch equals five feet (1"=5')	N/A
74	Centerline and stationing of the street in plan and profile	N/A
75	Label beginning of vertical curve, point of intersection of slope change, and the end of the curve, curve length	N/A
76	Show the K-value of each vertical curve	N/A
77	Existing ground elevation and finished pavement grade elevation at every fifty (50) foot station on the profile view	N/A
78	Low point and high point station and elevation of each vertical curve	N/A
Landscaping Plan		
79	Show street names.	N/A
80	Show Public Utility Easements and Minimum Building Setbacks	N/A
81	Show open spaces	N/A
82	Show existing and proposed utilities	N/A
83	Proposed lots with lot numbers	N/A
84	North arrow	N/A
85	A landscape plan shall be provided.	N/A
86	Plant materials must meet size and quality standards as stated in the American Standard for Nursery Stock, ANSI Z60.1, latest edition.	N/A
87	Provide a plant schedule indicating quantity, species, and size of proposed plants.	N/A
88	Trees specified for preservation and removal shall be clearly indicated on the grading and demolition plans. Trees must be protected through the use of tree protection fencing complying with Appendix D of the Hendersonville Zoning Ordinance. A tree protection detail must be provided. Tree protection fencing must be shown on the grading sheet as well as the tree replacement plan.	N/A
89	Street trees shall be minimum of 2.5" caliper and have a minimum of 6 feet clear trunk.	N/A
90	Street tree type should be canopy shade tree.	N/A
91	A minimum of 1 tree per lot is required	N/A
92	Within subdivisions containing open space fronting on streets, street trees shall be provided along the street frontage with a spacing generally approximating the per-lot tree spacing.	N/A
93	Where trees are planted within 6 feet of street pavement, root barriers shall be installed. Root barrier installation shall comply with AD.5 of the Zoning Ordinance.	N/A
94	City's standard tree selection and planting specification notes and details shall be provided (see Appendix AD.3 in the City of Hendersonville Zoning Ordinance).	N/A

Construction Plans Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

95	Landscape plans must be stamped by a Landscape Architect registered in the State of Tennessee.	N/A
96	Street trees should be located so as not to conflict with street lighting. Minimum separation between the tree trunk and light pole shall be dictated by the species of tree selected, but in no instance shall be less than 10 feet.	N/A
97	Street trees should be located so as not to conflict with fire hydrants. Minimum separation between the tree trunk and a hydrant shall be 10 feet.	N/A
98	Provide elevations and details of proposed community facilities such as gazebos and pavilions.	N/A
99	Provide details of proposed community amenities such as playground equipment, benches, swings, playing courts, etc.	N/A
100	Playground structural equipment should be commercial-grade, heavy-gauge galvanized, powder-coated steel construction	N/A
101	Playgrounds shall conform to ASTM F1847	N/A
102	Show intersection triangles in accordance with AASHTO Green Book Chapter 9	N/A
Details		
103	Elevations of all proposed retaining walls. Top-of-wall and bottom-of-wall elevations shall be shown for retaining walls.	N/A
104	Curb ramp detail	N/A
105	Trench backfill detail	N/A
106	Include all applicable TDOT details needed	N/A
107	The engineer shall give details of the detention facility on the plans. All calculations for detention facilities, including pervious and impervious areas, methods of computing flow, and methods of computing detention facility size, shall be submitted to the City of Hendersonville for review.	N/A
108	Retaining walls three (3') feet and greater above grade require separate plans stamped by a Structural Engineer.	N/A
109	Typical street sections for each proposed street, including dimensions, cross slopes, side slopes, guardrail placement, curb and gutter type, depth and types of base, pavement section, and cross-section of ditches as needed. Separate cross-section depictions shall be provided for a street if it changes widths.	N/A
110	Street typical section	N/A
111	Curb and Gutter section	N/A
112	Pavement section	N/A
113	Sidewalk section	N/A
114	Drainage inlet and grates detail	N/A
115	Headwall detail	N/A
116	Stone rip-rap aprons	N/A
117	Tree protection measures	N/A
118	Detail of the size of signs, size of lettering, typical dimension of the height of sign and post, and distance from the curb	N/A
119	Pavement markings	N/A
Erosion Prevention and Sediment Control Plan (For information only)		
		N/A
		N/A

Construction Plans Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

Erosion Prevention and Sediment Control Details (For information only)		
		N/A
		N/A
Utility Plan (For information only)		
		N/A
		N/A

Construction Plans containing the minimum information indicated hereon is required for all subdivision construction.

Before beginning the design, the engineer should obtain a certified property survey less than 5 years old, including as a minimum, topographic and utility information, property line information and adjacent site land use. A sub-surface report and copies of local codes and regulations, including a copy of the Hendersonville Subdivision Regulations, and Hendersonville Zoning Ordinance should be obtained, read and complied with. This checklist is not inclusive of all such regulations, and completing it does not relieve the applicant of the responsibility to comply with regulations not contained hearin.

These plans shall be prepared and stamped by an individual licensed and/or certified by the State of Tennessee to perform such design service as may be required. The engineer, landscape architect, and architect shall affix his/her seal to their respective plans in accordance with State of Tennessee Board of Architectural and Engineering Examiners Rules of Professional Conduct, Section 0120-2-08, and other applicable laws as required.

Prior to any grading activities a land disturbance permit must be obtained. Contact Hendersonville Public Works Department.

The information above is required minimum information that is required on a set of construction plans that is submitted to the City of Hendersonville for review.

I do hereby submit the attached Construction Plans for review. I have reviewed the above checklist and believe that all the information required has been provided within the submitted plans and is correct.

[SEAL]

_____

Signature of Design Professional Submitting Plan

This signature must be accompanied by the registrant's Seal and Registration #.

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

Project Name:		
Project Address:		
General Information		
1	Cover sheet, including information listed below and a sheet index for all sheets included in the submittal set.	
A	Minimum 4”x 8” clear area on top or bottom right of cover sheet for City approval stamps.	
B	Site location, address (verified by E911) and vicinity map.	
C	Name of proposed development, as well as applicable phase and section numbers.	
D	Contact information for professional(s) preparing the plans (including e-mail addresses).	
E	Contact information for developer(s) (including e-mail addresses).	
F	Contact information for the property owner(s) (including e-mail addresses).	
G	Existing and proposed zoning.	
H	Bulk data table, formatted to match the bulk data tables shown in the appropriate section of the Zoning Ordinance (Table 4 for Residential, Table 9 for Residential Planned Development, and Table 10 for Commercial Planning Development) and including the following information:	
i	Acreage and square footage of site.	
ii	Existing and proposed gross building square footage; square footage per floor.	
iii	Number of dwelling units.	
iv	Proposed building height and number of floors.	
v	Required parking ratio and required number of parking spaces; number of existing parking spaces; proposed number of parking spaces; total number of parking spaces.	
vi	Minimum and maximum building and parking setbacks or build-to lines (based on base zone and overlay district).	
2	Plan date, revision dates.	
3	Legend, North Arrow, and Scale.	
Existing Features		
4	Recent site survey (less than 5 years old), stamped by registered land surveyor. Survey shall contain, but is not limited to the following:	
A	Public and private streets with current names.	
B	Widths and locations of adjacent right-of-way.	
C	All existing drainage structures, including combination inlets, catch basins, junction boxes, culverts, cross drains, headwalls, and outlet facilities including information such as, invert elevations, size, material type, and slope.	
D	All environmental features, streams, wet-weather conveyances, wetlands, sinkholes, outcroppings, cemeteries, or other significant features. Streams, wet-weather conveyances, ponds, and wetlands must be labeled based on the hydrological determination (HD) report, if applicable. If HD was performed, all streams, wetlands, ponds, and wet-weather conveyances shall be confirmed through concurrence from TDEC and USACE.	
E	Existing parking lots, pavement, pavement markers and striping, and curbing.	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

F	All easements and servitudes burdening the property, including those not disclosed in record documents but observable, such as ditches, drains, communication, power, and gas lines, with locations, dimensions, and designation as to type.	
G	Acreage and square footage of property.	
H	Existing structures, including utility boxes, walls, fences, buildings, and other improvements. Including the shape, size, and location of all buildings or other structures to be altered, or moved, and of buildings or other structures already on the lot.	
I	Property lines with bearings and distances and all property line curve data.	
J	Building and parking setbacks or build-to lines.	
K	Existing iron rods, monuments, and pipes as well as those set by the surveyor.	
L	Existing utilities, including, but not limited to, power poles, light poles, gas lines, water lines, sewer lines, and manholes, fire hydrants, water valves and meters, gas valves, transformers, overhead power and communication lines, underground telephone, and power lines, etc.	
M	Topographic features and existing contours of not more than one (1) foot interval. Existing contours shall be provided a minimum of 10' beyond site's legal boundary and to the centerline of adjacent streets.	
N	All fences, tree lines, and large trees. Label all existing trees ten (10) inches diameter-at-breast-height (DBH) or greater. Indicate species and condition.	
O	Existing striping in parking lots and roadways.	
P	Raised islands in parking lots (note if these are curbed).	
Q	Existing curbs.	
R	Spot elevations (as necessary) to clarify existing drainage patterns.	
S	Property owners of property being developed and of surrounding properties with deed book and page numbers.	
T	Flood Emergency Management Agency (FEMA) information such as zone boundary(s), type(s), panel number(s), date(s), etc.	
U	Existing and intended use of the lot and of all such buildings or other structures upon it, including the number of dwelling units the building is intended to accommodate.	
V	Benchmark locations and elevations for vertical reference. One benchmark should be referenced to Tennessee State Plane coordinates. Include Northing and Easting.	
W	Location, quantity, size, botanical name and condition of all existing plant materials, including trees and other plant material in the right-of-way, and indicating plant material to be retained and removed.	
X	All applicable general notes, such a survey and utility notes.	
5	Areas of demolition shall be clearly shown, if applicable, and all appropriate demolition notes shall be given on the plans.	
Proposed Features – General		
6	Location and type of all fences, walls and railings (specify materials and colors).	
7	Proposed location of all easements and rights-of-way. If the existing right-of-way on which the lot or parcel has frontage is less than the width required by the Land Use & Transportation Plan, then additional right-of-way must be dedicated to bring the street up to standard.	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

8	Curbs and gutters on roads, driveways, parking lots, and islands shall be provided and clearly shown. Minimum roadway width is 20' for one way traffic and 24' for two-way traffic.	
9	Location, size, and type of proposed utilities. Show locations of all proposed hydrants, valves, bends, lines, sewer lines and manholes, connections, power poles, light poles, electric lines (overhead and underground), transformers, etc. All applicable utility notes shall be placed on the plans.	
10	If subsurface sewage disposal is anticipated, provide certification from the county health department approving the lot for such use.	
11	Locations and dimensions of other construction items such as dumpster pads, bollards, wheel stops, etc.	
12	Layout, location and dimensions of all driveways, entrances, accessory off-street parking areas, accessory off-street loading berths, and parking lot drive aisles and spaces. Show all geometry, such as radii of driveways and curb returns. Sufficient information shall be given to locate the proposed pavement in the field.	
13	Type of pavement (concrete or asphalt) including detail(s).	
14	Parking areas shall be striped with permanent markings. Driveway centerlines and directional arrows shall be shown. Striping color shall be noted.	
15	Handicap parking shall be provided as required by federal and state law.	
16	Handicap parking spaces shall be identified with appropriate signage and markings.	
17	All off-street parking areas must be constructed of concrete or asphalt. Brick and concrete pavers may be used on a case-by-case basis.	
18	Driveway locations should be tied to property line or other reference.	
19	Provide expansion joints between road, driveway, or other reference.	
20	Minimum dimensions of a parking space are 18’ x 9’.	
21	Upgrade adjacent street(s) to comply with City Bike/Pedestrian Master Plan.	
22	Upon submittal of the site plan to the City, also submit two (2) copies of the utility plan to the electrical service provider (NES; CEMC) for review.	
23	Elevations of all proposed steps, stairs, and retaining walls. Top-of-wall and bottom-of-wall elevations shall be shown for retaining walls.	
24	Provide City of Hendersonville general notes as provided by the City.	
25	Location and square footage of common open space.	
26	Location, type, and size of all signs. Show required sight triangles for impacted driveways and intersections.	
27	Public sidewalk shall be provided. Width shall conform to the Transportation Plan; where omitted from the Transportation Plan, widths shall be 5'.	
28	Provide right-of-way and infrastructure improvements as required by the City's Land Use & Transportation Plan - Roadway Improvements (recorded 2/5/13).	
Proposed Features – Grading, Drainage, & Utilities		
29	Proposed contours shall be clearly shown, labeled, and shall tie into existing contours. Proposed ditchlines shall be shown with proposed contours.	
30	Topographic features and proposed contours of not more than one (1) foot interval.	
31	Provide spot elevations at the following locations:	
A	Along all accessible paths, including elevations at each corner of all landing areas, ramps, ADA parking spaces, and crosswalks.	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

B	At critical drainage locations.	
C	Top of wall and bottom of wall.	
D	Along ditchlines.	
32	Provide site grading plan.	
33	All applicable drainage notes shall be included in the plan set.	
34	For usable open areas, a minimum slope of 1% and a maximum slope of 5% should be used. For areas to be mowed, a minimum slope of 1% and a maximum slope of 33% (1:3) should be used. The minimum slope on all areas should be 1% except for grass/sod lined ditches which should be 2%.	
35	Access ramps (driveways) shall have a maximum slope of 10% in the first fifteen (15) feet from the street.	
36	Parking lots should have a 5% maximum slope in any direction.	
37	Proposed culverts shall be labeled with size, type of pipe and type of headwalls/endwalls, with references to applicable details on the detail sheet(s).	
38	Locations of catch basins and combination inlets shall be clearly shown, with invert elevations, pipe sizes, inlet types, grate types, etc., labeled and reference to detail(s) on the detail sheet(s). A pipe schedule table and storm structure table may be used to summarize this information. The locations of curb cuts shall be noted.	
39	Indicate rip-rap size, pad dimensions, and locations.	
40	Show building locations with finished floor elevation. Proposed structures shall be located from property survey reference points so that they may be accurately located in the field. Finished floor elevation shall be set per the Floodplain Regulations where applicable.	
41	Location and size of stormwater control measures labeled and reference to details on the detail sheet(s).	
42	Drainage should be designed so as not to cross sidewalks or flow over retaining walls.	
43	Retaining walls that retain an excess of 4’ of fill require separate plans stamped by a Structural Engineer.	
Proposed Features – Landscaping & Irrigation		
44	A landscape plan shall be provided.	
45	Plant materials must meet size and quality standards as stated in the American Standard for Nursery Stock, ANSI Z60.1, latest edition.	
46	Provide a plant schedule indicating quantity, species, and size of proposed plants. A separate plant schedule shall be provided for replacement trees. Replacement trees shall be indicated on the landscape plan with an "R".	
47	Provide a tree replacement plan showing surveyed locations and sizes of trees 10" DBH and greater to be saved and removed; provide a table showing a line item for each removed tree, its size, required replacement value (50%), and summarization of total inches to be removed; provide a second table showing a line item for each tree 20" DBH and larger to be saved, its credit value (50%), and summarization of total inches to be saved.	
48	Trees specified for preservation and removal shall be clearly indicated on the grading and demolition plans. Trees must be protected through the use of tree protection fencing complying with Appendix D (Landscape Standards) of the Hendersonville	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

	Zoning Ordinance. A tree protection detail must be provided. Tree protection fencing must be shown on the grading sheet as well as the tree replacement plan.	
49	Impervious surface ratio (ISR) shall be stated on plans and not exceed 80%.	
50	Plant Sizes:	
A	Deciduous shade trees shall be minimum of 2.5" caliper.	
B	Evergreen trees shall be a minimum of 6' in height.	
C	Ornamental trees shall be a minimum of 2.5" caliper.	
D	Multiple-stem ornamental trees shall have a minimum height of 8' at planting. More than 5 trunks shall be considered shrubs.	
E	Large-growing shrubs (reach 5 or more feet at maturity) shall be a minimum height of 36 inches at planting. Small-growing shrubs (grow up to 5 feet in height if left unmaintained but are generally kept at heights of 18 to 30 inches) shall be a minimum height of 18 inches at installation. Parking lot perimeter shrubs shall be 30" ht. minimum.	
51	Trees and shrubs shall be used to break up long expanses of building walls, retaining walls, fences, and other barriers.	
52	Plant beds shall be mulched with naturally colored shredded hardwood, mushroom compost, pine fines or pine needles. Rock, gravel or synthetic mulches shall not be used.	
53	Planting beds shall be minimum width of five (5) feet. Parking lot perimeter shrub beds shall be minimum width of seven (7) feet. Landscape islands within parking lots shall be minimum of 9'x18'.	
54	Landscape beds shall have a minimum topsoil depth of eighteen inches (18"). Each tree shall have a minimum topsoil depth of twenty-four inches (24") over a twenty-five (25) square foot area, or a minimum of fifty (50) cubic feet of topsoil.	
55	Trees planted within sidewalk or other hardscape zones shall be provided a minimum of 200 cubic feet of soil per tree. A minimum of 60 square feet of pervious area shall be provided around each tree. Pervious paving may be used for this purpose if used in conjunction with structural soils.	
56	Detention/retention ponds shall be landscaped with trees, shrubs, and turf. Back slopes steeper than 1:4 exposed to public streets shall be screened with trees and shrubs. Back slopes exceeding 1:3 shall be vegetated with plants that do not require frequent mowing.	
57	Berms shall have a maximum slope of 1:3.	
58	Turf areas visible from the street shall not exceed a slope of 1:3.	
59	Building foundation landscaping shall be provided at the base of all building facades visible to the public, exclusive of building entry ways.	
60	Building foundation planting beds shall be a minimum width of 5 feet adjacent to single story buildings, and ten (10) feet adjacent to buildings having two or more stories.	
61	Regardless of building height, segments of buildings that have long, flat wall expanses of forty (40) feet or longer without significant architectural detailing, wall projections and recesses, shall have ten (10) feet wide planting beds that incorporate ornamental trees, tall evergreens, shrubs, and groundcovers.	
62	*Parking Lot Perimeter Landscaping:*	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

A	Parking lot perimeter landscaping shall be provided along the full length of parking lot boundaries facing or visible from public areas.	
B	Parking lot perimeter landscape beds shall be protected by raised concrete curbing. Exceptions may be made for the purpose of facilitating a bioswale designed as part of an overall water quality and drainage plan.	
C	Parking lot perimeter landscape shall be a minimum of seven (7) feet in width.	
D	Parking lot perimeter landscape beds shall incorporate a continuous double staggered row of shrubs, at a minimum height of 30" height and maximum spacing of forty-eight inches (48"). The configuration of shrubs may be altered so long as the overall required quantity is maintained, but in no case shall there be less than a single row of evergreen shrubs at the back of the parking lot curb.	
E	Shrubs shall be planted a minimum of three feet (3') from the back-of-curb.	
63	*Interior Parking Lot Landscaping:*	
A	One 9'x18' landscape island shall be provided every ten (10) parking spaces, or an 18'x18' island every twenty (20) parking spaces.	
B	Where parking medians (minimum 9' wide) are provided within interior parking bays, runs of parking, including adjacent perimeter parking, may be increased to twenty (20) spaces, with a 9'x18' landscape island terminating each run. Medians shall be landscaped with trees, shrubs, and groundcovers.	
C	All rows of parking shall be terminated by a 9'x18' (minimum) landscape island.	
D	Every landscape island shall contain a shade tree. Where light poles are located within the same island, trees should be a fastigiate or ornamental type.	
E	One (1) shade tree shall be provided for every 2000 square feet of Vehicle Use Area.	
F	A minimum of 70% of each parking lot landscape island shall be planted in turf of other live groundcover, shrubs, perennials, or ornamental grasses.	
G	Trees and light poles shall be separated by at least fourteen (14) feet.	
H	Parking facilities larger than 100,000 sf of Vehicle Use Area or 250 spaces shall be organized into a series of smaller modules separated by linear landscape medians with a minimum width of 9', located at least every 4th parking bay and running the length of the parking bay. Medians shall contain trees, shrubs, and groundcovers.	
I	Interior landscape islands are not required withing Industrial Zones.	
64	*Street Yard:*	
A	A 10' wide street yard shall be provided along all public road frontages, as measured from the front property line towards the interior of the lot.	
B	Within the required street yard, street trees shall be planted 40' on-center, 2.5 - 3" caliper. Trees shall be shade trees, except where overhead lines are present, in which case ornamental trees may be used.	
65	Buffer yards shall be provided according to the chart and requirements shown in Section 11.4.J. Buffers shall be shown, labeled, and dimensioned on the plan.	
66	Landscaping shall be provided around the bases of ground signs.	
67	Vehicular entry and exit points shall landscaped so as to be easily identified by users.	
68	Overhead power lines shall be shown and conflicts with proposed shade trees addressed.	
69	Dumpsters and other refuse storage areas shall be enclosed on three (3) sides by a brick or stone wall matching the proposed building and reaching a height of two (2)	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

	feet above the top elevation of the dumpster or container. The 4th side shall be an opaque gate of the same height.	
70	Dumpsters shall be set on a concrete pad. Pad shall extend 18' beyond face of enclosure.	
71	A 40' straight-line approach should be provided to the face of dumpster enclosure.	
72	*Screening Requirements:*	
A	Loading spaces or docks shall not be visible from the street. Screening shall consist of a solid wood or masonry fence to a height of no less than 6 feet, and/or a dense evergreen hedge. If vegetative screening is used, a minimum 9' wide planting bed shall be provided along the length of the dock.	
B	Outdoor storage areas shall be screened from view of all property lines and streets to a minimum height of 6' and a maximum height of 8'. Plants shall be installed along the face of the fence to soften the fence line and to screen any storage which extends above the top of the fence. A Type C buffer conforming to the requirements of 11.4.J.3c may be substituted for a fence.	
C	Drive-thru facilities shall be screened from view of residential properties. Screening shall consist of a solid wood or masonry screen wall, and/or dense evergreen hedge at least 6' in height.	
D	Service areas such as laydown yards, equipment holding areas, and service bays with overhead doors shall be screened from public view. Screening shall consist of evergreen trees and shrubs of sufficient height, width, and quantity to provide such screening at the time of planting. Planting beds shall be a minimum width of fifteen feet (15').	
E	Utility equipment (including wall-mounted) shall be screened from view of streets and other public areas. Screening shall consist of evergreen plants of sufficient height, width, and quantity to provide such screening at the time of planting.	
73	City's standard tree selection and planting specification notes and details shall be provided (see Appendix D: Landscape Standards).	
74	An automatic, underground irrigation plan shall be provided and meet the requirements of Chapter 11.4.4.11 (Irrigation) and Appendix AD.1 (Irrigation).	
75	Landscape plans must be stamped by a Landscape Architect registered in Tennessee. Irrigation plans must be stamped by a Landscape Architect or Certified Irrigation Designer.	
Proposed Features – Site Lighting		
76	Location, type, height, and finish color of site lighting; base, pole, and luminaire details.	
77	Provide a photometric plan using foot-candle unit showing a minimum of 0.2 foot-candles and a maximum of ten (10) foot-candles in parking areas; maximum of thirty (30) foot-candles underneath fuel center canopies.	
78	Cut off lenses shall be provided for fixtures in excess of five (5) watts or 100 lumens.	
79	Canopy lights shall be fully recessed.	
80	Combined height of pole, base and fixture shall not exceed twenty-two (22) feet in commercial districts, institutional uses (such as churches) and multi-family developments; shall not exceed sixteen (16) feet in residential districts.	
Proposed Features – Buildings		

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

81	Blackline elevations of each side of the building shall be provided in each plan set. Materials must be noted and shown graphically and correspond to the material sample board. Colors must be noted.	
82	Color elevations showing each side of the building shall be provided. Materials and colors must be noted, shown graphically, and correspond to the material sample board. Colors must be accurately represented. Two (2) sets of the elevations must accompany the initial submittal. One (1) set (24"x36" minimum) mounted on foam-core boards, or, 15 unmounted sets of 11"x17" or 12"x18" must accompany the re-submittal.	
83	A building materials sample board must accompany the initial site plan submittal. Materials must be labeled with the project name and be keyed to the blackline and color elevations.	
	Commercial Buildings	
84	Main entry shall face the street.	
85	Building massing shall be proportioned and articulated to meet the requirements of Chapter 12.3.3 (Massing and Scale of Buildings).	
86	Primary building materials on commercial buildings shall meet the requirements of Chapter 12.3.6.2.A. (Primary Building Materials)	
87	Trim materials on commercial buildings shall meet the requirements of Chapter 12.3.6.2.B. (Trim and Accent Materials)	
88	The following prohibited materials may not be used on commercial buildings: Plywood, vinyl siding, aluminum siding, hard board siding, metal, cement, or concrete block (except that calcium silicate block may be used on a case-by-case basis).	
89	Material colors shall meet the requirements of Chapter 12.3.6.3. (Building Color)	
90	Horizontal articulation of the building façade shall be provided. Wall surfaces over 40 feet in length should include at least one change in plane. (See Chapter 12.3.6.4: Building Facade).	
91	Vertical articulation of the building façade shall be provided. Building shall have a clearly identifiable base, middle and top. (See Chapter 12.3.6.4: Building Facade).	
92	Windows shall meet the requirements of Chapter 12.3.6.5 (Windows). At least 70% of the side(s) of the building facing the street shall contain windows, doors, or storefront. Storefronts shall wrap the corner of secondary building elevations visible from the street.	
93	Roofs shall meet the requirements of Section 12.3.F.6. Materials of visible roofs shall be standing seam metal, architectural shingles, tile, or slate. Flat roofs shall be screened by parapet walls.	
94	Rooftop units shall be completely screened on all sides of the building by parapet walls or a pitched roofing system.	
95	Rooftop access shall be provided internally rather than externally.	
96	Awnings shall meet the requirements of Chapter 12.3.6.7 (Awnings). Awning materials shall not be vinyl or plastic. Backlit awnings are prohibited.	
97	Canopies shall meet the requirements of Chapter 12.3.6.8 (Canopies, Carports, Sheds, and Similar Structures). Canopy support posts or columns shall be brick or stone to match the building.	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

98	Overhead doors shall not face a public street. They also shall not be placed on sides of buildings that face on-coming traffic, or if they are, they must be screened from view. See Chapter 12.3.6.9 (Overhead Doors for Service Bays and Loading Docks).	
99	Buildings in the Old Town Commercial District (OTC) shall be designed to meet the additional design requirements of Chapter 12.3.7 (Supplemental Design Standards for Old Town Commercial District).	
100	Neon lighting/tubing and strings of LED lighting and similar lighting are limited to the walls of buildings in the form of a single enclosed band of such lighting around not more than the perimeter of the building. Such lights shall not be located in windows or doors or other places with the building or on the property to the extent they are visible from a public street.	
	Industrial Buildings	
101	Main entry shall face the street.	
102	Building massing shall be proportioned and articulated to meet the requirements of Chapter 12.4.3 (Massing and Scale of Building)	
103	Brick, stone, split face concrete block (integrally colored), drivet, stucco, EIFS may be used on the facades of buildings facing a street, and on sides of buildings visible from a street.	
104	Painted metal siding, painted concrete block or painted concrete tilt-up walls may be used on the rear of the building and on sides of buildings screened from view of the street.	
105	Horizontal articulation of the building façade shall be provided. Wall surfaces over 50 - 75 feet in length shall include at least one change in plane. (See Chapter 12.3.6.4: Building Facade)	
106	Rooftop units shall be completely screened on all sides of the building by parapet walls or a pitched roofing system.	
107	Overhead doors shall be screened from view of the street.	
108	Canopies shall meet the requirements of Chapter 12.4.5.8 (Canopies, Carports, Sheds, and Similar Structures). Canopy support posts or columns visible from the street shall be brick or stone to match the building.	
Proposed Features – Erosion and Sediment Control Measures		
109	Labeled Flood Emergency Management Agency (FEMA) information such as zone boundary(s), type(s), panel number(s), effective date(s), etc.	
110	Label all streams (as defined in Construction General Permit) adjacent to the site. Note if the site drains to waters with unavailable parameters (sedimentation/siltation) or Exceptional TN Waters (ETWs). Please note that sites draining to waters with unavailable parameters for sedimentation/siltation or ETWs shall design EPSC measures for the 5-year, 24-hour design storm. Sites draining to waters with available parameters for sedimentation/siltation or unassessed waters shall design EPSC measures for the 2-year, 24-hour design storm.	
111	Show and label all required water quality riparian buffers, for areas with ARAP coverage include NOC Tracking Number.	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

112	Install high visibility fencing around the hydrologic features (streams, wetlands, jurisdictional ponds). Detail for high visibility fencing shall be provided.	
113	Label site outfalls. Note the acreage and average slope of the watershed to each outfall during each stage of construction.	
114	Show the limits of disturbance. The limits of disturbance should encompass all EPSC measures and not overlap them in the plans. Note the acreage of the limits of disturbance on the plans.	
115	Show and label the existing contours	
116	Show the survey benchmark, property lines, ROW lines, and easements.	
117	Provide details for all EPSC measures shown in Stages 1-3 (details must meet the minimum design criteria specified in the TDEC Erosion and Sediment Control Handbook)	
118	Provide construction sequence (A description of when EPSC measures are to be implemented in relation to construction milestones and how stormwater control measures (SCMs) will be protected during construction)	
119	Provide TDEC NOC tracking number and applicable ARAP tracking number(s) on plans	
120	Provide appropriate details and notes regarding environmental permitting commitments on the plans. (e.g. stream diversion details, special permit condition compliance, etc.)	
121	Add the following notes to the EPSC plans (as applicable):	
A	The Site Designer must certify that all initial EPSC measures are installed per the approved plan and details prior to beginning grading operations. The site designer must also perform a site assessment after 30 days of construction within watershed(s) for outfalls with drainage areas greater than or equal to 10 acres (or 5 acres if draining to waters with unavailable parameters for siltation/sedimentation or ETWs).	
B	The Contractor is required to sweep the streets daily when construction is active where the construction exit(s) are located.	
C	All disturbed areas must be stabilized within 14 days of any stoppage in work to the area.	
D	All slopes 35% or greater shall be stabilized with EPSC matting or sod. Slopes 35% or greater must be stabilized within 7 days of stoppage in work to the area.	
E	Dewatering practices shall comply with the TDEC Erosion and Sediment Control Manual's dewatering criteria.	
F	City of Hendersonville Public Works Department shall be notified 14 days prior to the removal or conversion of any sediment trap/basin for approval.	
G	All Water Quality Riparian Buffers shall be field surveyed and staked. High visibility fencing shall be installed based on staking prior to land disturbance activities.	
	Initial Stage 1 EPSC Plan	
122	Show existing site features (buildings, fences, structures) and stormwater system (if applicable).	
123	Show existing tree line, including tree protection as applicable. Detail for tree protection shall be provided on plans if used.	
124	Show haul roads necessary to install initial EPSC measures and traverse the site.	
125	Show existing utilities (stormwater, sanitary sewer, gas, electric, water, etc.).	
126	Show temporary stream crossings.	
126	Show any parking areas, and/or equipment staging area. Provide appropriate pollution prevention measures such as fuel tank secondary containment.	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

127	Show perimeter EPSC measures. Sediment should be controlled as close to the disturbance as possible to prevent sediment travelling across the site. Perimeter EPSC measures should be considered secondary treatment.	
128	Show construction exit(s) (include a sight distance triangle).	
129	Show concrete wash-down location.	
130	Show any required sediment basins or traps based on CGP requirements.	
131	Show any required diversion ditches with proposed grading including dimensions, slope, and as necessary temporary stabilization.	
132	Locate stockpile areas and specify EPSC measures around stockpile locations.	
133	Show outlet protection for all concentrated discharges (including length, width, stone size (if rock being used), and depth). A green-solution shall be used, if possible, based on shear stresses.	
134	Show check dams in all channels receiving drainage from disturbed areas. Specify weir height and spacing. These can be rock or other appropriate material.	
135	Provide all other EPSC measures required to control sediment during the initial stage of construction. All EPSC measures shall be designed based on the Tennessee Erosion and Sediment Control Handbook.	
	Interim Stage 2 EPSC Plan	
135	Show intermediate contours for pre-roadway binder conditions for projects with roadways to be dedicated to the City.	
136	Show and label existing and proposed contours.	
137	Show proposed site layout as it will exist during pre-binder conditions. Include the outline of the proposed roadways/driveways.	
138	Show proposed stormwater system features and any existing stormwater system features to remain.	
139	Show proposed utilities (sanitary sewer, water, electric, gas, etc.).	
140	Adequate perimeter EPSC measures, construction exit, and concrete wash-down location(s) must remain in place.	
141	Sediment basins/traps should remain in place.	
142	Show any required diversion ditches with proposed grading including dimensions, slope, and as necessary temporary stabilization.	
143	Sediment should be controlled as close to the disturbance as possible to prevent sediment travelling across the site. Perimeter EPSC measures should be considered secondary treatment.	
144	Show inlet protection for all proposed inlets that will receive flow at this stage. Provide rigid frame inlet filters, meeting specifications for ASTM D8057-17, for inlets located within the ROW.	
145	Show outlet protection for all concentrated discharges (including length, width, stone size (if rock being used), and depth). A green-solution shall be used, if possible, based on shear stresses.	
146	Show check dams in all channels receiving drainage from disturbed areas. Specify weir height and spacing. These can be rock or other appropriate material equal.	
	Final Stage 3 EPSC Plan	
146	Show and label existing and proposed contours.	
147	Show the final site layout including all stormwater infrastructure.	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

148	Show proposed utilities (sanitary sewer, water, electric, gas, etc.).	
149	Show outlet protection for all concentrated discharges (including length, width, stone size (if rock being used), and depth). A green-solution shall be used, if possible, based on shear stresses.	
150	Provide notes on the conversion of sediment basins/traps to permanent ponds as well as the installation of proposed stormwater control measures.	
151	Provide information regarding stabilization measures for the site. Include seeding specifications, including temporary and permanent seed, permanent matting or blanket, soil amendments based on site specific soil test(s), mulch, seeding schedule, and/or sod specifications and planting schedule.	
Drainage Report		
152	Signed and sealed by a PE licensed in the State of Tennessee.	
153	Include a copy of all required permits (TDEC Permits (CGP Application Documents, ARAP Application Documents, Sinkhole UIC, etc.), USACE Permit, and/or TVA Permits).	
154	USDA Web Soil Survey for subject site including Hydrologic Soil Group and Erodibility Factor.	
155	FEMA FIRM(s) for the subject site.	
156	National Wetlands Inventory Overlay for subject site.	
157	NOAA Atlas 14 printout (depth and intensities, as used in the analysis).	
158	Stormwater Pollution Prevention Plan.	
159	Narrative summary discussing the following:	
A	Existing and proposed drainage patterns.	
B	Chart of existing and proposed impervious areas.	
C	Design methods used (SCS method, rational method, etc.)	
D	All assumptions used in stormwater calculations.	
E	Chart of pre-development and post-development peak flowrates for the 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour design storms for each outfall.	
F	Discussion of the water quality design method used (selection of Stormwater Control Measure), including any supplementary information needed, such as infiltration testing or literature used to determine TSS removal %.	
G	Discussion of downstream infrastructure, including capacity.	
160	Pre-Development Drainage Area Map with the following:	
A	Existing contours (minimum of 1-foot interval) labeled.	
B	Existing property, ROW, and easement delineations.	
C	Existing stormwater system.	
D	Existing impervious areas.	
E	Existing drainage areas, including time of concentration path (if greater than 6 minutes is used), CN value (or “c” factor), flow arrows, outfall points, and area labels. Drainage areas should not be based on the property boundary.	
F	Location of any existing stormwater control measures.	
161	Post-Development Drainage Area Map with the following:	
A	Existing and proposed contours (minimum of 1-foot interval) labeled.	
B	Property, ROW, and Easement delineations.	
C	Existing and proposed stormwater system.	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

D	Proposed impervious areas.	
E	Post-development drainage areas, including time of concentration path (if greater than 6 minutes is used), CN value (or "c" factor), flow arrows, outfall points, and area labels. Drainage areas should include any off-site drainage that flows to the subject site.	
F	Location of proposed stormwater control measures.	
162	Proposed Inlet(s) Drainage Area Map	
A	Existing and proposed contours (minimum of 1-foot interval) labeled.	
B	Property, ROW, and Easement delineations.	
C	Existing and proposed stormwater network.	
D	Proposed impervious areas.	
E	Post-development drainage areas to each proposed catch basin or combination inlet, including time of concentration path (if greater than 6 minutes is used), CN value (or "c" factor), flow arrows, outfall points, and area labels. Drainage areas should include any off-site drainage that flows to the subject site.	
163	Pre-Development and Post-Development Hydrologic and Hydraulic Calculations including:	
A	Peak runoff calculations for the 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour design storms for the pre-development and post-development drainage areas shown on the drainage area maps. Post-developed peak flow shall not exceed pre-developed peak flow at any outfall.	
B	Calculations for the post-development peak flow rate to each ditch, inlet (catch basin), and pipe. Ditches and pipes shall be designed to convey a minimum of the 25-year design storm. No pipe or culvert shall be smaller than 15" diameter. No pipe shall be designed in a pressurized state. Calculations should include capacity vs design flowrate and velocity during 25-year design storm.	
C	Inlet spread calculations for the 25-year design storm.	
164	Erosion and Sediment Control Design Calculations including:	
A	Provide drainage area map delineating areas to each EPSC measure. For example: most down gradient check dam within ditch, each contiguous section of silt fence, sediment trap, sediment basin, diversion ditch, inlet protection.	
B	Provide calculations showing that channels with check dams have the capacity to convey the 2-year, 24-hour design storm (or 5-year, 24-hour design storm if draining to waters with unavailable parameters for sedimentation/siltation or ETWs) without overtopping the channel.	
C	Provide design calculations for sediment traps per the Tennessee Erosion and Sediment Control Handbook. Must be able to treat the 2-year, 24-hour design storm (or 5-year, 24-hour design storm if draining to water with unavailable parameters for sedimentation/siltation or ETWs).	
D	Provide design calculations for sediment basins per the Tennessee Erosion and Sediment Control Handbook. Must be able to treat the 2-year, 24-hour design storm (or 5-year, 24-hour design storm if draining to water with unavailable parameters for sedimentation/siltation or ETWs).	
E	Provide routing calculations for all sediment basins for the 2-year, 24-hour design storm (or 5-year, 24-hour design storm if draining to water with unavailable	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

	parameters for sedimentation/siltation or ETWs) and the 25-year, 24-hour design storm.	
F	Provide calculations showing that diversion ditches are designed to convey the 2-year, 24-hour design storm (or 5-year, 24-hour design storm if draining to waters with unavailable parameters for sedimentation/siltation or ETWs).	
G	Provide erosion resistance calculations for diversion ditches and permanent channels.	
H	Provide sizing calculations for all temporary culvert(s).	
I	Provide sizing guidelines/calculations for outlet protection.	
165	Water Quality Design Calculations including:	
A	Map showing all impervious area routed to a stormwater control measure (SCM). If certain areas cannot be drained toward an SCM (for example, driveway entrances, etc.) an equivalent section of impervious area or equivalent volume of runoff must be treated to offset it.	
B	Water quality design calculations based on the TDEC General Water Quality Rule 0400-40-10-.04	
C	Routing calculations for the 1-year, 24-hour design storm for proposed stormwater control measures.	
D	Infiltration testing results (if applicable based on water quality design method chosen).	
166	Long-term Maintenance Plan (prepared by a Professional Engineer or Registered Landscape Architect) including:	
A	Location of SCM(s), stormwater system features, detention areas, water quality riparian buffer areas, location of easement granting access for inspections/maintenance, and permanent elevation benchmark.	
B	Description of frequency of inspections, instructions for inspections, and required qualifications of the inspector for above mentioned items. These can be in the form of a checklist.	
C	Description of maintenance activities needed for above mentioned items.	
Flood Study		
167	For encroachments, within FEMA designated Floodways, Zone AE without Floodway, and Zone A, as well as, within twice the width of an unmapped stream from top of bank to top of bank a flood study is required.	
Other Information		
168	All new utility service lines shall be underground.	
169	Include elevations of ground signs, building signage, and all other signage. Specify illumination type. Indicate dimensions, square footage, materials, mounting, sight triangles, etc.	
170	Projects that are within the following Planned Developments must be accompanied by a letter stating the approval of the Architectural Review Committee: Glenbrook, Indian Lake Village, Indian Lake Center, Indian Lake Market. The letter must be provided with the initial submittal.	
171	All sheets must be stamped and sealed by design professionals licensed to do such design work in the State of Tennessee.	
172	-REQUIRED OF ALL PROJECTS-	

Site Plan & Design Review Checklist

Please mark Yes (Y), No (N), or Not Applicable (N/A) for each item in the righthand column.

	As a registered design professional within the State of Tennessee I have to the best of my knowledge designed the above referenced project in accordance with the accessibility code of ICC A117.1-2009 and Chapter 11 from the 2012 IBC.	
173	For projects with vehicular access on State Route 258 (New Shackle Island Road), State Route 386 (Vietnam Veterans Blvd), or US Hwy 31E (Main Street/Gallatin Pike), provide to the City a signed TDOT Concept approval letter. Make application for the letter by contacting Stanley Sumner, TDOT Region 3 Traffic Office, 6603 Centennial Blvd, Nashville, TN 37243-0360; Phone: (615) 350-4333.	

I do hereby submit the attached Site Plan and recommendation by the Hendersonville Regional Planning Commission. The appropriate copies of the plan have been provided. I have reviewed the above checklist and do believe that all the information required has been presented.

Date

Signature of Individual Submitting Plan

*Any items checked Not Applicable by the submitter that are deemed applicable by the City staff will result in the entire submittal being rejected as incomplete. If in doubt about the applicability of a particular item, contact the Staff Planner or City Engineer.

Please note: No plan will be reviewed until all information required is presented in a full and complete manner.

APPENDIX B-Public Works As Built Requirements

Public Works As-Built Requirements

Prior to release of the sureties for completion of the stormwater facilities and public infrastructure, an As-Built Plan is to be submitted for any stormwater and roadways facilities after final construction is completed. The plan must show the final constructed facilities will function as approved to meet the performance standards outlined in Title 18 of the Hendersonville Municipal Code. Plans shall be stamped by a Tennessee Licensed Professional Engineer and/or Land Surveyor as appropriate. Any discrepancy from the final constructed facilities and the approved design shall be noted on the As-Built Plan.

The licensed design professional shall certify that:

"The facilities have been constructed as shown on the "as-built" plan, and facilities meet the approved stormwater management plan and specifications, including verifying that the watershed draining to the permanent stormwater management features match the design, or achieve the function for which they were designed."

Where required by the City Engineer, updated calculations stamped by a Tennessee licensed engineer shall be submitted and approved by the City Engineer, showing the as-constructed facilities will function adequately to meet the performance standards of the Stormwater Ordinance. In addition, occupation permits shall not be granted until certification of all storm sewer system features are made and accepted by the City.

Digital CAD files shall be provided in the Tennessee State Plane Coordinate System, NAD83, NAVD88. The following shall be shown in the plan:

1. Invert elevation, top of casting elevation, slope, location, and material of all pipes, drainage inlets/outlets, headwalls, junctions, etc.
2. Size and material of all permanent stabilization including outlet dissipation pads.
3. Ditch size, slope, and materials, including location of top of banks.
4. Top of berm and weir elevations on all drainage facilities.
5. Limits and volume of all detention/retention facilities, including side slopes.
6. Location and description of all storm sewer system features (e.g., rain garden, pervious pavement, buffer, etc.)
7. Permanent stormwater control measures:
    a. Location of SCM
    b. Engineer's certification letter certifying SCMs have been installed to meet the performance standards of Hendersonville Municipal Code Title 18, Chapter 2 and provide full treatment capacity within 72 hours following the end of the preceding rain event.
    c. Description of any variations from the approved design plans and specifications
    d. A brief description of the type of SCM and basic design characteristics
    e. As-built design parameters including but not limited to invert elevations, outlet structure elevations, subbase layer depths, etc.

f. Responsible party contact information
g. Inspection schedule
h. A brief description of or reference to maintenance procedures and frequency
i. Photographs of the installed SCMs

8. Property corners marked with iron pins or other monuments.
9. Edges of pavement, curbs/gutters, sidewalks, curb ramps.
10. Streetlights.
11. Property lines, right-of-way lines, minimum building setbacks, public utility, and drainage easements.
12. Utilities and fire hydrants (on a separate sheet).
13. As-built contours for all ponds.
14. FFEs are required for buildings in or adjacent to FEMA Special Flood Hazard Zones, or near an aquatic feature such as a stream, wetland, pond, etc.

Hendersonville Stormwater Asset Management Workbook Requirements

In addition to the CAD files, the City of Hendersonville requires the submittal of the Hendersonville Stormwater Asset Management Workbook. The workbook includes two tabs to be populated with linear assets and point assets of the storm sewer system. Linear assets to be included are conveyances (pipes/box) and open channels. Point assets to be included are area drains, catch basins, combo inlets, outlet structures, manholes/cleanouts, headwall IN, headwall OUT, ponds, and any other stormwater system asset. Mapping of the storm sewer system is a requirement set forth by the Phase 2 Municipal Separate Storm Sewer System (MS4) Permit.

- Point assets
  - Area drains
  - Catch basins
  - Combo inlets
  - Outlet structures
  - Manholes/cleanouts
  - Headwall IN
  - Headwall OUT
  - Ponds
  - Any other stormwater system asset
- Linear assets
  - Conveyances (pipes/box)
  - Open channels

For residential development, the entire storm system must be included in the workbook. For commercial/non-residential development, all permanent stormwater control measures, connections to the MS4, outfalls to the MS4, and installation of storm infrastructure in the right-of-way must be included in the workbook.

APPENDIX C-Professional Engineer Permanent Stormwater Control Measure Certification Form

Professional Engineer Permanent Stormwater Control Measure Certification Form

Site Name:		**Date:**
Received by:		**LDP#:**
COH Contract #:	**Total Impervious Surface Area (ft^2):**	**# of SCMs:**

I,_____, have performed a site visit to certify the proper design and installation of the Permanent Stormwater Control Measures (SCMs) as shown on the City accepted plan set.

I certify that the site meets the required standards set forth by Title 18 of the Hendersonville Municipal Code for Permanent Stormwater Standards and Tennessee Rule *0400-40-10.04*. I understand that enforcement action may be taken against the property owner if Permanent SCMs are not properly installed and functioning as designed. Furthermore, I certify that the Permanent SCMs, identified below, provide full treatment capacity within 72 hours following the end of the preceding rain event and that the SCMs achieve an overall treatment efficiency of 80% Total Suspended Solids (TSS) removal from the Water Quality Treatment Volume (WQTV).

Permanent Stormwater Control Measure Inventory	**Latitude (dd.dddddd)**	**Longitude (dd.dddddd)**
1.		
2.		
3.		
4.		
5.		
6.		

Only list Permanent SCMs that provide treatment for a portion or all the 80% TSS removal from the WQTV

Therefore, I am providing to the City the following certification:
"I certify under penalty of law that this form is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury."

Name: _____ Signature: _____

Professional Engineer Seal

Professional Engineer License Number_____

Sign and date seal

Permanent Stormwater Control Measure Photo Log
(*Include labeled photos for each Permanent SCM)*

APPENDIX D-Stormwater Inspection and Maintenance Agreement/Long-Term Maintenance Plan (IMA/LTMP)

PROVIDED BY COH:	LDP PERMIT#-	COH CONTRACT#:

INSPECTION AND MAINTENANCE AGREEMENT OF PRIVATE STORMWATER MANAGEMENT FACILITIES

MAP & PARCEL NO.:_____

PROJECT NAME:_____

PROJECT ADDRESS:_____

THIS AGREEMENT, made this____day of _____ 20____, by and between_____ _____hereinafter referred to as the "OWNER(S)" of the referenced property and City of Hendersonville, Tennessee, hereinafter referred to as the "CITY",

Being all or a portion of the land acquired by (name)_____, by (deed type)_____from

(name)_____, dated_____, of record in Book #_____, Page #_____,Register's Office of Sumner County, Tennessee.

WITNESSETH

WE, the OWNER(S), with full authority to execute deeds, mortgages, other covenants, all rights, titles, and interests in the property described above, do hereby covenant with the CITY and agree as follows:

1. The OWNER(S) covenant and agree with the CITY that the OWNER(S) shall provide for adequate long-term maintenance and continuation of all features and infrastructure that capture, convey, treat or detain stormwater located onsite. This shall be further described and shown in the Long-Term Maintenance Plan, attached hereto as Exhibit A, to ensure that the facilities, are and remain in proper working condition in accordance with approved design standards, rules and regulations, and applicable laws. The OWNER(S) shall perform preventative maintenance activities at intervals described in the schedule included in the Long-Term Maintenance Plan with necessary landscaping (grass cutting, etc.) and trash removal as part of regular maintenance.
2. The OWNER(S) shall submit to the CITY an annual report by July 1st of each year. The report will include the Long-Term Maintenance Plan that document inspection schedule, times of inspection, remedial actions taken to repair, modify or reconstruct the system and the state of control measures.
3. The OWNER(S) shall have all SCMs inspected on a minimum annual basis or as specified in the Long-Term Maintenance Plan by a licensed professional engineer, licensed landscape architect, or a person who has an active Tennessee Stormwater Management Training SCM Inspection and Maintenance Course certification.
4. The OWNER(S) shall have a licensed professional engineer, or a licensed landscape architect complete a comprehensive inspection of all SCMs at least once every five years. All related reports, letters, certifications shall be provided to the CITY with the annual report.
5. The OWNER(S) shall grant to the CITY or its agent or contractor the right of entry at reasonable times and in a reasonable manner for the purpose of inspecting, operating, installing, constructing, reconstructing, maintaining, or repairing the facility.
6. The OWNER(S) shall grant to the CITY the necessary easements and rights-of-way and maintain perpetual access from public rights-of-way to the facility for the CITY or its agent and contractor in accordance with the Stormwater Management Ordinance. The OWNER(S) agree that should maintenance not be properly performed, after due notice, the CITY may order the work performed. The OWNER(S) shall reimburse the CITY upon demand the costs incurred and any enforcement action costs according to the Stormwater Management Ordinance and is due upon receipt.
7. The CITY is under no obligation to maintain, or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the CITY.
8. If the OWNER fails to pay the CITY for the above expenses after forty-five (45) days written notice, the OWNER authorizes the CITY to collect said expenses from the OWNER through appropriate legal action and the OWNER shall be liable for the reasonable expenses of collection, court cost, and attorney fees.
9. The OWNER(S) shall indemnify and save the CITY harmless from any and all claims for damages to persons or property arising from OWNER(S) actions or inaction relating to the construction, maintenance, and use of the facility including all reasonable expenses, court costs, and attorney fees resulting therefrom.
10. The Agreement and covenants contained herein shall apply to and bind the OWNER(S) and the OWNER(S)' heirs, executors, successors, and assigns, and shall bind all present and subsequent owners of the property served by the facility.
11. The OWNER(S) shall not be able to modify its responsibilities with respect to this agreement without the CITY's written prior consent. Nothing herein shall be construed to prohibit a transfer by OWNER(S) to subsequent owners and assigns.
12. The OWNER(S) shall record a plat showing and accurately defining the easements for stormwater control facilities. The plat must reference the Instrument Number where this AGREEMENT and attachments are recorded and contain a note that the OWNER(S) is responsible for maintaining the stormwater management facilities.
13. The OWNER(S), or the City on the OWNERS(S) behalf, shall record this AGREEMENT in the office of the Register of Deeds for the County of Sumner, Tennessee, and the AGREEMENT shall constitute a covenant running with the land, and shall be binding upon the OWNER(S) and the OWNER(S) heirs, administrators, executors, assigns, and any other successors in interest.

FOR THE OWNER(S):

ATTEST: OWNER SIGNATURE: _____

PRINT OWNER NAME: _____ TITLE: _____

OWNER ADDRESS _____

OWNER PHONE & EMAIL: _____

OWNER NOTARY:

STATE OF _____ COUNTY OF _____

Before me, _____(notary) of the state and county mentioned, personally appeared _____ (owner name), with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who, upon oath, acknowledged such person to be president (or other officer authorized to execute the instrument) of _____ (company name), the within named bargainor, a corporation, and that such president or officer as such _____(title), executed the foregoing instrument for the purpose therein contained, by personally signing the name of the corporation as _____(company name).

Notary stamp here

WITNESS my hand and seal this _____ day of _____, 20____.

_____

NOTARY PUBLIC *My Commission Expires:* _____

PREPARED BY: **CITY OF HENDERSONVILLE, ENGINEERING DIVISION**

ATTEST: _____ Date_____

CITY OF HENDERSONVILLE, ENGINEERING DIVISION

101 MAPLE DRIVE NORTH, HENDERSONVILLE, TN 37075

CITY NOTARY:

STATE OF TENNESSEE COUNTY OF SUMNER

Before me, _____of the state and county mentioned, personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledge themselves to be the City Engineer of the City of Hendersonville, Tennessee, and that as such City Engineer, being authorized so to do, executed the foregoing instrument of the purposes therein contained.

Notary stamp here

WITNESS my hand and seal this _____ day of _____, 20____.

_____

NOTARY PUBLIC *My Commission Expires:* _____

EXHIBIT A - LONG TERM MAINTENANCE PLAN (LTMP)

PROJECT NAME:	COH#:
SUBDIVISION/SECTION/LOT:	
ADDRESS:	MAP & PARCEL:
LAT/LONG:	IMPERVIOUS SQ. FT.

CONTACT INFO:	Owner	Prepared By:
NAME & COMPANY:		
ADDRESS:		
PHONE:		
EMAIL:		

*Owner shall submit Annual Inspection Reports via Citizen's Self Service portal (http://css.hvilletn.org) no later than July 1 st of each year *

STORMWATER MANAGEMENT FACILITIES LOCATED ON SITE:

☐ Bioretention/Rain Gardens	☐ Infiltration Trenches	☐ Dry Ponds	Green Roof
☐ Water Quality Swales	☐ Riparian Buffers	☐ Wet Ponds	Wetland
☐ Oil Grit Separator/Water Quality Unit	☐ Underground Detention	☐ Storm Sewer	Grass Swales
☐ Permeable Pavers/Concrete	Other:		

ALL OF THE FOLLOWING DOCUMENTS SHALL BE ATTACHED AND INCLUDED WITH THIS FORM:

☐	Location Map
☐	Stormwater Features Location Sheet: include detailed exhibits of the SCMs and a site map showing the location of all SCMs and stream buffers: CLEARLY LABELED
☐	Oil Grit Separator/Water Quality Unit 2 year maintenance agreement
☐	Maintenance narrative & description of each SCM to be inspected
☐	SCM inspection and maintenance form for each SCM located on site

AS-BUILT DRAWINGS of the stormwater controls will be provided to the City upon completion of the site construction.

ACCESS: As agreed to with the Inspection and Maintenance Agreement, the owner shall grant to the City of Hendersonville or its agent or contractor the right of entry at reasonable times and in a reasonable manner for the purpose of inspecting, operation, installing, constructing, reconstructing, maintain, or repairing the facility.

WASTE & SEDIMENT DISPOSAL: Trash and debris collected from the stormwater sewer system shall be properly disposed with a licensed sanitation company. All sediment and debris shall be disposed at a licensed landfill in accordance with all local, state, and federal laws. If any sediment is believed to be contaminate, the Tennessee Department of Environment and Conservation (TDEC)-Division of Water Pollution Control should be contacted at (615)-532-0625.

CERTIFICATION: ***Signed by the Engineer/Registered Landscape Architect that completed this Maintenance Plan***

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

PRINT NAME:	SIGNATURE:	DATE:
ADDRESS:	PHONE & EMAIL:	

OWNER'S AUTHORIZATION:	PRINT:	SIGNATURE:

APPENDIX E-Example Long-Term Maintenance Plan

Executive Summary

This Long Term Maintenance Plan (**LTMP** or **Plan**) describes the stormwater management and drainage system for the Sudsy's Car Wash site located at 1451 Murfreesboro Road, Franklin, Tennessee at the intersection of Highway 96 (Murfreesboro Road) and Quail Hollow Circle. It establishes inspection and maintenance schedules to insure the stormwater management and drainage system continues to function as designed and documented in the Stormwater Management Plan and in the Civil Construction drawings prepared for the site. As required by the City of Franklin, a post construction annual inspection report documenting the condition of the stormwater management and drainage system as well as the inspections and maintenance preformed on the system is due to the City of Franklin Engineering Department no later than July 1st of each year.

System Description

The site consists of an automatized car wash building, queuing lanes, pay stations, landscaped islands, sidewalks, catch basins, underground stormwater pipe network, and a parking lot. In the parking lot, certain parking spaces have access to permanently installed vacuum cleaners. The site is bounded on the north and west side by a long retaining wall, and to the south and east sides by Quail Hollow Circle, and Highway 96 (Murfreesboro Road) respectively. Beyond the retaining wall to the west are stream buffers that for the pond on the adjacent property.

Stormwater falling on the parking lot, landscape islands, and queuing lanes is detained and treated onsite with Permeable Pavers, and an Underground Detention Pond. Catch basins installed in the curb line collect the stormwater runoff that does not infiltrate through the permeable pavers and conveys it to the underground storm pipe network which in turn conveys it to the underground detention pond. The underground detention pond is an ADS StormTech pond system with an Isolator Row. This Isolator Row is the first row of the pond and it filters stormwater entering the pond through a filter fabric lining the bottom of the row. Below the filter fabric and below the remaining rows of the underground detention pond is a rock layer that can be used to detain stormwater as well as promote infiltration on site. Stormwater infiltrating into the permeable pavers will be filtered by the pavers and detained within the rock layers below the pavers. An underdrain system at the bottom of the rock layers collects the stormwater and conveys it to the underground storm pipe network which in turn conveys it to the underground detention pond. From the detention pond, stormwater is discharged under/through the retaining wall to a Level Spreader that returns concentrated flow to sheet flow as it enters the adjacent Zone 2 stream buffer, and eventually flows to the existing pond on the adjacent property.

Stormwater falling on the automatized car wash building and the grassed area between the building and Highway 96 (Murfreesboro Road) is detained and treated in a Water Quality Swale. At the end of the water quality swale, stormwater flows down a steeper rip-rapped slope to a second Level Spreader that returns concentrated flow to sheet flow as it enters the adjacent Zone 2 stream buffer, and, eventually flows to the existing pond on the adjacent property.

The elements of the stormwater system have been designed based on the City of Franklin's Green Infrastructure Practices (GIPs). Below are the corresponding GIP numbers for each element;

- Permeable Pavers (Level 2): GIP-03
- Dry Pond / Extended Detention: GIP-06
- Water Quality Swale (Level 1): GIP-05
- Level Spreader: GIP-07
- Water Resources Buffers

This location of the drainage system and these elements can be seen on the attached exhibit that highlights the GIPs and components of the system.

Additionally, a large component of the stormwater management system is maintaining the landscaping onsite as shown in the approved site landscape plan.

Copies of the, Site Plan, Grading Plan, Storm water Management Plan, and Landscape Plan prepared for the site are attached.

Inspection and Maintenance:

The overall stormwater system, water resource buffers, and each GIP element of the system are to be inspected quarterly and after every 2-inch or greater rainfall event. An annual inspection report summarizing the quarterly inspections, maintenance preformed on the system, and documenting the conditions of the GIPs is required by the City of Franklin. This annual report is due to the cities' engineering department by July 1st of each year.

The quarterly inspections should be performed by staff familiar with the site using the inspection forms attached to this report and walking the site to visually inspect each component of the stormwater management system. Copies of the attached forms should be made and a fresh copy completed during each inspection event. After being completed the inspection forms, and any concerns or recommendations for maintenance or housekeeping noted during the inspection, will be reviewed by Sudsy's management. Upon review of inspection forms, Sudsy's management will take appropriate action to address the concerns and recommendations noted.

Once completed, the inspection forms are to be maintained onsite in an orderly manner and be made available to Sudsy's Management and or the City of Franklin Engineering staff if requested, as well as, be made available when preparing the yearly inspection report.

Annual inspection reports are to be completed by a competent professional knowledgeable of stormwater systems, their function, and their design intent. The annual inspection should include a review of this Long Term Maintenance Plan (LTMP), the completed quarterly inspection report forms, a summary and review of any maintenance preformed that year, and a thorough inspection of the site and elements of the stormwater system. Any revisions needed to this plan should be made

Include the statement below in the narrative and plan sheets for all applicable sites:

THERE SHALL BE NO MOWING, CLEARING, GRADING, CONSTRUCTION, STORAGE, OR DISTRUBANCE OF VEGETATION OF ANY KIND IN THE WATER QUALITY RIPARIAN BUFFER EXCEPT AS PERMITTED BY THE CITY ENGINEER.

and noted as revisions to this LTMP and a copy of the revised plan be submitted to the City of Franklin along with the annual report.

All trash, sediments, and any other pollutants collected in the stormwater system are to be disposed of at an approved landfill or disposal site in accordance with the City of Franklin, and TDEC regulations.

Plan Revisions

This plan shall be updated as necessary to insure that the discharge requirements of the City of Franklin are being met. Revisions are to be recorded in the following places.

DATE REVISED	ITEMS REVISED

LONG TERM MAINTENANCE PLAN (LTMP) AND AGREEMENT

Susdy's Car Wash
1451 Murfreesboro Road
Franklin, TN 37067

(project name/subdivision/section, lot #)

CITY OF FRANKLIN
WILLIAMSON COUNTY, TENNESSEE

MAP & PARCEL #: 079K 004.01

COF #: 6301

LAT/LONG: 35.911994, -86.817071

PREPARED BY & CONTACT INFO:

Lance Wagner, PE
Civil Engineering Services, PC
PO Box 1302
Fairview, TN 37062
phone: 615-289-2047
email: lance@civilengineeringservices.net

OWNER'S CONTACT INFO:	
Name & Company: Sudsys Car Wash	
Address: 1451 Murfreesboro Road	
Phone: 615-479-9905	**Email:** troy@sudsys.com
**Owner shall submit Annual Inspection Reports to the City of Franklin's Engineering Dept. no later than July 1st of each year*	

STORMWATER SYSTEM FEATURES LOCATED ON SITE*:*		
☐ Urban Bioretention/Rain Gardens	☐ Infiltration Trenches	☐ Dry Ponds
☑ Water Quality Swales	☐ Grass Swales	☐ Wet Ponds
☐ Oil Grit Separator/Water Quality Unit	☑ Riparian Buffers	☐ Wetland
☑ Permeable Pavers/Concrete	☐ Green Roof	☑ Storm Sewer
☑ Underground Detention	☐ Other	

IMPERVIOUS SQ. FT.	11,300

ALL OF THE FOLLOWING DOCUMENTS SHALL BE ATTACHED AND INCLUDED WITH THIS FORM:

- ☑ Location Map
- ☑ Stormwater Features Location Sheet: include detailed exhibits of the BMP's and a site map showing the location of all BMP's and stream buffers: CLEARLY LABELED
- ☐ Oil Grit Separator/Water Quality Unit 2 year maintenance agreement
- ☑ Maintenance narrative & description of each BMP to be inspected
- ☑ BMP inspection and maintenance form for each BMP located on site

AS-BUILTS:

Upon completion of the site construction, as-built drawings of the stormwater controls will be provided to the City of Franklin Engineering Department for verification.

MAINTENANCE AGREEMENT

A copy of the inspection and Maintenance Agreement of Private Stormwater Management Facilities shall be completed, notarized and recorded in the Land Records of the County of Williamson, Tennessee with the document.

ACCESS

As agreed to with the Inspection and Maintenance Agreement, the owner shall grant to the City of Franklin or its agent or contractor the right of entry at reasonable times and in a reasonable manner for the purpose of inspecting, operation, installing, constructing, reconstructing, maintain, or repairing the facility.

WASTE DISPOSAL:

Trash and debris collected from the stormwater sewer system shall be properly disposed with a licensed sanitation company. All sediment and debris shall be disposed at a licensed landfill in accordance with all local, state, and federal laws. If any sediment is believed to be contaminate, the Tennessee Department of Environment and Conservation (TDEC)-Division of Water Pollution Control should be contacted at (615)-532-0625.

CERTIFICATION:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

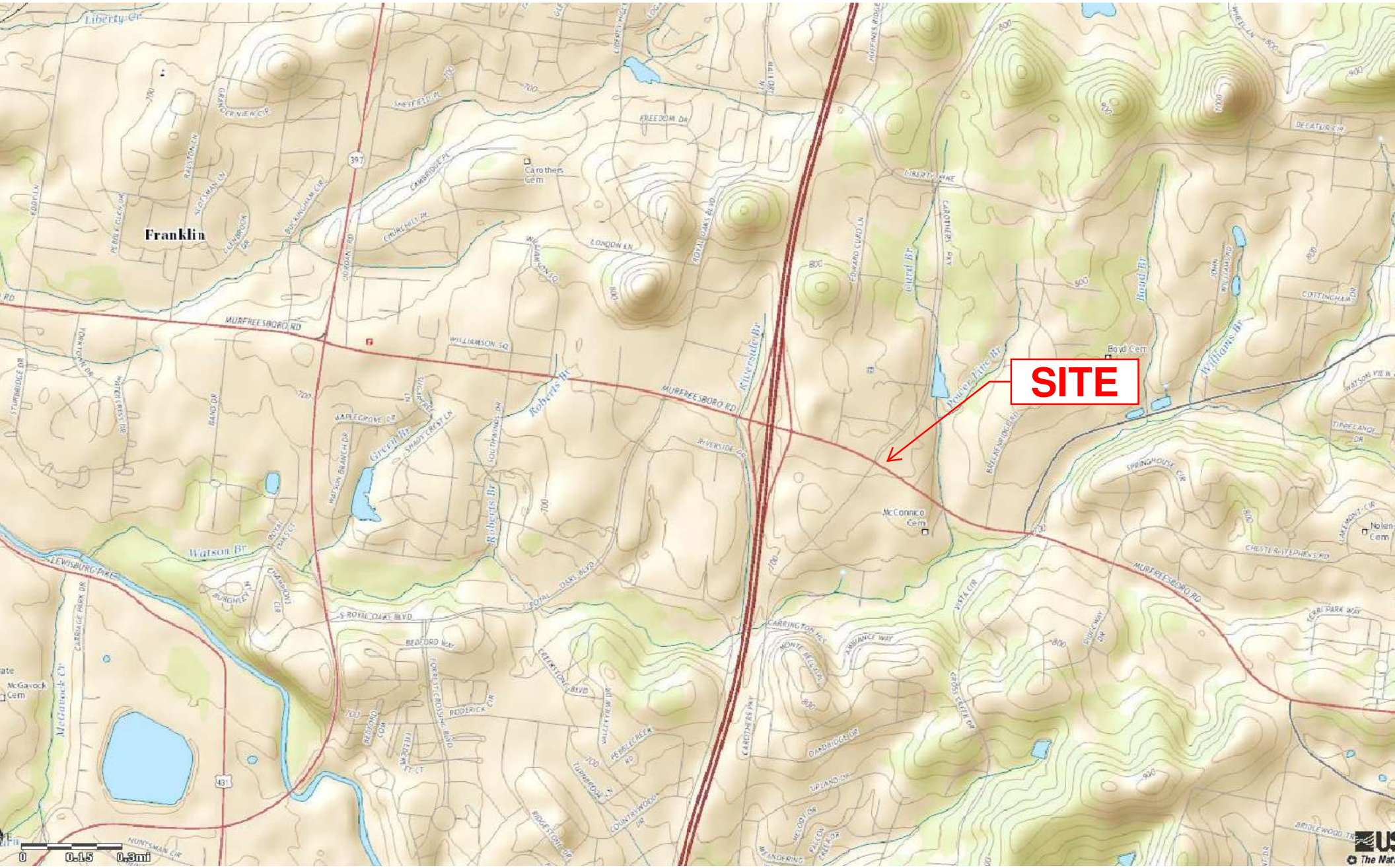
PRINT NAME:	SIGNATURE:	DATE:

APPENDIX A

LOCATION MAPS
AND
AND SITE PLANS

Sudsys - Car Wash - Vin Map

NOTES: Data available from U.S. Geological Survey, National Geospatial Program.



Open in The National Map Viewer

3/16/17 11:07 AM

Sudsys - Car Wash - Aerial Map

NOTES: Data available from U.S. Geological Survey, National Geospatial Program.

Open in The National Map Viewer

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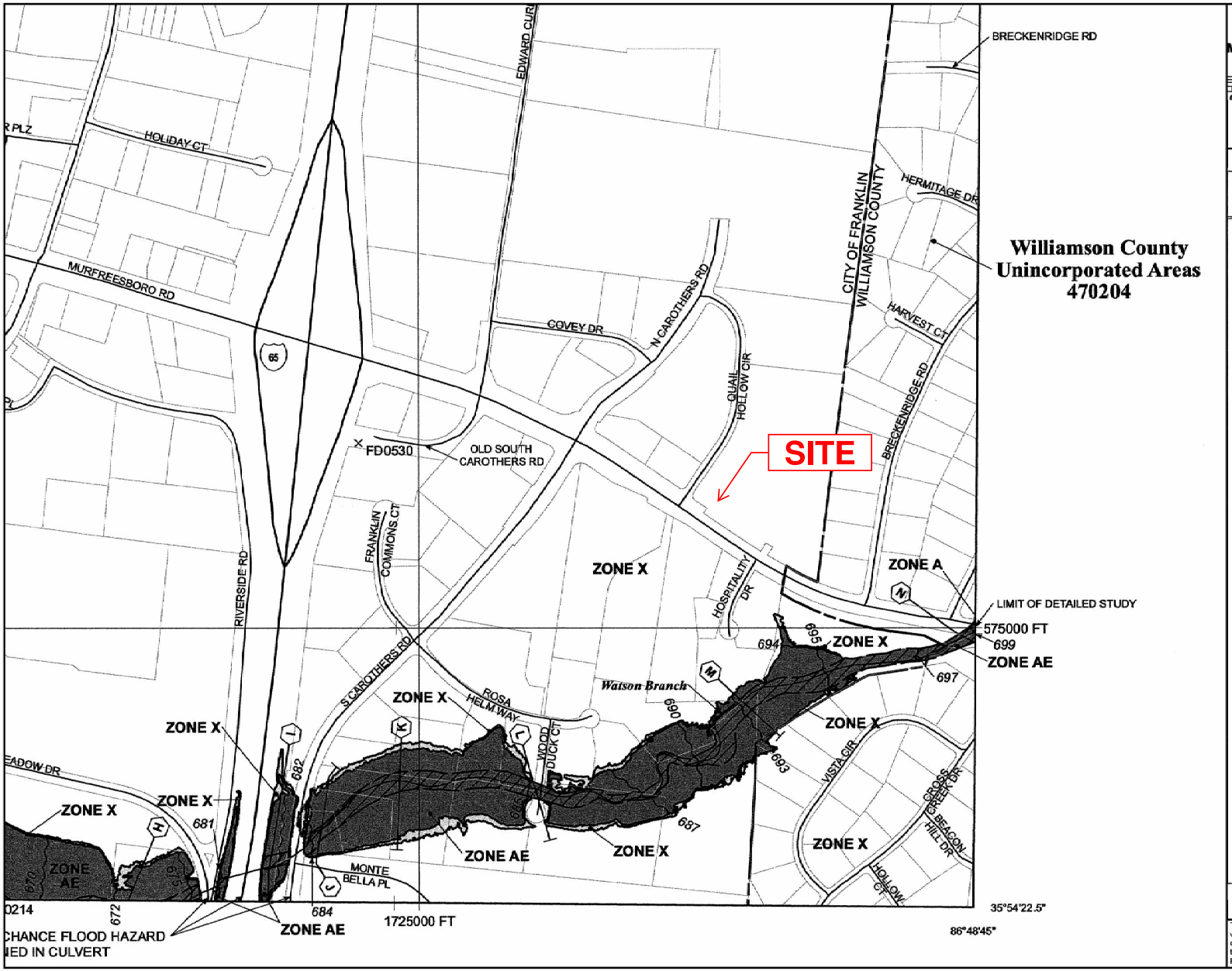


MAP SCALE 1" = 500'

250 500 750 1,000 FEET

0 150 300 METERS

PANEL 0212F

FIRM

FLOOD INSURANCE RATE MAP

WILLIAMSON COUNTY, TENNESSEE

AND INCORPORATED AREAS

PANEL 212 OF 485

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FRANKLIN, CITY OF	470206	0212	F
WILLIAMSON COUNTY	470204	0212	F

BEST AVAILABLE COPY AT THIS TIME

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
47187C0212F

MAP REVISED
SEPTEMBER 29, 2006

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

SITE GENERAL NOTES:

1. TOTAL AREA OF SITE: 1.30 ACRES
2. ALL GAS, ELECTRIC, AND TELEPHONE SERVICE LINES AND EXTENSIONS ARE TO BE CONSTRUCTED TO THE RESPECTIVE UTILITY COMPANY SPECIFICATIONS. UTILITY DISCONNECTIONS TO BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY.
3. THE GENERAL CONTRACTOR IS PARTICULARLY CAUTIONED THAT LOCATION AND/OR ELEVATION OF THE EXISTING UTILITIES SHOWN HEREON IS BASED ON UTILITY COMPANY RECORDS, AND WHERE POSSIBLE, FIELD MEASUREMENTS. THE CONTRACTOR SHALL NOT RELY UPON THIS INFORMATION AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION AND REQUEST FIELD VERIFICATION OF UTILITY LOCATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RELOCATE EXISTING UTILITIES CONFLICTING WITH IMPROVEMENTS SHOWN HEREON IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
4. BEFORE INSTALLATION OF WATER LINES, STORM SEWERS OR SANITARY SEWERS, THE CONTRACTOR SHALL EXCAVATE AND VERIFY ALL CROSSINGS AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS. THE ENGINEER WILL BE HELD HARMLESS IN THE EVENT HE IS NOT NOTIFIED OF DESIGN CONFLICTS PRIOR TO CONSTRUCTION.
5. ALL WATER CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE WATER DISTRICT'S SPECIFICATIONS AND DETAILS, LATEST REVISIONS, AS WELL AS ALL SEWER CONSTRUCTION SHALL CONFORM TO THE COUNTIES SPECIFICATIONS AND DETAILS.
6. BEFORE CONNECTING TO EXISTING UTILITIES, THE NEW LINES ARE TO BE FLUSHED AND TESTED BY THE CONTRACTOR. ALL LINES TO BE TIED INTO EXISTING UTILITIES ARE TO BE INSPECTED BY THE CITY BEFORE EACH TIE-IN IS MADE.
7. ALL SEWER LINES, INCLUDING SERVICE LINES, SHALL BE TESTED BY THE CONTRACTOR. THE TEST SHALL BE CONDUCTED IN THE PRESENCE OF A COUNTIES SEWER AND WATER REPRESENTATIVE.
8. THE CONTRACTOR SHALL PAY ANY APPLICABLE WATER AND SEWERAGE SERVICES INSPECTION FEES.
9. MAINTAIN 10' HORIZONTAL SEPARATION BETWEEN SANITARY SEWER AND WATER LINES WHERE POSSIBLE.
10. THE CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES, TAKE CARE TO PROTECT UTILITIES THAT ARE TO REMAIN, REPAIR ANY DAMAGE ACCORDING TO LOCAL STANDARDS AND AT THE CONTRACTOR'S EXPENSE, AND COORDINATE ALL CONSTRUCTION WITH THE APPROPRIATE UTILITY COMPANY.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE SEQUENCING OF CONSTRUCTION FOR ALL UTILITY LINES SO THAT WATER LINES AND GAS LINES DO NOT CONFLICT WITH SANITARY SEWERS, SANITARY SEWER SERVICES OR STORM SEWERS.
12. SEWER SERVICES SHALL BE 6" DIAMETER PVC (SDR 35) AND INSTALLED IN THE LOCATIONS SHOWN HEREON.
13. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND ELECTRICAL WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN THE CLOSE PROXIMITY OF THE ABOVE-NOTED WIRES, THE ELECTRIC COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD AND UNDERGROUND WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION. ETC.
14. THE OWNER AND ENGINEER DO NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT, DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATIONS OF THOSE SHOWN MAY BE DIFFERENT FROM LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT EXACT LOCATIONS BE KNOWN OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS NECESSARY TO EITHER VERIFY AND, SUBSTANTIATE OR DEFINITELY ESTABLISH THE POSITION OF UNDERGROUND UTILITY LINES.
15. AT LOCATIONS WHERE UTILITY LINES OR SERVICES ARE UNDERNEATH PROPOSED PAVEMENT, THE TRENCH SHALL BE BACKFILLED TO SUBGRADE WITH CRUSHED STONE.
16. DEVELOPER IS TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH THE CONTRACTOR, THE DEVELOPER'S ENGINEER, AND THE NEIGHBORHOOD SERVICES DEPARTMENT.
17. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
18. REMOVE ALL FOUNDATIONS, UNDERGROUND TANKS, PAVING, BASE ETC. IF REMAINING, BEFORE BEGINNING CONSTRUCTION.
19. FILL ALL PLANTERS/ISLANDS TO TOP OF CONCRETE CURB WITH TOPSOIL. TOPSOIL TO BE CLEAN AND FREE OF DEBRIS,

SITE INFORMATION:

CITY OF FRANKLIN PROJECT NUMBER: 6301
EXISTING ZONING & AREA DESIGNATION:
ZONING = GC (GENERAL COMMERCIAL)
ACREAGE OF SITE: 1.30 ACRES
DISTURBED ACRES = 48,916 SF, 1.12 ACRES
OFF SITE DISTURBED ACRES = 12,197 SF, 0.28 ACRES
IMPERVIOUS AREA = 24,605 SF, 0.56 ACRES
MINIMUM REQUIRED SETBACK LINES:
FRONT YARD (HWY 96) = 30' FROM PROP. LINE
SIDE STREET (WEST)= 30' FROM PROP. LINE
REAR YARD (NORTH) = 15' FROM PROP. LINE

BLDG SF: GROUND FLOOR: 2,736 SF; 2ND FLOOR 722

OF PARKING STALLS = 13 STALLS/VACUUM STATIONS

SEVENTH CIVIL DISTRICT, WILLIAMSON COUNTY, TENNESSEE; TAX MAP 51, LOT 8.

CONSTRUCTION TYPE: V-B
OCCUPANCY TYPE: BUSINESS GROUP B
DEVELOPMENT TYPE: CONVENTIONAL

PROPOSED SITE LEGEND

- (8) PARKING STALL COUNT – SEE PLANS
- LIGHT DUTY CONCRETE PAVING – SEE DETAIL SHEET – PROVIDE ALT. BID FOR LIGHT DUTY ASPHALT
- CONCRETE SIDEWALK – SEE DETAIL SHEET
- HEAVY DUTY CONCRETE PAVING – SEE DETAIL SHEET FOR SECTION
- HEAVY DUTY CONCRETE PAVING – SEE DETAIL SHEETS PROVIDE ALT. BID FOR HEAVY DUTY ASPHALT
- HEAVY DUTY CONCRETE PERMEABEL PAVERS PER MANUFACTURER SPECS – SEE DETAIL SHEETS
- HEAVY DUTY GRASS PAVERS PER MANUFACTURER SPECS – SEE DETAIL SHEETS
- HANDICAP PARKING
- DIRECTIONAL ARROWS

SITE BLOCK NOTES

1. HEAVY DUTY CONCRETE PAVING – SEE DETAIL SHEETS – PROVIDE ALT. BID FOR HEAVY DUTY ASPHALT
2. ~~HEAVY DUTY ASPHALT PAVING – SEE DETAIL SHEET~~
3. HEAVY DUTY CONCRETE PERMEABEL PAVERS PER MANUFACTURER SPECS – SEE DETAIL SHEETS – SEE DETAIL SHEET C6.1
4. HEAVY DUTY CONCRETE DUMPSTER PAD – SEE DETAIL SHEET FOR PAVEMENT SECTION – SEE ARCHITECTURAL PLANS – CONFIRM BIN SIZE WITH LOCAL WASTE MANAGEMENT COMPANY
5. DUMPSTER ENCLOSURE WITH GATES – SEE ARCHITECTURAL DRAWINGS FOR DETAILS
6. 6" CONCRETE POST CURB – SEE DETAIL SHEET
7. 18" CONCRETE CURB AND GUTTER – SEE DETAIL SHEET
8. CONCRETE SIDEWALK WITH INTEGRAL CURB – 2.00 % MAXIMUM CROSS SLOPE – SEE DETAIL SHEET
9. CONCRETE DRIVE ENTRANCE PER CITY OF FRANKLIN SPECS – SEE DETAIL SHEET – COORDINATE WITH CITY PRIOR TO CONSTRUCTION
10. SIDEWALK PER CITY OF FRANKLIN DETAIL RP-9 – 2.00% MAXIMUM CROSS SLOPE – COORDINATE WITH CITY PRIOR TO CONSTRUCTION
11. SEAL CONCRETE SIDEWALK (AQUA MIX SEALER'S CHOICE GOLD) – CONCRETE TO BE LIGHT BROOM TEXTURE FINISH – PROVIDE UNDER SLAB TREATMENT PER SOIL REPORT – PROVIDE POSITIVE DRAINAGE AWAY FROM BLDG. AND ALL SIDE WALKS – 2.00% MAXIMUM CROSS SLOPE
12. TIE INTO EXISTING SIDEWALK – MATCH GRADE AT EXISTING SIDEWALK
13. ADA ACCESSIBLE RAMP – SEE GRADING PLAN FOR ELEVATIONS – SEE DETAIL SHEET
14. HANDICAP PARKING AND SIGNAGE – SEE DETAIL SHEET
15. 4" WIDE PARKING STRIPE PAINTED YELLOW
16. 4" WIDE DIAGONAL STRIPES PAINTED YELLOW, AT 2 FT. O.C.
17. TRAFFIC ARROW PAINTED YELLOW – SEE DETAIL SHEET
18. STOP BAR PER MUTCD SPECIFICATIONS
19. TAPER CURB FROM 6" TO 0" – SEE GRADING PLAN FOR LIMITS AND ELEVATIONS
20. STOP SIGN PER MUTCD/LOCAL MUNICIPALITY SPECIFICATIONS
21. "DO NOT ENTER" SIGN PER MUTCD SPECIFICATIONS
22. GUARD RAIL CENTERED AT TOP OF RETAINING WALL FOR VEHICULAR TRAFFIC – SEE STRUCTURAL PLANS – G.C. TO PROVIDE SHOP DRAWINGS TO ENGINEER/OWNER PRIOR TO ANY WORK DONE
23. 6' HIGH VINYL COATED FALL SAFETY FENCING AT FACE OF RETAINING WALL – SEE STRUCTURAL PLANS – G.C. TO PROVIDE SHOP DRAWINGS TO ENGINEER/OWNER PRIOR TO ANY WORK DONE – COORDINATE COLOR WITH ARCHITECT
24. RETAINING WALL WITH BRICK TO FACE TO MATCH EXISTING BUILDING – SEE GRADING AND STRUCTURAL PLANS
25. VACUUM BOOM – SEE ARCHITECTURAL PLANS FOR DETAILS
26. OVERHEAD CLOTH CANOPY AT VACUUM BOOMS – SEE ARCHITECTURAL PLANS FOR DETAILS
27. CONCRETE PAD FOR VACUUM SYSTEM TO VACUUM BOOMS – SEE ARCHITECTURAL PLANS FOR DETAILS
28. CONTRACTOR TO FIELD VERIFY AND REPLACE ALL ADA NON-CONFORMING ACCESSIBLE SIDEWALKS AND RAMPS IN FRONTAGE OF SITE R.O.W. – COORDINATE WITH PUBLIC WORKS – SEE DETAIL SHEET
29. PROVIDE CONCRETE SPLASH PAD AT ALL ROOF DRAINS – SEE ARCHITECTURAL PLANS FOR LOCATION (SEE DETAIL SHEET)
30. PAY STATION WITH CANOPY – SEE ARCHITECTURAL PLANS FOR EQUIPMENT LOCATIONS AND TRAFFIC GATE FOUNDATION DETAIL
31. RFID AT FAST PASS LANE WITH CANOPY – SEE ARCHITECTURAL PLANS FOR EQUIPMENT LOCATIONS AND TRAFFIC GATE FOUNDATION DETAIL
32. PROVIDE LIGHT POLE – SEE PHOTOMETRIC PLAN – SEE DETAIL SHEET FOR LIGHT/POLE BASE
33. CONVEYOR SYSTEM
34. TIE INTO EXISTING RETAINING WALL AND MATCH EXISTING – SEE GRADING PLANS
35. TIE INTO EXISTING SIDEWALK AND MATCH EXISTING – SEE GRADING PLANS
36. HEAVEY DUTY GRASS PAVERS PER MANUFACTURER SPECS, WITH MOUNTABLE CURB – SEE DETAILS
37. NEW 8'X8' SIGN EASEMENT PER NEW PLAT – SEE NEW PLAT IN THESE PLANS COF#6406
38. DRAINAGE / WATER QUALITY EASEMENT

NOTE TEMPORARY OFF SITE GRADING AGREEMENT HAS ALREADY BEEN SIGNED AND RECORDED FOR THE ADJACENT PROPERTY BK:7055, PG: 206-209

NOTE ACCESS EASEMENT TO BE REMOVED IN NEW PLAT, COF# 6406. PLAT HAS BEEN SUBMITTED, AND WILL BE RECORDED PRIOR TO ISSUANCE OF GRADING PERMIT. FULL RELEASE AGREEMENT OF ACCESS EASEMENT FROM SITE PROPERTY HAS ALREADY BEEN SIGNED BY THE ADJACENT PROPERTY OWNER, AND RECORDED BK:7055, PG: 214-214

NOTE SIGN EASEMENT TO BE PART OF NEW PLAT, COF# 6406. PLAT HAS BEEN SUBMITTED, AND WILL BE RECORDED PRIOR TO ISSUANCE OF GRADING PERMIT. AGREEMENT FOR EASEMENT ON SITE PROPERTY HAS ALREADY BEEN SIGNED BY THE ADJACENT PROPERTY OWNER, AND RECORDED BK:7055, PG: 210-213

NOTE:
ALL INTERNAL SITE DIRECTIONAL SIGNAGE, PAVEMENT STRIPING AND MARKINGS SHALL BE COORDINATED WITH SUDSY'S PROJECT MANAGER.

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

FLOOD STATEMENT
NO PORTION OF THIS PROPERTY LIES WITHIN AN AREA DESIGNATED AS A PORTION OF THE 100 YEAR FLOOD ZONE IN ACCORDANCE WITH FEMA PANEL NUMBER 4718C 0212F, DATED: SEPTEMBER 29, 2006.

BENCHMARK
SOUTHERN MOST CORNER OF CONCRETE SIDEWALK
ELEVATION = 731.85

NOTE:
CITY OF FRANKLIN IS NOT A MEMBER OF TENNESSEE ONE CALL. G.C. TO CONTACT: COF WATER MANAGEMENT DEPARTMENT ATTN: UTILITY INSPECTOR 124 LUMBER DR, FRANKLIN, TN (615)794-4554

811 Know what's below. Call before you dig.

SUDSY'S CAR WASH
Troy VanLiere
PH# (615) 479-9905
www.sudsys.com

Civil Engineering Services
Engineering, Environmental, Land Planning
CES
1705 Spicer Farm Lane
Fairview, Tennessee
37062
phone: (615) 533-0401
fax: (615) 523-8865
e-mail: roy@civilengineeringservices.net

NO.	DATE	REVISIONS

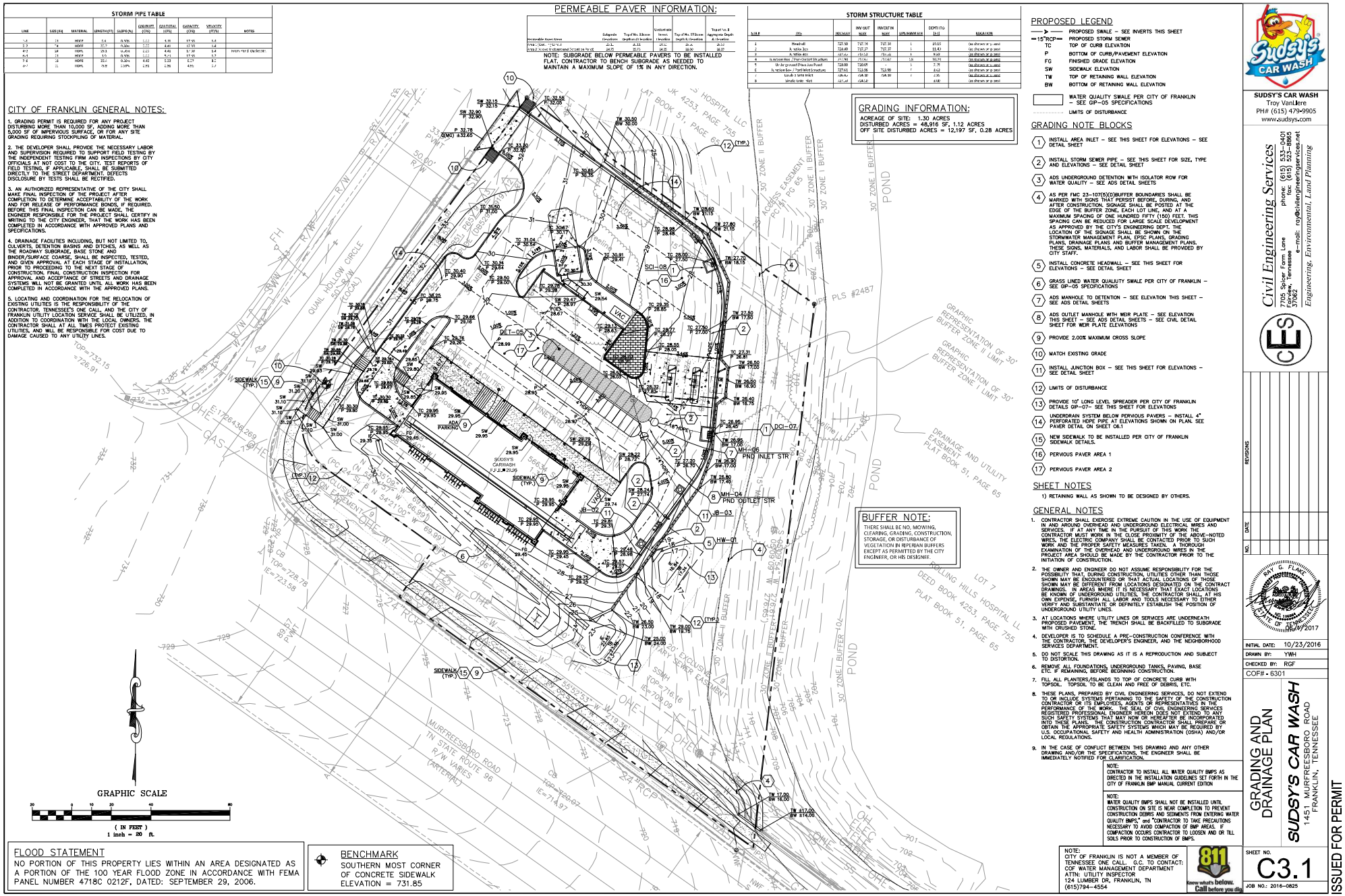
STATE OF TENNESSEE
ROY G. FLANNERY
REGISTERED
No. 102,090
LICENSED PROFESSIONAL ENGINEER
10/23/2017

INITIAL DATE: 10/23/2016
DRAWN BY: YMH
CHECKED BY: RGF
COF# - 6301

SITE PLAN
SUDSY'S CAR WASH
1451 MURFREESBORO ROAD
FRANKLIN, TENNESSEE

SHEET NO.
C2.1
JOB NO.: 2016-0825

ISSUED FOR PERMIT



STORM PIPE TABLE

LINE	SIZE(IN)	MATERIAL	LENGTH(FT)	SLOPE(%)	CONSUMPT (CFS)	QUANTITY (CFS)	CAPACITY (CFS)	VELOCITY (FT/S)	NOTES
1-2	12	HDPE	5.6	0.50%	1.22	6.38	17.95	5.6	
2-3	24	HDPE	37.7	0.50%	2.22	6.49	17.95	5.8	
4-5	24	HDPE	20.3	0.49%	2.22	6.66	17.76	5.8	TWO-PIPE CONFLUENCE
5-6	18	HDPE	1.0	0.50%	2.22	6.71	17.95	5.7	
7-8	12	HDPE	22.7	0.50%	1.22	1.22	6.27	8.2	
8-9	12	HDPE	79.8	2.09%	1.22	1.26	4.95	6.4	

PERMEABLE PAVER INFORMATION:

Permeable Paver Areas	Subgrade Elevations	Top of No. 3 Stone Depth and Elevation	Underdrain Invert Elevation	Top of No. 57 Stone Depth & Elevation	Top of No. 8 Aggregate Depth & Elevation
PAVER AREA 1	725.5	726.33	724.5	726.33	726.50
PAVER AREA 2	724.75	725.92	724.25	725.92	726.17

NOTE: SUBGRADE BELOW PERMEABLE PAVERS TO BE INSTALLED FLAT. CONTRACTOR TO BENCH SUBGRADE AS NEEDED TO MAINTAIN A MAXIMUM SLOPE OF 1% IN ANY DIRECTION.

STORM STRUCTURE TABLE

S.U.D.F.	STR.	RIM/GRATE	INV OUT MAX	INVERT IN MAX	SUMP/RANGE/SIZE	DEPTH (TO) (+/-)	LOCATION
1	Headwall	727.50	727.34	727.34	1	10.15	(as shown on plans)
2	A. Yellow Jacs	726.80	727.27	727.27	1	11.40	(as shown on plans)
3	A. Yellow Jacs	727.60	727.53	727.45	1	9.60	(as shown on plans)
4	In-Ground Box (Non-Detention Structure)	727.90	727.61	727.61	1.5	10.75	(as shown on plans)
5	Un-Perforated Pipe Junction Point	728.00	728.05	----	1	7.75	(as shown on plans)
6	A. Yellow Jacs - 2 Turf Inlets Structure	727.61	728.96	728.88	1	8.62	(as shown on plans)
7	Lo-clo 3 turtle inlets	726.84	726.30	726.30	1	2.95	(as shown on plans)
8	Simple turtle inlet	727.30	726.50	----	1	8.00	(as shown on plans)

CITY OF FRANKLIN GENERAL NOTES:

1. GRADING PERMIT IS REQUIRED FOR ANY PROJECT DISTURBING MORE THAN 10,000 SF, ADDING MORE THAN 5,000 SF OF IMPERVIOUS SURFACE, OR FOR ANY SITE GRADING REQUIRING STOCKPILING OF MATERIAL.

2. THE DEVELOPER SHALL PROVIDE THE NECESSARY LABOR AND SUPERVISION REQUIRED TO SUPPORT FIELD TESTING BY THE INDEPENDENT TESTING FIRM AND INSPECTIONS BY CITY OFFICIALS AT NOT COST TO THE CITY. TEST REPORTS OF FIELD TESTING, IF APPLICABLE, SHALL BE SUBMITTED DIRECTLY TO THE STREET DEPARTMENT. DEFECTS DISCLOSURE BY TESTS SHALL BE RECTIFIED.

3. AN AUTHORIZED REPRESENTATIVE OF THE CITY SHALL MAKE FINAL INSPECTION OF THE PROJECT AFTER COMPLETION TO DETERMINE ACCEPTABILITY OF THE WORK AND FOR RELEASE OF PERFORMANCE BONDS, IF REQUIRED. BEFORE THIS FINAL INSPECTION CAN BE MADE, THE ENGINEER RESPONSIBLE FOR THE PROJECT SHALL CERTIFY IN WRITING TO THE CITY ENGINEER, THAT THE WORK HAS BEEN COMPLETED IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.

4. DRAINAGE FACILITIES INCLUDING, BUT NOT LIMITED TO, CULVERTS, DETENTION BASINS AND DITCHES, AS WELL AS THE ROADWAY SUBGRADE, BASE STONE AND BINDER/SURFACE COARSE, SHALL BE INSPECTED, TESTED, AND GIVEN APPROVAL AT EACH STAGE OF INSTALLATION, PRIOR TO PROCEEDING TO THE NEXT STAGE OF CONSTRUCTION. FINAL CONSTRUCTION INSPECTION FOR APPROVAL AND ACCEPTANCE OF STREETS AND DRAINAGE SYSTEMS WILL NOT BE GRANTED UNTIL ALL WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS.

5. LOCATING AND COORDINATION FOR THE RELOCATION OF EXISTING UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR. TENNESSEE'S ONE CALL, AND THE CITY OF FRANKLIN UTILITY LOCATION SERVICE SHALL BE UTILIZED, IN ADDITION TO COORDINATION WITH THE LOCAL OWNERS. THE CONTRACTOR SHALL AT ALL TIMES PROTECT EXISTING UTILITIES, AND WILL BE RESPONSIBLE FOR COST DUE TO DAMAGE CAUSED TO ANY UTILITY LINES.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

FLOOD STATEMENT

NO PORTION OF THIS PROPERTY LIES WITHIN AN AREA DESIGNATED AS A PORTION OF THE 100 YEAR FLOOD ZONE IN ACCORDANCE WITH FEMA PANEL NUMBER 4718C 0212F, DATED: SEPTEMBER 29, 2006.

BENCHMARK

SOUTHERN MOST CORNER OF CONCRETE SIDEWALK ELEVATION = 731.85

GRADING INFORMATION:

ACREAGE OF SITE: 1.30 ACRES
DISTURBED ACRES = 48,916 SF, 1.12 ACRES
OFF SITE DISTURBED ACRES = 12,197 SF, 0.28 ACRES

BUFFER NOTE:

THERE SHALL BE NO, MOWING, CLEARING, GRADING, CONSTRUCTION, STORAGE, OR DISTURBANCE OF VEGETATION IN RIPERIAN BUFFERS EXCEPT AS PERMITTED BY THE CITY ENGINEER, OR HIS DESIGNEE.

PROPOSED LEGEND

- PROPOSED SWALE – SEE INVERTS THIS SHEET
- 15"RCP PROPOSED STORM SEWER
- TC TOP OF CURB ELEVATION
- P BOTTOM OF CURB/PAVEMENT ELEVATION
- FG FINISHED GRADE ELEVATION
- SW SIDEWALK ELEVATION
- TW TOP OF RETAINING WALL ELEVATION
- BW BOTTOM OF RETAINING WALL ELEVATION
- WATER QUALITY SWALE PER CITY OF FRANKLIN – SEE GIP-05 SPECIFICATIONS
- LIMITS OF DISTURBANCE

GRADING NOTE BLOCKS

1. INSTALL AREA INLET – SEE THIS SHEET FOR ELEVATIONS – SEE DETAIL SHEET
2. INSTALL STORM SEWER PIPE – SEE THIS SHEET FOR SIZE, TYPE AND ELEVATIONS – SEE DETAIL SHEET
3. ADS UNDERGROUND DETENTION WITH ISOLATOR ROW FOR WATER QUALITY – SEE ADS DETAIL SHEETS
4. AS PER FMC 23-107(5)(D)BUFFER BOUNDARIES SHALL BE MARKED WITH SIGNS THAT PERSIST BEFORE, DURING, AND AFTER CONSTRUCTION. SIGNAGE SHALL BE POSTED AT THE EDGE OF THE BUFFER ZONE, EACH LOT LINE, AND AT A MAXIMUM SPACING OF ONE HUNDRED FIFTY (150) FEET. THIS SPACING CAN BE REDUCED FOR LARGE SCALE DEVELOPMENT AS APPROVED BY THE CITY'S ENGINEERING DEPT. THE LOCATION OF THE SIGNAGE SHALL BE SHOWN ON THE STORMWATER MANAGEMENT PLAN, EPSC PLANS, GRADING PLANS, DRAINAGE PLANS AND BUFFER MANAGEMENT PLANS. THESE SIGNS, MATERIALS, AND LABOR SHALL BE PROVIDED BY CITY STAFF.
5. INSTALL CONCRETE HEADWALL – SEE THIS SHEET FOR ELEVATIONS – SEE DETAIL SHEET
6. GRASS LINED WATER QUALITY SWALE PER CITY OF FRANKLIN – SEE GIP-05 SPECIFICATIONS
7. ADS MANHOLE TO DETENTION – SEE ELEVATION THIS SHEET – SEE ADS DETAIL SHEETS
8. ADS OUTLET MANHOLE WITH WEIR PLATE – SEE ELEVATION THIS SHEET – SEE ADS DETAIL SHEETS – SEE CIVIL DETAIL SHEET FOR WEIR PLATE ELEVATIONS
9. PROVIDE 2.00% MAXIMUM CROSS SLOPE
10. MATCH EXISTING GRADE
11. INSTALL JUNCTION BOX – SEE THIS SHEET FOR ELEVATIONS – SEE DETAIL SHEET
12. LIMITS OF DISTURBANCE
13. PROVIDE 10' LONG LEVEL SPREADER PER CITY OF FRANKLIN DETAILS GIP-07– SEE THIS SHEET FOR ELEVATIONS
14. UNDERDRAIN SYSTEM BELOW PERVIOUS PAVERS – INSTALL 4" PERFORATED HDPE PIPE AT ELEVATIONS SHOWN ON PLAN. SEE PAVER DETAIL ON SHEET C6.1
15. NEW SIDEWALK TO BE INSTALLED PER CITY OF FRANKLIN SIDEWALK DETAILS.
16. PERVIOUS PAVER AREA 1
17. PERVIOUS PAVER AREA 2

SHEET NOTES

1) RETAINING WALL AS SHOWN TO BE DESIGNED BY OTHERS.

GENERAL NOTES

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND ELECTRICAL WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN THE CLOSE PROXIMITY OF THE ABOVE-NOTED WIRES, THE ELECTRIC COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD AND UNDERGROUND WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION.
2. THE OWNER AND ENGINEER DO NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT, DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATIONS OF THOSE SHOWN MAY BE DIFFERENT FROM LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT EXACT LOCATIONS BE KNOWN OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS NECESSARY TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITELY ESTABLISH THE POSITION OF UNDERGROUND UTILITY LINES.
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4. DEVELOPER IS TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH THE CONTRACTOR, THE DEVELOPER'S ENGINEER, AND THE NEIGHBORHOOD SERVICES DEPARTMENT.
5. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
6. REMOVE ALL FOUNDATIONS, UNDERGROUND TANKS, PAVING, BASE ETC. IF REMAINING, BEFORE BEGINNING CONSTRUCTION.
7. FILL ALL PLANTERS/ISLANDS TO TOP OF CONCRETE CURB WITH TOPSOIL. TOPSOIL TO BE CLEAN AND FREE OF DEBRIS, ETC.
8. THESE PLANS, PREPARED BY CIVIL ENGINEERING SERVICES, DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF CIVIL ENGINEERING SERVICES REGISTERED PROFESSIONAL ENGINEER HEREON DOES NOT EXTEND TO AND SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
9. IN THE CASE OF CONFLICT BETWEEN THIS DRAWING AND ANY OTHER DRAWING AND/OR THE SPECIFICATIONS, THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR CLARIFICATION.

NOTE: CONTRACTOR TO INSTALL ALL WATER QUALITY BMPS AS DIRECTED IN THE INSTALLATION GUIDELINES SET FORTH IN THE CITY OF FRANKLIN BMP MANUAL CURRENT EDITION

NOTE: WATER QUALITY BMPS SHALL NOT BE INSTALLED UNTIL CONSTRUCTION ON SITE IS NEAR COMPLETION TO PREVENT CONSTRUCTION DEBRIS AND SEDIMENTS FROM ENTERING WATER QUALITY BMPS," AND "CONTRACTOR TO TAKE PRECAUTIONS NECESSARY TO AVOID COMPACTION OF BMP AREAS. IF COMPACTION OCCURS CONTRACTOR TO LOOSEN AND OR TILL SOILS PRIOR TO CONSTRUCTION OF BMPS.

NOTE: CITY OF FRANKLIN IS NOT A MEMBER OF TENNESSEE ONE CALL. G.C. TO CONTACT: COF WATER MANAGEMENT DEPARTMENT ATTN: UTILITY INSPECTOR 124 LUMBER DR, FRANKLIN, TN (615)794-4554

811 Know what's below. Call before you dig.

SUDSY'S CAR WASH
Troy VanLiere
PH# (615) 479-9905
www.sudsys.com

Civil Engineering Services
Engineering, Environmental, Land Planning
CES
1705 Spicer Farm Lane
Fairview, Tennessee
37062
phone: (615) 533-0401
fax: (615) 523-8865
e-mail: roy@civilengineeringservices.net

REVISIONS

NO.	DATE

STATE OF TENNESSEE ROY G. FINNELL 101.000 REGISTERED ENGINEER
10/23/2017

INITIAL DATE: 10/23/2016
DRAWN BY: YMH
CHECKED BY: RGF
COF# - 6301

GRADING AND DRAINAGE PLAN

SUDSY'S CAR WASH

1451 MURFREESBORO ROAD
FRANKLIN, TENNESSEE

SHEET NO.
C3.1

JOB NO.: 2016-0825

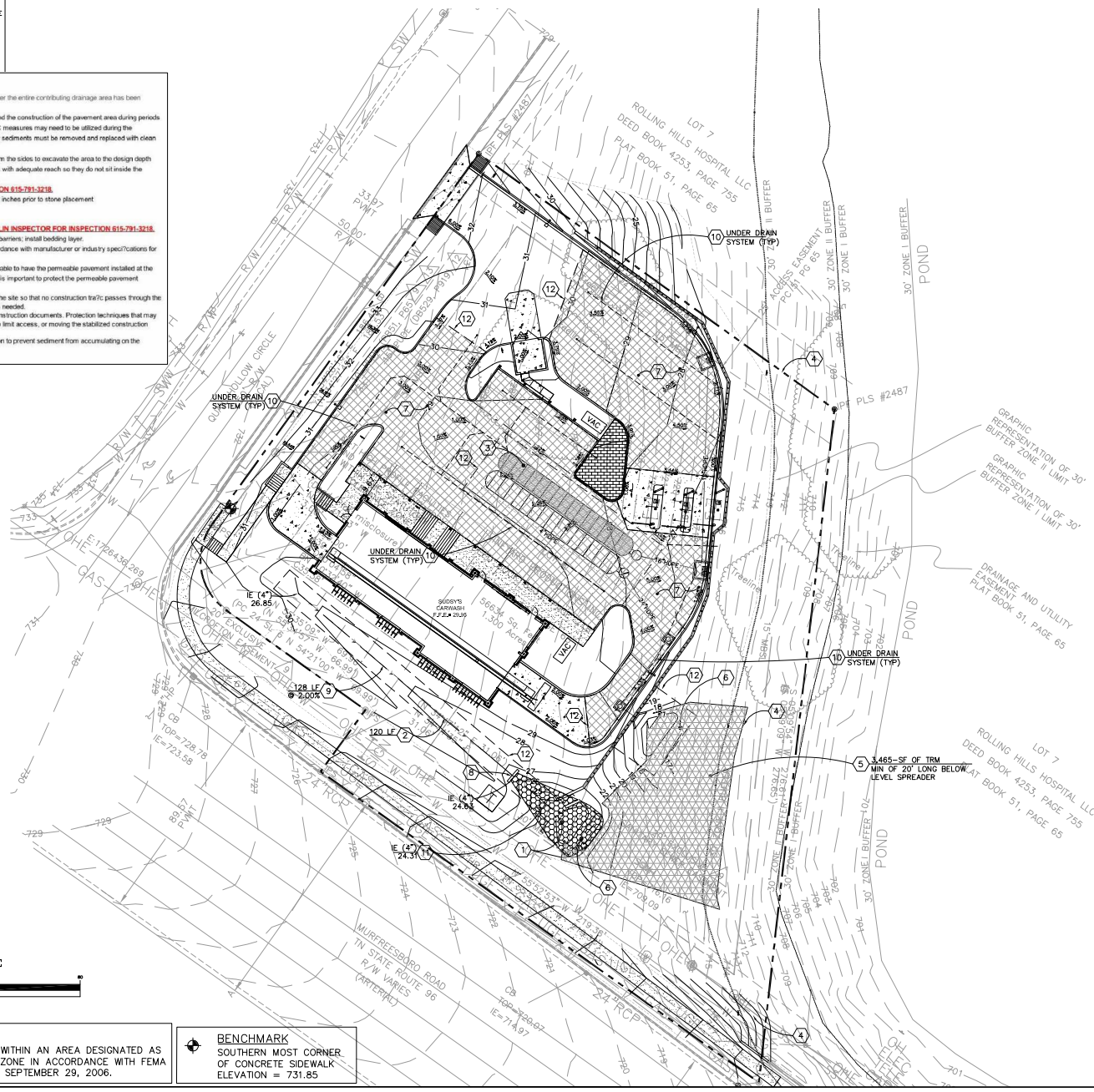
ISSUED FOR PERMIT

FINAL EROSION CONTROL NARRATIVE:

ONCE WORK ON SITE IS COMPLETE AND VEGETATION IS COMPLETELY ESTABLISHED, CONTRACTOR TO COORDINATE WITH CITY FOR INSPECTIONS AND THEN REMOVE ALL TEMPORARY EROSION CONTROLS. FOLLOWING THE REMOVAL OF TEMPORARY EROSION CONTROLS, OWNER TO ASSUME RESPONSIBILITY AND FOLLOW INSPECTION AND REPORTING MEASURES AS OUTLINED IN THE LONG TERM MAINTENANCE PLAN (LTMP) PREPARED FOR THIS SITE.

Pervious Concrete/Paver Construction Sequencing

1. Construction of the permeable pavement shall only begin after the entire contributing drainage area has been stabilized.
2. Contractor is to provide method of diverting runoff flow around the construction of the pavement area during periods of rainfall to ensure sediment does not enter the area. EPSC measures may need to be utilized during the installation. Construction materials that are contaminated by sediments must be removed and replaced with clean materials.
3. Excavate the area. Excavators or backhoes should work from the sides to excavate the area to the design depth and dimensions. Excavating equipment should have scoops with adequate reach so they do not sit inside the footprint of the area.
4. CALL CITY OF FRANKLIN INSPECTOR FOR INSPECTION 615-791-3218.
5. Scarify subgrade by ripping the bottom soils to a depth of 12 inches prior to stone placement
6. Install filter fabric on the bottom and sides of the area.
7. Install underdrain, if applicable.
8. IF UNDERDRAIN IS INSTALLED CALL CITY OF FRANKLIN INSPECTOR FOR INSPECTION 615-791-3218.
9. Install aggregate base; install curb restraints and pavement barriers; install bedding layer.
10. Install pavement. Paving materials shall be installed in accordance with manufacturer or industry specifications for the particular type of pavement.
11. Protect the pavement through project completion. It is preferable to have the permeable pavement installed at the end of the site construction timeline. If that is not possible, it is important to protect the permeable pavement through project completion. This may be done by:
    - Route construction access through other portions of the site so that no construction traffic passes through the permeable pavement site. Install barriers or fences as needed.
    - If this is not possible, protect the pavement per the construction documents. Protection techniques that may be specified include mats, plastic sheeting, barriers to limit access, or moving the stabilized construction entrance.
    - Schedule street sweeping during and after construction to prevent sediment from accumulating on the pavement.



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

FLOOD STATEMENT

NO PORTION OF THIS PROPERTY LIES WITHIN AN AREA DESIGNATED AS A PORTION OF THE 100 YEAR FLOOD ZONE IN ACCORDANCE WITH FEMA PANEL NUMBER 4718C 0212F, DATED: SEPTEMBER 29, 2006.

BENCHMARK

SOUTHERN MOST CORNER OF CONCRETE SIDEWALK
ELEVATION = 731.85

PROPOSED LEGEND

- RIVER STONE RIP-RAP D50 TO BE 8 INCHES, PLACED 12 INCHES THICK (MIN)
- PERMANENT TURF REINFORCED MATTING
- HEAVY DUTY CONCRETE PERMEABEL PAVERS PER MANUFACTURER SPECS - SEE DETAIL SHEETS

GENERAL EROSION CONTROL NOTES

SEE SHEET C3.2 FOR EROSION CONTROL NOTES

EROSION NOTE BLOCKS

1. RIVER STONE RIP-RAP D50 TO BE 8 INCHES, PLACED 12 INCHES THICK (MIN)
2. WATER QUALITY SWALE PER CITY OF FRANKLIN - SEE GIP-05 SPECIFICATIONS - SEE DETAIL SHEET C6.1
3. ADS UNDERGROUND DETENTION WITH ISOLATOR ROW FOR WATER QUALITY - SEE ADS DETAIL SHEETS
4. AS PER FMC 23-107(5)(D)BUFFER BOUNDARIES SHALL BE MARKED WITH SIGNS THAT PERSIST BEFORE, DURING, AND AFTER CONSTRUCTION. SIGNAGE SHALL BE POSTED AT THE EDGE OF THE BUFFER ZONE, EACH LOT LINE, AND AT A MAXIMUM SPACING OF ONE HUNDRED FIFTY (150) FEET. THIS SPACING CAN BE REDUCED FOR LARGE SCALE DEVELOPMENT AS APPROVED BY THE CITY'S ENGINEERING DEPT. THE LOCATION OF THE SIGNAGE SHALL BE SHOWN ON THE STORMWATER MANAGEMENT PLAN, EPSC PLANS, GRADING PLANS, DRAINAGE PLANS AND BUFFER MANAGEMENT PLANS. THESE SIGN SHALL BE SUPPLIED BY THE CITY OF FRANKLIN'S STORMWATER INSPECTORS AT INITIAL SITE PRE-CONSTRUCTION MEETINGS AND BE INSTALLED BY THE FIRST EPSC INSPECTION.
5. INSTALL PERMANENT TURF REINFORCED MATTING AT OUTLET, LEVELSPREADER AND DOWNSIDE SLOPE, TO PROVIDE VEGETATED STABILIZATION. EROSION CONTROL MATTING TO BE CONTECH LANDLOCK S2 OR APPROVED EQUAL.
6. PROVIDE 10' LONG LEVEL SPREADER PER CITY OF FRANKLIN DETAILS GIP-07- SEE GRADING PLAN FOR ELEVATIONS
7. HEAVY DUTY CONCRETE PERMEABLE PAVERS PER MANUFACTURER SPECS - SEE DETAIL SHEETS - SEE DETAIL SHEET C6.1
8. 7'Lx2'Dx6" CONCRETE CHECK DAM TO EXTEND 6" ABOVE PROPOSED GRADE - TO BE COORDINATED WITH WATER QUALITY SWALE - SEE DETAIL SHEET
9. PROVIDE 4" PERFORATED PIPE WITH FILTER SOCK 2' DEEP, AT CENTER OF WATER QUALITY SWALE - SEE DETAIL SHEET C6.1 - SEE LANDSCAPE PLAN - SEE GRADING PLAN
10. UNDERDRAIN SYSTEM - SEE DETAILS ON SHEET C6.1
11. DAYLIGHT UNDERDRAIN PIPE AT RIP-RAP
12. DRAINAGE / WATER QUALITY EASEMENT

WATER QUALITY AND DETENTION NOTES

1. ALL PERMEABEL PAVERS AS SHOWN IN PARKING LOTS, AND ISLEWAYS, TO BE PERMEABLE PAVERS WITH EXTEND DEPTH OF ROCK BASE IN ACCORDANCE WITH GIP-03.
2. PERMEABLE PAVER SYSTEM TO BE INSTALLED WITH AN UNDERDRAIN SYSTEM AS SHOWN ON PLANS.
3. STORMWATER DETENTION TO BE PROVIDED IN THE EXTENDED ROCK BASE UNDER THE PERMEABLE PAVER SYSTEM, AS WELL AS IN THE UNDER GROUND DETENTION POND.
4. THE PERMEABLE PAVER UNDER DRAIN SYSTEM TO DAYLIGHT INTO THE UNDERGROUND DETENTION POND.

NOTE:
CONTRACTOR TO INSTALL ALL WATER QUALITY BMPS AS DIRECTED IN THE INSTALLATION GUIDELINES SET FORTH IN THE CITY OF FRANKLIN BMP MANUAL CURRENT EDITION

NOTE:
WATER QUALITY BMPS SHALL NOT BE INSTALLED UNTIL CONSTRUCTION ON SITE IS NEAR COMPLETION TO PREVENT CONSTRUCTION DEBRIS AND SEDIMENTS FROM ENTERING WATER QUALITY BMPS," and "CONTRACTOR TO TAKE PRECAUTIONS NECESSARY TO AVOID COMPACTION OF BMP AREAS. IF COMPACTION OCCURS CONTRACTOR TO LOOSEN AND OR TILL SOILS PRIOR TO CONSTRUCTION OF BMPS.

NOTE:
CITY OF FRANKLIN IS NOT A MEMBER OF TENNESSEE ONE CALL. G.C. TO CONTACT: COF WATER MANAGEMENT DEPARTMENT ATTN: UTILITY INSPECTOR 124 LUMBER DR, FRANKLIN, TN (615)794-4554

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Civil Engineering Services
Engineering, Environmental, Land Planning
7705 Spicer Farm Lane
Fairview, Tennessee
37062
phone: (615) 533-0401
fax: (615) 523-8865
e-mail: roy@civilengineeringservices.net

REVISIONS

NO.	DATE

RAY G. FLATT LICENSED PROFESSIONAL ENGINEER STATE OF TENNESSEE
10/23/2017

INITIAL DATE: 10/23/2016
DRAWN BY: YMH
CHECKED BY: RGF
COF# - 6301

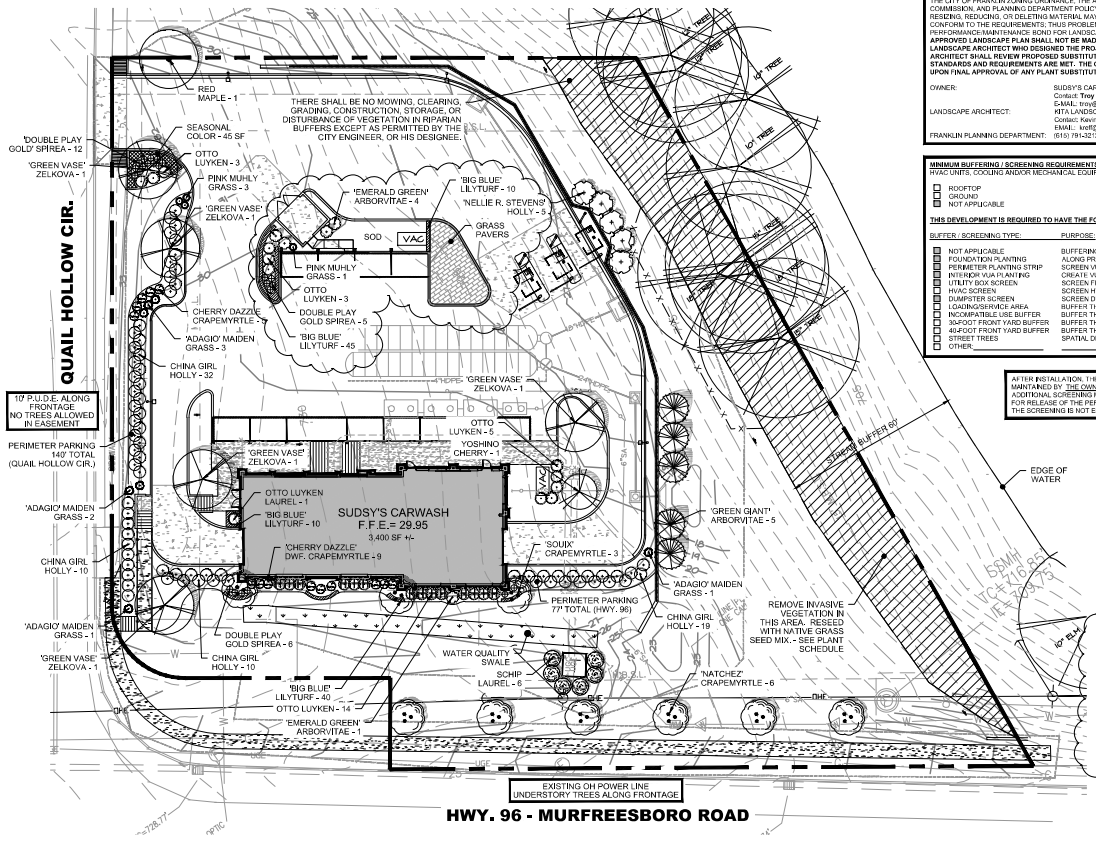
FINAL EROSION AND WQ CONTROL PLAN

SUDSY'S CAR WASH

14451 MURFREESBORO ROAD
FRANKLIN, TENNESSEE

SHEET NO.
C3.4
JOB NO.: 2016-0825

ISSUED FOR PERMIT



ATTENTION OWNER/INSTALLER:
THIS LANDSCAPE PLAN HAS BEEN DESIGNED TO MEET THE MINIMUM REQUIREMENTS OF THE CITY OF FRANKLIN ZONING ORDINANCE. THE APPROVAL OF THE PLANNING COMMISSION, AND PLANNING DEPARTMENT POLICY. RELOCATING, SUBSTITUTING, RESIZING, REDUCING, OR DELETING MATERIAL MAY CAUSE THE SITE TO NO LONGER CONFORM TO THE REQUIREMENTS. THUS PROBLEMS MAY ARISE WITH RELEASING THE PERFORMANCE/MAINTENANCE BOND FOR LANDSCAPING. **DEVIATION FROM THE APPROVED LANDSCAPE PLAN SHALL NOT BE MADE WITHOUT FIRST CONSULTING THE LANDSCAPE ARCHITECT WHO DESIGNED THE PROJECT. THE DESIGNING LANDSCAPE ARCHITECT SHALL REVIEW PROPOSED SUBSTITUTIONS TO ENSURE THAT ALL CITY STANDARDS AND REQUIREMENTS ARE MET. THE CITY SHALL BE NOTIFIED IN WRITING UPON FINAL APPROVAL OF ANY PLANT SUBSTITUTIONS.**

OWNER: SUDSY'S CAR WASH
Contact: Troy VanLiere (615) 479-9905
E-MAIL: troy@sudsyscarwash.com
LANDSCAPE ARCHITECT: KITA LANDSCAPE DESIGN
Contact: Kevin Reif (615) 469-1222
EMAIL: kreif@kitadesign.biz
FRANKLIN PLANNING DEPARTMENT: (615) 791-3212

MINIMUM BUFFERING / SCREENING REQUIREMENTS:
HVAC UNITS, COOLING AND/OR MECHANICAL EQUIPMENT MOUNTED ON THE:

- ☐ ROOFTOP
- ☐ GROUND
- ☐ NOT APPLICABLE

THIS DEVELOPMENT IS REQUIRED TO HAVE THE FOLLOWING LANDSCAPE IMPROVEMENTS:

BUFFER / SCREENING TYPE:	PURPOSE:
☐ NOT APPLICABLE	BUFFERING/SCREENING NOT REQUIRED
☐ FOUNDATION PLANTING	ALONG PRIMARY FACADE
☐ PERIMETER PLANTING STRIP	SCREEN VUAs AND TO CREATE "MODULES"
☐ INTERIOR VUA PLANTING	CREATE VUA "MODULES"
☐ UTILITY BOX SCREEN	SCREEN FROM VIEW
☐ HVAC SCREEN	SCREEN HVAC FROM VIEW
☐ DUMPSTER SCREEN	SCREEN DUMPSTER FROM VIEW
☐ LOADING/SERVICE AREA	BUFFER THE STREET OR RESIDENTIAL PROPERTY
☐ INCOMPATIBLE USE BUFFER	BUFFER THE ADJACENT LESS INTENSIVE USE
☐ 30-FOOT FRONT YARD BUFFER	BUFFER THE ADJACENT HATCHER BYPASS
☐ 40-FOOT FRONT YARD BUFFER	BUFFER THE ADJACENT INTERSTATE 65
☐ STREET TREES	SPATIAL DEFINITION/ENVIRONMENTAL MITIGATION
☐ OTHER _____	_____

AFTER INSTALLATION, THE PROPOSED LANDSCAPE WILL MAINTAINED BY THE OWNER. ADDITIONAL SCREENING MAY BE REQUIRED IF THE INSPECTION FOR RELEASE OF THE PERFORMANCE SURETY REVEALS THAT THE SCREENING IS NOT EFFECTIVE.

NATIVE GRASS MIX:
15%, Switchgrass, 15%, Weeping Lovegrass, 15% Beaked Panicgrass, 15% Redtop Panicgrass, 11% Virginia Wildrye, 5% Lurid (Shallow) Sedge, 3% Soft Rush, 3% Swamp (Narrowleaf) Sunflower, 3% Common Sneezeweed, 2% Hop Sedge, 2% Globe Beaksedge, 2% Crimsoneyed Rosemallow, 2% Lizard's Tail, 2% Showy Thickseed Sunflower, 2% Woolgrass, 1% New York Ironweed, 1% Meadowbeauty, 1% Leathery Rush

Seeding Rate: 20 lbs per acre Broadcast, 40lbs per acre Hydroseeded

LANDSCAPE CONTRACTOR SHALL COORDINATE ALL STREAM BUFFER ENHANCEMENT EFFORTS WITH THE CITY'S STORMWATER INSPECTOR FOR THE SITE THE CONTRACTOR SHALL CONTACT THE INSPECTOR BEFORE BEGINNING WORK TO OUTLINE SCOPE OF WORK WITHIN THE STREAM BUFFERS. THE CITY INSPECTOR WILL DOCUMENT ALL STAGES OF WORK THROUGH FINAL STABILIZATION. FAILURE TO CONTACT THE CITY INSPECTOR MAY RESULT IN PARTIAL OR FULL LANDSCAPE BOND WITHHOLDING.

STREAM BUFFER ENHANCEMENT SHALL BE COMPLETED BEFORE THE PROPERTY OWNER WILL BE RELIEVED OF THEIR DPSC MAINTENANCE REQUIREMENTS.

WATER QUALITY SWALE GRASS MIX:
75% Tall Fescue, 25% Timothy - Seeding Rate of 150 lbs per acre broadcast, 300 lbs per acre hydroseeded.

PLANT SCHEDULE

QTY.	COMMON NAME	BOTANICAL NAME	HEIGHT	TRUNK	ACI	COMMENTS
CANOPY TREES						
5	'Green Giant' Arborvitae	Thuja (standish x plicata) 'Green Giant	6' - 7'	2" Cal.	10	
5	'Green Vase' Japanese Zelkova	Zelkova serrate 'Green Vase'	10' - 12'	2" Cal.	10	
1	Red Maple	Acer rubrum	10' - 12'	2" Cal.	2	
11	TOTAL - CANOPY TREES				22	
UNDERSTORY TREES						
6	'Natchez' Crapemyrtle	Lagerstroemia indica 'Natchez'	8' - 10'	3" Cal.	18	Multi-trunk, (3) 1" canes min.
3	'Souix' Crapemyrtle	Lagerstroemia indica 'Souix'	6' - 7'	2" Cal.	6	Multi-trunk, (3) 1" canes min.
5	'Nellie R. Stevens' Holly	Ilex x 'Nellie R. Stevens'	6' Min.		10	
1	Yoshino Cherry	Prunus yedoensis	8' - 10'	2" Cal.	2	
15	TOTAL - UNDERSTORY TREES				36	
SHRUBS						
14	'Cherry Dazzle' Dwf. Crapemyrtle	Lagerstroemia 'Gamad I'	18" Min.			
71	China Girl Holly	Ilex meserveae 'Mesog'	30" Min.			
23	'Double Play Gold' Spirea	Spirea japonica 'Double Play Gold'	12" Min.			
5	Emerald Green Arborvitae	Thuja occidentalis, 'Emerald Green'	8' Min.			Plant 4' o.c.
26	Otto Luyken	Prunus laurocerasus 'Otto Luyken'	24" Min.	5 Gal.		
6	Schip Laurel	Prunus laurocerasus 'Schipkaensis'	30" Min.	5 Gal.		
145	TOTAL - SHRUBS					
ORNAMENTAL GRASSES						
7	'Adagio' Maiden Grass	Hakonechloa macra 'All Gold'	24" Min.			
4	Pink Muhly Grass	Muhlenbergia capillans	24" Min.			
GROUND COVER/PERENNIAL FLOWERS						
105	'Big Blue' Lilyturf	Liriope muscari 'Big Blue'	8" - 10"	1 Gal.		
45 SF	Seasonal Color	Various annual flowers	-	-		Change flowers each season
TURF						
SOD	Improved Tall Type Fescue Varieties	Drought tolerant Fescue blend				See Civil Sheets
SEED	Native Grass Mix	Various native grasses seed mix				Hogan Seed Co, 888-224-6426

CITY OF FRANKLIN MINIMUM PLANT QUALITY AND SIZE STANDARDS:

1. ALL NEWLY PLANTED LANDSCAPE MATERIAL SHALL CONFORM TO THE LATEST VERSION OF THE *AMERICAN STANDARD OF NURSERY STOCK* (ANSI Z60.1).
2. ALL TYPE 1, 2, AND 3 TREES (AS DEFINED IN ANSI Z60.1) USED TO MEET THE REQUIREMENTS OF THIS SUBSECTION SHALL HAVE THE FOLLOWING CHARACTERISTICS:
   A. DECIDUOUS TREES SHALL HAVE ONE DOMINANT TRUNK WITH THE TIP OF THE LEADER ON THE MAIN TRUNK LEFT INTACT AND THE TERMINAL BUD ON THE CENTRAL LEADER AS THE HIGHEST POINT ON THE TREE.
   B. TREES WITH FORKED TRUNKS ARE ACCEPTABLE IF ALL THE FOLLOWING CONDITIONS ARE MET:
      1. THE FORK OCCURS IN THE UPPER ONE-THIRD OF THE TREE;
      2. ONE FORK IS LESS THAN TWO-THIRDS THE DIAMETER OF THE DOMINANT FORK; AND
      3. THE TOP ONE-THIRD OF THE SMALLER FORK IS REMOVED AT THE TIME OF PLANTING.
   C. NO BRANCH IS GREATER THAN TWO-THIRDS THE DIAMETER OF THE TRUNK DIRECTLY ABOVE THE BRANCH.
   D. SEVERAL BRANCHES ARE LARGER IN DIAMETER AND OBVIOUSLY MORE DOMINANT.
   E. BRANCHING HABIT IS MORE HORIZONTAL THAN VERTICAL, AND NO BRANCHES ARE ORIENTED NEARLY VERTICAL TO THE TRUNK.
   F. BRANCHES ARE EVENLY DISTRIBUTED AROUND THE TRUCK WITH NO MORE THAN ONE MAJOR BRANCH LOCATED DIRECTLY ABOVE ANOTHER AND THE CROWN IN FULL OF FOLIAGE THAT IS EVENLY DISTRIBUTED AROUND THE TREE.

CITY OF FRANKLIN LANDSCAPE NOTES:

1. ANY PLANT MATERIAL THAT DIES, TURNS BROWN OR DEFOLIATES SHALL BE REPLACED WITHIN ONE YEAR OR BY THE NEXT GROWING SEASON, WHICH EVER COMES FIRST. OTHER DEFECTIVE LANDSCAPE MATERIAL SHALL BE REPLACED WITHIN THREE MONTHS.
2. ALL TREES SHALL BE STRAIGHT TRUNKED, FULL HEADED AND MEET ALL REQUIREMENTS SPECIFIED. ALL TREES AND SHRUBS MUST BE CONTAINER GROWN OR BALLED AND BURLAPPED WITH SIZES INDICATED IN THE PLANT SCHEDULE ON THE APPROVED PLAN. ALL PLANTS SHALL BE HEALTHY, VIGOROUS MATERIAL FREE OF PEST AND DISEASE. ALL ROOTBALLS, CONTAINERS AND HEIGHT TO WIDTH RATIOS SHALL CONFORM TO THE SIZE STANDARDS SET FORTH IN THE *AMERICAN STANDARDS FOR NURSERY STOCK*, CURRENT EDITION.
3. ALL REQUIRED TREES AND SHRUBS SHALL MEET THE MINIMUM SIZE STANDARDS AS LISTED IN THE PLANT SCHEDULE.
4. PLANT MATERIAL SHALL NOT OBSCURE TRAFFIC OR PARKING SIGNS/SIGNALS OR VEHICULAR SIGHT LINES.
5. TREE TOPPING IS NOT PERMITTED.
6. ADDITIONAL SCREENING MAY BE REQUIRED IF THE INSPECTION FOR THE RELEASE OF THE PERFORMANCE BOND REVEALS THAT THE REQUIRED SCREENING IS NOT EFFECTIVE.
7. ALL REQUIRED TREE PROTECTION SCREENING SHALL BE INSTALLED PRIOR TO LAND DISTURBING ACTIVITIES AND SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL ALL CONSTRUCTION ACTIVITY IS COMPLETED.
8. ANY SITE OR LANDSCAPE CHANGES (INCLUDING BUT NOT LIMITED TO A CHANGE IN DESIGN, A REDUCTION IN SIZE OR NUMBER OF PLANT MATERIAL, OR THE RELOCATION OF OVERHEAD OR UNDERGROUND UTILITIES) SHALL REQUIRE A REVISED LANDSCAPE PLAN TO BE SUBMITTED AND APPROVED PRIOR TO LANDSCAPE INSTALLATION.
9. EXISTING TREES ACCEPTED IN PARTIAL COMPLIANCE OF THE LANDSCAPE REQUIREMENTS FOR THIS SITE SHALL BE ACCESSIBLE AND FLAGGED PRIOR TO ALL LANDSCAPE INSPECTIONS.
10. ANY EXISTING TREE, SHOWN AS BEING PRESERVED ON APPROVED PLANS, WHETHER FOR CREDIT OR NOT, THAT IS REMOVED, DIES OR IS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH THE EQUIVALENT NUMBER OF CALIPER INCHES OF A SIMILAR SPECIES IN AN APPROVED LOCATION.
11. SCREENING PROPOSED AROUND ANY UTILITY BOX OR TRANSFORMER IS REQUIRED TO BE EVERGREEN AND ADEQUATELY SCREEN THE OBJECT. THE PROPOSED EVERGREEN PLANT MATERIAL SHALL BE REPLACED IF IT IS NOT OF A HEIGHT AT PLANTING TO SCREEN THE OBJECT.
12. ALL PLANT MATERIAL SHALL BE FROM THE FRANKLIN PLANT LIST UNLESS PRIOR APPROVAL IS RECEIVED FROM THE CITY.
13. ALL TREE-PROTECTION FENCING SHALL BE IN PLACE PRIOR TO ISSUANCE OF THE GRADING PERMIT AND SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL ALL CONSTRUCTION ACTIVITY IS COMPLETED. ANY REQUIRED EROSION CONTROL MEASURES SHALL BE PLACED OUTSIDE OF ANY TREE PROTECTION FENCING.
14. TOP SOIL USED IN ALL LANDSCAPE AREAS SHALL BE SCREENED PRIOR TO DEPOSITION IN PLANTING AREAS AND BLANDS.
15. ANY PLANT MATERIAL LOCATED ADJACENT TO A PARKING AREA SHALL BE PLANTED SO AS TO ALLOW FOR A TWO AND A HALF FOOT VEHICULAR BUMPER OVERHANG FROM THE FACE OF CURB TO THE EDGE OF THE ADJACENT PLANT MATERIAL.
16. THE OWNER ACKNOWLEDGES THAT PLANTING LANDSCAPE MATERIAL IN A DEDICATED EASEMENT DOES NOT WAIVE OR MODIFY THE CITY OF FRANKLIN'S RIGHTS AS THE EASEMENT HOLDER. THE OWNER UNDERSTANDS THAT THE CITY OF FRANKLIN, ITS AUTHORIZED CONTRACTOR OR APPLICABLE PRIVATE UTILITY MAY AT ANY TIME AND FOR ANY REASON PERFORM WORK WITHIN THE DEDICATED EASEMENT. THE CITY, ITS AUTHORIZED CONTRACTOR OR APPLICABLE PRIVATE UTILITY SHALL HAVE NO LIABILITY TO THE OWNER FOR ANY DAMAGE TO THE LANDSCAPE MATERIAL IN THE EASEMENT WHEN SAID DAMAGE IS DUE TO WORK WITHIN THE EASEMENT. THE OWNER MAY BE HELD RESPONSIBLE FOR THE REMOVAL OF THE LANDSCAPE MATERIAL TO ENABLE WORK TO BE DONE. THE OWNER SHALL BE SOLELY RESPONSIBLE FOR ANY COSTS INCURRED IN REPAIRING AND/OR REPLACING THE REQUIRED LANDSCAPE MATERIAL.

LANDSCAPE NOTES:

1. WHEN APPLICABLE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING TREES TO REMAIN. NO HEAVY EQUIPMENT SHOULD BE PERMITTED TO OPERATE OR BE STORED, NOR ANY MATERIALS TO BE HANDLED OR STORED, WITHIN THE DRIPLINES OF TREES OUTSIDE THE LIMIT OF GRADING.
2. THE QUANTITIES INDICATED ON THE PLANT LIST AND PLAN ARE PROVIDED FOR THE BENEFIT OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN QUANTITY CALCULATIONS AND THE LIABILITY WHICH PERTAINS TO THOSE QUANTITIES AND TO ANY RELATED CONTRACT DOCUMENTS AND/OR PRICE QUOTATIONS. QUESTIONS SHOULD BE DIRECTED TO THE LANDSCAPE ARCHITECT.
3. ALL PLANT MATERIALS SHALL BE NURSERY GROWN, GRADE "A" QUALITY, UNLESS OTHERWISE NOTED AND SHALL COMPLY WITH THE AMERICAN STANDARD FOR NURSERY STOCK: ANSI Z-60.1; LATEST EDITION, FOR SIZE AND QUALITY.
4. NO SUBSTITUTIONS AS TO TYPE, SIZE, OR SPACING OF PLANT MATERIALS SPECIFIED ON THIS PLAN MAY BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT. KITA LANDSCAPE DESIGN (615) 469-1222.
5. THE CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES AND TO PROTECT UTILITIES THAT ARE TO REMAIN. THE CONTRACTOR SHALL REPAIR ANY DAMAGE ACCORDING TO LOCAL STANDARDS AT THE CONTRACTOR'S EXPENSE. COORDINATE ALL CONSTRUCTION WITH THE APPROPRIATE UTILITY COMPANY.
6. ALL AREAS DISTURBED BY UTILITY TRENCHING, SITE AND BUILDING CONSTRUCTION SHALL BE STABILIZED WITH SEEDING AND SODDING AS SHOWN BY THE PLAN.
7. SOIL USED FOR PLANTING SHALL CONSIST OF (5) PARTS TOPSOIL, (1) PART SAND AND (2) PARTS ORGANIC MATTER, MIXED WITH 1 POUND OF FERTILIZER PER CUBIC YARD.
   A. SAND SHALL BE CLEAN MASONRY SAND.
   B. ORGANIC MATTER SHALL BE PEAT MOSS, OR WELL COMPOSTED PINE BARK, OR APPROVED EQUAL AND SHALL BE FINELY GROUND AND FREE OF WEEDS.
   C. ALL FERTILIZER SHALL BE 10-10-10 WITH MINOR ELEMENTS, FERTILIZER SHALL HAVE 40-60% OF ITS TOTAL NITROGEN IN A WATER INSOLUBLE FORM.
8. PRE-EMERGENT HERBICIDE SHALL BE APPLIED TO ALL PLANT BEDS AND SOD AREAS PRIOR TO INSTALLATION. TREFLAN OR AN APPROVED EQUAL SHALL BE USED.
9. ALL PLANT BEDS SHALL HAVE A MINIMUM OF 3" DEEP MULCH. MULCH SHALL BE SHREDDED HARDWOOD.
10. IT IS THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO CONFIRM MATERIAL QUANTITIES. IN THE EVENT OF A DISCREPANCY, THE QUANTITIES SHOWN ON THE PLAN SHALL TAKE PRECEDENCE OVER QUANTITIES SHOWN ON THE PLANT LIST.
11. PRIOR TO FINAL PAYMENT, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE OWNER WITH COMPLETE WRITTEN INSTRUCTIONS ON PROPER CARE OF ALL SPECIFIED PLANT MATERIALS.
12. THE LANDSCAPE INSTALLATION SHALL BE COORDINATED WITH THE IRRIGATION INSTALLATION WHEN APPLICABLE.
13. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM STRUCTURES AND TAKE SPECIAL CARE TO INSURE THAT BED PREPARATION DOES NOT INHIBIT DRAINAGE.
14. ALL LAWN AREAS SHALL BE CULTIVATED TO A DEPTH OF 4" PRIOR TO SODDING AND SEEDING. PREPARED TURF BEDS SHALL BE FREE FROM STONES OVER 2" DIAMETER, WEEDS AND OTHER DELETERIOUS MATERIAL.
15. THE LANDSCAPE CONTRACTOR SHALL RAKE SMOOTH ALL SEED OR SOD AREAS PRIOR TO INSTALLATION.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BACKFILLING BEHIND THE CURB SO GRADE IS LEVEL WITH TOP OF CURB.
17. SODDED AREAS SHALL HAVE NO BARE AREAS, SEEDED AREAS SHALL BE CONSIDERED ACCEPTABLE WHEN FULL COVERAGE OF THE PERMANENT TURF GRASS SPECIES IS ESTABLISHED.
18. CUT AWAY ROPES OR WIRES FROM B&B PLANTS. PULL BACK BURLAP FROM TOP OF ROOT BALL. DO NOT ALLOW BURLAP TO BE EXPOSED AT SURFACE. TOTALLY REMOVE BURLAP IF IT IS SYNTHETIC.
19. IF CONTAINER GROWN PLANTS SHOW SIGNS OF BEING ROOT BOUND, SCORE ROOTS VERTICALLY.
20. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
21. ALL REPLACEMENTS SHALL BE OF THE SAME TYPE, SIZE, AND QUALITY AS SPECIFIED ON THE PLANT LIST, UNLESS APPROVED OTHERWISE IN WRITING BY THE LANDSCAPE ARCHITECT.
22. ANY MATERIAL THAT IS DEEMED TO BE 35% DEAD OR MORE SHALL BE CONSIDERED DEAD, AND MUST BE REPLACED AT NO CHARGE. A TREE IS CONSIDERED DEAD WHEN THE MAIN LEADER HAS DIED BACK, OR MORE THAN 25% OF THE CROWN IS DEAD.
23. REPLACEMENTS SHALL BE MADE DURING THE NEXT PLANTING SEASON UNLESS THE LANDSCAPE CONTRACTOR AGREES TO AN EARLIER DATE.
    PLANTING DATES
    SPRING: MARCH 15 - APRIL 15
    FALL: OCTOBER 1 - NOVEMBER 30
24. THE LANDSCAPE CONTRACTOR WILL NOT BE RESPONSIBLE FOR PLANT MATERIAL THAT HAS BEEN DAMAGED BY VANDALISM, FIRE, RELOCATION, WILDLIFE, THEFT, OR OTHER ACTIVITIES BEYOND THE LANDSCAPE CONTRACTOR'S CONTROL.
25. CONTRACTOR TO IRRIGATE ALL NEW LANDSCAPE PLANTINGS AND LAWN AREAS WITH AN AUTOMATED UNDERGROUND IRRIGATION SYSTEM.
26. IRRIGATION TO HAVE A SEPARATE METER.
27. GENERAL CONTRACTOR TO COORDINATE AND BE RESPONSIBLE FOR WATERING ALL PLANTS AND SEEDED AREAS AFTER PLANTING UNTIL IRRIGATION SYSTEM IS OPERABLE.

LANDSCAPE REQUIREMENTS: (ACI)

LSR = 0.30
Credit for preserved trees: (114)
LSA = 0.70 Acres

	QUANTITY PROVIDED			INCHES PROVIDED
	EXISTING TREES	PROPOSED	TOTAL PROVIDED	CALIPER INCHES
EXISTING TREES = 14" EXISTING TREES =82.5"	4	@1.25	4	82.5
EX. TREES (SEE TREE INVENTORY)				
5" + CALIPER CANOPY TREES				
3" CALIPER CANOPY TREES				
2" CALIPER CANOPY TREES		11	11	22
AGGREGATE CANOPY CALIPER INCHES PROVIDED				104.5
AGGREGATE CANOPY CALIPER INCHES REQUIRED				107
2" CALIPER UNDERSTORY TREES		15	15	30
1.5" CALIPER UNDERSTORY TREES				
AGGREGATE UNDERSTORY CALIPER INCHES PROVIDED				30
AGGREGATE UNDERSTORY CALIPER INCHES REQUIRED				-
MIN. 18" HEIGHT SHRUBS			50	
MIN. 30" HEIGHT SHRUBS			77	
TOTAL SHRUBS PROVIDED			127	
TOTAL SHRUBS REQUIRED			-	

LANDSCAPE DATA

SITE ACREAGE:	(56,536 SF) 1.30 AC
SITE ZONING CLASSIFICATION AND OVERLAYS:	GC
DEVELOPMENT STANDARDS: (TRADITIONAL/CONVENTIONAL):	CONVENTIONAL
MIN. REQUIRED LANDSCAPE SURFACE RATIO (RATIO AND ACREAGE):	(0.13 AC) 10%
PROVIDED LANDSCAPE SURFACE RATIO (RATIO AND ACREAGE):	(0.70 AC) 53%
PERCENT AND ACREAGE OF ORIGINAL CANOPY COVER. (INDICATE IF SITE TREE REMOVAL GRANDFATHERED)	(5,755 SF - 0.13 AC) 10.2%
PERCENT AND ACREAGE TREE CANOPY COVER REQUIRED:	
PERCENT AND ACREAGE OF PRESERVED CANOPY COVER PROVIDED:	(48,480 SF) 1.11 AC
NUMBER AND DBH OF SPECIMEN TREES REMOVED:	NONE (0 DBH)

CALL BEFORE YOU DIG
811 CALL 811 NATIONWIDE
Know what's below. Call before you dig.

N E S W

20 0 10 20 40
GRAPHIC SCALE - 1 inch = 20ft.

SUDSY'S CAR WASH
Troy VanLiere
PH# (615) 479-9905
www.sudsys.com

KITA Landscape Design
2101 Masters Drive, Springfield, TN 37172
Ph. (615) 469-1222 Fax (615) 469-1223
Email: kreif@kitadesign.biz

NO.	DATE	REVISIONS
1	04/06/17	REVISED AREA FOR FIRE TRUNK RADIUS

05-04-17

INITIAL DATE: 11/07/2016
DRAWN BY: K_JR
CHECKED BY: K_JR
COF# - 6301

LANDSCAPE PLAN

SUDSY'S CAR WASH
1451 MURFREESBORO ROAD
FRANKLIN, TENNESSEE

SHEET NO. L1.1
JOB NO.: XXX

ISSUED FOR PERMIT

APPENDIX B

GIP EXHIBIT

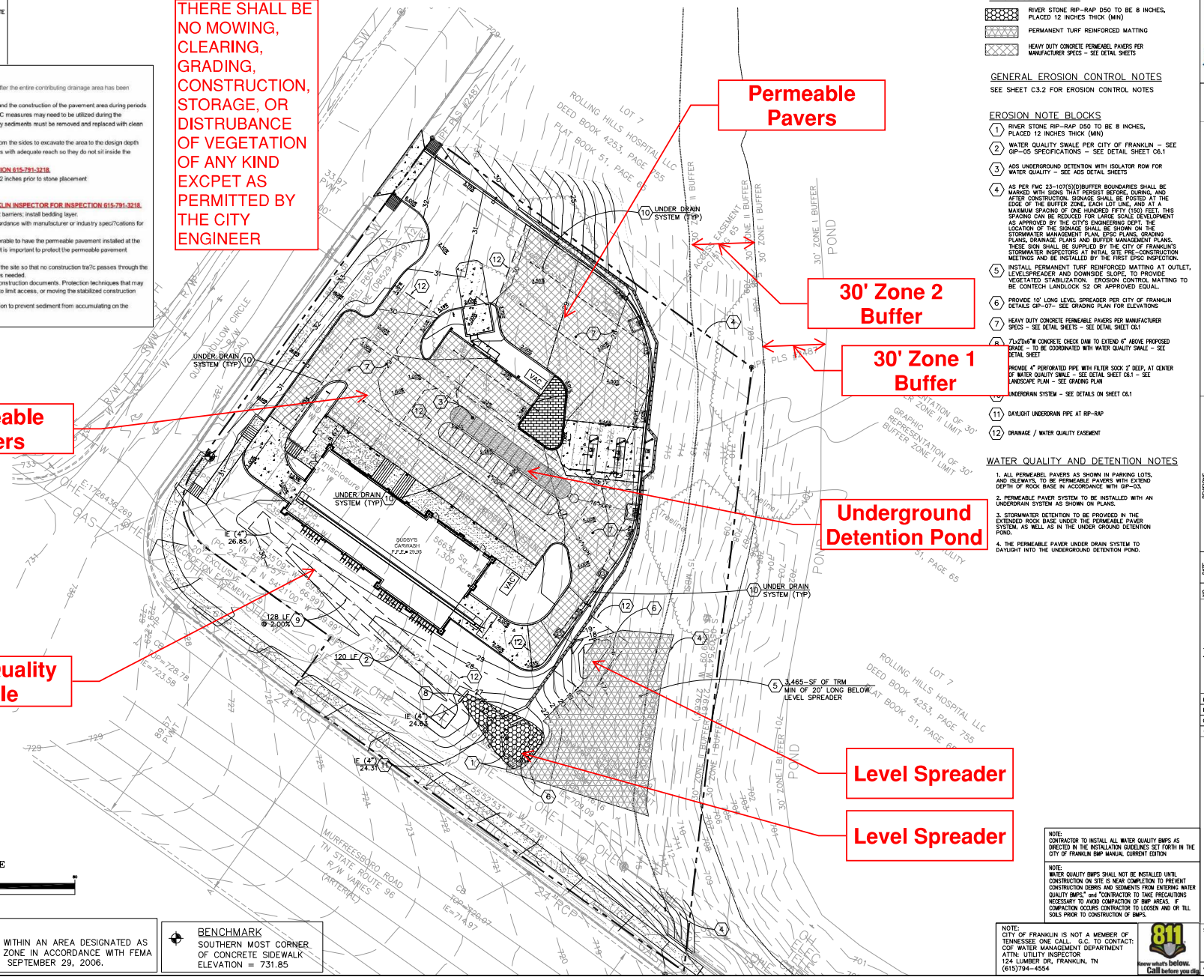
FINAL EROSION CONTROL NARRATIVE:

ONCE WORK ON SITE IS COMPLETE AND VEGETATION IS COMPLETELY ESTABLISHED, CONTRACTOR TO COORDINATE WITH CITY FOR INSPECTIONS AND THEN REMOVE ALL TEMPORARY EROSION CONTROLS. FOLLOWING THE REMOVAL OF TEMPORARY EROSION CONTROLS, OWNER TO ASSUME RESPONSIBILITY AND FOLLOW INSPECTION AND REPORTING MEASURES AS OUTLINED IN THE LONG TERM MAINTENANCE PLAN (LTMP) PREPARED FOR THIS SITE.

Pervious Concrete/Paver Construction Sequencing

1. Construction of the permeable pavement shall only begin after the entire contributing drainage area has been stabilized.
2. Contractor is to provide method of diverting runoff flow around the construction of the pavement area during periods of rainfall to ensure sediment does not enter the area. EPSC measures may need to be utilized during the installation. Construction materials that are contaminated by sediments must be removed and replaced with clean materials.
3. Excavate the area. Excavators or backhoes should work from the sides to excavate the area to the design depth and dimensions. Excavating equipment should have scoops with adequate reach so they do not sit inside the footprint of the area.
4. CALL CITY OF FRANKLIN INSPECTOR FOR INSPECTION 615-791-3218.
5. Scarify subgrade by ripping the bottom soils to a depth of 12 inches prior to stone placement
6. Install filter fabric on the bottom and sides of the area.
7. Install underdrain, if applicable.
8. IF UNDERDRAIN IS INSTALLED CALL CITY OF FRANKLIN INSPECTOR FOR INSPECTION 615-791-3218.
9. Install aggregate base; install curb restraints and pavement barriers; install bedding layer.
10. Install pavement. Paving materials shall be installed in accordance with manufacturer or industry specifications for the particular type of pavement.
11. Protect the pavement through project completion. It is preferable to have the permeable pavement installed at the end of the site construction timeline. If that is not possible, it is important to protect the permeable pavement through project completion. This may be done by:
    - Route construction access through other portions of the site so that no construction traffic passes through the permeable pavement site. Install barriers or fences as needed.
    - If this is not possible, protect the pavement per the construction documents. Protection techniques that may be specified include mats, plastic sheeting, barriers to limit access, or moving the stabilized construction entrance.
    - Schedule street sweeping during and after construction to prevent sediment from accumulating on the pavement.

THERE SHALL BE NO MOWING, CLEARING, GRADING, CONSTRUCTION, STORAGE, OR DISTRUBANCE OF VEGETATION OF ANY KIND EXCPET AS PERMITTED BY THE CITY ENGINEER



PROPOSED LEGEND

- RIVER STONE RIP-RAP D50 TO BE 8 INCHES, PLACED 12 INCHES THICK (MIN)
- PERMANENT TURF REINFORCED MATTING
- HEAVY DUTY CONCRETE PERMEABEL PAVERS PER MANUFACTURER SPECS - SEE DETAIL SHEETS

GENERAL EROSION CONTROL NOTES

SEE SHEET C3.2 FOR EROSION CONTROL NOTES

EROSION NOTE BLOCKS

1. RIVER STONE RIP-RAP D50 TO BE 8 INCHES, PLACED 12 INCHES THICK (MIN)
2. WATER QUALITY SWALE PER CITY OF FRANKLIN - SEE GIP-05 SPECIFICATIONS - SEE DETAIL SHEET C6.1
3. ADS UNDERGROUND DETENTION WITH ISOLATOR ROW FOR WATER QUALITY - SEE ADS DETAIL SHEETS
4. AS PER FMC 23-107(5)(D)BUFFER BOUNDARIES SHALL BE MARKED WITH SIGNS THAT PERSIST BEFORE, DURING, AND AFTER CONSTRUCTION. SIGNAGE SHALL BE POSTED AT THE EDGE OF THE BUFFER ZONE, EACH LOT LINE, AND AT A MAXIMUM SPACING OF ONE HUNDRED FIFTY (150) FEET. THIS SPACING CAN BE REDUCED FOR LARGE SCALE DEVELOPMENT AS APPROVED BY THE CITY'S ENGINEERING DEPT. THE LOCATION OF THE SIGNAGE SHALL BE SHOWN ON THE STORMWATER MANAGEMENT PLAN, EPSC PLANS, GRADING PLANS, DRAINAGE PLANS AND BUFFER MANAGEMENT PLANS. THESE SIGN SHALL BE SUPPLIED BY THE CITY OF FRANKLIN'S STORMWATER INSPECTORS AT INITIAL SITE PRE-CONSTRUCTION MEETINGS AND BE INSTALLED BY THE FIRST EPSC INSPECTION.
5. INSTALL PERMANENT TURF REINFORCED MATTING AT OUTLET, LEVELSPREADER AND DOWNSIDE SLOPE, TO PROVIDE VEGETATED STABILIZATION. EROSION CONTROL MATTING TO BE CONTECH LANDLOCK S2 OR APPROVED EQUAL.
6. PROVIDE 10' LONG LEVEL SPREADER PER CITY OF FRANKLIN DETAILS GIP-07- SEE GRADING PLAN FOR ELEVATIONS
7. HEAVY DUTY CONCRETE PERMEABLE PAVERS PER MANUFACTURER SPECS - SEE DETAIL SHEETS - SEE DETAIL SHEET C6.1
8. 7"Lx2"Dx6"W CONCRETE CHECK DAM TO EXTEND 6" ABOVE PROPOSED GRADE - TO BE COORDINATED WITH WATER QUALITY SWALE - SEE DETAIL SHEET

   PROVIDE 4" PERFORATED PIPE WITH FILTER SOCK 2' DEEP, AT CENTER OF WATER QUALITY SWALE - SEE DETAIL SHEET C6.1 - SEE LANDSCAPE PLAN - SEE GRADING PLAN
9. UNDERDRAIN SYSTEM - SEE DETAILS ON SHEET C6.1
10. DAYLIGHT UNDERDRAIN PIPE AT RIP-RAP
11. DRAINAGE / WATER QUALITY EASEMENT

WATER QUALITY AND DETENTION NOTES

1. ALL PERMEABEL PAVERS AS SHOWN IN PARKING LOTS, AND ISLEWAYS, TO BE PERMEABLE PAVERS WITH EXTEND DEPTH OF ROCK BASE IN ACCORDANCE WITH GIP-03.
2. PERMEABLE PAVER SYSTEM TO BE INSTALLED WITH AN UNDERDRAIN SYSTEM AS SHOWN ON PLANS.
3. STORMWATER DETENTION TO BE PROVIDED IN THE EXTENDED ROCK BASE UNDER THE PERMEABLE PAVER SYSTEM, AS WELL AS IN THE UNDER GROUND DETENTION POND.
4. THE PERMEABLE PAVER UNDER DRAIN SYSTEM TO DAYLIGHT INTO THE UNDERGROUND DETENTION POND.

FLOOD STATEMENT

NO PORTION OF THIS PROPERTY LIES WITHIN AN AREA DESIGNATED AS A PORTION OF THE 100 YEAR FLOOD ZONE IN ACCORDANCE WITH FEMA PANEL NUMBER 4718C 0212F, DATED: SEPTEMBER 29, 2006.

BENCHMARK

SOUTHERN MOST CORNER OF CONCRETE SIDEWALK
ELEVATION = 731.85

NOTE:
CONTRACTOR TO INSTALL ALL WATER QUALITY BMPS AS DIRECTED IN THE INSTALLATION GUIDELINES SET FORTH IN THE CITY OF FRANKLIN BMP MANUAL CURRENT EDITION

NOTE:
WATER QUALITY BMPS SHALL NOT BE INSTALLED UNTIL CONSTRUCTION ON SITE IS NEAR COMPLETION TO PREVENT CONSTRUCTION DEBRIS AND SEDIMENTS FROM ENTERING WATER QUALITY BMPS," and "CONTRACTOR TO TAKE PRECAUTIONS NECESSARY TO AVOID COMPACTION OF BMP AREAS. IF COMPACTION OCCURS CONTRACTOR TO LOOSEN AND OR TILL SOILS PRIOR TO CONSTRUCTION OF BMPS.

NOTE:
CITY OF FRANKLIN IS NOT A MEMBER OF TENNESSEE ONE CALL. G.C. TO CONTACT: COF WATER MANAGEMENT DEPARTMENT ATTN: UTILITY INSPECTOR 124 LUMBER DR, FRANKLIN, TN (615)794-4554

811 Know what's below. Call before you dig.

SUDSY'S CAR WASH
Troy VanLiere
PH# (615) 479-9905
www.sudsys.com

Civil Engineering Services
Engineering, Environmental, Land Planning
770 Spicer Farm Lane
Fairview, Tennessee
37062
phone: (615) 533-0401
fax: (615) 523-8865
e-mail: roy@civilengineeringservices.net

REVISIONS

NO.	DATE

STATE OF TENNESSEE ROY G. FRANKLIN 102.009 REGISTERED ENGINEER
10/23/2017

INITIAL DATE: 10/23/2016
DRAWN BY: YMH
CHECKED BY: RGF
COF# - 6301

FINAL EROSION AND WQ CONTROL PLAN

SUDSY'S CAR WASH
14451 MURFREESBORO ROAD
FRANKLIN, TENNESSEE

SHEET NO.
C3.4
JOB NO.: 2016-0825

ISSUED FOR PERMIT

APPENDIX C

STORMWATER MANAGEMENT
INSPECTION/MAINTENANCE FORMS

City of Franklin, Tn
Stormwater Division
615-791-3218

To be submitted as part of annual report to City

REV 2/2015

Permeable Pavement Inspection and Maintenance Checklist

Site Name:_____ Owner Change since last inspection? Y N

Location: _____

Owner Name:_____

Address:_____ Phone Number: _____

Site Status: _____

Date:_____ Time:_____ Site conditions:_____

*****Conduct maintenance inspection in the spring of each year.

Pavement Type: Pervious Concrete/Asphalt D Modular Pavers D Grass/Gravel Pavers D

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Pavement Area				
Pavement area free of debris?	*A/M*			
Staining or sediment?	*A/M*			
Inlets and outlets unobstructed and sediment free?	*A/M*			
All contributing drainage area free of erosion and sources of sediment?	*A/M*			
Water standing after a storm event?	*S*			
Any evidence of clogged pores that require vacuum-sweeping?	*A/M*			
Has area been vacuum swept in the past 12 months?	*A/M*			
Access to pervious pavement (egress and ingress routes) safe and efficient?	*A/M*			
Has drawdown rate been measured at observation well and is well capped?*	*A*			
Structural integrity of the pavement intact? Look for deterioration such as: slumping, cracking, spalling, or broken pavers.	*A/M*			
Grass Pavers				
Adjacent area fully stabilized (no evidence	*A*			

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
of eroding material into or from pervious pavement area)?				
Any noticeable irrigation needs?	*A/M*			
Fallen leaves/plant debris collecting in paving area?	*A/M*			
Grass height over 4 inches?	*A/M*			
Vegetation health affected by oil/grease from vehicles?	*A*			
Other	*A*			
Hazards				
Obstructions or debris affecting overflows/emergency spillways?	*A/M*			
Load-bearing capability of pavement intact?	*A/M*			

*Refer to GIP-03 Section 11.3 for further guidance.

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: D Acceptable D Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature)_____

Inspected by: (printed) _____

City of Franklin, Tn
Stormwater Division
615-791-3218

To be submitted as part of annual report to City

REV 2/2015

Stormwater Pond Inspections and Maintenance Checklist

Site Name:_____Owner Change since last inspection? Y N

Location: _____

Owner Name: _____

Address:_____Phone Number: _____

Site Status: _____

Date:_____Time:_____Site conditions: _____

Stormwater Pond Type: Wet Pond ☐ Wet ED Pond ☐ Micropool Pond ☐ Multiple Pond System ☐ Dry Pond ☐

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Embankment and Emergency Spillway				
Vegetation healthy?	*A/S*			
Erosion on embankment?	*A/S*			
Animal burrows in embankment?	*A/S*			
Cracking, sliding, bulging of dam?	*A/S*			
Drains blocked or not functioning?	*A/S*			
Leaks or seeps on embankment?	*A/S*			
Slope protection failure functional?	*A/S*			
Emergency spillway obstructed?	*A/S*			
Erosion in/around emergency spillway?	*A/S*			
Other (describe)	*A/S*			
Riser and Principal Spillway				(describe type: concrete pipe, slotted weir, channel, etc.)
Low-flow orifice functional?	*A/S*			
Trash rack (Debris removal needed? Corrosion noted?)	*A/S*			
Sediment buildup in riser?	*A*			
Concrete/masonry condition (Cracks or displacement? Spalling?)	*A*			
Metal pipe in good condition?	*A*			
Control valve operation?	*A*			
Pond drain valve operation?	*A*			
Outfall channels function, not eroding?	*A*			
Other (describe)	*A*			
Sediment Forebays				
Sedimentation description				
Sediment cleanout needed (over 50	*A/S*			

City of Franklin, Tn
Stormwater Division
615-791-3218

To be submitted as part of annual report to City

REV 2/2015

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
percent full)?				
Permanent Pool Areas (if applicable)				
Undesirable vegetation growth?	*A/M*			
Visible pollution?	*A/M*			
Shoreline erosion?	*A/M*			
Erosion at outfalls into pond?	*A/M*			
Headwalls and endwalls in good condition?	*A/M*			
Encroachment into pond or easement area by other activities?	*A/M*			
Evidence of sediment accumulation?	*A*			
Dry Pond Areas (if applicable)				
Vegetation adequate?	*A/M*			
Undesirable vegetation or woody plant growth?	*A/M*			
Excessive sedimentation?	*A*			
Hazards				
Have there been complaints from residents?	*A/M*			
Public hazards noted?	*A/M*			

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature)_____

Inspected by: (printed) _____

City of Franklin, Tn
Stormwater Division
615-791-3218

To be submitted as part of annual report to City

REV 2/2015

Storm Sewer Inspections and Maintenance Checklist

Site Name:_____ Owner Change since last inspection? Y N

Location: _____

Owner Name:_____

Address:_____ Phone Number: _____

Site Status: _____

Date:_____ Time:_____ Site conditions: _____

Indicate Features Present: Catch Basins ☐ Storm Pipe ☐ Headwalls ☐ Outfalls ☐ Catch Basin Inlets ☐

Inspection Frequency Key: A=annual; M=monthly; S=after major storms

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Catch Basins				
Ensure all are structurally sound and in good condition. Note any deficiencies and repair to proper working condition ensure all are set properly in place over inlets	*A/S*			
Check for sediment, leaf, or debris clogging grates and remove	*A/S*			
Catch Basin Inlets				
Ensure all are structurally sound and in good condition. Note any deficiencies and repair to proper working condition	*A/S*			
Inspect for blockage or sediment accumulation and remove when capacity is diminished by 20% or greater	*A/S*			
Pipes				
Ensure all are structurally sound and in good condition. Note any deficiencies and repair to proper working condition	*A/S*			
Inspect for blockage or sediment accumulation and remove when capacity is diminished by 20% or greater.	*A/S*			
Concrete/masonry condition of pipes and joints? (Cracks or displacement? Spalling?)	*A/S*			

City of Franklin, Tn
Stormwater Division
615-791-3218

To be submitted as part of annual report to City

REV 2/2015

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Headwalls and Endwalls				
Ensure all are structurally sound and in good condition. Note any deficiencies and repair to proper working condition	*A/S*			
Inspect for blockage or sediment	*A/S*			
Check for erosion or scouring around headwall inlets and repair	*A/S*			
Evidence of staining?	*A/S*			
If flowing water is present does it appear to contain anything other than stormwater? I.e. Discoloration, odors, sheens, etc? Note location and describe.	*A/S*			
Hazards				
Have there been complaints from residents?	*A/S*			

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature) _____

Inspected by: (printed) _____

City of Franklin, Tn
Stormwater Division
615-791-3218

To be submitted as part of annual report to City

REV 2/2015

Water Resource Buffers Inspection and Maintenance Checklist

Site Name:_____ Owner Change since last inspection? Y N

Location: _____

Owner Name: _____

Address:_____ Phone Number: _____

Site Status: _____

Date:_____ Time:_____ Site conditions: _____

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	
Disturbance				
Are there any signs of clearing, grading, construction, storage, mowing or other disturbance of vegetation or soil taken place in the buffer??	*A/M*			
Are there any signs of erosion within the buffer or banks of the stream?	*A/M*			
Are there any surrounding disturbances that might be threats to the buffer or water quality?	*A/M*			
Buffer State				
Would the general state of the buffer be described as an undisturbed native successional forest or similar?	*A/M*			
Are there any diseased, dying, or endangering trees in the buffer?	*A/M*			
Is the buffer contain more than 30% exotic invasive material?	*A/M*			
Signs				
Are buffer signs still clearly visible and in good legible condition? If not clear back vegetation or replace.	*A/M*			

City of Franklin, Tn
Stormwater Division
615-791-3218

To be submitted as part of annual report to City

REV 2/2015

Note: There shall be no clearing, grading, construction, storage or disturbance of vegetation or soil allowed in the Water Resource Buffer except as permitted by the City Engineer. There is to be no mowing of grass or cutting of trees in the buffers except for vegetation that is diseased, dying or in danger of adjacent structures. Report any of this in the comments section below.

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature)_____

Inspected by: (printed) _____

City of Franklin, Tn
Stormwater Division
615-791-3218

To be submitted as part of annual report to City

REV 2/2015

Water Quality Swale Inspections and Maintenance Checklist

Site Name:_____ Owner Change since last inspection? Y N

Location: _____

Owner Name: _____

Address:_____ Phone Number: _____

Site Status: _____

Date:_____ Time:_____ Site conditions: _____

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	
Pre-Treatment Area				
Area free of debris?	*A/M*			
Standing water longer than 24 hours after a storm event?	*A/S*			
Bare soil or erosion?	*M/S*			
Excessive landscape waste/yard clippings?	*A/M*			
Inlet/Outlet Structures				
Inlets provide stable conveyance into the facility?	*A*			
Evidence of erosion at or around inlet?	*A*			
If connected to extended detention, is outlet to pond functioning properly?	*A*			
Other	*A*			
Basin				
Adjacent area fully stabilized (no evidence of eroding material into Bioretention area)?	*A*			
Adequate media layer present?	*A*			
Plant composition according to approved plan?	*A*			
Invasive species/weeds present?	*A*			

City of Franklin, Tn
Stormwater Division
615-791-3218

To be submitted as part of annual report to City

REV 2/2015

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	
Dead vegetation or exposed soil present?	*A*			
Maintenance access to facility?	*A*			
Excessive trash/debris/sediment?	*A*			
Evidence of erosion?	*A*			
Evidence of standing water (Ponding, Noticeable Odors, Water Stains, Algae)?	*A/M*			
If underdrain system, is it broken or clogged?	*A/M*			
Overflow structure free of blockage and operating properly?	*A*			
Other	*A*			
Hazards				
Have there been complaints from residents?	*A/M*			
Public hazards noted?	*A/M*			
Mosquito proliferation?	*A/M*			
Is there encroachment on pervious area or easement by buildings or other structures?	*A/S*			

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature)_____

Inspected by: (printed) _____

APPENDIX D

UNDERGROUND DETENTION POND
PRODUCT INFORMATION

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	SANDY COLLINS-CAMARGO 859-421-6429 SANDY.CAMARGO@ADS-PIPE.COM
ADS SALES REP:	BRAIN MULLIGAN (615) 330-2307 BRIAN.MULLIGAN@ADS-PIPE.COM
PROJECT NO:	164760

ADVANCED DRAINAGE SYSTEMS, INC.

SUDSY'S CAR WASH

FRANKLIN, TN

STORMWATER CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-4500 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
   b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
   c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-4500 CHAMBER SYSTEM

1. STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS.
   STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm) MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-4500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

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PROPOSED LAYOUT

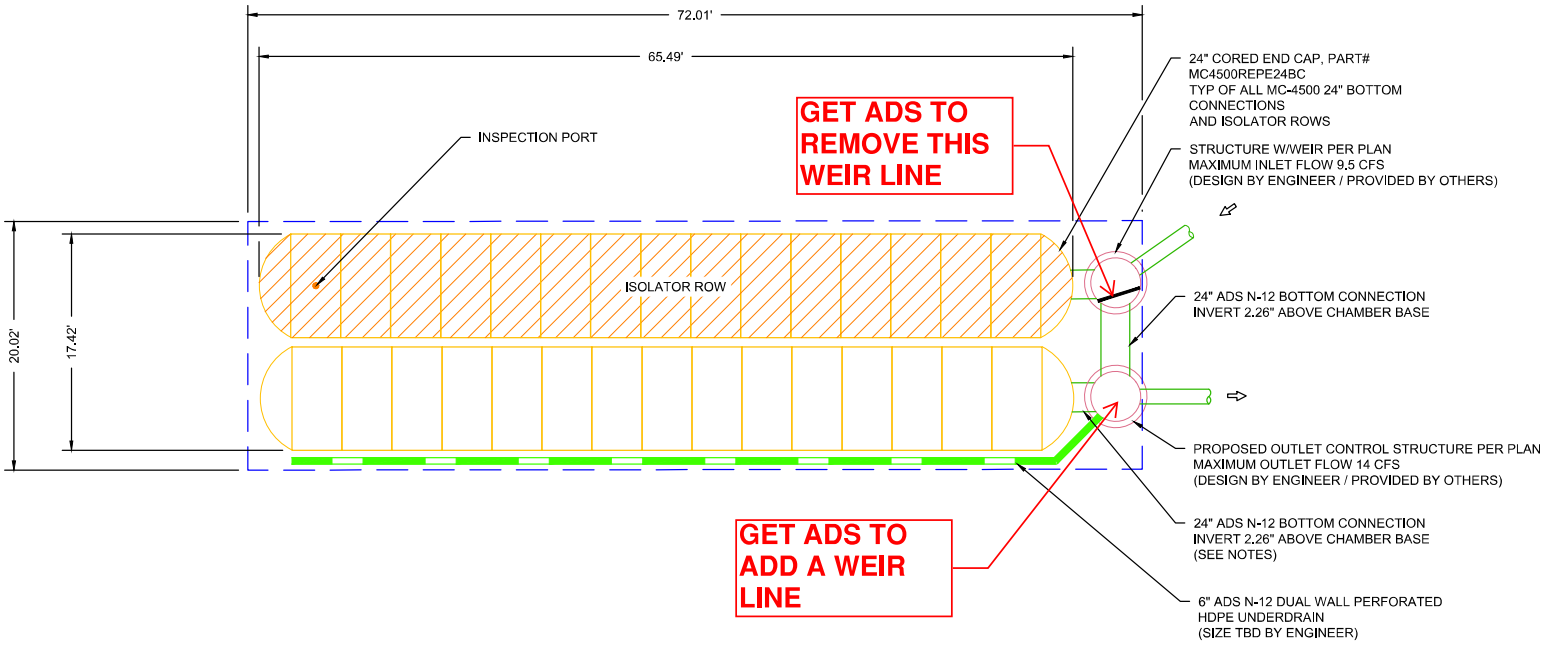
(30) STORMTECH MC-4500 CHAMBERS
(4) STORMTECH MC-4500 END CAPS
INSTALLED WITH 12" COVER STONE, 9" BASE STONE, 40% STONE VOID
INSTALLED SYSTEM VOLUME: 5,893 CF (PERIMETER STONE INCLUDED)
AREA OF SYSTEM: 1,441 FT²
PERIMETER OF SYSTEM: 184 FT

PROPOSED ELEVATIONS

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	32.65
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	28.15
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	27.65
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	27.65
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	27.65
TOP OF STONE:	26.65
TOP OF CHAMBER:	25.65
24" BOTTOM CONNECTION:	20.84
24" ISOLATOR ROW INVERT:	20.84
BOTTOM OF CHAMBER:	20.65
UNDERDRAIN INVERT:	19.90
BOTTOM OF STONE:	19.90

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH SHEET #7 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THE SITE DESIGN ENGINEER MUST REVIEW THE PROXIMITY OF THE CHAMBERS TO THE SLOPE AND CONSIDER EFFECTS OF POSSIBLE SATURATED SOILS ON THE SLOPE'S INTEGRITY.
- THIS PLAN REFLECTS THE CHAMBER SYSTEM DESIGN BY THE SITE DESIGN ENGINEER USING STORMTECH COMPONENTS. THE SUITABILITY OF THE CHAMBER SYSTEM TO MEET ANY FUNCTIONAL REQUIREMENTS ARE THE RESPONSIBILITY OF THE SITE DESIGN ENGINEER. STORMTECH'S SCOPE OF WORK IS LIMITED TO THE ASSEMBLED PRODUCT DIMENSIONS AND SPECIFICATIONS FOR INSTALLATION.



SUDSY'S CAR WASH
FRANKLIN, TN

DATE: 10-18-16 | DRAWN: LAH | CHECKED: KMS | PROJECT #: 164760

REV	DRW	CHK	DESCRIPTION

StormTech
Detention•Retention•Water Quality
70 INWOOD ROAD, SUITE 3 | ROCKY HILL | CT | 06067
860-529-8188 | 888-892-2694 | WWW.STORMTECH.COM

ADS
ADVANCED DRAINAGE SYSTEMS, INC.
4640 TRUEMAN BLVD
HILLIARD, OH 43026

0 10' 20'

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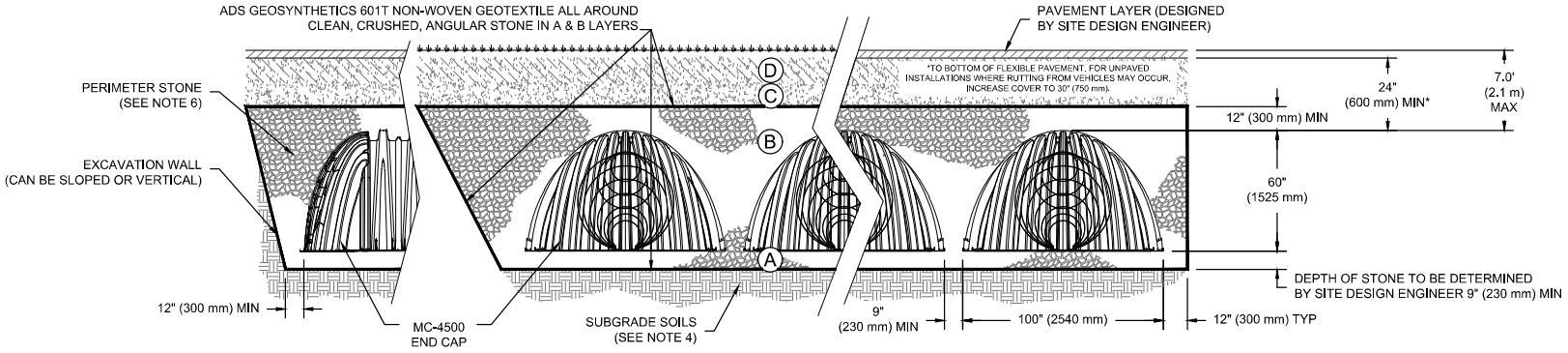
ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2 3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

1. MC-4500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.

SUDSY'S CAR WASH
FRANKLIN, TN

DATE: 10-18-16 | DRAWN: LAH
PROJECT #: 164760 | CHECKED: KMS

REV | DRW | CHK | DESCRIPTION

StormTech
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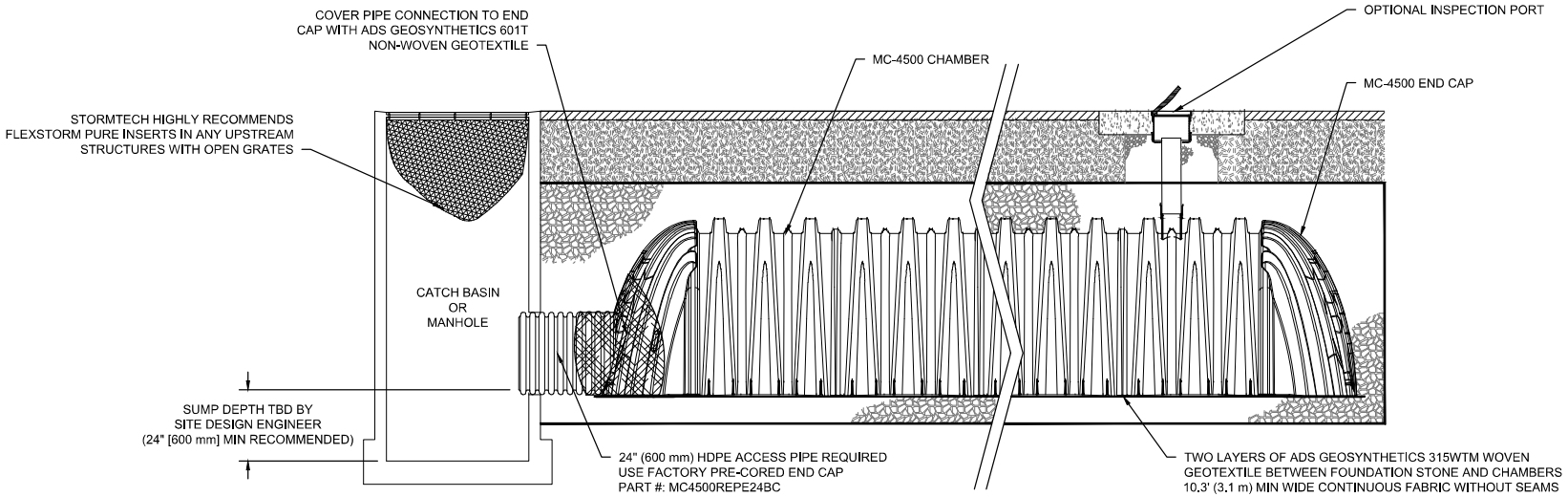


MC-4500 ISOLATOR ROW DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

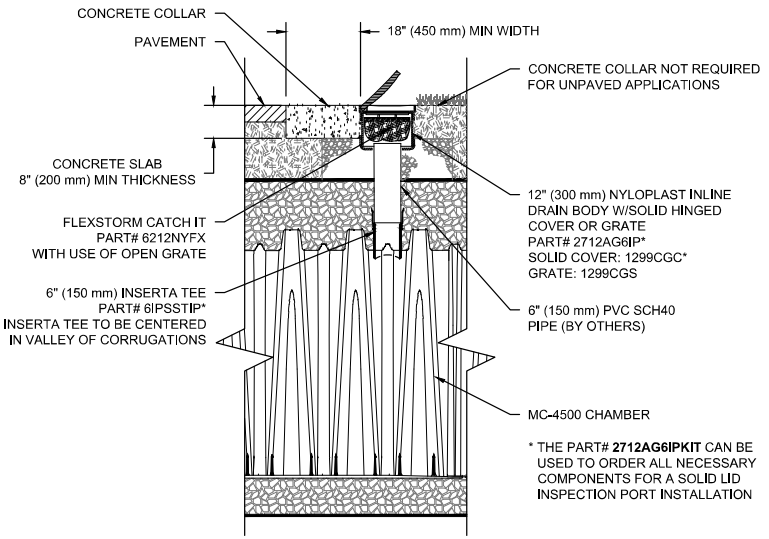
STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



MC-4500 6" INSPECTION PORT DETAIL
NTS

SUDSY'S CAR WASH
FRANKLIN, TN

DATE: 10-18-16 | DRAWN: LAH | PROJECT #: 164760 | CHECKED: KMS

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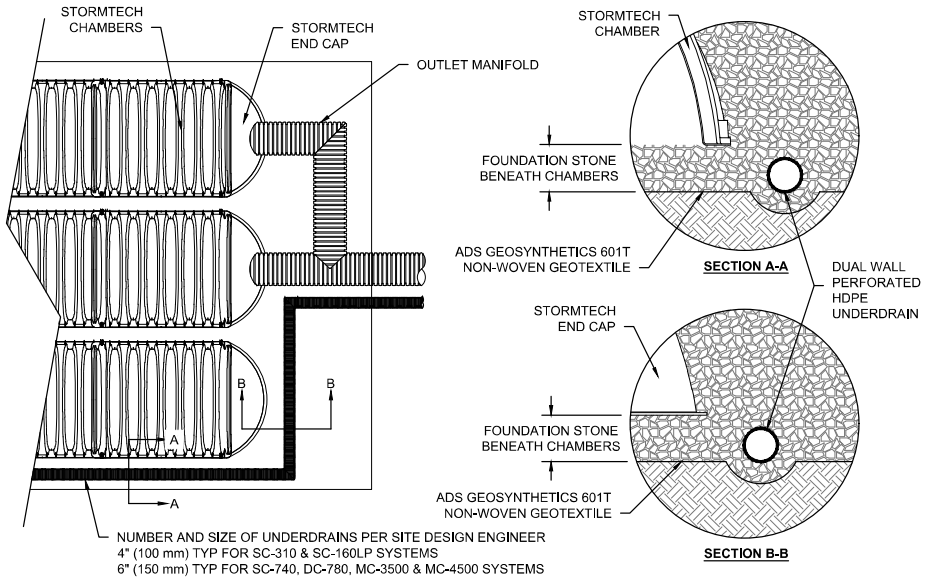
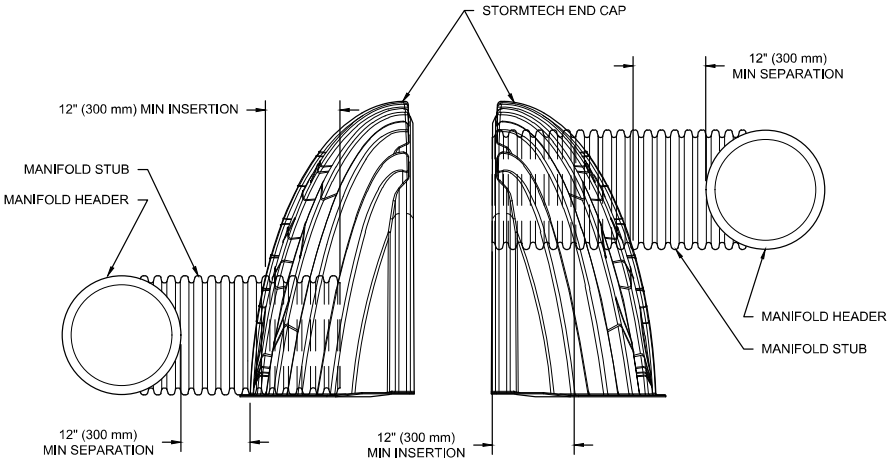
UNDERDRAIN DETAIL

NTS



MC-SERIES END CAP INSERTION DETAIL

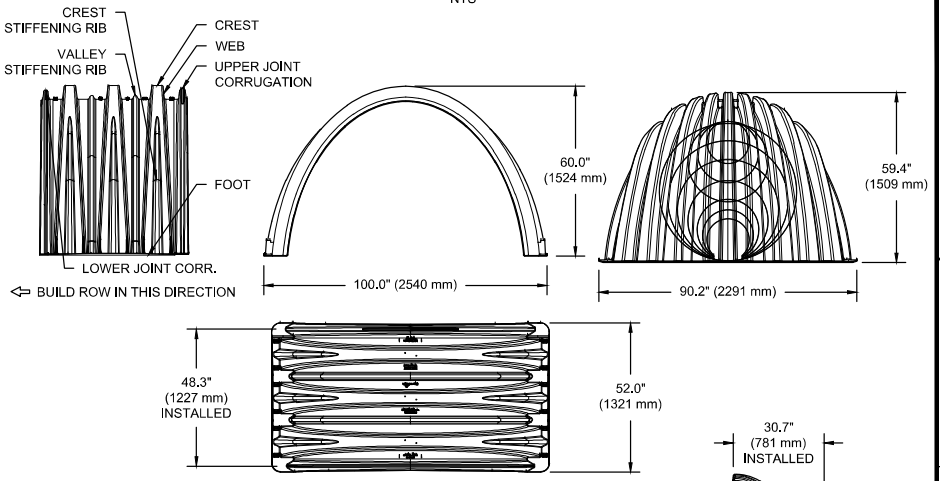
NTS



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-4500 TECHNICAL SPECIFICATION

NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 48.3"	(2540 mm X 1524 mm X 1227 mm)
CHAMBER STORAGE	106.5 CUBIC FEET	(3.01 m³)
MINIMUM INSTALLED STORAGE*	162.6 CUBIC FEET	(4.60 m³)
WEIGHT	130.0 lbs.	(59.0 kg)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	90.2" X 59.4" X 30.7"	(2291 mm X 1509 mm X 781 mm)
END CAP STORAGE	35.7 CUBIC FEET	(1.01 m³)
MINIMUM INSTALLED STORAGE*	108.7 CUBIC FEET	(3.08 m³)
WEIGHT	135.0 lbs.	(61.2 kg)

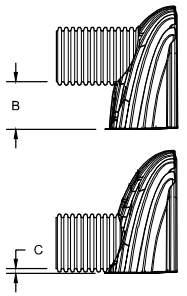
*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	B	C
MC4500REPE06T	6" (150 mm)	42.54" (1.081 m)	---
MC4500REPE06B		---	0.86" (22 mm)
MC4500REPE08T	8" (200 mm)	40.50" (1.029 m)	---
MC4500REPE08B		---	1.01" (26 mm)
MC4500REPE10T	10" (250 mm)	38.37" (975 mm)	---
MC4500REPE10B		---	1.33" (34 mm)
MC4500REPE12T	12" (300 mm)	35.69" (907 mm)	---
MC4500REPE12B		---	1.55" (39 mm)
MC4500REPE15T	15" (375 mm)	32.72" (831 mm)	---
MC4500REPE15B		---	1.70" (43 mm)
MC4500REPE18TC	18" (450 mm)	29.36" (746 mm)	---
MC4500REPE18BC		---	1.97" (50 mm)
MC4500REPE24TC	24" (600 mm)	23.05" (585 mm)	---
MC4500REPE24BC		---	2.26" (57 mm)
MC4500REPE30BC	30" (750 mm)	---	2.95" (75 mm)
MC4500REPE36BC	36" (900 mm)	---	3.25" (83 mm)
MC4500REPE42BC	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS.
CUSTOM INVERT LOCATIONS ON THE MC-4500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm)
THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.



SUDSY'S CAR WASH
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REV	DRW	CHK	DESCRIPTION

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StormTech®

Detention • Retention • Water Quality

A division of ADS

Save Valuable Land and Protect Water Resources

Isolator® Row O&M Manual

StormTech® Chamber System for Stormwater Management

1.0 The Isolator® Row

1.1 INTRODUCTION

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row is a patented technique to inexpensively enhance Total Suspended Solids (TSS) removal and provide easy access for inspection and maintenance.

Looking down the Isolator Row from the manhole opening, woven geotextile is shown between the chamber and stone base.

1.2 THE ISOLATOR ROW

The Isolator Row is a row of StormTech chambers, either SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-4500 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as storm water rises in the Isolator Row and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC-310-3 and SC-740 models) allow storm water to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

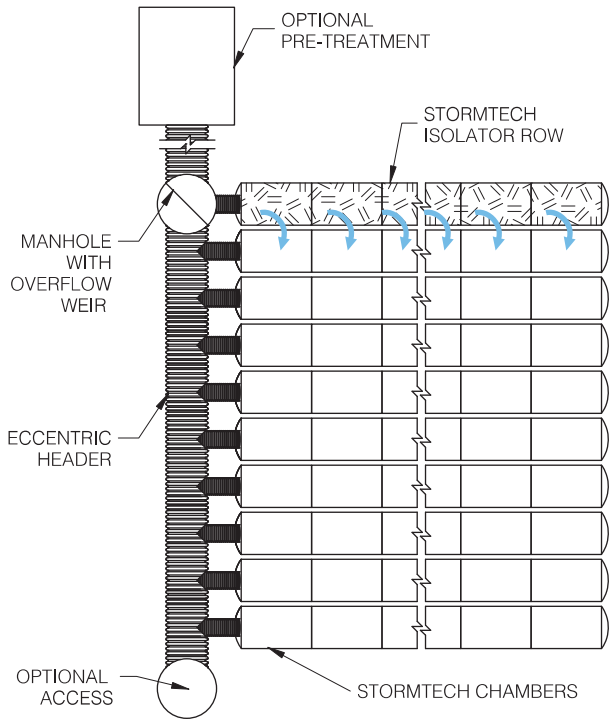
Two different fabrics are used for the Isolator Row. A woven geotextile fabric is placed between the stone and the Isolator Row chambers. The tough geotextile provides a media for storm water filtration and provides a durable surface for maintenance operations. It is also designed to prevent scour of the underlying stone and remain intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the perforations in the sidewall of the chamber. The non-woven fabric is not required over the DC-780, MC-3500 or MC-4500 models as these chambers do not have perforated side walls.

The Isolator Row is typically designed to capture the "first flush" and offers the versatility to be sized on a volume basis or flow rate basis. An upstream manhole not only provides access to the Isolator Row but typically includes a high flow weir such that storm water flowrates or volumes that exceed the capacity of the Isolator Row overtop the over flow weir and discharge through a manifold to the other chambers.

The Isolator Row may also be part of a treatment train. By treating storm water prior to entry into the chamber system, the service life can be extended and pollutants such as hydrocarbons can be captured. Pre-treatment best management practices can be as simple as deep sump catch basins, oil-water separators or can be innovative storm water treatment devices. The design of the treatment train and selection of pretreatment devices by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, the Isolator Row is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.

StormTech Isolator Row with Overflow Spillway
(not to scale)



2.0 Isolator Row Inspection/Maintenance

2.1 INSPECTION

The frequency of Inspection and Maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

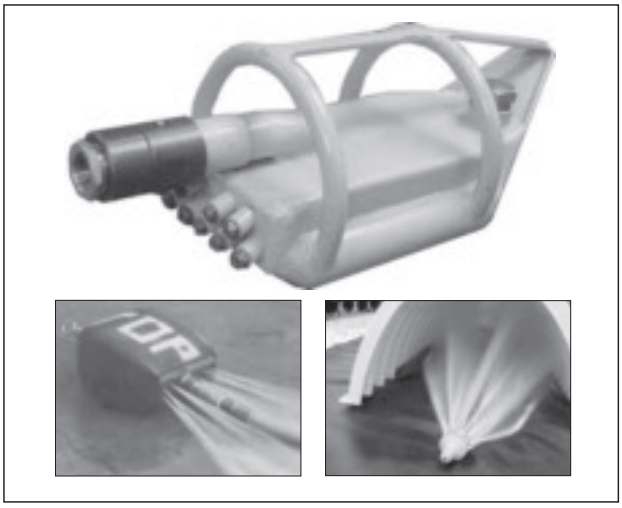
At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

2.2 MAINTENANCE

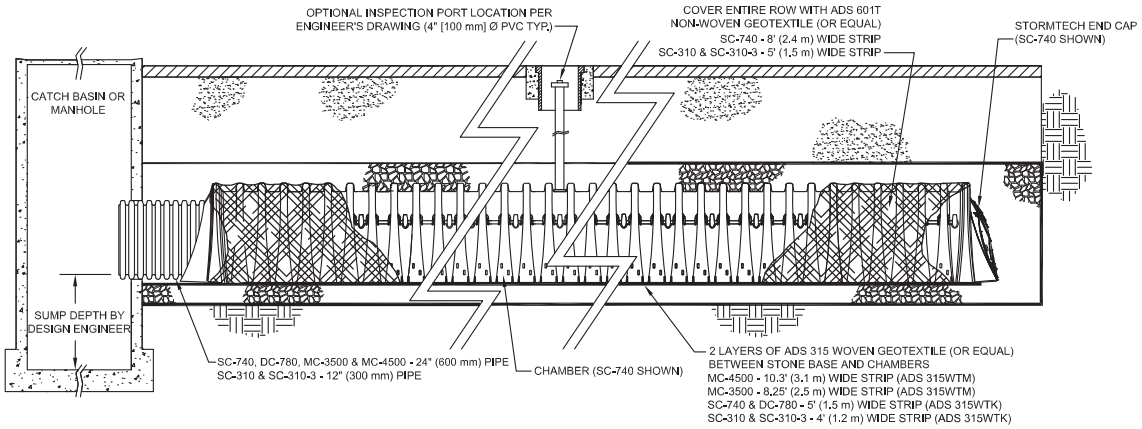
The Isolator Row was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.



Examples of culvert cleaning nozzles appropriate for Isolator Row maintenance. (These are not StormTech products.)

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45" are best. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row up to 50 chambers long. **The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.**

StormTech Isolator Row (not to scale)



NOTE: NON-WOVEN FABRIC IS ONLY REQUIRED OVER THE INLET PIPE CONNECTION INTO THE END CAP FOR DC-780, MC-3500 AND MC-4500 CHAMBER MODELS AND IS NOT REQUIRED OVER THE ENTIRE ISOLATOR ROW.

3.0 Isolator Row Step By Step Maintenance Procedures

Step 1) Inspect Isolator Row for sediment

A) Inspection ports (if present)

i. Remove lid from floor box frame

ii. Remove cap from inspection riser

iii. Using a flashlight and stadia rod, measure depth of sediment and record results on maintenance log.

iv. If sediment is at, or above, 3 inch depth proceed to Step 2. If not proceed to step 3.

B) All Isolator Rows

i. Remove cover from manhole at upstream end of Isolator Row

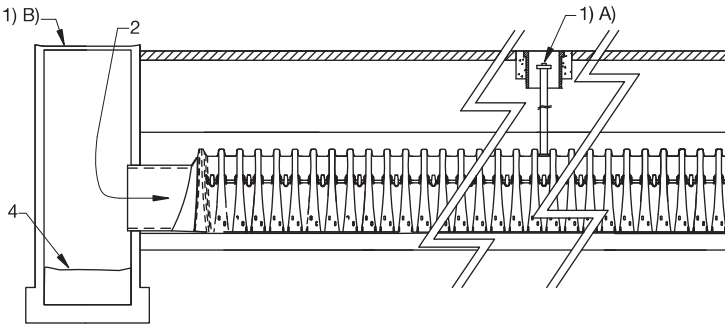
ii. Using a flashlight, inspect down Isolator Row through outlet pipe

1. Mirrors on poles or cameras may be used to avoid a confined space entry

2. Follow OSHA regulations for confined space entry if entering manhole

iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches) proceed to Step 2. If not proceed to Step 3.

StormTech Isolator Row (not to scale)



Step 2) Clean out Isolator Row using the JetVac process

A) A fixed culvert cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable

B) Apply multiple passes of JetVac until backflush water is clean

C) Vacuum manhole sump as required

Step 3) Replace all caps, lids and covers, record observations and actions

Step 4) Inspect & clean catch basins and manholes upstream of the StormTech system

Sample Maintenance Log

Date	Stadia Rod Readings		Sediment Depth (1) - (2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/01	6.3 ft.	none		New installation. Fixed point is CI frame at grade	djm
9/24/01		6.2	0.1 ft.	Some grit felt	sm
6/20/03		5.8	0.5 ft.	Mucky feel, debris visible in manhole and in Isolator row, maintenance due	rv
7/7/03	6.3 ft.		0	System jetted and vacuumed	djm

StormTech®

Detention • Retention • Water Quality

A division of ADS

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APPENDIX E-Permanent SCM Inspection and Maintenance Checklists

City of Hendersonville
Public Works Department
615-822-1016

Submit with annual report
Annual report due July 1
Submit to Stormwater Coordinator

Bioretention Inspections and Maintenance Checklist

Site Name:_____ Owner Change since last inspection?

Location: _____

Owner Name: _____

Address:_____ Phone Number: _____

Site Status: _____

Date:_____ Time:_____ Site conditions: _____

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Pre-Treatment Area				
Area free of debris?	*A/M*			
Standing water longer than 24 hours after a storm event?	*A/S*			
Bare soil or erosion?	*M/S*			
Excessive landscape waste/yard clippings?	*A/M*			
Inlet/Outlet Structures				
Inlets provide stable conveyance into the facility?	*A*			
Evidence of erosion at or around inlet?	*A*			
If connected to extended detention, is outlet to pond functioning properly?	*A*			
Other	*A*			
Basin				
Adjacent area fully stabilized (no evidence of eroding material into Bioretention area)?	*A*			
Plant height not less than design ponding depth?	*A*			
Adequate media layer present?	*A*			
Plant composition according to approved plan?	*A*			
Is there any sign of mowing or disturbance?	*A/M*			
Vegetation overgrown?	*A*			
Invasive species/weeds present?	*A*			

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Dead vegetation or exposed soil present?	*A*			
Maintenance access to facility?	*A*			
Excessive trash/debris/sediment?	*A*			
Evidence of erosion?	*A*			
Evidence of standing water (Ponding, Noticeable Odors, Water Stains, Algae)?	*A/M*			
If underdrain system, is it broken or clogged?	*A/M*			
Overflow structure free of blockage and operating properly?	*A*			
Other	*A*			
Hazards				
Have there been complaints from residents?	*A/M*			
Public hazards noted?	*A/M*			
Mosquito proliferation?	*A/M*			
Is there encroachment on pervious area or easement by buildings or other structures?	*A/S*			

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	**Due Date**

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature)_____
Inspected by: (printed) _____

City of Hendersonville
Public Works Department
615-822-1016

Submit with Annual Report
Annual Report due July 1
Submit to Stormwater Coordinator

Downspout Disconnection Inspections and Maintenance Checklist

Site Name:_____ Owner Change since last inspection?

Location: _____

Owner Name:_____

Address:_____ Phone Number: _____

Site Status: _____

Date:_____ Time:_____ Site conditions: _____

Disconnection Type: Soil Amendment ☐ Infiltration Trench ☐ Bioretention ☐
Rainwater Harvesting ☐ Stormwater Planter ☐ Simple Disconnection ☐

Note: Disconnection Type should also be evaluated per the appropriate Checklist located in this Appendix.
Inspection Frequency Key: A=annual; M=monthly; S=after major storms

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Pipes, Gutters, and Drains				
Downspouts provide stable conveyance into facility?	*A/S*			
Runoff enters pervious area as sheet flow?	*A/S*			
Excessive trash/debris/sediment/oil/chemicals accumulation at inflow points?	*A/S*			
Evidence of erosion at/around inflow points?	*A/S*			
Disconnection Treatment				(describe type: concrete pipe, slotted weir, channel, etc.)
Downspouts or surface impervious area drains to the receiving pervious area?	*A/S*			
Receiving treatment area retains dimensions as shown on plans and is in good condition?	*A/S*			
Sediment accumulation?	*A*			
Is erosion at simple disconnection, bioretention, filter paths, or planter present?	*A*			
Evidence of standing water (Ponding, Noticeable Odors, Water Stains, Algae)?	*A*			
Is vegetation in place?	*A*			
Is plant composition consistent with	*A*			

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
approved plans?				
Are invasive species/weeds present?	*A*			
Is dead vegetation or exposed soil present?	*A*			
Other (describe)	*A*			
Contributing Drainage Area-Rooftop				
Treatment area retains dimensions as shown on plans and is in good condition?				
Is there encroachment on pervious area or easement by buildings or other structures?	*A/S*			
Hazards				
Have there been complaints from residents?	*M*			
Public hazards noted?	*M*			

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature) _____

Inspected by: (printed) _____

City of Hendersonville
Public Works Department
615-822-1016

Submit with Annual Report
Annual Report due July 1
Submit to Stormwater Coordinator

Grass Channel Inspections and Maintenance Checklist

Site Name:_____ Owner Change since last inspection?

Location: _____

Owner Name:_____

Address:_____ Phone Number: _____

Site Status: _____

Date:_____ Time:_____ Site conditions: _____

Inspection Frequency Key: A=annual; M=monthly; S=after major storms

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Debris Removal				
Facility and adjacent area free of debris?	*M*			
Inlets and outlets free of debris?	*M*			
Any dumping of yard wastes into facility?	*M*			
Litter (branches) removed?	*M*			
Vegetation				
Surrounding area fully stabilized? (no evidence of eroding material into swale, channel or filter strip)	*M*			
Grass mowed?	*M*			
Grass height not less than 3 to 4 inches?	*M*			
Fertilized per specifications?	*M*			
Grasses planted according to approved plan?	*M*			
Unauthorized or inappropriate plantings?	*A*			
Grasses healthy? (no diseased or dying vegetation)	*M*			
Evidence of grasses stressed from inadequate watering?	*M*			
Filtration Capacity				
Clogging from oil or grease?	*M*			
Facility dewaters between storms?	*M*			
Check dams and energy dissipaters/sumps				
Any evidence of sedimentation buildup?	*A,S*			
Are sumps greater than 50% full of sediment?	*A,S*			

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Any evidence of erosion and downstream toe of drop structures?	*A,S*			
Any trash or blockages at weep holes?	*A,S*			
Sediment Deposition				
Swale clean of sediments?	*A*			
Sediment not > 25% of swale design depth?	*A*			
Outlet/Overflow Spillway				
In good condition?	*A*			
Any evidence of erosion?	*A*			
Any evidence of blockages?	*A*			
Has facility been filled or blocked inappropriately?	*A*			
Hazards				
Have there been complaints from residents?	*M*			
Public hazards noted?	*M*			
Maintenance accesses free of hazards and fully operational?	*M*			

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	**Due Date**

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature) _____
Inspected by: (printed) _____

City of Hendersonville
Public Works Department
615-822-1016

Submit with Annual Report
Annual Report due July 1
Submit to Stormwater Coordinator

Infiltration Trench Inspections and Maintenance Checklist

Site Name:_____ Owner Change since last inspection?

Location: _____

Owner Name:_____

Address_____ Phone Number_____

Site Status: _____

Date:_____ Time:_____ Site conditions: _____

Inspection Frequency Key: A=annual; M=monthly; S=after major storms

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Debris Removal				
Trench surface clear of debris?	*M*			
Contributing area free of debris?	*M*			
Inlets/Inflow pipes free of debris?	*M*			
Overflow spillway clear of debris?	*M*			
Vegetation				
Mowing done when necessary?	*M*			
Unauthorized or inappropriate plantings?	*A*			
Fertilized per specification?	*M*			
Evidence of erosion?	*M*			
Contributing drainage area stabilized?	*M*			
Trees growing in the trench?	*A*			
Dewatering				
Trench dewaters between storms?	*M*			
Sediment traps, forebays, or pretreatment swales				
Adequately trapping sediment?	*A*			
Structural damage?	*A*			
Greater than 50% of original storage volume remaining?	*A*			
Sediment removal of trench				
Any evidence of sedimentation in trench?	*A*			
Are pea gravel/topsoil and top surface filter fabric functioning properly?	*M*			
Does sediment accumulation currently require removal?	*A*			

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Inlets				
Good condition (no need for repair)?	*A*			
Evidence of erosion?	*A*			
Outlets/overflow spillway				
Good condition (no need for repair)?	*A*			
Evidence of erosion?	*A*			
Aggregate repairs				
Surface of aggregate clean?	*A*			
Top layer of stone in need of replacement?	*A*			
Trench in need of rehabilitation?	*A*			
Observation wells				
Evidence of clogging/failure to percolate? (Should percolate within 3 days.)	*M*			
Has drawdown rate been measured at observation well and is well capped?	*A*			
Hazards				
Have there been complaints from residents?	*M*			
Public hazards noted?	*M*			

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature) _____

Inspected by: (printed) _____

City of Hendersonville
Public Works Department
615-822-1016

Submit with Annual Report
Annual Report due July 1
Submit to Stormwater Coordinator

Permeable Pavement Inspection and Maintenance Checklist

Site Name:_____ Owner Change since last inspection?

Location: _____

Owner Name:_____

Address:_____ Phone Number:_____

Site Status: _____

Date:_____ Time:_____ Site conditions:_____

*****Conduct maintenance inspection in the spring of each year.

Pavement Type: ☐ Pervious Concrete/Asphalt ☐ Modular Pavers ☐ Grass/Gravel Pavers

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Pavement Area				
Pavement area free of debris?	*A/M*			
Staining or sediment?	*A/M*			
Inlets and outlets unobstructed and sediment free?	*A/M*			
All contributing drainage area free of erosion and sources of sediment?	*A/M*			
Water standing after a storm event?	*S*			
Any evidence of clogged pores that require vacuum-sweeping?	*A/M*			
Has area been vacuum swept in the past 12 months?	*A/M*			
Access to pervious pavement (egress and ingress routes) safe and efficient?	*A/M*			
Has drawdown rate been measured at observation well and is well capped?*	*A*			
Structural integrity of the pavement intact? Look for deterioration such as: slumping, cracking, spalling, or broken pavers.	*A/M*			
Grass Pavers				
Paver area stabilized/fully vegetated?	*A/M*			

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Adjacent area fully stabilized (no evidence of eroding material onto/from pervious pavement area)?	*A/M*			
Any noticeable irrigation needs?	*A/M*			
Fallen leaves/plant debris collecting in paving area?	*A/M*			
Grass height over 4 inches?	*A/M*			
Vegetation health affected by oil/grease from vehicles?	*A*			
Other	*A*			
Hazards				
Obstructions or debris affecting overflows/emergency spillways?	*A/M*			
Load-bearing capability of pavement intact?	*A/M*			

*Refer to the most current Tennessee Permanent Stormwater Management and Design Guidance Manual for further guidance.

Inspector Comments: _____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature) _____

Inspected by: (printed) _____

City of Hendersonville
Public Works Department
615-822-1016

Submit with Annual Report
Annual Report due July 1
Submit to Stormwater Coordinator

Stormwater Pond Inspections and Maintenance Checklist

Site Name:_____ Owner Change since last inspection?

Location: _____

Owner Name: _____

Address:_____ Phone Number: _____

Site Status: _____

Date:_____ Time:_____ Site conditions: _____

Stormwater Pond Type: Wet Pond ☐ Wet Extended Detention Pond ☐ Micropool Pond ☐
Multiple Pond System ☐ Dry Pond ☐

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Embankment and Emergency Spillway				
Vegetation healthy?	*A/S*			
Erosion on embankment?	*A/S*			
Animal burrows in embankment?	*A/S*			
Cracking, sliding, bulging of dam?	*A/S*			
Drains blocked or not functioning?	*A/S*			
Leaks or seeps on embankment?	*A/S*			
Slope protection failure functional?	*A/S*			
Emergency spillway obstructed?	*A/S*			
Erosion in/around emergency spillway?	*A/S*			
Other (describe)	*A/S*			
Outlet Structure, Riser, and Spillway				(describe type: concrete pipe, slotted weir, channel, etc.)
Low-flow orifice functional?	*A/S*			
Trash rack (Debris removal needed? Corrosion noted?)	*A/S*			
Sediment buildup in riser?	*A*			
Concrete/masonry condition (Cracks or displacement? Spalling?)	*A*			
Metal pipe in good condition?	*A*			
Control valve operation?	*A*			
Pond drain valve operation?	*A*			
Outfall channels function, and are free of erosion, undercutting, rip-rap displacement, wood growth, etc?	*A*			
Other (describe)	*A*			
Sediment Forebays				
Sedimentation description				
Sediment cleanout needed (over 50 % full)	*A/S*			

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Contributing Drainage Area				
Banks upstream and downstream free of sloughing , animal burrows, boggy areas, woody growth and gully erosion?	*A/M*			
Excessive trash, debris, erosion or landscaping waste?	*A/M*			
Permanent Pool Areas (if applicable)				
Undesirable vegetation growth?	*A/M*			
Visible pollution?	*A/M*			
Shoreline erosion?	*A/M*			
Erosion at outfalls into pond?	*A/M*			
Headwalls and endwalls in good condition?	*A/M*			
Encroachment into pond or easement area by other activities?	*A/M*			
Evidence of sediment accumulation?	*A*			
Dry Pond Areas (if applicable)				
Vegetation adequate?	*A/M*			
Undesirable vegetation or woody plant growth?	*A/M*			
Excessive sedimentation?	*A*			
Hazards				
Have there been complaints from residents?	*A/M*			
Public hazards noted?	*A/M*			
Maintenance accesses free of hazards and fully operational?	*A/M*			

Inspector Comments: _____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature) _____

Inspected by: (printed) _____

City of Hendersonville
Public Works Department
615-822-1016

Submit with Annual Report
Annual Report due July 1
Submit to Stormwater Coordinator

Storm Sewer Inspections and Maintenance Checklist

Site Name:_____ Owner Change since last inspection?

Location: _____

Owner Name:_____

Address:_____ Phone Number: _____

Site Status: _____

Date:_____ Time:_____ Site conditions: _____

Indicate Features Present: Catch Basins ☐ Storm Pipe ☐ Headwalls ☐ Outfalls ☐ Catch Basin Inlets ☐

Inspection Frequency Key: A=annual; M=monthly; S=after major storms

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Catch Basins				
Ensure all are structurally sound and in good condition. Note any deficiencies and repair to proper working condition ensure all are set properly in place over inlets	*A/S*			
Check for sediment, leaf, or debris clogging grates and remove	*A/S*			
Catch Basin Inlets				
Ensure all are structurally sound and in good condition. Note any deficiencies and repair to proper working condition	*A/S*			
Inspect for blockage or sediment accumulation and remove when capacity is diminished by 20% or greater	*A/S*			
Pipes				
Ensure all are structurally sound and in good condition. Note any deficiencies and repair to proper working condition	*A/S*			
Inspect for blockage or sediment accumulation and remove when capacity is diminished by 20% or greater.	*A/S*			
Concrete/masonry condition of pipes and joints? (Cracks or displacement? Spalling?)	*A/S*			

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Headwalls and Endwalls				
Ensure all are structurally sound and in good condition. Note any deficiencies and repair to proper working condition	*A/S*			
Inspect for blockage or sediment	*A/S*			
Check for erosion or scouring around headwall inlets and repair	*A/S*			
Evidence of staining?	*A/S*			
If flowing water is present does it appear to contain anything other than stormwater? I.e. Discoloration, odors, sheens, etc? Note location and describe.	*A/S*			
Hazards				
Have there been complaints from residents?	*A/S*			

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature) _____
Inspected by: (printed) _____

City of Hendersonville
Public Works Department
615-822-1016

Submit with Annual Report
Annual Report due July 1
Submit to Stormwater Coordinator

Water Quality Riparian Buffers Inspection and Maintenance Checklist

Site Name:_____ Owner Change since last inspection?

Location: _____

Owner Name: _____

Address:_____ Phone Number: _____

Site Status: _____

Date:_____ Time:_____ Site conditions: _____

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	
Disturbance				
Are there any signs of clearing, grading, construction, storage, mowing or other disturbance of vegetation or soil taken place in the buffer??	*A/M*			
Are there any signs of erosion within the buffer or banks of the stream?	*A/M*			
Are there any surrounding disturbances that might be threats to the buffer or water quality?	*A/M*			
Buffer State				
Would the general state of the buffer be described as an undisturbed native successional forest or similar?	*A/M*			
Are there any diseased, dying, or endangering trees in the buffer?	*A/M*			
Is the buffer contain more than 30% exotic invasive material?	*A/M*			
Signs				
Are buffer signs still clearly visible and in good legible condition? If not clear back vegetation or replace.	*A/M*			

Note: There shall be no clearing, grading, construction, storage or disturbance of vegetation or soil allowed in the Water Quality Riparian Buffer except as permitted by the City Engineer. There is to be no mowing of grass or cutting of trees in the buffers except for vegetation that is diseased, dying or in danger of adjacent structures. Report any of this in the comments section below.

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature)_____
Inspected by: (printed) _____

City of Hendersonville
Public Works Department
615-822-1016

Submit with Annual Report
Annual Report due July 1
Submit to Stormwater Coordinator

Water Quality Swale Inspections and Maintenance Checklist

Site Name:_____ Owner Change since last inspection?

Location: _____

Owner Name: _____

Address:_____ Phone Number: _____

Site Status: _____

Date:_____ Time:_____ Site conditions: _____

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	
Pre-Treatment Area				
Area free of debris?	*A/M*			
Standing water longer than 24 hours after a storm event?	*A/S*			
Bare soil or erosion?	*M/S*			
Excessive landscape waste/yard clippings?	*A/M*			
Inlet/Outlet Structures				
Inlets provide stable conveyance into the facility?	*A*			
Evidence of erosion at or around inlet?	*A*			
If connected to extended detention, is outlet to pond functioning properly?	*A*			
Other	*A*			
Basin				
Adjacent area fully stabilized (no evidence of eroding material into Bioretention area)?	*A*			
Adequate media layer present?	*A*			
Plant composition according to approved plan?	*A*			
Invasive species/weeds present?	*A*			

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	
Dead vegetation or exposed soil present?	*A*			
Maintenance access to facility?	*A*			
Excessive trash/debris/sediment?	*A*			
Evidence of erosion?	*A*			
Evidence of standing water (Ponding, Noticeable Odors, Water Stains, Algae)?	*A/M*			
If underdrain system, is it broken or clogged?	*A/M*			
Overflow structure free of blockage and operating properly?	*A*			
Other	*A*			
Hazards				
Have there been complaints from residents?	*A/M*			
Public hazards noted?	*A/M*			
Mosquito proliferation?	*A/M*			
Is there encroachment on pervious area or easement by buildings or other structures?	*A/S*			

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	**Due Date**

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature) _____
Inspected by: (printed) _____

City of Hendersonville
Public Works Department
615-822-1016

Submit with Annual Report
Annual Report due July 1
Submit to Stormwater Coordinator

Proprietary BMP Inspections and Maintenance Checklist

Site Name:_____ Owner Change since last inspection?

Location: _____

Owner Name:_____

Address_____ Phone Number_____

Site Status: _____

Date:_____ Time:_____ Site conditions: _____

Inspection Frequency Key: A=annual; M=monthly; S=after major storms

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Debris Removal				
Adjacent area free of debris?	*M*			
Inlets and Outlets free of debris?	*M*			
Facility (internally) free of debris?	*M*			
Vegetation				
Surrounding area fully stabilized? (no evidence of eroding material into proprietary BMP)				
Grass mowed?	*M*			
Water retention where required				
Water holding chambers at normal pool?	*M*			
Evidence of erosion?				
Sediment Deposition				
Filtration Chamber free of sediments?	*A*			
Sedimentation chamber not more than 50% full?	*A*			
Structural Components				
Any evidence of structural deterioration?	*A*			
Grates in good condition?	*A*			
Spalling or cracking of structural parts?	*A*			
Outlet/Overflow Spillway	*A*			
Other				
Noticeable odors?	*A*			
Any evidence of filter(s) clogging?	*M*			
Evidence of flow bypassing facility?	*A*			

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature) _____
Inspected by: (printed) _____

City of Hendersonville
Public Works Department
615-822-1016

Submit with Annual Report
Annual Report due July 1
Submit to Stormwater Coordinator

Constructed Wetlands Inspections and Maintenance Checklist

Site Name:_____ Owner Change since last inspection?

Location: _____

Owner Name:_____

Address_____Phone Number_____

Site Status: _____

Date:_____Time:_____Site conditions: _____

Constructed Wetland Type: ED Wetland ☐ Pocket Wetland ☐ Wetland ☐

Inspection Frequency Key: A=annual; M=monthly; S=after major storms

Inspection Items	**Inspection Frequency**	**Inspected? (Yes/No)**	**Maintenance Needed? (Yes/No)**	**Comments/Description**
Embankment and Emergency Spillway				
Vegetation healthy?	*A/S*			
Erosion on embankment?	*A/S*			
Animal burrows in embankment?	*A/S*			
Cracking, sliding, bulging of dam?	*A/S*			
Drains blocked or not functioning?	*A/S*			
Leaks or seeps on embankment?	*A/S*			
Slope protection failure functional?	*A/S*			
Emergency spillway obstructed?	*A/S*			
Erosion in/around emergency spillway?	*A/S*			
Other (describe)	*A/S*			
Riser and Principal Spillway				(describe type: concrete pipe, slotted weir, channel, etc.)
Low-flow orifice functional?	*A/S*			
Trash rack (Debris removal needed? Corrosion noted?)	*A/S*			
Sediment buildup in riser?	*A*			
Concrete/masonry condition (Cracks or displacement? Spalling?)	*A*			
Metal pipe in good condition?	*A*			
Control valve operation?	*A*			
Pond drain valve operation?	*A*			
Outfall channels function, not eroding?	*A*			
Other (describe)	*A*			

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Sediment Forebays				
Sedimentation description				
Sediment cleanout needed (over 50 percent full)?	*A/S*			
Constructed Wetland Ponding Areas				
Wetland vegetation present and healthy?	*M*			
Vegetation removal needed?	*A/M*			
Floatable debris removal needed?	*M*			
Visible pollution?	*M*			
Shoreline problem?	*M*			
Erosion at outfalls into pond?	*M*			
Headwalls and endwalls in good condition?	*M*			
Encroachment into pond or easement area?	*M*			
Hazards				
Have there been complaints from residents?	*M*			
Public hazards noted?	*M*			

Inspector Comments:_____

_____

_____

_____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature) _____
Inspected by: (printed) _____

APPENDIX G

MUNICIPAL FACILITIES OPERATION AND MAINTENANCE PLANS

COLLECTIVE FACILITIES

FIRE DEPARTMENT

PARKS DEPARTMENT

POLICE DEPARTMENT

ROAD DEPARTMENT

STORMWATER OPERATION & MAINTENANCE PLAN

COLLECTIVE FACILITIES:
CITY HALL
BATEY HOUSE
SENIOR CITIZENS CENTER
SANDERS FERRY SHOP

Prepared For:

CITY OF HENDERSONVILLE

Prepared By:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
NASHVILLE, TENNESSEE

CEC Project 192-267

FEBRUARY 2021

Civil & Environmental Consultants, Inc.

Nashville 117 Seaboard Lane, Suite E100 | Franklin, TN 37067 | p: 615-333-7797 f: 615-333-7751 | www.cecinc.com

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APPENDICES

1.0 INTRODUCTION

1.1 PURPOSE

The Stormwater Operations & Maintenance (O&M) Plan has been prepared for the City of Hendersonville's (City) City Hall, Batey House, Senior Citizens Center and Sanders Ferry Shop to address stormwater pollution prevention and good housekeeping in accordance with the Tennessee Department of Environment and Conservation (TDEC) National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) Permit No. TNS000000. The City's NPDES General Permit for Discharges from MS4s is Permit No. TNS075353.

1.2 PERMIT REQUIREMENTS

Section 4.2 of the Tennessee NPDES General Permit for MS4s, Permit No. TNS000000, addresses minimum controls required to be implemented by the Permittee. Section 4.2.6 "Pollution Prevention/Good Housekeeping for Municipal Operations" states the following:

> *The permittee must develop an operation and maintenance plan for each of the following municipal operations as applicable. The plans must include information related to maintenance activities, schedules and the proper disposal of waste from structural and non-structural stormwater controls related to the following:*
>
> - *streets, roads, highways,*
> - *municipal parking lots,*
> - *maintenance and storage yards,*
> - *fleet or maintenance shops with outdoor storage areas,*
> - *salt/sand storage locations,*
> - *snow disposal areas operated by the permittee, and*
> - *waste disposal, storage, and transfer stations.*
>
> TNS000000 Section 4.2.6

City Hall, the City's Batey House, Senior Citizens Center and Sanders Ferry Shop have been identified by the City (the permittee) as a municipal operation subject to this permit requirement. These collective facilities generate and/or store material(s) which constitutes a potential pollutant of concern for MS4s. Examples of these materials may include, but are not limited to, lubricants,

fuels, sand, gravel, soil, salt, pesticide, fertilizer, garbage, trash, clippings, vehicles, equipment and other wastes.

1.3 REVIEW AND REVISIONS TO THE OPERATIONS & MAINTENANCE PLAN

The O&M Plan will be reviewed at least annually by the City's Stormwater Coordinator to determine if revisions are necessary to reflect changes to the facility and/or changes to the activities conducted at the facility. Examples of changes that would require a revision to the plan include:

- A modification and/or addition to the facility layout.
- An activity that may introduce a new pollutant at the facility.
- A change in the materials generated and/or stored at the facility.
- A significant increase in the quantities of material generated and/or stored at the facility.
- Modification of an existing Best Management Practice (BMP) and or the additional of a new BMP.

2.0 FACILITY DESCRIPTION

2.1 SITE LOCATIONS

The collective facility consists of three site locations as presented in Table 1.

Table 1. Facility Site Locations

Site Number	Site Description	Address
1	City Hall	101 Maple Drive North, Hendersonville, Tennessee
2	Batey House	119 East Drive, Hendersonville, Tennessee
3	Senior Citizens Center	223 Campus Drive, Hendersonville, Tennessee
4	Sanders Ferry Shop	144 Sanders Ferry Road, Hendersonville, Tennessee

2.2 FACILITY CHARACTERISTICS

The City Hall location consists of the main building, which houses various municipal departments and small material storage areas; eternal diesel generator; surrounding public and City parking area; neighboring greenspace and a detention pond. The Batey House is located at Batey Farm. The Batey House maintains a small material storage area inside. The Senior Citizens Center consists of a main building, an outside shed and exterior records building. The Center includes a parking area and extensive green space. The Sanders Ferry Shop consists of the main building which includes a driveway with a trench drain, plus the associated outside shed and exterior cabinet. Stormwater outfalls (points of concentrated flow where stormwater leaves the facility) are present at each site and are typically identified as area drains, curb inlets, or drainage swales. Refer to the Property & Drainage Features map for each site as provided in Figure 1 of Appendix A.

2.3 STORMWATER POLLUTION PREVENTION TEAM

The pollution prevention team has been established and has specific stormwater-associated responsibilities. The pollution prevention team will assist the Permittee in the implementation, maintenance, and revision of the O&M Plan. A list of the team members and their responsibilities is shown in Table 2.

Table 2. Pollution Prevention Team

Name:	Rick Michalec	**Position:**	Public Works Superintendent
Responsibilities:			
• Administer implementation of this O&M plan daily. • Identify staff in need of stormwater training. • Participate in annual site assessment. • Review O&M Plan annually; assist with revisions if necessary. • Review documentation and records of inspection and coordinate stormwater maintenance activities. • Review documentation of spills and/or illicit discharges, if applicable.			
Name:	Zack McGlone	**Position:**	Property Maintenance Worker
Responsibilities:			
• Perform monthly stormwater inspections at City Hall, the Senior Citizen Center, and the Sanders Ferry Shop. • Participate in annual site assessment. • Maintain documentation and records of inspection and stormwater maintenance activities. • Maintain documentation of spills and/or illicit discharges, if applicable			
Name:	Trevor Cole	**Position:**	Parks Maintenance Supervisor
Responsibilities:			
• Perform monthly stormwater inspections at the Batey House • Participate in annual site assessment. • Maintain documentation and records of inspection and stormwater maintenance activities. • Maintain documentation of spills and/or illicit discharges, if applicable			
Name:	Helen Morrison	**Position:**	Stormwater Coordinator
Responsibilities:			
• Conduct and/or coordinate training for facility employees. • Conduct annual site assessment. • Review documentation and records annually for accuracy and completeness. • Review O&M Plan annually; assist with revisions if necessary.			

3.0 POTENTIAL POLLUTANTS AND ASSOCIATED BEST MANAGEMENT PRACTICES (BMPS)

3.1 SIGNIFICANT MATERIALS

A number of significant materials are stored or used on-site. An anticipated list of materials used, stored or produced on site is provided in Appendix B. The list also provides an approximation of the volume available on-site in addition to the handling location and typical frequency of use. Description of the handling and storage of these materials is provided in the following sections.

3.2 MATERIAL HANDLING & STORAGE

Proper material handling and storage aids in controlling the potential for leaks, spills and losses of material delivered, used and stored at the facility. Spills and leaks of materials can accumulate in soils or on surfaces and be carried away in stormwater runoff. Only needed products will be stored on-site. Materials will be stored under cover, free from interception with precipitation or stormwater runoff, and in their appropriate containers. Products must be stored in their original containers and/or labeled. Containers shall be tightly sealed when not in use. When possible, products should be used in their entirety before properly disposing of the container. The manufacturer's recommendations for disposal of materials and containers will be followed. Material storage areas will be inspected monthly to ensure proper use, storage and disposal. Dust generated will be removed as needed. Safety Data Sheets shall be kept current for all materials stored at the facility and be accessible to all facility personnel.

3.3 VEHICLE & EQUIPMENT MAINTENANCE

Regular maintenance of both vehicle and heavy equipment prolongs the life of municipal assets and helps reduce the potential for leaking fluids associated with normal wear and tear. Maintenance practices involve a number of solvents, petroleum products and other toxic compounds that must be stored and handled appropriately to avoid contamination. Leakage of fluids from vehicles can drain towards the stormwater management system and ultimately discharge to receiving waters. The City practices preventative maintenance including regular inspections and maintenance before problems arise. In instances where leaks are observed, maintenance should be performed as soon as possible, and the vehicle or equipment removed from use until repaired. Drip pans or tarps

should be used to contain leaks. Vehicle maintenance should be performed indoors or off-site at a commercial facility. Vehicle or equipment maintenance should not occur near storm drains. Maintenance and repair areas shall not be washed down, instead, they should be swept weekly or more often as needed to collect dirt, and spills must be wiped up with rags or other absorbent material. Used batteries should be stored indoors in secondary containment and recycled.

3.4 VEHICLE & EQUIPMENT WASHING

Improper vehicle or equipment washing can introduce solvents, grease, and sediment and petroleum products that can contribute to stormwater pollution. Vehicles should be washed with biodegradable cleaners away from the stormwater system. Nozzles with automatic shut off should be used. If possible, vehicles should be washed on a pervious surface or indoors with floor drains that are connected to the sanitary sewer system or other recycled water system. If extensive staining or an oily sheen is present, absorbent pillows or booms should be used in or around catch basins to prevent oil from entering the stormwater drainage system.

3.5 VEHICLE PARKING

Sediment, debris and other pollutants accumulate on parking lot surfaces and are a potential source of stormwater pollution. Vehicles located in the parking area and/or impoundment area should be inspected frequently for leaks. If leaks are identified, drip pans or tarps shall be placed immediately and the vehicle should be removed from service and scheduled for maintenance and/or disposal. Parking areas are also prone to trash and debris accumulation. Street sweeping can improve the aesthetics of City parking lots, control dust and decrease the accumulation of pollutants to stormwater inlets.

3.6 EQUIPMENT REFUELING

A 300-gallon generator is located on the southwest side of City Hall. All unloading and transferring activities into the aboveground storage tank associated with the generator are conducted by approved suppliers who are properly trained in bulk delivery procedures and spill prevention. The delivery personnel are constantly present throughout the transfer process, and their vehicles contain spill response equipment to supplement those of the facility.

3.7 FERTILIZER & PESTICIDE

The City currently does not apply fertilizer or herbicide at any of the collective City facilities. Pesticides are applied routinely to the interior buildings only. This is a contract-provided service and is not conducted by the City. A small amount (less than two gallons) of weed killer is available to be used as needed to deter weeds in the crevices of paved surfaces.

3.8 LAWN MAINTENANCE

The City currently maintains a mowing and landscape schedule at each site. Lawn and landscaping services include mowing, tree-trimming and landscaping. Mowing is performed at each site as needed. To avoid stressing the turf, no more than one third of the existing shoot growth should be removed at any one mowing. If a lawn grows excessively high, the mowing height should be gradually reduced to the proper height over a span of several mowings rather than all at once. This will minimize buildup of clippings and prevent shock to the turf. Unless an excessive amount of clippings remain on the lawn, there is no need to remove clippings by bagging or raking.

3.9 STORMWATER INLET CLEANING PROGRAM

Traditional municipal stormwater systems were designed to quickly collect and convey stormwater runoff to receiving waters. The purpose of catch basin, inlet and storm drain cleanings is to remove accumulated sediment which prevents blockages, localized flooding and reduces the release of downstream pollutants.

Fine particles and pollutants generated by stormwater run-off, atmospheric deposition, vehicle emissions, breakup of street surface materials, littering, and sanding accumulate along the curbs of roads in between rainfall events. This results in the accumulation of trash and sediment. Pollutants attach to trash and sediment including nutrients, metals, hydrocarbons, bacteria, pesticides, and toxic chemicals. Storm drain maintenance is often the first opportunity to provide pre-treatment and remove pollutants before they are conveyed through the storm drain system. Catch basins tend to trap these pollutants; therefore, they need to be cleaned out periodically to prevent those materials from being transported by high stormwater flows into downstream stormwater best management practices and the City's receiving waters.

Stormwater inlets within the facility boundary and immediately downgradient should be inspected monthly. Each stormwater inlet should include a public awareness message (ex. “dump no waste” or “drains to river”, etc.) stenciled or otherwise etched near the drain. Catch basins with illegible or missing labels should be noted on the inspection report and relabeled. Damage or deterioration threatening the structural integrity of any component, conveyance or facility should be repaired as soon as possible. Material accumulation (including sediment, leaf litter and trash) on the grate, around the grate and inside the stormwater drain inlet should be removed and disposed of according to local, state and federal guidelines. The materials removed from the stormwater inlets shall not re-enter the stormwater system.

3.10 WASTE HANDLING

Trash and debris management includes minimizing the generation of waste and handling and disposing of waste in a manner that minimizes risks to surface waters. Trash cans should be provided indoors in high traffic areas to encourage use. Outdoor waste or trash receptacles should be covered and emptied regularly, and the adjacent areas inspected for misplaced or wind-blown litter. Nonhazardous and potentially hazardous debris should be segregated and disposed of in accordance with local, state and federal guidelines. Do not allow potentially hazardous waste material to accumulate.

3.11 SPILL PREVENTION & CONTROL PROCEDURES

3.11.1 What is Spill Prevention & Controls?

Spill prevention and controls are procedures that establish spill response and control actions by anticipating when and how spills might occur and instituting actions to contain and clean it up. The City prepares for potential spills by reducing the chance of spills to occur, stopping the source of spills, containing and cleaning spills, properly disposing of spill material and training personnel. A spill kit is available at each location and is placed in a designated location. The spill kit should be inspected monthly and items replenished as needed.

3.11.2 What to do if there’s a Spill?

Employees are trained in spill identification, response and control. In the event of a spill, employees should be able to identify the substance spilled and its hazard, determine the amount

spilled and the extent of spreading, identify the source of the spill and determine whether the spill can be contained safely by facility personnel. If safe to do so, employees should attempt to contain the spill and prevent it from leaving the site or entering the stormwater drainage system or receiving waters. Employees should attempt to eliminate the source of the spill and clean up any spilled material as soon as possible. Contaminated material should be disposed of in accordance with local, state and federal guidelines. The Stormwater Coordinator should be contacted immediately in the event that a spill leaves the facility property boundary, enters the stormwater system or enters a receiving water.

The City shall foster interagency coordination for hazardous waste or material spills response and cleanup. The City's Stormwater Department will provide educational information to Collective Facilities personnel and shall inform local spill-response agencies and/or TEMA (Tennessee Emergency Management Agency) of the potential negative impacts to surface water (and ground water) of spill clean-up activities. TEMA shall be contacted via **1-800-262-3300**. Spills that result in a sheen on surface waters shall also be reported to TDEC's Division of Water Resources Nashville Environmental Field Office.

3.12 DETENTION POND

A detention pond is located to the north of City Hall. While the primary purpose of a detention pond is related to water quantity, it also aids in sediment capture, trash collection and pollutant removal. The detention pond should be visually inspected at least semi-annually. Maintenance should be performed when necessary as determined via the visual inspection. The City will subcontract maintenance services for the detention pond as needed.

4.0 INSPECTIONS

4.1 MONTHLY INSPECTIONS

Stormwater inspections will be conducted monthly by designated personnel at each site. The inspection will include a visual inspection of all potential pollutant sources and ensure that BMPs are appropriate and being implemented consistently throughout the facility. The inspector shall complete the inspection form as provided in Appendix C for each site. Any corrective actions and/or maintenance requirements shall be documented within the inspection form and implemented as soon as possible but at least prior to the next monthly inspection. The monthly inspection will also include a review and update to the materials inventory list for each site, as provided in Appendix B.

4.2 ANNUAL FACILITY ASSESSMENT

A facility assessment will be conducted annually by the Stormwater Coordinator. The assessment will aid in the identification of significant changes that warrant a revision to the O&M Plan. If revisions are required, the O&M Plan should be updated and re-issued within 12 weeks of the identification of the need. Table 3 should be used to track annual facility assessments and whether or not revisions were required.

Table 3. Facilities Assessment Log

Assessment Date	Assessor Name	Revision Required	Revision Date
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	

The annual facility assessment also includes the following:

- A visual inspection of all potential pollutant sources that may enter the stormwater drainage system via stormwater or non-stormwater discharges,
- A review of BMPs for adequacy, implementation and maintenance,
- A visual inspection of materials and equipment necessary to implement the O&M Plan such as spill kit, drip pans, brooms, etc., and
- A review of the monthly inspection forms, any incidents of non-compliance and the corrective actions taken.

A facility assessment form is available in Appendix C.

5.0 TRAINING

Employees whose activities may impact stormwater at the facility will be trained in the components and goals of this O&M Plan. The purpose of the training is to educate employees on identifying pollutants and preventing and/or reducing stormwater pollution from municipal operation activities. Training will be conducted as needed but at least every permit term. **New employees must be trained within six months of their employment or movement into an applicable job category.** The training event will be documented and shall include the date, name of the instructor and name of each employee in attendance. A training record form is included in Appendix D. Topics to be included during training are:

- Good housekeeping practices/BMP implementation
- Material management practices
- Used oil, spent solvent, and used battery management
- Spill prevention, response, and control
- Fueling procedures
- Inspections

6.0 REPORTING AND RECORDKEEPING

6.1 DOCUMENTATION

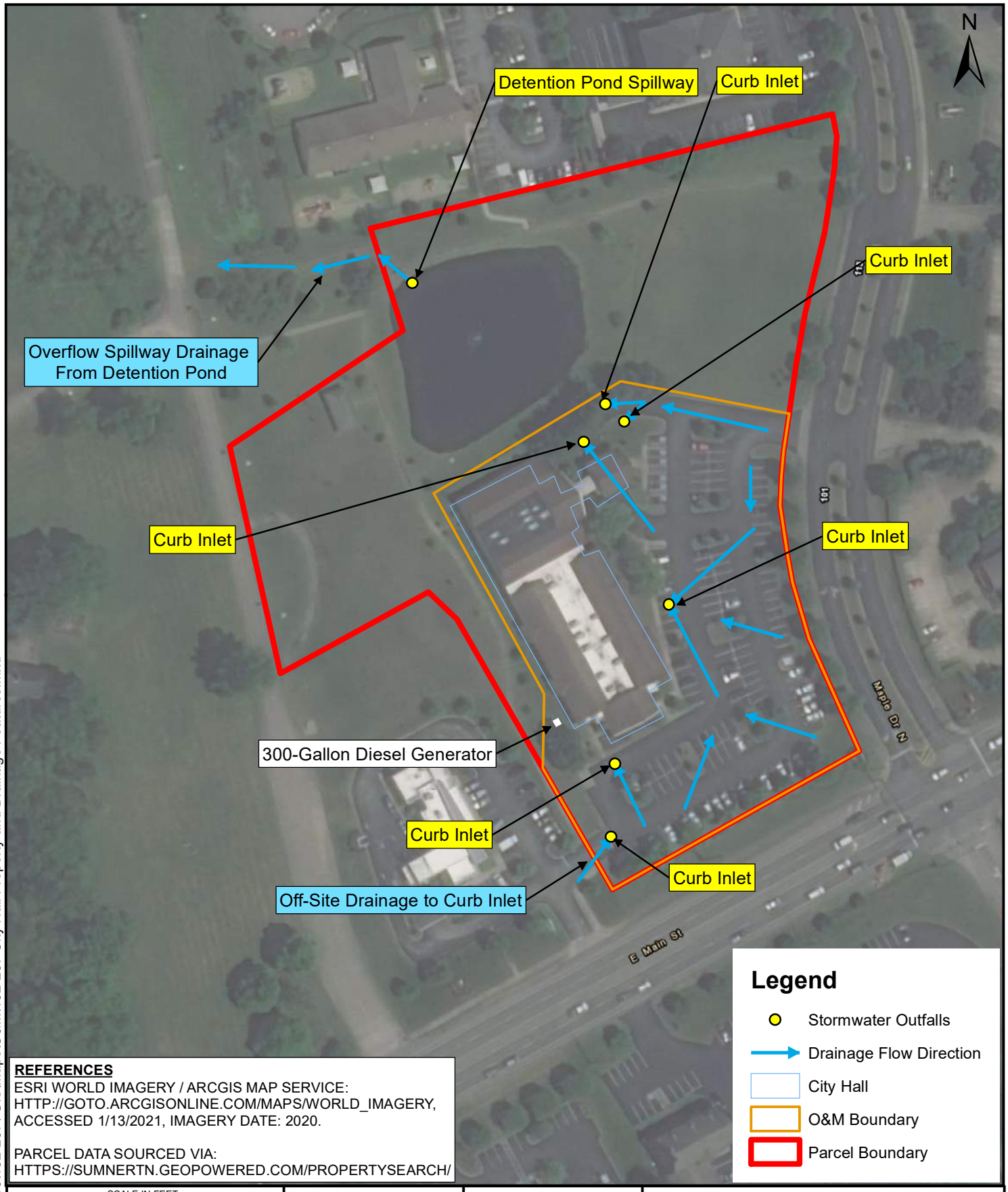
Stormwater maintenance activities must be documented with methods such as photos, maintenance logs, and/or contractor invoices. All inspection forms must be maintained at the applicable Police Department site location. Records may be used as supporting documentation for the TNS075353 permit-required annual report. Documentation, including inspection forms and maintenance records, should be maintained for a period of three years. Electronic recordkeeping is acceptable.

6.2 MEASUREMENT OF SUCCESS

The O&M Plan will be reviewed annually (preferably during the fourth quarter of the fiscal year) by the Stormwater Coordinator to evaluate overall effectiveness. The evaluation will be based on the example criteria presented below and the need for improvement and/or modification will be determined based on the results of the plan evaluation.

- Increased/sustained maintenance of best management practices.
- Fewer follow up maintenance activities required in response to the annual assessment.
- Number of employees trained annually.

APPENDIX A - FIGURES



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SCALE IN FEET
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SCALE: 1:1,500

DATE: 1/13/2021

ISSUED FOR: CITY OF HENDERSONVILLE

City of Hendersonville
Tennessee

ISSUED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
117 Seaboard Lane, Ste E100, Franklin, TN 37067
615-333-7797 800-763-2326
www.cecinc.com

DWN. BY: JTM

APPRVD BY: DRAFT * Hand signature on file

CITY OF HENDERSONVILLE
CITY HALL
PROPERTY & DRAINAGE FEATURES FOR OPERATION & MAINTENANCE PLAN

PROJECT NO.: 192-267

FIGURE 1
SHEET 1 OF 4

Document Path: P:\2019\192-267\-GIS\Maps\O&M\192-267 Batey House Property and Drainage Features.mxd

SCALE IN FEET
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SCALE: 1:1,200

DATE: 1/13/2021

ISSUED FOR: CITY OF HENDERSONVILLE

City of Hendersonville
Tennessee

ISSUED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
117 Seaboard Lane, Ste E100, Franklin, TN 37067
615-333-7797 800-763-2326
www.cecinc.com

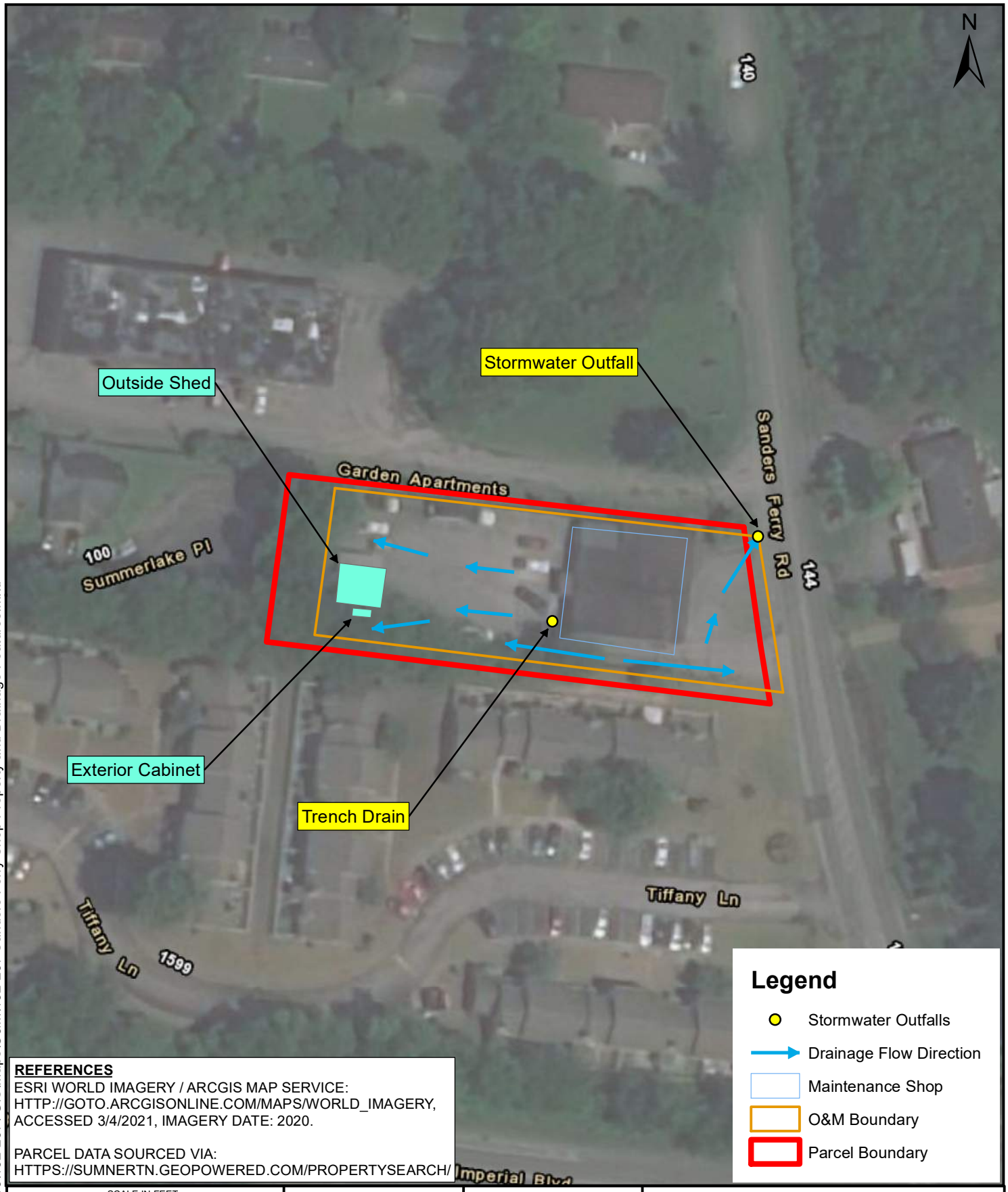
CITY OF HENDERSONVILLE
BATEY HOUSE
119 EAST DRIVE
PROPERTY & DRAINAGE FEATURES
FOR OPERATION & MAINTENANCE PLAN

DWN. BY: JTM

APPRVD BY: DRAFT * Hand signature on file

PROJECT NO.: 192-267

FIGURE 1
SHEET 2 OF 4



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SCALE IN FEET
0 37.5 75

SCALE: 1:900

DATE: 3/4/2021

ISSUED FOR: CITY OF HENDERSONVILLE

City of Hendersonville Tennessee

ISSUED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
117 Seaboard Lane, Ste E100, Franklin, TN 37067
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DWN. BY: JTM

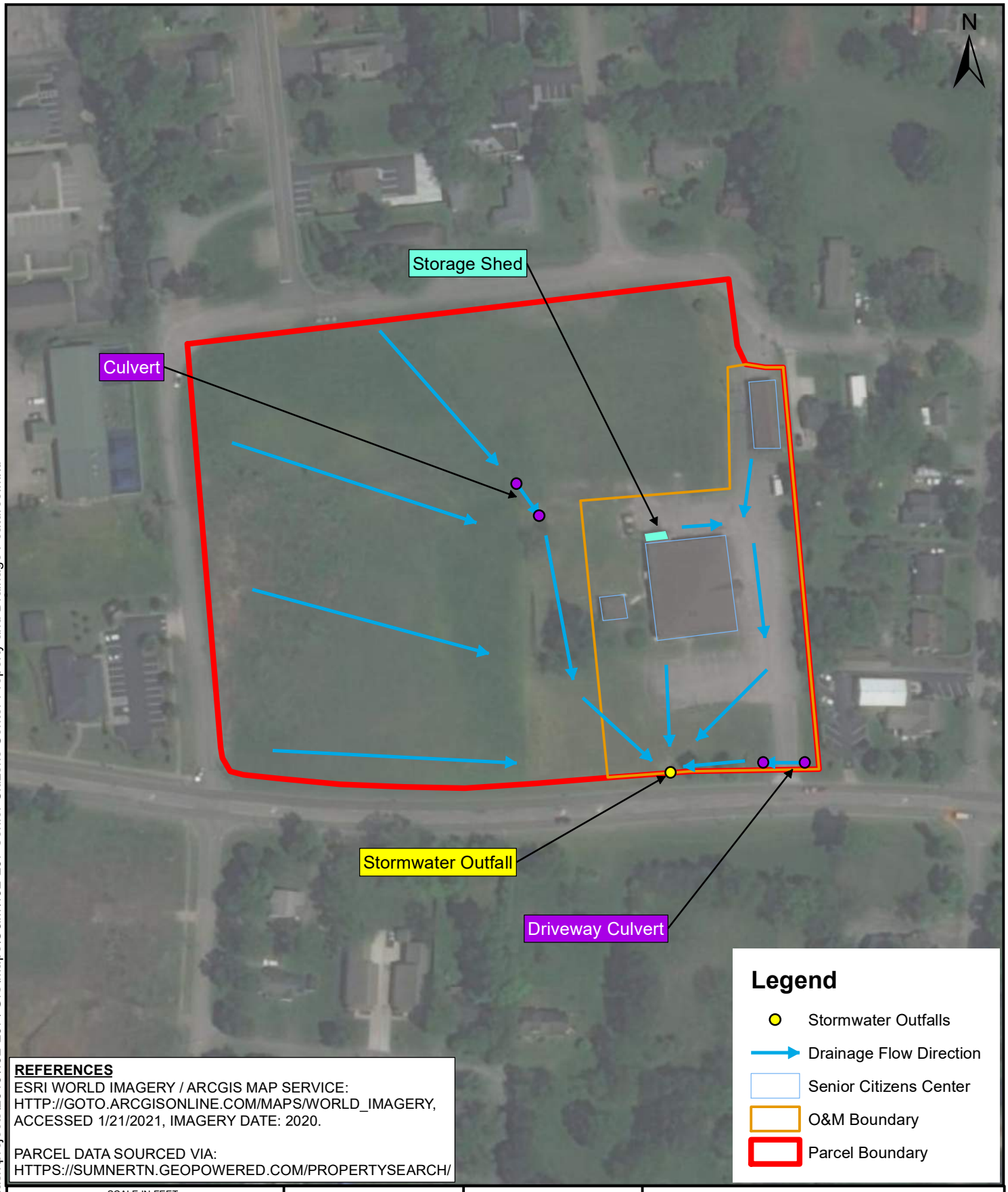
APPRVD BY: DRAFT * Hand signature on file

CITY OF HENDERSONVILLE
SANDERS FERRY SHOP
PROPERTY & DRAINAGE FEATURES
FOR OPERATION & MAINTENANCE PLAN

PROJECT NO.: 192-267

FIGURE 2
SHEET 3 OF 4

Document Path: P:\2019\192-267\-GIS\Maps\O&M\192-267 Sanders Ferry Shop Property and Drainage Features.mxd



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SCALE IN FEET
0 75 150

SCALE: 1:1,800

DATE: 1/21/2021

ISSUED FOR: CITY OF HENDERSONVILLE

City of Hendersonville
Tennessee

ISSUED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
117 Seaboard Lane, Ste E100, Franklin, TN 37067
615-333-7797 800-763-2326
www.cecinc.com

DWN. BY: JTM

APPRVD BY: JLW * Hand signature on file

CITY OF HENDERSONVILLE SENIOR CITIZENS CENTER PROPERTY & DRAINAGE FEATURES FOR OPERATION & MAINTENANCE PLAN

PROJECT NO.: 192-267

FIGURE 1
SHEET 4 OF 4

Document Path: \\svr-nash\projects\2019\192-267\-GIS\Maps\O&M\192-267 Senior Citizens Center Property and Drainage Features.mxd

APPENDIX B – INVENTORY OF SIGNIFICANT MATERIALS

List of Significant Materials City Hall

Material Name	Typical Quantity	Receiving and Shipping Location	Handling Location	Frequency
EXAMPLE: Acid	12 gal	Maintenance Shop	Maintenance Shop	Twice Weekly
SPRING BREEZE	12 CANS	JANITOR ROOM		A BUNCH
AIR SCENT	12 CANS			
SOAP	4-1 GAL.			
HAND SOAP	24 CANS			
DISINFECTANT SPRAY	24 CANS			
FOAM CLEANER	24 CANS			
CAR WASH	5 GAL			
WD 40	2 CANS	TOOL ROOM		
PAINT	10 GAL			
GLASS CLEANER	12 CANS			

List of Significant Materials Sanders Ferry Road Shop

Material Name	Typical Quantity	Receiving and Shipping Location	Handling Location	Frequency
EXAMPLE: Acid	12 gal	Maintenance Shop	Maintenance Shop	Twice Weekly
GLASS CLEANER	4-16 OZ			
ARMOR ALL	1/2 GAL			WHEN
FLOOR CLEANER	2 GAL			NEEDED
BONDER	1 GAL			
FOUL GAS/OIL	1 GAL			
DENATURED ALCOHOL	1 GAL			
FLOOR POLISH	2 GAL			
FLOOR SEALER	4 GAL			
BLEACH	1 GAL			
WASP SPRAY	3 CANS			
POWER STEERING	1 QT			
WEED KILLER	1 GAL			
CONCRETE CLEANER	3 GAL			
COMPRESSED OIL	1 GAL			
GREASED LIGHTNING	1 GAL			
PAINT	20 GAL			
ADHESIVE	10 GAL			
DRYWALL MUD	10 GAL			
WD-40	5 CANS			
ZEP CLENER	5 GAL			
WOOD GLUE	16 OZ			
CONTACT CEMENT	1 GAL			
CAULK	20 TUBES			
BONDO	1 GAL			
SPRAY PAINT	30 CANS			
MILDEW CLEANER	1 GAL			
TILE SEALER	1 GAL			
REFRIGERANT	3 BOTTLES			
PUMP OIL	1 GAL			
STAIN	4 GAL			
HAND CLENER	2 GAL			
DISINFECTANT	32 OZ			
CAR WASH	2 GAL			
CITRUS CLEANER	1/2 GAL			
PROPANE	2 BOTTLES			

List of Significant Materials Batey House

Material Name	Typical Quantity	Receiving and Shipping Location	Handling Location	Frequency

List of Significant Materials Senior Citizens Center

Material Name	Typical Quantity	Receiving and Shipping Location	Handling Location	Frequency

APPENDIX C – INSPECTION FORMS

City of Hendersonville
Tennessee

CITY OF HENDERSONVILLE – COLLECTIVE FACILITIES
MONTHLY STORWMATER INSPECTION FORM

General Information:			
Site Location (Circle One):	**City Hall** **Batey House** **Senior Citizens Center** **Sanders Ferry Shop**		
Inspector Name:		Date of Inspection:	enter date.

Instructions: Complete the following sections below; if section is not applicable, check N/A and move to next section.

1. Material Storage:			N/A ☐
a. Is material inventory list up to date and accurate?	Yes ☐	No: ☐	
b. Are all materials stored inside and/or undercover away from precipitation and/or stormwater runoff?	Yes ☐	No: ☐	
c. Are all materials stored in appropriate containers and labeled?	Yes ☐	No: ☐	
d. Are all containers tightly sealed?	Yes ☐	No: ☐	
e. Do containers appear in good condition, free of bulges, rust and/or any other indicators of concern?	Yes ☐	No: ☐	
f. Is there evidence of leaks or staining in material storage areas?	Yes ☐	No: ☐	
g. Is the area in general free of fines and dust?	Yes ☐	No: ☐	
2. Vehicle & Equipment Maintenance:			N/A ☐
a. Are leaking vehicles or equipment observed at the facility?	Yes ☐	No: ☐	
b. Is vehicle & equipment maintenance performed inside or undercover?	Yes ☐	No: ☐	
c. Are drip pans, tarps, etc. utilized during maintenance to contain spills or leaks?	Yes ☐	No: ☐	
d. Are used batteries stored in secondary containment and recycled appropriately?	Yes ☐	No: ☐	
e. Are used rags or tarps stored in flammable storage containers and disposed of appropriately?	Yes ☐	No: ☐	
f. Are used oil filters drainage prior to disposal?	Yes ☐	No: ☐	
g. Is used oil stored in an appropriate container and disposed of in accordance with local, state and federal guidelines?	Yes ☐	No: ☐	
3. Vehicle & Equipment Washing:			N/A ☐
a. Is vehicle washing performed in a designated location? *Ideally on a pervious area, or area that drains away from the stormwater drainage system or to the sanitary sewer system*	Yes ☐	No: ☐	
b. Are nozzles that automatically shut off utilized?	Yes ☐	No: ☐	
c. Are biodegradable soaps utilized (no detergents, wax, etc.)?	Yes ☐	No: ☐	
4. Vehicle Parking:			N/A ☐
a. Is sweeping being performed as needed to address trash and debris accumulation?	Yes ☐	No: ☐	
b. Is there evidence of spills or leaks? If yes, answer c below	Yes ☐	No: ☐	
c. Are spills and leaks being cleaned up and materials disposed of appropriately?	Yes ☐	No: ☐	
5. Equipment Refueling:			N/A ☐
a. Is refueling activity continuously monitored?	Yes ☐	No: ☐	
b. Is the generator and associated AST in good condition (free of rust, bulging, etc.)?	Yes ☐	No: ☐	
c. Is there evidence of spills or leaks? If yes, answer d below	Yes ☐	No: ☐	
d. Are spills and leaks being cleaned up and materials disposed of appropriately?	Yes ☐	No: ☐	
6. Fertilizer & Pesticide:			N/A ☐
a. Is >1 bag @ 30 lbs. of fertilizer or pesticide present on site (e.g. no bulk storage)?	Yes ☐	No: ☐	

City of Hendersonville
Tennessee

CITY OF HENDERSONVILLE – COLLECTIVE FACILITIES
MONTHLY STORWMATER INSPECTION FORM

7. Lawn Maintenance:		N/A ☐
a. Is mowing being performed as needed?	Yes ☐	No: ☐
b. Are lawn clippings allowed to remain on the lawn (unless excessive buildup)?	Yes ☐	No: ☐
8. Stormwater Inlets:		N/A ☐
a. Are stormwater inlets and outlets clearly visible and accessible?	Yes ☐	No: ☐
b. Are stormwater inlets include a public awareness message (ex. drains to river)?	Yes ☐	No: ☐
c. Are catch basin or area drain inlets in good condition and free of trash and debris, floatables, pollutants, oil and grease?	Yes ☐	No: ☐
d. Are catch basin or area drain inlets free of any signs of past spills, releases or illicit discharges?	Yes ☐	No: ☐
9. Waste Handling:		N/A ☐
a. Are trash cans provided as needed throughout the facility?	Yes ☐	No: ☐
b. Are trash cans or dumpsters outside covered?	Yes ☐	No: ☐
c. Is misplaced or windblown litter observed?	Yes ☐	No: ☐
d. Is non-hazardous and potentially hazardous waste segregated?	Yes ☐	No: ☐
e. Is waste collected frequently and disposed of in accordance with local, state and federal guidelines?	Yes ☐	No: ☐
10. Spill Prevention & Control Procedures:		N/A ☐
a. Is a spill kit available on-site and stored in a designated location?	Yes ☐	No: ☐
b. Are spill kits, SDS, and PPE accessible to employees?	Yes ☐	No: ☐
c. Are contents and materials in the spill kit sufficient?	Yes ☐	No: ☐
d. Has a spill occurred since the previous inspection? If yes, answer questions i – iv below	Yes ☐	No: ☐
i. Indicate material and estimate volume of material spilled in the Summary of Inspection Findings below.		
ii. Was the spill contained within the facility property boundary?	Yes ☐	No: ☐
iii. Did the spill enter the stormwater drainage system or enter a receiving water? If yes, answer (iv.)	Yes ☐	No: ☐
iv. Was the Stormwater Coordinator notified?	Yes ☐	No: ☐
11. Detention Pond:		N/A ☐
a. Is vegetation healthy and uniform in coverage?	Yes ☐	No: ☐
b. Is there evidence of erosion (embankment, shoreline, outfall, etc.)?	Yes ☐	No: ☐
a. Is there evidence of leaks of seepage at the embankment?	Yes ☐	No: ☐
d. Are there obstructions at the principal or emergency spillways?	Yes ☐	No: ☐
e. Is the trash rack in need of maintenance?	Yes ☐	No: ☐
f. Are the headwalls and endwalls in good condition?	Yes ☐	No: ☐
g. Is sediment accumulation in the pond greater than 50 percent?	Yes ☐	No: ☐
h. Is there undesirable vegetation or woody plant growth?	Yes ☐	No: ☐
i. Is the outfall channel stabilized and in good condition?	Yes ☐	No: ☐
j. Is there visual evidence of public hazards?	Yes ☐	No: ☐
k. Have there been any complaints from citizens?	Yes ☐	No: ☐
l. Please note the date when the Detention Pond was last maintained by a professional service:		
12. Summary of Inspection Findings:		
a. Corrective Action(s) and/or maintenance required?	Yes ☐	No: ☐

b. If yes, please provide comments below:

Certification & Signature:					
I certify under penalty of law that this report and all attachments are, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.					
Inspector's Name:		Signature:		Date:	enter date.

Example Photo Summary	
Photo #: Comments:	[Insert Photo]
Photo #: Comments:	[Insert Photo]
Photo #: Comments:	[Insert Photo]

Please attach any additional supporting information as needed to support the findings of the site assessment.

City of Hendersonville
Tennessee

CITY OF HENDERSONVILLE – COLLECTIVE FACILITIES
ANNUAL FACILITY ASSESSMENT

General Information:			
Station #:			
Assessor's Name:		Date of Assessment:	enter date.

Observations & Findings:		
1. Are monthly stormwater inspections being performed?	Yes ☐	No: ☐
2. Are corrective actions and maintenance requirements being completed within the appropriate timeframe?	Yes ☐	No: ☐
3. Are Best Management Practices adequate?	Yes ☐	No: ☐
5. Are Best Management Practices being implemented and maintained?	Yes ☐	No: ☐
6. Are maintenance records available on-site?	Yes ☐	No: ☐
7. Are materials and equipment necessary to implement the O&M Plan available on-site?	Yes ☐	No: ☐
8. Has the facility contributed to an illicit discharge since the previous assessment?	Yes ☐	No: ☐
9. Have all necessary facility personnel participated in annual stormwater training?	Yes ☐	No: ☐
10. Are training records available on-site?	Yes ☐	No: ☐
11. Are revisions to the O&M Plan required?	Yes ☐	No: ☐
Summary of Assessment Findings:		
12. Corrective Action(s) and/or maintenance required?	Yes ☐	No: ☐
If yes, please provide comments below:		

Certification & Signature:

I certify under penalty of law that this report and all attachments are, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Assessor's Name:		Signature:		Date:	enter date.
Site Representative's Name:		Signature:		Date:	enter date.

APPENDIX D – TRAINING

CITY OF HENDERSONVILLE

COLLECTIVE FACILITIES

ANNUAL STORMWATER TRAINING

Date: _____

Name of Instructor: _____

Station: _____

Name	Signature

STORMWATER OPERATION & MAINTENANCE PLAN

FIRE DEPARTMENT

Prepared For:

CITY OF HENDERSONVILLE

Prepared By:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
NASHVILLE, TENNESSEE

CEC Project 192-267

JUNE 2024

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2.3 Stormwater Pollution Prevention Team 3

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APPENDICES

1.0 INTRODUCTION

1.1 PURPOSE

The Stormwater Operations & Maintenance (O&M) Plan has been prepared for the City of Hendersonville's (City) Fire Department to address stormwater pollution prevention and good housekeeping in accordance with the Tennessee Department of Environment and Conservation (TDEC) National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) Permit No. TNS000000. The City's NPDES General Permit for Discharges from MS4s is Permit No. TNS075353.

1.2 PERMIT REQUIREMENTS

Section 4.2 of the Tennessee NPDES General Permit for MS4s, Permit No. TNS000000, addresses minimum controls required to be implemented by the Permittee. Section 4.2.6.2 "Operations and Maintenance (O&M Program" states the following:

> *The permittee must develop an operation and maintenance program detailing the activities and procedures the permittee will implement so that the MS4 infrastructure is maintained to reduce the discharge of pollutants from the MS4 for each of the following municipal operations as applicable:*
>
> - *streets, roads, highways,*
> - *municipal parking lots,*
> - *maintenance and storage yards,*
> - *fleet or maintenance shops with outdoor storage areas,*
> - *salt/sand storage locations,*
> - *snow disposal areas operated by the permittee, and*
> - *waste disposal, storage, and transfer stations.*
>
> TNS000000 Section 4.2.6

The City's Fire Department has been identified by the City (the permittee) as a municipal operation subject to this permit requirement. This facility generates and/or stores a material which constitutes a potential pollutant of concern for MS4s. Examples of these materials may include, but are not limited to, lubricants, fuels, sand, gravel, soil, salt, pesticide, fertilizer, garbage, trash, clippings, vehicles, equipment and other wastes.

1.3 REVIEW AND REVISIONS TO THE OPERATIONS & MAINTENANCE PLAN

The O&M Plan will be reviewed at least annually by the City's Stormwater Coordinator to determine if any revisions are necessary to reflect changes to the facility and/or changes to the activities conducted at the facility. Examples of changes that would require a revision to the plan include:

- A modification and/or addition to the facility layout.
- An activity that may introduce a new pollutant at the facility.
- A change in the materials generated and/or stored at the facility.
- A significant increase in the quantities of material generated and/or stored at the facility.
- Modification of an existing Best Management Practice (BMP) and or the additional of a new BMP.

2.0 FACILITY DESCRIPTION

2.1 SITE LOCATIONS

The City's Fire Department consists of seven station locations as presented in Table 1.

Table 1. City Fire Department Station Locations

Station No.	Address
1	173 Luna Lane, Hendersonville, Tennessee
2	225 Free Hill Road, Hendersonville, Tennessee
3	179 Bonita Parkway, Hendersonville, Tennessee
4	511 Indian Lake Road, Hendersonville, Tennessee
5	1166 Forest Retreat Road, Hendersonville, Tennessee
6	1003 Winston Hills Parkway, Hendersonville, Tennessee
7	1342 Drakes Creek Road, Hendersonville, Tennessee

2.2 FACILITY CHARACTERISTICS

Each of the seven fire stations consists of a fire hall with interior engine bays, outside storage shed, and small parking area for employees. Stormwater outfalls (points of concentrated flow where stormwater leaves the facility) are present at each station and are typically identified as area drains, curb inlets, drainage swales or concrete ditches, etc. Most engine bays feature a floor drain. Floor drains are either connected to the sanitary sewer system or the stormwater system via an oil water separator, except at Station #1 where the floor drain is directly connected to the driveway trench drain that daylights and ultimately discharges at the stormwater outfall. Refer to the Station Location map and Property & Drainage Features map for each station as provided in Figures 1 and 2 of Appendix A.

2.3 STORMWATER POLLUTION PREVENTION TEAM

The pollution prevention team has been established and has specific stormwater-associated responsibilities. The pollution prevention team will assist the Permittee in the implementation, maintenance, and revision of the O&M Plan. A list of the team members and their responsibilities is shown in Table 2.

Table 2. Pollution Prevention Team

Name:	George Edwards	**Position:**	Assistant Fire Chief
Responsibilities:			
• Administer implementation of this O&M plan daily. • Perform monthly stormwater inspections at each Station. • Identify staff in need of stormwater training. • Participate in annual site assessment. • Review O&M Plan annually; assist with revisions if necessary. • Maintain documentation and records of inspection and stormwater maintenance activities. • Maintain documentation of spills and/or illicit discharges, if applicable.			
Name:	Helen Morrison	**Position:**	Stormwater Coordinator
Responsibilities:			
• Conduct and/or coordinate training for facility employees. • Conduct annual site assessment. • Review documentation and records annually for accuracy and completeness. • Review O&M Plan annually; assist with revisions if necessary.			

3.0 POTENTIAL POLLUTANTS AND ASSOCIATED BEST MANAGEMENT PRACTICES (BMPS)

3.1 SIGNIFICANT MATERIALS

A number of significant materials are stored or used on-site. An anticipated list of materials used, stored or produced on site is provided in Appendix B. The list also provides an approximation of the volume available on-site in addition to the handling location and typical frequency of use. Description of the handling and storage of these materials is provided in the following sections.

3.2 MATERIAL HANDLING & STORAGE

Proper material handling and storage aids in controlling the potential for leaks, spills and losses of material delivered, used and stored at the facility. Spills and leaks of materials can accumulate in soils or on surfaces and be carried away in stormwater runoff. Only needed products will be stored on-site. Materials will be stored under cover, free from interception with precipitation or stormwater runoff, and in their appropriate containers. Products must be stored in their original containers and/or labeled. Containers shall be tightly sealed when not in use. When possible, products should be used in their entirety before properly disposing of the container. The manufacturer's recommendations for disposal of materials and containers will be followed. Material storage areas will be inspected monthly to ensure proper use, storage and disposal. Dust generated will be removed as needed. Safety Data Sheets shall be kept current for all materials stored at the facility and be accessible to all facility personnel.

3.3 VEHICLE & EQUIPMENT MAINTENANCE

Regular maintenance of both vehicle and heavy equipment prolongs the life of municipal assets and helps reduce the potential for leaking fluids associated with normal wear and tear. Maintenance practices involve a number of solvents, petroleum products and other toxic compounds that must be stored and handled appropriately to avoid contamination. Leakage of fluids from vehicles can drain towards the stormwater management system and ultimately discharge to receiving waters. The City practices preventative maintenance including regular inspections and minor maintenance (replacing bulbs, topping off fluids, etc.) before problems arise. Small mechanical maintenance is performed on-site by a certified Emergency Vehicle Technician (EVT). Major repairs and

maintenance is performed by a certified EVT at the selected vendor's garage. In instances where leaks are observed, maintenance should be performed as soon as possible, and the vehicle or equipment removed from use until repaired. Drip pans or tarps should be used to contain leaks. Vehicle maintenance should be performed indoors. Vehicle or equipment maintenance should not occur near stormwater system inlets. Maintenance and repair areas shall not be washed down, instead, they should be swept weekly or more often as needed to collect dirt, and spills must be wiped up with rags or other absorbent material. Used batteries should be stored indoors in secondary containment and recycled. Vehicle fueling is not performed on-site.

3.4 VEHICLE & EQUIPMENT WASHING

Improper vehicle or equipment washing can introduce solvents, grease, and sediment and petroleum products that can contribute to stormwater pollution. Vehicles should be washed with biodegradable cleaners away from the stormwater system. Nozzles with automatic shut off should be used. If possible, vehicles should be washed indoors with floor drains that are connected to the sanitary sewer system or other recycled water system. If staining or an oily sheen is present, absorbent pillows or booms should be used in or around catch basins to prevent oil from entering the stormwater drainage system.

3.5 FERTILIZER & PESTICIDE

The City currently does not apply fertilizer or herbicide at any Fire Department Station. Pesticides are applied quarterly to the interior buildings only. This is a contract-provided service and is not conducted by the City. A small amount (less than two gallons) of weed killer is available to be used as needed to deter weeds in the crevices of paved surfaces.

3.6 LAWN MAINTENANCE

The City currently maintains a mowing and landscape schedule at each Station. Lawn and landscaping services include mowing, tree-trimming and landscaping. Mowing is performed at each Station as needed. To avoid stressing the turf, no more than one third of the existing shoot growth should be removed at any one mowing. If a lawn grows excessively high, the mowing height should be gradually reduced to the proper height over a span of several mowings rather than all at once. This will minimize buildup of clippings and prevent shock to the turf. Unless an

excessive amount of clippings remain on the lawn, there is no need to remove clippings by bagging or raking.

3.7 STORMWATER INLET CLEANING PROGRAM

Traditional municipal stormwater systems were designed to quickly collect and convey stormwater runoff to receiving waters. The purpose of catch basin, inlet and storm drain cleanings is to remove accumulated sediment which prevents blockages, localized flooding and reduces the release of downstream pollutants.

Fine particles and pollutants are generated by stormwater run-off, atmospheric deposition, vehicle emissions, breakup of street surface materials, littering, and sanding accumulate along the curbs of roads in between rainfall events. This results in the accumulation of trash and sediment. Pollutants attach to trash and sediment including nutrients, metals, hydrocarbons, bacteria, pesticides, and toxic chemicals. Storm drain maintenance is often the first opportunity to provide pre-treatment and remove pollutants before they are conveyed through the storm drain system. Catch basins tend to trap these pollutants; therefore, they need to be cleaned out periodically to prevent those materials from being transported by high stormwater flows into downstream stormwater best management practices and the City's receiving waters.

Stormwater inlets within the facility boundary and immediately downgradient should be inspected monthly. Each stormwater inlet should include a public awareness message (ex. "dump no waste" or "drains to river", etc.) stenciled or otherwise etched near the drain. Catch basins with illegible or missing labels should be noted on the inspection report and relabeled. Damage or deterioration threatening the structural integrity of any component, conveyance or facility should be repaired as soon as possible. Material accumulation (including sediment, leaf litter and trash) on the grate, around the grate and inside the stormwater drain inlet should be removed and disposed of according to local, state and federal guidelines. The materials removed from the stormwater inlets shall not re-enter the stormwater system.

3.8 WASTE HANDLING

Trash and debris management includes minimizing the generation of waste and handling and disposing of waste in a manner that minimizes risks to surface waters. Trash cans should be provided indoors in high traffic areas to encourage use. Outdoor waste or trash receptacles should be covered and emptied regularly, and the adjacent areas inspected for misplaced or wind-blown litter. Nonhazardous and potentially hazardous debris should be segregated and disposed of in accordance with local, state and federal guidelines. Do not allow potentially hazardous waste material to accumulate.

3.9 SPILL PREVENTION & CONTROL PROCEDURES

3.9.1 What is Spill Prevention & Controls?

Spill prevention and controls are procedures that establish spill response and control actions by anticipating when and how spills might occur and instituting actions to contain and clean it up. The City prepares for potential spills by reducing the chance of spills to occur, stopping the source of spills, containing and cleaning spills, properly disposing of spill material and training personnel. A spill kit is available at each Station and on each Fire Engine and is placed in a designated location. The spill kit should be inspected monthly and items replenished as needed.

3.9.2 What to do if there's a Spill?

Employees are trained in spill identification, response and control. In the event of a spill, employees should be able to identify the substance spilled and its hazard, determine the amount spilled and the extent of spreading, identify the source of the spill and determine whether the spill can be contained safely by facility personnel. If safe to do so, employees should attempt to contain the spill and prevent it from leaving the site or entering the stormwater drainage system or receiving waters. Employees should attempt to eliminate the source of the spill and clean up any spilled material as soon as possible. Contaminated material should be disposed of in accordance with local, state and federal guidelines. The Stormwater Coordinator should be contacted immediately in the event that a spill leaves the facility property boundary, enters the stormwater system or enters a receiving water.

The City shall foster interagency coordination for hazardous waste or material spills response and cleanup. The City shall inform local spill-response agencies and/or TEMA (Tennessee Emergency Management Agency) of the potential negative impacts to surface water (and ground water) of spill clean-up activities. TEMA shall be contacted via **1-800-262-3300**. Spills that result in a sheen on surface waters shall also be reported to TDEC's Division of Water Resources Nashville Environmental Field Office.

3.10 OIL WATER SEPARATORS

Oil water separators consist of one or more chambers designed to remove trash and debris and to promote sedimentation of coarse materials and separation of free oil from stormwater runoff. While oil water separators can effectively trap floatables and oil and grease, they are ineffective at removing nutrients and metals and only capture coarse sediment. Maintenance is critical for proper operation of oil water separators. The unit should be inspected at least monthly and typically needs to be cleaned every six months. Typical maintenance includes removal of accumulated oil and grease, floatables, and sediment using a vacuum truck. Maintenance should be performed in accordance with the manufacturer's recommendations. Maintenance records must be maintained on-site for a period of three years and made available to the Stormwater Coordinator when requested. The City subcontracts oil water separator maintenance to a vendor.

3.11 UNDERGROUND DETENTION SYSTEM

Station #7 features an underground detention system. An underground detention system is a below ground pipe system that stores, detains and/or infiltrates stormwater runoff. The detention systems may also include filters to remove sediment and debris before entering the system. The underground detention system should be visually inspected quarterly. Maintenance should be performed when necessary as determined via the visual inspection. Refer to the "Underground Detention, Retention, and Infiltration Systems Inspection & Maintenance" document as provided in Appendix C. The City will subcontract maintenance services for the system.

4.0 INSPECTIONS

4.1 MONTHLY INSPECTIONS

Stormwater inspections will be conducted monthly by the Assistant Fire Chief at each Station. The inspection will include a visual inspection of all potential pollutant sources and ensure that BMPs are appropriate and being implemented consistently throughout the facility. The inspector shall complete the inspection form as provided in Appendix C for each Station. Any corrective actions and/or maintenance requirements shall be documented within the inspection form and implemented as soon as possible but at least prior to the next monthly inspection. The monthly inspection will also include a review and update to the materials inventory list for each Station, as provided in Appendix B.

4.2 ANNUAL FACILITY ASSESSMENT

A facility assessment will be conducted annually by the Stormwater Coordinator. The assessment will aid in the identification of significant changes that warrant a revision to the O&M Plan. If revisions are required, the O&M Plan should be updated and re-issued within 12 weeks of the identification of the need. Table 3 should be used to track annual facility assessments and whether or not revisions were required.

Table 3. Facilities Assessment Log

Assessment Date	Assessor Name	Revision Required	Revision Date
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	

The annual facility assessment also includes the following:

- A visual inspection of all potential pollutant sources that may enter the stormwater drainage system via stormwater or non-stormwater discharges,
- A review of BMPs for adequacy, implementation and maintenance,
- A visual inspection of materials and equipment necessary to implement the O&M Plan such as spill kit, drip pans, brooms, etc., and
- A review of the monthly inspection forms, any incidents of non-compliance and the corrective actions taken.

A facility assessment form is available in Appendix C.

5.0 TRAINING

Employees whose activities may impact stormwater at the facility will be trained in the components and goals of this O&M Plan. The purpose of the training is to educate employees on identifying pollutants and preventing and/or reducing stormwater pollution from municipal operation activities. Training will be conducted as needed but at least once every permit cycle. New employees must be trained within six months of their employment or movement into an applicable job category. The training event will be documented and shall include the date, name of the instructor and name of each employee in attendance. A training record form is included in Appendix D. Topics to be included during training are:

- Good housekeeping practices/BMP implementation
- Material management practices
- Used oil, spent solvent, and used battery management
- Spill prevention, response, and control
- Fueling procedures
- Inspections

6.0 REPORTING AND RECORDKEEPING

6.1 DOCUMENTATION

Stormwater maintenance activities must be documented with methods such as photos, maintenance logs, and/or contractor invoices. All inspection forms must be maintained at the applicable Fire Department Station. Records may be used as supporting documentation for the TNS075353 permit-required annual report. Documentation, including inspection forms and maintenance records, should be maintained for a period of three years. Electronic recordkeeping is acceptable.

6.2 MEASUREMENT OF SUCCESS

The O&M Plan will be reviewed annually (preferably during the fourth quarter of the fiscal year) by the Stormwater Coordinator and Assistant Fire Chief to evaluate overall effectiveness. The evaluation will be based on the example criteria presented below and the need for improvement and/or modification will be determined based on the results of the plan evaluation.

- Increased/sustained maintenance of best management practices.
- Fewer follow up maintenance activities required in response to the annual assessment.
- Number of employees trained annually.

APPENDIX A - FIGURES

APPENDIX B – INVENTORY OF SIGNIFICANT MATERIALS

APPENDIX C – INSPECTION FORMS

APPENDIX D – TRAINING

STORMWATER OPERATION & MAINTENANCE PLAN

PARKS DEPARTMENT

Prepared For:

CITY OF HENDERSONVILLE

Prepared By:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
NASHVILLE, TENNESSEE

CEC Project 192-267

JUNE 2021

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APPENDICES

1.0 INTRODUCTION

1.1 PURPOSE

The Stormwater Operations & Maintenance (O&M) Plan has been prepared for the City of Hendersonville's (City) Parks Department to address stormwater pollution prevention and good housekeeping in accordance with the Tennessee Department of Environment and Conservation (TDEC) National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) Permit No. TNS000000. The City's NPDES General Permit for Discharges from MS4s is Permit No. TNS075353.

1.2 PERMIT REQUIREMENTS

Section 4.2 of the Tennessee NPDES General Permit for MS4s, Permit No. TNS000000, addresses minimum controls required to be implemented by the Permittee. Section 4.2.6 "Pollution Prevention/Good Housekeeping for Municipal Operations" states the following:

> *The permittee must develop an operation and maintenance plan for each of the following municipal operations as applicable. The plans must include information related to maintenance activities, schedules and the proper disposal of waste from structural and non-structural stormwater controls related to the following:*
>
> - *streets, roads, highways,*
> - *municipal parking lots,*
> - *maintenance and storage yards,*
> - *fleet or maintenance shops with outdoor storage areas,*
> - *salt/sand storage locations,*
> - *snow disposal areas operated by the permittee, and*
> - *waste disposal, storage, and transfer stations.*
>
> TNS000000 Section 4.2.6

The City's Parks Department has been identified by the City (the permittee) as a municipal operation subject to this permit requirement. This facility generates and/or stores a material which constitutes a potential pollutant of concern for MS4s. Examples of these materials may include, but are not limited to, lubricants, fuels, sand, gravel, soil, salt, pesticide, fertilizer, garbage, trash, grass clippings, vehicles, equipment and other wastes.

1.3 REVIEW AND REVISIONS TO THE OPERATIONS & MAINTENANCE PLAN

The O&M Plan will be reviewed at least annually by the City's Stormwater Coordinator to determine if revisions are necessary to reflect changes to the facility and/or changes to the activities conducted at the facility. Examples of changes that would require a revision to the plan include:

- A modification and/or addition to the facility layout.
- An activity that may introduce a new pollutant at the facility.
- A change in the materials generated and/or stored at the facility.
- A significant increase in the quantities of material generated and/or stored at the facility.
- Modification of an existing Best Management Practice (BMP) and or the addition of a new BMP.

2.0 FACILITY DESCRIPTION

2.1 SITE LOCATIONS

The City's Parks Department consists of six site locations as presented in Table 1.

Table 1. City Parks Department Site Locations

Site Number	Site Description	Address
1	Drakes Creek Park Athletic Complex	131 Conway Twitty Lane, Hendersonville, Tennessee
2	Memorial Park	151 East Main Street, Hendersonville, Tennessee
3	Rugby Park	1693 Avant Lane, Hendersonville, Tennessee
4	Sanders Ferry Park	513 Sanders Ferry Road, Hendersonville, Tennessee
5	Veterans Park	144 Scotch Street, Hendersonville, Tennessee
6	Volunteer Park at Arrowhead	1334 Drakes Creek Road, Hendersonville, Tennessee

2.2 FACILITY CHARACTERISTICS

Drakes Creek Park Athletic Complex located at Conway Twitty Lane consists of athletic fields and public parking areas that drain to Drakes Creek or its tributaries. A City maintenance shop and fueling area are also located at Drakes Creek Park.

Memorial Park located at East Main Street consists of an athletic field, playground, greenspace, dog park and public parking areas that drain to Old Hickory Lake.

Rugby Park located at Avant Lane consists of football fields and public parking areas that drain to Drakes Creek.

Sanders Ferry Park located on Sanders Ferry Road consists of a disc golf course, greenspace, playground and public parking areas that drain to the Cumberland River and Old Hickory Lake.

Veterans Park located at Scotch Street consists of athletic field, playground, skate park and public parking areas that drain to Drakes Creek.

Volunteer Park at Arrowhead located at Drakes Creek Park Road consists of soccer fields, roller hockey facilities and public parking areas that drain to Drakes Creek or its tributaries.

Stormwater outfalls (points of concentrated flow where stormwater leaves the facility) are present at each site and are typically identified as area drains, curb inlets, pipe outlets or drainage swales. Refer to the Property & Drainage Features map for each site as provided in Figure 1 of Appendix A.

2.3 STORMWATER POLLUTION PREVENTION TEAM

The pollution prevention team has been established and has specific stormwater-associated responsibilities. The pollution prevention team will assist the Permittee in the implementation, maintenance, and revision of the O&M Plan. A list of the team members and their responsibilities is shown in Table 2.

Table 2. Pollution Prevention Team

Name:	Andy Gilley	**Position:**	Parks Director
Responsibilities:			
• Administer implementation of this O&M plan daily. • Identify staff in need of stormwater training. • Participate in annual site assessment. • Implement Emergency Response Plan and Procedures. • Oversee documentation and records of inspection and stormwater maintenance activities. • Conduct and/or coordinate training for facility employees. • Review documentation of spills and/or illicit discharges, if applicable.			

Table 3. Pollution Prevention Team Continued

Name:	Trevor Cole	**Position:**	Maintenance Supervisor
Responsibilities:			
• Administer implementation of this O&M plan daily. • Perform monthly stormwater inspections at each site location. • Participate in annual site assessment. • Review O&M Plan annually; assist with revisions, if necessary. • Maintain documentation and records of inspection and stormwater maintenance activities. • Maintain documentation of spills and/or illicit discharges, if applicable.			
Name:	Helen Morrison	**Position:**	Stormwater Coordinator
Responsibilities:			
• Conduct and/or coordinate training for facility employees. • Conduct annual site assessment. • Review documentation and records annually for accuracy and completeness. • Review O&M Plan annually; assist with revisions, if necessary.			

3.0 POTENTIAL POLLUTANTS AND ASSOCIATED BEST MANAGEMENT PRACTICES (BMPS)

3.1 SIGNIFICANT MATERIALS

A number of significant materials are stored or used on-site. An anticipated list of materials used, stored or produced on site is provided in Appendix B. The list also provides an approximation of the volume on-site in addition to the handling location and typical frequency of use. Description of the handling and storage of these materials is provided in the following sections.

3.2 MATERIAL HANDLING & STORAGE

Proper material handling and storage aids in controlling the potential for leaks, spills and losses of material delivered, used and stored at the facility. Spills and leaks of materials can accumulate in soils or on surfaces and be carried away in stormwater runoff. Only needed products will be stored on-site. Materials will be stored under cover, free from interception with precipitation or stormwater runoff, and in their appropriate containers. Products must be stored in their original containers and/or labeled. Containers shall be tightly sealed when not in use. When possible, products should be used in their entirety before properly disposing of the container. The manufacturer's recommendations for disposal of materials and containers will be followed. Material storage areas will be inspected monthly to ensure proper use, storage and disposal. Dust generated will be removed as needed. Safety Data Sheets shall be kept current for all materials stored at the facility and be accessible to all facility personnel.

3.3 BULK MATERIAL OUTDOOR STOCKPILING

Proper management and containment of outdoor bulk material stockpile areas can reduce the discharge of pollutants to stormwater during material delivery and storage. Bulk material storage may include, but is not limited to, sand, and soil typically stored outside in large piles. Designated material storage areas should be established away from storm drain inlets and/or jurisdictional features. When possible, material should be covered with a plastic sheeting and stored on elevated areas to minimize contact with precipitation and stormwater runoff. When large stockpiles cannot be covered, containment devices such as three-sided berms or perimeter walls should be established to minimize the erosion and prevent discharge off of the stockpiled material.

Stormwater runoff from the stockpiled areas should be conveyed through a treatment Best Management Practice(s) prior to discharge to a stormwater inlet and/or jurisdictional feature.

3.4 VEHICLE & EQUIPMENT MAINTENANCE

Regular maintenance of both vehicle and heavy equipment prolongs the life of municipal assets and helps reduce the potential for leaking fluids associated with normal wear and tear. Maintenance practices involve a number of solvents, petroleum products and other toxic compounds that must be stored and handled appropriately to avoid contamination. Leakage of fluids from vehicles can drain towards the stormwater management system and ultimately discharge to receiving waters. The City practices preventative maintenance including regular inspections and maintenance before problems arise. In instances where leaks are observed, maintenance should be performed as soon as possible, and the vehicle or equipment removed from use until repaired. Absorbent booms, drip pans or tarps should be used to contain leaks. Vehicle maintenance should be performed indoors. Vehicle or equipment maintenance should not occur near storm drains. Maintenance and repair areas shall not be washed down, instead, they should be swept weekly or more often as needed to collect dirt, and spills must be wiped up with rags or other absorbent material. Used batteries should be stored indoors in secondary containment and recycled.

3.5 VEHICLE & EQUIPMENT WASHING

Improper vehicle or equipment washing can introduce solvents, grease, sediment and petroleum products that can contribute to stormwater pollution. Outdoor washing of City vehicles requires permitting from the State of Tennessee and should be avoided. City vehicles should be washed indoors with floor drains that are connected to the sanitary sewer system or other recycled water system. City vehicles shall be washed in the manner described above or at commercial car wash facility.

3.6 VEHICLE & EQUIPMENT FUELING

Vehicle fueling can result in the exposure of hydrocarbons and other pollutants. Proper fueling practices can help prevent and minimize the risks of spills and leaks that can contribute to pollutants within stormwater runoff. Vehicle fueling must occur in a designated, preferably concrete, covered area away from stormwater drainage ditches, inlets and surface waters.

"Topping-off" or overfilling of fuel tanks should be discouraged. Fueling activities must be attended by personnel at all times. A spill kit and associated absorbent material must be located at the fueling area and accessible to employees. Absorbent material shall be used to address spills and the absorbent material promptly removed and disposed of properly. Washing down of the fueling area should be avoided.

3.7 VEHICLE PARKING

Sediment, debris and other pollutants accumulate on parking lot surfaces and are a potential source of stormwater pollution. Vehicles located in the parking area should be inspected frequently for leaks. If leaks are identified, absorbent booms, drip pans or tarps shall be placed immediately and the vehicle should be removed from service and scheduled for maintenance and/or disposal. Parking areas are also prone to trash and debris accumulation. Street sweeping can improve the aesthetics of City parking lots, control dust and decrease the accumulation of pollutants to stormwater inlets.

3.8 PET WASTE

Pet waste can contribute to stormwater pollution and degrade water quality. Pet waste contains pathogens, and its decomposition in surface waters can result in oxygen depletion. A pet waste collection and disposal system should be established at each site where necessary to minimize and/or eliminate the potential for animal waste to come into contact with stormwater runoff. Outdoor grassy areas associated with the park should be kept at a minimum height of 4 inches.

3.9 HERBICIDE, PESTICIDE & FERTILIZER

Improper use, storage or disposal of herbicide can contribute to stormwater pollution and degrade water quality. Herbicides, pesticides and fertilizers shall be stored in their original, compatible containers (with labels intact) on impervious surfaces and protected from stormwater runoff and precipitation. City employees must follow all product label directions and precautions. To minimize spills, closed handling systems (hose, funnel, etc.) must be used to transfer product directly from the storage container to the application equipment. Filling of the application equipment must be supervised at all times and shall occur at least 50 ft. away from any storm drain inlet and/or jurisdictional feature.

Herbicide, pesticide and fertilizer application is a contract-provided service. The vendor is to adhere to all product label procedures, directions and precautions to ensure proper application of the product. Application equipment will be checked prior to use to ensure that the equipment operates as intended, is free or leaks and/or other malfunctions. Spray equipment will be calibrated routinely as needed. Applications shall not occur within 48 hours of a predicted rain event, during a rain event or during windy conditions. Unused or unusable product is to be disposed of in accordance with local, state and federal requirements. Waste product is likely considered a hazardous waste. Waste herbicide will be removed by the vendor. Herbicide, pesticide or fertilizer shall never be poured into the sanitary sewer or stormwater system.

3.10 LAWN MAINTENANCE

The City currently maintains a mowing and landscape schedule at each site. Lawn and landscaping services include mowing, tree-trimming and landscaping. Mowing is performed at each site as needed. Where possible, to avoid stressing the turf, no more than one third of the existing shoot growth should be removed at any one mowing. If a lawn grows excessively high, the mowing height should be gradually reduced to the proper height over a span of several mowings rather than all at once. This will minimize buildup of clippings and prevent shock to the turf. Unless an excessive amount of clippings remain on the lawn, there is no need to remove clippings by bagging or raking. At no time should clippings, leaves, or landscaping debris be blown into drainage ditches, catch basins, Drakes Creek or the tributaries of Drakes Creek.

3.11 STORMWATER INLET CLEANING PROGRAM

Traditional municipal stormwater systems were designed to quickly collect and convey stormwater runoff to receiving waters. The purpose of catch basin, inlet and storm drain cleanings is to remove accumulated sediment which prevents blockages, localized flooding and reduces the release of downstream pollutants.

Fine particles and pollutants generated by stormwater run-off, atmospheric deposition, vehicle emissions, breakup of street surface materials, littering, and sanding accumulate along the curbs of roads in between rainfall events. This results in the accumulation of trash and sediment.

Pollutants attach to trash and sediment including nutrients, metals, hydrocarbons, bacteria, pesticides, and toxic chemicals. Storm drain maintenance is often the first opportunity to provide pre-treatment and remove pollutants before they are conveyed through the storm drain system. Catch basins tend to trap these pollutants; therefore, they need to be cleaned out periodically to prevent those materials from being transported by high stormwater flows into downstream stormwater best management practices and the City's receiving waters.

Stormwater inlets within the facility boundary and immediately downgradient should be inspected monthly. Each stormwater inlet should include a public awareness message (ex. "dump no waste" or "drains to river", etc.) stenciled or otherwise etched near the drain. Catch basins with illegible or missing labels should be noted on the inspection report and relabeled. Damage or deterioration threatening the structural integrity of any component, conveyance or facility should be repaired as soon as possible. Material accumulation (including sediment, leaf litter and trash) on the grate, around the grate and inside the stormwater drain inlet should be removed and disposed of according to local, state and federal guidelines. The materials removed from the stormwater inlets shall not re-enter the stormwater system.

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4.0 INSPECTIONS

4.1 MONTHLY INSPECTIONS

Stormwater inspections will be conducted monthly by the Maintenance Supervisor at each site. The inspection will include a visual inspection of all potential pollutant sources and ensure that BMPs are appropriate and being implemented consistently throughout the facility. The inspector shall complete the inspection form as provided in Appendix C for each site. Corrective actions and/or maintenance requirements shall be documented within the inspection form and implemented as soon as possible but at least prior to the next monthly inspection. The monthly inspection will also include a review and update to the materials inventory list for each site, as provided in Appendix B.

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A facility assessment will be conducted annually by the Stormwater Coordinator. The assessment will aid in the identification of significant changes that warrant a revision to the O&M Plan. If revisions are required, the O&M Plan should be updated and re-issued within 12 weeks of the identification of the need. Table 3 should be used to track annual facility assessments and whether or not revisions were required.

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The annual facility assessment also includes the following:

- A visual inspection of potential pollutant sources that may enter the stormwater drainage system via stormwater or non-stormwater discharges,
- A review of BMPs for adequacy, implementation and maintenance,
- A visual inspection of materials and equipment necessary to implement the O&M Plan such as spill kit, drip pans, brooms, etc., and
- A review of the monthly inspection forms, any incidents of non-compliance and the corrective actions taken.

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- Material management practices
- Used oil, spent solvent, and used battery management
- Spill prevention, response, and control
- Fueling procedures
- Inspections

6.0 REPORTING AND RECORDKEEPING

6.1 DOCUMENTATION

Stormwater maintenance activities must be documented with methods such as photos, maintenance logs, and/or contractor invoices. All inspection forms must be maintained at the Drakes Creek Park Maintenance Office. Records may be used as supporting documentation for the TNS075353 permit-required annual report. Documentation, including inspection forms and maintenance records, should be maintained for a period of three years. Electronic recordkeeping is acceptable.

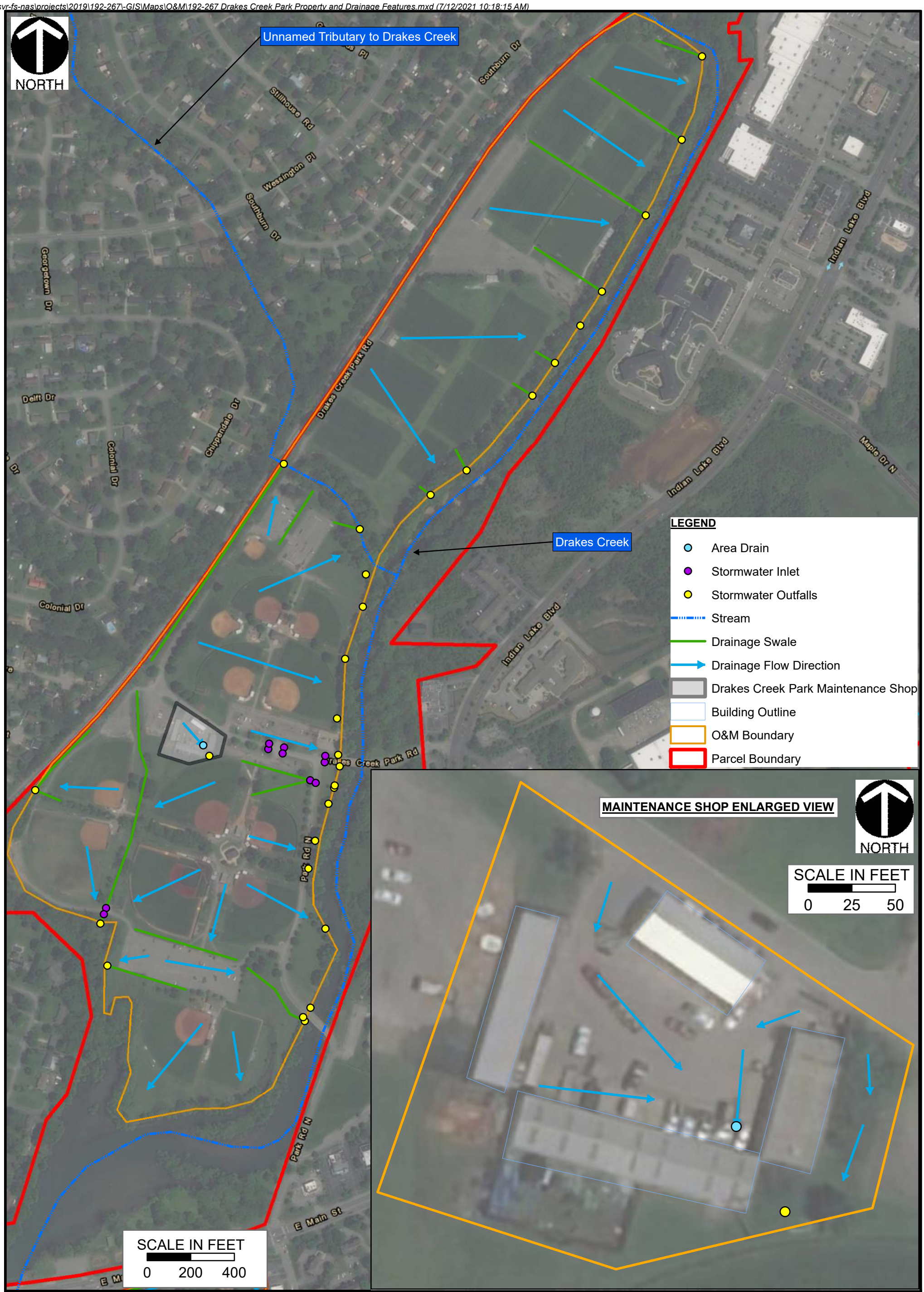
6.2 MEASUREMENT OF SUCCESS

The O&M Plan will be reviewed annually (preferably during the fourth quarter of the fiscal year) by the Stormwater Coordinator and the Maintenance Supervisor to evaluate overall effectiveness. The evaluation will be based on the example criteria presented below and the need for improvement and/or modification will be determined based on the results of the plan evaluation.

- Increased/sustained maintenance of best management practices.
- Fewer follow up maintenance activities required in response to the annual assessment.
- Number of employees trained annually.

APPENDIX A - FIGURES

H\ \\svr-fs-nas\projects\2019\192-267\-GIS\Maps\O&M\192-267 Drakes Creek Park Property and Drainage Features.mxd (7/12/2021 10:18:15 AM)



REFERENCES

ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY, ACCESSED 7/12/2021, IMAGERY DATE: 2020.

PARCEL DATA SOURCED VIA: HTTPS://SUMNERTN.GEOPOWERED.COM/PROPERTYSEARCH/

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CITY OF HENDERSONVILLE
PROPERTY & DRAINAGE FEATURES
FOR OPERATION AND MAINTENANCE PLAN

DRAKES CREEK PARK
AND MAINTENANCE SHOP

DRAWN BY:	JTM	CHECKED BY:	DRAFT	APPROVED BY:	DRAFT	FIGURE NO:	1
DATE:	7/12/2021	SCALE:	1 " = 400 '	PROJECT NO:	192-267		

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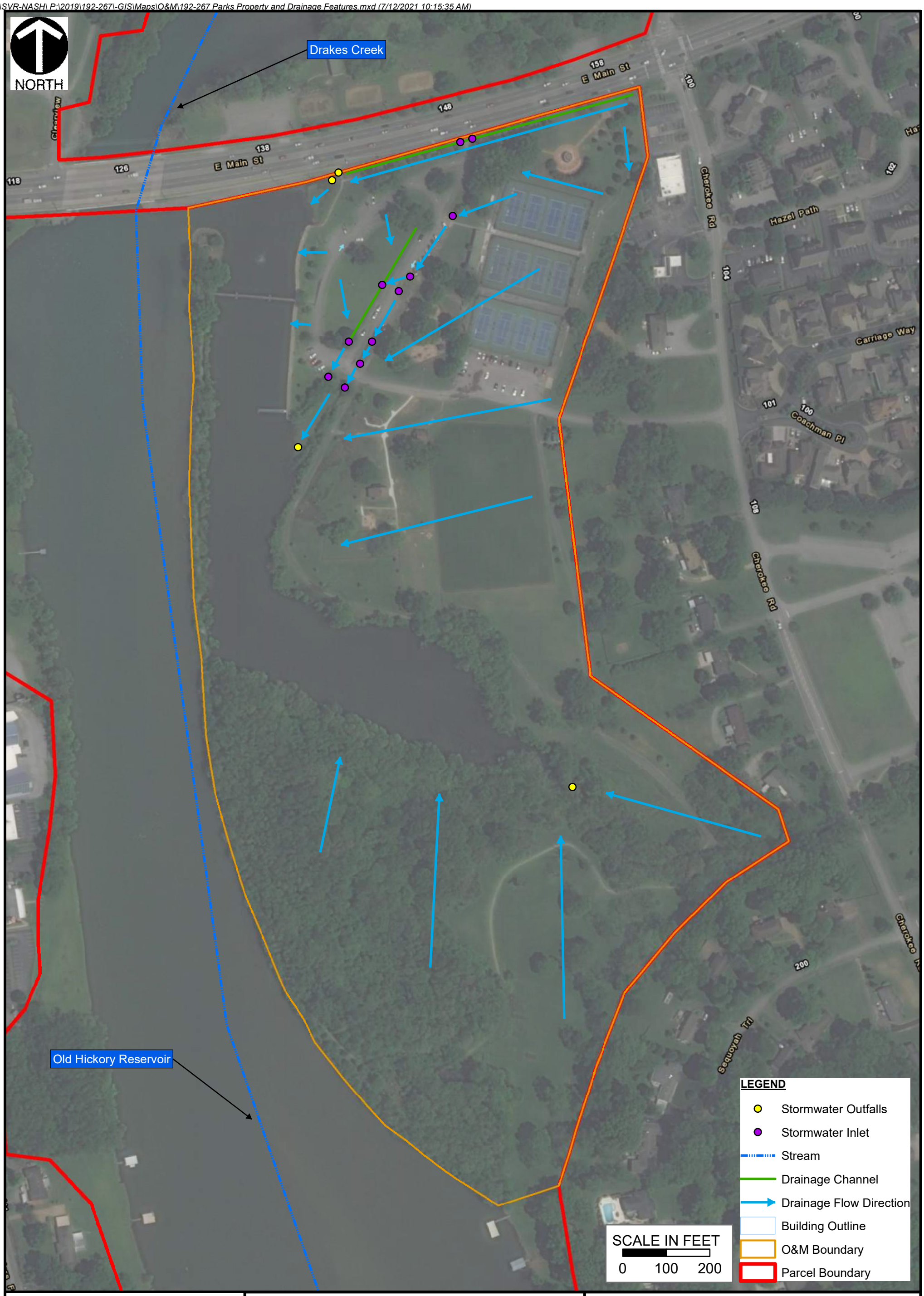

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CITY OF HENDERSONVILLE PROPERTY & DRAINAGE FEATURES FOR OPERATION & MAINTENANCE PLAN

MEMORIAL PARK

DRAWN BY:	JTM	CHECKED BY:	DRAFT	APPROVED BY:	DRAFT	FIGURE NO:	2
DATE:	7/12/2021	SCALE:	1 " = 200 '	PROJECT NO:	192-267		

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NORTH

Drakes Creek Rd

Drakes Creek

Redwood Way

Bratton Ct

Island Brook Dr

Carlyle Ct

Atchley Ct

Leaf Ln

1099

1066

1074

1000

1078

100

LEGEND

- Stormwater Outfalls
- Stormwater Inlet
- Stream
- Drainage Channel
- Drainage Flow Direction
- Building Outline
- O&M Boundary
- Parcel Boundary

SCALE IN FEET

0 100 200

REFERENCES

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CITY OF HENDERSONVILLE PROPERTY & DRAINAGE FEATURES FOR OPERATION & MAINTENANCE PLAN

RUGBY PARK

DRAWN BY:	JTM	CHECKED BY:	DRAFT	APPROVED BY:	DRAFT	FIGURE NO:	3
DATE:	7/12/2021	SCALE:	1 " = 200 '	PROJECT NO:	192-267		

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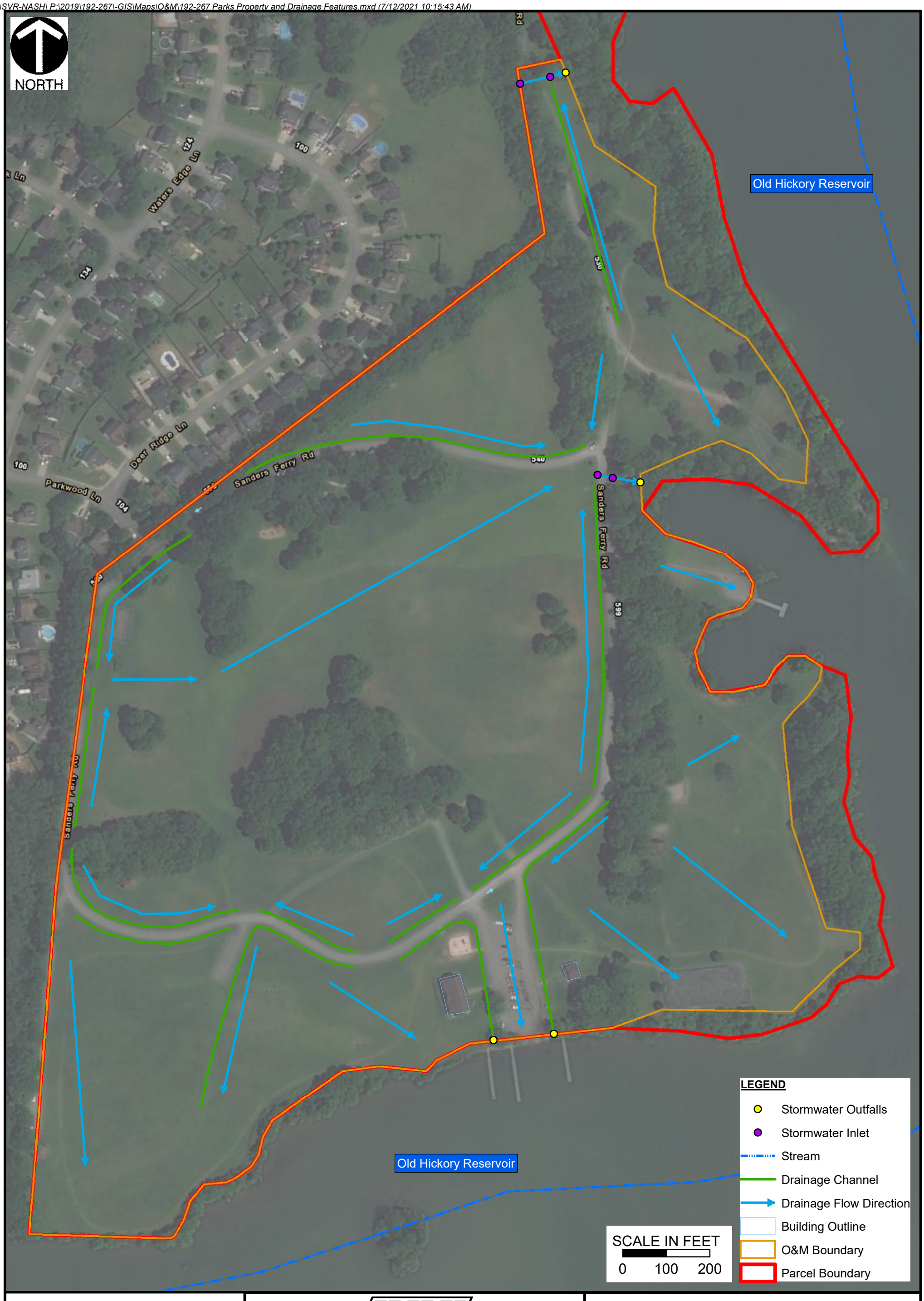

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CITY OF HENDERSONVILLE PROPERTY & DRAINAGE FEATURES FOR OPERATION & MAINTENANCE PLAN

SANDERS FERRY PARK

DRAWN BY:	JTM	CHECKED BY:	DRAFT	APPROVED BY:	DRAFT	FIGURE NO:	4
DATE:	7/12/2021	SCALE:	1 " = 200 '	PROJECT NO:	192-267		

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NORTH

Unnamed Tributary to Drakes Creek

Drakes Creek

TN-386 S

TN-386 N

Raindrop Ln

Pedestrian Bridge

LEGEND

- Stormwater Outfalls
- Stormwater Inlet
- Stream
- Drainage Channel
- Drainage Flow Direction
- Building Outline
- O&M Boundary
- Parcel Boundary

SCALE IN FEET

0 100 200

REFERENCES

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CITY OF HENDERSONVILLE PROPERTY & DRAINAGE FEATURES FOR OPERATION & MAINTENANCE PLAN

VETERANS PARK

DRAWN BY:	JTM	CHECKED BY:	DRAFT	APPROVED BY:	DRAFT	FIGURE NO:	5
DATE:	7/12/2021	SCALE:	1 " = 200 '	PROJECT NO:	192-267		

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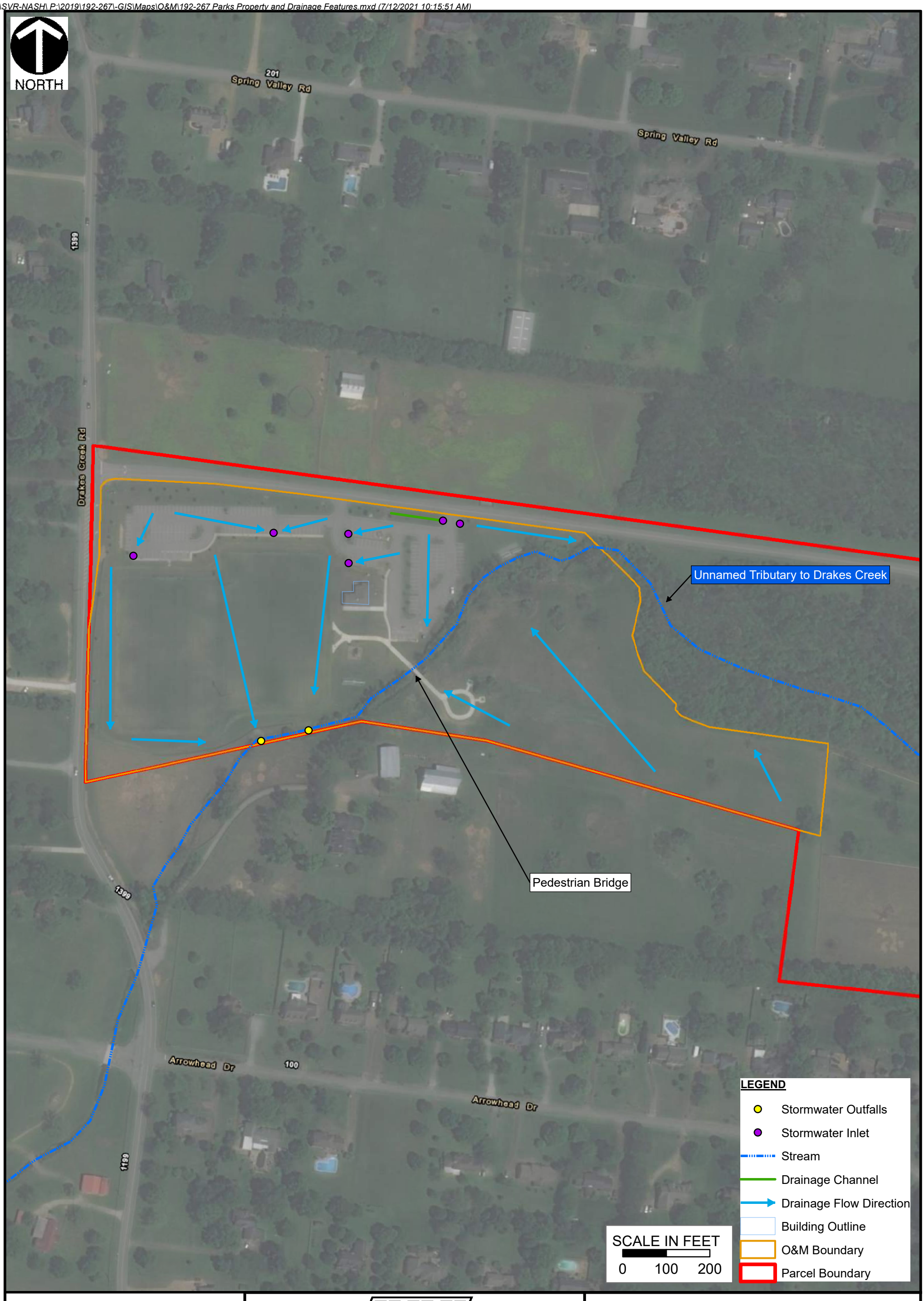

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CITY OF HENDERSONVILLE PROPERTY & DRAINAGE FEATURES FOR OPERATION & MAINTENANCE PLAN

VOLUNTEER PARK

DRAWN BY:	JTM	CHECKED BY:	DRAFT	APPROVED BY:	DRAFT	FIGURE NO:	6
DATE:	7/12/2021	SCALE:	1 " = 200 '	PROJECT NO:	192-267		

APPENDIX B – INVENTORY OF SIGNIFICANT MATERIALS

List of Significant Materials for Hendersonville Parks Department

Material Name	Typical Quantity	Receiving and Shipping Location	Handling Location	Frequency
EXAMPLE: Acid	12 gal	Maintenance Shop	Maintenance Shop	Twice weekly
Acid				
Adhesives and sealants				
Aggregate				
Animal Wastes				
Asphalt				
Brake fluid	<1 gal	Maintenance Building	Maintenance Building	As needed
Concrete				
Coolant (new)	<1 gal	Maintenance Building	Maintenance Building	As needed
Coolant (used)	<1 gal	Maintenance Building	Maintenance Building	As needed
Detergents				
Diesel fuel	500 gal	Maintenance Area	Maintenance Area	Monthly
Fertilizers		Maintenance Building	Maintenance Building	Once per year
Gasoline	500 gal	Maintenance Area	Maintenance Area	Every 2 weeks
Gravel	1 ton	Maintenance Area	Maintenance Area	As needed
Hydraulic fluid				
Lubricants				
Motor oil (new)	<1 gal	Maintenance Building	Maintenance Building	As needed
Motor oil (used)	50 gal	Maintenance Building	Maintenance Building	As needed
Paint Products	5 gal	Maintenance Building	Maintenance Building	As needed
Pesticides/Herbicides	X?	Maintenance Building	Maintenance Building	Once per year
Sand	1 ton	Maintenance Area	Maintenance Area	As needed
Soil amendments				
Solvents				
Ballfield Material – Clay/Sand Mix	1 ton	Maintenance Area	Maintenance Area	As needed

APPENDIX C – INSPECTION FORMS

City of Hendersonville
Tennessee

CITY OF HENDERSONVILLE –PARKS DEPARTMENT
MONTHLY STORMWATER INSPECTION FORM

General Information:			
Site Location (Circle One):	**Drakes Creek Memorial Rugby Sanders Ferry Veterans Volunteer**		
Inspector Name:		Date of Inspection:	enter date.

Instructions: Complete the following sections below; if section is not applicable, check N/A and move to next section.

1. Material Storage:					N/A ☐
a. Is material inventory list up to date and accurate?	Yes	☒	No:	☐	
b. Are all materials stored inside and/or undercover away from precipitation and/or stormwater runoff?	Yes	☐	No:	☐	
c. Are all materials stored in appropriate containers and labeled?	Yes	☐	No:	☐	
d. Are all containers tightly sealed?	Yes	☐	No:	☐	
e. Do containers appear in good condition, free of bulges, rust and/or any other indicators of concern?	Yes	☐	No:	☐	
f. Is there evidence of leaks or staining in material storage areas?	Yes	☐	No:	☐	
g. Is the area in general free of fines and dust?	Yes	☐	No:	☐	
2. Bulk Material Outdoor Stockpiling:					N/A ☐
a. Is material stored in a designated location?	Yes	☐	No:	☐	
b. Where practical, is material covered with sheeting?	Yes	☐	No:	☐	
c. Where sheeting is impractical, is material contained via perimeter devices?	Yes	☐	No:	☐	
d. Is material stored away from stormwater inlets and/or jurisdictional features (streams, wetlands)?	Yes	☐	No:	☐	
e. Is material exposure to precipitation and/or stormwater runoff minimized?	Yes	☐	No:	☐	
3. Vehicle & Equipment Maintenance:					N/A ☐
a. Are leaking vehicles or equipment observed at the facility?	Yes	☐	No:	☐	
b. Is vehicle & equipment maintenance performed inside or undercover?	Yes	☐	No:	☐	
c. Are drip pans, tarps, etc. utilized during maintenance to contain spills or leaks?	Yes	☐	No:	☐	
d. Are used batteries stored in secondary containment and recycled appropriately?	Yes	☐	No:	☐	
e. Are used rags or tarps stored in flammable storage containers and disposed of appropriately?	Yes	☐	No:	☐	
f. Are used oil filters drained prior to disposal?	Yes	☐	No:	☐	
g. Is used oil stored in an appropriate container and disposed of in accordance with local, state and federal guidelines?	Yes	☐	No:	☐	
4. Vehicle & Equipment Washing:					N/A ☐
a. Is vehicle washing performed indoors with discharge to the sanitary sewer system?	Yes	☐	No:	☐	
5. Vehicle & Equipment Fueling:					N/A ☐
a. Is fueling performed at a designated location?	Yes	☐	No:	☐	
b. Is there evidence of spills or leaks? If yes, answer c below	Yes	☐	No:	☐	
c. Are spills and leaks being cleaned up and materials disposed of appropriately?	Yes	☐	No:	☐	
6. Vehicle Parking:					N/A ☐
a. Is sweeping being performed as needed to address trash and debris accumulation?	Yes	☐	No:	☐	
b. Is there evidence of spills or leaks? If yes, answer c below	Yes	☐	No:	☐	
c. Are spills and leaks being cleaned up and materials disposed of appropriately?	Yes	☐	No:	☐	

City of Hendersonville
Tennessee

CITY OF HENDERSONVILLE –PARKS DEPARTMENT
MONTHLY STORMWATER INSPECTION FORM

7. Pet Waste:		N/A ☐
a. Are pet waste collection stations available?	Yes ☐	No: ☐
b. Is animal waste being disposed of accordingly?	Yes ☐	No: ☐
8. Herbicide, Pesticide & Fertilizer:		N/A ☐
a. Are products stored in their original, compatible containers with labels intact?	Yes ☐	No: ☐
b. Are products stored on impervious surfaces protected from stormwater runoff and/or precipitation?	Yes ☐	No: ☐
c. Are products being applied at the appropriate application rate and frequency?	Yes ☐	No: ☐
d. Are products applied during appropriate weather conditions? *Not within 48 hours of predicted rain event, during a rain event or windy conditions.*	Yes ☐	No: ☐
e. Is unused product removed of by the vendor and disposed of accordingly?	Yes ☐	No: ☐
9. Lawn Maintenance:		N/A ☐
a. Is mowing being performed as needed?	Yes ☐	No: ☐
b. Are lawn clippings allowed to remain on the lawn where possible (unless excessive buildup)? *Do not dispose of grass clippings, leaves, debris in ditches or streams.*	Yes ☐	No: ☐
10. Stormwater Inlets:		N/A ☐
a. Are stormwater inlets and outlets clearly visible and accessible?	Yes ☐	No: ☐
b. Are stormwater inlets include a public awareness message (ex. drains to river)?	Yes ☐	No: ☐
c. Are catch basin or area drain inlets in good condition and free of trash and debris, floatables, pollutants, oil and grease?	Yes ☐	No: ☐
d. Are catch basin or area drain inlets free of any signs of past spills, releases or illicit discharges?	Yes ☐	No: ☐
11. Waste Handling:		N/A ☐
a. Are trash cans provided as needed throughout the facility?	Yes ☐	No: ☐
b. Are trash cans or dumpsters outside covered?	Yes ☐	No: ☐
c. Is misplaced or windblown litter observed?	Yes ☐	No: ☐
d. Is non-hazardous and potentially hazardous waste segregated?	Yes ☐	No: ☐
e. Is waste collected frequently and disposed of in accordance with local, state and federal guidelines?	Yes ☐	No: ☐
12. Spill Prevention & Control Procedures:		N/A ☐
a. Is a spill kit available on-site and stored in a designated location?	Yes ☐	No: ☐
b. Are spill kits, SDS, and PPE accessible to employees?	Yes ☐	No: ☐
c. Are contents and materials in the spill kit sufficient?	Yes ☐	No: ☐
d. Has a spill occurred since the previous inspection? If yes, answer questions i – iv below	Yes ☐	No: ☐
i. Indicate material and estimate volume of material spilled in the Summary of Inspection Findings below.		
ii. Was the spill contained within the facility property boundary?	Yes ☐	No: ☐
iii. Did the spill enter the stormwater drainage system or enter a receiving water? If yes, answer (iv.)	Yes ☐	No: ☐
iv. Was the Stormwater Coordinator notified?	Yes ☐	No: ☐
13. Summary of Inspection Findings:		
a. Corrective Action(s) and/or maintenance required?	Yes ☐	No: ☐

b. If yes, please provide comments below:

Certification & Signature:					
I certify under penalty of law that this report and all attachments are, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.					
Inspector's Name:		Signature:		Date:	enter date.

City of Hendersonville
Tennessee

CITY OF HENDERSONVILLE –PARKS DEPARTMENT
MONTHLY STORMWATER INSPECTION FORM

Example Photo Summary	
Photo #: Comments:	[Insert Photo]
Photo #: Comments:	[Insert Photo]
Photo #: Comments:	[Insert Photo]

Please attach any additional supporting information as needed to support the findings of the site assessment.

City of Hendersonville
Tennessee

CITY OF HENDERSONVILLE – PARKS DEPARTMENT
ANNUAL FACILITY ASSESSMENT

General Information:			
Station #:			
Assessor's Name:		Date of Assessment:	enter date.

Observations & Findings:		
1. Are monthly stormwater inspections being performed?	Yes ☐	No: ☐
2. Are corrective actions and maintenance requirements being completed within the appropriate timeframe?	Yes ☐	No: ☐
3. Are Best Management Practices adequate?	Yes ☐	No: ☐
5. Are Best Management Practices being implemented and maintained?	Yes ☐	No: ☐
6. Are maintenance records available on-site?	Yes ☐	No: ☐
7. Are materials and equipment necessary to implement the O&M Plan available on-site?	Yes ☐	No: ☐
8. Has the facility contributed to an illicit discharge since the previous assessment?	Yes ☐	No: ☐
9. Have all necessary facility personnel participated in annual stormwater training?	Yes ☐	No: ☐
10. Are training records available on-site?	Yes ☐	No: ☐
11. Are revisions to the O&M Plan required?	Yes ☐	No: ☐
Summary of Assessment Findings:		
12. Corrective Action(s) and/or maintenance required?	Yes ☐	No: ☐
If yes, please provide comments below:		

Certification & Signature:

I certify under penalty of law that this report and all attachments are, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Assessor's Name:		Signature:		Date:	enter date.
Site Representative's Name:		Signature:		Date:	enter date.

APPENDIX D – TRAINING

CITY OF HENDERSONVILLE

PARKS DEPARTMENT

ANNUAL STORMWATER TRAINING

Date: _____

Name of Instructor: _____

Station: _____

Name	Signature

STORMWATER OPERATION & MAINTENANCE PLAN

POLICE DEPARMENT

Prepared For:

CITY OF HENDERSONVILLE

Prepared By:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
NASHVILLE, TENNESSEE

CEC Project 192-267

AUGUST 2023

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APPENDICES

1.0 INTRODUCTION

1.1 PURPOSE

The Stormwater Operations & Maintenance (O&M) Plan has been prepared for the City of Hendersonville's (City) Police Department to address stormwater pollution prevention and good housekeeping in accordance with the Tennessee Department of Environment and Conservation (TDEC) National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) Permit No. TNS000000. The City's NPDES General Permit for Discharges from MS4s is Permit No. TNS075353.

1.2 PERMIT REQUIREMENTS

Section 4.2 of the Tennessee NPDES General Permit for MS4s, Permit No. TNS000000, addresses minimum controls required to be implemented by the Permittee. Section 4.2.6.2 "Operation and Maintenance (O&M) Program " states the following:

> *The permittee must develop an operation and maintenance program detailing the activities and procedures the permittee will implement so that the MS4 infrastructure is maintained to reduce the discharge of pollutants from the MS4 for each of the following municipal operations as applicable:*
>
> - *streets, roads, highways,*
> - *municipal parking lots,*
> - *maintenance and storage yards,*
> - *fleet or maintenance shops with outdoor storage areas,*
> - *salt/sand storage locations,*
> - *snow disposal areas operated by the permittee, and*
> - *waste disposal, storage, and transfer stations.*
>
> TNS000000 Section 4.2.6.2

The City's Police Department has been identified by the City (the permittee) as a municipal operation subject to this permit requirement. This facility generates and/or stores a material which constitutes a potential pollutant of concern for MS4s. Examples of these materials may include, but are not limited to, lubricants, fuels, sand, gravel, soil, salt, pesticide, fertilizer, garbage, trash, grass clippings, vehicles, equipment and other wastes.

1.3 REVIEW AND REVISIONS TO THE OPERATIONS & MAINTENANCE PLAN

The O&M Plan will be reviewed at least annually by the City's Stormwater Coordinator to determine if revisions are necessary to reflect changes to the facility and/or changes to the activities conducted at the facility. Examples of changes that would require a revision to the plan include:

- A modification and/or addition to the facility layout.
- An activity that may introduce a new pollutant at the facility.
- A change in the materials generated and/or stored at the facility.
- A significant increase in the quantities of material generated and/or stored at the facility.
- Modification of an existing Best Management Practice (BMP) and or the addition of a new BMP.

2.0 FACILITY DESCRIPTION

2.1 SITE LOCATIONS

The City's Police Department consists of three site locations as presented in Table 1.

Table 1. City Police Department Site Locations

Site Number	Site Description	Address
1	Police Station, Police Annex & Animal Control	3 Executive Park Drive, Hendersonville, TN
2	Equestrian Training Center	0 Drakes Creek Road, Hendersonville, TN
3	Police Firing Range	485 Forest Retreat Road, Hendersonville, TN

2.2 FACILITY CHARACTERISTICS

The first site, located on Executive Park Drive, consists of the Police Station and Police Annex buildings. The Police Station has an attached Sally Port, canopy-covered Fueling Center, outdoor storage sheds, vehicle impoundment yard, City vehicular parking area and public parking. The Police Annex building includes the attached City's Animal Control facility and surrounding public parking area.

The second site, located on Drakes Creek Road, consists of the Equestrian Training Center that includes a horse barn which houses several stables, storage areas and sink/wash area equipped with a floor drain. A manure stockpile area is located adjacent to the horse barn.

The third site, located at Forest Retreat Road, consists of the Police Firing Range, which includes a small parking area, a gravel walkway and firing line, and an embankment, or backstop, that captures spent ammunition. The facility shares an access road with the Mulch Facility, and, therefore, has a single stormwater outfall located at a cross drain along the road, north of the firing range. Stormwater outfalls (points of concentrated flow where stormwater leaves the facility) are present at each site and are typically identified as area drains, curb inlets, cross drains, or drainage swales. Refer to the Property & Drainage Features map for each site as provided in Figure 1 of Appendix A.

2.3 STORMWATER POLLUTION PREVENTION TEAM

The pollution prevention team has been established and has specific stormwater-associated responsibilities. The pollution prevention team will assist the Permittee in the implementation, maintenance, and revision of the O&M Plan. A list of the team members and their responsibilities is shown in Table 2.

Table 2. Pollution Prevention Team

Name:	Cmdr. Daniel	**Position:**	Commander- Special Operations
Responsibilities:			
• Administer implementation of this O&M plan daily. • Identify staff in need of stormwater training. • Participate in annual site assessment. • Review O&M Plan annually; assist with revisions if necessary. • Review documentation and records of inspection and coordinate stormwater maintenance activities. • Review documentation of spills and/or illicit discharges, if applicable.			
Name:	Jackson Mungle	**Position:**	Building Maintenance Technician
Responsibilities:			
• Perform monthly stormwater inspections at the Police Department, Police Annex and Animal Control Complex. • Participate in annual site assessment. • Maintain documentation and records of inspection and stormwater maintenance activities. • Maintain documentation of spills and/or illicit discharges, if applicable			
Name:	John Newberry	**Position:**	Master Patrol Officer- Mounted
Responsibilities:			
• Perform monthly stormwater inspections at the Police Equestrian Training Center • Participate in annual site assessment. • Maintain documentation and records of inspection and stormwater maintenance activities. • Maintain documentation of spills and/or illicit discharges, if applicable			

Name:	Helen Morrison	**Position:**	Stormwater Coordinator
Responsibilities:			
• Conduct and/or coordinate training for facility employees. • Conduct annual site assessment. • Review documentation and records annually for accuracy and completeness. • Review O&M Plan annually; assist with revisions if necessary.			

3.0 POTENTIAL POLLUTANTS AND ASSOCIATED BEST MANAGEMENT PRACTICES (BMPS)

3.1 SIGNIFICANT MATERIALS

A number of significant materials are stored or used on-site. An anticipated list of materials used, stored or produced on site is provided in Appendix B. The list also provides an approximation of the volume on-site in addition to the handling location and typical frequency of use. Description of the handling and storage of these materials is provided in the following sections.

3.2 MATERIAL HANDLING & STORAGE

Proper material handling and storage aids in controlling the potential for leaks, spills and losses of material delivered, used and stored at the facility. Spills and leaks of materials can accumulate in soils or on surfaces and be carried away in stormwater runoff. Only needed products will be stored on-site. Materials will be stored under cover, free from interception with precipitation or stormwater runoff, and in their appropriate containers. Products must be stored in their original containers and/or labeled. Containers shall be tightly sealed when not in use. When possible, products should be used in their entirety before properly disposing of the container. The manufacturer's recommendations for disposal of materials and containers will be followed. Material storage areas will be inspected monthly to ensure proper use, storage and disposal. Dust generated will be removed as needed. Safety Data Sheets shall be kept current for all materials stored at the facility and be accessible to all facility personnel.

3.3 VEHICLE & EQUIPMENT MAINTENANCE

Regular maintenance of both vehicle and heavy equipment prolongs the life of municipal assets and helps reduce the potential for leaking fluids associated with normal wear and tear. Maintenance practices involve a number of solvents, petroleum products and other toxic compounds that must be stored and handled appropriately to avoid contamination. Leakage of fluids from vehicles can drain towards the stormwater management system and ultimately discharge to receiving waters. The City practices preventative maintenance including regular inspections and maintenance before problems arise. In instances where leaks are observed, maintenance should be performed as soon as possible, and the vehicle or equipment removed from use until repaired. Absorbent booms, drip

pans or tarps should be used to contain leaks. Vehicle maintenance should be performed indoors. Vehicle or equipment maintenance should not occur near storm drains. Maintenance and repair areas shall not be washed down, instead, they should be swept weekly or more often as needed to collect dirt, and spills must be wiped up with rags or other absorbent material. Used batteries should be stored indoors in secondary containment and recycled.

3.4 VEHICLE & EQUIPMENT WASHING

Improper vehicle or equipment washing can introduce solvents, grease, and sediment and petroleum products that can contribute to stormwater pollution. Vehicles should be washed indoors with floor drains that are connected to the sanitary sewer system or other recycled water system. Vehicles should be washed with biodegradable cleaners away from the stormwater system. If extensive staining or an oily sheen is present, absorbent pillows or booms should be used in or around catch basins to prevent oil from entering the stormwater drainage system. Nozzles with automatic shut off should be used.

3.5 VEHICLE FUELING

Vehicle fueling can result in the exposure of hydrocarbons and other pollutants. Proper fueling practices can help prevent and minimize the risks of spills and leaks that can contribute to pollutants within stormwater runoff. Vehicle fueling must occur in a designated, preferably concrete, covered area away from stormwater drainage ditches, inlets and surface waters. “Topping-off” or overfilling of fuel tanks should be discouraged. Fueling activities must be attended by personnel at all times. A spill kit and associated absorbent material must be located within the Fuel Center and accessible to employees. Absorbent material shall be used to address spills and the absorbent material promptly removed and disposed of properly. Washing down of the fueling area should be avoided.

3.6 VEHICLE PARKING & IMPOUNDMENT AREA

Sediment, debris and other pollutants accumulate on parking lot surfaces and are a potential source of stormwater pollution. Vehicles located in the parking area and/or impoundment area should be inspected frequently for leaks. If leaks are identified, absorbent booms, drip pans or tarps shall be placed immediately and the vehicle should be removed from service and scheduled for

maintenance and/or disposal. Parking areas are also prone to trash and debris accumulation. Street sweeping can improve the aesthetics of City parking lots, control dust and decrease the accumulation of pollutants to stormwater inlets.

3.7 ANIMAL WASTE

3.7.1 Animal Control Waste Generation

Pet waste can contribute to stormwater pollution and degrade water quality. Pet waste contains pathogens, and its decomposition in surface waters can result in oxygen depletion. A pet waste collection and disposal system should be established at the City's animal control facility to minimize and/or eliminate the potential for animal waste to come into contact with stormwater runoff. Outdoor grassy areas associated with the animal control facility should be kept at a minimum height of 4 inches. Wash down of any indoor or outdoor areas should be directed away from storm drain inlets and/or collected and directed to the sanitary sewer system.

3.7.2 Manure Pile Storage

Manure should be stockpiled in a manner to prevent groundwater and surface water pollution. Manure should be stored in an area where interface with stormwater runoff will be minimal and/or stormwater runoff may be diverted away from the area. Stockpiling manure within in a three-sided containment area will aid in minimizing contact with stormwater runoff. Tarp or plastic sheeting should be used to restrict exposure to precipitation and minimize leachate production. Manure should not be stored in close proximity to surface waters where runoff or floodwaters will cause nutrients to enter nearby waterways.

The manure stockpile should be located in an area where it will drain to avoid saturated conditions. The site may be graded to divert surface runoff without creating erosion. Divert any surface water from roof drains or other sources away from the pile area. The manure stockpile should be located upgradient of a gently sloped, grassed area to be used as a filter. Filter areas should be well vegetated and potential destruction due to animal grazing should be minimized. In the event of a large accumulation of manure an engineered, vegetative filter strip may be required.

Several options are available for manure disposal including direct disposal, contract disposal and/or composting. Direct disposal involved on-site use of the stall waste via field application. Proper field application requires a tractor or spreader so that the manure is applied in a thin layer directly over the soil. Manure shall not be spread on frozen ground or near surface waters. Field applications may require a manure or nutrient management plan to ensure that manure is applied at the appropriate rate so that excess nutrients are not introduced to surface runoff and contribute to water quality degradation. A nutrient management plan is recommended for large stables (10 or more horses).

Contract disposal consists of obtaining a "contract" with a hauler who will remove the waste from the facility. Removal of the material shall be performed as needed and not exceed the capacity of the on-site storage area. The last option for disposal is composting. Finished compost is partially degraded manure, which is more organically stable, presenting less of a pollution threat. Static composting consists of piling the waste and allowing it to degrade or compost for 6 months to 2 years.

3.8 FERTILIZER & PESTICIDE

The City currently does not apply fertilizer or herbicide at any Police Department site. Pesticides are applied routinely to the interior buildings only. This is a contract-provided service and is not conducted by the City. A small amount (less than two gallons) of weed killer is available to be used as needed to deter weeds in the crevices of paved surfaces.

3.9 LAWN MAINTENANCE

The City currently maintains a mowing and landscape schedule at each site. Lawn and landscaping services include mowing, tree-trimming and landscaping. Mowing is performed at each site as needed. To avoid stressing the turf, no more than one third of the existing shoot growth should be removed at any one mowing. If a lawn grows excessively high, the mowing height should be gradually reduced to the proper height over a span of several mowings rather than all at once. This will minimize buildup of clippings and prevent shock to the turf. Unless an excessive amount of clippings remain on the lawn, there is no need to remove clippings by bagging or raking.

3.10 ROAD SALT APPLICATION & STORAGE PROCEDURES

The application and storage of deicing materials, most commonly salts such as sodium chloride, can lead to water quality problems for surrounding areas. Salts, gravel, sand and other materials are applied to highways, roads, sidewalks and parking areas to prevent the accumulation of ice during winter storm events. Salts lower the melting point of ice, allowing roadways to stay free of ice buildup during cold winters.

Many of the problems associated with contamination of local waterways stem from the improper storage of deicing materials. Salts are very soluble when they come into contact with stormwater. The following best management practices should be considered for roadway salt application and storage:

- Store salts under cover or inside buildings to minimize contact with precipitation or stormwater runoff. If necessary, include a tarp on the open side of a three-sided structure to avoid windblown rain contact.
- Take preventative actions to minimize spillage when loading trucks during deicing events.
- Regulate the amount of salt applied. Adjust usage according to the road width, design, traffic concentration, temperature, and proximity to jurisdictional waters. Consider targeted applications to hills, curves, shaded sections, and bridges that are the most prone to ice formation.
- Calibrate salt spreaders.
- Apply salt in advance of the predicted storm event. More salt is necessary to melt accumulated snow than to prevent accumulation; therefore, applying salt prior to the precipitation event will result in less material needed.

3.11 STORMWATER INLET CLEANING PROGRAM

Traditional municipal stormwater systems were designed to quickly collect and convey stormwater runoff to receiving waters. The purpose of catch basin, inlet and storm drain cleanings is to remove accumulated sediment which prevents blockages, localized flooding and reduces the release of downstream pollutants.

Fine particles and pollutants generated by stormwater run-off, atmospheric deposition, vehicle emissions, breakup of street surface materials, littering, and sanding accumulate along the curbs of roads in between rainfall events. This results in the accumulation of trash and sediment. Pollutants attach to trash and sediment including nutrients, metals, hydrocarbons, bacteria, pesticides, and toxic chemicals. Storm drain maintenance is often the first opportunity to provide pre-treatment and remove pollutants before they are conveyed through the storm drain system. Catch basins tend to trap these pollutants; therefore, they need to be cleaned out periodically to prevent those materials from being transported by high stormwater flows into downstream stormwater best management practices and the City's receiving waters.

Stormwater inlets within the facility boundary and immediately downgradient should be inspected monthly. Each stormwater inlet should include a public awareness message (ex. "dump no waste" or "drains to river", etc.) stenciled or otherwise etched near the drain. Catch basins with illegible or missing labels should be noted on the inspection report and relabeled. Damage or deterioration threatening the structural integrity of any component, conveyance or facility should be repaired as soon as possible. Material accumulation (including sediment, leaf litter and trash) on the grate, around the grate and inside the stormwater drain inlet should be removed and disposed of according to local, state and federal guidelines. The materials removed from the stormwater inlets shall not re-enter the stormwater system.

3.12 WASTE HANDLING

Trash and debris management includes minimizing the generation of waste and handling and disposing of waste in a manner that minimizes risks to surface waters. Trash cans should be provided indoors in high traffic areas to encourage use. Outdoor waste or trash receptacles should be covered and emptied regularly, and the adjacent areas inspected for misplaced or wind-blown litter. Nonhazardous and potentially hazardous debris should be segregated and disposed of in accordance with local, state and federal guidelines. Do not allow potentially hazardous waste material to accumulate.

3.13 SPILL PREVENTION & CONTROL PROCEDURES

3.13.1 What is Spill Prevention & Controls?

Spill prevention and controls are procedures that establish spill response and control actions by anticipating when and how spills might occur and instituting actions to contain and clean it up. The City prepares for potential spills by reducing the chance of spills to occur, stopping the source of spills, containing and cleaning spills, properly disposing of spill material and training personnel. A spill kit is available at each location and is placed in a designated location. The spill kit should be inspected monthly and items replenished as needed.

3.13.2 What to do if there's a Spill?

Employees are trained in spill identification, response and control. In the event of a spill, employees should be able to identify the substance spilled and its hazard, determine the amount spilled and the extent of spreading, identify the source of the spill and determine whether the spill can be contained safely by facility personnel. If safe to do so, employees should attempt to contain the spill and prevent it from leaving the site or entering the stormwater drainage system or receiving waters. Employees should attempt to eliminate the source of the spill and clean up any spilled material as soon as possible. Contaminated material should be disposed of in accordance with local, state and federal guidelines. The Stormwater Coordinator should be contacted immediately in the event that a spill leaves the facility property boundary, enters the stormwater system or enters a receiving water.

The City shall foster interagency coordination for hazardous waste or material spills response and cleanup. The City shall inform local spill-response agencies and/or TEMA (Tennessee Emergency Management Agency) of the potential negative impacts to surface water (and ground water) of spill clean-up activities. TEMA shall be contacted via **1-800-262-3300**. Spills that result in a sheen on surface waters shall also be reported to TDEC's Division of Water Resources Nashville Environmental Field Office.

3.14 UNDERGROUND DETENTION SYSTEM

An underground detention system is a below ground pipe system that stores, detains and/or infiltrates stormwater runoff. The detention systems may also include filters to remove sediment

and debris before entering the system. The underground detention system should be visually inspected quarterly. Maintenance should be performed when necessary as determined via the visual inspection. Refer to the "Underground Detention, Retention, and Infiltration Systems Inspection & Maintenance" document as provided in Appendix C. The City will subcontract maintenance services for the system.

4.0 INSPECTIONS

4.1 MONTHLY INSPECTIONS

Stormwater inspections will be conducted monthly by Jackson Mungle at the Police Department, Police Annex, Animal Control and Firing Range. MPO John Newberry will be conducting the monthly stormwater inspections at the Police Equestrian Training Center. The inspection will include a visual inspection of all potential pollutant sources and ensure that BMPs are appropriate and being implemented consistently throughout the facility. The inspector shall complete the inspection form as provided in Appendix C for each site. Corrective actions and/or maintenance requirements shall be documented within the inspection form and implemented as soon as possible but at least prior to the next monthly inspection. The monthly inspection will also include a review and update to the materials inventory list for each site, as provided in Appendix B.

4.2 ANNUAL FACILITY ASSESSMENT

A facility assessment will be conducted annually by the Stormwater Coordinator. The assessment will aid in the identification of significant changes that warrant a revision to the O&M Plan. If revisions are required, the O&M Plan should be updated and re-issued within 12 weeks of the identification of the need. Table 3 should be used to track annual facility assessments and whether or not revisions were required.

Table 3. Facilities Assessment Log

Assessment Date	Assessor Name	Revision Required	Revision Date
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	

The annual facility assessment also includes the following:

- A visual inspection of potential pollutant sources that may enter the stormwater drainage system via stormwater or non-stormwater discharges,
- A review of BMPs for adequacy, implementation and maintenance,
- A visual inspection of materials and equipment necessary to implement the O&M Plan such as spill kit, drip pans, brooms, etc., and
- A review of the monthly inspection forms, any incidents of non-compliance and the corrective actions taken.

A facility assessment form is available in Appendix C.

5.0 TRAINING

Employees whose activities may impact stormwater at the facility will be trained in the components and goals of this O&M Plan. The purpose of the training is to educate employees on identifying pollutants and preventing and/or reducing stormwater pollution from municipal operation activities. Training will be conducted as needed but at least every permit term. **New employees must be trained within six months of their employment or movement into an applicable job category.** The training event will be documented and shall include the date, name of the instructor and name of each employee in attendance. A training record form is included in Appendix D. Topics to be included during training are:

- Good housekeeping practices/BMP implementation
- Material management practices
- Used oil, spent solvent, and used battery management
- Spill prevention, response, and control
- Fueling procedures
- Inspections

6.0 REPORTING AND RECORDKEEPING

6.1 DOCUMENTATION

Stormwater maintenance activities must be documented with methods such as photos, maintenance logs, and/or contractor invoices. All inspection forms must be maintained at the applicable Police Department site location. Records may be used as supporting documentation for the TNS075353 permit-required annual report. Documentation, including inspection forms and maintenance records, should be maintained for a period of three years. Electronic recordkeeping is acceptable.

6.2 MEASUREMENT OF SUCCESS

The O&M Plan will be reviewed annually (preferably during the fourth quarter of the fiscal year) by the Stormwater Coordinator and the Special Operations Lieutenant to evaluate overall effectiveness. The evaluation will be based on the example criteria presented below and the need for improvement and/or modification will be determined based on the results of the plan evaluation.

- Increased/sustained maintenance of best management practices.
- Fewer follow up maintenance activities required in response to the annual assessment.
- Number of employees trained annually.

APPENDIX A - FIGURES

APPENDIX B – INVENTORY OF SIGNIFICANT MATERIALS

APPENDIX C – INSPECTION FORMS

APPENDIX D – TRAINING

STORMWATER OPERATION & MAINTENANCE PLAN

ROAD DEPARTMENT

Prepared For:

CITY OF HENDERSONVILLE

Prepared By:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
NASHVILLE, TENNESSEE

CEC Project 192-267

MAY 2021

REVISED
FEBRUARY 2024

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APPENDICES

1.0 INTRODUCTION

1.1 PURPOSE

The Stormwater Operations & Maintenance (O&M) Plan has been prepared for the City of Hendersonville's (City) Road Department to address stormwater pollution prevention and good housekeeping in accordance with the Tennessee Department of Environment and Conservation (TDEC) National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) Permit No. TNS000000. The City's NPDES General Permit for Discharges from MS4s is Permit No. TNS075353.

1.2 PERMIT REQUIREMENTS

Section 4.2 of the Tennessee NPDES General Permit for MS4s, Permit No. TNS000000, addresses minimum controls required to be implemented by the Permittee. Section 4.2.6 "Pollution Prevention/Good Housekeeping for Municipal Operations" states the following:

> *The permittee must develop an operation and maintenance plan for each of the following municipal operations as applicable. The plans must include information related to maintenance activities, schedules and the proper disposal of waste from structural and non-structural stormwater controls related to the following:*
>
> - *streets, roads, highways,*
> - *municipal parking lots,*
> - *maintenance and storage yards,*
> - *fleet or maintenance shops with outdoor storage areas,*
> - *salt/sand storage locations,*
> - *snow disposal areas operated by the permittee, and*
> - *waste disposal, storage, and transfer stations.*
>
> TNS000000 Section 4.2.6

The City's Road Department has been identified by the City (the permittee) as a municipal operation subject to this permit requirement. This facility generates and/or stores a material which constitutes a potential pollutant of concern for MS4s. Examples of these materials may include, but are not limited to, lubricants, fuels, sand, gravel, soil, salt, pesticide, fertilizer, garbage, trash, grass clippings, vehicles, equipment, and other wastes.

1.3 REVIEW AND REVISIONS TO THE OPERATIONS & MAINTENANCE PLAN

The O&M Plan will be reviewed at least annually by the City's Stormwater Coordinator to determine if revisions are necessary to reflect changes to the facility and/or changes to the activities conducted at the facility. Examples of changes that would require a revision to the plan include:

- A modification and/or addition to the facility layout.
- An activity that may introduce a new pollutant at the facility.
- A change in the materials generated and/or stored at the facility.
- A significant increase in the quantities of material generated and/or stored at the facility.
- Modification of an existing Best Management Practice (BMP) and or the addition of a new BMP.

2.0 FACILITY DESCRIPTION

2.1 SITE LOCATIONS

The Road Department consists of one site location as presented in Table 1.

Table 1. City Road Department Site Location

Site Number	Site Description	Address
1	Road Department	223 Free Hill Road, Hendersonville, Tennessee
2	Mulch Facility	485 Forest Retreat Road, Hendersonville, Tennessee

2.2 FACILITY CHARACTERISTICS

The Road Department is located on Free Hill Road and consists of the road maintenance facility and the fueling center. This includes a gravel storage area, above ground fuel tanks, salt barn, surplus vehicles, material storage, cold mix storage, hot mix supplies and Maintenance building. A stormwater outfall (point of concentrated flow where stormwater leaves the facility) is present at the wash bay outlet. The wash bay inlet was filled with concrete to eliminate illicit discharges from the facility.

The Mulch Facility is located on Forest Retreat Road and consists of a mulch stockpiling location. The facility is location upgradient of a regional detention pond. Several outfalls are identified which discharge to an unnamed tributary to Center Point Branch and/or Center Point Branch.

Refer to the Property & Drainage Features map for each site as provided in Figure 1 of Appendix A.

2.3 STORMWATER POLLUTION PREVENTION TEAM

The pollution prevention team has been established and has specific stormwater-associated responsibilities. The pollution prevention team will assist the Permittee in the implementation, maintenance, and revision of the O&M Plan. A list of the team members and their responsibilities is shown in Table 2.

Table 2. Pollution Prevention Team

Name:	Trace Buerkett	**Position:**	Public Works Superintendent - Road
Responsibilities:			
• Administer implementation of this O&M plan daily. • Identify staff in need of stormwater training. • Participate in annual site assessment. • Review O&M Plan annually; assist with revisions if necessary. • Review documentation and records of inspection and coordinate stormwater maintenance activities. • Review documentation of spills and/or illicit discharges, if applicable.			
Name:	Danny Laycock	**Position:**	Mechanic
Responsibilities:			
• Perform monthly stormwater inspections. • Participate in annual site assessment. • Maintain documentation and records of inspection and stormwater maintenance activities. • Maintain documentation of spills and/or illicit discharges, if applicable			
Name:	Helen Morrison	**Position:**	Stormwater Coordinator
Responsibilities:			
• Conduct and/or coordinate training for facility employees. • Conduct annual site assessment. • Review documentation and records annually for accuracy and completeness. • Review O&M Plan annually; assist with revisions if necessary.			

3.0 POTENTIAL POLLUTANTS AND ASSOCIATED BEST MANAGEMENT PRACTICES (BMPS)

3.1 SIGNIFICANT MATERIALS

A number of significant materials are stored or used on-site. An anticipated list of materials used, stored, or produced on site is provided in Appendix B. The list also provides an approximation of the volume on-site in addition to the handling location and typical frequency of use. Description of the handling and storage of these materials is provided in the following sections.

3.2 MATERIAL HANDLING & STORAGE

Proper material handling and storage aids in controlling the potential for leaks, spills and losses of material delivered, used, and stored at the facility. Spills and leaks of materials can accumulate in soils or on surfaces and be carried away in stormwater runoff. Only needed products will be stored on-site. Materials will be stored under cover, free from interception with precipitation or stormwater runoff, and in their appropriate containers. Products must be stored in their original containers and/or labeled. Containers shall be tightly sealed when not in use. When possible, products should be used in their entirety before properly disposing of the container. The manufacturer's recommendations for disposal of materials and containers will be followed. Material storage areas will be inspected monthly to ensure proper use, storage, and disposal. Dust generated will be removed as needed. Safety Data Sheets shall be kept current for all materials stored at the facility and be accessible to all facility personnel.

3.3 BULK MATERIAL OUTDOOR STOCKPILING

Proper management and containment of outdoor bulk material stockpile areas can reduce the discharge of pollutants to stormwater during material delivery and storage. Bulk material storage may include, but is not limited to, sand, gravel, asphalt millings, concrete, building materials and metal products typically stored outside in large piles or stacks. Designated material storage areas should be established away from storm drain inlets and/or jurisdictional features. When possible, material should be covered with a plastic sheeting and stored on elevated areas to minimize contact with precipitation and stormwater runoff. When large stockpiles cannot be covered, containment devices such as three-sided berms or perimeter walls should be established to minimize the erosion

and prevent discharge of the stockpiled material. Stormwater runoff from the stockpiled areas should be conveyed through a treatment Best Management Practice(s) prior to discharge to a stormwater inlet and/or jurisdictional feature.

3.4 VEHICLE & EQUIPMENT MAINTENANCE

Regular maintenance of both vehicle and heavy equipment prolongs the life of municipal assets and helps reduce the potential for leaking fluids associated with normal wear and tear. Maintenance practices involve a number of solvents, petroleum products and other toxic compounds that must be stored and handled appropriately to avoid contamination. Leakage of fluids from vehicles can drain towards the stormwater management system and ultimately discharge to receiving waters. The City practices preventative maintenance including regular inspections and maintenance before problems arise. In instances where leaks are observed, maintenance should be performed as soon as possible, and the vehicle or equipment removed from use until repaired. Absorbent booms, drip pans or tarps should be used to contain leaks. Vehicle maintenance should be performed indoors. Vehicle or equipment maintenance should not occur near storm drains. Maintenance and repair areas shall not be washed down, instead, they should be swept weekly or more often as needed to collect dirt, and spills must be wiped up with rags or other absorbent material. Used batteries should be stored indoors in secondary containment and recycled.

3.5 VEHICLE & EQUIPMENT WASHING

Improper vehicle or equipment washing can introduce solvents, grease, and sediment and petroleum products that can contribute to stormwater pollution. Vehicles should be washed with biodegradable cleaners away from the stormwater system. Nozzles with automatic shut off should be used. Vehicles should be washed indoors with floor drains that are connected to the sanitary sewer system or other recycled water system. Outdoor vehicle washing is prohibited.

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Vehicle fueling can result in the exposure of hydrocarbons and other pollutants. Proper fueling practices can help prevent and minimize the risks of spills and leaks that can contribute to pollutants within stormwater runoff. Vehicle fueling must occur in a designated, preferably concrete, covered area away from stormwater drainage ditches, inlets, and surface waters.

"Topping-off" or overfilling of fuel tanks should be discouraged. Fueling activities must be attended by personnel at all times. A spill kit and associated absorbent material must be located within the Fueling Center and accessible to employees. Absorbent material shall be used to address spills and the absorbent material promptly removed and disposed of properly. Washing down of the fueling area should be avoided.

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Sediment, debris, and other pollutants accumulate on parking lot surfaces and are a potential source of stormwater pollution. Vehicles located in the parking area should be inspected frequently for leaks. If leaks are identified, absorbent booms, drip pans or tarps shall be placed immediately, and the vehicle should be removed from service and scheduled for maintenance and/or disposal. Parking areas are also prone to trash and debris accumulation. Street sweeping can improve the aesthetics of City parking lots, control dust and decrease the accumulation of pollutants to stormwater inlets.

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The City shall foster interagency coordination for hazardous waste or material spills response and cleanup. The City shall inform local spill-response agencies and/or TEMA (Tennessee Emergency Management Agency) of the potential negative impacts to surface water (and ground water) of spill clean-up activities. TEMA shall be contacted via **1-800-262-3300**. Spills that result in a sheen on surface waters shall also be reported to TDEC's Division of Water Resources Nashville Environmental Field Office.

Refer to the site-specific Spill Prevention Control and Countermeasure Plan for details relating to the management of the bulk storage of oil-based products with capacity in aboveground storage tanks greater than 1,320 gallons.

4.0 INSPECTIONS

4.1 MONTHLY INSPECTIONS

Stormwater inspections will be conducted monthly by Public Works Superintendent - Roads at the site. The inspection will include a visual inspection of all potential pollutant sources and ensure that BMPs are appropriate and being implemented consistently throughout the facility. The inspector shall complete the inspection form as provided in Appendix C for each site. Corrective actions and/or maintenance requirements shall be documented within the inspection form and implemented as soon as possible but at least prior to the next monthly inspection. The monthly inspection will also include a review and update to the materials inventory list for each site, as provided in Appendix B.

4.2 ANNUAL FACILITY ASSESSMENT

A facility assessment will be conducted annually by the Stormwater Coordinator. The assessment will aid in the identification of significant changes that warrant a revision to the O&M Plan. If revisions are required, the O&M Plan should be updated and re-issued within 12 weeks of the identification of the need. Table 3 should be used to track annual facility assessments and whether revisions were required.

Table 3. Facilities Assessment Log

Assessment Date	Assessor Name	Revision Required	Revision Date
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	

The annual facility assessment also includes the following:

- A visual inspection of potential pollutant sources that may enter the stormwater drainage system via stormwater or non-stormwater discharges,
- A review of BMPs for adequacy, implementation, and maintenance,
- A visual inspection of materials and equipment necessary to implement the O&M Plan such as spill kit, drip pans, brooms, etc., and
- A review of the monthly inspection forms, any incidents of non-compliance and the corrective actions taken.

A facility assessment form is available in Appendix C.

5.0 TRAINING

Employees whose activities may impact stormwater at the facility will be trained in the components and goals of this O&M Plan. The purpose of the training is to educate employees on identifying pollutants and preventing and/or reducing stormwater pollution from municipal operation activities. Training will be conducted as needed but at least every permit term. **New employees must be trained within six months of their employment or movement into an applicable job category.** The training event will be documented and shall include the date, name of the instructor and name of each employee in attendance. A training record form is included in Appendix D. Topics to be included during training are:

- Good housekeeping practices/BMP implementation
- Material management practices
- Used oil, spent solvent, and used battery management
- Spill prevention, response, and control
- Fueling procedures
- Inspections

6.0 REPORTING AND RECORDKEEPING

6.1 DOCUMENTATION

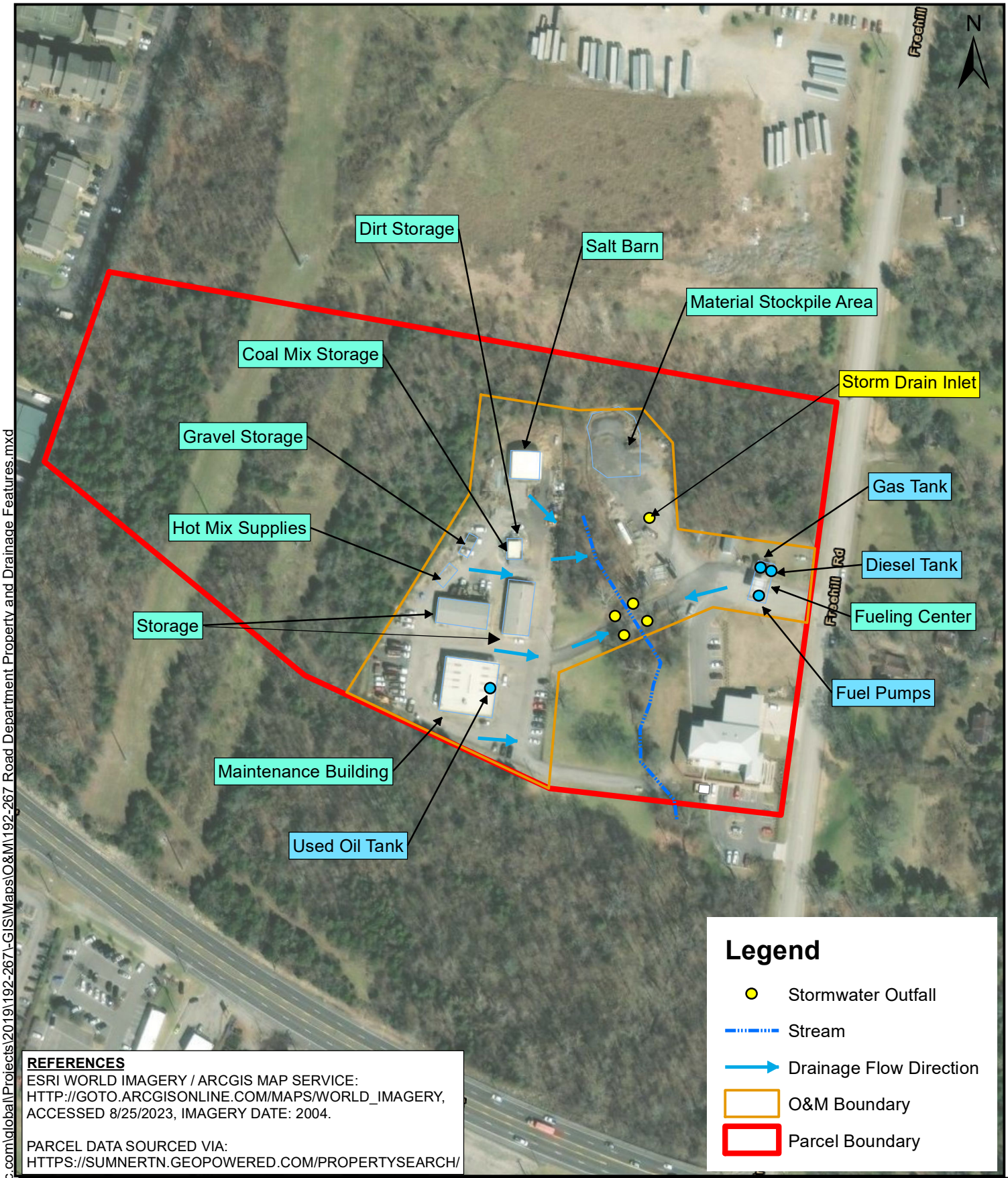
Stormwater maintenance activities must be documented with methods such as photos, maintenance logs, and/or contractor invoices. All inspection forms must be maintained at the applicable Drakes Creek Park site location. Records may be used as supporting documentation for the TNS075353 permit-required annual report. Documentation, including inspection forms and maintenance records, should be maintained for a period of three years. Electronic recordkeeping is acceptable.

6.2 MEASUREMENT OF SUCCESS

The O&M Plan will be reviewed annually (preferably during the fourth quarter of the fiscal year) by the Stormwater Coordinator and Steven Russell to evaluate overall effectiveness. The evaluation will be based on the example criteria presented below and the need for improvement and/or modification will be determined based on the results of the plan evaluation.

- Increased/sustained maintenance of best management practices.
- Fewer follow up maintenance activities required in response to the annual assessment.
- Number of employees trained annually.

APPENDIX A - FIGURES



Legend

- Stormwater Outfall
- Stream
- Drainage Flow Direction
- O&M Boundary
- Parcel Boundary

REFERENCES

ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY, ACCESSED 8/25/2023, IMAGERY DATE: 2004.

PARCEL DATA SOURCED VIA: HTTPS://SUMNERTN.GEOPOWERED.COM/PROPERTYSEARCH/

SCALE IN FEET
0 105 210

SCALE: 1 inch=200 feet

DATE: 8/25/2023

ISSUED FOR: CITY OF HENDERSONVILLE

City of Hendersonville
Tennessee

ISSUED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
117 Seaboard Lane, Ste E100, Franklin, TN 37067
615-333-7797 800-763-2326
www.cecinc.com

DWN. BY: KGA

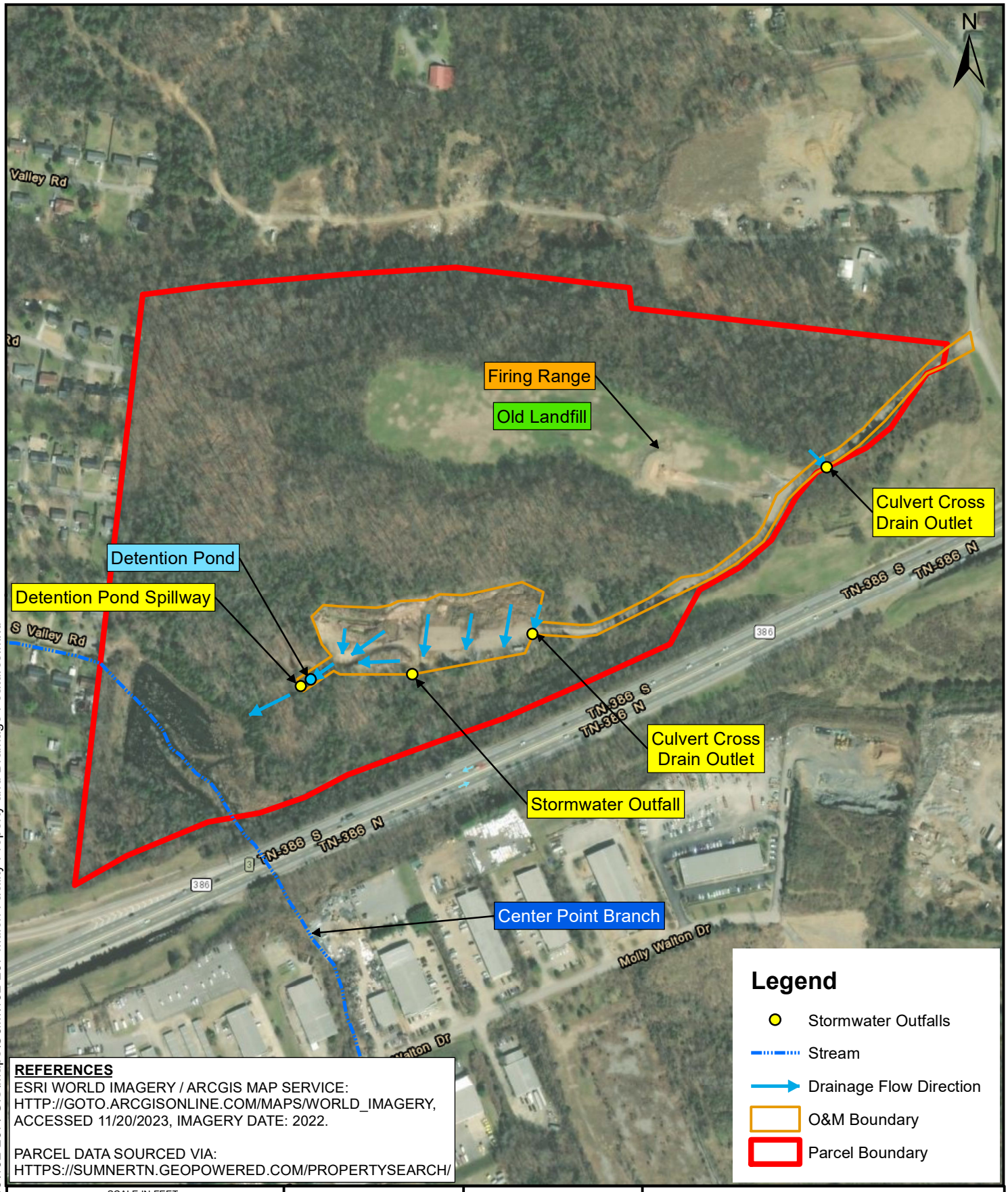
APPRVD BY: JLW *Hand signature on file

CITY OF HENDERSONVILLE ROAD DEPARTMENT PROPERTY & DRAINAGE FEATURES FOR OPERATION & MAINTENANCE PLAN

PROJECT NO.: 192-267

FIGURE 1
SHEET 1 OF 1

Document Path: \\cecinc.com\global\Projects\2019\192-267\-GIS\Maps\O&M\192-267 Road Department Property and Drainage Features.mxd



REFERENCES
ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY, ACCESSED 11/20/2023, IMAGERY DATE: 2022.

PARCEL DATA SOURCED VIA: HTTPS://SUMNERTN.GEOPOWERED.COM/PROPERTYSEARCH/

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SCALE: 1:4,800

DATE: 11/20/2023

ISSUED FOR: CITY OF HENDERSONVILLE

City of Hendersonville
Tennessee

ISSUED BY:

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117 Seaboard Lane, Ste E100, Franklin, TN 37067
615-333-7797 800-763-2326
www.cecinc.com

DWN. BY: JTM

APPRVD BY: JLW *Hand signature on file

CITY OF HENDERSONVILLE
MULCH FACILITY
485 FOREST RETREAT ROAD
PROPERTY & DRAINAGE FEATURES
FOR OPERATION & MAINTENANCE PLAN

PROJECT NO.: 192-267

FIGURE 1
SHEET 2 OF 2

Document Path: P:\2019\192-267\-GIS\Maps\O&M\192-267 Mulch Facility Property and Drainage Features.mxd

APPENDIX B – INVENTORY OF SIGNIFICANT MATERIALS

List of Significant Materials Hendersonville Roads Department

Material Name	Typical Quantity	Receiving and Shipping Location	Handling Location	Frequency
Acid				
Adhesives and Sealants				
Aggregate				
Asphalt				
Brake Fluid	<1 gal	Maintenance Building	Maintenance Building	As needed
Concrete				
Coolant (new)	<1 gal	Maintenance Building	Maintenance Building	As needed
Coolant (used)	<1 gal	Maintenance Building	Maintenance Building	As needed
Detergents				
Diesel Fuel	8,000 gal	Fueling Center	Fueling Center	Monthly
Fertilizers				
Gasoline	12,000 gal	Fueling Center	Fueling Center	Every 2 weeks
Gravel				
Hydraulic Fluid				
Lubricants				
Motor oil (new)	<1 gal	Maintenance Building	Maintenance Building	As needed
Motor oil (used)	50 gal	Maintenance Building	Maintenance Building	As needed
Plant Products	5 gal	Maintenance Building	Maintenance Building	As needed
Pesticides/Herbicides		Maintenance Building	Maintenance Building	Once per year
Sand				
Soil amendments				
Solvents				
Coal Mix	10 ton	Covered Storage area	Covered storage area	As needed
Top Soil	20 ton	Covered storage area	Covered storage area	As needed
Road Salt	40-100 tons	Covered salt barn	Covered salt barn	Once per year
Diesel additive		Fueling Center	Fueling Center	Every 2 weeks

APPENDIX C – INSPECTION FORMS

City of Hendersonville
Tennessee

CITY OF HENDERSONVILLE – ROADS DEPARTMENT
MONTHLY STORWMATER INSPECTION FORM

General Information:			
Site Location:			
Inspector Name:		Date of Inspection:	

Instructions: Complete the following sections below; if section is not applicable, check N/A and move to next section.

1. Material Storage:		
a. Is material inventory list up to date and accurate?	Yes ☒	No: ☐
b. Are all materials stored inside and/or undercover away from precipitation and/or stormwater runoff?	Yes ☐	No: ☐
c. Are all materials stored in appropriate containers and labeled?	Yes ☐	No: ☐
d. Are all containers tightly sealed?	Yes ☐	No: ☐
e. Do containers appear in good condition, free of bulges, rust and/or any other indicators of concern?	Yes ☐	No: ☐
f. Is there evidence of leaks or staining in material storage areas?	Yes ☐	No: ☐
g. Is the area in general free of fines and dust?	Yes ☐	No: ☐
2. Bulk Material Outdoor Stockpiling:		
a. Is material stored in a designated location?	Yes ☐	No: ☐
b. Where practical, is material covered with sheeting?	Yes ☐	No: ☐
c. Where sheeting is impractical, is material contained via perimeter devices?	Yes ☐	No: ☐
d. Is material stored away from stormwater inlets and/or jurisdictional features (streams, wetlands)?	Yes ☐	No: ☐
e. Is material exposure to precipitation and/or stormwater runoff minimized?	Yes ☐	No: ☐
3. Vehicle & Equipment Maintenance:		
a. Are leaking vehicles or equipment observed at the facility?	Yes ☐	No: ☐
b. Is vehicle & equipment maintenance performed inside or undercover?	Yes ☐	No: ☐
c. Are drip pans, tarps, etc. utilized during maintenance to contain spills or leaks?	Yes ☐	No: ☐
d. Are used batteries stored in secondary containment and recycled appropriately?	Yes ☐	No: ☐
e. Are used rags or tarps stored in flammable storage containers and disposed of appropriately?	Yes ☐	No: ☐
f. Are used oil filters drainage prior to disposal?	Yes ☐	No: ☐
g. Is used oil stored in an appropriate container and disposed of in accordance with local, state and federal guidelines?	Yes ☐	No: ☐
4. Vehicle & Equipment Washing:		
a. Is vehicle washing performed in a designated location? *Indoors with discharge directed to the sanitary sewer system.*	Yes ☐	No: ☐
b. Are nozzles that automatically shut off utilized?	Yes ☐	No: ☐
c. Are biodegradable soaps utilized (no detergents, wax, etc.)?	Yes ☐	No: ☐
5. Vehicle Fueling:		
a. Is fueling performed at a designated location?	Yes ☐	No: ☐
b. Is there evidence of spills or leaks? If yes, answer c below	Yes ☐	No: ☐
c. Are spills and leaks being cleaned up and materials disposed of appropriately?	Yes ☐	No: ☐
6. Vehicle Parking & Surplus Area:		
a. Is sweeping being performed as needed to address trash and debris accumulation?	Yes ☐	No: ☐
b. Is there evidence of spills or leaks? If yes, answer c below	Yes ☐	No: ☐
c. Are spills and leaks being cleaned up and materials disposed of appropriately?	Yes ☐	No: ☐

City of Hendersonville
Tennessee

CITY OF HENDERSONVILLE – ROADS DEPARTMENT
MONTHLY STORWMATER INSPECTION FORM

7. Fertilizer & Pesticide:		
a. Is >1 bag @ 30 lbs. of fertilizer or pesticide present on site (e.g. no bulk storage)?	Yes ☐	No: ☐
8. Lawn Maintenance:		
a. Is mowing being performed as needed?	Yes ☐	No: ☐
b. Are lawn clippings allowed to remain on the lawn (unless excessive buildup)?	Yes ☐	No: ☐
9. Road Salt Application & Storage:		
a. Are salts stored undercover or inside?	Yes ☐	No: ☐
b. When applicable, is the amount of salt applied regulated?	Yes ☐	No: ☐
c. When possible, is salt applied in advance of a predicted precipitation event?	Yes ☐	No: ☐
d. If applicable, are salt spreaders routinely calibrated?	Yes ☐	No: ☐
10. Stormwater Inlets:		
a. Are stormwater inlets and outlets clearly visible and accessible?	Yes ☐	No: ☐
b. Are stormwater inlets include a public awareness message (ex. drains to river)?	Yes ☐	No: ☐
c. Are catch basin or area drain inlets in good condition and free of trash and debris, floatables, pollutants, oil and grease?	Yes ☐	No: ☐
d. Are catch basin or area drain inlets free of any signs of past spills, releases or illicit discharges?	Yes ☐	No: ☐
11. Waste Handling:		
a. Are trash cans provided as needed throughout the facility?	Yes ☐	No: ☐
b. Are trash cans or dumpsters outside covered?	Yes ☐	No: ☐
c. Is misplaced or windblown litter observed?	Yes ☐	No: ☐
d. Is non-hazardous and potentially hazardous waste segregated?	Yes ☐	No: ☐
e. Is waste collected frequently and disposed of in accordance with local, state and federal guidelines?	Yes ☐	No: ☐
12. Spill Prevention & Control Procedures:		
a. Is a spill kit available on-site and stored in a designated location?	Yes ☐	No: ☐
b. Are spill kits, SDS, and PPE accessible to employees?	Yes ☐	No: ☐
c. Are contents and materials in the spill kit sufficient?	Yes ☐	No: ☐
d. Has a spill occurred since the previous inspection? If yes, answer questions i – iv below	Yes ☐	No: ☐
i. Indicate material and estimate volume of material spilled in the Summary of Inspection Findings below.		
ii. Was the spill contained within the facility property boundary?	Yes ☐	No: ☐
iii. Did the spill enter the stormwater drainage system or enter a receiving water? If yes, answer (iv.)	Yes ☐	No: ☐
iv. Was the Stormwater Coordinator notified?	Yes ☐	No: ☐
13. Summary of Inspection Findings:		
a. Corrective Action(s) and/or maintenance required?	Yes ☐	No: ☐
b. If yes, please provide comments below (attach additional notes if necessary):		

Certification & Signature:

I certify under penalty of law that this report and all attachments are, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Inspector's Name:		Signature:		Date:	

City of Hendersonville
Tennessee

CITY OF HENDERSONVILLE – ROADS DEPARTMENT
MONTHLY STORWMATER INSPECTION FORM

Example Photo Summary	
Photo #: Comments:	[Insert Photo]
Photo #: Comments:	[Insert Photo]
Photo #: Comments:	[Insert Photo]

Please attach any additional supporting information as needed to support the findings of the site assessment.

City of Hendersonville
Tennessee

CITY OF HENDERSONVILLE – ROADS DEPARTMENT
ANNUAL FACILITY ASSESSMENT

General Information:			
Station #:			
Assessor's Name:		Date of Assessment:	enter date.

Observations & Findings:		
1. Are monthly stormwater inspections being performed?	Yes ☐	No: ☐
2. Are corrective actions and maintenance requirements being completed within the appropriate timeframe?	Yes ☐	No: ☐
3. Are Best Management Practices adequate?	Yes ☐	No: ☐
5. Are Best Management Practices being implemented and maintained?	Yes ☐	No: ☐
6. Are maintenance records available on-site?	Yes ☐	No: ☐
7. Are materials and equipment necessary to implement the O&M Plan available on-site?	Yes ☐	No: ☐
8. Has the facility contributed to an illicit discharge since the previous assessment?	Yes ☐	No: ☐
9. Have all necessary facility personnel participated in annual stormwater training?	Yes ☐	No: ☐
10. Are training records available on-site?	Yes ☐	No: ☐
11. Are revisions to the O&M Plan required?	Yes ☐	No: ☐
Summary of Assessment Findings:		
12. Corrective Action(s) and/or maintenance required?	Yes ☐	No: ☐
If yes, please provide comments below:		

Certification & Signature:

I certify under penalty of law that this report and all attachments are, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Assessor's Name:		Signature:		Date:	enter date.
Site Representative's Name:		Signature:		Date:	enter date.

APPENDIX D – TRAINING

CITY OF HENDERSONVILLE

ROAD DEPARTMENT

ANNUAL STORMWATER TRAINING

Date: _____

Name of Instructor: _____

Name	Signature

APPENDIX H

MONITORING PLAN AND PROCEDURES

Hendersonville MS4 Monitoring Plan and Procedures

Prepared by:

The City of Hendersonville Public Works Department
101 Maple Drive North, Hendersonville, TN 37075

Developed May 2021
Revised September 2023

Table of Contents

Hendersonville MS4 Monitoring Plan and Procedures 0

Hendersonville MS4 Monitoring Plan and Procedures 2

1. Introduction 2
2. Monitoring Plan Goals 2
3. Procedures 2
4. Future Analytical and Non-analytical Monitoring 3
5. Data Review 3
6. Reporting 3

Consultant Monitoring Agreement 4

Hendersonville MS4 Monitoring Plan and Procedures

1. Introduction

The City of Hendersonville has contracted with Civil & Environmental Consultants to complete the 2022-2027 MS4 permit required monitoring components outlined below.

> Permittees shall develop and implement a monitoring and assessment program that provides data and information to identify pollutant sources and aids in determining the effectiveness of the stormwater management program. A description of this program must be included in the Stormwater Management Program. The monitoring and assessment program must be designed to meet the following objectives:
>
> a. Assess compliance with this permit;
> b. Measure the effectiveness of the permittee's stormwater management program;
> c. Evaluate stormwater impacts to the receiving waters;
> d. Identify sources of specific pollutants, including nutrients, pathogens, siltation, or other parameters related to stormwater discharges from the MS4 System: and
> e. Gather data to inform program decisions and prioritization of future activities related to the protection of water quality and identify corrective actions.

The City has selected Option 1 to satisfy the MS4 Permit monitoring requirements.

2. Monitoring Plan Goals

The City of Hendersonville will evaluate the monitoring data to assist in identification pollutants of concern. Identifying the pollutants of concern will enable the City to provide targeted education and IDDE screenings to reduce or eliminate pollutants. Specific locations identified as high pollutant areas will be classified as priority sites. The City of Hendersonville will use each permit cycle monitoring reports to compare to previous permit cycle reports to determine the effectiveness of the education and IDDE program.

3. Procedures

Prior to any monitoring activities, the City will provide formal public notice to the residents of Hendersonville. The monitoring consultant will provide updates to the Stormwater Coordinator on locations to be inspected and sampled. The Police Department is notified of monitoring locations prior to activities so shift supervisors can make officers aware of the activities. Other City staff are notified of monitoring activities so they can properly direct any questions or concerns to Stormwater staff. The monitoring consultant will wear reflective vests, identification badges, and will drive a marked company vehicle.

4. Future Analytical and Non-analytical Monitoring

It is the City's intention to continue to contract these services with an environmental consultant each permit cycle to meet the minimum monitoring requirements. These costs will be incorporated into the annual budget to eliminate any delays.

5. Data Review

The City will review the results of non-analytical and analytical monitoring to determine pollutants of concern and areas of concern. The City will then make a coordinated effort to address each individual issue/deficiency.

6. Reporting

The City will provide all monitoring data to the Division during the reporting year it has been performed. A summary of monitoring results will also be provided to the Division in the annual report.

Consultant Monitoring Agreement

(Consultant Monitoring Agreement Begins on Next Page)

TASK ORDER E

Client Name:	City of Hendersonville	**Contact:**	Sarah Lock
Address:	101 Maple Drive North	**Client Phone:**	(615) 822-1000
	Hendersonville, TN 37075	**Client Fax:**	N/A
		Client Email:	slock@hvilletn.org
Date:	October 20, 2022	**CEC Project Manager:**	Christine Guy-Baker
CEC Project:	192-267 **Task:** E		
Project Name:	Hendersonville Public Works – Stream Monitoring		
Location:	Hendersonville, TN		

The following change order request is being provided to assist the City with the required stormwater monitoring per the TDEC Small MS4 General Permit, Section 4.6, Option 1.

Proposed Scope of Services for Visual Stream Assessment (VSA):
CEC proposes to perform visual stream assessment (VSA) surveys for the listed streams using the Maryland Department of Natural Resources' *Stream Corridor Assessment Survey* (2001). Per the 2022 MS4 Permit, VSA "must be performed on each stream segment within the MS4 jurisdiction with unavailable parameters for siltation, pathogens, and nutrients." The approximate length for each stream is shown in Figure 1 provided in Attachment 1, as well as listed in Table 1 provided in Attachment 2. For safety purposes, a team of two CEC field personnel will complete electronic data sheets, photos, and GPS data for each visual survey location. The field data will then be compiled and summarized to develop a summary map showing the visual survey locations.

The field data collection for the Visual Stream Assessment Survey will require CEC personnel to access the listed streams at multiple locations to perform the monitoring. If CEC encounters conditions that do not permit field crews to access a portion of a stream (i.e., "no trespassing" signs, property owner asking field crews to leave the property, etc.), CEC will document the location and the nature of the conditions and leave the property. CEC will also report the occurrence to the City, preferably the same day as the occurrence, but no later than two (2) business days following the occurrence. CEC and the City will then determine what action(s) are needed and appropriate to complete the assessment.

CEC will prepare a summary report to document key findings from the VSA. CEC will also conduct a Teams Meeting to discuss the results with the City.

Proposed Scope of Services for *E. coli* Sampling:
CEC proposes to perform the required sampling for *E. coli* on the streams listed as "Not Supporting" with *E. coil* as the cause. Per the 2022 MS4 Permit, "for stream segments identified [as] waters with unavailable parameters for pathogens, bacteriological stream sampling must be performed." These streams are listed in Table 1 provided in Attachment 2. CEC will also estimate flow, gather field parameters (pH, temperature, dissolved oxygen, and specific conductivity), and the latitude and longitude at each sample location. The *E. coil* sampling will include collecting five samples within a 30-day period in order to determine a geometric mean. The samples will be collected at least 24 hours apart and between March and November by a team of two CEC field personnel, for safety. It is essential that all five sampling events yield *E. coli* results that are not above the detection limit of the test per TDEC SOP. Therefore, CEC will take up to three samples at each location for the first sampling event in order to have the lab run three tests (no dilution, 1:10 dilution, and 1:100 dilution). Under the guidance of the laboratory manager, CEC will use the results of this first sampling event to dictate dilution for future sampling events. If resampling is required at any time due to problems using the wrong dilution, CEC will resample at a cost not-to-exceed $500 per sample per location for which a resample is required.

A summary letter report and sampling results will be provided that includes field data sheets and laboratory results. CEC will also conduct a Teams Meeting to discuss the results with the City.

TASK ORDER E

Proposed Scope of Services for Benthic Macroinvertebrate Sampling:
CEC proposes to perform benthic macroinvertebrate (benthic) sampling for streams listed in Table 1 provided in Attachment 2. CEC will follow guidance for performing and completing benthic surveys provided by TDEC's *Quality System Standard Operating Procedure for Macroinvertebrate Surveys,* effective December 28, 2021. The macroinvertebrate samples will be collected using the semi-quantitative single habitat (SQSH) method as described in the SOP. Depending on field conditions and available habitat, the field sampling procedure will be further defined with a semi-quantitative riffle kick (SQKICK) or semi-quantitative bank sample (SQBANK) procedure. For smaller streams, a modified SQKICK procedure will be utilized. Field collection efforts at each station will include completion of the appropriate habitat assessment forms for Middle Tennessee streams. Routine water quality parameters will be recorded at each station and will include water temperature, dissolved oxygen, pH, conductivity, and stream flow. The macroinvertebrate samples will be preserved upon collection and transferred to the laboratory for processing and enumeration. The report of results will include the list of metrics as required by the TDEC SOP.

A summary letter report and sampling results will be provided for the site that includes field data sheets and laboratory results. CEC will also conduct a Teams Meeting to discuss the results with the City.

Fees: Time and Materials in accordance with the attached fee schedule.

The costs shown below based on CEC's 2022 Municipal Services Fee Schedule which will be valid through December 31, 2022. Work performed after December 31, 2022 will be subject to an updated Fee Schedule. CEC suggests that VSA be performed during the spring, fall or winter months.

Costs for each task are based on a team of two CEC personnel, for safety and efficiency in completing tasks.

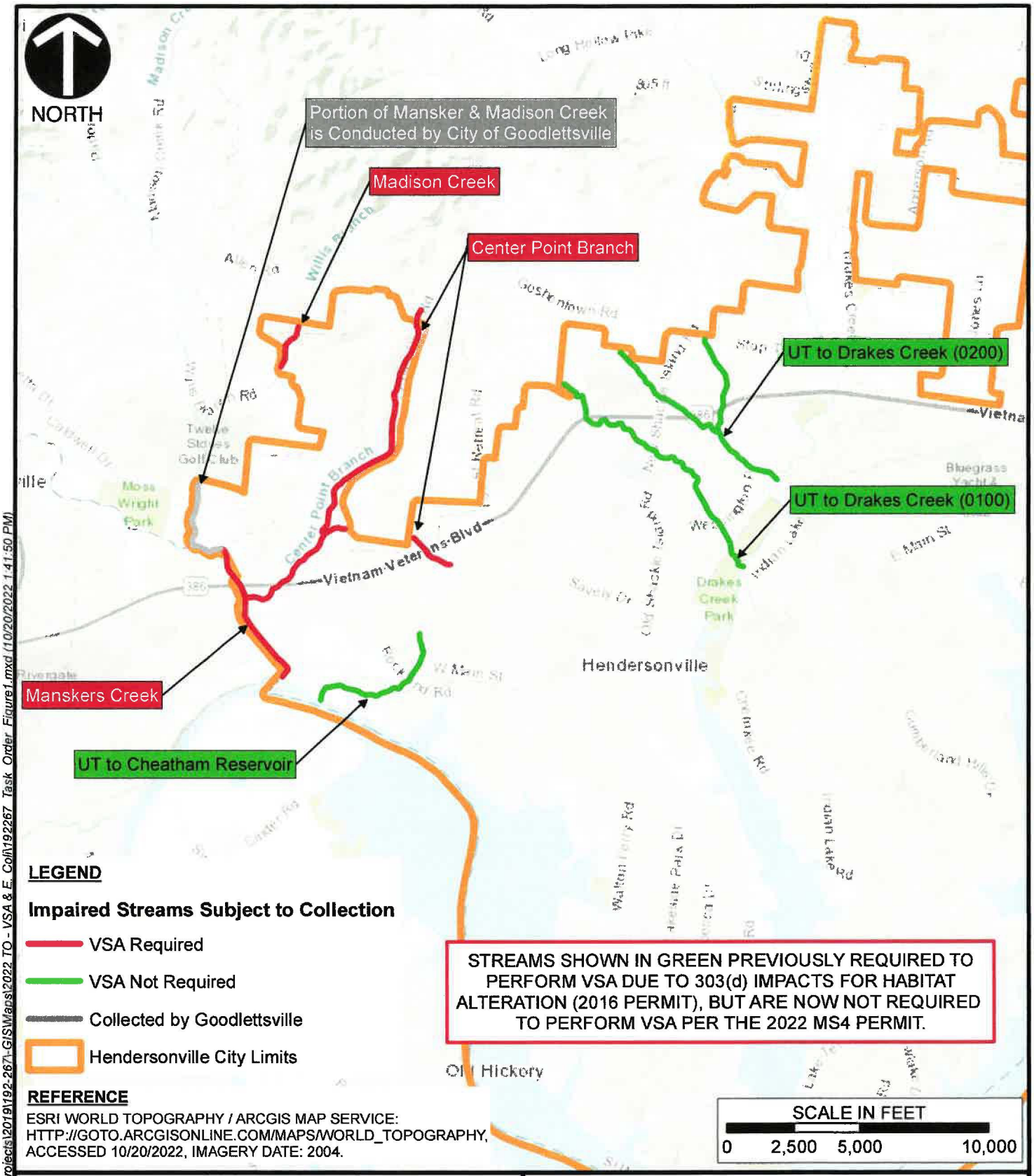
CEC Principal Signature: _____

Estimated Fee VSA:	**$10,600**
Estimated Fee *E. Coli*:	**$11,800**
Estimated Fee Benthic:	**$9,800**

Please provide a signature below authorizing CEC to proceed with the additional services. Upon receipt, CEC will begin the additional services under the Terms and Conditions of our initial Agreement for the additional fee identified above.

Client Authorized Signature: _____ **Date:** 10-25-22

Approved
GRBailey



Civil & Environmental Consultants, Inc.
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615-333-7797 · 800-763-2326
www.cecinc.com

CITY OF HENDERSONVILLE MS4 MONITORING PLAN IMPAIRED STREAMS WITHIN MS4

VISUAL STREAM ASSESSMENT MAP

DRAWN BY:	JTM	CHECKED BY:	LWK	APPROVED BY:	JLW	FIGURE NO:	1
DATE:	10/20/2022	SCALE:	1 " = 5,000 '	PROJECT NO:	192-267		

\\SVR-NASH\Ilcecinc.com\global\Projects\2019\192-267\-GIS\Mxds\2022 TO - VSA & E. Coli\192267 Task Order Figure1.mxd (10/20/2022 1:41:50 PM)

Table 1: Waters with Unavailable Parameters within the City of Hendersonville

Waterbody Name	Waterbody I.D. # (Milage)	Cause(s)	Source Name(s)	VSA	Benthic	*E. Coli*
Center Point Branch	TN05130202220_0500 (3.26 miles)	Nutrient Eutrophication Biological Indicators	Municipal (Urbanized High Density Area)	X	X	
Madison Creek**	TN05130202220_0400 (0.34 miles)	Sedimentation/Siltation	Municipal (Urbanized High Density Area)	X	X	
		Alteration in stream-side or littoral vegetative covers	Municipal (Urbanized High Density Area)			
Manskers Creek*	TN05130202220_1000 (1.12 miles)	Sedimentation/Siltation	Municipal (Urbanized High Density Area)	X	X	X
		Escherichia coli	Municipal (Urbanized High Density Area)			
Unnamed Trib to Cheatham Reservoir*	TN05130202001T_0600 (1.13 miles)	Chlorine	Municipal Point Source Discharges			
		Alteration in stream-side or littoral vegetative covers	Municipal (Urbanized High Density Area)			
		Sludge	Municipal (Urbanized High Density Area) & Municipal Point Source Discharges			
Unnamed Trib to Drakes Creek*	TN05130201047_0100 (2.19 miles)	Alteration in stream-side or littoral vegetative covers	Municipal (Urbanized High Density Area)			
Unnamed Trib to Drakes Creek*	TN05130201047_0200 (2.28 miles)	Alteration in stream-side or littoral vegetative covers	Municipal (Urbanized High Density Area)			

*Note: These streams were previously required to perform VSA collection under the 2016 MS4 Permit due to unavailable parameters for habitat alteration. Per the 2022 MS4 Permit, streams with unavailable parameters due to habitat alteration are not required to perform VSA collection.

**Note: Portions of these streams border the City of Goodlettsville. This stream segment is historically mapped by the City of Goodlettsville. CEC excluded those portions of these streams to avoid overlapping efforts.

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
117 SEABOARD LANE • SUITE E-100
FRANKLIN, TENNESSEE 37067
PHONE: 615-333-7797 • FAX: 615-333-7751

Municipal Services Fee Schedule

January 1, 2022 through December 31, 2022

PROFESSIONAL SERVICES

Classification	Rate/Hour
Senior Principal	$235
Principal	$210
Senior Project Manager	$196
Project Manager III	$185
Project Manager II	$168
Project Manager I	$141
Assistant Project Manager	$122
Project Consultant / Geologist / Ecologist / Environmental Scientist	$112
Staff Consultant / Geologist / Ecologist / Environmental Scientist	$103
CAD Designer	$125
Draftsperson / CADD Operator	$74
Senior Field Technician	$93
Environmental Technician./ Intern	$55
Senior Land Surveyor	$145
Assistant Project Surveyor	$107
Survey Technician IV	$103
Survey Technician III	$86
Survey Technician II	$75
Survey Technician I	$66
Administrative Assistant	$69
Administrative Manager	$82

DIRECT EXPENSES

Automobile Mileage	Current IRS Rate
Computer / CADD Usage	$15/hour
Survey Equipment Usage	$12/hour
In-House Equipment Usage	per daily rates
Other Travel Related Expenses	Cost plus 10%
Printing and Reproduction	Cost plus 10%
Telephone and Shipping	Cost plus 10%
Miscellaneous Reimbursables	Cost plus 10%

SUBCONTRACT SERVICES

Services @ Cost Plus 10%

APPENDIX I

ENFORCEMENT RESPONSE PLAN AND PROCEDURES

Enforcement Response Plan and Procedures

Prepared by:

The City of Hendersonville Public Works Department
101 Maple Drive North, Hendersonville, TN 37075

Developed May 2021
Revised August 2024

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1. Purpose

The purpose of this document is to provide additional guidance while enforcing the City of Hendersonville Stormwater Ordinance, Hendersonville Municipal Code (H.M.C.) Title 18. This plan provides consistent enforcement responses for similar violations and circumstances. This document is a guide; any of the enforcement responses may be used at the City's discretion. While the City intends to be consistent with enforcement responses, the City may also choose to escalate enforcement responses where necessary to address persistent noncompliance, repeat or escalating violation, or incidents of major environmental harm. This plan is subject to change based on individual action(s) and severity of violation(s).

2. Background

Pursuant to Section 4.5 of the Small MS4 General NPDES Permit, the City of Hendersonville has developed an Enforcement Response Plan (ERP) that outlines the enforcement actions for violations of the Stormwater Ordinance and addresses repeat violations through progressive enforcement, as needed, to achieve compliance. These incidents include actions to be taken for common violations associated with active construction sites, illicit discharges and connections, and post-construction stormwater control measures; all of which are components of the City of Hendersonville Stormwater Management Program.

In addition to meeting the requirements of Section 4.5 of the Small MS4 General NPDES Permit, the ERP serves as a guidance document for City stormwater staff when addressing the variety of different noncompliance incidents that may be encountered. The City must have the legal ability to employ progressive enforcement actions and to escalate enforcement responses, where necessary, to address persistent noncompliance, repeat or escalating violations, or incidents of major environmental harm. The ERP must allow for the maximum penalties per day for each day of violation as specified in TCA §68-221-1106.

3. Legal Authority

The City of Hendersonville has adopted a Stormwater Ordinance that gives stormwater staff the legal authority to employ progressive enforcement actions and to escalate enforcement responses to address persistent noncompliance. Title 18, Chapter 2, Section 9 of H.M.C. defines staff's enforcement authority and the various forms of enforcement that may be used to bring a site into compliance.

Title 18, Chapter 2, Section 18-209 of H.M.C. states:

1. *Enforcement authority. The City Engineer or their designee shall have the authority to issue notices of violation and citations, and to impose the civil penalties provided in this section guided by the Enforcement Response Plan (ERP). Measures authorized include:*
    a. *Verbal warnings. At a minimum, verbal warnings must specify the nature of the violation and require corrective action.*

b. *Written notices. Written notices must stipulate the nature of the violation and the required corrective action, with deadlines for taking such action.*
c. *Citations with administrative penalties. The MS4 has the authority to assess monetary penalties, which may include civil and administrative penalties.*
d. *Stop work orders. Stop work orders that require construction activities to be halted, except for activities cleaning up, abating discharge, and installing appropriate control measures.*
e. *Withholding of plan approvals or other authorizations. Where a facility is in noncompliance, the MS4's own approval process affecting the facility's ability to discharge to the MS4 can be used to abate the violation.*
f. *Additional measures. The MS4 may also use other escalated measures provided under local legal authorities. The MS4 may perform work necessary to improve erosion control measures and collect the fund from the responsible party in an appropriate manner, such as collecting against the project's bond, surety, or directly billing the responsible party to pay for work and materials.*

2. *Notification of Violation.*

a. *<u>Verbal Warning.</u> Verbal warning may be given at the discretion of the inspector when it appears the condition can be corrected by the violator within a reasonable time, which time shall be approved by the inspector.*
b. *<u>Written Notice.</u> Whenever the City finds that any permittee or any other person discharging stormwater has violated or is violating this ordinance or a permit or order issued hereunder, the City may serve upon such person written notice of the violation. Within ten (10) days of this notice, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted to the City Engineer, or their designee. Submission of this plan in no way relieves the discharger of liability for any violations occurring before or after receipt of the notice of violation.*
c. *<u>Consent Orders.</u> The City Engineer, or their designee, is empowered to enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with the person responsible for the noncompliance. Such orders will include specific action to be taken by the person to correct the noncompliance within a time period also specified by the order. Consent orders shall have the same force and effect as administrative orders issued pursuant to paragraphs (d) and (e) below.*
d. *<u>Show Cause Hearing.</u> The City Engineer, or their designee, may order any person who violates this ordinance or permit, or order issued hereunder, to show cause why a proposed enforcement action should not be taken. Notice shall be served on the person specifying the time and place for the meeting, the proposed enforcement action, and the reasons for such action, and a request that the violator show cause why this proposed enforcement action should not be taken. The notice of the meeting shall be served personally or by registered or certified mail (return receipt requested) at least ten (10) days prior to the hearing.*
e. *<u>Compliance Order.</u> When the City Engineer, or their designee, finds that any person has violated or continues to violate this ordinance or a permit or order*

issued there under, he may issue an order to the violator directing that, following a specific time period, adequate structures, devices, be installed or procedures implemented and properly operated. Orders may also contain such other requirements as might be reasonably necessary and appropriate to address the noncompliance, including the construction of appropriate structures, installation of devices, self-monitoring, and management practices.

f. Cease and Desist Orders. When the City Engineer, or their designee, finds that any person has violated or continues to violate this ordinance or any Permit or order issued hereunder, the City Engineer, or their designee, may issue an order to cease and desist all such violations and direct those persons in noncompliance to:

i. Comply forthwith; or

ii. Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations and terminating the discharge.

g. Conflicting standards. Whenever there is a conflict between any standard contained in this ordinance and in the manuals adopted by the municipality under this ordinance, the strictest standard shall prevail.

Furthermore, H.M.C. 18-210 establishes the City's legal authority to penalize violators of the Stormwater Ordinance. Title 18, Chapter 2, Section 10 states:

18-210. Penalties.

1. *Violations. Any person who shall commit any act declared unlawful under this ordinance, who violates any provision of this ordinance, who violates the provisions of any permit issued pursuant to this ordinance, or who fails or refuses to comply with any lawful communication or notice to abate or take corrective action by the City, shall be guilty of a civil offense.*
2. *Penalties. Under the authority provided in Tennessee Code Annotated Section 68-221-1106, the municipality declares that any person violating the provisions of this ordinance may be assessed a civil penalty by the City Engineer, or their designee, of not less than fifty dollars (50) and not more than five thousand dollars (5,000) per day or the maximum allow by law for each day of violation. Each day of violation shall constitute a separate violation.*
3. *Measuring civil penalties. In assessing a civil penalty, the City Engineer, or their designee, may consider:*
    a. *The harm done to the public health or the environment;*
    b. *Whether the civil penalty imposed will be a substantial economic deterrent to the illegal activity;*
    c. *The economic benefit gained by the violator;*
    d. *The amount of effort put forth by the violator to remedy this violation;*
    e. *Any unusual or extraordinary enforcement costs incurred by the municipality;*
    f. *The amount of penalty established by ordinance or resolution for specific categories of violations; and*
    g. *Any equities of the situation that outweigh the benefit of imposing any penalty or damage assessment.*

4. *Recovery of damages and costs. In addition to the civil penalties in subsection (2) above, the City may recover:*
    a. *All damages proximately caused by the violator to the City, which may include any reasonable expenses incurred in investigating violations of, and enforcing compliance with, this ordinance, or any other actual damages caused by the violation.*
    b. *The costs of the City's maintenance of stormwater facilities when the user of such facilities fails to maintain them as required by this ordinance.*
5. *Other remedies. The City may bring legal action to enjoin the continuing violation of this ordinance, and the existence of any other remedy, at law or equity, shall be no defense to any such actions.*
6. *Remedies cumulative. The remedies set forth in this section shall be cumulative, not exclusive, and it shall not be a defense to any action, civil or criminal that one (1) or more of the remedies set forth herein has been sought or granted.*

The ERP should be used only as a guide, while recognizing that each situation is unique. The provisions of this ERP are not mandatory. Actual enforcement procedures should consider any unusual aspects of a violation or condition, as well as special characteristics of an enforcement action in determining the proper response.

4. Enforcement Procedures

The ERP designates several enforcement options for each type (or pattern) of noncompliance. Stormwater staff shall use the ERP as a guide for appropriate enforcement response and to ensure consistent enforcement for similar violations and circumstances. Factors that will be evaluated when determining the appropriate response are as follows:

1) The harm done to the public health or the environment.
2) Whether the civil penalty imposed will be substantial economic deterrent to the illegal activity.
3) The economic benefit gained by the violator.
4) The amount of effort put forth by the violator to remedy this violation.
5) Any unusual or extraordinary enforcement costs incurred by the municipality.
6) The amount of penalty established by ordinance or resolution for specific categories of violations; and
7) Any equities of the situation which outweigh the benefit of imposing any penalty or damage assessment.

4.1. Enforcement Documentation

Each enforcement action must be clearly documented by email, formal notice letter, or an inspection report. All enforcement actions must be tracked and included in the MS4 Annual Report. Currently, all enforcement actions are tracked in an annual report enforcement tracking spreadsheet. As the

City continues to incorporate the use of Tyler Technologies Energov application into daily operations, the City will transition to Energov for tracking purposes.

4.2. Escalating Enforcement Response

Escalating enforcement response will be used for recurring violations and failure to achieve compliance after initial enforcement action. A recurring violation is one in which the same type of violation occurs on a project or on multiple projects by the same operator, or any other pattern of noncompliance is shown.

4.3. Multiple Violations

Violations that fall under more than one category in the ERP will be addressed through the more severe enforcement action. All alleged violations will be included in the more severe action. For example, if a construction site has a silt fence failure, but has also dumped concrete into a stream on-site the property owner will face initial enforcement action for the more severe violation of polluting the stream.

4.4. Recovery of Damages and Costs

In addition to assessing and collecting civil penalties, the City may recover:

- All damages proximately caused by the violator to the City, which may include any reasonable expenses incurred in investigating violations, and enforcing compliance, or any other actual damages caused by the violation.
- The costs of the City's maintenance of stormwater facilities when the user of such facilities fails to maintain them.

4.5. Timeframes for Enforcement Response

- Violations will be identified and documented within two (2) business days of receiving compliance information or observing a violation.
- Initial enforcement responses will occur within seven (7) calendar days of identifying a violation.
- Follow up actions for continuing or recurring violations will be taken within seven (7) calendar days of the initial enforcement response.
- Violations which threaten health and safety, property, or environmental quality are considered emergencies and will receive immediate response such as the issuance of a stop work order.

4.6. Timeframes for Compliance

- Verbal and written warnings shall be addressed before the next rain event or within seven (7) calendar days.
- Sites under a Notice of Violation shall address site deficiencies before the next rain event or within seven (7) calendar days. Sites under a Notice of Violation requiring a Corrective Action Plan (CAP) must eliminate all violations in accordance with the approved CAP.

4.7. Requirements for Chronic Violators

Chronic violators shall be defined as any person that repeats violations of the Stormwater Ordinance at least three times in a one-year period. The violations are tied to the person rather than a project or site, meaning that the violations do not have to occur on the same project. The violations do, however, need to be of a similar nature, such as all violations of construction standards or all violations involving illicit discharges. Once an operator has been labeled as a chronic violator they will remain as such until they have operated for a one-year period with no documented violations of the Stormwater Ordinance. Chronic violators will be treated differently than other operators. The City will inspect all projects in which chronic violators are involved at a higher frequency than other projects.

Prior NOV multipliers will apply to all violators of the Stormwater Ordinance when assessing a civil penalty, as long as the City can do so and not exceed the maximum penalty allowed by the Stormwater Ordinance and T.C.A. (Up to $5,000 per day per violation). The City will also escalate enforcement responses for chronic violators. This means that for a given violation that would normally result in a Notice of Violation, the chronic violator will likely receive a civil penalty and/or permit suspension and revocation with the Notice of Violation. A violator that meets the criteria of this section will be notified of such in the Notice of Violation or other enforcement documentation that is sent to the violator for the third and qualifying violation.

5. Identifying and Investigating Instances of Noncompliance

There are many activities associated with the identification and investigation of noncompliance. A brief description of these activities is provided in this ERP. The activities that facilitate the identification and investigation of noncompliance are as follows:

5.1. Routine Permit Inspections

The City issues land disturbance permits for applicable construction activities taking place within the city limits of Hendersonville. Once a permit is issued for a project, routine compliance inspections are conducted at the project to ensure that the provisions of the permit, municipal code, and the stormwater pollution prevention plan (SWPPP), if applicable, are being met. Any violations documented during routine inspections will initiate enforcement action.

5.2. Complaint Investigations

The City investigates all stormwater related complaints. Complaints are received in several ways. Complaints are received via phone calls, email, the City's stormwater web page, and from other city departments. Violations documented because of complaint investigations will initiate appropriate enforcement activities.

6. Description of Enforcement Actions and Procedures

6.1. Verbal Warning

Verbal notifications by telephone or in person provide an immediate notification of violations. In general, verbal notifications are used for minor isolated violations or as an initial step leading to an

escalated enforcement response. The verbal warning should be documented in written correspondence provided to the responsible party (e.g., inspection report, email, or warning notice letter). The report or email shall include the issue and timeline to correct the issue (e.g., before the next rain event or within 7 calendar days). If the issue is not addressed in the timeline communicated, a NOV shall be issued. All verbal notifications shall be tracked and included in the annual report.

6.2. Written Notification

Written notification may be in the form of a warning letter, an email, or inspection report to the responsible party. The inspection report will document any compliance issues that need to be addressed at the site and provide a timeline for compliance. This written notification may or may not be followed up with a more formal means of notification, such as a Notice of Violation. The inspector shall ensure the enforcement actions are noted if the issues are not corrected by the deadline. Warnings are commonly issued for first time buffer violations, first time minor residential illicit discharges, and minor construction site deficiencies. The written notification shall include the violation(s) and a timeline to correct the violation(s). If the violation is not addressed in the timeline communicated, a NOV shall be issued. All written notifications shall be tracked and included in the annual report.

6.3. Notice of Violation

A Notice of Violation (NOV) is a formal written notice to the noncompliant responsible party that a stormwater violation has occurred. A NOV includes a statement detailing the legal authority under which the City issued the NOV, a description of the violation(s), and the date(s) the violation(s) occurred. The NOV will require a response from the responsible party that details the causes of the violation(s) and the corrective actions taken to correct the violation and to prevent similar violations from occurring. The NOV may assess civil penalties or a damage assessment and may require a specific remedial action of the user. A NOV may be issued for any violation of the Stormwater Ordinance, H.M.C. Title 18. Typically, NOV's are issued in response to a complaint investigation where a violation is observed, when issues brought forth in inspection reports are not addressed, illicit discharges, or when immediate attention is required to avoid pollution to the City's MS4 or waters of the State. The City must provide a deadline in the NOV for the responsible party to submit a Corrective Action Plan (CAP) to the City Engineer, or their designee. The CAP shall identify the violation, the source of the violation, a plan to eliminate the violation, and a timeline to eliminate the violation.

6.3.1. Formal Notice of Violation Requirements

The City Engineer, or their designee, shall issue all necessary notices or penalties to ensure compliance with H.M.C. NOVs shall be issued via Certified Mail with Signature Confirmation and by email with Delivery Receipt and Read Receipt tracking options selected. NOVs shall be in accordance with the following:

a. Must be a formal written notice provided to the property owner or the violator when the City Engineer, or their designee, observes a violation of the Stormwater Ordinance. Copy all applicable agencies, contractors, and responsible parties.
b. Include the location of the violation- Address, Parcel ID, and/or Latitude and Longitude

c. Include a statement identifying the violation(s), the Municipal Code violated, and why the NOV is being issued. Provide a copy of the section of the Municipal Code being violated.
d. Provide an outline of the site improvements needed to correct the violation(s) and bring the site into compliance.
e. Include the requirement to provide a corrective action plan (CAP) with an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions.
f. Include a deadline for submittal of the CAP.
g. For NOVs assessing Civil Penalties. Inform the property owner and/or violator of the right to appeal. They can seek modification or withdrawal of the notice and order by appealing to the City Engineer first and if he denies the appeal then to the Citizen's Stormwater Appeals Board.
h. Include labeled photographs with a description of the image captured.
i. Include the repercussions if the responsible party fails to submit the CAP and/or return the site to compliance.
j. NOVs shall be reviewed and approved by the City Engineer. NOVs assessing a civil penalty shall be reviewed and approved by the Public Works Director and/or City Attorney prior to sending.

6.3.2. Corrective Action Plan Requirements and Procedures

Pursuant to H.M.C. 18-210, whenever the City finds that any permittee or any other person discharging stormwater has violated or is violating the Illicit Discharge ordinance or a permit or order issued hereunder, the City may serve upon such person written notice of the violation. Within ten (10) days of the notice, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted to the City Engineer. Submission of this plan in no way relieves the discharger of liability for any violations occurring before or after receipt of the notice of violation.

When a violation of the Stormwater Ordinance occurs, depending upon the severity of the violation, the City may require submittal of a Corrective Action Plan (CAP). The CAP must include the items below:

a. A formal response on letterhead.
b. Identification of the violation.
c. Identification of the root cause of the violation.
d. Action items.
e. Timeline for each action item.
f. Identification of preventative measures for future violations.
g. Plan mark-ups/schematics to support action items.
h. Provide a date to return the site to compliance.

The City Engineer, or their designee, will review all CAPs using the CAP Review Checklist (APPENDIX A). The CAP will be reviewed for completeness and to verify that the proposed CAP will eliminate the illegal discharge to the MS4 as soon as practicable. The City Engineer, or their designee, will review feasibility, applicability, timeline, and potential impacts to the storm sewer system. The City Engineer

may need supporting documentation from other agencies/utilities prior to approval of the CAP. If the CAP is rejected, the City Engineer will notify the responsible party and provide an explanation for rejection of the CAP and set a second deadline for resubmittal of a complete CAP. A response will be provided to the responsible party within seven (7) calendar days. The responsible party is subject to all enforcement actions identified in this ERP at any point during this CAP review.

6.4. Withholding of Planning Approvals, Codes Inspections and/or Permits

Planning reviews and approvals, Codes inspections, and City permits are withheld when the responsible party of the suspect site has failed to acknowledge the City's attempts to gain site compliance. If the responsible party fails to bring the site back into compliance within the timeline provided by the inspector, the City may, in addition to issuing a Notice of Violation, withhold Planning/Codes Department reviews and approvals, permit approvals, and withhold all associated inspections. Only when the site has been brought back into compliance will the inspector notify the applicable departments to release all holds.

6.5. Stop Work Order

A Stop Work Order (SWO) is an order issued to the responsible party by the City requiring that all work at the site cease until such time as the violation is corrected. A SWO is issued when a responsible party fails to or refuses to bring a site into compliance, or when there is an imminent threat or existing impact to water quality. The SWO can be posted at the site or can be sent as part of a formal Notice of Violation. A SWO will be utilized when the nature of the violation is such that it is imperative that the correction of the violation take place prior to any further work being conducted on the site or as an escalation option when a NOV is disregarded, or violation(s) have not been corrected. A SWO may also be issued as part of an escalated enforcement response for chronic violators. Prior to issuing a SWO, the inspector will request an on-site meeting with the responsible party, the site designer, and the City Engineer, or their designee. If a plan to remedy the violation cannot be developed at the meeting, a SWO will be issued. The inspector will issue a formal written NOV, alert building and codes inspectors, and physically place Stop Work Order Notices at all entrances to the site. Under a SWO, no City inspections are to occur, and no work is to be done, other than correcting the site violation(s) resulting in the SWO. Once the site violations are corrected, the responsible party is to contact the City inspector for a re-inspection. If the site passes the inspection, the inspector will lift the SWO, notify applicable departments, and remove any signs posted on-site.

6.6. Show Cause Hearing

A Show Cause Hearing is a formal meeting requiring the responsible party to appear, explain their noncompliance, and show cause as to why more severe enforcement actions against the user should not go forward. The meeting may also serve as a forum to discuss corrective action and compliance schedules. An example of when a Show Cause Hearing will be utilized would be when a requirement is not completed on time and a civil penalty is being considered. The City is not, however, required to hold a Show Cause Hearing prior to assessing a civil penalty. The City Attorney shall coordinate show cause hearings.

6.7. Compliance Order

When the City Engineer, or their designee, finds that any person has violated or continues to violate this ordinance or a permit or order issued there under, he may recommend to the City Attorney to

issue a compliance order to the violator directing that, following a specific time period, adequate structures, devices, be installed or procedures implemented and properly operated. Orders may also contain such other requirements as might be reasonably necessary and appropriate to address the noncompliance, including the construction of appropriate structures, installation of devices, self-monitoring, and management practices. Compliance orders shall be issued by the City Attorney.

6.8. Cease and Desist Orders

A cease and desist order is a formal written notice demanding that the recipient immediately stop an illegal activity. The City Attorney may issue Cease and Desist Orders when the City Engineer, or their designee, finds that any person has violated or continues to violate the Stormwater Ordinance or any Permit or order issued hereunder. The order shall direct those persons in noncompliance to:

a. Comply forthwith; or
b. Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations and terminating the discharge.

Failure to comply with a cease and desist order may result in assessment of civil penalties and suspension of MS4 access.

6.9. Suspension of MS4 Access

6.9.1. Suspension due to Illicit Discharges in Emergency Situations

The City may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the United States. The City Attorney shall issue the MS4 suspension order to the violator. If the violator fails to comply with a suspension order issued in an emergency, the authorized enforcement agency may take such steps as deemed necessary to prevent or minimize damage to the MS4 or Waters of the United States, or to minimize danger to persons.

6.9.2. Suspension due to the Detection of Illicit Discharge

Any person discharging to the MS4 in violation of the Stormwater Ordinance may have their MS4 access terminated. The City Attorney shall notify the violator of the proposed termination of its MS4 access through a formal written notice. The violator may petition the authorized enforcement agency for reconsideration and hearing as outlined in the H.M.C. 18-212.

6.10. Civil Penalties

A civil penalty is a punitive monetary charge assessed by the City rather than a court. The penalty amount must be authorized in H.M.C.. The purpose of the penalty is to recover the economic benefit of noncompliance and to deter future violations. The range of penalties allowed by the H.M.C. and by TCA §68-221-1106 is a minimum of fifty dollars ($50.00) to a maximum of five thousand dollars ($5,000) per day per violation. When assessing a civil penalty, the following factors are considered:

1. The harm done to the public health or the environment.
2. Whether the civil penalty imposed will be substantial economic deterrent to the illegal activity.
3. The economic benefit gained by the violator.

4. The amount of effort put forth by the violator to remedy this violation.
5. Any unusual or extraordinary enforcement costs incurred by the municipality.
6. The amount of penalty established by ordinance or resolution for specific categories of violations; and
7. Any equities of the situation which outweigh the benefit of imposing any penalty or damage assessment.

A civil penalty may be imposed with a NOV either as a precursor to a Stop Work Order (SWO), with a SWO, or in lieu of a SWO. The civil penalty is calculated based on the type of violation(s) and impact of the violation(s). Notices of Civil Penalty will be issued by the City Engineer and/or the City Attorney. Civil penalties are assessed based on the Enforcement Response Plan Penalty Calculator Tool in APPENDIX B. The responsible party is given 30 days to remit payment, prior to having the Civil Penalty sent to collections. The responsible party has the right to appeal the civil penalty within the timeline and manner described in H.M.C. 18-210. Civil Penalty appeals will be heard by the Citizen's Stormwater Appeals Board.

A water quality multiplier has been incorporated into the Enforcement Response Plan Penalty Calculator Tool.

6.11. Additional Measures

6.11.1. Recovery of Maintenance Costs

The City may perform work necessary to mitigate damage to the storm sewer system and threats against public health and safety. The City shall collect the funds expended from the responsible party in an appropriate manner, such as collecting against the project's bond, land disturbance surety, or directly billing the responsible party to pay for work and materials. Failure by the responsible party to provide payment to the City may result in the filing of a lien upon the subject property.

6.11.2. Recovery of Damages and Costs

The City may recover the cost of all damages proximately caused by the violator to the City. This may include any reasonable expenses incurred in investigating violations and enforcing compliance with the Stormwater Ordinance, or any other actual damages caused by the violation.

6.11.3. Suspension/Revocation of Land Disturbance Permit

The City may suspend or revoke a violator's Land Disturbance Permit for repeated failures to comply with the Stormwater Ordinance. Suspension/revocation will occur after formal Notice of Violation when deemed appropriate by the City Engineer and/or Public Works Director.

6.11.4. Criminal Penalties

When necessary, the City may pursue criminal charges against the violator pursuant to Tennessee Code Annotated 69-3-101 the Tennessee Water Quality Control Act.

6.12. City Attorney's Discretion

The City Attorney will evaluate escalated enforcement actions and determine if further legal action will be taken against the violator. The City Attorney has the authority to escalate enforcement action

beyond this ERP as they deem necessary. The City Attorney may seek injunctive relief for noncompliance if any such noncompliance might result in irreparable harm to the MS4 system, to the health and safety of workers, or to the environment.

7. Construction Noncompliance Procedures

All sites that require a Land Disturbance Permit (LDP), Tennessee Department of Environment and Conservation (TDEC) Construction General Permit (CGP) coverage, or TDEC Aquatic Resource Alteration Permit (ARAP) coverage are subject to the enforcement actions outlined in this section. Two noncompliance situations are addressed: permit non-filers and permit violations.

7.1. Summary of Enforcement Permit Non-Filers

Any site that falls under the requirements of obtaining a LDP, a TDEC CGP Notice of Coverage (NOC), or TDEC ARAP are required to have the approved permit on site. If it is found the site has not obtained proper coverage, a Stop Work Order will be issued immediately. Before any further work, except for stabilization of the site, is performed, proper permit coverage must be obtained. In the event the violator does not stop work immediately, the violator will be assessed penalties as outlined above and the TDEC Nashville Environmental Field Office (NEFO) will be notified. The project location, responsible party, project size, and records of communication will be provided to the local TDEC NEFO.

7.2. Summary of Enforcement for Permit Violations

Any site covered under a LDP, a TDEC CGP, or a TDEC ARAP will be subject to stormwater inspections. Inspections will be performed to evaluate compliance with the permits listed above. If noncompliance is noted, it will be documented in the City of Hendersonville Stormwater Inspection Report in Energov.

In cases of minor violation(s), a call to the site contact will be made, informing them of the violation and outlining a timeline for correction before the next rain event or within seven (7) calendar days. After the given timeline has expired, and no corrective action has been taken, a Notice of Violation (NOV) will be issued. Depending on the phase of construction, a hold on Codes permitting and inspections will be issued. A Stop Work Order (SWO) may be issued when deemed appropriate by the City Engineer, or their designee. If substantial progress is not made toward compliance, Civil Penalties may be assessed, as outlined above.

In cases of major violation(s), a NOV and/or SWO will be issued immediately. Once a NOV or SWO is issued, a timeline of ten (10) business days, will be given to develop and submit a corrective action plan (CAP). If the CAP is not submitted and substantial progress is not made toward compliance, Civil Penalties may be assessed, as outlined above, and the site may have their Land Disturbance Permit suspended or revoked.

The City may take immediate action when violations threaten major damage to waters of the State and to protect public health and safety. If the responsible party is uncooperative or fails to prevent such violations, the City will act in the best interest of the public health and safety to mitigate violations. This will in no way reduce or offset the liability of the owner with respect to damages incurred.

If the City is unable to bring a NPDES permitted discharge into compliance using its enforcement mechanisms and protocol, the TDEC NEFO will be notified and provided the project location,

responsible party information, project size, and records of communication, including a summary and copies of escalated enforcement actions taken.

7.3. Common Construction Violations

- Land Disturbing Activities without a Land Disturbance Permit (to include exceeding approved limits of disturbance).
- Failure to properly design, install, and maintain best management practices (BMPs).
- Land disturbance activities encroaching in the water quality riparian buffer.
- Failure to comply with approved Land Disturbance Permit/development inconsistent with permit.
- Unpermitted alterations to jurisdictional features.
- CGP Violations.

*The above-mentioned violations are common violations observed on sites and are not all inclusive of what may be enforced by H.M.C Title 18.

8. Illicit Discharge Investigation Procedures

Pursuant to H.M.C. 18-208, no person shall introduce or cause to be introduced into the MS4 any discharge that is not composed entirely of stormwater, except those outlined in H.M.C. 18-208 (2). The City developed and implemented a program to identify and eliminate illicit discharges. The components of this program that involve enforcement response are dry weather screening, Visual Stream Assessments, Priority Area inspections, Stormwater Hotline complaint investigations, and Stream Monitoring. Illicit discharge investigations, and the results of those investigations, shall be individually tracked and documented. Tracking shall include the name of the Responsible party, locations, description of findings, dates times, parameters and sampling results, discharge source, description of enforcement action(s) including referrals to other agencies, the date the illicit discharge was resolved, and any other pertinent information.

Illicit discharge complaints shall be investigated within seven (7) calendar days from the receipt of the complaint. Initial enforcement actions (including referrals to other agencies) shall be taken within seven (7) calendar days of the investigation of a confirmed illicit discharge. Confirmed illicit discharges shall be eliminated as soon as practicable. If the elimination of the confirmed illicit discharge will take more than fourteen (14) calendar days (from responsible party's notification of confirmed illicit discharge) a corrective action plan (CAP) to eliminate identified illicit discharges shall be developed by the responsible party of the source of the illicit discharge in concurrence with the City. Failure to provide the CAP may result in assessment of civil penalties. In addition to civil penalties, the City may recover all damages proximately caused by the violator and all associated costs to remedy the violation. Remediation cost will be determined on a time and materials basis.

8.1. Illicit Discharge ERP (Commercial/Industrial)

First Offense

NOV issued to the violator, or permittee if applicable. A civil penalty may be issued and calculated utilizing the ERP Penalty Calculator and will be no less than $250.00. The civil penalty will include

damages consisting of salaries and the cost of all city crew or contracted services to clean up the release. If warranted a SWO/Suspension Order may be issued to cease the illicit discharge.

Subsequent Offense

The penalty may increase by twenty-five percent (25%) of the previous penalty amount for every subsequent but separate offense made by the same person, company, or facility. The penalty shall be additional to other enforcement actions.

Note: Additional civil penalties may incur if clean-up is prolonged and/or material is lost to the MS4 or waters of the state. Damages consisting of salaries and the cost of all city crew or contracted services to clean up accidental release may be assessed to the property owner and/or witnessed responsible party.

8.2. Illicit Discharge ERP (Residential)

First Offense

Enforcement action based on individual action. More serious violations, such as deliberate dumping of pesticide, used motor oil or other hazardous or dangerous chemicals into the MS4 or waters of the state, may result in issuance of a NOV and civil penalty. The civil penalty will be calculated utilizing the ERP Penalty Calculator and will be no less than $50.00. The civil penalty may include damages consisting of salaries and the cost of all city crew or contracted services to clean up the release. A less serious violation, such as raking leaves into drainage system, may result in written or verbal warning.

Subsequent Offense

The penalty may increase by twenty-five percent (25%) of the previous penalty amount for every subsequent but separate offense made by the same person, company, or facility. The penalty shall be additional to other enforcement actions. A subsequent offense of a less serious violation will result in a civil penalty, calculated utilizing the ERP Penalty Calculator

Note: Additional civil penalties may incur if clean-up is prolonged and/or material is lost to the MS4 or waters of the state. Damages consisting of salaries and the cost of all city crew or contracted services to clean up the release may be assessed to the property owner and/or witnessed responsible party.

8.3. Requirements for Construction Site Operators

Control Construction Site Wastes and Minimize Migration of Sediment and Debris

Pursuant to H.M.C. 18-208.6, construction site operators are required to control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary wastes at construction sites within the jurisdiction to avoid adverse impacts to water quality. Construction site operators are required to minimize the migration of sediment and debris to the roadway. All sediment and debris tracked onto the roadway shall be cleaned as soon as possible, and at minimum before the end of the workday.

To avoid adverse impacts to water quality, the City will take immediate action for failing to control construction site waste and remove sediment and debris from the roadway. The Stormwater Inspector shall make notifications to the responsible parties and if deficiencies are not addressed in the timeline provided the inspector shall withhold Codes permitting and inspections.

8.4. Common Illicit Discharge Violations

- Residential
- Commercial/Industrial
- Discharge of sediment/debris into the MS4/roadway
- Illicit discharge of Industrial Waste/Hazardous Waste/Toxic Chemicals

8.5. Spill Response Enforcement

The Hendersonville Fire Department (HFD) will be the incident commander for all spill response activities. When notified of a spill City Stormwater staff shall immediately notify the HFD and if applicable, the Hendersonville Police Department (HPD), for discharges of pollutants to the MS4. HFD will respond to the scene and determine if the spill is a regulated substance and/or a hazardous substance.

Stormwater staff will respond to the scene once HFD has secured the scene and determined it safe for investigation. Stormwater staff will investigate to determine if the spill discharged into the MS4. If an illicit discharge is confirmed, Stormwater staff will continue the investigation and take appropriate enforcement action. If the illicit discharge has the potential to enter or has entered navigable waters. Stormwater staff will ensure that notifications are made to the agencies identified below:

- TDEC Nashville Environmental Field Office (615-687-7078)
- Sumner EMA (615-452-7584)
- TEMA (833-247-7745)
- National Response Center (800-424-8802)

Stormwater staff shall include report numbers from the agencies above in the illicit discharge report.

9. Post Construction Noncompliance Procedures

Pursuant to Section 4.2.5 of the City's Small MS4 General NPDES permit discharges from new development and redevelopment sites must be managed such that post-development hydrology does not exceed pre-development hydrology. The permanent stormwater management program must require new development projects to be designed to remove pollutants to the maximum extent practicable (MEP). For design purposes, total suspended solids (TSS) may be used as the indicator for the reduction of pollutants. Permanent stormwater control measures (SCM) are used to meet water quality requirements. Permanent SCMs must be designed in accordance with H.M.C. 18-204. Instances of noncompliance will be addressed through the progressive enforcement actions identified in Section 6 of this ERP.

9.1. Permanent SCM Verification Enforcement

Pursuant to H.M.C. 18-206, all permittees are required to submit as-built plans for any SCMs located on-site within ninety (90) days after final construction is completed. Failure to meet permanent SCM design standards and/or provide the ninety (90) day verification documents will result in progressive enforcement actions identified in Section 6 of this ERP.

9.2. Inspection and Maintenance of Permanent Stormwater Control Measures (SCM)

The City requires all new development and redevelopment sites to record a Stormwater Inspection and Maintenance Agreement/Long-Term Maintenance Plan for all stormwater management facilities. The property responsible party must complete routine inspection of all SCMs on a minimum annual basis or as specified in the Long-Term Maintenance Plan. Failure to inspect and maintain permanent SCMs will result in enforcement in accordance with actions and timeframe in this plan.

9.3. Existing Location and Developments Violations

The City Engineer, or their designee, shall in writing notify the owners of existing locations and developments of specific drainage, erosion or sediment problem affecting such locations and developments, and the specific actions required to correct those problems. The notice shall also specify a minimum of ten (10) business days for compliance or submittal of a Corrective Action Plan (CAP).

9.4. Common Post Construction Violations

- Encroachment/disturbance of the water quality riparian buffer.
- Failure to properly design, install, or maintain BMPs or SCMs.
- Failure to meet or maintain design or maintenance standards.
- Failure to submit the Inspection and Maintenance/Long-Term Maintenance Plan (IMA/LTMP) Annual Report on July 1.
- Failure to submit the 90-day verification of Permanent SCMs.
- Failure to comply with the recorded IMA/LTMP.
- Existing Location and Developments Violations.

*The above-mentioned violations are common violations observed on sites and are not all inclusive of what may be enforced by H.M.C Title 18.

APPENDICES

APPENDIX A-CORRECTIVE ACTION PLAN DOCUMENTS

City of Hendersonville
Corrective Action Plan (CAP) Guidance

Pursuant to Hendersonville Municipal Code 18-209, whenever the City finds that any permittee or any other person discharging stormwater has violated or is violating this ordinance or a permit or order issued hereunder, the City may serve upon such person written notice of the violation. Within ten (10) business days of this notice, an explanation of the violation and a corrective action plan (CAP), to include specific required actions to be taken to correct the noncompliance, shall be submitted to the City Engineer, or their designee. Submission of this plan in no way relieves the discharger of liability for any violations occurring before or after receipt of the notice of violation.

When a violation of the Stormwater Ordinance occurs, depending upon the severity of the violation, the City may require submittal of a Corrective Action Plan (CAP). The CAP must include the items below:

1. A formal response on letterhead
2. Identification of the violation
3. Identification of the root cause of the violation
4. Action items
5. Timeline for each action item
6. Identification of preventative measures for future violations
7. Plan mark-ups/schematics to support action items
8. Provide a date to return the site to compliance

The City Engineer or his designee will review the CAP and provide a response within seven (7) calendar days. If the City Engineer rejects the CAP, he will provide an explanation for the rejection and set a second deadline for resubmittal of a complete CAP.

If you have questions about the CAP or the process, please contact the City Stormwater Coordinator at 615-590-4649.

City of Hendersonville
Corrective Action Plan (CAP) Review Checklist

CAP Review #:	Date of CAP Submittal:	LDP#:
Project:		
Property Owner/Operator:		
Point of Contact:		
Location:		
Description of Violation:		

Corrective Action Plan Required Items:	**YES**	**NO**
1. Was a formal response to the Notice of Violation provided?	☐	☐
2. Did the response identify the violation?	☐	☐
3. Did the response identify the root cause of the violation?	☐	☐
4. Did the response include corrective action items?	☐	☐
5. Did the response provide a timeline for each action item	☐	☐
6. Did the plan identify preventative measures to eliminate future violations?	☐	☐
7. Were plan mark-ups/schematics included to support action items?	☐	☐
8. Did the plan provide a date of return to compliance?	☐	☐
9. Did the City Engineer and/or Public Works Director agree with the CAP?	☐	☐

What is the proposed date of return to compliance? _____

Reviewer Comments: _____

_____

_____

_____

CAP Plan Reviewer:	**Date of Review:**
Signature of Reviewer:	☐ **Accepted** ☐ **Rejected**
Explanation for Rejection:	
Deadline for Resubmittal:	

APPENDIX B-ENFORCEMENT RESPONSE PLAN PENALTY CALCULATOR TOOL

Project Name:		
Property Owner/Responsible Party:		
Permit #:		
Chronic Violator:	Yes☐	No☐

Enforcement Response Plan Penalty Calculator

Offender Category	Violation	Hendersonville Municipal Code	Penalty	# of Violations	Water Quality Impact Multiplier On/Offsite=1 MS4=2 Buffer=3 Waters of the State= 4	Prior NOV Multiplier 0 for None 25% Additional for Each Prior NOV	Penalty
Construction Activities	Land Disturbance activities without a Permit (includes exceeding approved limits of disturbance)	18-203	$ 500				$ 0
	Failure to properly design, install, and maintain BMPs	18-204	$ 100				$ 0
	Land disturbance activities encroaching in the water quality riparian buffer	18-205	$ 100				$ 0
	Failure to comply with approved Land Disturbance Permit/development inconsistent with permit	18-203	$ 250				$ 0
	Unpermitted alterations to jurisdictional features	18-205.4	$ 250				$ 0
	CGP Violations	18-208.9b	$ 100				$ 0
	Other		$ 0				$ 0
Illicit Discharge	Residential	18-208	$ 50				$ 0
	Commercial/Industrial	18-208	$ 250				$ 0
	Discharge of sediment/debris into the MS4/roadway	18-208	$ 100				$ 0
	Industrial Waste/Hazardous/Toxic	18-208	$ 500				$ 0
	Other		$ 0				$ 0
Post-Construction Activities	Encroachment/disturbance of the permanent water quality riparian buffer	18-205	$ 100				$ 0
	Failure to properly design, install, or maintain SCMs	18-204	$ 100				$ 0
	Failure to meet or maintain design or maintenance standards	18-206.5	$ 250				$ 0
	Failure to submit IMA/LTMP Annual Report	18-204.4c	$ 100				$ 0
	Failure to submit 90-day verification of Perm. SCMs	18-206	$ 100				$ 0
	Failure to comply with the recorded IMA/LTMP	18-204	$ 100				$ 0
	Existing Location and Developments Violations	18-207	$ 100				$ 0
	Other		$ 0				$ 0
						Total Penalty	$ 0

APPENDIX C-SAMPLE NOTICE OF VIOLATION LETTERS

City of Hendersonville

101 Maple Drive North • Hendersonville, TN 37075 • Telephone (615) 822-1000
www.hvilletn.org

Notice of Violation/Stop Work Order

April 16, 2024

City of Hendersonville
Attn: Helen Morrison
101 Maple Drive North
Hendersonville, TN 37075
e-copy: hmorrison@hvilletn.org

Re: Notice of Violation/Stop Work Order
Failure to Obtain a Land Disturbance Permit
Location: 101 Maple Drive North, Hendersonville, Sumner County, Tennessee, 37075
Parcel ID: 159J A 021.08 000

Dear Mrs. Morrison,

On Thursday, April 11, 2024, while conducting a routine inspection of a neighboring property, the Stormwater Construction Inspector observed unpermitted land disturbance activities at the location above. The approximate area of disturbance was between one to two acres. Land disturbance activities exceeding one acre of disturbance are required to obtain a Land Disturbance Permit per **Hendersonville Municipal Code (H.M.C.) 18-203**. All land disturbance activities shall stop, and the site shall be temporarily stabilized until all applicable Local, State, and Federal permits have been obtained. Guidance on obtaining a land disturbance permit can be found at Permits | Hendersonville, TN (hvilletn.org).

Per H.M.C. 18-210 (2)(a), within 10 days of this notice, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted to the City Engineer, Stephen Winzenread. Submission of this plan in no way relieves the discharger of liability for any violations occurring before or after receipt of the notice of violation.

Any person violating the provisions of the Stormwater Ordinance may be assessed a civil penalty by the City Engineer of not less than fifty ($50) dollars and not more than five thousand ($5,000) dollars per day or the maximum allowed by law for each day of violation. Each day of violation

Mayor	Ward One	Ward Two	Ward Three	Ward Four	Ward Five	Ward Six
Jamie Clary						
Vice Mayor	Mark A. Skidmore	Lee Peterson	Bob Garza	Karen Dixon	Rachel Collins	Jim Waters
Jim Waters	Mark Burgdorf	Michael Martin	Jeffrey Sasse	Terri Goodwin	Janna Garton	Dr. Eddie Roberson

shall constitute a separate violation. In addition to the civil penalty, the City may recover damages proximately caused by the violator to the City.

Failure to communicate the corrective action plan and timeline to the City by April 29, 2024, may result in a penalty assessment for each day that the violation continues. Please submit a formal response in writing to Mr. Stephen Winzenread (swinzenread@hvilletn.org), City Engineer, prior to the close of business on **4/29/2024**.

Respectfully,

Helen Morrison Date: 2024.05.15 12:50:10-05'00'

Helen Morrison
Stormwater Coordinator
615-590-4649

CC: Stephen Winzenread, Assistant Public Works Director/City Engineer

City of Hendersonville

101 Maple Drive North • Hendersonville, TN 37075 • Telephone (615) 822-1000
www.hvilletn.org

STOP WORK ORDER
Notice of Violation/Penalty Assessment

April 6, 2023

[redacted]

Re: Unpermitted Land Disturbance Activities- Stop Work Order/Penalty Assessment
Location: [redacted] Hendersonville, Sumner County, Tennessee
Parcel ID: [redacted]
Zoning: SR-2 Suburban Residential

Dear Property Owner,

On Thursday, 3/2/2023, City of Hendersonville staff investigated and observed unpermitted land disturbance activities at the location above. Unpermitted land disturbance activities are a violation of **Hendersonville Municipal Code (H.M.C.) Title 18, Chapter 2- Land Disturbance Regulations**. Sediment-laden water was observed leaving the property and entering community waters violating the illicit discharge ordinance. Illicit discharges/illicit connections are prohibited by **H.M.C. Title 18, Chapter 2, Section 9. Illicit Discharges**. All unpermitted land disturbance activities shall cease until all applicable Federal, State, and City permits have been obtained. The site must be temporarily stabilized until permits have been issued to prevent further loss of sediment. Attached you will find guidance on how to obtain a land disturbance permit and temporary stabilization methods.

Under the Clean Water Act and State Law, the City of Hendersonville is required to detect, remove, prohibit, and enforce any non-stormwater discharges to the municipal separate storm sewer system (MS4) and community waters. After careful review, the City of Hendersonville Public Works Department has determined that you have violated H.M.C. Title 18, Chapter 2- Land Disturbance Regulations. **Therefore, the City assesses [redacted] et al and [redacted] civil penalties for the violations described below. The civil penalties will continue to accrue and increase until you have obtained all applicable permits and satisfied any outstanding penalties and/or judgements against you as the property owner.**

Mayor	Ward One	Ward Two	Ward Three	Ward Four	Ward Five	Ward Six
Jamie Clary						
Vice Mayor	Mark A. Skidmore	Lee Peterson	Bob Garza	Karen Dixon	Rachel Collins	Jim Waters
Jim Waters	Mark Burgdorf	Michael Martin	Jeffrey Sasse	Terri Goodwin	Janna Garton	Dr. Eddie Roberson

On 3/6/2023, you were notified via phone call by the City Stormwater Inspector, Chris Rapp, of the Hendersonville Municipal Code violations of land disturbance without a permit and illicit discharges due to land disturbance. Mr. Rapp ordered you to stop all work and to temporarily stabilize the site. The City of Hendersonville issued a Notice of Violation/Stop Work Order via certified mail to [redacted] et al and [redacted] for unpermitted land disturbance activities and illicit discharges due to land disturbance. The NOV/SWO was received, and delivery confirmed on 3/8/2023. **A civil penalty of $50.00 per day is assessed for failing to obtain a land disturbance permit, starting on 3/8/2023. A civil penalty of $250.00 per day is assessed for failing to eliminate the illicit discharge due to land disturbance.**

On 3/8/ 2023, you received the formal Notice of Violation/Stop Work Order by certified mail. The land disturbance activities continued, and you failed to temporarily stabilize the site. **A civil penalty of $500.00 per day is assessed for violation of the Stop Work Order, starting on 3/8/2023.**

You failed to provide a corrective action plan to the City Engineer before close of business on 3/17/2023. **A civil penalty of $50.00 per day is assessed for failing to provide a corrective action plan, starting on 3/17/2023.**

This is your second and final notice of violation and stop work order. All land disturbance activities shall cease immediately, all access to the site must be prohibited, and the site shall be temporarily stabilized until all applicable permits are obtained. Pursuant to H.M.C. 18-210 (2)(a), within 10 days of this notice, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted to the City Engineer, Stephen Winzenread. Submission of this plan in no way relieves the discharger of liability for any violations occurring before or after receipt of the notice of violation/stop work order. **Submit your response in writing to Mr. Stephen Winzenread, City Engineer, prior to close of business on 4/19/2023**.

Failure to comply with this order will result in an increase in civil penalties detailed below and filing of an injunction. Pursuant to H.M.C. 18-211(2) "**Penalties**. Under the authority provided in Tennessee Code Annotated Section 68-221-1106, the municipality declares that any person violating the provisions of this ordinance may be assessed a civil penalty by the City Engineer of not less than fifty dollars (50) and not more than five thousand dollars (5,000) per day or the maximum allow by law for each day of violation. Each day of violation shall constitute a separate violation."

Pursuant to H.M.C. 18-211 (4) "Recovery of Damages and Costs. In addition to civil penalty the City may recover;

> (a) all damages proximately caused by the violator to the City, which may include any reasonable expenses incurred in investigating violations of, and enforcing compliance with, this ordinance, or any other actual damages caused by the violation.
> (b) the costs of the City's maintenance of stormwater facilities when the user of such facilities fails to maintain them as required by this ordinance."

If compliance cannot be achieved the City of Hendersonville intends to temporarily stabilize the site and provide temporary stormwater management for the site, as required by law. The cost of these actions will be at the expense of the property owner.

Summary of Assessed Civil Penalties

1. **Failure to obtain a Land Disturbance Permit**
   - **3/18/2023 to 4/19/2023- $50 x 33 days= $1,650.00**
   - **Increased to $500.00 per day on 4/20/2023.**

2. **Failure to Stop Work**
   - **3/8/2023 to 4/19/2023- $500.00 x 43 days= $21,500.00**
   - **Increased to $1,000.00 per day on 4/20/2023.**

3. **Failure to submit a Corrective Action Plan**
   - **3/18/2023 to 4/19/2023- $50.00 x 33 days= $1,650.00**
   - **Increased to $500.00 per day on 4/20/2023.**

4. **Failure to eliminate the Illicit Discharge due to Land Disturbance**
   - **3/18/2023 to 4/19/2023- $250.00 x 33 days= $ 8,250.00**
   - **Increased to $1,000.00 per day on 4/20/2023.**

Total Penalties Assessed as of 4/19/2023= $33,050.00

Under H.M.C. 18-212, you have a right to appeal this civil penalty. You must submit the appeal in writing to the Public Works Secretary at the City of Hendersonville, 101 Maple Drive North, Hendersonville, TN, 37075, Attention: Stephen Winzenread, **within 15 days of receipt of this penalty assessment,** or you will be deemed to have consented to the assessment.

Issued this 6th day of April 2023.

Sincerely,

Stephen Winzenread, PE
Assistant Public Works Director/City Engineer

Attachments: 1. Land Disturbance Permit Application
2. Land Disturbance Checklist
3. Land Disturbance Permit Guidance
4.Temporary Stabilization Criteria from the Tennessee Erosion & Sediment Control Handbook

cc: Jesse Eckenroth, Chief of Operations, City of Hendersonville, TN
Lance Wray, Interim City Attorney, City of Hendersonville, TN
Sarah Lock, Public Works Director, City of Hendersonville, TN
Laurel Jobe, TDEC Division of Water Resources
Bill Murph, TDEC Division of Water Resources

APPENDIX J

SOLICITOR'S CERTIFICATION STATEMENT

City of Hendersonville

101 Maple Drive North • Hendersonville, TN 37075 • Telephone (615) 822-1000
www.hvilletn.org

SOLICITORS CERTIFICATION STATEMENT

Date: **August 14, 2024**

From: **Lance A. Wray, City Attorney**

Re: **Legal Authority for City of Hendersonville, Tennessee – (TNS000000)**

To Whom It May Concern:

As counsel/city attorney for the city of Hendersonville, Tennessee (hereinafter "the City"), the following statement is submitted pursuant to the requirements contained in the MS4 General Permit TNS000000 regarding legal authority for the City to implement the City's MS4 Stormwater Management Program (SWMP).

The City has adequate authority to carry out the program described in MS4 General Permit TNS00000.

The following references to the legal authority requirements of MS4 General Permit TNS000000 subpart 4.7 are correlated with the sections of the City's legal basis providing the required authority. Where the authority is not apparent from a reading of the Ordinance, an explanation is provided.

a. Section 18-208 of the Ordinance prohibits non-stormwater discharges into the storm sewer system and authorizes appropriate enforcement procedures and actions.

b. Section 18-203 of the Ordinance requires erosion and sediment controls, and provides for sanctions to ensure compliance.

c. Section 18-204 of the Ordinance addresses post construction/permanent stormwater runoff from new development and redevelopment projects. New development or redevelopment projects may not discharge to the MS4 system without a land disturbance permit and meeting the general performance criteria for stormwater management which may contain various terms, conditions, and prohibitions as found in Sections 18-203 & 18-204 of the Ordinance.

d. The City may obtain remedies for noncompliance, seek injunctive relief, seek or assess penalties and enact the enforcement response plan as required in subpart 4.5 of permit TNS000000. The City may seek injunctive relief for noncompliance if any such noncompliance might result in irreparable harm to the MS4 system, to the health and safety of workers, or to the environment; and because damages at law would not be an adequate remedy. A civil penalty is authorized by Section 18-210 of the Ordinance. The civil penalty

Mayor	Ward One	Ward Two	Ward Three	Ward Four	Ward Five	Ward Six
Jamie Clary						
Vice Mayor	Mark A. Skidmore	Lee Peterson	Bob Garza	Karen Dixon	Rachel Collins	Jim Waters
Jim Waters	Mark Burgdorf	Michael Martin	Jeff Sasse	Terri Goodwin	Janna Garton	Dr. Eddie Roberson

may equal a sum not to exceed $5,000 per day per violation. Injunctive relief is authorized by Section 18-210 of the Ordinance.

e. Section 18-210 of the Ordinance requires compliance with conditions in the Ordinance, permits, contract, orders, or other requirements.

f. The City may conduct inspection, surveillance, and monitoring activities and shall have the authority to enter the premises of any discharger in which a discharge source or permanent stormwater control measure is located or in which records are required to be kept to ensure compliance with Stormwater Management Program requirements under authority granted in Ordinance Section 18-201.

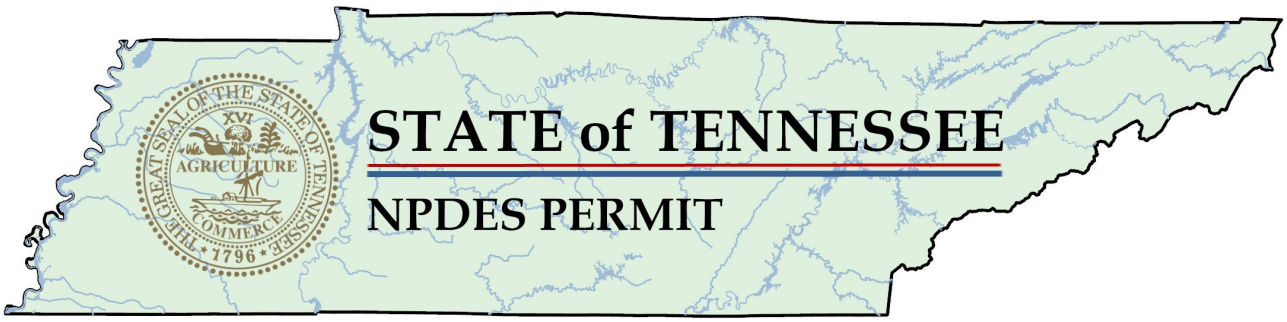
As stated above, the City has sufficient authority to implement the requirements of its Stormwater Management Program to minimize the discharge of pollutants to the maximum extent practicable and to individual MS4 users through use of the Stormwater Management Plan, and by direct enforcement of its Stormwater Ordinance. A description of the exact procedures to be used in implementing the Stormwater Management Program is available upon request.

Sincerely,

Lance A. Wray
City Attorney, Hendersonville, TN

APPENDIX K

CITY OF HENDERSONVILLE NOTICE OF COVERAGE FOR SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS PERMIT# TNS075353



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

Tracking No. TNS075353

Notice of Coverage (NOC) under the General NPDES Permit for
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)

Under authority of the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.) and the delegation of authority from the United States Environmental Protection Agency under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (33 U.S.C. 1251, et seq.) the following operator of a small municipal separate storm sewer system is authorized to discharge stormwater runoff into the waters of the State of Tennessee in accordance with the various eligibility criteria, administrative procedures, program requirements, reporting requirements, etc. set forth in the Tennessee MS4 NPDES general permit.

Permittee Name:	**City of Hendersonville**
is authorized to discharge:	stormwater runoff
from separate storm sewer system located in:	**Hendersonville, TN, Sumner County**
to to waters of the state:	**in accordance with the required program elements and other conditions set forth in the Tennessee small MS4 general permit.**
Issuance date:	**11/29/2022**
Effective date:	**12/01/2022**
Expiration date:	**08/31/2027**

General MS4 Permit information and overview can be found here.

Print

NPDES Small MS4 NOI

version 1.6

(Submission #: HPM-G1BX-ZFFJX, version 2)

Details

Originally Started By	Helen Morrison
Submitted	11/22/2022 (540 days ago) by Jamie Clary
Submission ID	HPM-G1BX-ZFFJX
MS4 Owner Name	City of Hendersonville
Status	Complete

Form Input

General Information

Are any other operators of MS4s seeking coverage under this Notice of Intent
No

MS4 Ownership Type
City or Town

What is the estimated population of the MS4
60000

Name of Municipality or Organization
City of Hendersonville

MS4 Responsible Official

Prefix
Hon.

First Name	**Last Name**
Jamie	*Clary*

Title
Mayor

Name of MS4
City of Hendersonville

Phone Type	**Number**	**Extension**
Business	615-822-1000	

Email
jclary@hvilletn.org

Address
101 MAPLE DR N
HENDERSONVLLE, TN 37075

County
Sumner

MS4 Program Manager

Prefix
Mrs.

First Name	Last Name
Sarah	*Lock*

Title
Public Works Director

Company/Organization Name
City of Hendersonville

Phone Type	Number	Extension
Business	6158221016	

Email
slock@hvilletn.org

Address
101 MAPLE DR N
HENDERSONVLLE, TN 37075

Description Of Storm Sewer System

Is an electronic geospatial map of your system available?
Yes

If YES, provide a link to the REST Services:
https://hvilletn.maps.arcgis.com/apps/webappviewer/index.html?id=d47fbac3d1be411f8ec9a5de082e88e5

Summary Of Receiving Streams

Please Lookup Waterbody Using Mapping Tool

Using the GIS mapping tool linked below to list the receiving waterbodies to which your MS4 discharges, the 12 Digit Hydrologic Unit Code and the number of MS4 outfalls discharging into it.
DWR Waterbodies Spatial Tool

Streams with Unavailable Parameters

Use the most current EPA Approved List of Impaired and Threatened Waters linked below, along with the GIS mapping tool published on the division's web site, to determine whether stormwater from any part of the MS4 discharges into streams with unavailable parameters for nutrients, pathogens, siltation, or other.
Water Quality Rules, Reports and Publications

Exceptional Tennessee Waters (ETW)

Use the division's data viewer linked below to determine whether stormwater from any part of the MS4 discharges into Exceptional Tennessee Waters.
TDEC Data viewer

State or EPA Issued TMDL's

EPA-Approved TMDLs as well as EPA-Established TMDLs for Tennessee waters can be found on the division's web site at Tennessee's Total Maximum Daily Load (TMDL) Program (tn.gov). to determine whether stormwater from any

part of the MS4 discharges into it.
Tennessee's Total Maximum Daily Load (TMDL) Program (tn.gov)

List waters and parameters

Receiving Water (Enter Source_FeatureID Value)	Number of Outfalls	Nutrients	Pathogens	Siltation	Other	ETW	TMDL	MS4 Jurisdiction
Center Point Branch from Manskers Creek to headwaters (TN05130202220_0500)	54	Yes	No	No	No	No	No	
Old Hickory Reservoir on Cumberland River in Davidson County (TN05130201001_1000)	170	No	No	No	No	No	No	
Unnamed trib to Cheatham Reservoir from Cheatham Reservoir to headwaters (near COE archery range) (TN05130202001T_0600)	16	No	No	No	Yes	No	No	
Drakes Creek from Old Hickory Lake to headwaters (TN05130201047_1000)	79	No	No	No	No	No	No	
Misc tribs to Drakes Creek from Old Hickory Lake to headwaters (TN05130201047_0999)	117	No	No	No	No	Yes	No	
Unnamed trib to Drakes Creek from Drakes Creek to headwaters (furthest south trib in Hendersonville) (TN05130201047_0100)	42	No	No	No	Yes	No	No	
Unnamed trib to Drakes Creek from Drakes Creek to headwaters (in Hendersonville) (TN05130201047_0200)	47	No	No	No	Yes	No	No	
Madison Creek from Manskers Creek to headwaters (TN05130202220_0400)	15	No	No	Yes	Yes	No	No	
Misc tribs to Old Hickory Reservoir (TN05130201001T_0999)	106	No	No	No	No	No	No	
Station Camp Creek from Old Hickory Lake to headwaters (TN05130201046_1000)	13	No	No	No	No	No	No	
Misc tribs to Station Camp Creek from Old Hickory Lake to headwaters (TN05130201046_0999)	40	No	No	No	No	Yes	No	

Receiving Water (Enter Source_FeatureID Value)	Number of Outfalls	Nutrients	Pathogens	Siltation	Other	ETW	TMDL	MS4 Jurisdiction
Manskers Creek from Cheatham Reservoir to Slaters Creek (TN05130202220_1000)	16	No	Yes	Yes	No	No	Yes	

CORRECTION REQUEST ***(APPROVED)***

Stream Listing Incomplete

Please include the following missing stream: TN05130202220_1000 **-** Manskers Creek
Created on 11/22/2022 7:33 AM by **Brown Patton**

1 COMMENT

Helen Morrison (hmorrison@hvilletn.org) (11/22/2022 8:44 AM)
Missing stream TN05130202220_1000**-** Mansker Creek was added and TN05130202220_2000 was removed from the inventory as it is outside of our jurisdiction.

MCM 1: Public Education and Outreach

Public Education

Target Audience	Management Measure	Delivery Method/Materials	MS4(s) Responsible for Implementation
General Public	Awareness of the impacts on water quality	Webpage, flyers, educational videos, School education Partnership with Cumberland River Compact, Tree Day Distributor, Stream stewardship events, Waterfest sponsor, Watershed Educational Programming and/or Outreach.	
General Public	Awareness of the importance of maintenance activities for operators of permanent BMPs/SCMs	Webpage, flyers, educational videos, School education Partnership with Cumberland River Compact, Tree Day Distributor, Stream stewardship events, Waterfest sponsor, Watershed Educational Programming and/or Outreach.	
General Public	Awareness on the proper storage, use, and disposal of pesticides, herbicides, fertilizers, oil and other automotive-related fluids	Webpage, flyers, educational videos, School education Partnership with Cumberland River Compact, Tree Day Distributor, Stream stewardship events, Waterfest sponsor, Watershed Educational Programming and/or Outreach.	
General Public	Awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.	Webpage, flyers, educational videos, School education Partnership with Cumberland River Compact, Tree Day Distributor, Stream stewardship events, Waterfest sponsor, Watershed Educational Programming and/or Outreach.	
Engineering & Development Community	Awareness of the stormwater ordinances, regulations, and guidance materials related to long-term water quality impacts	Webpage, flyers, educational videos, Partnership with Cumberland River Compact	

Target Audience	Management Measure	Delivery Method/Materials	MS4(s) Responsible for Implementation
Engineering & Development Community	Awareness of the stormwater ordinances, regulations, and guidance materials related to long-term water quality impacts	Webpage, flyers, educational videos, Partnership with Cumberland River Compact	
Public Employees	Awareness of water quality impacts from daily operations	Educational Emails, Stormwater Training Videos, Educational Flyers	
Public Employees	Pollution Prevention and Good Housekeeping (see Permit sub-part 4.2.6.)	Educational Emails, Stormwater Training Videos, Educational Flyers, Distribution of education materials through email.	
Public Employees	The awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer diversions or seepages, spills, etc.	Educational Emails, Stormwater Training Videos, Educational Flyers, Distribution of education materials through email.	

Are there additional education campaigns and audiences?
No

MCM 2: Public Involvement/Participation

Public Involvement

Participants	Management Measure	Delivery Method/Materials	MS4(s) Responsible for Implementation
General Public	Pollution Prevention	Webpage, flyers, educational videos, Partnership with Cumberland River Compact. The City has partnered with the Cumberland River Compact to provide educational meetings to the public.	
General Public	Impacts on water quality or local storm water management issues	Webpage, flyers, educational videos, Partnership with Cumberland River Compact	
General Public	Storage, use, and disposal of household hazardous waste, automotive-related fluids, pesticides, herbicides, and fertilizers use	Webpage, flyers, educational videos, Partnership with Cumberland River Compact	
General Public	Identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.	Webpage, flyers, educational videos, Partnership with Cumberland River Compact	
Commercial & Development Community	Pollution Prevention	Webpage, flyers, educational videos, Partnership with Cumberland River Compact	
Commercial & Development Community	Impacts on water quality or local storm water management issues	Webpage, flyers, educational videos, Partnership with Cumberland River Compact	

NOTE *(CREATED)*
Public Involvement/Participation Methods

Please be aware that several of the delivery method/materials provided for MCM 2: PUBLIC INVOLVEMENT/PARTICIPATION appear to primarily reference educational opportunities, and may not be considered as an involvement or participation event or activity.
You do not need to make any changes to the NOI, this is just a reminder to review the 2022 Small MS4 to ensure your program meets all requirements.
Created on 11/22/2022 7:35 AM by **Brown Patton**

Have you implemented additional public involvement/participation activities?
Yes

If Yes, describe the additional activities, participants, management measures and MS4(s) responsible for implementation:
Public Notice is uploaded onto the stormwater webpage to provide citizen's with the opportunity to comment and ask questions about active construction projects in the city. This content will be updated on a monthly basis and any questions or comments will be tracked and reported in the annual report.

MCM 3: Illicit Discharge Detection & Elimination (IDDE)

1. Has an ordinance or other regulatory mechanism been established prohibiting non-stormwater discharges?
Yes

1a. Name of ordinance or other regulatory mechanism
Ordinance 2003-47

1b. Effective date of adoption
10/28/2003

2. Has a written plan to detect, identify, and eliminate non-stormwater discharges been established and implemented to include all components of the permit?
Yes

2b. Effective date of adoption
08/20/2020

3. Has a storm sewer system map been developed to include the minimum mapping requirements?
Yes

3a. If Yes, provide most recent date of mapping of MS4 outfalls & receiving streams
08/31/2020

4. Does the MS4's PIE plan include procedures to inform public employees, businesses, and the general public of the hazards and damage to water quality associated with illegal dumping and connections to the storm sewer, and the improper disposal of waste?
Yes

5. Has a mechanism been developed for the public to report suspected illicit discharges?
Yes

If yes, list the mechanism (e.g., hotline number, website URL or other)
Hotline: 615-822-1016
https://www.hvilletn.org/departments/public-works/stormwater/illicit-discharge-detection-elimination/illicit-discharge-illicit-connection-report-form/-fsiteid-1

MCM 4: Construction Site Stormwater Runoff Control

1. Has an ordinance or other regulatory mechanism been established to require erosion prevention and sediment controls (EPSCs) from construction activities that result in land disturbance of equal or greater than on acre or less than one acre if part of a larger common plan of development or sale, including sanctions to ensure compliance?
Yes

1a. Name of enforcement authority or other mechanism
Ordinance 2003-47

1b. Title/Code/Citation
Title 18, Chapter 2, Section 3.

1c. Effective date of adoption
10/28/2003

2. Have requirements for construction site operators to implement appropriate erosion and sediment control best management practices and control of waste at the construction site been established?
Yes

3. Have procedures for construction site plan (including erosion prevention and sediment controls) review and approval which incorporate consideration of potential water quality impacts been established?
Yes

4. Have mechanisms or plans for public access to information on projects and receiving and considering comments from the public on those projects been established?
Yes

4a. If Yes, describe
A public notice of active construction projects in the city has been posted on the stormwater webpage. There is a link for citizen's to ask questions or provide comments for active construction projects.

5. Have procedures to inspect construction sites and take enforcement actions to correct noncompliance been established?
Yes

MCM 5: Post Construction/Permanent Stormwater Management in New Development and Redevelopment

1. Has an ordinance or other regulatory mechanism been established to address post construction runoff from new development and redevelopment projects that disturb one or more acres of land, or less than one acre if part of a larger common plan of development
Yes

1b. Effective date of adoption
10/28/2003

2. Does the SWMP include requirements to ensure long-term operation and maintenance of SCMs for controlling runoff from new development and redevelopment projects?
Under Development

2c. Estimation of completion date
9/1/2024

3. Does your program meet all the requirements of State Rule Chapter 0400-40-10?
No

4. If your program does not meet all the requirements of State Rule Chapter 0400-40-10 have you already developed an implementation plan that includes a compliance schedule with interim milestones?
Yes

4a. If Yes, attach your implementation plan if available
Implementation Plan 11-14-2022.pdf - 11/14/2022 08:45 AM
Comment
NONE PROVIDED

MCM 6: Pollution Prevention/Good Housekeeping For Municipal Operations

1. Indicate if the MS4 has the municipal operations listed below

Municipal Operation	Included?	Responsible Department/Parties
Streets, roads, highways	No	
Parking lots	Yes	Public Works
Maintenance and storage yards	Yes	Public Works
Fleet or maintenance shops with outdoor storage areas	Yes	Public Works
Salt/sand storage locations	Yes	Public Works
Snow disposal areas operated by the permittee	No	
Waste disposal, storage, and transfer stations	Yes	Public Works

2. Has an employee training program for employees responsible for municipal operations at these facilities been developed?
Yes

3. Has an O&M Facility Plan developed and implemented for these facilities?
Yes

Enforcement Response Plan (ERP)

Has an Enforcement Response Plan for all required program elements been established?
No

If no, please describe
There is an enforcement response plan in place, but the plan has not been adopted by the Board of Mayor and Alderman. It is the City's intent to incorporate the ERP by reference in the next round of ordinance revisions. These ordinance revisions will then be adopted by BOMA. The same plan was provided to TDEC in our 5/2021 audit.

Stormwater Monitoring and Program Evaluation

Monitoring Program Type (see subpart 4.6 of the permit for details)
Option 1

Attachments

Date	Attachment Name	Context	User
11/14/2022 8:45 AM	Implementation Plan 11-14-2022.pdf	Attachment	Helen Morrison

Status History

	User	Processing Status
11/22/2022 7:42:49 AM	Helen Morrison	Draft
11/22/2022 9:16:58 AM	Helen Morrison	Signing
11/22/2022 11:29:37 AM	Jamie Clary	Submitting
11/22/2022 11:30:02 AM	Jamie Clary	Submitted
11/22/2022 11:30:17 AM	Jamie Clary	In Review
11/29/2022 3:20:56 PM	Brown Patton	Complete

Processing Steps

Step Name	Assigned To/Completed By	Date Completed
Form Submitted	Jamie Clary	11/22/2022 11:30:02 AM
Technical Review	Brown Patton	11/29/2022 3:20:33 PM
Submission Deemed Complete	Brown Patton	11/29/2022 3:20:33 PM

Revisions

Revision	Revision Date	Revision By
Revision 1	9/6/2022 8:23 AM	Helen Morrison
Revision 2	11/22/2022 7:42 AM	Helen Morrison

Agreements and Signature(s)

SUBMISSION AGREEMENTS

- [x] I am the owner of the account used to perform the electronic submission and signature.
- [x] I have the authority to submit the data on behalf of the facility I am representing.
- [x] I agree that providing the account credentials to sign the submission document constitutes an electronic signature equivalent to my written signature.
- [x] I have reviewed the electronic form being submitted in its entirety, and agree to the validity and accuracy of the information contained within it to the best of my knowledge.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached document; and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signed By Jamie Clary on 11/22/2022 at 11:29 AM

APPENDIX L

2022-2027 ANNUAL MS4 REPORTS

NPDES MS4 Annual Report

version 1.6

(Submission #: HPW-JMTD-WFJ4H, version 1)

Details

Originally Started By	Helen Morrison
Submitted	9/21/2023 (237 days ago) by Sarah Lock
Submission ID	HPW-JMTD-WFJ4H
MS4 Owner Name	City of Hendersonville
Status	Complete

Form Input

General Information

Permit Number
TNS075353

MS4 Owner/Operator (e.g. City of ...)
City of Hendersonville

County
Sumner

Reporting Period

Per subpart 5.1
a. The Annual Report shall cover the period beginning on July 1st and ending on June 30th;
b. The Annual Report shall be due on September 30th after the end of the reporting period.

Reporting Period Start Date
07/01/2022

Reporting Period End Date
06/30/2023

MS4 Population At NOI Submittal
Population greater than or equal to 50,001

Name and contact information of MS4 Responsible Authority (e.g. Mayor ...)

Prefix
Hon.

First Name	**Last Name**
Jamie	*Clary*

Title
Mayor

Company Name
City of Hendersonville

Phone Type	**Number**	**Extension**
Business	615-822-1000	

Email
jclary@hvilletn.org

Address
101 MAPLE DR N
HENDERSONVLLE, TN 37075

Designated MS4 Stormwater Management Program Contact

Prefix
Mrs.

First Name	**Last Name**
Helen	*Morrison*

Title
Stormwater Coordinator

Company Name
City of Hendersonville

Phone Type	**Number**	**Extension**
Business	615-590-4649	

Email
hmorrison@hvilletn.org

Address
101 MAPLE DR N
HENDERSONVLLE, TN 37075

MCM 1: Public Education

Below report on the educational activities completed during the reporting year. Delete unused rows (click X at end of row). Add rows (add row button on bottom of table) to report add activities.

Provide the number of activities completed during the reporting year for the Public (Subpart 4.2.1.1. of the permit).
9

Provide the number of activities completed during the reporting year for the Engineering and Development Community (Subpart 4.2.1.2. of the permit).
3

How many employees (that are new to the MS4 or new to the job category) have NOT been educated in accordance with the PIE plan within 6 months?
0

For existing employees: provide the total number of employees NOT educated in accordance with the PIE plan within the permit term.
0

A population of greater than or equal to 50,001 at NOI submittal was selected in the General Information Section. Per Subpart 4.2.1.1. the MS4 is required to conduct six (6) activities during the reporting year addressing each of the four (4) management measures for the public. A single activity may address multiple management measures.
You may need to use the scroll bars to view the whole table.
To Add a Row - Click Add Row near the bottom right of the table
To Delete a Row - Click the "X" at the far right end of the row.

Column Descriptions

Target Audience (This column is fixed and cannot be changed.)

Activity Description: (Provide details as to the specific activity that was conducted.)

Management Measure: Impacts on Water Quality (Select Yes if the activity listed in this row addressed the 4.2.1.1.a.General awareness of the impacts on water quality.)

Management Measure: SCM/BMP Maintenance (Select Yes if the activity listed in this row addressed the 4.2.1.1.b. Awareness of the importance of maintenance activities for operators of permanent Best Management Practices (BMPs)/Stormwater Control Measures (SCMs).)

Management Measure: Storage, Use, Disposal of Fluids (Select Yes if the activity listed in this row addressed the 4.2.1.1.c. Awareness of the proper storage, use, and disposal of pesticides, herbicides, fertilizers oil and other automotive-related fluids.)

Management Measure: Illicit Discharges (Select Yes if the activity listed in this row addressed the 4.2.1.1.d. Awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.)

Date of Activity (Enter the date the activity took place. If the activity took place across multiple days enter the Date of the first day of the activity.)

Specifically Targeted Audience (This column is used to provide more details as to the audience the activity was targeting e.g. school age children, Homeowners with SCMs) A broad based event such as tabling at a festival may list general public as the specifically targeted audience.

# of Audience (Enter the approximate number of individuals that were reached with this activity.)

Sponsored Activities (Identify if the event sponsored
monetarily e.g. money or as a donation in kind e.g. goods or services by the MS4 program. If it was not a sponsored activity, leave N/A in the cell.)

Provide the status of your MS4 program's public education and outreach activities for the Public audience during the reporting period.

Target Audience	Activity Description	Management Measure: Impacts on Water Quality	Management Measure: SCM/BMP Maintenance	Management Measure: Storage, Use, Disposal of Fluids	Management Measure: Illicit Discharges	Date of Activity	Specifically Targeted Audience	# of Audience
Public	Biodiversity of Local Waterways School Program for Indian Lake Elementary	Yes	No	Yes	Yes	3/2/2023	children and adults	125
Public	Pollution in waterways for Walton Ferry Elementary School	Yes	No	Yes	Yes	5/3/2023	children and adults	52
Public	Waterfest	Yes	Yes	Yes	Yes	6/23/2023	children and adults	270
Public	Tree Day Pre-Bundling	Yes	Yes	Yes	Yes	3/17/2023	adults	11
Public	Tennessee Tree Day Distributor	Yes	No	No	No	3/18/2023	homeowners	116
Public	Tennessee Tree Day Sponsorship	Yes	No	No	No	3/18/2023	homeowners	500
Public	Distribute Stormwater Flyers to all Property Owners in Hendersonville	Yes	Yes	Yes	Yes	10/1/2022	Public, homeowners, business owners	22000
Public	Presentation by CEC, Inc. on Lessons Learned and Best Practices for Land Disturbance Applications	Yes	Yes	No	Yes	2/13/2023	homeonwers, business owners	45
Public	Creek Critters Program	Yes	No	No	Yes	05/17/2023	children and adults	17

A population of greater than or equal to 50,001 at NOI submittal was selected in the General Information Section. Per Subpart 4.2.1.2. the MS4 is required to conduct two (2) activities during the reporting year addressing each of the two (2) management measures for the Engineering and Development Community. A single activity may address multiple management measures.
You may need to use the scroll bars to view the whole table.
To Add a Row - Click Add Row near the bottom right of the table
To Delete a Row - Click the "X" at the far right end of the row.

Column Descriptions

Target Audience (This column is fixed and cannot be changed.)

Activity Description: (Provide details as to the specific activity that was conducted.)

Management Measure: Long Term Water Quality Impacts (Select Yes if the activity listed in this row addressed the 4.2.1.2.a Awareness of the stormwater ordinances, regulations, and guidance
materials related to long-term water quality impacts.)

Management Measure: Construction Water Quality Impacts (Select Yes if the activity listed in this row addressed the 4.2.1.2.b. Awareness of stormwater ordinances, regulations, and guidance materials
related to construction phase water quality impacts.)

Date of Activity (Enter the date the activity took place. If the activity took place across multiple days enter the Date of the first day of the activity.)

Specifically Targeted Audience (This column is used to provide more details as to the audience the activity was targeting e.g. restaurants, Engineers, Developers) A broad based event such as tabling at a local trade show may list commercial and development community as the specifically targeted audience.

# of Audience (Enter the approximate number of individuals that were reached with this activity.)

Provide the status of your MS4 program's public education and outreach activities for the Engineering and Development Community during the reporting period.

Target Audience	Activity Description	Management Measure: Long Term Water Quality Impacts	Management Measure: Construction Water Quality Impacts	Date of Activity	Specifically Targeted Audience	# of Audience
Engineering and Development Community	Presentation by CEC, Inc. on Lessons Learned and Best Practices for Land Disturbance Applications	Yes	Yes	2/13/2023	Homebuilders, contractors, engineers	45
Engineering and Development Community	Tour and Presentation at Cumberland River Aquatic Center	Yes	Yes	4/12/2023	Engineers, developers, contractors	11
Engineering and Development Community	Distribute Stormwater Education Flyer to property owners in Hendersonville	Yes	Yes	10/01/2023	Engineers, homebuilders, developers in Hendersonville	22000

Supporting Documentation for Activities described in this section.

2022 Stormwater Flyer v2.pdf - 08/04/2023 07:06 AM
Hendersonville Annual Report Year End June 30, 2023 (1).pdf - 08/04/2023 07:09 AM
2023 Tennessee Tree Day List and Photos.pdf - 08/04/2023 07:15 AM
Cumberland River Compact Education Plan cost redacted.pdf - 08/04/2023 07:25 AM
Stormwater Webpage Info 2023.pdf - 08/09/2023 08:21 AM

Comment
NONE PROVIDED

Notes:
The City of Hendersonville has partnered with the Cumberland River Compact for the next MS4 Permit cycle to provide stormwater educational programs to the public, HOAs/POAs, businesses, and the engineering and development communities. In addition to our partnership with CRC, the City maintains educational stormwater webpages. These webpages provide information, guidance, and resources for the MS4 permit minimum control measures. Stormwater webpage metrics have been uploaded. The City of Hendersonville mails a stormwater educational flyer to every property owner in the City annually. The flyer contains information about good housekeeping, pollution prevention, household hazardous waste management, and a variety of other water quality topics. Approximately 22,000 flyers are mailed each year.

MCM 2: Public Involvement And Participation

Below report on the involvement/participation activities completed during the reporting year. Delete unused rows (click X at end of row). Add rows (add row button on bottom of table) to report add activities.

Is your Stormwater Management Program Plan documentation available online?
No

Provide a brief description of the public records request process.
Visit https://www.hvilletn.org/i-want-to/request-information-records and complete the applicable form(s). Submit the form with the required information to RecordsRequest@hvilletn.org.

Was the MS4 program documentation formally placed on public notice during the reporting year?
No

> Subpart 4.2.2. requires the following in the annual report
> Detail applicable changes as directed in subpart 4.4.1
> This requirement will be located in the Program Modifications Section

Is information for all construction site projects accessible to the public?
Yes

Number of comments received from the public on construction site projects.
1

Are all comments from the public on construction site projects considered?
Yes

Number of reports during the reporting period received from the public via public reporting system (IDDE reports)?
4

Provide the number of activities completed during the reporting year for the General Public (Subpart 4.2.2.1. of the permit).
9

Provide the number of activities completed during the reporting year for the Commercial and Development Community (Subpart 4.2.2.2. of the permit).
3

> A population of greater than or equal to 50,001 at NOI submittal was selected in the General Information Section. Per Subpart 4.2.2.1. the MS4 is required to conduct six (6) activities during the reporting year addressing each of the four (4) management measures for the general public. A single activity may address multiple management measures.
> You may need to use the scroll bars to view the whole table.
> To Add a Row - Click Add Row near the bottom right of the table
> To Delete a Row - Click the "X" at the far right end of the row.

Column Descriptions

Target Audience (This column is fixed and cannot be changed.)

Activity Description: (Provide details as to the specific activity that was conducted.)

Management Measure: Pollution Prevention (Select Yes if the activity listed in this row addressed the 4.2.2.1.a Pollution Prevention Management Measure.)

Management Measure: Impacts on Water Quality (Select Yes if the activity listed in this row addressed the 4.2.2.1.b. Impacts on water quality or local stormwater management issues.)

Management Measure: Storage, Use, Disposal of Fluids (Select Yes if the activity listed in this row addressed the 4.2.2.1.c. Storage, use, and disposal of household hazardous waste, automotive related fluids, pesticides, herbicides, and fertilizers use.)

Management Measure: Illicit Discharges (Select Yes if the activity listed in this row addressed the 4.2.2.1.d. Identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.)

Date of Activity (Enter the date the activity took place. If the activity took place across multiple days enter the Date of the first day of the activity.)

Specifically Targeted Audience (This column is used to provide more details as to the audience the activity was targeting e.g. school age children, Homeowners with SCMs) A broad based event such as tabling at a festival may list general public as the specifically targeted audience.

# of Audience (Enter the approximate number of individuals that were reached with this activity.)

Sponsored Activities (Identify if the event sponsored
monetarily e.g. money or as a donation in kind e.g. goods or services by the MS4 program. If it was not a sponsored activity, leave N/A in the cell.)

Provide the status of your MS4 program's public involvement/participation activities for the General Public audiences during the reporting period.

Target Audience	Activity Description	Management Measure: Pollution Prevention	Management Measure: Impacts on Water Quality	Management Measure: Storage, Use, Disposal of Fluids	Management Measure: Illicit Discharges	Date of Activity	Specifically Targeted Audience	# of Audience
General Public	Biodiversity of local waterways	Yes	Yes	Yes	Yes	3/2/2023	children and adults	125
General Public	Pollution in Waterways Presentation	Yes	Yes	Yes	Yes	5/2/2023	children and adults	52
General Public	Creek Criters Program	Yes	Yes	Yes	Yes	5/17/2023	children and adults	17
General Public	Tennessee Tree Day Pre-bundling	Yes	Yes	Yes	Yes	3/17/2023	adults	11
General Public	Tennessee Tree Day Distributor	Yes	Yes	No	No	3/18/2023	homeowners	116
General Public	Tennesse Tree Day Sponsor	Yes	Yes	No	No	3/18/2023	homeowners	500
General Public	Waterfest 2023	Yes	Yes	Yes	Yes	6/23/2023	adults and children	270
General Public	Presentation by CEC, Inc. on Lessons Learned and Best Practices for Land Disturbance Applications	Yes	Yes	Yes	Yes	2/13/2023	homeowners, commercial, developer, engineers	45
General Public	Distribute annual stormwater flyer to every property owner in Hendersonville.	Yes	Yes	Yes	Yes	10/01/2022	All property owners in Hendersonville	22000

A population of greater than or equal to 50,001 at NOI submittal was selected in the General Information Section. Per Subpart 4.2.2.2. the MS4 is required to conduct two (2) activities during the reporting year addressing each of the two (2) management measures for the Commercial and Development Community. A single activity may address multiple management measures.
You may need to use the scroll bars to view the whole table.
To Add a Row - Click Add Row near the bottom right of the table
To Delete a Row - Click the "X" at the far right end of the row.

Column Descriptions

Target Audience (This column is fixed and cannot be changed.)

Activity Description: (Provide details as to the specific activity that was conducted.)

Management Measure: Pollution Prevention (Select Yes if the activity listed in this row addressed the 4.2.2.2.a Pollution Prevention Management Measure.)

Management Measure: Impacts on Water Quality (Select Yes if the activity listed in this row addressed the 4.2.2.2.b. Impacts on water quality or local stormwater management issues.)

Date of Activity (Enter the date the activity took place. If the activity took place across multiple days enter the Date of the first day of the activity.)

Specifically Targeted Audience (This column is used to provide more details as to the audience the activity was targeting e.g. restaurants, Engineers, Developers) A broad based event such as tabling at a local trade show may list commercial and development community as the specifically targeted audience.

# of Audience (Enter the approximate number of individuals that were reached with this activity.)

Provide the status of your MS4 program's public involvement/participation activities for the Commercial and Development Community during the reporting period.

Target Audience	Activity Description	Management Measure: Pollution Prevention	Management Measure: Impacts on Water Quality	Date of Activity	Specifically Targeted Audience	# of Audience
Commercial and Development Community	Presentation by CEC, Inc. on Lessons Learned and Best Practices for Land Disturbance Applications	Yes	Yes	2/13/2023	homeowners, commercial and development community	45
Commercial and Development Community	Tour and Presentation of Cumberland River Aquatic Center	Yes	Yes	4/12/2023	commercial, engineering, development community	11
Commercial and Development Community	Distribute annual stormwater flyer to every property owner in Hendersonville.	Yes	Yes	10/1/2022	All property owners in Hendersonville. Private and public.	22000

Supporting Documentation for Activities described in this section.
NONE PROVIDED
Comment
NONE PROVIDED

Notes:
NONE PROVIDED

MCM 3: Illicit Discharge Detection & Elimination (IDDE)

Is the storm sewer map available through Spatial Rest Services?
Yes

Provide location for Spatial Rest Service for Map Layer(s)
https://hvilletn.maps.arcgis.com/apps/webappviewer/index.html?id=d47fbac3d1be411f8ec9a5de082e88e5

The number of potential illicit discharges reported by the public.
13

The number of potential illicit discharges reported by internal personnel.
1

Total number of potential Illicit discharges reported (from any source) that are under investigation at the time of the annual report.
0

Were all potential illicit discharges investigated within 7 days of receipt?
Yes

Number of identified illicit discharges
12

Were all initial enforcement actions on confirmed illicit discharges taken within seven (7) calendar days of the investigation?
Yes

Number of corrective actions plans received for confirmed illicit discharges.
3

Were all corrective actions plans reviewed in accordance with established procedures?
Yes

Number of non-stormwater discharges or flows identified as a significant contributor of pollutants to the MS4.
0

Total number of non-stormwater discharges or flows investigated.
0

Were all non-stormwater discharges or flows identified as a significant contributor of pollutants to the MS4 investigated?
Yes

MCM 4: Construction Site Stormwater Runoff Pollutant Control

For reporting construction activities in this section, count all activities e.g., projects, sites that were active during the reporting period. It is understood that activities will overlap multiple reporting years. For example: If a project plan is submitted and reviewed in reporting year 1, that plan review will go only on the report for that year. If that same project begins construction in reporting year 2, it would be included in the year 2 report for active construction activity, but not the year 1 report. If a construction activity is terminated in the beginning of a reporting year before the first inspection for that reporting year is required, that activity may be left off the count.

Identify if the regulatory mechanisms for construction site runoff control have been updated to be consistent with the CGP?
In Effect

Total number of active construction activities.
46

Total number of active non-priority construction activities with incomplete inventory information.
0

Number of new development and redevelopment projects reviewed in accordance with established policies and procedures.
37

Were all new development and redevelopment projects reviewed in accordance with the established policy and procedure?
Yes

Number of active non-priority construction activities.
26

Were all nonpriority active construction activities inspections conducted accordance with Stormwater Management Program.
Yes

Number of active priority construction activities.
20

Did all Priority Construction Activities have Pre-Construction meetings?
Yes

Were all priority Construction Activities inspected at least once per calendar month?
No

MCM 5: Post Construction/ Permanent Stormwater Management

Has an offsite mitigation program or payment in lieu into a public stormwater fund been developed as outlined in subpart 4.2.5.3.?
No

Did all of the projects approved meet the buffer requirements of subpart 4.2.5.4?
No

Does the Stormwater Management Program implement alternative buffer widths?
No

Information on EPA's Water Quality Scorecard can be found on the EPA's website.
Water Quality Scorecard Information

The scorecard can be found on EPA's website.
Water Quality Scorecard

Scorecard
NONE PROVIDED
Comment
NONE PROVIDED

Number of all new development and redevelopment projects reviewed.
37

Number of new development and redevelopment projects reviewed in accordance with the established policy and procedure.
37

Number of sites verified that 100% of SCMs are installed per design specifications in accordance with approved plan.
0

Were all SCMs verified to be installed per design specifications in accordance with approved plan within 90 days of installation?
No

Does the permittee have adequate legal authority as required by 4.2.5.7 for all SCMs installed?
Yes

Number of SCMs that have not been properly operated or maintained.
0

Have enforcement actions been taken in accordance with the appropriate legal authority or ERP?
No

Number of public requests for SCM inventory.
0

Are all SCMs in the inventory tracking system?
No

Do all SCMs in the inventory tracking system have complete information?
No

SCM inventory tracking system information
> NONE PROVIDED
> **Comment**
> SCM inventory will be provided with the 2025 annual report.

MCM 6: Pollution Prevention/Good Housekeeping For Municipal Operations

Number of Municipal Operations Facilities under subpart 4.2.6.2.
19

Do all Municipal Operations Facilities have a O&M Facility Plan?
Yes

Number Municipal Operations Facilities NOT inspected in accordance with the Stormwater Management Program in the previous 12 months.
2

> Please note that this question is asking for the number of facilities NOT inspected during reporting period.

Stormwater Management Program Modification

Have any municipal facilities covered under this permit been added during the reporting term?
Yes

In the table below identify if any changes were made to your Stormwater Management Program during the reporting period.

For minor modifications that add, but neither subtract nor replace, components, controls, or requirements to the Stormwater Management Program provide a description of that modification. - See Subpart 4.4.1.1.a

For minor modifications that replace an ineffective or infeasible BMP, or SCM which is specifically identified in the Stormwater Management Program provide a description of the analysis of why the former BMP was ineffective or infeasible; Expectations on the effectiveness of the replacement BMP or SCM; and an analysis, if applicable, of why the replacement BMP or SCM will ensure the optimization of equipment use. a description of that modification. - See Subpart 4.4.1.1.e

For major modifications that subtract BMPs, SCMs, components, controls, or requirements of the Stormwater Management Program provide a description of the analysis of why the component was ineffective or infeasible; and detailed explanation of why, with the elimination of this component, the Stormwater Management Program will continue to achieve a reduction in pollutants to the MEP and shall not cause or contribute to violations of State water quality standards in the receiving stream. - See Subpart 4.4.1.2.a.

Where any changes were made to the program elements during the reporting period?

Program Elements	Changes	Modifications that Add Components	Replaced an Ineffective or Infeasible BMP or SCM	Subtracted BMP, SCM, Components, Controls etc.
MCM 1	Yes	Contracted with the Cumberland River Contract to provide stormwater educational programming. The City will continue to sponsor and participate in other events.	NONE PROVIDED	NONE PROVIDED
MCM 2	Yes	Contracted with the Cumberland River Contract to provide stormwater educational programming. The City will continue to sponsor and participate in other events.	NONE PROVIDED	NONE PROVIDED
MCM 3	No	NONE PROVIDED	NONE PROVIDED	NONE PROVIDED
MCM 4	No	NONE PROVIDED	NONE PROVIDED	NONE PROVIDED
MCM 5	Yes	In process of developing and implementing a compliant post-construction program. Added requirement to provide Perm. SCM IMA/LTMP and as-built to LDP closeout process. Working towards accomplishing the	NONE PROVIDED	NONE PROVIDED
MCM 6	Yes	Addition of two facilities to existing O&M Plans	NONE PROVIDED	NONE PROVIDED
QLP	No	NONE PROVIDED	NONE PROVIDED	NONE PROVIDED
Enforcement	No	NONE PROVIDED	NONE PROVIDED	NONE PROVIDED
Monitoring & Program Evaluation	No	NONE PROVIDED	NONE PROVIDED	NONE PROVIDED

Other Program Changes not Identified above
The City of Hendersonville is working with CEC, Inc. to conduct a review of the existing stormwater ordinance and stormwater management program. Stormwater ordinance and program updates will take place over the next year. Changes will be reported in accordance with Section 4.4.1.

Summary Of Enforcement Actions

Note: Non-traditional MS4s may not have legal authority to enforce one or more MS4 permit requirements. For example, a university campus regulated as a MS4 permittee or co-permittee may not have the legal authority to enforce MS4 permit requirements against another entity.

Summary of Enforcement Actions Taken during the reporting year

Action	IDDE	Construction	Permanent Stormwater/Post-Construction	Total
Verbal Warnings	4	354	0	358
Written Notice of Violation	5	28	0	33
Citations or Administrative Orders	0	0	0	0
Stop Work Orders	5	7	0	12
Withholding of Plan Approvals or Other Authorizations	0	0	0	0
Civil Penalties	0	2	0	2
Additional Measures	0	0	0	0
				Sum: 405

Results Of Information Collected And Analyzed (Monitoring)

Was monitoring for the reporting year performed in accordance with either 4.6.1.1.1 (Option 1) or 4.6.1.1.2 (Option 2)?
Yes

Provide a summary describing the results of information collected and analyzed, including monitoring data (analytical and non-analytical), if any, during the reporting period. If no monitoring was completed, explain.
Visual Stream Assessments were completed during the reporting period. The City hired CEC, Inc., to conduct all MS4 Permit required monitoring. The City evaluated the results of the assessments and will provide targeted education and outreach to impacted areas. All applicable areas will be evaluated for future improvement projects.

For your convenience, links to the required standard templates for reporting the results of your monitoring data are provided below. EDD Sheets (Field Stream Survey and Habitat Sheets, Macroinvertebrate Taxa Report, and the TDEC E. coli and Field Water Parameter Report) are in the section labelled Water Quality Assessment Publications as excel files.

Publications

Attach results of all analytical and non-analytical monitoring data collected during this reporting period.
2023 VSA Report - City of Hendersonville (CEC Project 192-267)_r1.pdf - 08/07/2023 02:45 PM
Comment
NONE PROVIDED

Legal Authority

Per subpart 4.7.1.The initial solicitor's statement will be required in the 2024 annual report for existing permittees and in the third annual report for new permittees.

If modifications are made to the legal authority that necessitate a new evaluation by a solicitor, a new certification statement must be submitted.

Attach a signed solicitor's certification statement.
NONE PROVIDED
Comment
NONE PROVIDED

Stormwater Management Program Evaluation

Stormwater Management Program Evaluation

In accordance with subpart 4.6.2. The permittee shall conduct an annual evaluation of the Stormwater Management Program to evaluate compliance with the terms and conditions of the permit, including the effectiveness of the BMPs, components, or controls of its stormwater management program, and the status of achieving the measurable requirements in the permit.

Summarize the results of the permittee's annual evaluation of the current Stormwater Management Program.
The City of Hendersonville continues to make progress developing and implementing an MS4 Permit compliant post-construction /permanent stormwater management program. We are working with CEC, Inc. to complete updates to the stormwater ordinance and stormwater management program. Currently, the City has identified two program components in need of improvement. The permanent stormwater management minimum control measure, which the City has provided an approved Implementation Plan. The second component is Facility Operation and Maintenance Plans for applicable facilities

Identify modifications or replacement of an ineffective activity/control measure/component/BMP.
The City partnered with the Cumberland River Compact to satisfy the activity requirements set forth by the MS4 Permit.

Summarize the assessment results, and any modifications and improvements scheduled to be implemented in the next reporting period to improve the program or remedy deficiencies or weaknesses
After reviewing the annual report, the City will work with the Cumberland River Compact to fine tune the educational programming to satisfy the BMP requirements in the annual report. The City is undergoing a thorough review of the entire stormwater management program to update documents, ordinances, policies and procedures to be consistent with the MS4 permit. The City is modifying two existing O&M Plans to add two new facilities. Although the program is not specific to stormwater, the City established a Clean Team that focuses on litter clean-up and keeping Hendersonville clean. This initiative will have great impacts on water quality by reducing litter in stormwater.

Is MCM 1: Public Education and Outreach on Stormwater Impacts compliant with Permit Requirements?
Yes

Is MCM 2: Public Involvement/Participation compliant with Permit Requirements?
Yes

Is MCM 3: Illicit Discharge Detection and Elimination (IDDE) compliant with Permit Requirements?
Yes

Is MCM 4: Construction Site Stormwater Runoff Control compliant with Permit Requirements?
Yes

Is MCM 5: Post-Construction/Permanent Stormwater Management in New Development and Redevelopment compliant with Permit Requirements?
No

Please Explain
See implementation plan previously provided to TDEC.

Is MCM 6: Pollution Prevention/Good Housekeeping compliant with Permit Requirements?
No

Please Explain
The City is in the process of updating two O&M plans to add a new facility and one existing facility.

Is Monitoring Program (subpart 4.6.1.1) compliant with Permit Requirements?
Yes

The following questions are from subpart 5.2 Annual Report Requirements.

Is the permittee compliant with the permit terms and conditions?
No

This determination should be made as to the status of the program at the end of the reporting period and the requirements applicable at that date. For example, the permanent stormwater program changes are not required to be implemented until 24 months after the effective date of the permit. So if the MS4 has not yet implemented those changes at the first annual report, they would still be in compliance, if their program meets the previously established requirements.

Please Explain
The City is in the process of modifying two existing O&M Plans to add one newly constructed facility and an existing facility.

Is the permittee relying on another governmental entity to satisfy some of the permit obligations?
No

Enter additional or clarifying information not elsewhere reported in this document.
NONE PROVIDED

Any other data specifically requested by the Division to substantiate statements and conclusions reached in the Annual Reports.
NONE PROVIDED
Comment
NONE PROVIDED

Attachments

Date	Attachment Name	Context	User
8/9/2023 8:21 AM	Stormwater Webpage Info 2023.pdf	Attachment	Helen Morrison
8/7/2023 2:45 PM	2023 VSA Report - City of Hendersonville (CEC Project 192-267)_r1.pdf	Attachment	Helen Morrison
8/4/2023 7:25 AM	Cumberland River Compact Education Plan cost redacted.pdf	Attachment	Helen Morrison
8/4/2023 7:15 AM	2023 Tennessee Tree Day List and Photos.pdf	Attachment	Helen Morrison
8/4/2023 7:09 AM	Hendersonville Annual Report Year End June 30, 2023 (1).pdf	Attachment	Helen Morrison
8/4/2023 7:06 AM	2022 Stormwater Flyer v2.pdf	Attachment	Helen Morrison

Status History

	User	Processing Status
8/1/2023 10:47:39 AM	Helen Morrison	Draft
9/21/2023 2:47:30 PM	Helen Morrison	Signing
9/21/2023 4:05:47 PM	Sarah Lock	Submitting
9/21/2023 4:06:19 PM	Sarah Lock	Submitted
9/22/2023 5:52:46 AM	Bill Murph	In Review
10/12/2023 9:58:33 AM	Robert Karesh	Complete

Processing Steps

Step Name	Assigned To/Completed By	Date Completed
Form Submitted	Sarah Lock	9/21/2023 4:06:19 PM
Assign Technical Reviewer	Bill Murph	9/22/2023 5:52:46 AM
EFO Technical Review	Bill Murph	9/22/2023 5:52:54 AM
Submission Deemed Complete	Robert Karesh	10/12/2023 9:58:33 AM

Agreements and Signature(s)

SUBMISSION AGREEMENTS

- [x] I am the owner of the account used to perform the electronic submission and signature.
- [x] I have the authority to submit the data on behalf of the facility I am representing.
- [x] I agree that providing the account credentials to sign the submission document constitutes an electronic signature equivalent to my written signature.
- [x] I have reviewed the electronic form being submitted in its entirety, and agree to the validity and accuracy of the information contained within it to the best of my knowledge.

This report must be signed by a ranking elected official or by a duly authorized representative of that person. See signatory requirements in sub-part 7.11.2 of the permit.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached document; and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Signed By

Helen Morrison on 09/21/2023 at 2:51 PM

Sarah Lock on 09/21/2023 at 4:05 PM

APPENDIX M

STORMWATER ORDINANCE

HENDERSONVILLE MUNICIPAL CODE TITLE 18

ORDINANCE 2024-14

Sponsors: Clary, Peterson, and Skidmore

AN ORDINANCE AMENDING HENDERSONVILLE MUNICIPAL CODE TITLE 18, THE STORM WATER MANAGEMENT ORDINANCE, TO COMPLY WITH THE NEW TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION SMALL MS4 PERMIT

WHEREAS, the City of Hendersonville established and adopted a Storm Water Management Ordinance as codified by Title 18 of the Hendersonville Municipal Code;

WHEREAS, the Tennessee Department of Environment and Conservation ("TDEC") under the State of Tennessee National Pollutant Discharge Elimination System (NPDES) from Small Municipal Separate Storm Sewer Systems (Small MS4) Permit Number TNS000000 requires amendments be made to the existing ordinance; and

WHEREAS, it is the desire of the City to adopt the State required amendments by amending and replacing Title 18 in its entirety with that which is attached hereto as Exhibit A:

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF HENDERSONVILLE, TENNESSEE, as follows:

Section One: That Title 18, Water and Storm Sewers, of the Hendersonville Municipal Code is hereby amended to comply with the new TDEC Small MS4 Permit by deleting Title 18 in its entirety and replacing with that as attached hereto as **Exhibit A**.

Section Two: That all ordinances or partial ordinances in conflict herewith be, and the same hereby are, repealed or modified as the case may be.

Section Three: That this ordinance shall take effect from and after the date it shall have been passed, properly signed, certified, and has met all other legal requirements, and as otherwise provided by law, the general welfare of the City of Hendersonville, Tennessee requiring it.

First Reading: August 27th, 2024. *Passed.*

Second Reading: September 10th, 2024. *Passed.*

APPROVED:

JAMIE CLARY, Mayor

ATTEST:

TAMARA INGERSOLL, City Recorder

APPROVED AS TO FORM AND LEGALITY:

LANCE A. WRAY, City Attorney

LEGISLATIVE HISTORY

Ordinance 2024-14

Sponsors: Clary, Peterson, and Skidmore
Committee: Public Works
Date of Special Called Committee Meeting: August 15th, 2024
Committee Recommendation: Yes
First BOMA Reading: August 27th, 2024
Vote: Aye: Burgdorf, Dixon, Garton, Garza, Goodwin, Martin, Peterson, Roberson, Sasse, Skidmore, and Clary. Nay: None. Abstain: None. Absent: Collins and Waters. *Motion carried.*
Second BOMA Reading: September 10th, 2024
Vote: Aye: Burgdorf, Collins, Dixon, Garton, Garza, Goodwin, Martin, Peterson, Roberson, Sasse, Skidmore, Waters, and Clary. Nay: None. *Motion carried.*

TITLE 18

WATER AND STORM SEWERS[1]

CHAPTER

1. WATER.
2. STORMWATER MANAGEMENT.
3. NATIONAL FLOOD INSURANCE PROGRAM REGULATIONS.
4. STORMWATER UTILITY.

CHAPTER 1

WATER[2]

SECTION

18-101. Definitions.
18-102. Public nuisance declared.
18-103. Prohibition.
18-104. Abatement.
18-105. Appeals to board of mayor and aldermen.
18-106. Compliance required.
18-107. Obstruction of city building inspector.
18-108. Violation and penalty.

18-101. Definitions. For the purpose of this chapter, the following terms, phrases, words, and their derivation, shall have the meanings given herein:

(1) "***Aldermen***": "*Aldermen*", when used herein, shall mean the Board of Mayor and Aldermen of the City of Hendersonville, Sumner County, Tennessee.

(2) "***Certified mail***": "*Certified mail*" may be used instead of registered mail whenever this chapter requires a notice to be given by Registered Mail.

(3) "***City***": "*City*", when used herein shall mean the City of Hendersonville, Sumner County, Tennessee.

(4) "***City building inspector***": The "*city building inspector*" shall be and mean that person designated as such by the Chief of Operations, or the city building inspector's designated representative.

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[1]Municipal code references
Building, utility and housing codes: title 12.
Refuse disposal: title 17.

[2]Municipal code reference
Plumbing code: title 12, chapter 2.

(5) "***Computation of time***": The time within which any act is to be done shall be computed by excluding the first and including the last day, unless the last day is a Saturday, a Sunday, or a legal holiday, and then it shall also be excluded.

(6) "***Gender***": Words importing the masculine gender shall include the feminine and neuter.

(7) "***Number***": Words used in the singular include the plural and the plural includes the singular number.

(8) "***Obstruction to the natural flow of water***": The term "*obstruction to the natural flow of water*", as used in this chapter, is hereby defined to mean and include any bridges, culverts, drainage structures, pipes, dams, spans, trestles, viaducts, causeways, artificial or man-made drains, or any other such or similar structure, and the depositing or dumping of any material, waste, refuse, garbage, or any other such or similar acts, that impede, impair, or hinder the natural flow of water so that injury or imminent danger, annoyance, hurt, harm, inconvenience, or damage to the general public or its property is likely to ensue, or the rights of the public generally or a considerable number of persons or inhabitants of this city are infringed, impaired, endangered, or placed in jeopardy, or threatened to be placed in jeopardy of harm, damage, or injury.

(9) "***Person***": "*Person*" means any individual, firm, partnership, corporation, company, association, or joint stock association, and includes any trustee, receiver, assignee, or other similar representative thereof.

(10) "***Shall***; ***may***": The word "*shall*" is mandatory. The word "*may*" is permissive. (Ord. #1975-19, July 1975, modified, Ord. 2020-19, July 2020)

18-102. Public nuisance declared. Any obstruction to the natural flow of water is hereby declared and proclaimed to be a public nuisance. (Ord. #1975-19, July 1975)

18-103. Prohibition. It shall be unlawful for any person to cause or to permit the construction, maintenance, or the existence of any obstruction to the natural flow of water within the area of this city or within this city's jurisdiction. (Ord. #1975-19, July 1975)

18-104. Abatement. (1) Whenever the city building inspector inspects or causes to be inspected any drains, streams, ditches, creeks, or any other bodies of water, or any places where water accumulates, or any structures, man-made or artificial, that affect the flow of any water by any means, directly or indirectly, when such structures are in, upon, near, or contiguous to the drains, streams, ditches, creeks, or any other bodies of water or any other places where water accumulates, and whenever the city building inspector shall find and be of the opinion that any bridge, dam, culvert, pipe, span, trestle, viaduct, causeway, artificial or man-made drain, or any such or similar structure, or the depositing or dumping of any material, waste, refuse, garbage, or any other such or similar acts, are in a state of nuisance and that any such conation, structure, or activity, as aforesaid, obstructs the natural flow of water, as herein defined, he shall notify or cause to be notified the person causing or permitting the construction, maintenance, or existence of said nuisance; and such person shall have such nuisance or the cause of such nuisance removed and abated

within a reasonable time as prescribed in such written notice. Such notice shall be served by Registered Mail or Personal Service upon such person. Such notice may state that the obstruction has been declared to be a nuisance, and that such obstruction must be removed, or remedied by repairing, altering, or demolishing the same; and that in any event, the condition must be abated within the time prescribed herein. Such notice may set forth facts to show that the condition complained of constitutes a nuisance of a public character and that it is an "obstruction to the natural flow of water", as herein defined. Such notice may be in the following form or substantially, the following form:

"NOTICE AND DEMAND FOR REMOVAL TO: _____
(name of person, as

_____
herein defined, causing, or responsible for such obstruction)

You will please take notice that the City of Hendersonville, Sumner County, Tennessee, requires you to remedy or remove and to completely abate the nuisance and obstruction arising from _____
(describe

_____
the condition complained of, the nuisance, and insert the

_____
facts as to the decision to proclaim such condition a nuisance)

at _____
(describe the place and location of the obstruction)

_____

You are further advised that upon default or upon your failure to remove, abate, or remedy such nuisance or obstruction by repairing, altering, or demolishing it within days from the service of this notice, the city may proceed to abate and remove such nuisance and require you to pay all the expenses and costs incident thereto, or the city may pursue its other and various legal recourses, unless such time is extended by virtue of your taking an appeal to the aldermen from the findings and declarations of the city building inspector that such conditions, as aforesaid, constitute a nuisance, which appeal must be taken pursuant to Ordinance 1975-19, within seventy-two (72) hours from the service of this notice upon you. This notice is given without prejudice to any right of action for damages the city has already sustained or may sustain by reason of said nuisance and obstruction as aforesaid, and without prejudice to any other right or relief or action to which the city may be entitles; all such rights the city has in this matter are hereby reserved.

Dated at _____, this _____
day of _____, 1975

THE CITY OF HENDERSONVILLE

By:

Title

(2) If such person or his agents shall neglect or refuse to comply with the terms of such notice and this chapter, the city building inspector, upon the expiration of the terms as set out in the said notice, is hereby empowered to remove such nuisance or the cause of such nuisance, utilizing either the services of some agency of this city or some private agency, at the expense of such person who is causing or responsible for said nuisance; such person's liability, if more than one, shall be joint and several. If the nuisance is abated by the city or its agents, public or private, the person causing or permitting the construction, maintenance, or existence of such nuisance shall be required to pay all of the reasonable expenses and costs of such abatement; such expenses and costs may be determined by the board of mayor and aldermen.

In the event that such person should feel aggrieved by any decision of the city building inspector in this regard, such aggrieved party shall, within seventy-two (72) hours from the receipt of the written or personal notice and demand for the abatement of the nuisance, file at the offices of the city building inspector and the city recorder, a request for a hearing by the aldermen, which request shall be in written form and shall contain the contentions of the aggrieved party. The aldermen shall hold a hearing to review the action of the city building inspector, and the aldermen shall affix a time and place for such hearing and shall notify such aggrieved person who is requesting a hearing. The aldermen, at such hearing or after such hearing, may affirm, amend, or set aside such action of the said city building inspector. No implementation of the order of the city building inspector for the abatement of the nuisance shall be effected, pending such hearing by the aldermen.

None of the remedies for the abatement of nuisances as set out in this chapter shall be deemed to be exclusive, or as precluding the city from seeking injunctive relief in equity or from seeking any other relief.

Nothing contained in this chapter shall be construed to affect, suspend, or delay any cause or right of action or actions that any other citizen or third party may have against such person causing such nuisance, nor will any action taken by the city affect any duty of such persons causing the nuisance to other citizens or third parties. (Ord. #1975-19, July 1975)

18-105. Appeals to board of mayor and aldermen. The aldermen shall hear and act upon such complaints filed by persons affected by decisions of the city building inspector, and may amend or set aside such decisions if contrary to the provisions of this chapter and the purpose and intent of this chapter. The concurring vote of a simple majority of those members present at such hearing shall be necessary to amend or set aside any order, requirement, decision, or determination of the city building inspector, provided, however, that a quorum of the board of mayor and aldermen is present at such hearing. A quorum constitutes a majority of all the members of said board of mayor and aldermen. Such an appeal shall only be perfected by the filing of an informal written request for a hearing before the aldermen and setting forth in such written request the contentions of the aggrieved party and explaining why the actions of the city building inspector should be set aside, modified, or vacated. Upon the perfecting of an appeal, the aggrieved party shall be granted a public hearing before the aldermen, as prescribed above, and he may appear on his own behalf or be represented by counsel. The aggrieved person's side of the matter shall first be heard, and subsequently, the city building inspector and the city attorney shall present their side, and both sides shall be permitted to introduce any relevant and competent evidence bearing on the issue. The notice of such hearing to which the aggrieved person shall be entitled shall be mailed to the said aggrieved person at least seven (7) days prior to the hearing date, unless in specific instances a shorter period of time is specified and agreed upon by the aldermen and the aggrieved person. Such notice of hearing shall be sent by Registered Mail to the address that shall be given by the aggrieved person in his written request for a hearing. The following disposition of any such complaint shall be in the form of a resolution, which shall affirm, amend, or set aside the decision of the city building inspector. No request to grant a rehearing of such decision of the aldermen shall be entertained unless new evidence is submitted that could not reasonably have been presented at the previous hearing. If justifiable grounds for a rehearing are alleged, they shall be made know, by a written communication to the aldermen, of which a copy of the same shall be filed with the city recorder; and if a motion to grant a rehearing shall receive the number of affirmative votes that is required to amend or set aside any decisions of the said city building inspector, as hereinabove prescribed, then a date for a rehearing shall be set. Such rehearing shall be conducted by the aldermen in substantially the same manner as required for the former hearing. (Ord. #1975-19, July 1975)

18-106. Compliance required. In lieu of enforcement of this chapter by way of prosecution, recovery of civil remedies, revocation of permits, condemnation, and other compulsory means, the city building inspector and the aldermen, either one or both, may seek to obtain the voluntary compliance with this chapter by way of notice, warning, or other educational means. This section does not, however, require that such non-compulsory methods be used before proceeding by way of a compulsory enforcement. (Ord. #1975-19, July 1975)

18-107. Obstruction of city building inspector. No person shall interfere with or obstruct the city building inspector or any of his designated representatives in carrying out any inspection, survey, or examination or the performance of any other duty for the office of the city building inspector. (Ord. #1975-19, July 1975)

18-108. Violation and penalty. Any person violating any provision of this chapter or permitting or causing any obstruction to the natural flow of water, as herein defined, shall be fined not more than fifty dollars ($50.00) for each offense for each offense; and a separate offense shall be considered committed upon each day during or on which a violation occurs or continues. (Ord. #1975-19, July 1975, modified)

Rev. 08/2024

CHAPTER 2

STORMWATER MANAGEMENT

SECTION

18-201. GENERAL PROVISIONS
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18-201. General Provisions.

1. Purpose. It is the purpose of this ordinance to:
    a. Protect, maintain, and enhance the environment of the City of Hendersonville and the public health, safety, and the general welfare of the citizens of the City, by controlling discharges of pollutants to the City's stormwater system and to maintain and improve the quality of the receiving waters into which the stormwater outfalls flow, including, without limitation, lakes, rivers, streams, ponds, wetlands, and groundwater of the City. This also includes regulation of non-stormwater discharges to the storm drainage system to the maximum extent practicable as required by federal and state law and to establish long term, post-construction runoff management.
    b. Enable the City to comply with the National Pollution Discharge Elimination System (NPDES) permit and applicable regulations, 40 CFR 122.26 for stormwater discharges.
    c. Allow the City to exercise the powers granted in Tennessee Code Annotated § 68-221-1105, which provides that, among other powers municipalities have with respect to stormwater facilities, is the power by ordinance or resolution to:

i. Exercise general regulation over the planning, location, construction, and operation and maintenance of stormwater facilities in the municipality, whether or not owned and operated by the municipality;
ii. Adopt any rules and regulations deemed necessary to accomplish the purposes of this statute, including the adoption of a system of fees for services and permits;
iii. Establish standards to regulate the quantity of stormwater discharged and to regulate stormwater pollutants as may be necessary to protect water quality;
iv. Review and approve plans and plats for stormwater management in proposed subdivisions or commercial developments;
v. Issue permits for stormwater discharges, or for the construction, alteration, extension, or repair of stormwater facilities;
vi. Suspend or revoke permits when it is determined that the permittee has violated any applicable ordinance, resolution, or condition of the permit;
vii. Regulate and prohibit discharges into stormwater facilities of sanitary, industrial, or commercial sewage or waters that have otherwise been contaminated;
viii. Expend funds to remediate or mitigate the detrimental effects of contaminated land or other source of stormwater contamination, whether public or private; and
ix. In the case of conflicting Ordinances, this ordinance shall prevail.

2. Authority.
   a. The City of Hendersonville shall have right-of-entry upon the property subject to this ordinance and any permit or document issued hereunder. The City of Hendersonville shall be provided ready access to all parts of the premises for the purposes of inspection, monitoring, sampling, inventory, records examination and copying, and the performance of any other duties necessary to determine compliance with this ordinance.
   b. Where a property, site, or facility has security measures in place that require proper identification and clearance before entry into its premises, the person shall make necessary arrangements with its security personnel so that, upon presentation of suitable identification, the City of Hendersonville will be permitted to enter without delay for the purposes of performing specific responsibilities.
   c. The City of Hendersonville shall have the right to operate and maintain on the person's property such devices as are necessary to conduct sampling and metering of the person's stormwater operations or discharges.
   d. No person shall interfere with or obstruct the Public Works Director or their designated representatives in carrying out any inspection, survey, or examination or the performance of any other duty for the office of the Public Works Department.
   e. Any temporary or permanent obstruction to safe and easy access to the areas to be inspected and/or monitored shall be removed promptly by the person at the written

or verbal request of the City of Hendersonville. The costs of clearing such access shall be borne by the owner.

f. The City of Hendersonville may reserve the right to determine and impose inspection schedules necessary to enforce the provisions of this ordinance.

3. Duty to provide information. The owner/operator shall furnish to the City of Hendersonville any information that is requested to determine compliance with this ordinance.
4. Administering entity. The Director of Public Works shall administer the provisions of this ordinance.
5. City Stormwater Management Plan. The City shall implement the requirements of this ordinance using guidance from the City's Stormwater Management Plan.
6. Severability. The provisions of this ordinance are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this ordinance or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this ordinance.
7. Ultimate Responsibility. The standards set forth herein and promulgated pursuant to this ordinance are minimum standards; therefore, this ordinance does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants.

18-202. Definitions.

For the purpose of this chapter, the following definitions shall apply: Words used in the singular shall include the plural, and the plural shall include the singular; words used in the present tense shall include the future tense. The word "shall" is mandatory and not discretionary. The word "may" is permissive. Words not defined in this section shall be construed to have the meaning given by common and ordinary use as defined in the latest edition of Webster's Dictionary.

1. "***Agriculture land management activities***" is the practice of cultivating the soil, producing crops, and raising livestock for the preparation and marketing of the resulting products.
2. "***As-built plans***" means a set of engineering or site drawings and documents that delineate and describe the as-built condition of stormwater control measures and stormwater management facilities as actually constructed, including but not limited to elevation, size, type, slope, etc. These drawings and associated documents should be prepared by a registered professional engineer or registered landscape architect that is familiar with the city-approved plans for the property and may be based on as-built survey information prepared by a registered land surveyor.
3. "***Authorized enforcement agency***" is the Hendersonville Director of Public Works shall administer, and the City Engineer shall enforce the provisions of this ordinance.
4. "***Best management practices (BMPs)***" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to Waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage, leaks, sludge or waste disposal, or drainage from raw material storage. BMPs include

source control practices (non-structural BMPs) and engineered structures designed to treat runoff.

5. "***Clean Water Act***" is the federal Water Pollution Control Act (33 U.S.C.' 1251 et seq.), and any subsequent amendments thereto.
6. "***Clearing***" refers to the removal of vegetation and disturbance of soil prior to grading or excavation in anticipation of construction activities. Clearing may also refer to wide area land disturbance in anticipation of non-construction activities. Clearing, grading, and excavation do not refer to clearing of vegetation along existing or new roadways, highways, dams or power lines for sight distance or other maintenance and/or safety concerns, or cold planning, milling, and/or removal of concrete and/or bituminous asphalt roadway pavement surfaces. The clearing of land for agricultural purposes is exempt from federal stormwater NPDES permitting in accordance with Section 401(1)(1) of the 1987 Water Quality Act and state stormwater NPDES permitting in accordance with the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.).
7. "***The City***" shall mean the City of Hendersonville.
8. "***Common plan of development or sale***" is broadly defined as any announcement or documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design) or physical demarcation (including boundary signs, lot stakes, surveyor markings) indicating construction activities may occur on a specific plot. A common plan of development or sale identifies a situation in which multiple areas of disturbance are occurring on contiguous areas. This applies because the activities may take place at different times, on difference schedules, by different operators.
9. "***Construction Site Operator***" ***Or*** "***Operator***" means any person associated with a construction project that meets either of the following two criteria:
    a. This person has operational or design control over construction plans and specifications, including the ability to make modifications to those plans and specifications. This person is typically the owner or developer of the project or a portion of the project and is considered the primary permittee.
    b. This person has day-to-day operational control of those activities at a project which are necessary to implement compliance with a SWPPP for the site or other permit conditions. This person is typically a contractor or a commercial builder who is hired by the primary permittee and is considered a secondary permittee.

    It is anticipated that at different phases of a construction project, different types of parties may satisfy the definition of the "construction site operator."
10. "***Design storm event***" is the estimated design rainfall amounts, for any return period interval (i.e., 1-yr, 2-yr, 5-yr, 25-yr, etc.) in terms of either 24-hour depths, or intensities for any duration, as defined by Precipitation-Frequency Atlas of the United States. Atlas 14. Volume 2. Version 3.0 U.S. Department of Commerce National Oceanic and Atmospheric Administration (NOAA), National Weather Service,

Hydrometeorological Design Studies Center, Silver Springs, Maryland or its digital product equivalent.

11. "***Discharge***" means dispose, deposit, spill, pour, inject, seep, dump, leak, or place by any means, with direct or indirect entry of any solid or liquid matter into the municipal separate storm sewer system.
12. "***Disturbed area***" means the total area presented as part of the development (and/or of a larger common plan of development) subject to being cleared, graded, or excavated during the life of the development. The area cannot be limited to only the portion of the total area that the site-wide owner/developer initially disturbs through the process of various land clearing activities or in the construction of roadways, sewers, drainfields and water utilities, stormwater drainage structures, etc., to make the property marketable.
13. "***Division***" means the Division of Water Resources of the State of Tennessee, Department of Environment and Conservation.
14. "***Easement***" means an acquired privilege or right-of-use or enjoyment that a person, party, firm, corporation, municipality, or other legal entity has in the land of another.
15. "***Enforcement Response Plan (ERP)***" is a set of procedures which present the permittee's potential responses to violations and address repeat violations through progressive enforcement as needed to achieve compliance. These enforcement responses should be commensurate with the nature of the violation and must include enforcement responses progressing up to the maximum civil and criminal penalties as described in T.C.A. 69-3-101.
16. "***Erosion***" means the removal of soil particles by the action of water, wind, ice, or other geological agents, whether naturally occurring or acting in conjunction with or promoted by anthropogenic activities or effects.
17. "***Erosion prevention and sediment control (EPSC) plan***" means a written plan (including drawings or other graphic representations) that indicates the specific measures and sequencing to be used to control sediment runoff and minimize erosion on a development or redevelopment site during and after construction.
18. "***Exceptional Tennessee Waters (ETW)***" are surface waters designated by the Division as having the characteristics set forth at Tennessee Rules, Chapter 0400-40-03-.06(4). Characteristics include waters within parks or refuges, scenic rivers, waters with threatened or endangered species, waters that provide specialized recreational opportunities, waters within areas designated as lands, waters with naturally reproducing trout, waters with exceptional biological diversity and other waters with outstanding ecological or recreational value.
19. "***Forestry***" is the cultivation and harvesting of timber for the production of forest products.
20. "***Hazardous materials***" is any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

21. "***Illicit connection***" defined as either of the following: Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including, but not limited to, any conveyances which allow any non-stormwater discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or, any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.
22. "***Illicit discharge***" means any discharge to the MS4 that is not composed entirely of stormwater and not specifically exempted under Section 18-208.2 of this ordinance.
23. ***"Industrial activity***" is any activity subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26 (b)(14).
24. "***Inspection and Maintenance Agreement (IMA)***" means a document recorded with the office of the register of deeds for Sumner County that acts as a property deed restriction, and which provides for long-term inspection and maintenance of stormwater control measures and stormwater management facilities.
25. ***"Inspector"*** is a person with one of the following qualifications:
    a. a valid certification for the "Fundamentals of Erosion Prevention and Sediment Control Level I" course,
    b. a registered professional engineer or registered landscape architect,
    c. a Certified Professional in Erosion and Sediment Control (CPESC), or
    d. a valid certification for the "Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites" course.

    An inspector performs and documents the required inspections, paying particular attention to time-sensitive permit requirements such as stabilization and maintenance activities. An inspector may also have the following responsibilities:
    a. Oversee the requirements of other construction-related permits, such as an Aquatic Resources Alteration Permit (ARAP) or U.S. Army Corps of Engineers (USACE) permit for construction activities in or around Waters of the State or Waters of the U.S.
    b. Update field SWPPPs.
    c. Conduct pre-construction inspection to verify that undisturbed areas have been properly marked and initial measures have been installed.
    d. Inform the permit holder of activities that may be necessary to gain or remain in compliance with the Tennessee Department of Environment and Conservation (TDEC) Construction General Permit (CGP) and other environmental permits.
26. "***Land disturbing activity***" means any activity on property that results in a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land-disturbing activities include, but are not limited to, development, re-

development, demolition, construction, reconstruction, clearing, grading, filling, trench, and excavation.

27. "***Land Disturbance Permit (LDP) audit***" is a twice-monthly, site-wide inspection to be performed by LDP permittees required for sites disturbing more than 50 acres at any one time, to be completed by a registered professional engineer, registered landscape architect, and/or person with an active TDEC Level 2 certification.
28. "***Linear project***" is a land disturbing activity as conducted by an underground/overhead utility or highway department, including, but not limited to, any cable line or wire for the transmission of electrical energy; any conveyance pipeline for transportation of gaseous or liquid substance; any cable line or wire for communications; or any other energy resource transmission ROW or utility infrastructure, e.g., roads and highways. Activities include the construction and installation of these utilities within a corridor. Linear project activities also include the construction of access roads, staging areas and borrow/spoil sites associated with the linear project. Land disturbance specific to the development of residential and commercial subdivisions or high-rise structures is not considered a linear project.
29. "***Long-Term Maintenance Plan (LTMP)***" is a plan that specifies the schedule of inspections and maintenance activities necessary to ensure that stormwater control measures or facilities remain in proper working condition in accordance with approved design standards, rules, and regulations, and applicable laws that shall be included with the IMA and recorded with the office of the register of deeds for Sumner County.
30. "***Maintenance***" means any activity that is necessary to ensure that stormwater control measures, best management practices, or stormwater management facilities remain in proper working condition in accordance with approved design standards, rules, and regulations, and applicable laws. Maintenance shall include complete reconstruction of a stormwater facility if reconstruction is needed to restore the facility to its original operational design parameters. Maintenance shall also include the correction of any problem on the site property that may directly or indirectly impair the functions of the stormwater facility.
31. "***Municipal Separate Storm Sewer System (MS4)***" is defined in 40 C.F.R. §122.26(b)(8) to mean a conveyance or system of conveyances (e.g., roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains that are:
    a. owned and operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to Waters of the United States;
    b. designed or used for collecting or conveying stormwater;
    c. not a combined sewer; and

d. not part of a Publicly Owned Treatment Works (POTW) as defined in 40 C.F.R §122.2.

32. "***National Pollutant Discharge Elimination System permit***" or "***NPDES permit***" is a permit issued by EPA (or by a State under authority delegated pursuant to 33 USC' 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area- wide basis.

33. "***Non-stormwater discharge***" is any discharge to the storm drain system that is not composed entirely of stormwater.

34. "***Peak flow***" means the maximum instantaneous rate of flow of water at a particular point resulting from a storm event.

35. "***Permanent stabilization***" means that all soil disturbing activities at the site have been completed and one of the three following criteria is met:
    a. A perennial, preferably native, vegetative cover with a uniform (i.e., evenly distributed, without large bare areas) density of at least 70 percent has been established on all unpaved areas and areas not covered by permanent structures, and all slopes and channels have been permanently stabilized against erosion.
    b. Equivalent permanent stabilization measures such as the use of riprap; permanent geotextiles; hardened surface materials including concrete, asphalt, gabion baskets or Reno mattresses have been employed.
    c. For construction projects on land used for agricultural or silvicultural purposes, permanent stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural or silvicultural use.

36. "***Person***" means any and all persons, natural or artificial, including any individual, firm, or association and any municipal or private corporation organized or existing under the laws of this or any other state or country.

37. "***Point source***" ***or*** "***Outfall***" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include introduction of pollutants from non-point source agricultural or silvicultural activities, including stormwater runoff from orchards, cultivated crops, pastures, range lands, forest lands or return flows from irrigated agriculture or agricultural stormwater runoff. In short, outfall is a point where runoff leaves the site as a concentrated flow in a discrete conveyance.

38. "***Pollutant***" means anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sediment; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

39. "***Premises***" any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.
40. "***Priority areas"*** means an area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater. Examples include, auto repair shops, auto supply shops, fleet storage areas, industrial sites, commercial nurseries, gas stations, car washes, large commercial parking areas, restaurants, and other land uses as determined by the Public Works Department.
41. "***Priority construction activity***" means construction activities discharging directly into, or immediately upstream of, Waters of the State recognized as unavailable parameters for siltation or Exceptional Tennessee Waters.
42. "***Redevelopment"*** means the alteration of developed land.
43. "***Registered Engineer***" ***and*** "***Registered Landscape Architect***" is an engineer or landscape architect certified and registered by the State Board of Architectural and Engineer Examiners pursuant to Section 62-202, Tennessee Code Annotated, to practice in Tennessee.
44. "***Runoff***" means that portion of the precipitation on a drainage area that is discharged from the area into the MS4.
45. "***Sediment***" means solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice as a product of erosion.
46. "***Sediment basin***" is a temporary basin consisting of an embankment constructed across a wet weather conveyance, an excavation that creates a basin or by a combination of both. A sediment basin typically consists of a forebay cell, dam, impoundment, permanent pool, primary spillway, secondary or emergency spillway and surface dewatering device. The size and shape of the basin depends on the location, size of the drainage area, incoming runoff volume and peak flow, soil type and particle size, land cover, and receiving stream classification (i.e., waters with unavailable parameters, Exceptional Tennessee Waters, or waters with available parameters).
47. "***Sedimentation***" means the action or process of forming or depositing sediment.
48. "***Significant contributor***" is defined as a source of pollutants where the volume, concentration, or mass of a pollutant in a stormwater discharge can cause or threaten to cause pollution, contamination, or nuisance that adversely impact human health or the environment and cause or contribute to a violation of any applicable water quality standards for receiving water.
49. "***Soils report***" means a study of soils on a subject property with the primary purpose of characterizing and describing the soils. The soils report shall be prepared by a qualified geotechnical engineer or geologist.
50. "***Steep slope***" is a natural or created slope of 35% grade or greater. Designers of sites with steep slopes must pay attention to stormwater management in the SWPPP to engineer runoff around or over a steep slope so as not to erode the slope. In addition, site managers should focus on erosion prevention on the slopes and stabilize the slopes as soon as practicable to prevent slope failure or sediment discharges from the project.

51. "***Stormwater***" means stormwater runoff, snow melt runoff, surface runoff, infiltration, and drainage.
52. "***Stormwater Control Measure (SCM)***" means permanent practices and measures designed to reduce the discharge of pollutants from new development projects or redevelopment projects.
53. "***Stormwater discharge-related activities***" means activities that cause, contribute to, or result in point source stormwater pollutant discharges. These activities may include excavation, site development, grading and other surface disturbance activities; and activities to control stormwater including the siting, construction, and operation of best management practices.
54. "***Stormwater management facilities***" means the drainage structures, conduits, ditches, combined sewers, and all appurtenances by means of which stormwater is collected, transported, pumped, treated, or disposed of.
55. "***Stormwater management program***" refers to a comprehensive program to manage the quality of stormwater discharges from the MS4.
56. "***Stormwater Pollution Prevention Plan (SWPPP)***" is a written site-specific plan required by the Construction General Permit that includes a narrative pollution prevention plan and graphical erosion and sediment control plan. In its basic form, the plan contains a site map, a description of construction activities that could introduce pollutants to stormwater runoff, a description of measures or practices to control these pollutants, and erosion and sediment control plans and specifications. It must be prepared and submitted before construction begins. In order to effectively reduce erosion and sedimentation impacts, best management practices must be designed, installed, and maintained during land disturbing activities. The SWPPP should be prepared in accordance with the Tennessee Erosion and Sediment Control Handbook.
57. "***Stormwater utility***" means the Public Works Department that administers the stormwater management ordinance, and other stormwater rules and regulations adopted by the municipality.
58. ***"Stream"*** is a surface water that is not a wet weather conveyance. Includes lakes, wetlands, and other non-linear surface waters.
59. "***Take***" of an endangered species means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct.
60. "***Temporary stabilization***" is achieved when vegetation or non-erodible surface has been established on the area of disturbance and construction activity has temporarily ceased. Under certain conditions, temporary stabilization is required when construction activities temporarily cease. However, if future construction activity is planned, permit coverage continues.
61. "***Total maximum daily load***" (TMDL) means the sum of the individual wasteload allocations for point sources and load allocations for non-point sources and natural background (40 CFR 130.2(I)). TMDL is a study that quantifies the amount of a pollutant in a stream, identifies the sources of the pollutant and recommends regulatory or other actions that may need to be taken in order for the stream to cease being polluted. TMDLs can also be described by the following equation:

TMDL = sum of non-point sources (LA) + sum of point sources (WLA) + margin of safety

62. "***Treatment train***" is a technique for progressively selecting various stormwater control measures to address water quality, by which groups of practices may be used to achieve a treatment goal while optimizing effectiveness, maintenance needs, and space.
63. "***Waste site***" is an area where material from a construction site is disposed of. When the material is erodible, such as soil, the site must be treated as a construction site, fill site, or spoil material, and shall be permitted based on disturbance.
64. "***Water quality riparian buffer***" is a permanent strip of natural perennial vegetation adjacent to a stream, river, wetland, pond, or lake that contains dense vegetation made up of grass, shrubs, and/or trees. The purpose of a water quality riparian buffer is to maintain existing water quality by minimizing the risk of any potential sediments, nutrients, or other pollutants reaching adjacent surface waters and to further prevent negative water quality impact by providing canopy over adjacent waters.
65. "***Waters of the State or Waters***" means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through or border upon Tennessee or any portion thereof, except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine or effect a junction with natural surface or underground waters.
66. "***Waters with unavailable parameters***" means any segment of surface waters that has been identified by the Division as failing to support one or more classified uses. Unavailable parameters exist where water quality is at, or fails to meet, the levels specified in water quality criteria in Rule 0400-40-03-.03, even if caused by natural conditions. In the case of a criterion that is a single response variable or is derived from measurement of multiple response variables, the unavailable parameters shall be the agents causing water quality to be at or failing to meet the levels specified in criteria. Resources to be used in making this determination include biennial compilations of impaired waters, databases of assessment information, updated GIS coverages, and the results of recent field surveys.
67. "***Watershed***" means all the land area that contributes runoff to a particular point.
68. "***Wet weather conveyances***" are man-made or natural watercourses, including natural watercourses that have been modified by channelization, that meet the following:
    a. The conveyance carries flow only in direct response to precipitation runoff in its immediate locality.
    b. The conveyance's channels are at all times above the ground water table.
    c. The flow carried by the conveyance is not suitable for drinking water supplies.
    d. Hydrological and biological analyses indicate that, due to naturally occurring ephemeral or low flow under normal weather conditions, there is not sufficient water to support fish or multiple populations of obligate lotic

aquatic organisms whose life cycle includes an aquatic phase of at least two months. (Tennessee Rules, Chapter 0400-40-3-.04(3)).

18-203. Land Disturbance and Permanent Stormwater Standards.

1. General. New development and redevelopment projects must be designed in accordance with the following table:

Table 18-1. New Development and Redevelopment Requirements

	Land Disturbance Permit Required	EPSC Plans Required	Water Quality Riparian Buffer Required	Water Quality Design Required
Any land use* (excluding commercial/ industrial), less than one acre of disturbance, not part of common plan of development or sale.		X	X	
Commercial / industrial, less than one acre of disturbance, not part of common plan of development or sale.	X	X	X	
Any land use, one acre or greater of disturbance or part of a larger common plan of development or sale.	X	X	X	X

*Other requirements at discretion of City Engineer/Public Works Director.

2. Building permit. No building permit shall be issued until the applicant has obtained a land disturbance permit where the same is required by this ordinance.
3. Exemptions. The following activities are considered to be exempt from the requirements of a land disturbance permit:
    a. Any emergency activity that is immediately necessary for the protection of life, property, or natural resources;
    b. Surface mining as is defined by Tennessee Code Annotated, §59-8-202; and
    c. Any forestry or agricultural activities that are consistent with the definitions in Section 18-202.

    These activities may be undertaken without a land disturbance permit; however, the person conducting these excluded activities shall remain responsible for conducting these activities within accordance with provisions of this ordinance and other applicable regulations including responsibility for controlling sediment, illicit discharges, and runoff.
4. Land disturbance permit fees. The land disturbance permit fees shall be as set forth in the municipal fee schedule.

5. Land disturbance permit qualifications. Land disturbance permit calculations and associated Erosion Prevention and Sediment Control (EPSC) plans must be prepared by a registered engineer or registered landscape architect with an active TDEC Level 2 certification.
    a. If a registered engineer or registered landscape architect submits plans for review without an active TDEC Level 2 certification, they do so with the understanding that upon the third submittal of the project EPSC plans they shall be responsible for the consultant invoice total based upon the consultant hourly rate at that time to complete the EPSC review, and any subsequent project reviews.
    b. This requirement shall be effective six months after the adoption of this ordinance.
6. Permit duration. Every land disturbance permit shall expire and become null and void when one of the following has occurred:
    a. Six (6) months of no activity on the site has occurred;
    b. Permanent stabilization of the site per the approved plans has occurred;
    c. Issuance of a TDEC Notice of Termination (NOT). A copy must be provided to the City in order to close out land disturbance permits; or
    d. Three (3) years from the issuance of the permit or if new federal or state regulations exist changing the scope of coverage where a new land disturbance permit is required.
7. Land disturbance permit special procedures.
    a. Fourteen (14) days prior to removal or conversion of sediment basins and/or sediment traps (if present) the City must be contacted for a site inspection and approval by the City Engineer, Public Works Director, or their designee.
    b. The City shall be notified within thirty (30) days of any change in responsible party (i.e., owner, developer, contractor, etc.) for the land disturbance permit. The new responsible party must comply with the existing City-approved site-wide SWPPP and EPSC Plans.
8. Surety. The City may, at its discretion, require the submittal of surety in the form of a letter of credit or cashier's check prior to the issuance of a permit to ensure that the stormwater management facilities and/or Stormwater Control Measures (SCMs) are installed by the permit holder as required by the approved stormwater management plan. The amount of the surety shall be the total estimated construction cost determined by the City Engineer, or their designee, for the installation of BMPs, stormwater management facilities, and/or SCMs approved under the permit plus any reasonably foreseeable additional related costs, e.g., for damages or enforcement. The surety shall contain forfeiture provisions for failure to complete work specified in the stormwater management plan. The surety shall be released in full with the submittal and approval of an as-built plan stamped by a registered professional engineer or registered landscape architect. Provisions for a partial pro-rata release of the surety based on the completion of various development stages can be made at the discretion of the City Engineer, or their designee.

9. Review and approval of application.
    a. The City will review each application and determine its conformance with the provisions of this ordinance. Within thirty (30) days after receiving an application, the City shall provide one of the following responses in writing:
        i. Approval of the permit application;
        ii. Approval of the permit application, subject to such reasonable conditions as may be necessary to secure substantially the objective of this ordinance, and issue the permit subject to these conditions; or
        iii. Denial of the permit application, indicating the reason(s) for the denial.
    b. If the City has granted conditional approval of the permit, the applicant shall submit a revised plan that conforms to the conditions established by the City. However, the applicant shall be allowed to proceed with his land disturbing activity so long as it conforms to conditions established by the City.
10. Erosion Prevention and Sediment Control Plan (EPSC) requirements. The EPSC Plans in support of a Land Disturbance Permit shall accurately describe the potential for soil erosion and sedimentation problems resulting from land disturbing activity and shall explain and illustrate the measures that are to be taken to control these problems. A registered professional engineer or registered landscape architect licensed in the state of Tennessee shall seal the plan. The plan shall also conform to the requirements found in the Tennessee Erosion and Sediment Control Handbook, and shall include at least the following:
    a. Project Description - Briefly describe the intended project and proposed land disturbing activity including number of units and structures to be constructed and infrastructure required;
    b. A topographic map of the basin and site with contour intervals of two (2) feet or less showing present conditions and proposed grading resulting from land disturbing activity;
    c. All existing receiving Waters of the State, and if they are classified as waters with unavailable parameters for siltation/sedimentation or habitat alteration and/or ETWs. Include any FEMA effective floodways and/or floodplains;
    d. A general description of existing land cover. Individual trees and shrubs do not need to be identified unless requested;
    e. Stands of existing trees, as they are to be preserved upon project completion, specifying their general location on the property. Differentiation shall be made between existing trees to be preserved, trees to be removed and proposed planted trees. Tree protection measures must be identified, and diameter of the area involved must also be identified on the plan and shown to scale. Complete landscape plans may be submitted separately. The plan must include the sequence of implementation for tree protection measures;
    f. Approximate limits of proposed land disturbing activities including

clearing, grading, utility connections, and/or filling;

g. A general description of existing soil types and characteristics;
h. Proposed drainage network;
i. Approximate flows leaving site after construction and incorporating stormwater detention measures. The evaluation must include projected effects on property adjoining the site and on existing drainage facilities and systems;
j. The projected sequence of work represented by the grading, drainage and EPSC plans as related to other major items of construction, beginning with the installation of EPSC measures, and including the construction of any sediment basins, sediment traps, stormwater management facilities, and SCMs;
k. Plans shall include detailed drawings of all control measures used; stabilization measures including vegetation and non-vegetation measures, both temporary and permanent, shall be detailed. Detailed construction notes and a maintenance schedule shall be included for all control measures in the plan;
l. All temporary and permanent EPSC measures shall be maintained and repaired as needed by the permittee to ensure continued performance of their intended function, as determined by the City Engineer or their designee; and
m. Proposed structures; location and identification of any proposed additional buildings, structures, or development on the site.

11. Construction General Permit (CGP) EPSC Phasing. The Stormwater Pollution Prevention Plan and EPSC Plans prepared for the Land Disturbance Permit application shall be consistent with the requirements of the current CGP in addition to the following requirements:
    a. Development or redevelopment exceeding 50 acres of disturbance at one time must perform twice-monthly, site-wide LDP audits conducted by a person with one or more of the following active qualifications:
        i. Registered professional engineer,
        ii. Registered landscape architect, and/or
        iii. TDEC Level 2 Certification.
    b. The City shall complete LDP audits with either city staff or consultant services. The LDP permit holder will be responsible for reimbursing the City for all costs associated with the LDP audits on a monthly basis.
    c. The report shall be provided to the City Engineer or their designee, and the LDP permit holder.
    d. A copy of the report shall be maintained with the on-site SWPPP.

18-204. Stormwater System Design: construction and permanent stormwater management performance standards.

1. SCM or BMP Design manuals.

a. Adoption. The municipality adopts as its SCM design and Best Management Practices (BMP) manual the following publications, which are incorporated by reference in this ordinance as is fully set out herein:
    i. Tennessee Erosion and Sediment Control Handbook;
    ii. Tennessee Permanent Stormwater Management and Design Guidance Manual;
    iii. Metro Nashville Stormwater Management Manual Volume 4 & 5; and
    iv. Hendersonville Construction Manual.
b. These manuals include a list of acceptable BMPs and a selection of SCMs including the specific design performance criteria, inspection, operation and maintenance requirements for each stormwater practice. Failures to properly design, install, or maintain BMPs or SCMs shall constitute a violation of this ordinance.

2. General performance criteria for stormwater management. Unless determined by the City Engineer, or their designee, to be exempt, the following performance criteria shall be addressed for stormwater management facilities at all developments or redevelopments with disturbances greater than or equal to 1 acre or part of a common plan of development or sale:
    a. Shall reduce the post-development peak flow rates for the 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour design storm to pre-development rates;
    b. Protect stream channels from degradation, specific channel protection criteria shall be provided as determined by the design engineer based on shear stress and erosion potential;
    c. Stormwater discharges to critical areas with sensitive resources (i.e., cold water fisheries, shellfish beds, swimming beaches, recharge areas, water supply reservoirs, etc.) or Exceptional Tennessee Waters may be subject to additional performance criteria or may need to utilize or restrict certain stormwater management facilities or SCMs;
    d. Stormwater discharges from priority areas may require the application of additional SCMs and pollution prevention practices;
    e. Shall meet a stormwater quantity level of service defined by:
        i. Design road catch basins and connecting culverts to convey the 25-year design storm peak flow with a spread of less than one-half the travel way.
    f. Bridges, culverts, channels, and cross drains shall be designed in a way that:
        i. Collector roads shall be designed to have no overtopping of the road during the 100-year, 24-hour design storm peak flow.
        ii. Other existing roads (as impacted by new or existing development) shall be designed to have no overtopping of the road during the 25-year, 24-hour design storm peak flow.
        iii. Other new roads shall be designed to have no overtopping of the road during the 25-year, 24-hour design storm peak flow.

g. Prior to or during the site design process, applicants for land disturbance permits shall consult with the City Engineer, or their designee, to determine if they are subject to additional stormwater design requirements; and
h. If hydrologic or topographic conditions warrant greater control than that provided by the minimum control requirements, the City may impose any and all additional requirements deemed necessary to control the volume, timing, quality, and rate of runoff.

3. Drainage report requirements. The Drainage Report shall include sufficient information to allow the City Engineer, or their designee, to evaluate environmental characteristics of the project site, the potential impacts of all proposed development or redevelopment of the site (both present and future) on the water resources, and the effectiveness and acceptability of the measures proposed for managing stormwater generated at the project site. To accomplish this goal the Drainage Report shall include the following:
    a. Topographic Base Map: A one (1) inch equals one hundred (100) foot topographic base map of the basin (minimum 2' contours) containing the site which extends a minimum of one hundred (100) feet beyond the limits of the basin of the proposed development and indicates:
        i. Existing surface water drainage including streams, ponds, culverts, ditches, sink holes, wetlands; and the type, size, invert elevation, etc., of the two (2) nearest upstream and downstream drainage structures;
        ii. Current land use including all existing structures, locations of utilities, roads, and easements;
        iii. All other existing significant natural and artificial features;
        iv. Proposed land use with tabulation of the percentage of surface area to be adapted to various uses;
        v. Drainage patterns (including time of concentration path);
        vi. Proposed limits of disturbance;
        vii. Existing and proposed stormwater management facilities and systems;
        viii. Existing and proposed SCMs; and
        ix. A written description of the site plan and justification of proposed changes in natural conditions may also be required.
    b. Calculations: Hydrologic and hydraulic design calculations prepared by a Tennessee Licensed Engineer for the pre-development and post-development conditions for the design storms specified in the stormwater design, BMP and SCM manuals. These calculations must show that the proposed stormwater management measures are capable of controlling from the site in compliance with this chapter and the guidelines of the approved BMP and SCM manuals. Such calculations shall include:
        i. A description of the design storm frequency, duration, and intensity where applicable;

ii. Time of concentration;
iii. Soil curve numbers or runoff coefficients for pre-development (prior to any land alteration) and post-development conditions;
iv. Design of EPSC measures based on the 2-year, 24-hour design storm, unless the site discharges into a water with unavailable parameters due to siltation/sedimentation or Exceptional Tennessee Waters which shall be based on the 5-year, 24-hour design storm;
v. Post-development peak runoff discharge for each watershed for the 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour design storms showing discharge controlled to release at rates equal to or less than that of pre-development;
vi. Infiltration rates, where applicable;
vii. The location, size, and capacity of proposed stormwater management facilities and systems as well as the two existing stormwater management structures in every direction that will receive runoff immediately downstream of the proposed development (including size, material, slope and invert elevations);
viii. Culvert, stormwater conduit, ditch and/or other stormwater conveyance capacities;
ix. Flow velocities;
x. Documentation of sources for all computation methods and field test results; and
xi. Calculations showing compliance with the WQTV table as provided within this section.

c. Soils Information: If a stormwater management control measure depends on the hydrologic properties of soils (e.g., infiltration basins), then a soils report/ infiltration testing shall be submitted. The soils report shall be based on on-site boring logs or test pit profiles and soil survey reports. The number and location of required soil borings or test pits shall be determined based on what is needed to determine the suitability and distribution of soil types present at the location of the SCM and the bedrock elevation.
d. Landscaping Plan: The applicant must present a detailed plan for management of vegetation at the site after construction is finished, including who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved. A registered landscape architect must prepare this plan.

4. Long-Term Maintenance Plan (LTMP) Requirements. The LTMP shall include sufficient information on the inspection and maintenance requirements of the stormwater management facilities, system, and SCMs located on the subject property. The LTMP shall detail the frequency and procedure necessary to ensure that the stormwater management facilities, system, and SCMs can meet the performance standards of this ordinance and provide full treatment capacity within 72 hours following the end of the preceding rain event. The LTMP shall be prepared by a registered professional engineer or registered landscape architect, preferably

the site designer. The LTMP shall include the following:

a. Inspection and Maintenance Plan: These plans will identify the location of each SCM and/or stormwater management facility, frequency of inspections, necessary maintenance activities, and required qualifications of the inspector. A permanent elevation benchmark shall be identified in the plans to assist in the periodic inspection of the facility.
b. Maintenance Easements: The applicant must ensure access to the site for the purpose of inspection and maintenance by securing all the maintenance easements needed. These easements must be binding on the current property owner and all subsequent owners of the property and must be properly recorded in the land record.
c. Inspection and Maintenance Agreement (IMA):
    i. The owner of property to be served by an on-site stormwater management facility must execute an inspection, operation, and maintenance agreement that shall operate as a deed restriction binding on the current property owner and all subsequent property owners.

5. Stormwater Quality Design Standards. To implement the objectives of this ordinance, the following general stormwater quality policy statements shall apply:
    a. There shall be no distinctly visible floating scum, oil, or other matter contained in the stormwater discharge.
    b. The stormwater discharge must not cause an objectionable color contrast in the receiving stream.
    c. The design storm for water quality treatment design shall be the 1-year, 24-hour design storm event.
    d. All roof runoff is presumed to be contaminated and, therefore, is to be included within the water quality treatment volume.
    e. The water quality treatment volume (WQTV) is the portion of the runoff generated from impervious surfaces at a new development or redevelopment project from the design storm. SCMs must be designed, at a minimum to achieve an overall treatment efficiency of eighty percent (80%) TSS removal from the WQTV. The quantity of the WQTV that must be provided from a new development or redevelopment depends on the type of treatment provided, as established in the following table:

Table 18-2. Water Quality Treatment Volume Requirements

Water Quality Treatment Volume and the Corresponding SCM Treatment Type for the 1-year, 24-hour design storm		
SCM Treatment Type	WQTV	Notes
Infiltration, evaporation, transpiration, and/or reuse	Runoff generated from the first 1 inch of the design storm	Examples include, but are not limited to, bioretention, stormwater wetlands, and infiltration systems.

Biologically active filtration, with an underdrain	Runoff generated from the first 1.25 inches of the design storm	To achieve biologically active filtration, SCMs must provide minimum of 12 inches of internal water storage.
Sand or gravel filtration, settling ponds, extended detention ponds, and wet ponds	Runoff generated from the first 2.5 inches of the design storm or the design or the first 75% of the design storm, whichever is less	Examples include, but are not limited to, sand filters, permeable pavers, and underground gravel detention systems. Ponds must provide forebays comprising a minimum of 10% of the total design volume. Existing regional ponds are not subject to the forebay requirement.
Hydrodynamic separation, baffle box settling, other flow-through manufactured treatment devices (MTDs), and treatment trains using MTDs	Maximum runoff generated from the entire design storm	Flow-through MTDs must provide an overall treatment efficiency of at least 80% TSS reduction.

f. Treatment trains using MTDs shall use the following calculation:
   $R = A + B - (A \times B) / 100$
   Where:
   R = total TSS percent removal from application of both SCMs
   A = the TSS percent removal rate applicable to the first SCM
   B = the TSS percent removal rate applicable to the second SCM
   TSS removal rates for MTDs must be evaluated using industry-wide standards.
   TSS removal rates for other SCMs must be from published reference literature.

g. Treatment trains using infiltration, evaporation, transpiration, reuse, or biologically active filtration followed by sand or gravel filtration, settling ponds, extended detention ponds, or wet ponds may subtract the treated WQTV of the upstream SCMs from the WQTV of the downstream SCMs.

h. Additional requirements for infiltration-based SCM treatment devices are as follows:
   i. Infiltration testing shall be required for infiltration-based SCMs;
   ii. The site Engineer shall select the appropriate infiltration testing methodology, such as those provided within the Metro Nashville Stormwater Management Manual Volume 5; and
   iii. At a minimum, testing shall identify a minimum 2-foot separation

from bedrock and the seasonal high-water table from the invert of the infiltration-based SCM.

i. SCMs must be designed to provide full treatment capacity within 72-hours following the end of the preceding rain event for the life of the development or redevelopment.

j. Incentive Standard: The following types of development or redevelopment shall receive a twenty percent (20%) reduction in the water quality treatment volume for any one of the following conditions:

   i. Redevelopment projects (including, but not limited to, brownfield redevelopment); and

   ii. Vertical density (floor to area ratio of at least 2, or at least 18 units per acre).

18-205 Water Quality Riparian Buffer

1. Applicability. A water quality riparian buffer shall be established, protected, and maintained along all streams for developments or redevelopments that meet the requirements per Section 18-203. The goal of the water quality riparian buffer is to preserve undisturbed vegetation that is native to the streamside habitat in the area of the project. The water quality riparian buffer zone is required to protect Waters of the State located within or immediately adjacent to the boundaries of the project, as identified using methodology from standard operating procedures for hydrologic determinations. Vegetated, preferably native, water quality riparian buffers protect water bodies by providing structural integrity and canopy cover, as well as stormwater infiltration, filtration, and evapotranspiration. Refer to the tables below for water quality riparian buffer zone requirements.

Table 18-3. Temporary and Permanent Water Quality Riparian Buffer Requirements for Sites That Do Not Require CGP Coverage

Receiving Feature	Buffer Width (feet)	Notes
Waters of the State	15	Only applicable for sites that do not require a CGP.

Table 18-4. Temporary and Permanent Water Quality Riparian Buffer Requirements for Sites That Do Require CGP Coverage

	Average Buffer Width (feet)	Minimum Buffer Width (feet)	Notes
Waters with available parameters for siltation/sedimentation or habitat alteration or unassessed waters	30	15	The criteria for the width of the buffer zone can be established on average width basis at a project, as long as the minimum width of buffer zone is more

Exceptional Tennessee Waters, waters with unavailable parameters for siltation or habitat alteration, or waters with federally or state threatened and endangered aquatic animal species	60	30	than the required location. If the new development or redevelopment site encompasses both sides of the stream, buffer averaging can be applied to both sides, but must be applied independently.

a. The buffer width shall be measured perpendicular from the top of bank on each side of the stream; around the perimeter of a pond or lake identified as Waters of the State measured as perpendicular to the contour at which normal pool is located around; and around the perimeter of a wetland identified as Waters of State.
b. Take of any federally or state threatened or endangered aquatic species within the property and or project area is strictly prohibited.

2. Permissible land uses. The water quality riparian buffer is to remain undisturbed for the minimum required buffer width. The following land uses are permittable within the remaining buffer subject to approval by the City Engineer:
    a. Greenways, biking trails, and walking trails;
        i. Trails constructed within the buffer should prevent or minimize the generation of pollutants. If trails are constructed from impervious materials, runoff must either be directed to infiltration-based SCMs or the buffer width must be increased by the width of the trail.
    b. Infiltration-based SCMs;
    c. Road and utility crossings. Private drives and private utility crossings may also be approved by the City Engineer, or their designee, upon review of a complete submittal demonstrating that there is no feasible alternative route; and
    d. Selective landscaping and/or habitat improvement.
3. Development or Redevelopment Adjacent to Water Quality Riparian Buffer. For any proposed development, redevelopment, and/or construction activity within or adjacent to a water quality riparian buffer, the following shall be required.
    a. The location of the water quality riparian buffer shall be delineated by the applicant and boundaries shall be clearly indicated and labeled on all plats, plans, permits, and official maps;
    b. Include a note on plans to reference protective covenants governing all water quality riparian buffer areas, labeled as: "Any water quality riparian buffer is subject to protective covenants recorded in the Register of Deeds

(Sumner County). Disturbance and use of these areas is restricted; severe penalties apply.";

c. Water quality riparian buffers shall be protected during construction activities by a combination of fencing and flagging to prevent entry of construction equipment, storage, and/or stockpiling. Buffer boundaries per the approved plans shall be marked during construction activities; and

18-206. Permanent Stormwater Management: Operation, Maintenance, and Inspection.

1. As-Built Requirements. Prior to land disturbance permit completion and surety release, the following must be submitted and accepted by the City:
    a. SCM as-built plans. All permittees are required to submit as-built plans for any SCMs located on-site within ninety (90) days after final construction is completed. The plans must be sealed by a registered professional engineer or registered landscape architect. The plans shall include the following:
        i. Location map of SCM(s) within project site;
        ii. An engineer's certification letter certifying that the SCM(s) have been installed to meet the performance standards of this ordinance and provide full treatment capacity within 72 hours following the end of the proceeding rain event;
        iii. Description of any variations from the approved design plans and specifications, if any;
        iv. A brief description of the type of SCM(s) and basic design characteristics;
        v. As-built design parameters including but not limited to invert elevations, outlet structure elevations, subbase layer depths, etc.;
        vi. The responsible party contact information;
        vii. Inspection schedule(s);
        viii. A brief description of or reference to maintenance procedures and frequency; and
        ix. Photographs of the installed SCMs.
    b. Stormwater infrastructure as-built plans. For stormwater infrastructure that will be dedicated and operated by the City, the following as-built information shall be provided:
        i. Location, type, material, size, condition, and direction of flow for all inputs (including road inlets, area drains, pipes, and ditches);
        ii. Location, material, size, condition, and direction of flow for all direct connections to the MS4 stormwater management system; and
        iii. Location, material, size, condition, and direction of flow for all outlets draining into the MS4.
    c. The City Engineer, or their designee, shall have the discretion to adopt provisions for a partial pro-rata release of the surety on the completion of various stages of development. In addition, occupation permits shall not be

granted until corrections to all SCMs have been made and accepted by the City Engineer, or their designee.

2. SCM Inspection Requirements.
    a. Routine inspection of all SCMs shall be performed by owner/operator or other qualified professional on a minimum annual basis or as specified in the LTMP. These inspections shall be conducted by registered professional engineer, registered landscape architect, or a person who has successfully completed the Tennessee Stormwater Management Training SCM Inspection & Maintenance Course. Owners/operators shall maintain documentation of these inspections;
    b. Comprehensive inspections of all SCMs must be performed once every five years by a registered professional engineer or registered professional landscape architect. Complete inspection reports for these five-year inspections shall include:
        i. SCM location(s);
        ii. Brief description of SCM(s) type and basic design characteristics;
        iii. Description of current SCM conditions;
        iv. The responsible party contact information;
        v. Inspection date;
        vi. Specific maintenance items or violations that need to be corrected by the SCM owner/operator along with timeline for maintenance;
        vii. Maintenance records, if any; and
        viii. Current photo of SCM(s)
    c. Inspections, whether routine or comprehensive, shall be submitted annually to the City by July 1.
3. Landscaping and stabilization requirements. Any area of land from which the natural vegetative cover has been either partially or wholly cleared by disturbance activities shall be stabilized. Stabilization measures shall be initiated as soon as possible in portions of the site where construction activities have temporarily or permanently ceased. Temporary or permanent soil stabilization at the construction site (or a phase of the project) must be completed no later than fourteen (14) days (or 7 days for steep slopes) after the construction activity in that portion of the site has temporarily or permanently ceased. In the following situations, temporary stabilization measures are not required:
    a. Where the initiation of stabilization measures is precluded by snow cover or frozen ground conditions or adverse soggy ground conditions, stabilization measures shall be initiated as soon as practicable; or
    b. Where construction activity on a portion of the site is temporarily ceased and earth disturbing activities will be resumed within fourteen (14) days.

    Permanent stabilization with perennial vegetation (using native herbaceous and woody plants where practicable) or other permanently stable, non-eroding surface shall replace any temporary measures as soon as practicable. Unpacked gravel containing fines (silt and clay sized particles), or crusher runs will not be considered a non-eroding surface. The following criteria shall apply to stabilization efforts:

a. Reseeding must be done with an annual or perennial cover crop accompanied by placement of straw mulch or its equivalent of sufficient coverage to control erosion until such time as the cover crop is established over seventy percent (70%) of the seeded area.
b. Replanting with native woody and herbaceous vegetation must be accompanied by placement of straw mulch or its equivalent of sufficient coverage to control erosion until the plantings are established and are capable of controlling erosion.
c. Any area of stabilization must exhibit survival of a minimum of seventy percent (70%) of the cover crop throughout the year immediately following revegetation. Revegetation must be repeated in successive years until the minimum seventy percent (70%) survival for one (1) year is achieved.
d. In addition to the above requirements, a landscaping plan must be submitted with the final design describing the vegetative stabilization and management techniques to be used at a site after construction is completed. This plan will explain not only how the site will be stabilized after construction, but who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved.

4. Records of installation and maintenance activities. Parties responsible for the operation and maintenance of a stormwater management facility shall make records of the installation of the stormwater facility, and of all maintenance and repairs to the facility, and shall retain the records for at least three (3) years. These records shall be made available to the City of Hendersonville during inspection of the facility and at other reasonable times upon request.

18-207. Existing Locations and Developments.

1. Requirements for all existing locations and developments. The requirements of this ordinance shall apply to all locations and developments at which land disturbing activities have occurred previous to the enactment of this ordinance including:

a. Denuded areas must be vegetated or covered under the standards and guidelines specified in the adopted manuals and on a schedule acceptable to the City Engineer, or their designee.
b. Cuts and slopes must be properly covered with appropriate vegetation and/or retaining walls constructed.
c. Drainage ways shall be properly covered in vegetation or secured with rip-rap, channel lining, etc., to prevent erosion.
d. Trash, junk, rubbish, etc. shall be cleared from drainage ways.
e. Stormwater runoff shall be controlled to the extent reasonable to prevent pollution of local waters. Such control measures may include, but are not limited to, the following:
    i. Ponds

1. Detention pond
2. Extended detention pond
3. Wet pond
4. Alternative storage measures

ii. Constructed wetlands

iii. Infiltration systems
1. Infiltration/percolation trench
2. Infiltration basin
3. Drainage (recharge) well
4. Porous pavement

iv. Filtering systems
1. Catch basin inserts/media filter
2. Sand filter
3. Filter/absorption bed
4. Filter and buffer strips

v. Open channel
1. Swale

2. Requirements for existing problem locations. The City Engineer, or their designee, shall in writing notify the owners of existing locations and developments of specific drainage, erosion or sediment problem affecting such locations and developments, and the specific actions required to correct those problems. The notice shall also specify a minimum of ten (10) business days for compliance or submittal of a Corrective Action Plan (CAP).
3. Inspection of existing facilities. The City Engineer, or their designee, may, to the extent authorized by state and federal law, enter and inspect private property for the purpose of determining if there are illicit non-stormwater discharges, and to establish inspection programs to verify that all stormwater management facilities, including those built before as well as after the adoption of this ordinance, are functioning within design limits. These inspection programs may be established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other pollutants; inspections of businesses or industries of a type associated with higher than usual discharges of pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of the municipality's NPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include but are not limited to reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other SCMs.
4. Corrections of problems subject to appeal. Corrective measures imposed by the City are subject to appeal under this ordinance.

18-208. Illicit discharges.

1. Scope. This section shall apply to all water generated on developed or undeveloped land entering the municipality's separate storm sewer system.
2. Prohibition of illicit discharges. No person shall introduce or cause to be introduced into the municipal separate storm sewer system any discharge that is not composed entirely of stormwater. No person shall allow discharges that are not composed entirely of stormwater. No person shall allow discharges that flow from a stormwater management facility that is not inspected in accordance with Section 18-206. Non-stormwater discharges shall include, but shall not be limited to sanitary wastewater, car wash wastewater, lawn mowing debris, lawn care chemicals, grease, soap, cleaning chemicals, radiator flushing disposal, spills from vehicle accidents, carpet cleaning wastewater, effluent from septic tanks, improper oil disposal, laundry wastewater/gray water, improper disposal of auto and household toxics. The commencement, conduct or continuance of any non-stormwater discharge to the municipal separate storm sewer system is prohibited except as described as follows:
    a. Uncontaminated discharges from the following sources:
        i. Water line flushing or other potable water sources,
        ii. Landscape irrigation or lawn watering with potable water,
        iii. Diverted stream flows,
        iv. Rising ground water,
        v. Uncontaminated groundwater infiltration (infiltration is defined as water other than wastewater that enters a sewer system, including sewer service connections and foundation drains, from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow),
        vi. Uncontaminated pumped groundwater,
        vii. Discharges from potable water sources,
        viii. Foundation drains,
        ix. Air conditioning condensate,
        x. Irrigation water,
        xi. Springs,
        xii. Water from crawl space pumps,
        xiii. Footing drains,
        xiv. Lawn watering,
        xv. Individual residential car washing,
        xvi. Flows from riparian habitat or wetlands,
        xvii. Dechlorinated swimming pool discharge (typically less than one PPM chlorine),
        xviii. Street wash water, and
        xix. Discharges or flows from firefighting activities.
    b. Discharges authorized by the CGP, which comply with Section 1.2.3. of the same:

i. Dewatering of collected stormwater and groundwater discharge in accordance with Section 4.1.3. of the CGP (filtering or chemical treatment may be necessary prior to discharge);
ii. Waters used to wash vehicles (of dust and soil, not process materials such as oils, asphalt, or concrete) where detergents are not used and detention and/or filtering is provided before the water leaves the site;
iii. Water used to control dust in accordance with CGP Section 5.5.3.7.;
iv. Potable water sources, including waterline flushings, from which chlorine has been removed to the maximum extent practicable;
v. Routine external building washdown that does not use detergents or other chemicals;
vi. Uncontaminated, non-turbid groundwater or spring water;
vii. Foundation or footing drains where flows are not contaminated with pollutants (process materials such as solvent, heavy metals, etc.);
viii. Fire hydrant flushings;
ix. Landscape irrigation;
x. Pavement wash waters, provided spills or leaks or other toxic or hazardous substances have not occurred (unless all spill material has been removed) and where soaps, solvents, and detergents are not used; and
xi. Uncontaminated air conditioning or compressor condensate.

3. Prohibition of illicit connections. The construction, use, maintenance, or continued existence of illicit connections to the municipal separate storm sewer system is prohibited. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection. A person is considered to be in violation of this ordinance if the person connects a line conveying sewage to the MS4 or allows such a connection to continue.
4. Reduction of stormwater pollutants by the use of SCMs. Any person responsible for a property or premises, which is, or may be, the source of an illicit discharge, may be required to implement, at the person's expense, the SCMs necessary to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of stormwater associated with industrial activity, to the extent practicable, shall be deemed compliant with the provisions of this section. Discharges from existing SCMs that have not been maintained and/or inspected in accordance with this ordinance shall be considered a violation of this ordinance.
5. Notification of spills. Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting in, or may result in, illicit discharges or pollutants discharging into stormwater, the municipal separate storm sewer system, the person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials the person shall immediately notify

emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, the person shall notify the City Engineer, or their designee, in person, email, or by telephone no later than the next business day. Notifications in person or by telephone shall be confirmed by written notice addressed and mailed to the City Engineer, or their designee, within seven (7) days of the notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three (3) years.

6. Requirements for construction site operators.
    a. Construction site operators are required to control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at construction sites within the jurisdiction to avoid adverse impacts to water quality.
    b. Construction site operators are required to minimize the migration of sediment and debris to the roadway. All sediment and debris tracked onto the roadway shall be cleaned as soon as possible, and at minimum, before the end of each workday.
7. Priority area. The City Engineer, or their designee, is authorized to regulate priority areas. Upon written notification by the City Engineer, or their designee, the property owner or designated facility manager of a priority area shall, at their expense, implement necessary SCMs and/or BMPs to prevent discharge of contaminated stormwater to the MS4. The City Engineer, or their designee, may require the facility to maintain inspection logs or other records to document compliance with this ordinance.
8. Suspension of MS4 Access.
    a. Suspension due to Illicit Discharges in Emergency Situations. The City may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the State. If the violator fails to comply with a suspension order issued in an emergency, the authorized enforcement agency may take such steps as deemed necessary to prevent or minimize damage to the MS4 or Waters of the State, or to minimize danger to persons.
    b. Suspension due to the Detection of Illicit Discharge. Any person discharging to the MS4 in violation of this ordinance may have their MS4 access terminated. The authorized enforcement agency will notify a violator of the proposed termination of its MS4 access. The violator may petition the authorized enforcement agency for reconsideration and hearing as outlined in this ordinance. A person commits an offense if the person

reinstates MS4 access to premises terminated pursuant to this Section, without the prior approval of the authorized enforcement agency.

9. Industrial or Construction Activity Discharge.
    a. Any activity subject to an industrial or construction NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the City prior to the discharges to the MS4.
    b. Any violation of the CGP shall constitute a violation of this ordinance.
10. Monitoring of Discharges.
    a. Applicability. This section applies to all facilities that have stormwater discharges associated with industrial activity, including construction activity.
    b. Access to Facilities.
        i. The City shall be permitted to enter and inspect facilities subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the authorized enforcement agency.
        ii. Facility operators shall allow the City ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law.
        iii. The City shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the authorized enforcement agency to conduct monitoring and/or sampling of the facility's stormwater discharge.
        iv. The City has the right to require the discharger to install monitoring equipment, as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.
        v. Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the City and shall not be replaced unless otherwise notified by the City. The costs of clearing such access shall be borne by the operator.
        vi. Unreasonable delays in allowing the City access to a permitted facility are a violation of a stormwater discharge permit and of this ordinance. A person who is the operator of a facility with an NPDES

permit to discharge stormwater associated with industrial activity commits an offense if the person denies the authorized enforcement agency reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this ordinance.

vii. If the City has been refused access to any part of the premises from which stormwater is discharged, and is able to demonstrate probable cause to believe that there may be a violation of this ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this ordinance or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the authorized enforcement agency may seek issuance of a search warrant from any court of competent jurisdiction.

18-209. Enforcement.

1. Enforcement authority. The City Engineer or their designees shall have the authority to issue notices of violation and citations, and to impose the civil penalties provided in this section guided by the Enforcement Response Plan (ERP). Measures authorized include:
    a. Verbal warnings. At a minimum, verbal warnings must specify the nature of the violation and required corrective action.
    b. Written notices. Written notices must stipulate the nature of the violation and the required corrective action, with deadlines for taking such action.
    c. Citations with administrative penalties. The MS4 has the authority to assess monetary penalties, which may include civil and administrative penalties.
    d. Stop work orders. Stop work orders that require construction activities to be halted, except for activities cleaning up, abating discharge, and installing appropriate control measures.
    e. Withholding of plan approvals or other authorizations. Where a facility is in noncompliance, the MS4's own approval process affecting the facility's ability to discharge to the MS4 can be used to abate the violation.
    f. Additional measures. The MS4 may also use other escalated measures provided under local legal authorities. The MS4 may perform work necessary to improve EPSC measures and collect the funds from the responsible party in an appropriate manner, such as collecting against the project's bond, surety, or directly billing the responsible party to pay for time and materials.
2. Notification of violation.
    a. Verbal Warning. Verbal warning may be given at the discretion of the inspector when it appears the condition can be corrected by the violator within a reasonable time, which time shall be approved by the inspector.
    b. Written Notice. Whenever the City finds that any permittee or any other person discharging stormwater has violated or is violating this ordinance or

a permit or order issued hereunder, the City may serve upon such person written notice of the violation. Within ten (10) business days of this notice, an explanation of the violation and a corrective action plan (CAP), to include specific required actions to be taken to correct the noncompliance, shall be submitted to the City Engineer, or their designee. Submission of this plan in no way relieves the discharger of liability for any violations occurring before or after receipt of the notice of violation.

c. Consent Orders. The City Engineer, or their designee, is empowered to enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with the person responsible for the noncompliance. Such orders will include specific action to be taken by the person to correct the noncompliance within a time period also specified by the order. Consent orders shall have the same force and effect as administrative orders issued pursuant to paragraphs (d) and (e) below.

d. Show Cause Hearing. The City Engineer, or their designee, may order any person who violates this ordinance or permit, or order issued hereunder, to show cause why a proposed enforcement action should not be taken. Notice shall be served on the person specifying the time and place for the meeting, the proposed enforcement action, and the reasons for such action, and a request that the violator show cause why this proposed enforcement action should not be taken. The notice of the meeting shall be served personally or by registered or certified mail (return receipt requested) at least ten (10) business days prior to the hearing.

e. Compliance Order. When the City Engineer, or their designee, finds that any person has violated or continues to violate this ordinance or a permit or order issued there under, he may issue an order to the violator directing that, following a specific time period, adequate structures, devices, be installed or procedures implemented and properly operated. Orders may also contain such other requirements as might be reasonably necessary and appropriate to address the noncompliance, including the construction of appropriate structures, installation of devices, self-monitoring, and management practices.

f. Cease and Desist Orders. When the City Engineer, or their designee, finds that any person has violated or continues to violate this ordinance or any Permit or order issued hereunder, the City Engineer, or their designee, may issue an order to cease and desist all such violations and direct those persons in noncompliance to:

    i. Comply forthwith; or
    ii. Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations and terminating the discharge.

g. Conflicting standards. Whenever there is a conflict between any standard contained in this ordinance and in the manuals adopted by the municipality under this ordinance, the strictest standard shall prevail.

18-210. Penalties.

1. Violations. Any person who shall commit any act declared unlawful under this ordinance, who violates any provision of this ordinance, who violates the provisions of any permit issued pursuant to this ordinance, or who fails or refuses to comply with any lawful communication or notice to abate or take corrective action by the City, shall be guilty of a civil offense.
2. Penalties. Under the authority provided in Tennessee Code Annotated Section 68-221-1106, the municipality declares that any person violating the provisions of this ordinance may be assessed a civil penalty by the City Engineer, or their designee, of not less than fifty dollars (50) and not more than five thousand dollars (5,000) per day or the maximum allow by law for each day of violation. Each day of violation shall constitute a separate violation.
3. Measuring civil penalties. In assessing a civil penalty, the City Engineer, or their designee, may consider:
    a. The harm done to the public health or the environment;
    b. Whether the civil penalty imposed will be a substantial economic deterrent to the illegal activity;
    c. The economic benefit gained by the violator;
    d. The amount of effort put forth by the violator to remedy this violation;
    e. Any unusual or extraordinary enforcement costs incurred by the municipality;
    f. The amount of penalty established by ordinance or resolution for specific categories of violations; and
    g. Any equities of the situation that outweigh the benefit of imposing any penalty or damage assessment.
4. Recovery of damages and costs. In addition to the civil penalties in subsection (2) above, the City may recover:
    a. All damages proximately caused by the violator to the City, which may include any reasonable expenses incurred in investigating violations of, and enforcing compliance with this ordinance, or any other actual damages caused by the violation.
    b. The costs of the City's maintenance of stormwater facilities when the user of such facilities fails to maintain them as required by this ordinance.
5. Other remedies. The City may bring legal action to enjoin the continuing violation of this ordinance, and the existence of any other remedy, at law or equity, shall be no defense to any such actions.

6. Remedies cumulative. The remedies set forth in this section shall be cumulative, not exclusive, and it shall not be a defense to any action, civil or criminal that one (1) or more of the remedies set forth herein has been sought or granted.

18-211. Appeals Board.

There is created an Appeals Board which shall consist of three members. All members shall be appointed by the Mayor with the consent of the Board of Mayor and Alderman.

1. Term. Appointed members shall serve for staggered terms of 4 years and can be reappointed for two additional consecutive terms.
2. Organization. Within ten (10) days after its appointment the Mayor will appoint one chairman. The chairman of the board shall serve for a 2- year term. The City Engineer, or their designee, shall be the secretary to the board and shall be the custodian of the minutes and records of the proceedings of the board.
3. Compensation. All appointed members shall be compensated at a rate of $100 per month for their service. Appointed members shall be removed from the board for absence from meetings, or other just cause.
4. Replacement. Replacement of any appointed member of the Board, resigning or dismissed from the board, shall be appointed by the Mayor.
5. Duties. The Appeals Board shall adopt such rules and regulations as it may deem necessary to conduct its business. The board, in open meeting, shall hear all appeals, under the provisions of this ordinance and illicit discharges. The board shall base its decisions on the written documentation presented before it. The board shall meet at regular monthly intervals with the day and time to be determined by the board's chairman. In the event no appeals have been filed and there is no business pending, the chairman may cancel the meeting five (5) days before it scheduled date.
6. Voting. Three members of the Appeals Board shall constitute a quorum. A majority vote of the members present shall be required for actions by the board. No member of the board shall act in any case in which he/she has a person financial interest.
7. Qualifications. Members of the Appeals Board shall meet the following qualifications:
    a. Citizen of the City of Hendersonville (at least 12 months),
    b. Experience, preferred, in stormwater, law, accounting, engineering, management, business, or government, but not required,
    c. Must commit to attending scheduled Board meetings,
    d. No more than 2 members shall be from the same Ward, and
    e. Attend all necessary training.

18-212. Appeals.

1. Pursuant to Tennessee Code Annotated Section 68-221-1106(d), any person aggrieved by the imposition of a civil penalty or damage assessment as provided by this ordinance may appeal said penalty or damage assessment to the Appeals Board.
    a. Appeals to be in writing. The appeal shall be in writing and filed with the Public Works secretary within fifteen (15) days after the civil penalty and/or damage assessment is served in any manner authorized by law.

b. Public hearing. Upon receipt of an appeal, the Appeals Board shall hold a public hearing within thirty (30) days. Ten (10) days prior notice of the time, date, and location of said hearing shall be on the City's web page. Ten (10) days notice by registered mail shall also be provided to the aggrieved party, such notice to be sent to the address provided by the aggrieved party at the time of appeal. The decision of the Appeals Board shall be final.

c. Appealing decisions of the Appeals Board. Any alleged violator may appeal a decision of the Appeals Board pursuant to the provisions of Tennessee Code Annotated, Title 27, Chapter 9, and the federal Water Pollution control Act (33 U.S.C. 1251 et seq.). (Ord. 2003-47, Oct. 2003, Ord. 2021-17, May 2021)

CHAPTER 3

NATIONAL FLOOD INSURANCE PROGRAM REGULATIONS

SECTION

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ARTICLE I. STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND OBJECTIVES

18-301. Statutory Authorizations.
The Legislature of the State of Tennessee has in Sections 13-7-201 through 13-7-210, Tennessee Code Annotated delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the City of Hendersonville, Tennessee, Mayor, and the Hendersonville Board of Aldermen, do ordain as follows:

18-302. Findings of Fact.
1. The City of Hendersonville, Tennessee, Mayor and its Board of Aldermen wishes to maintain eligibility in the National Flood Insurance Program (NFIP) and in order to do so must meet the NFIP regulations found in Title 44 of the Code of Federal Regulations (CFR), Ch. 1, Section 60.3.
2. Areas of the City of Hendersonville, Tennessee are subject to periodic inundation which could result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.
3. Flood losses are caused by the cumulative effect of obstructions in floodplains, causing increases in flood heights and velocities; by uses in flood hazard areas which are vulnerable to floods; or construction which is inadequately elevated, floodproofed, or otherwise unprotected from flood damages.

18-303. Statement of Purpose
It is the purpose of this Ordinance to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas. This Ordinance is designed to:
1. Restrict or prohibit uses which are vulnerable to flooding or erosion hazards, or which result in damaging increases in erosion, flood heights, or velocities;
2. Require that uses vulnerable to floods, including community facilities, be protected against flood damage at the time of initial construction;
3. Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;
4. Control filling, grading, dredging and other development which may increase flood damage or erosion;
5. Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters, or which may increase flood hazards to other lands.

18-304 Objectives
The objectives of this Ordinance are:
1. To protect human life, health, safety, and property;
2. To minimize expenditure of public funds for costly flood control projects;

3. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
4. To minimize prolonged business interruptions;
5. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in flood prone areas;
6. To help maintain a stable tax base by providing for the sound use and development of flood prone areas to minimize blight in flood areas;
7. To ensure that potential homebuyers are notified that property is in a flood prone area;
8. To maintain eligibility for participation in the NFIP.

ARTICLE II. DEFINITIONS

18-305. Definitions.

Unless specifically defined below, words or phrases used in this Ordinance shall be interpreted as to give them the meaning they have in common usage and to give this Ordinance its most reasonable application given its stated purpose and objectives.

1. "***Accessory Structure***" means a subordinate structure to the principal structure on the same lot and, for the purpose of this Ordinance, shall conform to the following:
    a. Accessory structures shall only be used for parking of vehicles and storage.
    b. Accessory structures shall be designed to have low flood damage potential.
    c. Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters.
    d. Accessory structures shall be firmly anchored to prevent flotation, collapse, and lateral movement, which otherwise may result in damage to other structures.
    e. Utilities and service facilities such as electrical and heating equipment shall be elevated or otherwise protected from intrusion of floodwaters.
2. "***Addition (to an existing building)***" means any walled and roofed expansion to the perimeter or height of a building.
3. "***Appeal***" means a request for a review of the local enforcement officer's interpretation of any provision of this Ordinance or a request for a variance.
4. "***Area of Shallow Flooding***" means a designated AO or AH Zone on a community's Flood Insurance Rate Map (FIRM) with one percent or greater annual chance of flooding to an average depth of one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate; and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.
5. "***Area of Special Flood-related Erosion Hazard***" is the land within a community which is most likely to be subject to severe flood-related erosion losses. The area may be designated as Zone E on the Flood Hazard Boundary Map (FHBM). After the detailed evaluation of the special flood-related erosion hazard area in preparation for publication of the FIRM, Zone E may be further refined.
6. "***Area of Special Flood Hazard***" see "Special Flood Hazard Area"

7. "***Base Flood***" means the flood having a one percent chance of being equaled or exceeded in any given year. This term is also referred to as the 100-year flood or the one (1)-percent annual chance flood.
8. "***Basement***" means any portion of a building having its floor subgrade (below ground level) on all sides.
9. "***Building***" see "Structure"
10. "***Development***" means any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavating, drilling operations, or storage of equipment or materials.
11. "***Elevated Building***" means a non-basement building built to have the lowest floor of the lowest enclosed area elevated above the ground level by means of solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of floodwater, pilings, columns, piers, or shear walls adequately anchored so as not to impair the structural integrity of the building during a base flood event.
12. "***Emergency Flood Insurance Program***" or "***Emergency Program***" means the program as implemented on an emergency basis in accordance with Section 1336 of the Act. It is intended as a program to provide a first layer amount of insurance on all insurable structures before the effective date of the initial FIRM.
13. "***Erosion***" means the process of the gradual wearing away of land masses. This peril is not "per se" covered under the Program.
14. "***Exception***" means a waiver from the provisions of this Ordinance which relieves the applicant from the requirements of a rule, regulation, order, or other determination made or issued pursuant to this Ordinance.
15. "***Existing Construction***" means any structure for which the "start of construction" commenced before the effective date of the initial floodplain management code or ordinance adopted by the community as a basis for that community's participation in the NFIP.
16. "***Existing Manufactured Home Park or Subdivision***" means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, final site grading or the pouring of concrete pads) is completed before the effective date of the first floodplain management code or ordinance adopted by the community as a basis for that community's participation in the NFIP.
17. "***Existing Structures***" see "Existing Construction"
18. "***Expansion to an Existing Manufactured Home Park*** or ***Subdivision***" means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).
19. "***Flood***" or "***Flooding***"
    a. A general and temporary condition of partial or complete inundation of normally dry land areas from:

i. The overflow of inland or tidal waters.
ii. The unusual and rapid accumulation or runoff of surface waters from any source.
iii. Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph a.ii. of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.

b. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph a.l. of this definition.

20. "***Flood Elevation Determination***" means a determination by the Federal Emergency Management Agency (FEMA) of the water surface elevations of the base flood, that is, the flood level that has a one percent or greater chance of occurrence in any given year.
21. "***Flood Elevation Study***" means an examination, evaluation, and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation, and determination of mudslide (i.e., mudflow) or flood-related erosion hazards.
22. "***Flood Hazard Boundary Map (FHBM)***" means an official map of a community, issued by FEMA, where the boundaries of areas of special flood hazard have been designated as Zone A.
23. "***Flood Insurance Rate Map (FIRM)***" means an official map of a community, issued by FEMA, delineating the areas of special flood hazard or the risk premium zones applicable to the community.
24. "***Flood Insurance Study***" is the official report provided by FEMA, evaluating flood hazards, and containing flood profiles and water surface elevation of the base flood.
25. "***Floodplain***" or "***Floodprone Area***" means any land area susceptible to being inundated by water from any source (see definition of "flooding").
26. "***Floodplain Management***" means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.
27. "***Flood Protection System***" means those physical structural works for which funds have been authorized, appropriated, and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the area within a community subject to a "special flood hazard" and the extent of the depths of associated flooding. Such a system typically includes hurricane tidal barriers, dams, reservoirs,

levees, or dikes. These specialized flood modifying works are those constructed in conformance with sound engineering standards.

28. "***Floodproofing***" means any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities and structures and their contents.

29. "***Flood-related Erosion***" means the collapse or subsidence of land along the shore of a lake or other body of water as a result of undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as a flash flood, or by some similarly unusual and unforeseeable event which results in flooding.

30. "***Flood-related Erosion Area***" or "***Flood-related Erosion Prone Area***" means a land area adjoining the shore of a lake or other body of water, which due to the composition of the shoreline or bank and high-water levels or wind-driven currents, is likely to suffer flood-related erosion damage.

31. "***Flood-related Erosion Area Management***" means the operation of an overall program of corrective and preventive measures for reducing flood-related erosion damage, including but not limited to emergency preparedness plans, flood-related erosion control works and floodplain management regulations.

32. "***Floodway***" means the channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

33. "***Freeboard***" means a factor of safety usually expressed in feet above a flood level for purposes of floodplain management. "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, blockage of bridge or culvert openings, and the hydrological effect of urbanization of the watershed.

34. "***Functionally Dependent Use***" means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

35. "***Highest Adjacent Grade***" means the highest natural elevation of the ground surface, prior to construction, adjacent to the proposed walls of a structure.

36. "***Historic Structure***" means any structure that is:

    a. Listed individually in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;

    b. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or

a district preliminarily determined by the Secretary to qualify as a registered historic district;

c. Individually listed on the Tennessee inventory of historic places and determined as eligible by states with historic preservation programs which have been approved by the Secretary of the Interior; or

d. Individually listed on the City of Hendersonville, Tennessee inventory of historic places and determined as eligible by communities with historic preservation programs that have been certified either:

i. By the approved Tennessee program as determined by the Secretary of the Interior or

ii. Directly by the Secretary of the Interior.

37. "***Levee***" means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control or divert the flow of water to provide protection from temporary flooding.

38. "***Levee System***" means a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

39. "***Lowest Floor***" means the lowest floor of the lowest enclosed area, including a basement. An unfinished or flood resistant enclosure used solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this Ordinance.

40. "***Manufactured Home***" means a structure, transportable in one or more sections, which is built on a permanent chassis and designed for use with or without a permanent foundation when attached to the required utilities. The term "***Manufactured Home***" does not include a "***Recreational Vehicle***".

41. "***Manufactured Home Park*** or ***Subdivision***" means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

42. "***Map***" means the Flood Hazard Boundary Map (FHBM) or the Flood Insurance Rate Map (FIRM) for a community issued by FEMA.

43. "***Mean Sea Level***" means the average height of the sea for all stages of the tide. It is used as a reference for establishing various elevations within the floodplain. For the purposes of this Ordinance, the term is synonymous with the National Geodetic Vertical Datum (NGVD) of 1929, the North American Vertical Datum (NAVD) of 1988, or other datum, to which Base Flood Elevations shown on a community's Flood Insurance Rate Map are referenced.

44. "***National Geodetic Vertical Datum (NGVD)***" means, as corrected in 1929, a vertical control used as a reference for establishing varying elevations within the floodplain.

45. "***New Construction***" means any structure for which the "start of construction" commenced on or after the effective date of the initial floodplain management Ordinance and includes any subsequent improvements to such structure.

46. "***New Manufactured Home Park*** or ***Subdivision***" means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of this ordinance or the effective date of the initial floodplain management ordinance and includes any subsequent improvements to such structure.
47. "***North American Vertical Datum (NAVD)***" means, as corrected in 1988, a vertical control used as a reference for establishing varying elevations within the floodplain.
48. "***100-year Flood***" see "Base Flood"
49. "***Person***" includes any individual or group of individuals, corporation, partnership, association, or any other entity, including State and local governments and agencies.
50. "***Reasonably Safe from Flooding***" means base flood waters will not inundate the land or damage structures to be removed from the Special Flood Hazard Area and that any subsurface waters related to the base flood will not damage existing or proposed structures.
51. "***Recreational Vehicle***" means a vehicle which is:
    a. Built on a single chassis;
    b. 400 square feet or less when measured at the largest horizontal projection;
    c. Designed to be self-propelled or permanently towable by a light duty truck; and
    d. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.
52. "***Regulatory Floodway***" means the channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.
53. "***Regulatory Flood Protection Elevation***" means the "Base Flood Elevation" plus the "Freeboard". In "Special Flood Hazard Areas" where Base Flood Elevations (BFEs) have been determined, this elevation shall be the BFE plus 1 foot. In "Special Flood Hazard Areas" where no BFE has been established, this elevation shall be at least three (3) feet above the highest adjacent grade.
54. "***Riverine***" means relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.
55. "***Special Flood Hazard Area***" is the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. The area may be designated as Zone A on the FHBM. After detailed ratemaking has been completed in preparation for publication of the FIRM, Zone A usually is refined into Zones A, AO, AH, Al-30, AE or A99.
56. "***Special Hazard Area***" means an area having special flood, mudslide (i.e., mudflow) and/or flood-related erosion hazards and shown on an FHBM or FIRM as Zone A, AO, Al-30, AE, A99, or AH.
57. "***Start of Construction***" includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within

180 days of the permit date. The actual start means either the first placement of permanent construction of a structure (including a manufactured home) on a site, such as the pouring of slabs or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; and includes the placement of a manufactured home on a foundation. Permanent construction does not include initial land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds, not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

58. "***State Coordinating Agency***" the Tennessee Emergency Management Agency, State NFIP Office, as designated by the Governor of the State of Tennessee at the request of FEMA to assist in the implementation of the NFIP for the State.

59. "***Structure***" for purposes of this Ordinance, means a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

60. "***Substantial Damage***" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed fifty percent (50%) of the market value of the structure before the damage occurred.

61. "***Substantial Improvement***" means any reconstruction, rehabilitation, addition, alteration, or other improvement of a structure in which the cost equals or exceeds fifty percent (50%) of the market value of the structure before the "start of construction" of the initial improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed. The market value of the structure should be:

    a. the appraised value of the structure prior to the start of the initial improvement, or
    b. in the case of substantial damage, the value of the structure prior to the damage occurring. The term does not, however, include either:
        i. Any project for improvement of a structure to correct existing violations of State or local health, sanitary, or safety code specifications which have been pre-identified by the local code enforcement official, and which are the minimum necessary to assure safe living conditions and not solely triggered by an improvement or repair project; or
        ii. Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure".

62. "***Substantially Improved Existing Manufactured Home Parks or Subdivisions***" is where the repair, reconstruction, rehabilitation or improvement of the streets, utilities

and pads equals or exceeds fifty percent (50%) of the value of the streets, utilities and pads before the repair, reconstruction or improvement commenced.

63. "***Variance***" is a grant of relief from the requirements of this Ordinance.

64. "***Violation***" means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certification, or other evidence of compliance required in this Ordinance is presumed to be in violation until such time as that documentation is provided.

65. "***Water Surface Elevation***" means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929, the North American Vertical Datum (NAVD) of 1988, or other datum, where specified, of floods of various magnitudes and frequencies in the floodplains of riverine areas.

ARTICLE III. GENERAL PROVISIONS

18-306. Application.

This Ordinance shall apply to all areas within the incorporated area of the City of Hendersonville, Tennessee.

18-307. Basis for Establishing the Areas of Special Flood Hazard.

The Areas of Special Flood Hazard identified on the City of Hendersonville, Tennessee, as identified by FEMA, and in its Flood Insurance Study (FIS) dated February 26, 2021, and Flood Insurance Rate Map (FIRM), Community Panel Numbers 47165C0394G, 47165C0401G, 47165C0402G, 47165C0403G, 47165C0404G, 47165C0406G, 47165C0407G, 47165C0408G, 47165C0409G, 47165C0411G, 47165C0412G, 47165C0413G, 47165C0414G, 47165C0416G, 47165C0418G, 47165C0476G, and 47165C0477G, dated April 17, 2012 and 47165C0383H, 47165C0384H, 47165C0391H, and 47165C0392H, dated February 26, 2021, along with all supporting technical data, are adopted by reference and declared to be a part of this Ordinance.

18-308. Requirement for Development Permit.

A development permit shall be required in conformity with this Ordinance prior to the commencement of any development activities.

18-309. Compliance.

No land, structure or use shall hereafter be located, extended, converted, or structurally altered without full compliance with the terms of this Ordinance and other applicable regulations.

18-310. Abrogation and Greater Restriction.

This Ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants or deed restrictions. However, where this Ordinance conflicts or overlaps with

another regulatory instrument, whichever imposes the more stringent restrictions shall prevail.

18-311. Interpretation.
In the interpretation and application of this Ordinance, all provisions shall be:
1. considered as minimum requirements;
2. liberally construed in favor of the governing body; and
3. deemed neither to limit nor repeal any other powers granted under Tennessee statutes.

18-312. Warning and Disclaimer of Liability.
The degree of flood protection required by this Ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This Ordinance does not imply that land outside the Areas of Special Flood Hazard or uses permitted within such areas will be free from flooding or flood damages. This Ordinance shall not create liability on the part of the City of Hendersonville, Tennessee or by any officer or employee thereof for any flood damages that result from reliance on this Ordinance, or any administrative decision lawfully made hereunder.

18-313. Penalties for Violation.
Violation of the provisions of this Ordinance or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variance shall constitute a misdemeanor punishable as other misdemeanors as provided by law. Any person who violates this ordinance or fails to comply with any of its requirements shall, upon adjudication, therefore, be fined as prescribed by Tennessee statutes, and in addition, shall pay all costs and expenses involved in the case. Each day such violation continues shall be considered a separate offense. Nothing herein contained shall prevent the City of Hendersonville, Tennessee from taking such other lawful actions to prevent or remedy any violation. Nothing herein contained shall prevent the City of Hendersonville, Tennessee from taking such other lawful actions to prevent or remedy any violation.

ARTICLE IV. ADMINISTRATION

18-314. Designation of Ordinance Administrator.
The Public Works Director is hereby appointed as the Administrator to implement the provisions of this Ordinance.

18-315. Permit Procedures.
Application for a development permit shall be made to the Administrator on forms furnished by the community prior to any development activities. The development permit may include but is not limited to the following: plans in duplicate drawn to scale and showing the nature, location, dimensions, and elevations of the area in question; existing

or proposed structures, earthen fill placement, storage of materials or equipment, and drainage facilities. Specifically, the following information is required:

1. Application stage
    a. Elevation in relation to mean sea level of the proposed lowest floor, including basement, of all buildings where Base Flood Elevations are available, or to certain height above the highest adjacent grade when applicable under this Ordinance.
    b. Elevation in relation to mean sea level to which any non-residential building will be floodproofed where Base Flood Elevations are available, or to certain height above the highest adjacent grade when applicable under this Ordinance.
    c. A FEMA Floodproofing Certificate from a Tennessee registered professional engineer or architect that the proposed non-residential floodproofed building will meet the floodproofing criteria in Article V, Sections 18-317 and 18-318.
    d. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
    e. A final Finished Construction Elevation Certificate (FEMA Form 086-0-33) is required after construction is completed and prior to Certificate of Compliance/Occupancy issuance. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of final as-built construction of the elevation of the reference level and all attendant utilities.
    f. In order to determine if improvements or damage meet the Substantial Improvement or Substantial Damage criteria, the applicant shall provide to the Floodplain Administrator a detailed cost to repair all damages and/or cost of improvements which includes the complete costs associated with all types of work necessary to completely repair or improve a building. These include the costs of all materials, labor, and other items necessary to perform the proposed work. These must be in the form of:
        i. An itemized cost of materials, and labor, or estimates of materials and labor that are prepared by licensed contractors or professional construction cost estimators.
        ii. Building valuation tables published by building code organizations and cost-estimating manuals and tools available from professional building cost-estimating services.
        iii. A qualified estimate of costs that is prepared by the local official using professional judgement and knowledge of local and regional construction costs.
        iv. A detailed cost estimate provided and prepared by the building owner. This must include as much supporting documentation as possible (such as pricing information from lumber companies, plumbing and electrical suppliers, etc). In addition, the estimate must include the value of labor, including the value of the owner's labor.

2. Construction Stage Within AE Zones, where Base Flood Elevation data is available, any lowest floor certification made relative to mean sea level shall be prepared by or under the direct supervision of, a Tennessee registered land surveyor and certified by same. The Administrator shall record the elevation of the lowest floor on the development permit. When floodproofing. is utilized for a non-residential building, said certification shall be prepared by, or under the direct supervision of, a Tennessee registered professional engineer or architect and certified by same.

   Within approximate A Zones, where Base Flood Elevation data is not available, the elevation of the lowest floor shall be determined as the measurement of the lowest floor of the building relative to the highest adjacent grade. The Administrator shall record the elevation of the lowest floor on the development permit. When floodproofing is utilized for a non-residential building, said certification shall be prepared by, or under the direct supervision of, a Tennessee registered professional engineer or architect and certified by same.

   For all new construction and substantial improvements, the permit holder shall provide to the Administrator an as-built certification of the lowest floor elevation or floodproofing level upon the completion of the lowest floor or floodproofing.

   Any work undertaken prior to submission of the certification shall be at the permit holder's risk. The Administrator shall review the above-referenced certification data. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further work being allowed to proceed. Failure to submit the certification or failure to make said corrections required hereby, shall be cause to issue a stop-work order for the project.
3. Finished Construction Stage A final Finished Construction Elevation Certificate is required after construction is completed and prior to Certificate of Compliance/Occupancy issuance. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of final as-built construction of the elevation of the reference level and all attendant utilities. The Administrator will keep the certificate on file in perpetuity.

18-316. Duties and Responsibilities of the Administrator.

Duties of the Administrator shall include, but not be limited to, the following:

1. Review all development permits to assure that the permit requirements of this Ordinance have been satisfied, and that proposed building sites will be reasonably safe from flooding.
2. Review proposed development to assure that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334.

3. Notify adjacent communities and the Tennessee Emergency Management Agency, State NFIP Office, prior to any alteration or relocation of a watercourse and submit evidence of such notification to FEMA.
4. For any altered or relocated watercourse, submit engineering data/analysis within six (6) months to FEMA to ensure accuracy of community FIRM's through the Letter of Map Revision process.
5. Assure that the flood carrying capacity within an altered or relocated portion of any watercourse is maintained.
6. Record the elevation, in relation to mean sea level or the highest adjacent grade, where applicable, of the lowest floor (including basement) of all new and substantially improved buildings, in accordance with Article IV, Section 18-315.
7. Record the actual elevation, in relation to mean sea level or the highest adjacent grade, where applicable to which the new and substantially improved buildings have been floodproofed, in accordance with Article IV, Section 18-315.
8. When floodproofing is utilized for a nonresidential structure, obtain certification of design criteria from a Tennessee registered professional engineer or architect, in accordance with Article IV, Section 18-315.
9. Where interpretation is needed as to the exact location of boundaries of the Areas of Special Flood Hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), make the necessary interpretation. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this Ordinance.
10. When Base Flood Elevation data and floodway data have not been provided by FEMA, obtain, review, and reasonably utilize any Base Flood Elevation and floodway data available from a Federal, State, or other sources, including data developed as a result of these regulations, as criteria for requiring that new construction, substantial improvements, or other development in Zone A on the City of Hendersonville, Tennessee FIRM meet the requirements of this Ordinance.
11. Maintain all records pertaining to the provisions of this Ordinance in the office of the Administrator and shall be open for public inspection. Permits issued under the provisions of this Ordinance shall be maintained in a separate file or marked for expedited retrieval within combined files.
12. A final Finished Construction Elevation Certificate (FEMA Form 086-0-33) is required after construction is completed and prior to Certificate of Compliance/Occupancy issuance. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of final as-built construction of the elevation of the reference level and all attendant utilities. The Floodplain Administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to Certificate of Compliance/Occupancy issuance. In some instances, another certification may be required to certify corrected as built construction. Failure to submit the certification or failure to make required corrections shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy. The Finished Construction Elevation Certificate certifier shall provide at least 2 photographs showing the front and rear of the building taken within

90 days from the date of certification. The photographs must be taken with views confirming the building description and diagram number provided in Section A. To the extent possible, these photographs should show the entire building including foundation. If the building has split-level or multi-level areas, provide at least 2 additional photographs showing side views of the building. In addition, when applicable, provide a photograph of the foundation showing a representative example of the flood openings or vents. All photographs must be in color and measure at least 3"x 3" Digital photographs are acceptable.

ARTICLE V. PROVISIONS FOR FLOOD HAZARD REDUCTION

18-317. General Standards.

In all areas of special flood hazard, the following provisions are required:

1. New construction and substantial improvements shall be anchored to prevent flotation, collapse, and lateral movement of the structure;
2. Manufactured homes shall be installed using methods and practices that minimize flood damage. They must be elevated and anchored to prevent flotation, collapse, and lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State of Tennessee and local anchoring requirements for resisting wind forces.
3. New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
4. New construction and substantial improvements shall be constructed by methods and practices that minimize flood damage;
5. All electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;
6. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
7. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;
8. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding;
9. Any alteration, repair, reconstruction, or improvements to a building that is in compliance with the provisions of this Ordinance, shall meet the requirements of "new construction" as contained in this Ordinance;
10. Any alteration, repair, reconstruction, or improvements to a building that is not in compliance with the provision of this Ordinance, shall be undertaken only if said non-conformity is not further extended or replaced;

11. All new construction and substantial improvement proposals shall provide copies of all necessary Federal and State permits, including Section 404 of the Federal Water Pollution Control Act amendments of 1972, 33 U.S.C. 1334;
12. All subdivision proposals and other proposed new development proposals shall meet the standards of Article V, Section 18-318;
13. When proposed new construction and substantial improvements are partially located in an area of special flood hazard, the entire structure shall meet the standards for new construction;
14. When proposed new construction and substantial improvements are located in multiple flood hazard risk zones or in a flood hazard risk zone with multiple Base Flood Elevations, the entire structure shall meet the standards for the most hazardous flood hazard risk zone and the highest Base Flood Elevation.

18-318. Specific Standards.

In all Areas of Special Flood Hazard, the following provisions, in addition to those set forth in Article V, Section 18-317, are required:

1. Residential Structures.

In AE Zones where Base Flood Elevation data is available, new construction and substantial improvement of any residential building (or manufactured home) shall have the lowest floor, including basement, elevated to no lower than two (2) feet above the Base Flood Elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate equalization of flood hydrostatic forces on both sides of exterior walls shall be provided in accordance with the standards of this section: "Enclosures".

Within approximate A Zones where Base Flood Elevations have not been established and where alternative data is not available, the administrator shall require the lowest floor of a building to be elevated to a level of at least three (3) feet above the highest adjacent grade (as defined in Article II). Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate equalization of flood hydrostatic forces on both sides of exterior walls shall be provided in accordance with the standards of this section: "Enclosures"

2. Non-Residential Structures.

In AE Zones, where Base Flood Elevation data is available, new construction and substantial improvement of any commercial, industrial, or non-residential building, shall have the lowest floor, including basement, elevated or floodproofed to no lower than two (2) feet above the level of the Base Flood Elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate equalization of flood hydrostatic forces on both sides of exterior walls shall be provided in accordance with the standards of this section: "Enclosures"

In approximate A Zones, where Base Flood Elevations have not been established and where alternative data is not available, new construction and substantial improvement of any commercial, industrial, or non-residential building, shall have the lowest floor, including basement, elevated or floodproofed to no lower than three (3) feet above the

highest adjacent grade (as defined in Article II). Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate equalization of flood hydrostatic forces on both sides of exterior walls shall be provided in accordance with the standards of this section: "Enclosures"

Non-Residential buildings located in all A Zones may be floodproofed, in lieu of being elevated, provided that all areas of the building below the required elevation are watertight, with walls substantially impermeable to the passage of water, and are built with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. A Tennessee registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the Administrator as set forth in Article IV, Section 18-315.

3. Enclosures.

All new construction and substantial improvements that include fully enclosed areas formed by foundation and other exterior walls below the lowest floor that are subject to flooding, shall be designed to preclude finished living space and designed to allow for the entry and exit of flood waters to automatically equalize hydrostatic flood forces on exterior walls.

a. Designs for complying with this requirement must either be certified by a Tennessee professional engineer or architect or meet or exceed the following minimum criteria.
    i. Provide a minimum of two openings having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding;
    ii. The bottom of all openings shall be no higher than one (1) foot above the finished grade;
    iii. Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwaters in both directions.
b. The enclosed area shall be the minimum necessary to allow for parking of vehicles, storage or building access.
c. The interior portion of such enclosed area shall not be finished or partitioned into separate rooms in such a way as to impede the movement of floodwaters and all such partitions shall comply with the provisions of Article V, Section 18-318.

4. Standards for Manufactured Homes and Recreational Vehicles.

a. All manufactured homes placed, or substantially improved, on:
    i. individual lots or parcels,
    ii. in expansions to existing manufactured home parks or subdivisions, or
    iii. in new or substantially improved manufactured home parks or subdivisions, must meet all the requirements of new construction.

b. All manufactured homes placed or substantially improved in an existing manufactured home park or subdivision must be elevated so that either:
    i. In AE Zones, with Base Flood Elevations, the lowest floor of the manufactured home is elevated on a permanent foundation to no lower than two (2) feet above the level of the Base Flood Elevation or
    ii. In approximate A Zones, without Base Flood Elevations, the manufactured home chassis is elevated and supported by reinforced piers (or other foundation elements of at least equivalent strength) that are at least three (3) feet in height above the highest adjacent grade (as defined in Article II).
c. Any manufactured home, which has incurred "substantial damage" as the result of a flood, must meet the standards of Article V, Sections 18-317 and 18-318.
d. All manufactured homes must be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
e. All recreational vehicles placed in an identified Special Flood Hazard Area must either:
    i. Be on the site for fewer than 180 consecutive days;
    ii. Be fully licensed and ready for highway use (a recreational vehicle is ready for highway use if it is licensed, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached structures or additions); or
    iii. The recreational vehicle must meet all the requirements for new construction.

5. Standards for Subdivisions and Other Proposed New Development Proposals.
Subdivisions and other proposed new developments, including manufactured home parks, shall be reviewed to determine whether such proposals will be reasonably safe from flooding.

a. All subdivision and other proposed new development proposals shall be consistent with the need to minimize flood damage.
b. All subdivision and other proposed new development proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.
c. All subdivision and other proposed new development proposals shall have adequate drainage provided to reduce exposure to flood hazards.
d. In all approximate A Zones require that all new subdivision proposals and other proposed developments (including proposals for manufactured home parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, include within such proposals Base Flood Elevation data (See Article V, Section 18-321).

18-319. Standards for Special Flood Hazard Areas with Established Base Flood Elevations and With Floodways Designated.

Located within the Special Flood Hazard Areas established in Article III, Section 18-307, are areas designated as floodways. A floodway may be an extremely hazardous area due to the velocity of floodwaters, debris or erosion potential. In addition, the area must remain free of encroachment in order to allow for the discharge of the base flood without increased flood heights and velocities. Therefore, the following provisions shall apply:

1. Encroachments are prohibited, including fill, new construction, substantial improvements, or other development within the adopted regulatory floodway. Development may be permitted however, provided it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the encroachment shall not result in any increase in flood levels or floodway widths during a base flood discharge. A registered professional engineer must provide supporting technical data and certification thereof;
2. A community may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that the applicant first applies for a conditional letter of map revision (CLOMR) and floodway revision, fulfills the requirements for such revisions as established under the provisions of § 65.12, and receives the approval of FEMA;
3. ONLY if Article V, Section 18-319, provisions (1) through (2) are satisfied, then any new construction or substantial improvement shall comply with all other applicable flood hazard reduction provisions of Article V, Section 18-317 and 18-318.

18-320. Standards for Areas of Special Flood Hazard Zones AE with Established Base Flood Elevations but Without Floodways Designated.

Located within the Special Flood Hazard Areas established in Article III, Section 18-307, where streams exist with base flood data provided but where no floodways have been designated (Zones AE), the following provisions apply:

1. Require until a regulatory floodway is designated, that no new construction, substantial, or other development, including fill shall be permitted within Zone AE on the community's FIRM, unless it is demonstrated through hydrologic and hydraulic analyses performed that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one (1) foot at any point within the community.
2. A community may permit encroachments within Zones AE on the community's FIRM, that would result in an increase in the water surface elevation of the base flood, provided that the applicant first applies for a conditional letter of map revision (CLOMR) and floodway revision, fulfills the requirements for such revisions as established under the provisions of§ 65.12, and receives the approval of FEMA;
3. ONLY if Article V, Section 18-320, provisions (1) through (2) are satisfied, then any new construction or substantial improvement shall comply with all other applicable flood hazard reduction provisions of Article V, Sections 18-317 and 18-318.

18-321. Standards for Streams Without Established Base Flood Elevations and Floodways (A Zones).

Located within the Special Flood Hazard Areas established in Article III, Section 18-307, where streams exist, but no base flood data has been provided and where a Floodway has not been delineated, the following provisions shall apply:

1. The Administrator shall obtain, review, and reasonably utilize any Base Flood Elevation and floodway data available from any Federal, State, or other sources, including data developed as a result of these regulations (see 2 below), as criteria for requiring that new construction, substantial improvements, or other development in approximate A Zones meet the requirements of Article V, Sections 18-317 and 18-318.
2. Require that all new subdivision proposals and other proposed developments (including proposals for manufactured home parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, include within such proposals Base Flood Elevation data.
3. Within approximate A Zones, where Base Flood Elevations have not been established and where such data is not available from other sources, require the lowest floor of a building to be elevated or floodproofed to a level of at least three (3) feet above the highest adjacent grade (as defined in Article II). All applicable data including elevations or floodproofing certifications shall be recorded as set forth in Article IV, Section 18-315. Openings sufficient to facilitate automatic equalization of hydrostatic flood forces on exterior walls shall be provided in accordance with the standards of Article V, Section 18-318.
4. Within approximate A Zones, where Base Flood Elevations have not been established and where such data is not available from other sources, no encroachments, including structures or fill material, shall be located within an area equal to the width of the stream or twenty feet (20), whichever is greater, measured from the top of the stream bank, unless certification by a Tennessee registered professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one (1) foot at any point within the City of Hendersonville, Tennessee. The engineering certification should be supported by technical data that conforms to standard hydraulic engineering principles.
5. New construction and substantial improvements of buildings, where permitted, shall comply with all applicable flood hazard reduction provisions of Article V, Sections 18-317 and 18-318. Within approximate A Zones, require that those subsections of Article V, Section 18-318 dealing with the alteration or relocation of a watercourse, assuring watercourse carrying capacities are maintained and manufactured homes provisions are complied with as required.

18-322. Standards for Areas of Shallow Flooding (Zone AO).

Located within the Special Flood Hazard Areas established in Article III, Section 18-307, are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one (1) to three (3) feet where a clearly defined channel

does not exist and where the path of flooding is unpredictable and indeterminate. In addition to Article V, Sections 18-317 and 18-318, all new construction and substantial improvements shall meet the following requirements:

1. The lowest floor (including basement) shall be elevated at least as high as the depth number specified on the Flood Insurance Rate Map (FIRM), in feet, plus a freeboard of one (1) foot above the highest adjacent grade; or at least three (3) feet above the highest adjacent grade, if no depth number is specified.
2. Non-residential structures may, in lieu of elevation, be floodproofed to the same level as required in Article V, Section 18-322.1. so that the structure, together with attendant utility and sanitary facilities, below that level shall be watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Certification is required in accordance with Article IV, Section 18-315.1.c. and Article V, Section 18-318.2.
3. Adequate drainage paths shall be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

18-323. Standards for Areas of Shallow Flooding (Zone AH).

Located within the Special Flood Hazard Areas established in Article III, Section 18-307, are areas designated as shallow flooding areas. These areas are subject to inundation by 1-percent-annual chance shallow flooding (usually areas of ponding) where average depths are one (1) to three (3) feet. Base Flood Elevations are derived from detailed hydraulic analyses are shown in this zone. In addition to meeting the requirements of Article V, Sections 18-317 and 18-318, all new construction and substantial improvements shall meet the following requirements:

1. Adequate drainage paths shall be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

18-324. Standards for Areas Protected by Flood Protection System (A-99 Zones).

Located within the Areas of Special Flood Hazard established in Article III, Section 18-307, are areas of the 100-year floodplain protected by a flood protection system but where Base Flood Elevations have not been determined. Within these areas (A-99 Zones) all provisions of Article IV and Article V shall apply.

18-325. Standards for Unmapped Streams.

Located within the Hendersonville, Tennessee, are unmapped streams where areas of special flood hazard are neither indicated nor identified. Adjacent to such streams, the following provisions shall apply:

1. No encroachments including fill material or other development including structures shall be located within an area of at least equal to twice the width of the stream, measured from the top of each stream bank, unless certification by a Tennessee registered professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated

development, will not increase the water surface elevation of the base flood more than one (1) foot at any point within the locality.

2. When a new flood hazard risk zone, and Base Flood Elevation and floodway data is available, new construction and substantial improvements shall meet the standards established in accordance with Articles IV and V.
3. ONLY if Article V, Section I, provisions (1) through (2) are satisfied, then any new construction and substantial improvement shall comply with all other applicable flood hazard reduction provisions of Article V, Sections 18-317 and 18-318.

ARTICLE VI. VARIANCE PROCEDURES

18-326. Municipal Board of Zoning Appeals.

1. Authority. The City of Hendersonville, Tennessee Municipal Board of Zoning Appeals shall hear and decide appeals and requests for variances from the requirements of this Ordinance.
2. Procedure. Meetings of the Municipal Board of Zoning Appeals shall be held at such times, as the Board shall determine. All meetings of the Municipal Board of Zoning Appeals shall be open to the public. The Municipal Board of Zoning Appeals shall adopt rules of procedure and shall keep records of applications and actions thereof, which shall be a public record. Compensation of the members of the Municipal Board of Zoning Appeals shall be set by the Board of Aldermen.
3. Appeals: How Taken. An appeal to the Municipal Board of Zoning Appeals may be taken by any person, firm or corporation aggrieved or by any governmental officer, department, or bureau affected by any decision of the Administrator based in whole or in part upon the provisions of this Ordinance. Such appeal shall be taken by filing with the Municipal Board of Zoning Appeals a notice of appeal, specifying the grounds thereof. In all cases where an appeal is made by a property owner or other interested party, a fee of One Hundred ($100.00) dollars for the cost of publishing a notice of such hearings shall be paid by the appellant. The Administrator shall transmit to the Municipal Board of Zoning Appeals all papers constituting the record upon which the appeal action was taken. The Municipal Board of Zoning Appeals shall fix a reasonable time for the hearing of the appeal, give public notice thereof, as well as due notice to parties in interest and decide the same within a reasonable time which shall not be more than thirty (30) days from the date of the hearing. At the hearing, any person or party may appear and be heard in person or by agent or by attorney.
4. Powers. The Municipal Board of Zoning Appeals shall have the following powers:
    a. Administrative Review. To hear and decide appeals where it is alleged by the applicant that there is error in any order, requirement, permit, decision, determination, or refusal made by the Administrator or other administrative official in carrying out or enforcement of any provisions of this Ordinance.
    b. Variance Procedures. In the case of a request for a variance the following shall apply:
        i. The City of Hendersonville, Tennessee Municipal Board of Zoning

Appeals shall hear and decide appeals and requests for variances from the requirements of this Ordinance.

ii. Variances may be issued for the repair or rehabilitation of historic structures as defined, herein, upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary deviation from the requirements of this Ordinance to preserve the historic character and design of the structure.

iii. In passing upon such applications, the Municipal Board of Zoning Appeals shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this Ordinance, and:

1. The danger that materials may be swept onto other property to the injury of others;
2. The danger to life and property due to flooding or erosion;
3. The susceptibility of the proposed facility and its contents to flood damage;
4. The importance of the services provided by the proposed facility to the community;
5. The necessity of the facility to a waterfront location, in the case of a functionally dependent use;
6. The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
7. The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
8. The safety of access to the property in times of flood for ordinary and emergency vehicles;
9. The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site;
10. The costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, water systems, and streets and bridges.

iv. Upon consideration of the factors listed above, and the purposes of this Ordinance, the Municipal Board of Zoning Appeals may attach such conditions to the granting of variances, as it deems necessary to effectuate the purposes of this Ordinance.

v. Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

18-327. <u>Conditions for Variances.</u>

1. Variances shall be issued upon a determination that the variance is the minimum relief necessary, considering the flood hazard and the factors listed in Article VI, Section 18-314.

2. Variances shall only be issued upon a showing of good and sufficient cause, a determination that failure to grant the variance would result in exceptional hardship; or a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisance, cause fraud on or victimization of the public, or conflict with existing local laws or Ordinances.
3. Any applicant to whom a variance is granted shall be given written notice that the issuance of a variance to construct a structure below the Base Flood Elevation will result in increased premium rates for flood insurance (as high as $25 for $100) coverage, and that such construction below the Base Flood Elevation increases risks to life and property.
4. The Administrator shall maintain the records of all appeal actions and report any variances to FEMA upon request.

ARTICLE VII. LEGAL STATUS PROVISIONS

18-328. Conflict with Other Ordinance.

In case of conflict between this Ordinance or any part thereof, and the whole or part of any existing or future Ordinance of the City of Hendersonville, Tennessee, the most restrictive shall in all cases apply.

18-329. Severability.

If any section, clause, provision, or portion of this Ordinance shall be held to be invalid or unconstitutional by any court of competent jurisdiction, such holding shall not affect any other section, clause, provision, or portion of this Ordinance which is not of itself invalid or unconstitutional. (Ord. 2017-16, April 2017; Ord. 2021-05, Feb. 2021)

Rev. 08/2024

CHAPTER 4

STORMWATER UTILITY

SECTION

18-401. POLICY
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18-407. STORMWATER USER'S FEES ESTABLISHED
18-408. EQUIVALENT RESIDENTIAL UNIT (ERU)
18-409. PROPERTY CLASSIFICATION FOR STORMWATER USER'S FEE
18-410. BASE RATE
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18-412. PROPERTY OWNERS TO PAY CHARGES
18-413. BILLING PROCEDURES AND PENALTIES FOR LATE PAYMENT
18-414. APPEAL OF FEES
18-415. CALCULATING STORMWATER USER FEES

18-401. Policy.

The Board of Mayor and Aldermen finds, determines, and declares that the stormwater system which provides for the collection, treatment, storage, and disposal of stormwater provides benefits and services to all property within the incorporated city limits. Such benefits include but are not limited to:

1. The provision of adequate systems of collection, conveyance, detention, treatment, and release of stormwater.
2. The reduction of hazards to property and life resulting from stormwater runoff.
    a. Improvements in general health and welfare through reduction of undesirable stormwater conditions.
    b. Improvements to the water quality in the stormwater and surface water system and its receiving waters.

18-402. Creation of Stormwater Utility.

For those purposes of the Federal Clean Water Act and of Tennessee Code Annotated, § 68-221-1101 et seq., there is created a stormwater utility which shall consist of a manager or director and such staff as the municipality's governing body shall authorize.

The stormwater utility shall be directed by the Public Works Director, who shall administer it through the City Design Engineer and Stormwater Coordinator.

The stormwater utility, under the legislative policy, supervision, and control of the governing body of the City, shall:

1. Administer the acquisition, design, construction, maintenance, and operation of the stormwater utility system, including capital improvements designated in the capital improvement program;
2. Administer and enforce this ordinance and all regulations and procedures adopted relating to the design, construction, maintenance, operation, and alteration of the utility stormwater system, including, but not limited to, the quantity, quality or velocity of the stormwater conveyed thereby;
3. Advise the municipality's governing body and other City departments on matters relating to the utility;
4. Prepare and revise a drainage plan for adoption by the municipality's governing body;
    a. Review plans and approve or deny, inspect, and accept extensions and connections to the system;
    b. Enforce regulations to protect and maintain water quality and quantity within the system in compliance with water quality standards established by state, regional or federal agencies as now adopted or hereafter amended;
    c. Annually analyze the cost of services and benefits provided, and the system and structure of fees, charges, civil penalties, and other revenues of the utility.

18-403. Definitions.

For the purpose of this ordinance, the following definitions shall apply: Words used in the singular shall include the plural, and the plural shall include the singular; words used in the present tense shall include the future tense. The word "shall" is mandatory and not discretionary. The word "may" is permissive. Words not defined in this section shall be construed to have the meaning given by common and ordinary use as defined in the latest edition of Webster's Dictionary.

1. "***Base rate***" means the stormwater user's fee for a detached single family residential property in the city.
2. "***Construction***" means the erection, building, acquisition, alteration, reconstruction, improvement or extension of stormwater facilities; preliminary planning to determine the economic and engineering feasibility of stormwater facilities; the engineering, architectural, legal, fiscal and economic investigations and studies, surveys, designs, plans, working drawings, specifications, procedures, and other action necessary in the construction of stormwater facilities; and the inspection and supervision of the construction of stormwater facilities;
3. "***Developed property***" means real property which has been altered from its natural state by the creation or addition of impervious areas, by the addition of any buildings, structures, pavement, or other improvements.

4. "***Equivalent residential unit***" or "***ERU***" means the average square footage of a detached single family residential property determined pursuant to this ordinance.
5. "***Exempt property***" means all properties of the federal, state, county, and city governments, and any of their divisions or subdivisions, and portions of property that does not discharge stormwater runoff into the stormwater or flood control facilities of the municipality.
6. "***Fee***" or "***Stormwater user's fee***" means the charge established under this ordinance and levied on owners or users of parcels or pieces of real property to fund the costs of stormwater management and of operating, maintaining, and improving the stormwater system in the municipality. The stormwater user's fee is in addition to any other fee that the municipality has the right to charge under any other rule or regulation of the municipality.
7. "***Fiscal year***" means July 1 of a calendar year to June 30 of the next calendar year, both inclusive.
8. "***Impervious surface***" means a surface which is compacted or covered with material that is resistant to infiltration by water, including, but not limited to, most conventionally surfaced streets, roofs, sidewalks, patios, driveways, parking lots, and any other oiled, graveled, graded, compacted, or any other surface which impedes the natural infiltration of surface water.
9. "***Impervious surface area***" means the number of square feet of horizontal surface covered by buildings, and other impervious surfaces. All building measurements shall be made between exterior faces of walls, foundations, columns or other means of support or enclosure.
10. "***Other developed property***" means a parcel of developed land that cannot be classified as a single-family residential property. Non-single-family residential properties include, but are not limited to, commercial properties, industrial properties, public buildings and other structures, storage buildings and storage areas covered with impervious surfaces, parking lots, parks, recreation properties, cemeteries, public and private schools, colleges and universities, churches, research stations, hospitals, healthcare and convalescent centers, airports, agricultural lands covered by impervious surfaces, and multiple dwelling unit residential properties that do not meet the definition of single-family residential property.
11. "***Person***" means any and all persons, natural or artificial, including any individual, firm, or association, and any municipal or private corporation organized or existing under the laws of this or any other state or country.
12. "***Property owner***" means the property owner of record as listed in the county's assessment roll. A property owner includes any individual, corporation, firm, partnership, or group of individuals acting as a unit, and any trustee, receiver, or personal representative.
13. "***Single-family residential property***" means a parcel of developed land which serves the primary purpose of providing residential housing for single families in individual dwelling units, where individual dwelling units are not located above or below other dwelling units. In single-family residential properties, a dwelling unit occupies the entire space from ground level to rooftop, regardless of the number of stories of the

unit. The term "single-family residential property" may include, but is not limited to, single-family residential detached homes, buildings that were originally constructed as single-family homes but were subsequently converted into multiple dwelling units within the original structure, mobile homes, and single-family attached homes (duplexes, triplexes, etc.), apartments, condominiums, and townhomes provided that individual dwelling units do not have other dwelling units located above or below.

14. "***Stormwater***" means stormwater runoff, snow melt runoff, surface runoff, street wash waters related to street cleaning or maintenance, infiltration, and drainage.
15. "***Stormwater management fund***" or "***fund***" means the fund created by this ordinance to operate, maintain, and improve the City's stormwater system.
16. "***Stormwater management***" means the planning, design, construction, regulation, improvement, repair, maintenance, and operation of facilities and programs relating to water, flood plains, flood control, grading, erosion, tree conservation, and sediment control.
17. "***Surface water***" includes waters upon the surface of the earth in bounds created naturally or artificially including, but not limited to, streams, other water courses, lakes, and reservoirs.
18. "***User***" shall mean the owner of record of property subject to the stormwater user's fee imposed by this ordinance.

18-404. Funding of the Stormwater Utility.

Funding for the stormwater utility's activities may include, but not be limited to, the following:

1. Stormwater user's fees.
2. Civil penalties and damage assessments imposed for or arising from the violation of the City's stormwater management ordinance.
3. Other funds or income obtained from federal, state, local, and private grants, or revolving funds, and from the Local Government Public Obligations Act of 1986 (Tennessee Code Annotated, Title 9, Chapter 21).

To the extent that the stormwater drainage fees collected are insufficient to construct needed stormwater drainage facilities, the cost of the same may be paid from such City funds as may be determined by the municipality's governing body.

18-405. Stormwater Fund.

All revenues generated by or on behalf of the stormwater utility shall be deposited in a stormwater utility fund and used exclusively for the stormwater utility.

18-406. Operating Budget.

The municipality's governing body shall adopt an operating budget for the stormwater utility each fiscal year. The operating budget shall set forth for such fiscal year the estimated revenues and the estimated costs for operations and maintenance, extension and replacement and debt service.

18-407. Stormwater User's Fee Established.

There shall be imposed on each and every developed property in the City, except exempt property, a stormwater user's fee, which shall be set from time to time by ordinance or resolution, and in the manner and amount prescribed by this ordinance.

Prior to establishing or amending user's fees, the municipality shall advertise its intent to do so by publishing notice in a newspaper of general circulation in the City at least thirty (30) days in advance of the meeting of the municipality's governing body which shall consider the adoption of the fee or its amendment.

18-408. Equivalent Residential Unit (ERU).

1. Establishment. There is established for purposes of calculating the stormwater user's fee the equivalent residential unit (ERU).
2. Definition. The ERU is the average square footage of a detached single family residential property.
3. Setting the ERU. The ERU shall be set by the municipality's governing body from time to time by ordinance or resolution.
4. Source of ERU. The municipality's governing body shall have the discretion to determine the source of the data from which the ERU is established, taking into consideration the general acceptance and use of such source on the part of other stormwater systems, and the reliability and general accuracy of the source. The municipality's governing body shall have the discretion to determine the impervious surface area of other developed property through property tax assessor's rolls or site examination, mapping information, aerial photographs, and other reliable information.

18-409. Property Classification for Stormwater User's Fee.

1. Property classifications. For purposes of determining the stormwater user's fee, all properties inthe City are classified into one of the following classes:
    a. Single family residential property;
    b. Other developed property; or
    c. Exempt property.
2. Single family residential fee. The municipality's governing body finds that the intensity of development of most parcels of real property in the municipality classified as single family residential is similar and that it would be excessively and unnecessarily expensive to precisely determine the square footage of the improvements (such as buildings, structures, and other impervious areas) on each such parcel. Therefore, all single-family residential properties in the City shall be charged a flat stormwater management fee, equal the base rate, regardless of the size of the parcel or the improvements.
3. Other developed property fee. The fee for other developed property (i.e., non- single-family residential property) in the municipality shall be the base rate multiplied by the numerical factor obtained by dividing the total impervious area (square feet) of the property by one ERU. The impervious surface area for other developed property is the square footage for the buildings and other improvements on the property. The minimum

stormwater management fee for other developed property shall equal the base rate for single family residential property.

4. Exempt property. There shall be no stormwater user's fee for exempt property.

18-410. Base Rate.

The municipality's governing body shall, by ordinance or resolution, establish the base rate for the stormwater user's fee. The base rate shall be calculated to ensure adequate revenues to fund the costs of stormwater management and to provide for the operation, maintenance, and capital improvements of the stormwater system in the City. The base rate for the stormwater user shall be $6.00 per month per ERU.

18-411. Adjustments to Stormwater User's Fees.

The stormwater utility shall have the right on its own initiative to adjust upward or downward the stormwater user's fees with respect to any property, based on the approximate percentage on any significant variation in the volume or rate of stormwater, or any significant variation in the quality of stormwater, emanating from the property, compared to other similar properties. In making determinations of the similarity of property, the stormwater utility shall take into consideration the location, geography, size, use, impervious area, stormwater facilities on the property, and any other factors that have a bearing on the variation.

18-412. Property Owner's to Pay Charges.

The owner of each non-exempt lot or parcel shall pay the stormwater user's fees and charges as provided in this ordinance.

18-413. Billing Procedures and Penalties for Late Payment.

1. Rate and collection schedule. The stormwater user's fee must be set at a rate, and collected on a schedule, established by ordinance.
2. Delinquent bills. The stormwater user's fee shall be paid in person or by mail at The City of Hendersonville, Public Works Department, 101 Maple Drive North, Hendersonville, TN 37075 and shall become delinquent as of 28 days following the billing.
3. Penalties for late payment. Stormwater user's fees shall be subject to a late fee of $50. The municipality shall be entitled to recover fees incurred in collecting delinquent drainage fees. Any charge due under this ordinance which shall not be paid may be recovered at law by the municipality.
4. Mandatory statement. Pursuant to Tennessee Code Annotated § 68-221-1112, each bill that shall contain stormwater user's fees shall contain the following statement in bold:

THIS FEE HAS BEEN MANDATED BY CONGRESS

18-414. Appeals of Fees.

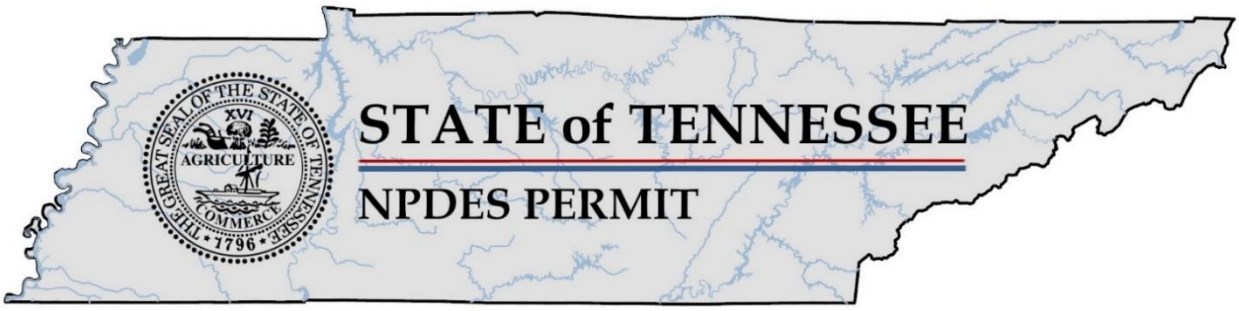
1. General. Any person who disagrees with the calculation of the stormwater user's fee, as provided in this ordinance, or who seeks a stormwater user's fee adjustment based upon stormwater management practices, may appeal such fee determination to the

Citizens Stormwater Appeals Board within thirty (30) days from the date of the last bill containing stormwater user's fees charges. Any appeal shall be filed in writing and shall state the grounds for the appeal. The Citizens Stormwater Appeals Board may request additional information from the appealing party.

2. Adjustments. Stormwater user's fee adjustments for stormwater management practices may be considered for: reductions in runoff volume including discharge to non-city drainage system; and properly designed constructed and maintained existing retention facilities, i.e. evaporation and recharge. Based upon the information provided by the utility and the appealing party, the Citizens Stormwater Appeals Board shall make a final calculation of the stormwater drainage fee. The Citizens Stormwater Appeals Board shall notify the parties, in writing, of its decision.
(Ord. 2017-42, Feb. 2018;Ord. 2021-17, May 2021)

APPENDIX N

SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS PERMIT (TNS000000)



National Pollutant Discharge Elimination System (NPDES)
From

Small Municipal Separate Storm Sewer Systems

Permit Number TNS000000

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issued by the

Department of Environment and Conservation
Division of Water Resources
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

Under authority of the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.) and the delegation of authority from the United States Environmental Protection Agency under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (33 U.S.C. 1251, et seq.) and the Water Quality Act of 1987, P.L. 100-4, operators of small municipal separate storm sewer systems are authorized to discharge stormwater runoff into waters of the State of Tennessee in accordance with the various eligibility criteria, administrative procedures, program requirements, reporting requirements, etc. set forth herein

This permit shall become effective on:	**April 1, 2024**
This permit shall expire on:	**August 31, 2027**
Issuance date:	**March 22, 2024**

for Jennifer Dodd
Director

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PART 1

1. COVERAGE UNDER THIS PERMIT

1.1. PERMIT AREA

This permit covers the entire State of Tennessee.

1.2. LIST OF THE DIVISION'S ENVIRONMENTAL FIELD OFFICES AND CORRESPONDING COUNTIES

EFO Name	Division of Water Resources Environmental Field Office Address[1]	List of Counties
Chattanooga	1301 Riverfront Parkway, Suite 206 Chattanooga, TN 37402 (423) 634-5745	Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, Sequatchie
Columbia	1421 Hampshire Pike Columbia, TN 38401 (931) 380-3371	Bedford, Coffee, Franklin, Giles, Hickman, Lawrence, Lewis, Lincoln, Marshall, Maury, Moore, Perry, Wayne
Cookeville	1221 South Willow Ave Cookeville, TN 38506 (931) 520-6688	Cannon, Clay, Cumberland, DeKalb, Fentress, Jackson, Macon, Overton, Pickett, Putnam, Smith, Trousdale, Van Buren, Warren, White
Jackson	1625 Hollywood Drive Jackson, TN 38305-2222 (731) 512-1300	Benton, Carroll, Chester, Crockett, Decatur, Dyer, Gibson, Hardin, Haywood, Henderson, Henry, Lake, Lauderdale, McNairy, Madison, Obion, Weakly
Johnson City	2305 Silverdale Rd Johnson City, TN 37601 (423) 854-5400	Carter, Greene, Hancock, Hawkins, Johnson, Sullivan, Unicoi, Washington
Knoxville	3711 Middlebrook Pike Knoxville, TN 37921 (865) 594-6035	Anderson, Blount, Campbell, Claiborne, Cocke, Grainger, Hamblen, Jefferson, Knox, Loudon, Monroe, Morgan, Roane, Scott, Sevier, Union
Memphis	8383 Wolf Lake Drive Bartlett, TN 38133-4119 (901) 371-3000	Fayette, Hardeman, Shelby, Tipton

[1] Contact information is correct at the time of issuance. See the Department's webpage for changes https://www.tn.gov/environment/contacts/about-field-offices.html

EFO Name	Division of Water Resources Environmental Field Office Address[1]	List of Counties
Nashville	711 R.S. Gass Boulevard Nashville, TN 37216 (615) 687-7000	Cheatham, Davidson, Dickson, Houston, Humphreys, Montgomery, Robertson, Rutherford, Stewart, Sumner, Williamson, Wilson
Nashville Central Office	William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue 11th Floor Nashville, TN 37243	Statewide – until 4/15/2024
Nashville Central Office	500 James Robertson Pkwy 9th Floor Nashville, TN 37243	Statewide – after 4/16/2024

All Environmental Field Offices (EFOs) may be reached by telephone at the toll-free number 1-888-891-8332.

1.3. ELIGIBILITY

1.3.1. Authorization to Discharge

This permit authorizes discharges of stormwater from small municipal separate storm sewer systems (MS4s), as defined in 40 C.F.R. § 122.26(b)(16). The permittee is authorized to discharge under the terms and conditions of this general permit if the permittee:

Operates a small MS4 within the permit area described in subpart 1.1;

Is not a "large" or "medium" MS4 as defined in 40 C.F.R. § 122.26(b)(4) or (7);

Is located fully or partially within an urban area with a population of 50,000 or more people as determined by the latest decennial census by the United States Census Bureau; or

Is designated for permit authorization by the Division of Water Resources (the Division) pursuant to 40 C.F.R. § 122.32; and

Submits a complete Notice of Intent (NOI) in accordance with part 2 of this permit and receive a Notice of Coverage (NOC).

1.3.2. Area of MS4 Authorized

Where a city, town, county, or non-traditional MS4 (such as a college or university) is covered under this permit, this permit covers all portions and areas operated by the city, town, or non-traditional MS4. Where a county is covered under this permit, the permit covers the urban area with a population of 50,000 or more people of the county and any additional portions of the county, or the whole county, as shall be indicated on the Notice of Intent.

1.3.3. Types of Authorized Discharges

1.3.3.1. Stormwater Discharges

This permit authorizes stormwater discharges to waters of the state from the small MS4s identified in section 1.3.1, except as excluded in subpart 1.4.

1.3.3.2. Non-stormwater Discharges

The permittee is authorized to discharge the following non-stormwater sources provided that the permittee has not determined these sources to be significant contributors of pollutants to the MS4:

- Water line flushing
- Landscape irrigation
- Diverted stream[2] flows
- Rising ground waters
- Uncontaminated groundwater infiltration (Infiltration is defined as water other than wastewater that enters a sewer system, including sewer service connections and foundation drains, from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow.)
- Uncontaminated pumped groundwater
- Discharges from potable water sources
- Foundation drains
- Air conditioning condensate
- Irrigation water
- Springs

[2] "Stream" as defined by TCA 69-3-103(38) ("stream" means a surface water that is not a wet weather conveyance).

- Water from crawl space pumps
- Footing drains
- Lawn watering
- Individual residential car washing
- Flows from riparian habitats and wetlands
- Dechlorinated swimming pool discharges
- Street wash water
- Discharges or flows from firefighting activities.

1.4. LIMITATIONS ON COVERAGE

This permit does not authorize:

Discharges that are mixed with sources of non-stormwater unless such non-stormwater discharges are covered under an NPDES permit.

Permitted stormwater discharges associated with industrial activity as defined in 40 C.F.R. 122.26(b)(14). Stormwater discharges from certain construction related industrial activities, as defined along with other construction activities in this permit, are excluded from this limitation.

Discharges not protective of aquatic or semi-aquatic threatened and endangered species, species deemed in need of management or special concern species - Discharges or discharge-related activities that are likely to jeopardize the continued existence of listed or proposed threatened or endangered aquatic species, or their critical habitat, under the Endangered Species Act (ESA), or other applicable state law or rule. Discharges or conducting discharge-related activities that will cause a prohibited "take" of federally listed aquatic species (as defined under Section 3 of the ESA and 50 C.F.R. §17.3) unless such take is authorized under Sections 7 or 10 of the ESA. Discharges or conducting discharge-related activities that will cause a prohibited "take" of state listed aquatic species[3], unless such take is authorized under the provisions of T.C.A. § 70-8-106(e).

Discharges that would cause or contribute to an in-stream exceedance of water quality standards.

[3] As defined in the Tennessee Wildlife Resources Commission Proclamation, Endangered or Threatened Aquatic Species, and in the Tennessee Wildlife Resources Commission Proclamation, Wildlife in Need of Management.

Discharges of stormwater-borne pollutants at levels that would be in violation of a specific wasteload allocation (WLA) applicable to MS4 permits and as defined in the implementation plan contained in an EPA approved or established Total Maximum Daily Load.

Discharges of materials resulting from a spill within the jurisdiction of the MS4, except emergency discharges required to prevent imminent threat to human health or to prevent severe property damage, provided reasonable and prudent measures have been taken to minimize the impact of the discharges.

Discharges that do not comply with the Division's antidegradation policy for water quality standards, pursuant to the Rules of the Tennessee Department of Environment and Conservation (TDEC), Subchapter 0400-40-03-.06, titled "Tennessee Antidegradation Statement."

1.5. OBTAINING AUTHORIZATION

To be authorized to discharge stormwater from a small MS4, the entity that owns and operates the MS4 must submit an NOI (Electronic submittal is required via https://forms.tdec.tn.gov/) in accordance with part2. The NOI must be signed and dated in accordance with subpart 7.11of this permit.

If the Division notifies dischargers of other NOI form options that become available at a later date (e.g., differing platform or paper submission of forms), the permittee may take advantage of those options to satisfy the submittal requirements of part 2.

Dischargers who submit an NOI in accordance with the requirements of this permit are authorized to discharge stormwater from small MS4s under the terms and conditions of this permit as of the effective date of coverage given in the NOC. The Division may deny coverage under this permit and require submittal of an application for an individual NPDES permit based on a review of the NOI or other information (see subpart 7.11).

Where the operator changes, or where a new operator is added after submittal of an NOI under part 2, a new NOI must be submitted in accordance with part 2 prior to the change or addition.

PART 2

2. NOTICE OF INTENT REQUIREMENTS

2.1. DEADLINES FOR NOTIFICATION

If the Division designates a municipality or nontraditional MS4 as a small MS4, the designee is required to submit a NOI to the Division within 180 days of notice. Existing permittees must submit an NOI within 90 days of September 1, 2022.

The permittee is not prohibited from submitting an NOI after the dates provided above. If a late NOI is submitted, the authorization is only for discharges that occur after permit coverage is granted. The Division may take appropriate enforcement actions for any unpermitted discharges.

2.2. WHERE AND HOW TO SUBMIT NOTICE OF INTENT

2.2.1. Electronic Submittal

The NOI shall be submitted electronically via MyTDEC Forms and must conform to the signatory requirements in subpart 7.11. unless a waiver is granted in accordance with 40 C.F.R. 127.15 (see subpart 6.2).

MyTDEC Forms may be found at the following link
https://forms.tdec.tn.gov/

2.2.2. Hard Copy Option

Only after a waiver (see subpart 6.2) is approved by the Division, a hard copy of the NOI, signed in accordance with the signatory requirements of subpart 7.11of this permit, may be mailed to the address shown in subpart 1.2 for the Nashville Central Office.

PART 3

3. SPECIAL CONDITIONS

3.1. DISCHARGES TO WATERBODIES WITH UNAVAILABLE PARAMETERS OR EXCEPTIONAL TENNESSEE WATERS

Using the most current 303(d) list published on the Division's website along with the GIS mapping tool, the permittee must determine whether it discharges stormwater into streams with unavailable parameters (previously referred to as impaired streams) for nutrients, pathogens, siltation, or other parameters related to stormwater runoff from an urban area with a population of 50,000 or more people or to streams designated as Exceptional Tennessee Waters (ETW). The Stormwater Management Program (Stormwater Management Program) must include a description of the Best Management Practices (BMPs) the permittee will use to control discharges to such streams to the Maximum Extent Practicable (MEP). The Division may require a Corrective Action Plan (CAP) if discharges from the MS4 are determined to cause or contribute to an in-stream exceedance of water quality standards or may require the permittee to obtain coverage under an individual permit per subpart 7.16.

For waters with unavailable parameters, the permittee must determine whether a Total Maximum Daily Load (TMDL) has been established and approved by EPA. A list of EPA-Approved TMDLs as well as EPA-Established TMDLs for Tennessee waters can be found on the Division's website.

3.1.1. Discharges into Waterbodies with EPA-Approved or Established TMDLs

The permittee must implement stormwater pollutant reductions consistent with the assumptions and requirements of any applicable WLA(s) in TMDLs established or approved by EPA. If a TMDL is applicable, the Stormwater Management Program must include Best Management Practices (BMPs) specifically targeted to achieve the reductions prescribed by the TMDL. The Stormwater Management Program must also contain a monitoring and/or evaluation component to assess the effectiveness of the BMPs in achieving the reductions, and overall compliance with the standard of the Maximum Extent Practicable (MEP). Monitoring can entail a number of activities, including but not limited to: outfall monitoring, instream monitoring or modeling. Monitoring requirements are further described in subpart 4.6 of this permit.

No later than 180 days following a newly approved or established TMDL, the Stormwater Management Program must be revised to include BMPs specifically targeted to achieve the reductions prescribed by the TMDL.

3.1.2. Discharges to Waterbodies with Unavailable Parameters without TMDLs

For the discharge of nutrients, pathogens, siltation, or other parameters related to stormwater runoff from an urban area with a population of 50,000 or more people into a receiving water which has been identified according to subpart 3.1 as having unavailable parameters but not covered by a TMDL, the permittee must document in its Stormwater Management Program how the BMPs will address the discharge of these pollutants. Compliance with this section shall be demonstrated through a monitoring component to assess the effectiveness of the BMPs in controlling the discharge of these pollutants. This component must also be included in the Stormwater Management Program. Monitoring can entail several activities including but not limited to: outfall monitoring, in-stream monitoring and/or modeling. Monitoring requirements are further described in subpart 4.6 of this permit.

3.2. CO-PERMITTEES AND COORDINATED PROGRAMS

3.2.1. Co-permittees

The MS4 jurisdiction may be covered under this general permit as a co-permittee with one or more other, neighboring MS4 jurisdictions. Co-permittees may submit an NOI at any time during the term of this permit.

3.2.2. Requirements in order to be permitted as co-permittees

a. Responsible officials of each participating jurisdiction must sign and submit a single NOI that includes:
   1. A list of all co-permittees covered under the NOI;
   2. A description of where (on which co-permittee) the accountability falls (whole or in part) for each portion of the Stormwater Management Program (Stormwater Management Program). The description shall assign clear and distinct accountability to the co-permittees involved as to who is response for what permit compliance issues, who is to develop what portions of a Stormwater Management Program, and who is to implement what portions of the Stormwater Management Program; and

3. Any necessary agreements, contracts, memorandums of understanding or other legal documents between co-permittees that govern the implementation and operations of the Stormwater Management Program.

b. Either multiple Minimum Control Measures (MCMs) in part must be developed, implemented, and enforced among all co-permittees or at least one MCM in whole must be developed, implemented, and enforced among all co-permittees; and

c. Legal mechanisms (e.g. ordinances, resolutions etc.) for shared components must contain the same verbiage for those shared components.

3.2.3. Co-Permittee Liabilities

a. Each co-permittee is individually liable for:

1. Permit compliance for discharges within its legal jurisdiction;
2. Implementing the six minimum measures (see subpart 4.2) in portions of the jurisdiction where it is the operator and in areas within its legal jurisdiction; and
3. If any permit conditions are established for specific portions of the MS4, co-permittees need only comply with the permit conditions relating to those portions of the MS4 for which they are the operator.

b. Each co-permittee is jointly liable for compliance with annual reporting requirements, except that a co-permittee is individually liable for any parts of the annual report that relate exclusively to portions of the MS4 where it is the operator.

c. Co-permittees are jointly liable for permit compliance on portions of the MS4 as follows:

1. Where operational or Stormwater Management Program implementation authority over portions of the MS4 has been transferred from one co-permittee to another in accordance with legally binding interagency agreements, both the owner and operator may be jointly liable for permit compliance on those portions of the MS4; and

2. Where one or more co-permittees jointly own or operate a portion of the MS4, each owner/operator is jointly liable for compliance with permit conditions on the shared portion of the MS4.

3.2.4. Coordinated Programs

Implementation of one or more of the minimum control measures (MCMs) described in subpart 4.2 may be shared with another entity, or the entity may fully take over the measure. The permittee may rely on another entity only if:

a. The particular control measure, or component of that measure, is at least as stringent as the corresponding permit requirement; and

b. The other entity agrees to implement the control measure on the permittee's behalf. Written acceptance of this obligation is required. This obligation must be maintained as part of the description of the Stormwater Management Program. If the other entity agrees to report on the minimum measure, the permittee must supply the other entity with the reporting requirements contained in subpart 5 of this permit. If the other entity fails to implement the control measure on the permittee's behalf, then the permittee remains liable for any discharges due to that failure to implement.

PART 4

4. STORMWWATER MANAGEMENT PROGRAM

4.1. REQUIREMENTS

The permittee must continue to develop, implement, and enforce a Stormwater Management Program (the Program) as described below and according to 40 C.F.R. §§ 122.30 – 122.37 to protect water quality and to satisfy the appropriate water quality requirements of the CWA. The Program shall include engineering methods, system design, control techniques and/or management practices appropriate for the control of pollutants of concern. The elements of the Program must be documented by the permittee in a Stormwater Management Program (Stormwater Management Program). The Program must be reviewed periodically in accordance with subpart 4.6.2. and in conjunction with the requirements found Parts 4 and 5 of this permit. Changes to the Program required by this permit must be completed within 180 days of the effective date of the notice of coverage unless otherwise specified. Changes to the Stormwater Management Program must be approved and documented according to subpart 4.4.

The Stormwater Management Program shall minimize the discharge of pollutants to the maximum extent practicable (MEP) and shall not cause or contribute to violations of State water quality criteria of the receiving streams in stormwater runoff the MS4 system.

The Stormwater Management Program must include the following information documented in a written plan for each of the program elements described in this part:

a. A detailed written document(s) that describes in detail how the permittee intends to comply with the permit's requirements;

b. A detailed narrative description of the BMPs, programs and processes that the permittee or other entity will implement for each of the stormwater control minimum measures;

c. The measurable goals for each of the BMPs including, as appropriate, the months and years in which the permittee will undertake required actions, including interim milestones and the frequency of the action;

d. Identify by name, job title, or department those with the responsibility for implementing or coordinating the Program elements in the Stormwater Management Program; and

e. Specific elements detailed in each subpart of this Part.

The Stormwater Management Program must include mechanism(s) for documenting and tracking compliance to this permit.

Implementation and enforcement of the BMPs consistent with the Stormwater Management Program as documented in the respective plans as well as compliance with provisions of this permit, including reporting and monitoring requirements, constitutes compliance with the standard of reducing pollutants to the MEP.

4.1.1. Newly Permitted MS4 Jurisdictions

Permittees that have not been previously covered under an MS4 permit must develop and fully implement the program within five years from the issuance date of this permit except for the following:

Permit requirement	Description	Implementation date
4.2.5.1d	Submit implementation plan for permanent stormwater management program	90 days from the Effective Date of the Notice of Coverage
4.2.5.5a	Within one year of obtaining initial permit coverage, newly permitted programs shall review local codes and ordinances using the EPA Water Quality Scorecard	A completed copy of the Scorecard shall be submitted with the subsequent annual report
4.6.1.1.2	*Only Required if Option 2 is selected*. A proposed alternate monitoring plan must be submitted to the Nashville Central Office at Water.Permits@tn.gov	24 months from the Effective Date on the Notice of Coverage
Legal Authority e.g. Ordinance Updates	All updates to the legal authority required by changes to this permit shall be fully implemented and adopted (as applicable)	As soon as possible in conjunction with the permanent stormwater legal authority (not to exceed 24 months from the Effective Date on the Notice of Coverage)
4.2.5	Implementation of permanent stormwater management program	Either the effective date of the notice of coverage or as specified in the implementation plan (not to exceed 24 months from the Effective Date of the Notice of Coverage)

4.1.2. Previously Permitted MS4 Jurisdictions

Renewing permittees shall continue to implement the existing program and all changes to the Stormwater Management Program and written documentation or "plans" required by this permit must be completed within 12 months of the effective date of the notice of coverage with the exception of the following:

Permit requirement	Description	Implementation date
Legal Authority e.g. Ordinance Updates	All updates to the legal authority required by changes to this permit shall be fully implemented and adopted (as applicable)	As soon as possible in conjunction with the permanent stormwater legal authority (not to exceed 24 months from September 1, 2022)
4.2.4	Modifications to ordinance or other regulatory mechanism for construction site runoff pollutant control program consistent with requirements of the NPDES general permit for construction stormwater runoff effective October 1, 2021.	Changes to regulatory mechanisms and implementation into the construction site runoff pollutant control program within 24 months from September 1, 2022
4.2.4	Modifications to ordinance or other regulatory mechanism for construction site runoff pollutant control program consistent with requirements of NPDES general permit for construction stormwater runoff with an effective date after September 30, 2026.	Changes to regulatory mechanisms and implementation into the construction site runoff pollutant control program within 18 months of the effective date of the NPDES general permit for construction stormwater runoff
4.2.5	Implementation of permanent stormwater management program	Either the effective date of the notice of coverage or as specified in the implementation plan (not to exceed 24 months from September 1, 2022)
4.2.5.1d	Submit Implementation plan for permanent stormwater management program	90 days from September 1, 2022
4.6.1.1.2	Only Required if Option 2 is selected. A proposed alternate monitoring plan must be submitted to the Nashville Central Office at Water.Permits@tn.gov	24 months from September 1, 2022

Compliance schedules, once established, remain in effect regardless of new permit cycles, unless specifically indicated by the Division.

4.2. MINIMUM CONTROL MEASURES

The Stormwater Management Program shall include the following minimum control measures:

4.2.1. Public Education and Outreach on Stormwater Impacts

Permittees shall develop and implement an education and outreach program that includes public education and outreach on stormwater impacts as a component of the stormwater management program. The objective of this program is to reduce or eliminate behaviors and practices that cause or contribute to the impacts of stormwater discharges on water bodies and the steps that the audiences can take to reduce pollutants in stormwater runoff to the maximum extent practicable. This program will be designed to reach three major audiences, (1) the public (4.2.1.1), (2) engineering and development community (4.2.1.2), and (3) employees (4.2.1.3). The program shall include the following at a minimum:

The Public Information and Education (PIE) plan shall include:

a. Specific public information/education activities that are designed to meet the management measure;
b. Identification of job categories and applicable management measures for employee education (see subpart 4.2.1.3);
c. Schedule/calendar of events for each year; and
d. Methodology to evaluate components to assess overall effectiveness and the need for improvement.

4.2.1.1. Public

Management Measure:

Conduct activities as described in the PIE plan targeted to address the following issues:

a. General awareness of the impacts on water quality;
b. Awareness of the importance of maintenance activities for operators of permanent Best Management Practices (BMPs)/Stormwater Control Measures (SCMs);
c. Awareness of the proper storage, use, and disposal of pesticides, herbicides, fertilizers oil and other automotive-related fluids; and
d. Awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.

<table>
<tr><th colspan="2">Measurable Goals</th><th>Annual Report Requirement</th></tr>
<tr><td colspan="2">Permittees must conduct and/or sponsor a minimum number of activities (as identified below) that address each of issues identified under “management measures” every reporting year.</td><td rowspan="5">- Total Number of activities conducted

Provide the details of each activity including:
- description;
- date;
- management measures addressed;
- specifically targeted audience and;
- approximate number of that audience that was reached.

For sponsored activities only:
-Identify if the event sponsored monetarily or as a donation in kind</td></tr>
<tr><td>MS4 Population at NOI submittal</td><td>Minimum Number of activities conducted</td></tr>
<tr><td>Population ≤10,000</td><td>Per 5 year permit term 2</td></tr>
<tr><td>10,001 ≤ Population ≤25,000</td><td>Per each reporting year 1</td></tr>
<tr><td>25,001 ≤ Population ≤ 50,000</td><td>Per each reporting year 3</td></tr>
<tr><td>Population greater than or equal to 50,001</td><td>Per each reporting year 6</td></tr>
</table>

4.2.1.2. Engineering and Development Community

Management Measure:

Conduct activities as described in the PIE plan targeted to address the following issues:

a. Awareness of the stormwater ordinances, regulations, and guidance materials related to long-term water quality impacts; and

b. Awareness of stormwater ordinances, regulations, and guidance materials related to construction phase water quality impacts.

<table>
<tr><th colspan="2">Measurable Goals</th><th>Annual Report Requirement</th></tr>
<tr><td colspan="2">Permittees must conduct or sponsor a minimum number of activities (as identified below) that address each of issues identified under “management measures” every reporting year.</td><td rowspan="4">- Total Number of activities conducted

Provide the details of each activity including:
- description;
- date;
- management measures addressed;
- specifically targeted audience and;
- approximate number of that audience that was reached.</td></tr>
<tr><td>MS4 Population at NOI submittal</td><td>Minimum Number of activities conducted</td></tr>
<tr><td>Population ≤10,000</td><td>Per 5 year permit term 1</td></tr>
<tr><td>10,001 ≤ Population ≤25,000</td><td>Per 5 year permit term 2</td></tr>
</table>

Measurable Goals		Annual Report Requirement
25,001 ≤ Population ≤ 50,000	Per each reporting year 1	
Population greater than or equal to 50,001	Per each reporting year 2	

4.2.1.3. Employees

The target audience for municipal, county, educational (college or university), military, and other public employees is dependent on job function and duty location.

Management Measure:
Conduct activities as described in the PIE plan targeted to address the following issues:

a. Awareness of water quality impacts from daily operations;
b. Pollution Prevention and Good Housekeeping (see subpart 4.2.6); and
c. The awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer diversions or seepages, spills, etc.(see subpart 4.2.3e)

Measurable Goals	Annual Report Requirement
Permittees must educate all employees as identified by job category in the PIE plan. New employees must be trained within six months of their employment or movement into an applicable job category. All responsible employees must receive training and/or retraining within the permit term. to address the issues identified under "management measures"	- For employees that are new to the MS4 or new to the job category: provide the total number of employees NOT educated in accordance with the PIE plan within 6 months - For existing employees: provide the total number of employees NOT educated in accordance with the PIE plan within the permit term.

4.2.2. Public Involvement/Participation

Permittees must develop and implement a program for public involvement and participation as a component of the stormwater management program. The objective is to promote, publicize, and facilitate citizen's participation in the development and implementation of the stormwater management program in order to reduce the discharge of pollutants to the maximum extent practicable. This program will be designed to reach two major audiences: (1) the general public (4.2.2.1), and (2) the commercial and industrial community (4.2.2.2). This program must include the following at a minimum:

a. Specific public involvement/participation activities that are designed to meet the management measures;
b. Schedule/calendar of events for each year;
c. Methodology to evaluate components to assess overall effectiveness and the need for improvement;
d. A mechanism for citizen reporting of illegal spillage, dumping, or otherwise illicit disposal of materials into the MS4 system;
e. Publicity plan for public involvement and participation opportunities by methods designed to reach the intended audience;
f. Permittees shall create opportunities for the public to participate in the decision-making processes for developing, implementing, and updating the Stormwater Management Program;
g. Mechanisms, procedures, and processes for public access to information on new development and redevelopment projects and receiving and considering comments from the public on those new development and redevelopment projects (See subpart 4.2.4);
h. Develop and implement a public notice process in accordance with subpart 4.4.1; and
i. Permittees shall track and maintain records of public involvement and participation opportunities.

Management Measure	Measurable Goals	Annual Report Requirement
Provide public access to the Stormwater Management Program records, including a written description of the Stormwater Management Program, available to the public at reasonable times during regular business hours	Make written description of Stormwater Management Program (e.g. plans) Either - Available on the MS4's webpage Or - (For MS4 without webpage) make available through the MS4's public records review process	Provide the web address for the Stormwater Management Program plan documentation or Provide a brief description of the public records request process
Develop and implement a formal public notice process including - documenting and responding to public comments - mechanism to identify major modification to the Stormwater Management Program that require a formal public notice process (see subpart 4.4.1)	Prior to the Second annual report due date complete the formal public notice process for the entire Stormwater Management Program including response to comments. For subsequent years, formal public notice is required only when major changes (see subpart 4.4.1) are made to the Stormwater Management Program	- For years when the program <u>is</u> required to be formally placed on public notice, a copy of the public notice and response to comments shall be submitted with the annual report. Or - For years when the program <u>is not</u> formally placed on public notice, indicate as such in the annual report. - Detail applicable changes as directed in subpart 4.4.1
Mechanisms, procedures, and processes for public access to information on projects and receiving and considering	- Information for 100% of all construction site projects (see subpart 4.2.4) is accessible to the public	Yes/No Is information for all construction site projects accessible to the public?

Management Measure	Measurable Goals	Annual Report Requirement
comments from the public on those projects. See subpart 4.2.4	- 100% of all comments from the public construction site projects (see subpart 4.2.4) are considered in accordance with the Stormwater Management Program	- # of comments received from the public on construction site projects - Yes/No Are all comments from the public on construction site projects considered?
Encourage and promote citizen reporting of illegal spillage, dumping, or otherwise disposal of materials into the MS4 storm sewer system (see subpart 4.2.3)	Develop and implement a public reporting system e.g. a hotline (see subpart 4.2.3) to facilitate and track public reports of spills, discharges, and dumping to its storm sewer system.	- The number of reports received from the public

4.2.2.1. General Public

Management Measure:

Conduct activities as described in the plan targeted to address the following issues:

a. Pollution Prevention ;
b. Impacts on water quality or local stormwater management issues;
c. Storage, use, and disposal of household hazardous waste, automotive-related fluids, pesticides, herbicides, and fertilizers use; and
d. Identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.

<table>
<tr><th colspan="2">Measurable Goals</th><th>Annual Report Requirement</th></tr>
<tr><td colspan="2">Permittees must conduct and/or sponsor a minimum number of activities (as identified below) that address each of issues identified under “management measures” every reporting year.</td><td rowspan="5">- Total Number of activities conducted

Provide the details of each activity including:
- description;
- date;
- management measures addressed;
- specifically targeted audience and;
- approximate number of that audience that was reached.
For sponsored activities only:
-Identify if the event sponsored monetarily or as a donation in kind</td></tr>
<tr><td>MS4 Population at NOI submittal</td><td>Minimum Number of activities conducted each reporting year</td></tr>
<tr><td>Population ≤10,000</td><td>Per 5 year permit term 2</td></tr>
<tr><td>10,001 ≤ Population ≤25,000</td><td>Per each reporting year 1</td></tr>
<tr><td>25,001 ≤ Population ≤ 50,000</td><td>Per each reporting year 3</td></tr>
<tr><td>Population greater than or equal to 50,001</td><td>Per each reporting year 6</td></tr>
</table>

4.2.2.2. Commercial and Development Community

Management Measure:
Conduct activities as described in the plan targeted to address the following issues:

a. Pollution Prevention; and
b. Impacts on water quality or local stormwater management issues.

<table>
<tr><th colspan="2">Measurable Goals</th><th>Annual Report Requirement</th></tr>
<tr><td colspan="2">Permittees must conduct or sponsor a minimum number of activities (as identified below) that address each of issues identified under “management measures” every reporting year.</td><td rowspan="5">- Total Number of activities conducted

Provide the details of each activity including:
- description;
- date;
- management measures addressed;
- specifically targeted audience and;
- approximate number of that audience that was reached.</td></tr>
<tr><td>MS4 Population at NOI submittal</td><td>Minimum Number of activities conducted each reporting year</td></tr>
<tr><td>Population ≤10,000</td><td>Per 5 year permit term
1</td></tr>
<tr><td>10,001 ≤ Population ≤25,000</td><td>Per 5 year permit term
2</td></tr>
<tr><td>25,001 ≤ Population ≤ 50,000</td><td>Per each reporting year
1</td></tr>
<tr><td>Population greater than or equal to 50,001</td><td>Per each reporting year
2</td></tr>
</table>

4.2.3. Illicit Discharge Detection and Elimination (IDDE)

Permittee must develop, implement, and enforce a program to detect and eliminate illicit discharges into the storm sewer system. Stormwater discharges listed in subpart 1.3.3.2 above are excluded from the effective prohibition against non-stormwater and need only be addressed where they are identified as significant sources of pollutants to waters of the state. The objective is to detect and eliminate illicit discharges to the maximum extent practicable. This program must include the following at a minimum:

a. Develop, if not already completed, a storm sewer system map, (see subpart 4.2.3.1 for minimum map requirements);

b. To the extent allowable under State, Tribal, or local law, effectively prohibit, through ordinance or other regulatory mechanism[4], non-stormwater discharges (unless allowed by sub-section 1.3.3.2) into the storm sewer system and implement appropriate enforcement response plan (ERP) (see subpart 4.5);

c. Develop and implement a program to detect, investigate, and address non-stormwater discharges, including illegal dumping, to the system. This includes standard procedures and forms to be followed to investigate illicit discharges throughout the MS4 jurisdiction. This must include:

1. Procedures for locating priority areas likely to have illicit discharges.
2. Procedures for tracing the source of an illicit discharge.
3. Procedures for removing the source of the discharge.
4. Procedures for tracking, investigating, and addressing potential illicit discharges and confirmed Illicit discharges. The results of all illicit discharge investigations shall be individually tracked and documented and include the name of Owner/Operator, locations, description of findings, dates, times, parameters and sampling results, discharge source, description of enforcement action(s) including referrals to other agencies, the date the illicit discharge was resolved, and any other pertinent information.
5. The permittee shall specify the timeframe for initiating complaint investigations within the ERP, but not to exceed seven (7) calendar days from the receipt of the complaint.

[4] Other regulatory mechanism may include: statute, law, rule, ordinance, permit, contract, order, or similar means.

6. Initial enforcement actions (including referrals to other regulatory agencies with appropriate jurisdiction) shall be taken within seven (7) calendar days of the investigation on confirmed illicit discharges in accordance with the ERP.

7. Confirmed illicit discharges shall be eliminated as soon as practicable. If the elimination of the confirmed illicit discharge will take more than fourteen (14) calendar days (from owner/operator's notification of confirmed illicit discharge) a corrective action plan to eliminate identified illicit discharges shall be developed by the owner/operator of the source of the illicit discharge in concurrence with the MS4. The ERP shall include remedies to address failures by the owner/operator to complete the corrective action plan and eliminate the illicit discharge.

8. If the responsible party or source of a confirmed illicit discharge cannot be identified after a comprehensive investigation in accordance with all stormwater management program IDDE investigation and tracing procedures, the illicit discharge shall be referred to the Division within fourteen calendar days of completing the investigation. All records and documentation of the investigation will be provided to the Division in the referral. Referrals shall be made to the local environmental field office identified in subpart 1.2.

d. Address the following categories of non-stormwater discharges or flows (*i.e.,* illicit discharges) only if the permittee identifies them as a significant contributor of pollutants to the MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated groundwater infiltration (as defined at 40 C.F.R. 35.2005(b)(20)), uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water(including tunnel cleaning) (discharges or flows from firefighting activities are excluded from the effective prohibition against non-stormwater and need only be addressed where they are identified as significant sources of pollutants to waters);

e. Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste. The educational training for public employees as identified by job category in the PIE plan shall be tracked for each employee (see subpart 4.2.1.1; and

f. The permittee shall develop a mechanism for the public to report (e.g., via hotline or website), suspected illicit discharges.(See subpart 4.2.2.1).

Management Measure	Measurable Goals	Annual Report Requirement
Storm sewer map that contains all required data elements found in subpart 4.2.3.1	Continue to update mapping as new elements are identified.	Provide location for Spatial Rest Service Outfall Map Layer Or Submit the geodatabase/shapefile Or submit a copy of the system map
Identify and investigate the categories of non-stormwater discharges or flows (as indicated in subpart 4.2.3) only if the permittee identifies them as a significant contributor of pollutants to the MS4.	Maintain an inventory of non-stormwater discharges or flows (as indicated in subpart 4.2.3) that the permittee identified as a significant contributor of pollutants to the MS4.	- # of non-stormwater discharges or flows identified as a significant contributor of pollutants to the MS4 - Total # of non-stormwater discharges or flows investigated
	Investigate as an illicit discharge all non-stormwater discharges or flows (as indicated in subpart 4.2.3) that the permittee identified as a significant contributor of pollutants to the MS4	- Yes/No Were all non-stormwater discharges or flows identified as a significant contributor of pollutants to the MS4 investigated?

Management Measure	Measurable Goals	Annual Report Requirement
Illicit discharge reporting and investigations	- track all potential illicit discharges reported, categorized by reporting source	- The number of potential illicit discharges reported by the public
		- The number of potential illicit discharges reported by internal personnel
	- Initiate 100% of all potential Illicit discharges investigations within 7 days of the receipt of the complaint.	- Total number of potential Illicit discharges reported (from any source) that are under investigation at the time of the annual report
		-Yes/No Were all potential illicit discharges investigated within 7 days of receipt?
	- 100% of all Initial enforcement actions shall be taken within seven (7) calendar days of the investigation on confirmed illicit discharges	-# of identified illicit discharges
		- Yes/No Were all initial enforcement actions on confirmed illicit discharges taken within seven (7) calendar days of the investigation?
	- 100% of all corrective action plans are reviewed in accordance with procedures	- # of corrective actions plans received for confirmed illicit discharges.

Management Measure	Measurable Goals	Annual Report Requirement
		- Yes/No Were all corrective actions plans reviewed in accordance with established procedures?
As indicated in the PIE plan, the permittee must educate public employees, businesses, and the general public concerning the hazards and damage to water quality associated with illegal dumping and connections to the storm sewer, and the improper disposal of waste.	The Measurable Goals and Annual Reporting requirements for this management measures are located in subparts 4.2.1.1 & 4.2.1.3	
As indicated in the Public Involvement/Participate MCM (see subpart 4.2.2), the permittee must Encourage and promote citizen reporting of illegal spillage, dumping, or otherwise disposal of materials into the MS4 storm sewer system by developing and implementing a public reporting system e.g. hotline.	The Measurable Goals and Annual Reporting requirements for this management measures are located in subpart 4.2.2	

4.2.3.1. MS4 Storm System Map Requirements

a. MS4 Outfalls;
b. Inputs into the storm sewer collection system, such as the inlets, catch basins, drop structures, flow(s) from adjacent MS4s or other defined contributing points to the storm sewershed of that outfall;
c. Direction of stormwater flow through the system; and

d. Receiving streams.
(The TDEC-DWR GIS layer maybe used in lieu of permittee developing their own receiving stream layer. TDEC rest services can be found at https://tdeconline.tn.gov/arcgis/rest/services/DWR_Public/MapServer)

4.2.4. Construction Site Stormwater Runoff Control

Permittees must develop, implement, and enforce a construction site stormwater runoff pollutant control program to reduce pollutants in any stormwater runoff to the small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. The program must include the following at a minimum:

a. An ordinance or other regulatory mechanism to require erosion prevention and sediment controls (EPSC), as well as sanctions to enforce compliance. The enforcement sanctions must be identified in an ERP as indicated in subpart 4.5.
   1. Modifications to ordinance or other regulatory mechanism for construction site runoff pollutant control program consistent with requirements of the NPDES general permit for construction stormwater runoff (CGP, TNR100000) effective October 1, 2021, must be completed within 24 months of September 1, 2022.
   2. Modifications to ordinance or other regulatory mechanism for construction site runoff pollutant control program consistent with requirements of the NPDES general permit for construction stormwater runoff (CGP, TNR100000) effective after **September 30, 2026,** must be completed within 18 months of the effective date of the subsequent CGP, TNR100000 with an effective after September 30, 2026, modifications to ordinances or other regulatory mechanisms for construction site runoff control must be effective and implemented within 18 months of the effective date of a Tennessee Construction General Permit (CGP, TNR100000);

b. Requirements for construction site operators to implement appropriate erosion prevention and sediment control best management practices (BMPs). The permittee's EPSC BMPs shall be consistent with those described in the TDEC EPSC Handbook;

c. Requirements for design storm for all waters as well as special conditions for unavailable parameters waters or exceptional Tennessee waters must be consistent with those of the current Tennessee Construction General Permit (TNR100000);

d. An inventory of actively permitted public and private construction sites that result in a total land disturbance as defined in subpart 4.2.4. The inventory must be updated as new development and redevelopment projects are permitted and completed. The inventory must contain relevant contact information for each new development and redevelopment project (e.g., tracking number, name, address, phone, etc.), the size of the new development and redevelopment project and area of disturbance, whether the new development and redevelopment project has submitted for permit coverage under the Tennessee Construction General Permit (TNR100000), and the date the permittee approved the construction site plan. The permittee must make this inventory available to TDEC upon request;

e. Requirements for construction site operators to control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at construction sites within the jurisdiction to avoid adverse impacts to water quality;

f. Specific procedures for construction site plan (including erosion prevention and sediment controls) review and approval (or denial) which incorporate consideration of potential water quality impacts. The procedures must include an evaluation of plan completeness, and overall BMP effectiveness;

g. Mechanisms or plans for public access to information on new development and redevelopment projects and receiving and considering comments from the public on those new development and redevelopment projects;

h. Procedures for permittee inspectors to evaluate and document construction site compliance. These procedures, as required in subpart 4.5, must include specific enforcement steps to ensure construction operators maintain compliance with the permittee's construction program requirements. At a minimum 10% of all non-priority construction activities must be inspected at least once during the reporting period;

i. Requirements for permittee inspectors who conduct inspections of construction sites must maintain certification under the Tennessee Fundamentals of Erosion Prevention and Sediment Control, Level 1 (or

equivalent such as Tennessee Registered Engineer, Landscape Architect, or Certified Professional in Erosion and Sediment Control). Construction site plan reviewers must receive a certificate of completion from the Tennessee Erosion Prevention and Sediment Control Design Course, Level 2 (or equivalent such as Tennessee Registered Engineer, Landscape Architect, or Certified Professional in Erosion and Sediment Control). It is recommended that permittee construction staff receive training under both courses; and

j. Priority construction activity shall be at a minimum, those construction activities discharging directly into, or immediately upstream of, waters the state recognized as unavailable condition for siltation or Exceptional Tennessee Waters.

Requirements for all priority construction activities must include:

- Pre-construction meetings with construction-site operators for priority construction activities;
- Inspections by the permittee of priority construction sites at least once per calendar month; and
- Documentation of procedures, including related meetings and inspections.

Management Measure	Measurable Goals	Annual Report Requirement
Regulatory mechanism are required to be consistent with the currently effective Tennessee Construction General Permit (CGP, TNR100000). Note: This reporting element won't be seen in the annual report until after the subsequent CGP has been issued.	NPDES general permit for construction stormwater runoff with an effective after September 30, 2026, modifications to ordinances or other regulatory mechanisms for construction site runoff control must be effective and implemented within 18 months of the effective date of a Tennessee Construction General Permit (CGP, TNR100000);	Identify if the regulatory mechanisms for construction site runoff control have been updated to be consistent with CGP and are effective & implemented within 18 months of the effective date of the subsequent CGP

Management Measure	Measurable Goals	Annual Report Requirement
An inventory of actively permitted public and private construction sites that result in a total land disturbance as defined in subpart 4.2.4.d	Maintain an up-to-date inventory with all information identified subpart 4.2.4.d	-total number of active construction activities
		Total number of active non-priority construction activities with incomplete inventory information
Construction site plans review and approval	Establish policies and/or procedures for review and approval (or denial) of all plans and review 100% of all new development and redevelopment projects accordingly	- Total number of new development and redevelopment projects reviewed in accordance with established policies and procedures
		- Yes/No Were all new development and redevelopment projects reviewed in accordance with the established policy and procedure?
Mechanisms or plans for public access to information on new development and redevelopment projects and receiving and considering comments from the public on those new development and redevelopment projects.	The Measurable Goals and Annual Reporting requirements for this management measures are implemented Public Involvement MCM and reported under subpart 4.2.2	
Procedures for permittee inspectors to evaluate and document construction site compliance.	Inspect a minimum of 10% of active non-priority construction sites in accordance	- Total number of active non-priority construction activities

Management Measure	Measurable Goals	Annual Report Requirement
	with Stormwater Management Program	- Yes/No Were all non-priority active construction activities inspections conducted accordance with Stormwater Management Program
Priority construction activities;	-Conduct Pre-construction meetings at 100% of Priority Construction Activities	- Total Number of Priority Construction Activities
		- Yes/No Did all Priority Construction Activities that have Pre-Construction meetings?
	- Inspect 100% of all of Priority Construction Activities at least once per calendar month	- Yes/No Were all priority Construction Activities inspected at least once per calendar month?

4.2.5. Post-Construction/Permanent Stormwater Management in New Development and Redevelopment

Permits issued to entities that operate a municipal separate storm sewer system (MS4) shall include the following to manage post-construction stormwater at all new development and redevelopment projects that disturb one acre or more of land, or less than one acre if part of a larger common plan of development, and discharge into the permittee's MS4:

4.2.5.1. Permanent Stormwater Management Program.

a. The permittee shall develop and implement a permanent stormwater management program to reduce pollutants in stormwater discharges

through management practices, control techniques, and systems, design, and engineering practices implemented to the maximum extent practicable (MEP), as set forth herein.

b. The permanent stormwater management program shall include plans review, site inspections, and a means to ensure that permanent stormwater control measures (SCMs) are adequately operated and maintained.

c. The permittee must develop and implement, and modify as necessary, an ordinance or other regulatory mechanism to address permanent stormwater management at new development and redevelopment projects.

d. The permittee must submit an implementation plan for its permanent stormwater management program not later than 90 days after the effective date of the first new or revised permit issued[5] after the effective date of Tennessee Rule *0400-40-10-.04*. The implementation plan shall include a brief description of the main components of the permittee's permanent stormwater management program, which should include: codes and ordinance development and implementation; procedures for plans review and criteria for approval; procedures for conducting and tracking site inspections; and SCM operation and maintenance policies. The implementation plan shall also include a timeline to develop and implement the program. If the permittee has implemented a permanent stormwater management program that complies with all requirements of the new or revised permit, the permittee may submit an implementation plan explaining how its program complies and identifying any new or modified elements of its program. The schedule must indicate completion as soon as feasible but no later than 24 months from the effective date of the first permit issued after the effective date of Tennessee Rule *0400-40-10-.04*. Further, if implementation will take longer than 12 months, the plan must include interim milestones. Implementation plans must be submitted to the Division.

4.2.5.2. Permanent Stormwater Standards

[5] The effective date of the first new or revised permit issued after the effective date of Tennessee Rule *0400-40-10-.04* was September 1, 2022.

a. The permanent stormwater management program must require new development and redevelopment projects to be designed to reduce pollutants to the MEP, as set forth herein. Compliance with permanent stormwater standards for new development and redevelopment projects is determined by designing and installing SCMs as established by Tennessee Rule *0400-40-10-.04* and complying with other requirements of Tennessee Rule *0400-40-10-.04*. For design purposes, total suspended solids (TSS) may be used as the indicator for the reduction of pollutants.

b. SCMs must be designed to provide full treatment capacity within 72 hours following the end of the preceding rain event for the life of the new development or redevelopment project. The permittee shall identify a suite of SCMs to be used in various situations. Information relevant to identified SCMs should be made readily available. Application of innovative SCMs is encouraged. If the permittee decides to significantly limit the number of SCM options, it must be documented in the stormwater management program how the performance standards of Tennessee Rule *0400-40-10-.04* can be met with the limited set of control measures that are allowed.

c. The water quality treatment design storm is a 1-year, 24-hour storm event as defined by Precipitation-Frequency Atlas of the United States. Atlas 14. Volume 2. Version 3.0. U.S. Department of Commerce. National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center, Silver Springs, Maryland or its digital product equivalent. The water quality treatment volume (WQTV) is a portion of the runoff generated from impervious surfaces at a new development or redevelopment project by the design storm, as set forth below. SCMs must be designed, at a minimum, to achieve an overall treatment efficiency of 80% TSS removal from the WQTV. The quantity of the WQTV depends on the type of treatment provided, as established in the following table:

Water Quality Treatment Volume and the Corresponding SCM Treatment Type for the 1-year, 24-hour design storm		
SCM Treatment Type	WQTV	Notes
infiltration, evaporation, transpiration, and/or reuse	runoff generated from the first 1 inch of the design storm	Examples include, but are not limited to, bioretention, stormwater wetlands, and infiltration systems.
biologically active filtration, with an underdrain	runoff generated from the first 1.25 inches of the design storm	To achieve biologically active filtration, SCMs must provide minimum of 12 inches of internal water storage.
sand or gravel filtration, settling ponds, extended detention ponds, and wet ponds	runoff generated from the first 2.5 inches of the design storm or the first 75% of the design storm, whichever is less	Examples include, but are not limited to, sand filters, permeable pavers, and underground gravel detention systems. Ponds must provide forebays comprising a minimum of 10% of the total design volume. Existing regional detention ponds are not subject to the forebay requirement.
hydrodynamic separation, baffle box settling, other flow-through manufactured treatment devices (MTDs), and treatment trains using MTDs	maximum runoff generated from the entire design storm	Flow-through MTDs must provide an overall treatment efficiency of at least 80% TSS reduction. Refer to 4.2.5.20

Treatment Train Calculations

1. Treatment trains using MTDs.

Treatment trains using MTDs must provide an overall treatment efficiency of at least 80% TSS reduction utilizing the following formula:

The calculation:

$R = A + B - (A \times B) / 100$

Where:

R = total TSS percent removal from application of both SCMs,
A = the TSS percent removal rate applicable to the first SCM, and
B = the TSS percent removal rate applicable to the second SCM.

TSS removal rates for MTD must be evaluated using industry-wide standards. TSS removal rates for other SCMs must be from published reference literature.

2. Treatment trains not using MTDs.

Treatment trains using infiltration, evaporation, transpiration, reuse, or biologically active filtration followed by sand or gravel filtration, settling ponds, extended detention ponds or wet ponds may subtract the treated WQTV of the upstream SCMs from the WQTV of the downstream SCMs.

The permittee may also develop a mitigation program and/or system of payment into a public stormwater fund as described in subpart 4.2.5.3

The permanent stormwater management program may allow for a reduction of the WQTV for a new development or redevelopment project up to 20% for any one of the following conditions, and up to a total maximum of 50% for a combination of the following conditions:

1. Redevelopment projects (including, but not limited to, brownfield redevelopment);

2. Vertical density (floor to area ratio of at least 2, or at least 18 units per acre); and

3. Incentives as identified by the permittee, submitted to the Division, and approved by the Division in writing, and documented as part of the stormwater management program.

4.2.5.3. Stormwater Mitigation and Public Stormwater Fund

a. A permittee may choose to develop an offsite mitigation program or payment in lieu into a public stormwater fund, or both, to offset the portion of the WQTV that cannot be treated on site to the MEP. The program must ensure that off-site stormwater mitigation will be accomplished within the

same USGS 12-digit hydrologic unit code watershed as the new development or redevelopment project, if practicable, and will treat a minimum of 1.5 times the portion of the WQTV not treated on site. The permittee may identify priority areas within the watershed in which stormwater mitigation projects are to be completed. The program must have a mitigation project approval procedure, and all projects must meet all requirements in this permit. Procedures and requirements in the offsite mitigation and payment in lieu programs should be documented as part of the stormwater management program and available for review.

b. If the permittee allows payment into a public stormwater fund, the permittee assumes responsibility to provide the required mitigation projects. The public stormwater fund should be used to fund public mitigation projects. The payment amount into a public stormwater fund must be sufficient to design, install, and maintain the stormwater mitigation measures.

4.2.5.4. Water Quality Riparian Buffers

Permittees shall develop and implement a set of requirements to establish, protect, and maintain permanent water quality riparian buffers to provide additional water quality treatment in riparian areas of new development and redevelopment projects that contain streams, including wetlands, ponds, and lakes. Riparian buffers must meet the following minimum standards:

a. Stormwater discharges should enter the water quality riparian buffer as sheet flow, not as concentrated flow, where site conditions allow.

Water quality riparian buffers must have the following minimum widths, unless site-specific conditions necessitate alternative widths, as described in 4.2.5.40:

	Average buffer width (feet)	Minimum buffer width (feet)	Notes
Waters with available parameters for siltation or habitat alteration or unassessed waters	30	15	The criteria for the width of the buffer zone can be established on an average width basis at a project, as long as the minimum width of the buffer zone is more than the required minimum width at any measured location. If the new development or redevelopment site encompasses both sides of a stream, buffer averaging can be applied to both
Exceptional Tennessee Waters or waters with unavailable parameters for siltation or habitat alteration	60	30	

			sides, but must be applied independently.

The predominant vegetation within the minimum buffer width area should be trees. The remaining riparian buffers may be composed of herbaceous cover or infiltration-based SCMs.

Permittees may establish permissible land uses or activities within the buffer, such as biking and walking trails, infiltration-based SCMs, selective landscaping, habitat improvement, road and utility crossings, or other limited uses as determined by the permittee. The permittee must have a process to review proposed activities within buffers to ensure the pollutant removal function of the buffer will be retained. Trails constructed within the buffer should prevent or minimize the generation of pollutants. If trails are constructed from impervious materials, runoff must either be directed to infiltration-based SCMs or the buffer width must be increased by the width of the trail.

Permittees may authorize alternative buffer widths for new development and redevelopment projects where averaged water quality riparian buffers cannot be fully implemented on-site. In order to allow alternative widths, the permittee must develop and apply criteria for determining the circumstances under which required buffer widths cannot be achieved based on the type of project, existing land use, and physical conditions that restrict the use of water quality riparian buffers. Any such procedures and criteria for alternative buffer widths must ensure that implementing full buffer widths would be impracticable and that the maximum practicable buffer widths are required. Procedures and criteria for alternative buffer widths must be submitted to the Division, approved by the Division in writing, and documented as a part of the stormwater management program.

Water quality riparian buffer widths are measured from the top of bank also referred to as the “ordinary high-water mark.”

Ordinances and local requirements adopted prior to November 13, 2018, and that mandate minimum 30-foot water quality riparian buffers for drainage areas less than one square mile, and minimum 60-foot water quality riparian buffers for drainage areas of greater than one square mile (with provisions for buffer averaging down to a minimum 30-foot width), are deemed to satisfy the conditions of this paragraph.

4.2.5.5. Codes and Ordinances Review and Update

a. Within one year of obtaining initial permit coverage, newly permitted programs shall review local codes and ordinances using the EPA Water Quality Scorecard[6]. A completed copy of the Scorecard shall be submitted with the subsequent annual report. Permittees who have completed and submitted the Scorecard in the past are not required to repeat this review.

   Newly permitted programs shall update codes and ordinances or other legal instruments as necessary to comply with the permit within 24 months of coverage under this permit. Current permittees shall continue to implement the existing permanent stormwater management program and update legal instruments according to the compliance schedule in subpart 4.2.5.1d

4.2.5.6. Development Project Plan Review, Approval, and Enforcement

The permittee shall develop and implement project plan review, approval, and enforcement procedures applicable, at a minimum, to all new development and redevelopment projects, which shall include:

Procedures for review and approval of site plans, including inter-departmental consultations and a re-submittal process when modifications to the project require changes to an approved site design plan;

A plans review process that requires SCMs to be properly designed, installed, and maintained to meet the performance standards established in Tennessee Rule *0400-40-10-.04*. The process must also include incentives adopted by the permittee as authorized by subpart 4.2.5.2, if any, along with water quality buffers as required by subpart 4.2.5.4; and

A verification process to document that SCMs have been installed per design specifications within 90 days of installation. Verification shall include submission of as-built plans to the permittee, permittee inspection, or inspection by a qualified design professional. The verification process shall include enforcement procedures to bring noncompliant projects into compliance, which shall be detailed in the enforcement response plan.

[6] https://www.epa.gov/smartgrowth/water-quality-scorecard

4.2.5.7. Maintenance of Permanent Stormwater Control Measure Assets

Permanent SCMs, including SCMs used at mitigation projects, must be installed, implemented, and maintained to meet the performance standards of subpart 4.2.5.2, and provide full treatment capacity within 72 hours following the end of the preceding rain event.

The permittee must develop and implement a program to require implementation of appropriate SCM maintenance procedures to sustain pollutant reduction efficiency for the life of the new development or redevelopment project. All procedures, reports, and documentation must be maintained as part of the stormwater management program. The program must include at a minimum:

1. The development and documentation of maintenance and inspection procedures and frequencies for approved SCMs, which shall require all SCMs to be inspected at least once every five years by the permittee, a licensed professional engineer, a licensed landscape architect, or other qualified professional familiar with applicable SCM design and maintenance requirements;

2. The development and documentation of the procedure the permittee will use to verify that SCMs are being inspected and maintained including any written reports from the responsible party;

3. A clear, documented, legally binding agreement assigning SCM maintenance responsibility to the owner/operator, a third party, or the permittee as appropriate. For SCMs designed to manage stormwater from multiple properties, appropriate deed restrictions shall be recorded; and

4. An allowance or agreement for permittee personnel to access the SCMs for inspections and provide for enforcement action for failure to maintain SCMs according to agreement.

4.2.5.8. Inventory and Tracking of Permanent Stormwater Control Measure Assets

a. Existing permittees must continue to implement and maintain a system to inventory and track the status of all public and private SCMs installed on new

development and redevelopment projects. New permittees must implement the system within 24 months of coverage.

b. The inventory and tracking system must be a searchable database, either paper or electronic, that retrieves SCM information by location or other similar identification. The system must be made available to the Division or to members of the public upon request. Other than the basic information of location and project identification, the system should include information and records the permittee will use to demonstrate that SCMs are properly maintained, including but not limited to:

    1. A brief description of the type of SCM and basic design characteristics;

    2. The responsible party contact information;

    3. Inspection schedules (both permittee and responsible party);

    4. A brief description of or reference to maintenance procedures and frequency;

    5. Photographs of the installed SCMs; and

    6. Maintenance and inspection records.

4.2.5.9. Management Measures, Goals and Annual Report Requirements

Management Measure	Measurable Goals	Annual Report Requirement[7]
Stormwater Mitigation and Public Stormwater Fund as outlined in subpart 4.2.5.3 (note this management measure is only required if the permittee has developed such a fund)	100% of all mitigation projects must be completed	- Brief status description status description of Stormwater Mitigation and Public Stormwater Fund
		- # of uncompleted mitigation projects at the end of the previous reporting period
		- # of mitigation projects completed during the reporting period
		-# of uncompleted Projects at the end of the current reporting period
		- # of uncompleted projects at the end of the reporting period that began more than 24 months prior to the end of the reporting period
	100% of all mitigation projects in the Stormwater Mitigation and Public Stormwater Fund are completely funded	- $ in Public Stormwater Fund at the end of the reporting period

[7] Annual reporting identified in this section will begin with the first annual report due after completion of the implementation plan in 4.2.5.1d but no later than 24 months from the effective date of the permit.

Management Measure	Measurable Goals	Annual Report Requirement[7]
		- # of uncompleted projects due to lack of funds
Develop and implement a set of requirements to establish, protect, and maintain permanent water quality riparian buffers	-100% of projects must have the buffer as required by subpart 4.2.5.4	-Yes/No Did all of the projects approved meet the buffer requirements of subpart 4.2.5.4?
	If applicable: -100% of projects with permanent alternative buffer widths must be in accordance with the procedures and criteria approved by the Division	-# of project approved with alternative width Buffer
		- Date Alternative buffer width procedures and criteria most recently approved by Division
Complete Code and Ordinance Review in accordance with subpart 4.2.5.5a (New Permittees Only)	EPA Water Quality Scorecard must be completed and submitted within one year of the effective date on the notice of coverage	A completed copy of the Scorecard shall be submitted with the subsequent annual report. (Note: this is a one-time requirement)
Develop, implement, and enforce policies and procedures for the submittal and review of plans as required by 4.2.5.60	Establish policies and/or procedures for review and approval (or denial) of all plans and review all new development and redevelopment projects accordingly	- Total number of all new development and redevelopment projects reviewed
		- Number of new development and redevelopment projects reviewed in accordance with the established policy and procedure

Management Measure	Measurable Goals	Annual Report Requirement[7]
Develop, implement, and enforce policies and procedures for SCM Installation verification as required by subpart 4.2.5.60	Verify that 100% of SCMs are installed per design specifications in accordance with approved plan within 90 days of installation	- Total number of sites verified
		- Yes/No Were all SCMs are installed per design specifications in accordance with approved plan within 90 days of installation
Establish and maintain adequate legal authority assigning SCM maintenance responsibility and personnel access to the SCM and provide for enforcement action as required by subpart 4.2.5.70	The permittee must have the legal authority to access SCMs and assigned maintenance responsibility for 100% of all SCMs	Yes/No Does the permittee have adequate legal authority as required by 4.2.5.7 for all SCMs installed?
	The permittee must enforce as directed in the appropriate legal authority, for 100% of all SCMs that have not been properly maintained	# of SCMs that have not been properly operated or maintained
		Yes/No Have enforcement actions been taken in accordance with the appropriate legal authority or ERP?
Implement and maintain a system to inventory and track the status of all public and private SCMs as required by subpart 4.2.5.8	The system must be made available to the Division or members of the public upon request.	Total number of requests for inventory
	100% of all SCMs must be included in the inventory tracking system with complete information	- Yes/No Are all SCMs in the inventory tracking system?
		- Yes/No Do all SCMs in the inventory tracking system have complete information?

Management Measure	Measurable Goals	Annual Report Requirement[7]
		Beginning in the year 3 (2025) annual report submit the SCM inventory tracking system information as a geodatabase or as a file type that is generally accessible e.g. excel, csv, xml, or division supplied EDD, etc. note: - Files may be submitted in a manner approved by the division.

4.2.6. Pollution Prevention/Good Housekeeping

The permittee must develop and implement an operation and maintenance program that has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.

4.2.6.1. Employee Training

This program must include an employee training program for employees responsible for municipal operations at facilities within the jurisdiction of the permittee that handle, generate, and/or store materials which constitute a potential pollutant of concern for MS4s. The goal of the training program should be to identify pollutants and prevent and/or 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. The program must Identify all applicable job categories for training and include these job categories and associated training management measures in the PIE plan (see subpart 4.2.1.b.). New employees must be trained within six months of their employment or movement into an applicable job category. All responsible employees must receive training and/or retraining within the permit term. (note: management measures, measurable goals and annual reporting requirements are in 4.2.1.3

4.2.6.2. Operation and Maintenance (O&M) Program

The permittee must develop an operation and maintenance (O&M) program detailing the activities and procedures the permittee will implement so that the MS4 infrastructure is maintained to reduce the discharge of pollutants from the MS4 for each of the following municipal operations as applicable:

a. streets, roads, highways;
b. municipal parking lots;
c. maintenance and storage yards;
d. fleet or maintenance shops with outdoor storage areas;
e. salt/sand storage locations;
f. snow disposal areas operated by the permittee; and
g. waste disposal, storage, and transfer stations.

(note: see subpart 4.2.5 for requirements specific to SCMs)

The O&M program must include the following management practices at a minimum:

a. Minimize or Prevent Exposures of Materials to Precipitation;
b. Good Housekeeping;
c. Preventative Maintenance;
d. Spill Prevention and Response;
e. Erosion and Sediment Control;
f. Management of Runoff;
g. Control Measure Maintenance; and
h. Facility Site Inspections (conducted at least once every 12 months).

An O&M Facility Plan for each applicable municipal facility shall be developed and implement and must include the following at a minimum:

a. Inventory of management practices on site;
b. Procedures and documentation for the implementation of the management practices on site; and
c. Maintenance Procedures and Frequencies for each Stormwater Control Measure (or type of SCM).

The permittee must keep record of the implementation of the management practices and document the record keeping requirements in the O&M Plan.

An O&M Facility Plan does not need to be developed for a facility if the permittee has either a no exposure certification for the discharge under the Tennessee Multi-Sector General Permit (TMSP) or the discharge is authorized under another NPDES permit, e.g. TMSP.

Management Measure	Measurable Goals	Annual Report Requirement
Employee training program for employees responsible for municipal operations at facilities	The Measurable Goals and Annual Reporting requirements for this management measures are implemented Public Education MCM and reported under subpart 4.2.1	
Develop and implement an O&M Facility Plan	All applicable Municipal operations must have an O&M Facility Plan	- # Municipal Operations Facilities
		Yes/No Do all Municipal Operations Facilities have a O&M Facility Plan?

Management Measure	Measurable Goals	Annual Report Requirement
Facility Site Inspections	Conduct a facility site inspection in accordance with the Stormwater Management Program at all municipal operation facilities at least once every 12 months	- # Municipal Operations Facilities NOT inspected in accordance with the Stormwater Management Program in the previous 12 months

4.3. QUALIFYING TRIBE, STATE OR LOCAL PROGRAM (QLP)

A QLP is a MS4 jurisdictional Stormwater Management Program that has been approved by the Division as having met the QLP minimum program requirements related to stormwater discharges associated with construction activity. If a construction activity is within the jurisdiction of and has obtained a notice of coverage from a QLP, the operator of the construction activity is authorized to discharge stormwater associated with construction activity under General NPDES Permit for Discharges of Stormwater Associated with Construction Activities (CGP) Permit without submittal of an NOI to the Division. Additional information, including QLP minimum requirements and application procedures, can be obtained from the local EFO or TDEC's stormwater QLP program website.

4.3.1. QLP Application

An application form is required to be submitted when an operator of a Tennessee NPDES Municipal Separate Storm Sewer System (MS4) is applying for approval as a QLP related to stormwater discharges associated with construction activity.

The application must:

a. Contain a completed signed (in accordance with 7.11) application form (CN-1374) (located on the stormwater QLP program website);
b. Contain as an attachment Construction stormwater ordinance or regulatory mechanism for violations, including civil penalties and procedures. Note: Indicate the portions of the ordinance or regulatory mechanism that are directly relevant to your application;
c. Contain as an attachment SWPPP/EPSC plan review and approval procedures;
d. Contain as an attachment Construction site tracking and inventory procedures;
e. Contain as an attachment Copies of Level I & II Certifications for appropriate staff (or equivalent);
f. Contain as an attachment Construction site compliance inspection and documentation procedures;
g. Contain as an attachment Enforcement Response Plan; and
h. Contain as an attachment Public Information/Public Input Process;
i. Existing authorized MS4 Qualified Local Programs shall submit required documentation to TDEC electronically as a part of the MS4 NOI; or
j. MS4s requesting QLP authorization shall submit required documentation to TDEC electronically to water.permits@tn.gov.

4.3.2. QLP Minimum Program Requirements

a. Regulated MS4s must implement and maintain a construction site stormwater runoff control program that addresses stormwater runoff from construction activities, as identified in sub-section 4.2.4 of this permit;
b. Legal authority, procedures, and processes to require construction site operators to prepare and submit an NOI, and related comprehensive SWPPP, as identified in Section 3 (SWPPP Requirements) of the CGP;
c. Coordinate with the Division on confirming water resource inventory;
d. Specific procedures (including tracking) for SWPPP review utilizing form Tennessee Municipal Construction Stormwater Project Review Checklist (CN-1440) (located on the stormwater QLP program website);, approval, and NOC issuance; and
e. Requirements for construction site operators to perform inspections and site assessments as identified in the CGP.

4.3.3. QLP Site Reporting Requirements

The QLP program must also include a system for reporting to the Division, information related to construction sites authorized by the QLP. This report is due quarterly as follows:

Quarter	Report Due
January-March	April 15 of that year
April- June	July 15 of that year
July-September	October 15 of that year
October-December	January 15 of the following year

Minimum Data Reporting Elements

a. QLP tracking number
b. QLP MS4 Jurisdiction
c. Project Name
d. Responsible Party, e.g. permittee
e. Complete Street Address
f. Site Description
g. County
h. Latitude (decimal degrees)
i. Longitude (decimal degrees)
j. Estimated Start Date
k. Estimated End Date
l. Acres Disturbed
m. Total Acres

n. Receiving Water
o. Status (Pending, Active, Terminated)

This report shall be submitted in a spreadsheet format to Water.Permits@tn.gov or through the Division's electronic reporting portal MyTDEC Forms (when available) at https://forms.tdec.tn.gov/.

4.4. STORMWATER MANAGEMENT PROGRAM MODIFICATION

4.4.1. Program Modification

Permittees may modify the Stormwater Management Program during the life of the permit in accordance with the following:

4.4.1.1. Minor Modifications

Minor Modification are required to be reported in accordance with 4.2.2. These changes **do not require** a formal public notice.

a. Modifications that add, but neither subtract nor replace, components, controls, or requirements to the Stormwater Management Program may be made by the permittee at any time. A description of the modification shall be included in the subsequent Annual Report.

b. Correct typographical errors

c. Increase in Monitoring

d. Remove an outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits.

e. Modifications that replace an ineffective or infeasible BMP, or SCM which is specifically identified in the Stormwater Management Program along with an alternate BMP or SCM, may be made by the permittee at any time. A description of the replacement BMP or SCM shall be included in the subsequent Annual Report along with the following information:

An analysis of why the former BMP was ineffective or infeasible;
Expectations on the effectiveness of the replacement BMP or SCM; and
An analysis, if applicable, of why the replacement BMP or SCM will ensure the optimization of equipment use.

f. Addition of Facilities covered under this permit.

4.4.1.2. Major Modifications

Major Modifications are required to be reported in accordance with subpart 4.2.2. These are changes that **do require** a formal public notice. The Stormwater Management Program Plan shall include a description of the formal public notice process for the MS4 program.

The documentation made available for comment in the formal public notice process shall include the written plans required by Part 4 of this permit. Individual facility O&M Plans, work instructions, written procedures, or other such documentation are not required to be available for public comment during the formal public notice process described in the Stormwater Management Program Plan.

The formal public notice process described in this subpart is not applicable to the adoption process of any legal authorities.

TDEC-DWR shall be included in the distribution list at water.permits@tn.gov. Comments or objections made by the Division on the modifications must be addressed before the changes can be implemented.

a. Modifications that subtract BMPs, SCMs, components, controls, or requirements of the Stormwater Management Program may not be made by the permittee unless it can be clearly demonstrated that with the elimination of this component, the Stormwater Management Program will continue to achieve a reduction in pollutants to the MEP and shall not cause or contribute to violations of State water quality standards in the receiving stream. In the case where this type of modification is appropriate, the permittee may make the required modification and shall include in the subsequent Annual Report a description of the component which has been eliminated along with the following information:

An analysis of why the component was ineffective or infeasible; and
A detailed explanation of why, with the elimination of this component, the Stormwater Management Program will continue to achieve a reduction in pollutants to the MEP and shall not cause or contribute to violations of State water quality standards in the receiving stream.

Management Measure	Measurable Goals	Annual Report Requirement
Identify Modifications as Minor or Major in accordance with the permit and report as required.	Report all Minor and Major Modifications to Stormwater Management Program as required	- Identify if any changes were made to each program element Yes/No - Include a description of the modification(s) made under 4.4.1.1a - Include a description of the modification(s) made under 4.4.1.1e - Include a description of the modification(s) made under 4.4.1.1f - Include a description of the modification(s) made under 4.4.1.2a

4.4.2. Transfer of Ownership, Operational Authority, or Responsibility

The permittee must implement the Stormwater Management Program in any new areas added to the MS4 as expeditiously as practicable, but not later than one year from addition of the new areas. Implementation may be accomplished in a phased manner to allow additional time for controls that cannot be implemented within one year.

Within 90 days of a transfer of ownership, operational authority, or responsibility for Stormwater Management Program implementation, the permittee must have a plan for implementing the Stormwater Management Program in any newly added areas. The plan may include schedules for implementation. Information on newly annexed areas and any resulting updates required to the Stormwater Management Program must be included in the annual report.

4.5. ENFORCEMENT

4.5.1. Enforcement Response Plan

The permittee must develop and implement an enforcement response plan (ERP). The written plan must set out the permittee's potential responses to violations and address repeat violations through progressive enforcement as needed to achieve compliance. The permittee must have the legal ability to employ progressive enforcement actions as described below (or their functional equivalent for non-traditional MS4 jurisdictions), and to escalate enforcement responses where necessary to address persistent non-compliance, repeat or escalating violations, or incidents of major environmental harm.

a. Verbal Warnings – At a minimum, verbal warnings should be as specific as possible to the nature of the violation and be documented.

b. Written Notice of Violation – Written notices stipulate the nature of the violation and the required corrective action, with deadlines for taking such action.

c. Citations or Administrative Orders – These actions indicate when the permittee will assess monetary penalties, which may include civil and administrative penalties.

d. Stop Work Orders – These actions have the authority to require activities at a facility to be halted, except for those activities directed at cleaning up, abating discharge, and installing appropriate control measures.

e. Withholding of Plan Approvals or Other Authorizations – Where a facility is in non-compliance, the ERP may address how the permittee's approval process affecting the facility's ability to discharge to the MS4 can be used to abate the violation.

f. Civil Penalties - The permittee must have the authority for the maximum penalties per day for each day of violation as specified in TCA 68-221-1106.

g. Additional Measures – The permittee may also use other escalated measures provided under local legal authorities. The permittee may perform work necessary to improve erosion control measures and collect the funds from the responsible party in an appropriate manner, such as collecting against the bond or directly billing the responsible party to pay for work and materials.

4.5.2. NPDES Permit Referrals

For those new development and redevelopment projects subject to the TNR100000 (the NPDES general permit for stormwater discharges from construction activity) or industrial facilities subject to TNR050000 (the NPDES general permit for stormwater discharges from industrial activity), the permittee must comply with the following:

a. If the permittee becomes aware that a construction activity or an industrial activity is discharging to an MS4 in violation of an NPDES permit or is discharging to the MS4 and does not have the required permit, the permittee shall notify the appropriate EFO of the situation as soon as possible. Provide as much of the information below as possible so that the Division may investigate and take appropriate enforcement action. The permittee may also pursue enforcement under the illicit discharge program, if applicable.

- New development and redevelopment project or industrial facility location;
- Name of owner or operator;
- Estimated new development and redevelopment project size or type of industrial activity (including Standard Industrial Classification (SIC) code if known); and
- Records of communication with the owner or operator regarding filing requirements.

b. If the permittee has not been able, through its enforcement mechanisms and protocol, to bring an NPDES-permitted discharge into compliance with the permittee's stormwater- and water pollution-related ordinances, then the permittee must notify TDEC, at the local EFO, of this situation. In making such referrals, the permittee must provide, at a minimum, the following:

- New development and redevelopment project or industrial facility location;
- Name of owner or operator;
- Estimated new development and redevelopment project size or type of industrial activity (including Standard Industrial Classification (SIC) code if known);
- Records of communication with the owner or operator regarding the violation, including at least two follow-up inspections, two warning letters or notices of violation, and any response from the owner or operator.

4.5.3. Enforcement Tracking

The permittee must track instances of non-compliance either in paper files or electronically. The enforcement case documentation must include, at a minimum, the following:

- Name of owner/operator;
- Location of new development and redevelopment project or industrial facility;
- Description of violation;
- Required schedule for returning to compliance;
- Description of enforcement response used, including escalated responses if repeat violations occur or violations are not resolved in a timely manner;
- Accompanying documentation of enforcement response (e.g., notices of noncompliance, notices of violations, etc.);
- Any referrals to different departments or agencies; and
- Date violation was resolved.

4.5.4. Requirements for Chronic Violators

The permittee must identify chronic violators of any Stormwater Management Program component and reduce the rate of noncompliance recidivism. The permittee must track the violations, apply incentives and/or disincentives, and increase the inspection frequency at the operator's sites. If corrective actions are not taken, the permittee shall pursue progressive enforcement and, if need be, perform the necessary work and assess against the owner/operator the costs incurred for repairs.

4.5.5. Annual Report Requirements

Annual Report – Summary of Enforcement Actions Requirement	
Enforcement Action Type	**Total Number of Enforcement Actions Taken**
Verbal Warnings	# Enforcement Actions Taken
Written Notice of Violation	# Enforcement Actions Taken
Citations or Administrative Orders	# Enforcement Actions Taken
Stop Work Orders	# Enforcement Actions Taken
Withholding of Plan Approvals or Other Authorizations	# Enforcement Actions Taken
Civil Penalties	# Civil Penalties Assessed
Additional Measures	# Enforcement Actions Taken

4.6. STORMWATER MONITORING AND PROGRAM EVALUATION

4.6.1. Monitoring Program, Sampling Requirements and Reporting

4.6.1.1. Monitoring

Permittees shall develop and implement a monitoring and assessment program that provides data and information to identify pollutant sources and aids in determining the effectiveness of the stormwater management program. A description of this program must be included in the Stormwater Management Program. The monitoring and assessment program must be designed to meet the following objectives:

a. Assess compliance with this permit;
b. Measure the effectiveness of the permittee's stormwater management program;
c. Evaluate stormwater impacts to the receiving waters;
d. Identify sources of specific pollutants, including nutrients, pathogens, siltation, or other parameters related to stormwater discharges from the MS4 System: and
e. Gather data to inform program decisions and prioritization of future activities related to the protection of water quality and identify corrective actions.

The permittee shall perform monitoring in compliance with the requirements in Option 1 below or develop a jurisdiction-specific monitoring plan in compliance with the objectives in Option 2 below. Regardless of the option chosen, at a minimum the permittee shall perform monitoring as prescribed for stream segments subject to EPA approved TMDLs for streams with unavailable parameters for nutrients, pathogens, or siltation as applicable to MS4 jurisdictions.

4.6.1.1.1. Option 1

The permittee shall perform analytical monitoring as a part of its Stormwater Management Program within the MS4 program area.
For stream segments identified by the Division as waters with unavailable parameters for siltation and/or nutrients, biological stream sampling and habitat assessment must be performed utilizing the Semi-Quantitative Single Habitat (SQSH) Method (see subpart 4.6.1.3) as identified in the Division's most current version of the Quality System Standard Operating Procedure for Macroinvertebrate Stream Survey. At least one sample per stream segment must

be collected, with all segments within the MS4 jurisdiction sampled in a five-year period i.e. no more than 5 years between samples in a segment.

For stream segments identified by the Division as waters with unavailable parameters for pathogens, bacteriological stream sampling must be performed utilizing methods identified in the Division's most current version of the Quality System Standard Operating Procedure for Chemical and Bacteriological Sampling of Surface Water. Monitoring shall include the collection of five samples within a thirty-day period (to establish a geometric mean) and be performed during the summer (March through November). Corresponding flow measurement is recommended but not required. At least one series of five samples per stream segment must be collected, with all segments within the MS4 jurisdiction sampled in a five-year period.

Visual Stream Surveys and Unavailable Parameter Inventories must be performed on each stream segment within the MS4 jurisdiction with unavailable parameters for siltation, pathogens, and nutrients to identify and prioritize sources of these pollutants of concern. At a minimum, a visual stream survey must be performed immediately upstream and downstream of each MS4 outfall that discharges into that stream segment. All stream segments with unavailable parameters in the permitted jurisdiction must be surveyed once every five-year period.

Permittees shall develop and implement visual stream survey protocols in the Stormwater Management Program. The permittee must:

a. Adopt existing survey protocols such as the ones available through the Natural Resources Conservation Service, State of Maryland Department of Natural Resources, and/or the State of Tennessee Habitat Assessment Protocol and related Stream Survey Field Sheets (See Subpart 8.3 for links to referenced protocols); or

b. Develop their own protocol which must address the following at a minimum:
    1. Training, Safety, and Private Property Access;
    2. Equipment and Logistics;
    3. Recordkeeping and photo documentation;
    4. Scoring Mechanism;
    5. Visual Survey Assessment elements:
        i. Channel Condition
        ii. Hydrologic Alteration
        iii. Bank Condition
        iv. Riparian Area Condition

v. Canopy Cover
vi. Water Appearance
vii. Nutrient Enrichment
viii. Animal Or Human Waste Presence
ix. Pools
x. Barriers
xi. Fish Habitat Complexity
xii. Invertebrate Habitat
xiii. Invertebrate Community
xiv. Riffle Embeddedness
xv. Other as defined by the permittee

For the purpose of complying with subpart, the permittee is only required to monitor the stream segments that were designated as unavailable conditions for nutrients, pathogens, and siltation by the Division upon September 1, 2022.

4.6.1.1.2. Option 2

The permittee may develop a jurisdiction-specific monitoring plan as an alternative to the plan identified in Option 1 (subpart 4.6.1.1.1). The jurisdiction-specific monitoring plan must be designed to meet, at a minimum, the objectives of 4.6.1.1a-b:

When developing the alternative monitoring plan, the permittee must examine and consider a variety of factors, including, but not limited to, land use conditions, stream status/characteristics, and utilization of monitoring results. The alternate plan must contain:

a. A justification for the stream selection(s);
b. Identification and source determination of pollutant(s) of concern;
c. Monitoring details;
d. Records requirements;
e. Description of how MS4 will evaluate stormwater impacts to receiving waters;
f. Description of how data will be gathered to inform program decisions and prioritization of future activities related to the protection of water quality;
g. Acknowledgement that division protocols (identified above in Option 1) will be used for instream monitoring or alternative protocols for division approval; and
h. Provisions for an administratively continued small MS4 general permit.

A proposed Option 2 plan must be submitted to the Nashville Central Office to Water.Permits@tn.gov within 24 months of September 1, 2022 for review and

authorization. The permittee must submit any revisions requested by the division within 30 days of being notified. The plan must be implemented upon written authorization and completed by the end of the permit cycle.

4.6.1.2. Sampling Methods and Procedures

4.6.1.2.1. Representative Sampling

Samples and measurements taken in compliance with the monitoring requirements specified herein shall be representative of the volume and nature of the monitored discharge or the receiving stream.

4.6.1.2.2. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304 (h) of the Clean Water Act (the "Act"), as amended, under which such procedures may be required.

Unless otherwise noted in the permit, all pollutant parameters shall be determined using sufficiently sensitive methods in Title 40 C.F.R. § 136, as amended, and promulgated pursuant to Section 304 (h) of the Act. The chosen methods must be sufficiently sensitive as required in state rule 0400-40-03-.05(8).

When there is no analytical method that has been approved under 40 C.F.R. §136 or required under 40 C.F.R. chapter I, subchapter N or O, and a specific method is not otherwise required by the Director, the permittee may use any suitable method but shall provide a description of the method. When selecting a suitable method, factors such as a method's precision, accuracy, or resolution must be considered when assessing the performance of the method.

4.6.1.3. Semi-Quantitative Single Habitat (SQSH) Reporting

Appropriate habitat assessment and stream survey workbooks (also known as Electronic Data Deliverable or EDDs) will be completed concurrent with each biological survey. The High Gradient worksheet will be used in conjunction with riffle kick collections and the Low Gradient worksheet will be used in conjunction with rooted bank collections.

Two electronic Excel workbooks titled *Field Stream Survey* and *Habitat Sheets and Macroinvertebrate Taxa Report* should be used to report complete taxa lists as well as habitat assessments and field survey sheets, including chemical/physical parameters recorded during the biosurvey. The worksheets can be downloaded from the TDEC publications website TDEC Water Quality Reports and Publications

and looking under Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys.

The completed workbooks, also known as Electronic Data Deliverable or EDDs, shall be attached to the annual report.

4.6.1.4. Annual Report Requirements for Monitoring Program

Management Measure	Measurable Goals	Annual Report Requirement
Perform monitoring in accordance with Stormwater Management Program	Option 1 – Perform monitoring specified in 4.6.1.1.1 for the stream segments that were designated as unavailable conditions for nutrients, pathogens, and siltation by the Division upon September 1, 2022. Or Option 2 – Perform monitoring in accordance with the approved Option 2 monitoring plan	- Yes / No Monitoring for the reporting year has been performed in accordance with either 4.6.1.1.1 (Option 1) or 4.6.1.1.2 (Option 2) - Provide a summary of monitoring results - Upload a copy of all monitoring data. Where available the EDD Forms developed by the Division shall be submitted.

4.6.2. Stormwater Management Program Evaluation

The permittee shall conduct an annual evaluation of the Stormwater Management Program to evaluate compliance with the terms and conditions of the permit, including the effectiveness of the BMPs, components, or controls of its stormwater management program, and the status of achieving the measurable requirements in the permit.

Management Measure	Measurable Goals	Annual Report Requirement
Conduct an annual evaluation of the current Stormwater Management Program for every reporting period	Summarize evaluation results	- Narrative Description
	Identify modifications or replacement of an ineffective activity/control measure/component/BMP.	Narrative Description
	Summarize the assessment results, and any modifications and improvements scheduled to be implemented in the next reporting period to improve the program or remedy deficiencies or weaknesses	Narrative Description
MCM Status Determination	Indicate compliance status for each of the six MCMs (subpart 4.2) and the Monitoring Program (subpart 4.6.1.1	Compliant with Permit Requirements? Yes/No If no (Please provide more details)

4.7. LEGAL AUTHORITY

To the extent allowed by law, each permittee shall ensure legal authority to reduce the discharge of pollutants to the maximum extent practicable (MEP) from those portions of the MS4 Area over which it has jurisdiction. This legal authority may be a combination of statute, law, rule, ordinance, resolution, permit, contract, order, or interjurisdictional agreements between permittees with adequate existing legal authority to:

a. Prohibit non-stormwater discharges into the storm sewer system and implement appropriate enforcement procedures and actions;

b. Require erosion and sediment controls, as well as sanctions to ensure compliance;

c. Address post-construction/permanent stormwater runoff from new development and redevelopment projects;

d. Obtain remedies for noncompliance, seek injunctive relief, seek, or assess penalties and enact the enforcement response plan as required in subpart 4.5;

e. Require compliance with conditions in ordinance, permits, contract, orders, or other legal authority; and

f. Conduct all inspection, surveillance, and monitoring activities necessary to determine compliance with the conditions of this permit.

4.7.1. Annual Report Requirements for Legal Authority

Legal Authority	Annual Report Requirement
Provide a signed solicitor's certification statement that: - Contains the name of the attorney(s) - Confirms that the permittee has the adequate authority (or functional equivalent for non-traditional MS4s) to carry out the Stormwater Management Program (Stormwater Management Program) as described - Lists the documents (such as Ordinance, Rules, Regulations, codes, interjurisdictional agreements, or any other document) that give the permittee that authority - Specifies the document and location of the specific authorities required by subpart 4.7a-f note: For non-traditional MS4, the legal authority for some elements may be inherent as a legal entity and not in a standalone document.	The initial solicitor's statement will be required in the 2024 annual report for existing permittees and in the third annual report for new permittees. If modifications are made to the legal authority that necessitate a new evaluation by a solicitor, a new certification statement must be submitted.

PART 5

5. ANNUAL REPORT

5.1. ANNUAL REPORTING PERIOD, DUE DATE AND SIGNATORY REQUIREMENT

a. The Annual Report shall cover the period beginning on July 1st and ending on June 30th;
b. The Annual Report shall be due on September 30th after the end of the reporting period.;
c. The permittee shall sign and certify the Annual Report in accordance with subpart 7.11.; and
d. The annual report shall be submitted electronically through MyTDEC Forms https://forms.tdec.tn.gov/ see subpart 6.

5.2. ANNUAL REPORT REQUIREMENTS

Annual Report Required Information
- All reporting elements as indicated in the permit including the information noted in the "**Annual Report Requirement"** column of the tables in Part 4 of the permit, information noted in narrative format. - - The status of compliance with permit terms and conditions; - Notice that the permittee is relying on another governmental entity to satisfy some of the permit obligations (if applicable); and - Any other data specifically requested by the Division to substantiate statements and conclusions reached in the Annual Reports.

PART 6

6. RETENTION, ACCESSIBLITY, AND SUBMISSION OF RECORDS

6.1. RECORDS RETENTION

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, Stormwater Management Program documentation including but not limited to policies, procedures, forms, checklists, correspondence, records, etc., reports required by this permit, records of all data used to complete the NOI and the Notice of Termination (NOT) for a period of at least three years. This period may be extended by written request of the Director.

6.2. ELECTRONIC SUBMISSION OF DOCUMENTS

This permit requires the submission of forms developed by the Director in order for a person to comply with certain requirements, including, but not limited to, making reports, submitting monitoring results, and applying for permit coverage. The Director may make these forms available electronically and, if submitted electronically, then that electronic submission shall comply with the requirements of Chapter 0400-01-40. Electronic submission is required when available unless waived by the Commissioner in accordance with 40 C.F.R. § 127.15.

In the event of large-scale emergencies and/or prolonged electronic reporting system outages, an episodic electronic reporting waiver may be granted by the Commissioner in accordance with 40 C.F.R. § 127.15. A request for a deadline extension or episodic electronic reporting waiver should be submitted to DWRWater.Compliance@tn.gov, in compliance with the Federal NPDES Electronic Reporting Rule.

If an episodic electronic reporting waiver is granted, reports with wet-ink original signatures shall be mailed to the following address:

STATE OF TENNESSEE -DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
COMPLIANCE & ENFORCEMENT UNIT
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

For purposes of determining compliance with this permit, data provided to the Division electronically is legally equivalent to data submitted on signed and certified forms. A copy must be retained for the permittee's files.

PART 7

7. STANDARD PERMIT CONDITIONS

7.1. DUTY TO COMPLY

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Tennessee Water Quality Control Act (TWQCA) and is grounds for an enforcement action, permit termination, revocation and reissuance, modification; or for denial of a permit renewal application.

7.2. PENALTIES

Pursuant to T.C.A. § 69-3-115 of The Tennessee Water Quality Control Act of 1977, as amended:

a. Any person who violates an effluent standard or limitation or a water quality standard established under this part (T.C.A. § 69-3-101, et. seq.); violates the terms or conditions of this permit; fails to complete a filing requirement; fails to allow or perform an entry, inspection, monitoring or reporting requirement; violates a final determination or order of the board, panel or commissioner; or violates any other provision of this part or any rule or regulation promulgated by the board, is subject to a civil penalty of up to ten thousand dollars ($10,000) per day for each day during which the act or omission continues or occurs.

b. Any person unlawfully polluting the waters of the state or violating or failing, neglecting, or refusing to comply with any of the provisions of this part (T.C.A. § 69-3-101, et. seq.) commits a Class C misdemeanor. Each day upon which such violation occurs constitutes a separate offense.

c. Any person who willfully and knowingly falsifies any records, information, plans, specifications, or other data required by the board or the commissioner, or who willfully and knowingly pollutes the waters of the state, or willfully fails, neglects or refuses to comply with any of the provisions of this part (T.C.A. § 69-3-101, et. seq.) commits a Class E felony and shall be punished by a fine of not more than twenty-five thousand dollars ($25,000) or incarceration, or both.

7.3. CIVIL AND CRIMINAL LIABILITY

Nothing in this permit shall be construed to relieve the discharger from civil or criminal penalties for noncompliance. Notwithstanding this permit, the discharger shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge to any surface or subsurface waters. Additionally, notwithstanding this permit, it shall be the responsibility of the discharger to conduct stormwater discharge activities in a manner such that public or private nuisances or health hazards will not be created. Furthermore, nothing in this permit shall be construed to preclude the State of Tennessee from any legal action or relieve the discharger from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or the Federal Water Pollution Control Act.

7.4. FALSIFYING RESULTS AND/OR REPORTS

Knowingly making any false statement on any report required by this permit or falsifying any result may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Water Pollution Control Act, as amended, and in § 69-3-115 of the Tennessee Water Quality Control Act.

7.5. LIABILITY UNDER STATE LAW

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable local, state, or federal law.

7.6. CONTINUATION OF EXPIRED GENERAL PERMIT

This permit will continue to be in full force and effect for discharges that were authorized prior to expiration until the new general permit is issued. If a small MS4 was granted permit coverage under this permit, it will automatically remain authorized by this permit until the earliest of:

a. Issuance of a Notice of Coverage under a reissued general permit following timely and appropriate submittal of a complete and accurate NOI requesting authorization to discharge under the reissued permit; or
b. Issuance or denial of an individual permit for the MS4's discharges, if the small MS4 submitted a complete application for an individual permit at least 180 days prior to expiration of this general permit or within the timeframe for submitting an NOI established by the reissued permit.

If the MS4 operator does not submit a timely NOI requesting authorization to discharge under the reissued permit or a timely application for an individual permit, authorization under this permit will terminate on the due date for the NOI under the reissued permit unless otherwise specified in the reissued permit.

7.7. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

7.8. DUTY TO MITIGATE

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

7.9. DUTY TO PROVIDE INFORMATION

The permittee shall furnish to the Division or an authorized representative of the Division, within a time specified by the Division, any information that the Division may request to determine compliance with this permit or other information relevant to the protection of the waters of the state. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit.

7.10. OTHER INFORMATION

When the permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in the NOI or in any other report to the Director, it shall promptly submit such facts or information**.**

7.11. SIGNATORY REQUIREMENTS

All Notices of Intent, reports, certifications, or information submitted to the Division, or that this permit requires be maintained by the permittee shall be signed, dated, and certified as follows:

7.11.1. Signatory Requirements for an NOI

The NOI shall be signed as follows:

a. For a corporation: by a responsible corporate officer. For the purpose of this subpart, a responsible corporate officer means:

   1. a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or

   2. Manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions that govern the operation of the regulated facility to assure long term environmental compliance with environmental laws and regulations

   3. Person in a corporate position to whom signatory authority has been delegated by a corporate officer.

b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

c. For a municipality, state, federal, or other public facility, by a:

   1. Principal executive officer (i.e., the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency); or
   2. Ranking elected official.

   NOTE: The Division does not require specific assignments or delegations of authority to responsible corporate officers. The Division will presume that these officers have the requisite authority to sign permit applications unless the entity has notified the Director to the contrary. Procedures governing authority to sign permit applications may provide for assignment or delegation to applicable positions rather than to specific individuals.

7.11.2. Signatory Requirements for Reports and Other Information

All reports or information submitted to the Commissioner shall be signed and certified by the persons identified in subpart 7.11.1 or a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by the person identified in subpart 7.11.1;

2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or regulated activity, or the authorization specifies an individual or position having overall responsibility for environmental matters for the company; and

3. The written authorization is submitted to the Commissioner.

Any changes in the written authorization submitted to the Director under subpart 7.11.2 which occur after the issuance of a permit shall be reported to the Director by submitting a copy of a new written authorization which meets the requirements of 7.11.1 and 7.11.2 of this subpart.

7.11.3. Certification Statement

Any person signing any document under subpart 7.11.1or 7.11.2 of this permit shall make the following certification:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached document; and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

7.11.4. Changes to Authorization

If an authorization under subpart 7.11.1or 7.11.2 of this permit is no longer accurate because a different individual or position has responsibility for the overall operation of the MS4, a new authorization satisfying the requirement of 7.11.2 must be submitted to the Division prior to[8] or together with any reports, information, or NOIs to be signed by an authorized representative.

[8] Authorizations may need to be submitted prior to NOIs or reports submitted electronically in order for that individual to be granted appropriate electronic access.

7.12. OIL AND HAZARDOUS SUBSTANCE LIABILITY

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to Section 311 of the Clean Water Act or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

7.13. MONITORING, RECORDS AND REPORTING

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time.

Records of monitoring information shall include:

- The date, exact place, and time of sampling or measurements;
- The individual(s) who performed the sampling or measurements;
- The date analyses were performed;
- The individual(s) who performed the analyses;
- The laboratory where the analyses were performed;
- The analytical techniques or methods used; and
- The results of such analyses.

Monitoring results shall be conducted according to test procedures approved under 40 C.F.R. part 136.

7.14. PROPERTY RIGHTS

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges; nor does it authorize any injury to private property, any invasion of personal rights or any infringement of federal, state or local laws or regulations. The issuance of this permit does not authorize trespassing or discharges of stormwater or non-stormwater across private property.

7.15. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid,

the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

7.16. INDIVIDUAL PERMITS

7.16.1. Required Individual Permit Coverage

The Director may require any person covered by this permit to apply for and obtain an individual NPDES permit or an alternative NPDES general permit to ensure adequate protection of designated uses of a receiving stream. Any interested person may petition the Director in writing to take action under this paragraph but must include in their petition the justification for such an action. Where the Director requires a discharger authorized to discharge under this permit to apply for an individual NPDES permit, the Director shall notify the discharger in writing that an individual permit application is required. This notification will include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for the discharger to file the application and a statement that coverage under this general permit shall terminate upon the effective date of an individual NPDES permit; or denial of coverage under an individual permit.

7.16.2. Permittee-Requested Individual Permit Coverage

Any discharger authorized by this permit may request to be excluded from the coverage of this permit by applying for an individual permit. Any discharger that knowingly cannot abide by the terms and conditions of this permit must apply for an individual permit. In such cases, the permittee shall submit an individual application in accordance with the requirements of 40 C.F.R. 122.21(f)[9] and 40 C.F.R. §122.33(b)(2)(i) as well as reasons supporting the request.

7.16.3. General Permit Termination

When an individual NPDES permit is issued to a discharger otherwise subject to this permit, or the discharger is authorized to discharge under an alternative NPDES general permit, the applicability of this permit to the discharger is terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit, whichever the case may be. When an individual NPDES permit is denied to an owner or operator otherwise subject to this permit, or the owner or operator is denied for coverage under an alternative NPDES general permit, the applicability of this permit to the

[9] The requirements of 40 CFR 122.21(f) can be met by submitting EPA Application Form 1 (https://www.epa.gov/npdes/npdes-application-forms)

individual NPDES permittee is terminated on the date of such denial, unless otherwise specified by the Director.

7.17. OTHER, NON-STORMWATER, PROGRAM REQUIREMENTS

No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

7.18. PROPER OPERATION AND MAINTENANCE

The permittee shall, at all times, properly operate and maintain all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory and process controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit. Backup continuous pH and flow monitoring equipment are not required.

7.19. INSPECTION AND ENTRY

The permittee shall allow authorized representatives of the Environmental Protection Agency, the Director or an authorized representative of the Commissioner of TDEC, upon the presentation of credentials and other documents as may be required by law to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

4. Sample or monitor at reasonable times for the purposes of assuring permit compliance or as otherwise authorized by the Director.

7.20. PERMIT ACTIONS

This permit may be issued, modified, revoked, reissued or terminated for cause in accordance with this permit and the applicable requirements of T.C.A. § 69-3-108. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7.21. ANTICIPATED NONCOMPLIANCE

The permittee must give advance notice to the Division of any planned changes in the permitted small MS4 or activity which may result in noncompliance with this permit.

7.22. PLANNED CHANGES

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

a. The alteration or addition to a permitted facility is considered a new source as defined in Rule 0400-40-05-.02; or

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged.

PART 8

8. DEFINITIONS AND ACRONYMS

8.1. DEFINITIONS

Annually	For the purposes of this permit, ***annually*** is defined as a frequency of once every 12 months beginning on July 1st.
ARAP	**Aquatic Resource Alteration Permit** Persons who wish to make an alteration to a stream, river, lake or wetland must first obtain a water quality permit. Physical alterations to properties of waters of the state require an ARAP or a §401 Water Quality Certification (§401 certification). Examples of stream alterations that require a permit from the Division include: • Dredging, excavation, channel widening, or straightening • Bank sloping; stabilization • Channel relocation • Water diversions or withdrawals • Dams, weirs, dikes, levees or other similar structures • Flooding, excavating, draining and/or filling a wetland • Road and utility crossings • Structural fill General ARAPs are developed and maintained by the Division to provide a streamlined, expedited means of authorizing projects that singularly or cumulatively propose minor impacts to water resources.
BMP	**Best Management Practices** ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the discharge of pollutants to waters of the state. BMPs also include treatment requirements, operating procedures; and practices to control plant site runoff, spillage, leaks, sludge or waste disposal, or drainage from raw material storage. BMPs include source control practices (non-structural BMPs) and engineered structures designed to treat runoff. Structural BMPs are facilities that help prevent pollutants in stormwater runoff from leaving the site.

	Non-structural BMPs are techniques, activities and processes that reduce pollutants at the source.
borrow pit	**Borrow Pit** is an excavation from which erodible material (typically soil) is removed to be fill for another site. There is no processing or separation of erodible material conducted at the site. Given the nature of activity and pollutants present at such excavation, a borrow pit is considered a construction activity for the purpose of this permit.
buffer zone	**Buffer Zone** or **Water Quality Riparian Buffer** is a permanent strip of natural perennial vegetation, adjacent to a stream, river, wetland, pond, or lake that contains dense vegetation made up of grass, shrubs, and/or trees. The purpose of a water quality riparian buffer is to maintain existing water quality by minimizing risk of any potential sediments, nutrients or other pollutants reaching adjacent surface waters and to further prevent negative water quality impacts by providing canopy over adjacent waters
calendar day	A ***calendar day*** is defined as the 24-hour period from midnight to midnight or any other 24-hour period that reasonably approximates the midnight-to-midnight time period.
clearing	**Clearing** refers to removal of vegetation and disturbance of soil prior to grading or excavation in anticipation of construction activities. Clearing may also refer to wide area land disturbance in anticipation of non-construction activities. Clearing, grading and excavation do not refer to clearing of vegetation along existing or new roadways, highways, dams or power lines for sight distance or other maintenance and/or safety concerns, or cold planing, milling, and/or removal of concrete and/or bituminous asphalt roadway pavement surfaces. The clearing of land for agricultural purposes is exempt from federal stormwater NPDES permitting in accordance with Section 401(1)(1) of the 1987 Water Quality Act and state stormwater NPDES permitting in accordance with the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.).
commencement	**Commencement of construction:** the initial disturbance of soils associated with clearing, grading, excavating or other construction activities.
common plan	**Common plan of development or sale** is broadly defined as any announcement or documentation (including a sign, public

	notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design) or physical demarcation (including boundary signs, lot stakes, surveyor markings) indicating construction activities may occur on a specific plot. A common plan of development or sale identifies a situation in which multiple areas of disturbance are occurring on contiguous areas. This applies because the activities may take place at different times, on different schedules, by different operators.
control measure	**Control measure** refers to any Best Management Practice (BMP) or other method used to prevent or reduce the discharge of pollutants to waters of the state.
CWA	**CWA** means the Clean Water Act of 1977 or the Federal Water Pollution Control Act (33 U.S.C. 1251, et seq.)
director	**Director** means the director, or authorized representative, of the Division of Water Resources of the State of Tennessee, Department of Environment and Conservation.
Design Storm	Design storm is a 1-year, 24-hour storm event as defined by Precipitation-Frequency Atlas of the United States. Atlas 14. Volume 2. Version 3.0. U.S. Department of Commerce. National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center, Silver Springs, Maryland or its digital product equivalent. The estimated design rainfall amounts, for any return period interval (i.e., 1,-yr, 2-yr, 5-yr, 25-yr, etc.,) in terms of either 24-hour depths or intensities for any duration, can be found by accessing the data available at https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html.
de minimis	**De Minimis** is degradation of a small magnitude, as provided in this paragraph: (a) Discharges and withdrawals: 1. Subject to the limitation in part 3 of this subparagraph, a single discharge other than those from new domestic wastewater sources will be considered de minimis if it uses less than five percent of the available assimilative capacity for the substance being discharged. 2. Subject to the limitation in part 3 of this subparagraph, a single water withdrawal will be considered de minimis if it removes less than five percent of the 7Q10 flow of the stream.

	3. If more than one activity described in part 1 or 2 of this subparagraph has been authorized in a segment and the total of the authorized and proposed impacts uses no more than 10% of the assimilative capacity, or 7Q10 low flow, they are presumed to be de minimis. Where the total of the authorized and proposed impacts uses 10% of the assimilative capacity, or 7Q10 low flow, additional degradation may only be treated as de minimis if the Division finds on a scientific basis that the additional degradation has an insignificant effect on the resource. (b) Habitat alterations authorized by an Aquatic Resource Alteration Permit (ARAP) are de minimis if the Division finds that the impacts, individually and cumulatively, are offset by impact minimization and/or in-system mitigation, provided however, in Outstanding National Resource Waters (ONRWs) the mitigation must occur within the ONRW.
discharge of a pollutant	**Discharge** or **discharge of a pollutant** refers to the addition of pollutants to waters from a source.
disturbed area	**Disturbed area** means the total area presented as part of the development (and/or of a larger common plan of development) subject to being cleared, graded, grubbed, filled or excavated during the life of the development. The area cannot be limited to only the portion of the total area that the site-wide owner/developer initially disturbs through the process of various land clearing activities or in the construction of roadways, sewers, drainfields, and water utilities, stormwater drainage structures, etc., to make the property marketable.
division	**Division** means the Division of Water Resources of the State of Tennessee, Department of Environment and Conservation
ecoregion	An ***ecoregion*** is a relatively homogeneous area defined by similarity of climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables.
Electronic Data Deliverable	An **Electronic Data Deliverable** is an electronic mechanism to transfer monitoring results to the division to allow for the data to be integrated into the Division database for use.
exceptional waters	**Exceptional Tennessee Waters** are surface waters designated by the Division as having the characteristics set forth at Tennessee Rules, Chapter 0400-40-03-.06(4).

	Characteristics include waters within parks or refuges; scenic rivers; waters with threatened or endangered species; waters that provide specialized recreational opportunities; waters within areas designated as lands unsuitable for mining; waters with naturally reproducing trout; waters with exceptional biological diversity and other waters with outstanding ecological or recreational value.
permanent stabilization	**Permanent Stabilization** means that all soil disturbing activities at the site have been completed and one of the three following criteria is met: (1) A perennial, preferably native, vegetative cover with a uniform (i.e., evenly distributed, without large bare areas) density of at least 70 percent has been established on all unpaved areas and areas not covered by permanent structures, and all slopes and channels have been permanently stabilized against erosion. (2) Equivalent permanent stabilization measures such as the use of riprap; permanent geotextiles; hardened surface materials including concrete, asphalt, gabion baskets or Reno mattresses have been employed. (3) For construction projects on land used for agricultural or silvicultural purposes, permanent stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural or silvicultural use.
improved sinkhole	**Improved sinkhole** is a natural surface depression that has been altered in order to direct fluids into the hole opening. Improved sinkhole is a type of injection well regulated under the Underground Injection Control (UIC) program. Underground injection constitutes an intentional disposal of waste waters in natural depressions, open fractures and crevices, such as those commonly associated with weathering of limestone.
Level 1	**Level 1 - Fundamentals of Erosion Prevention and Sediment Control** training and certification program administered by University of Tennessee Water Resources Research Center (https://tnepsc.org/index.asp). The Fundamentals course is a foundation-building course intended for individuals involved in land-disturbing activities covered by the Construction General Permit. The course aims to build a working knowledge of erosion and sedimentation processes and practices and is intended for:

	site inspectors, inspection and enforcement personnel from all levels of government, plan preparers and reviewers, and designers and engineers. Topics include: Construction General Permit and related SWPPP requirements; function, installation, limitations, inspection and maintenance of Best Management Practices; roles of local officials and state government agencies involved in the permitting process; and basic hydrologic and erosion processes. Upon successful completion of a Course Certification Exam, the participant receives a Level 1 TNEPSC certificate. The Level 1 certificate is valid for three full years following the year that the certificate was issued. To meet the requirement for Level 1 certified staff, TDOT may develop and administer an approved equivalent Level1 training and certification program as provided in the TDOT individual MS4 Permit. The equivalent TDOT Level 1 certification is valid only for TDOT staff and for projects where TDOT is the primary site operator.
Level 2	**Level 2 - Design Principles for Erosion Prevention and Sediment Control for Construction Sites** training and certification program administered by University of Tennessee Water Resources Research Center (https://tnepsc.org/index.asp). It is an advanced 2-day workshop designed for engineers and other professionals who have completed the prerequisite Level 1 course. The Level 2 Design workshop provides the general tools needed for developing an acceptable, working SWPPP. Topics discussed in the course include: hydrologic methods for determining peak flows; principles of soil erosion, scouring and sediment transport processes, including practice examples for preventing erosion; and open channel principles and practices for designing a stable channel, including use and examples of riprap, blankets and matting, and vegetation; stormwater control requirements and design; sedimentation principles; and temporary sediment basin design requirements, and detailed examples. The Level 2 Design workshop provides a Certificate of Completion after attending both days and successfully completing the take-home exam.
linear project	**Linear Project** is a land disturbing activity as conducted by an underground/overhead utility or highway department, including, but not limited to, any cable line or wire for the

	transmission of electrical energy; any conveyance pipeline for transportation of gaseous or liquid substance; any cable line or wire for communications; or any other energy resource transmission ROW or utility infrastructure, e.g., roads and highways. Activities include the construction and installation of these utilities within a corridor. Linear project activities also include the construction of access roads, staging areas and borrow/spoil sites associated with the linear project. Land disturbance specific to the development of residential and commercial subdivisions or high-rise structures is not considered a linear project.
measurable degradation	**Measurable Degradation**, as used in the context of discharges or withdrawals, means changes in parameters of waters that are of sufficient magnitude to be detectable by the best available instrumentation or laboratory analyses.
monitoring	**Monitoring** refers to tracking or measuring activities, progress, results, etc., and can refer to non-analytical monitoring for pollutants by means other than 40 C.F.R. § 136 (and other than state- or federally-established protocols in the case of biological monitoring and assessments), such as visually or by qualitative tools that provide comparative values or rough estimates.
month	**Month** or **Monthly** refers to calendar months.
MS4	"**Municipal Separate Storm Sewer System**" or "**MS4**" is defined in 40 C.F.R. §122.26(b)(8) to mean a conveyance or system of conveyances (e.g., roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) that are: a) owned and operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;

	b) designed or used for collecting or conveying stormwater; c) not a combined sewer; and d) not part of a Publicly Owned Treatment Works (POTW) as defined in 40 C.F.R. §122.2.
operator	**Operator** means any person who owns, leases, operates, controls, or supervises a source
point source (or outfall)	**Point source** means any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include introduction of pollutants from non-point source agricultural and silvicultural activities, including stormwater runoff from orchards, cultivated crops, pastures, range lands, forest lands or return flows from irrigated agriculture or agricultural stormwater runoff. In short, outfall is a point where runoff leaves the site as a concentrated flow in a discrete conveyance. Phrase "point source" and term "outfall" are used interchangeably in this general permit, and can be considered synonyms.
pollutant	**Pollutant** means sewage, industrial wastes, or other wastes.
QLP	**Qualifying State, Tribal, or local erosion and sediment control program** is one that includes, as defined in 40 C.F.R. 122.44(s): a) Requirements for construction site operators to implement appropriate erosion and sediment control best management practices. b) Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality. c) Requirements for construction site operators to develop and implement a stormwater pollution prevention plan. A stormwater pollution prevention plan includes site descriptions, descriptions of appropriate control measures, copies of approved State, Tribal or local requirements, maintenance

	procedures, inspection procedures and identification of non-stormwater discharges. d) Requirements to submit a site plan for review that incorporates consideration of potential water quality impacts.
QLP Status	Pending – NOI/SWPPP has been received but final approval or notice of coverage has not been issued
	Active- Permit coverage is active
	Terminated – Site has been stabilized and permit coverage is terminated
quarter	A ***quarter*** is defined as any one of the following three-month periods: January 1 through March 31, April 1 through June 30, July 1 through September 30, and/or October 1 through December 31.
rainfall	A **rainfall event** is defined as any occurrence of rain preceded by 10 hours without precipitation that results in an accumulation of 0.01 inches or more. Instances of rainfall occurring within 10 hours of each other will be considered a single rainfall event.
registered engineer or licensed professional engineer	**Registered Engineer** and **Registered Landscape Architect** An engineer or landscape architect certified and registered by the State Board of Architectural and Engineer Examiners pursuant to Section 62-202, Tennessee Code Annotated, to practice in Tennessee.
runoff coefficient	**Runoff coefficient** means the fraction of total rainfall that will appear at the conveyance as runoff. Runoff coefficient is also defined as the ratio of the amount of water that is not absorbed by the surface to the total amount of water that falls during a rainstorm.
sediment	**Sediment** means solid material, both inorganic (mineral) and organic, that is in suspension, is being transported; or has been moved from the site of origin by wind, water, gravity or ice as a product of erosion.
sediment basin	**Sediment basin** A temporary basin consisting of an embankment constructed across a wet weather conveyance, an excavation that creates a basin or by a combination of both. A sediment basin typically consists of a forebay cell, dam, impoundment, permanent pool, primary spillway, secondary or emergency spillway and surface dewatering

	device. The size and shape of the basin depends on the location, size of drainage area, incoming runoff volume and peak flow, soil type and particle size, land cover, and receiving stream classification (i.e., waters with unavailable parameters, Exceptional TN Waters, or waters with available parameters).
sedimentation	**Sedimentation** means the action or process of forming or depositing sediment.
Significant Contributor	**Significant Contributor** is defined as a source of pollutants where the volume, concentration, or mass of a pollutant in a stormwater discharge can cause or threaten to cause pollution, contamination, or nuisance that adversely impact human health or the environment and cause or contribute to a violation of any applicable water quality standards for receiving water.
soil	**Soil** or **Topsoil** means the unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of plants.
steep slope	**Steep Slope** or **Steep Grade** means a natural or created slope of 35% grade or greater. Designers of sites with steep slopes must pay attention to stormwater management in the SWPPP to engineer runoff around or over a steep slope so as not to erode the slope. In addition, site managers should focus on erosion prevention on the slopes and stabilize the slopes as soon as practicable to prevent slope failure or sediment discharges from the project.
stormwater	**Stormwater** means rainfall runoff, snow melt runoff, and surface runoff and drainage.
Stormwater Management Plan	**A Stormwater Management Plan is a written compilation of the elements of the Stormwater Management Program. It is considered a single document, even though it actually consists of separate stand- alone components.**
Stormwater Management Program	**Stormwater Management Program** refers to a comprehensive program to manage the quality of stormwater discharged from the municipal separate storm sewer system.
Stormwater control measure (SCM)	**Stormwater control measure** or **SCM** means permanent practices and measures designed to reduce the discharge of pollutants from new development projects or redevelopment projects.
stream	A **Stream** is a surface water that is not a wet weather conveyance. Therefore, as used in this permit, "stream" includes lakes, wetlands and other non-linear surface waters.

construction stormwater	**Stormwater associated with industrial activity** is defined in 40 C.F.R. 122.26(b)(14) and incorporated here by reference. Most relevant to this permit is 40 C.F.R. 122.26(b)(14)(x), which relates to construction activity including clearing, grading, filling and excavation activities, including borrow pits containing erodible material. Disturbance of soil for the purpose of crop production is exempt from permit requirements, but stormwater discharges from agriculture-related activities that involve construction of structures (e.g., barn construction, road construction, pond construction) are considered associated with industrial activity. Maintenance to the original line and grade, hydraulic capacity; or to the original purpose of the facility (e.g., re-clearing, minor excavation performed around an existing structure necessary for maintenance or repair and repaving of an existing road) is not considered a construction activity for the purpose of this permit.
discharge-related activities	**Stormwater discharge-related activities** means activities that cause, contribute to or result in point source stormwater pollutant discharges. These activities may include excavation, site development, grading and other surface disturbance activities; and activities to control stormwater including the siting, construction and operation of best management practices (BMPs).
SWPPP	**Stormwater Pollution Prevention Plan** is a written site-specific plan required by this permit that includes a narrative pollution prevention plan and graphical erosion and sediment control plan. In its basic form, the plan contains a site map, a description of construction activities that could introduce pollutants to stormwater runoff, a description of measures or practices to control these pollutants, and erosion and sediment control plans and specifications. It must be prepared and submitted before construction begins. In order to effectively reduce erosion and sedimentation impacts, Best Management Practices (BMPs) must be designed, installed and maintained during land disturbing activities. The SWPPP should be prepared in accordance with the Tennessee Erosion and Sediment Control Handbook.
take	**Take** of an endangered species means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct.

the handbook	**Tennessee Erosion and Sediment Control Handbook** is a guidance issued by the Division of Water Resources for the purpose of developing Stormwater Pollution Prevention Plans and Erosion and Sediment Control Plans required by the TNCGP. The handbook is designed to provide information to planners, developers, engineers and contractors on the proper selection, installation and maintenance of BMPs. The handbook is intended for use during the design and construction of projects that require erosion and sediment controls to protect waters of the state.
temporary stabilization	**Temporary stabilization** is achieved when vegetation or non-erodible surface has been established on the area of disturbance and construction activity has temporarily ceased. Under certain conditions, temporary stabilization is required when construction activities temporarily cease. However, if future construction activity is planned, permit coverage continues.
TMDL	**Total maximum daily load (TMDL)** means the sum of the individual wasteload allocations for point sources and load allocations for nonpoint sources and natural background (40 C.F.R. 130.2(I)). TMDL is a study that quantifies the amount of a pollutant in a stream, identifies the sources of the pollutant and recommends regulatory or other actions that may need to be taken in order for the stream to cease being polluted. TMDLs can also be described by the following equation: TMDL = sum of nonpoint sources (LA)+ sum of point sources (WLA)+ margin of safety A list of completed TMDLs that have been approved by EPA can be found at our web site: https://www.tn.gov/environment/program-areas/wr-water-resources/watershed-stewardship/tennessee-s-total-maximum-daily-load--tmdl--program.html
treatment chemicals	**Treatment chemicals** are polymers, flocculants or other chemicals used to reduce turbidity in stormwater discharges by chemically bonding to suspended silts and other soil materials and causing them to bind together and settle out. Common examples of anionic treatment chemicals are chitosan and anionic PAM.

turbidity	**Turbidity** is the cloudiness or haziness of a fluid caused by individual particles (suspended solids) that are generally invisible to the naked eye, similar to smoke in air.
waste site	**Waste site** is an area where material from a construction site is disposed of. When the material is erodible, such as soil, the site must be treated as a construction site.
waters or waters of the state	**Waters** (or waters of the state) means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through, or border upon Tennessee or any portion thereof, except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine or effect a junction with natural surface or underground waters.
unavailable parameters	**Waters with unavailable parameters** means any segment of surface waters that has been identified by the Division as failing to support one or more classified uses. Unavailable parameters exist where water quality is at, or fails to meet, the levels specified in water quality criteria in Rule 0400-40-03-.03, even if caused by natural conditions. In the case of a criterion that is a single response variable or is derived from measurement of multiple response variables, the unavailable parameters shall be the agents causing water quality to be at or failing to meet the levels specified in criteria. Resources to be used in making this determination include biennial compilations of impaired waters, databases of assessment information, updated GIS coverages (https://tdeconline.tn.gov/dwr/), and the results of recent field surveys. GIS coverages of the streams and lakes not meeting water quality standards, plus the biennial list of waters with unavailable parameters, can be found at https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html.
Water quality riparian buffer	"Water quality riparian buffer" means a permanent strip of natural perennial vegetation adjacent to a stream, river, wetland, pond, or lake that contains dense vegetation made up of grass, shrubs, and/or trees. The purpose of a water quality riparian buffer is to maintain existing water quality by minimizing the risk of any potential sediments, nutrients, or other pollutants reaching adjacent surface waters and to

	further prevent negative water quality impacts by providing canopy over adjacent waters.
week	A **one-week period** is a synonym of a **calendar-week**; typically, a period from Sunday through Saturday.
wet weather conveyance	**Wet weather conveyances** are man-made or natural watercourses, including natural watercourses that have been modified by channelization, that meet the following: a) The conveyance carries flow only in direct response to precipitation runoff in its immediate locality. b) The conveyance's channels are at all times above the groundwater table. c) The flow carried by the conveyance is not suitable for drinking water supplies. d) Hydrological and biological analyses indicate that, due to naturally occurring ephemeral or low flow under normal weather conditions, there is not sufficient water to support fish or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months. (Tennessee Rules, Chapter 0400-40-3-.04(3)).

8.2. ACRONYMS AND ABBREVIATIONS

1Q10 – 1-day minimum, 10-year recurrence interval
BDL – below detection limit
BOD_5 – five-day biochemical oxygen demand
$CBOD_5$ – five-day carbonaceous biochemical oxygen demand
CEI – compliance evaluation inspection
C.F.R. – code of federal regulations
CFS – cubic feet per second
D.O. – dissolved oxygen
E. coli – *Escherichia coli*
EDD - *Electronic Data Deliverable*
EPA – Environmental Protection Agency
EFO – environmental field office
GPM – gallons per minute
LB (lb) – pound
MDL – method detection limit
MGD – million gallons per day
mg/L – milligrams per liter
ML – minimum level of quantification

mL – milliliter
NPDES – national pollutant discharge elimination system
POTW – publicly owned treatment works
SCM - Stormwater Control Measure
TCA – Tennessee code annotated
TDEC – Tennessee Department of Environment and Conservation
TMDL – total maximum daily load
TSS – total suspended solids

8.3. RESOURCES, HYPERLINKS, AND WEB PAGES

Clean Water Act NPDES Electronic Reporting (eReporting) Information
https://www.epa.gov/compliance/npdes-ereporting

Construction General Permit Information
https://www.tn.gov/content/tn/environment/permit-permits/water-permits1/npdes-permits1/npdes-stormwater-permitting-program/npdes-stormwater-construction-permit.html

Electronic Code of Federal Regulations (eC.F.R.), Title 40 (40 C.F.R. § 1 through § 1099)
https://www.ecfr.gov/cgi-bin/text-idx?SID=75202eb5d09974cab585afeea981220b&mc=true&tpl=/ecfrbrowse/Title40/40chaptErl.tpl

Electronic Reporting (NetDMR) Waiver Request
https://www.tn.gov/environment/program-areas/wr-water-resources/netdmr-and-electronic-reporting/e-report-waiver.html

Low Flow Statistics Tools: A How-To Handbook for NPDES Permit Writers (EPA)
https://www.epa.gov/sites/production/files/2018-11/documents/low_flow_stats_tools_handbook.pdf

Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA)
https://www.epa.gov/sites/production/files/2015-08/documents/acute-freshwater-and-marine-wet-manual_2002.pdf

Municipal Boundaries
https://comptroller.tn.gov/office-functions/pa/gisredistricting/municipal-boundaries.html

MyTDEC Forms
https://forms.tdec.tn.gov/

National Resources Conservation Service – National Biology Handbook Part 614 Stream Visual Assessment Protocol Version 2
https://www.nrcs.usda.gov/sites/default/files/2022-10/SVAP2%20National%20Bio%20Handbook%20Part%20614.pdf

NetDMR, MyTDEC Forms, & Electronic Reporting Information
https://www.tn.gov/environment/program-areas/wr-water-resources/netdmr-and-electronic-reporting.html

NPDES Compliance Inspection Manual (EPA)
https://www.epa.gov/sites/production/files/2017-01/documents/npdesinspect.pdf

NPDES Electronic Reporting Rule
https://www.federalregister.gov/documents/2015/10/22/2015-24954/national-pollutant-discharge-elimination-system-npdes-electronic-reporting-rule

Qualifying Local Program Information
https://www.tn.gov/environment/permit-permits/water-permits1/npdes-permits1/npdes-stormwater-permitting-program/tennessee-qualifying-local-program.html

Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys (QSSOP)
https://www.tn.gov/content/dam/tn/environment/water/policy-and-guidance/DWR-PAS-P-01-Quality_System_SOP_for_Macroinvertebrate_Stream_Surveys-122821.pdf

Quality System Standard Operating Procedure for Chemical and Bacteriological Sampling of Surface Water
https://www.tn.gov/content/dam/tn/environment/water/policy-and-guidance/dwr-wqp-p-01-qssop-chem-bac-082918-update-2022-jan.pdf

Rules of the TN Department of Environment and Conservation, Chapter 0400-40
https://publications.tnsosfiles.com/rules/0400/0400-40/0400-40.htm

Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA)
https://www.epa.gov/sites/production/files/2015-08/documents/short-term-chronic-freshwater-wet-manual_2002.pdf

State of Maryland Stream Corridor Assessment Survey SCA Survey Protocols
https://dnr.maryland.gov/streams/Publications/SCAProtocols.pdf

TDEC Final Policy and Guidance Documents
https://www.tn.gov/environment/about-tdec/policy-and-guidance-documents/boe-final-guidance-documents.html

TDEC Water Quality Rules, Reports, and Publications including EDD spreadsheets and instructions for Macroinvertebrate Stream Surveys
https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html
(Related Stream Survey Field Sheets)
https://www.tn.gov/content/dam/tn/environment/water/watershed-planning/wr_wpu_pub_stream-survey-habitat_6.0.xlsx

Technical Support Document for Water Quality-based Toxics Control (EPA)
https://www3.epa.gov/npdes/pubs/owm0264.pdf

Tennessee Erosion and Sediment Control Handbook
https://tnepsc.org/handbook.asp

Tennessee Fundamentals of Erosion Prevention and Sediment Control, (Level 1)
And Tennessee Erosion Prevention and Sediment Control Design Course (Level 2)
https://tnstormwatertraining.org/index.asp

Tennessee Nutrient Reduction Framework
https://www.tn.gov/content/dam/tn/environment/water/tmdl-program/wr-ws_tennessee-draft-nutrient-reduction-framework_030315.pdf

Tennessee Plant Optimization Program (TNPOP)
https://www.tn.gov/environment/program-areas/wr-water-resources/tn-plant-optimization-programs/tnpop.html

Tennessee Water Resources Data and Map Viewers
https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-resources-data-map-viewers.html

USGS StreamStats
https://www.usgs.gov/mission-areas/water-resources/science/streamstats-streamflow-statistics-and-spatial-analysis-tools?qt-science_center_objects=0#qt-science_center_objects

USGS SWToolbox
https://www.usgs.gov/software/swtoolbox-software-information

2024 REVISIONS

Small MS4 General Permit

NPDES Permit No. TNS000000
Date: January 4, 2024
Permit Writer: Ariel Wessel-Fuss

On August 1, 2022, the small MS4 general permit was issued and became effective on September 1, 2022. A third party permit appeal was received by the Division in a letter dated August 30, 2022. That appeal resulted in a settlement agreement that was reached on December 5, 2022. To effectuate that settlement agreement, the Division entered the rulemaking process for Rule 0400-40-05 and Rule 0400-40-10. These rules will become effective March 19, 2024.

Additionally, on July 12, 2023, a revision to 40 CFR § 122.32 became effective. The changes are described in the Federal Register:

> The changes to EPA's regulations are limited to clarifying that the designation criteria for small municipal separate storm sewer systems (MS4s), which have been used since the promulgation of the regulations in 1999, will remain the same. These clarifications are necessary due to the Census Bureau's recent decision to discontinue its practice of publishing the location of "urbanized areas" along with the 2020 Census and future censuses. The clarifications in this final rule replace the term "urbanized area" in the Phase II regulations with the phrase "urban areas with a population of at least 50,000," which is the Census Bureau's longstanding definition of the term urbanized areas. This change allows NPDES permitting authorities to use 2020 Census and future Census data in a manner that is consistent with existing longstanding regulatory practice.
>
> *NPDES Small MS4 Urbanized Area Clarification 88 Fed. Reg. 37994, June 12, 2023, codified in 40 CFR Parts 122 and 123*

This replacement of the term "Urbanized Area" with its definition does not alter the MS4 program implementation requirement for either New or Existing MS4 programs.

As such, this permit is being revoked and reissued in order to comply with both the settlement agreement, the newly effective federal and state rules as well as correct broken links and typographical errors will be made. Furthermore, it is important to note the following:

1. The expiration date of the permit will **not** change.
2. All milestone or due dates remain in place as required by the August 1, 2022, permit.
3. The Notice of Determination issued with the August 1, 2022, permit is incorporated herein as applicable.
4. Small MS4 permittees who have obtained coverage under the August 1, 2022, permit will automatically be covered under the modified permit.

RATIONALE

Small MS4 General Permit
NPDES Permit No. TNS000000
Date: 3/22/2022
Edited: 1/9/24
Permit Writer: Ariel Wessel-Fuss

1. CURRENT PERMIT STATUS

Permit Type:	MS4
Classification:	General
Issuance Date:	30-Sep-16
Expiration Date:	30-Sep-21
Effective Date:	1-Oct-16

2. COVERAGE

3. AREA OF MS4 AUTHORIZED

For city or town, the MS4 program is to be implemented and enforced within the municipal boundaries. Once an area is annexed into the municipality, the newly annexed area will become part of the MS4 automatically. A new NOI is not required. For identification of municipal boundaries, the Division primarily rely on the maps maintained by Geographic Services department in the Division of Property Assessments with the Tennessee Comptroller's office. Similarly, for non-traditional MS4 (such as a university) this permit covers all portions and automatically includes any property acquired.

A county permittee must indicate on the NOI if the MS4 program applies to the entire county or only the urban area with a population of 50,000 or more people (excluding municipalities or non-traditional MS4s). If the permittee's program covers the entire county, the county boundaries minus the municipalities or non-traditional MS4s will be the area of the MS4. If the county permittee indicates the MS4 covers the only the urban area with a population of 50,000 or more people of the county, the Division will utilize the urban area with a population of 50,000 or more people census maps for boundary identification.

When an area is annexed or de-annexed, it is possible that the MS4 authority shifts from one entity to another. The Division encourages communication

between the entities to provide appropriate support for transition and to consult their attorneys for the need of an interjurisdictional agreement during the transition.

3.1. LIMITATIONS ON COVERAGE

Approved TMDLs have corresponding language to subpart 1.40 of this permit. This language is typically in section 9.2.2. of the TMDL. Generally, the TMDL states (in part): *These* [MS4] *permits typically require the development and implementation of a Storm water Management Plan (SWMP) that will reduce the discharge of pollutants to the "maximum extent practicable" and not cause or contribute to violations of state water quality standards. A monitoring component to assess the effectiveness of BMPs is also typically included in the SWMP. Regulated MS4s that maintain compliance with the provisions of their NPDES permits are considered to be consistent with the assumptions and requirements of the WLAs of this TMDL.*

In practice, the language of subpart 1.40 of this permit and the corresponding language of the current TMDLs means that if the permittee is in compliance with the NPDES MS4 permit the permittee is meeting its obligations under the TMDL. The Division does not plan at this time to alter this methodology. However, permittees are encouraged to engage and review proposed TMDLs during the respective public notice periods.

3.2. PERMIT TERM

The permit will be issued for a 5 year term.

4. CO-PERMITTEES AND COORDINATED PROGRAMS

40 CFR 122.35

The section on co-permittees was expanded to better detail during the NOI submittal the accountability for each permittee. This is help ensure both the Division and the co-permittees clearly understand which entity is responsible for each component of the SWMP. Similarly, the language was added for verbiage of the legal mechanisms to prevent the confusion that can occur when multiple MS4 who share responsibility of a program element have differing legal authority.

A requirement to have either one shared MCM or partial sharing of multiple MCMs was added to avoid a loophole where multiple MS4s apply as co-permittees and operate their programs separately.

40 CFR 122.35(a)(3) states that EPA encourages the permittee to enter into a legally binding agreement with that entity if the permittee wants to minimize any uncertainty about compliance with the permit.

5. STORM WATER MANAGEMENT PROGRAM (SWMP)

5.1. TERMINOLOGY

In general conversation as well as previous permits, the terms Storm Water Management Program and Storm Water Management Plan with both using the acronym SWMP have been used almost interchangeably. While in conversations this interchanging of words is not typically an issue, it has caused some confusion with the permit. Therefore, this permit will use SWMP to mean Storm Water Management Program.

The Storm Water Management Program is a set of related measures, projects, plans, activities, and documentation that is managed in a coordinated manner under a structure that allows for the delivery of outcomes/goals. It may be helpful to think of the SWMP documentation as a 3-ring binder. The table of contents for this binder would be very similar to the headings of this permit. Each minimum control measure (MCM) would constitute its own section developed by the permittee to meet the permit requirements. This section could include a plan (document) that describes in detail how the permittee intends to comply with the permit requirements for that MCM. It could also include items like a tracking mechanism, standard operating procedures, policies, or standardized forms such as an inspection form. This 3-ring binder isn't a program unless it is implemented. The SWMP must also include the legal authority to implement and enforce the activities described in the documentation. Additionally, the permittee must not only implement the SWMP but show evidence of implementation as well. So next, let's assume that 3 ring binder is on top of a filing cabinet. A staff member makes a copy of the inspection form from the binder and reviews the inspection procedure. Upon returning from the inspection, the staff member logs the inspection in a tracking mechanism then sends a notice of violation (NOV) in accordance with the enforcement response plan. The completed inspection form and a copy of the NOV are stored in the filing cabinet as records. The documents in the 3-ring binder and the filing cabinet along with the inspection and enforcement activities collectively exemplifies how the term SWMP is used in this permit. The above is for example purposes. The permittee has enormous flexibility to incorporate various technologies into its SWMP such as GIS, databases, or electronic data management systems. It is important to clarify that the broader SWMP may include subprograms like the IDDE program etc.

5.2. NEW PERMITTEES

Tennessee Rule 0400-40-10-.04 allows for implementation of the permanent stormwater management program no more than twenty-four (24) months to implement fully implement the program. In order to establish a clear requirement of fully implementation, new permittees will have 24 months to implement fully the entirety of the MS4 program. The EPA scorecard is required within 12 months and the implementation plan within 90 days. As this time frame is established by the permanent stormwater rule, it will remain the same.

5.3. EXISTING PERMITTEES

Tennessee Rule 0400-40-10-.04 allows for implementation of the permanent stormwater management program no more than 24 months to implement fully implement the program although some MS4s. in order to avoid confusion with numerous implementation due dates and allow the MS4s to make all required changes to the legal authority at once, existing permittees will have 24 months to fully implement all changes to the legal authority required by this permit. All other changes with the exception of permanent stormwater requirements will be fully implemented within 180 days.

5.4. SHELBY COUNTY SMALL MS4S

On January 19, 2017, the Division entered into a settlement agreement with the Shelby County Small MS4s (Town of Arlington, City of Bartlett, Town of Collierville, City of Germantown, City of Lakeland, City of Millington, and Shelby County). This agreement authorized the Shelby County Small MS4s to continue to implement their current (as of the date of the settlement) programs to reduce the discharge of pollutants in stormwater from new development and redevelopment sites, but to postpone implementation of subpart 4.2.5 (permanent stormwater management at dew development and redevelopment sites until the date when the City of Memphis is required to implement equivalent specific measures. This settlement agreement is still in effect. Therefore, for the Shelby County Small MS4s will be required to implement subpart 4.2.5 and its associated requirements found in subparts 4.5 and 4.7 at the same time, i.e. due date as the City of Memphis.

5.5. QLP PROGRAM

The previous permit period acted as a pilot for the QLP program. As a result, QLP program language has been expanded to clarify minimum program and specialized reporting requirements.

For the purposes of this requirement "*Coordinate with the Division on confirming water resource inventory*", Coordination includes stream and/or wetland determination report, a TDEC DWR HD/Wetland concurrence letter, ARAP Requirements, ETW, Siltation, and T&E species present. See the Tennessee municipal Construction Stormwater Project Review Checklist (CN-1440) on the QLP Website.

QLP Status meaning:

-Pending: (NOI/SWPPP has been received but final approval or notice of coverage has not been issued.)
-Active: (Permit coverage is active.)
-Terminated:(site has been stabilized and permit coverage is terminated)

5.6. SWMP MODIFICATION

40 CFR 122.63
40 CFR 122.34(d)

Clarified this section to better delineated between Minor and Major modifications. This section clarified the requirements of modification as it relates to the public involvement/participation MCM. The public notice plan does not have to be a separate document from the plan required in the Public Participation MCM. They can be combined.

The permittee is encouraged to request a determination from the Division of a modification if it is unclear as to the classification of a minor or major modification. The best practice will be to public notice changes if there is any doubt as to if it is minor or major modification.

5.7. LEGAL AUTHORITY

40 CFR 122.34(b)(3)-(4)
40 CFR 122.26(d)(2)(i)

What constitutes legal authority has in the past caused much confusion. The proposed permit outlines the required elements of the legal authority in its own sub-part that were previously embedded in various locations of the 2016 permit. While some requirements may be in two places, the legal authority section is intended to list the requirements for clarity. Additionally, language was added language aligning more closely with 40 CFR 122.26(d)(2)(i) which is the basis for the best management practice.

Simply coping and pasting the elements listed in the legal authority subpart is not sufficient to be able to legally implement and enforce the stormwater management program. Additionally, the new permanent stormwater rules require codes and ordinances be updated.

The determination of adequate legal authority is complex in itself. A few of the comments made during the rulemaking process illustrated a misunderstanding of legal authority. For example:

> **Comment 27.** Regarding Rule 0400-40-10-.04(1)(d), the permittee has regulatory authority over municipal separate storm sewer system but does not have such authority over private stormwater control measures. Therefore, an implementation plan for a permanent stormwater management program can only be applicable to the municipal separate storm sewer system.
> **Response:** The permittee has regulatory authority over new private SCMs that it permits and is required by these rules to adopt ordinances or other regulatory mechanisms to implement that authority.

As such this proposed permit includes specific reporting requirements for the annual report. A solicitor's (attorney's) statement attesting that the MS4 has the legal authority to implement and enforce the SWMP is to be submitted. While many municipalities have staff attorney that review ordinances routinely, some municipalities contract out these reviews. Municipalities may wish to contact the Municipal Technical Advisory Service (MTAS) or County Technical Assistance Service (CTAS).

The Division recognizes that non-traditional MS4s may not have the ability for codes or ordinances. These MS4s can implement their "legal authority" through other legally binding mechanisms such as contracts, agreements, or other binding mechanism.

5.8. STORMWATER MONITORING AND PROGRAM EVALUATION

40 CFR 122.34(d)(1)

The monitoring section has been moved from its own part to the SWMP and paired with the program evaluation component since the intent of the monitoring program is to provide data and information for the evaluation of program effectiveness. Additionally, habitat alteration has been removed from the list of unavailable conditions that require monitoring to be consistent with the CGP.

When the 2016 permit was administratively continued it caused confusion regarding the monitoring that needed to occur during this period. While the Division fully intends to issue subsequent permits in a timely manner to avoid this issue altogether, language was added to option 1 "no more than 5 years between samples in a segment" and option 2 "provisions for an administratively continued small MS4 general permit" to clarify the requirement.

The 2016 permit introduced the "option 2" jurisdiction specific monitoring plan. As such, it was broadly designed. This seemed to prevent some MS4 from taking the opportunity it provided for MS4s. The proposed permit provides more specific requirements primarily based on lessons learned. These changes are intended to provide more structure to option 2 clarifying the expectation while still providing the maximum flexibility in designing their monitoring program.

From Chapter 8 of EPA's MS4 Permit guide (EPA 833-R-10-001) https://www3.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf: *Without clear monitoring objectives and a detailed monitoring plan, it will be difficult for permittees and permitting authorities to evaluate the effectiveness of the municipal stormwater program. There are numerous factors that should be examined while setting up the water quality monitoring portion of the comprehensive program. Understanding and considering climatic conditions such as precipitation patterns, temperature, and seasonal variations will ensure the study design will collect data that are representative of typical storms in the area and that sampling occurs during times of the year when it is most logical to do so. Acknowledging the different types of land uses within the area will also help the permittee to prioritize monitoring efforts based on the areas most likely to be impacted by stormwater. The type of waterbody monitored must also be considered when selecting sampling locations since pollutants behave differently depending on the environment thereby impacting sampling protocols. For example, sampling in a freshwater lake involves different protocols than monitoring in a tidally influenced river or a first order stream. Waterbody type can also influence the data results and conclusions (e.g. freshwater wetlands typically have high denitrification rates that will likely impact the results of nitrate sampling).*

5.9. UNAVAILABLE CONDITIONS

Wherever the permit specifies terms or conditions related to unavailable parameters, the permittee can locate those streams using the latest approved 303d list located on our website https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html under Water Quality Assessment Publications. Please note the 303d list for 2022 is expected to be approved during the public notice period of this proposed permit.

6. MINIMUM CONTROL MEASURES

40 CFR 122.34(b)

The written plan for each Minimum Control Measure (MCM) of the SWMP should outline the details for the required components e.g. the bulleted list after "This program must include the following at a minimum" as well as the management measures and goal e.g. the table.

The Measurable Goals Table format has been incorporated into the proposed permit to better delineate the measure, goals, and Annual Report Requirements. This layout is intended to provide clarity to the reporting requirements. It is important to note, that the permittee is expected to maintain documentation supporting the implementation of the goals.

6.1. PUBLIC EDUCATION AND OUTREACH

40 CFR 122.34(b)(1)

Management measures in this section have been clarified from the previous permit to better implement the requirements of 40 C.F.R. §122.34(b)(1).

In certain areas known as for illicit discharges, the permittee should focus education on the particular pollutant(s) of concern and address outreach to those communities. Permittees are encouraged to emphasize the water quality improvement aspect of education programs and document related or expected water quality improvements.

The PIE plan is required to include a methodology for review of this component. The evaluation methods could include but not be limited to: direct evaluations/observations, surveys, tracking the number of attendees, interviews, review of media clippings, or tracking the number of stormwater related calls, emails, and letters received.

When determining the target audience for employees, the stationed location and the duties of the job classification should be evaluated. The employees working in the municipal facilities covered under MCM should certainly be included in the PIE plan. However, municipalities are encouraged to evaluate all job functions. For example, education for administrative staff that interact with the public may be beneficial to not only internal communication of issues, but also provide an educational opportunity for the citizen as well.

The MCM uses the term "sponsor". An MS4 may sponsor an activity either monetarily or as a donation in kind, i.e. goods, services, or time.

The permittee may use stormwater educational materials provided by the State, Tribe, EPA, environmental, public interest, or trade organizations, or other MS4s. The public education program should inform individuals and households about the steps they can take to reduce stormwater pollution, such as ensuring proper septic system maintenance, ensuring the proper use and disposal of landscape and garden chemicals including fertilizers and pesticides, protecting, and restoring riparian vegetation, and properly disposing of used motor oil or household hazardous wastes. EPA recommends that the program inform individuals and groups how to become involved in local stream and beach restoration activities as well as activities that are coordinated by youth service and conservation corps or other citizen groups. EPA recommends that the permit require the permittee to tailor the public education program, using a mix of locally appropriate strategies, to target specific audiences and communities. Examples of strategies include distributing brochures or fact sheets, sponsoring speaking engagements before community groups, providing public service announcements, implementing educational programs targeted at school age children, and conducting community-based projects such as storm drain stenciling, and watershed and beach cleanups. In addition, EPA recommends that the permit require that some of the materials or outreach programs be directed toward targeted groups of commercial, industrial, and institutional entities likely to have significant stormwater impacts. For example, providing information to restaurants on the impact of grease clogging storm drains and to garages on the impact of oil discharges. The permit should encourage the permittee to tailor the outreach program to address the viewpoints and concerns of all communities, particularly minority and disadvantaged communities, as well as any special concerns relating to children.

6.2. PUBLIC INVOLVEMENT/PARTICIPATION

40 CFR 122.34(b)(2)
40 CFR 122.34(d)(2)

The overlapping nature of the public education and public involvement MCMs has led to a merging of these two MCMs. In order to meet the federal eReporting requirements the proposed permit provides more specificity regarding the target participants and subject. While the public education MCM requirements have remained consistent with the previous permit, the proposed permit provides more specificity for public participation. Additional requirements have been

added regarding public access of the SWMP to better meet the requirements of 40 C.F.R. §122.34(b)(2). This permit requires that the SWMP be placed on public notice prior to the second annual report. This is not intended to be an annual requirement as the section also requires a formal public notice process to be developed which identifies what modifications to the SWMP require public notice. Additional direction on Minor and Major modifications is found in subpart 4.4.1.

Potential Activities for the Public:

a. Pollution Prevention
   - Storm Drain Marking
   - Pet Waste Management
   - Recycling
   - Trash Management
   - Vehicle Washing
   - Water Conservation
   - Residential Yard Waste Management (e.g., onsite reuse of leaves and grass clippings)
   - Cleanup Events
   - Planting Community Rain Garden

b. Impacts on water quality or local stormwater management issues

Construction Sites
Infrastructure Maintenance
Smart Growth
Green Infrastructure/Better Site Design/Low Impact
Riparian Corridor Protection/Restoration
Wetland Protection
Citizen Stream Monitoring

c. Storage, use, and disposal of household hazardous waste, automotive-related fluids, pesticides, herbicides, and fertilizers
   - Household Hazardous Waste Disposal
   - Storm Drain Marking
   - Pesticide, herbicide, and Fertilizer Application
   - Recycling

d. Identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.

e. Illicit Discharge Detection and Elimination public workshop, citizen committee meetings

Potential Activities for the Commercial/Industrial Community:

Pollution Prevention
- Storm Drain Marking
- Recycling

- Trash Management
- Vehicle Washing
- Water Conservation
- Pesticide or Fertilizer application (e.g., onsite reuse of leaves and grass clippings)
- Cleanup Events
- Suppling materials for a Community Rain Garden

Impacts on water quality or local stormwater management issues
Construction Sites
Infrastructure Maintenance
Smart Growth
Green Infrastructure/Better Site Design/Low Impact
Riparian Corridor Protection/Restoration
Wetland Protection
Citizen Stream Monitoring

EPA recommends that the permit include provisions addressing the need for the public to be included in developing, implementing, and reviewing the stormwater management program and that the public participation process should make efforts to reach out and engage all economic and ethnic groups. Opportunities for members of the public to participate in program development and implementation include serving as citizen representatives on a local stormwater management panel, attending public hearings, working as citizen volunteers to educate other individuals about the program, assisting in program coordination with other pre-existing programs, or participating in volunteer monitoring efforts. (Citizens should obtain approval where necessary for lawful access to monitoring sites.)

There is an additional recordkeeping requirement in 40 CFR 122.34(d)(2) related to public involvement which has been incorporated into the MCM rather than a standalone permit condition. "The permit must require the permittee to make records, including a written description of the stormwater management program, available to the public at reasonable times during regular business hours (see § 122.7 for confidentiality provision). (The permittee may assess a reasonable charge for copying. The permit may allow the permittee to require a member of the public to provide advance notice.)" It is important to note that traditional MS4 i.e. state, county and municipal are subject to the Tennessee Open Records Act (T.C.A. § 10-7). Non-traditional MS4s should contact their attorney for information.

6.3. ILLICIT DISCHARGE DETECTION AND ELIMINATION

40 CFR 122.34(b)(3)

Documentation of illicit discharges is particularly important for the permittee since an illicit discharge triggers a corrective action and enforcement. Documentation such as reports, responses, correspondence, and resolutions shall be maintained.

The term "hot-spot" has been replaced with "priority areas" to better align with the language of the Federal rule.

The Illicit Discharge Detection and Elimination (IDDE) educational/training requirement for public employees requires tracking to ensure that all applicable employees are properly trained. If the MS4 tracks this as part of a personnel record, it should be able to provide evidence of training as requested while protecting confidential information.

The requirement *"Identify and investigate the categories of non-stormwater discharges or flows (as indicated in subpart 4.2.3) only if the permittee identifies them as a significant contributor of pollutants to the MS4."* is a specific subset of all IDDE investigations.

The section has been updated to include a slightly more detailed list for the storm sewer system map. The intent is to move towards standardizing the geospatial reporting requirements. Although not every system in the state is currently utilizing geospatial system mapping, it is rapidly becoming practicable for all systems. This is especially true since current funding sources such as the American Rescue Plan can be used by counties and municipalities to develop these system maps.

The permittee 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. It may be beneficial for the stormwater system mapping to be shared with EMS officials if it is easily accessible.

EPA recommends that the plan to detect and address illicit discharges include the following four components: procedures for locating priority areas likely to have illicit discharges; procedures for tracing the source of an illicit discharge; procedures for removing the source of the discharge; and procedures for program evaluation and assessment. EPA also recommends that the permittee to

visually screen outfalls during dry weather and conduct field tests of selected pollutants as part of the procedures for locating priority areas. Illicit discharge education actions may include storm drain stenciling, a program to promote, publicize, and facilitate public reporting of illicit connections or discharges, and distribution of outreach materials.

6.4. CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

40 CFR 122.34(b)(4)

The requirement for receipt and consideration of information submitted by the public is located in subpart 4.2.2. The permittee may use various forms of public communication and electronic communication is encouraged. In many MS4, the Engineering and Planning department (or equivalent) may already have a public notice process and a means to incorporate comments. While those processes may need to be modified to ensure adequate coverage of MS4 related concerns, the permittee is encouraged to utilize existing processes and procedures to streamline and simplify communication with the public.

To clarify the requirement for "ordinances or other regulatory mechanisms for construction site runoff control must be effective and implemented within 12 months of the reissuance of a CGP" is not referring to the 2021 CGP, but the subsequent permit.

One management measure refers to "… effective and implemented …" The term "effective" in this sub-part is meant to indicate that the legal authority has been fully adopted and is "in effect".

The proposed permit requires the MS4 to inspect 10% of non-priority construction sites during the reporting period and priority construction sites monthly. While the latter requirement was in the previous permit, the inspect 10% of non-priority construction requirement was added to the proposed permit to quantify (i.e. measure) the permit condition.

The % Priority Construction Activities inspected at a frequency of less than once per calendar month calculation should take into consideration the fact that construction site projects are starting and stopping. For example, if a Priority Construction Activity is stabilized and complete during month 8 of the reporting period and inspections were completed each of those 8 calendar months, this would be counted as meeting the objective of the requirement.

The permittee may define additional priority criteria to expand the priority construction program.

EPA recommends examples of sanctions to ensure compliance include non-monetary penalties, fines, bonding requirements and/or permit denials for non-compliance. EPA recommends that the procedures for site plan review include the review of individual pre-construction site plans to ensure consistency with local sediment and erosion control requirements. Procedures for site inspections and enforcement of control measures could include steps to identify priority sites for inspection and enforcement based on the nature of the construction activity, topography, and the characteristics of soils and receiving water quality. EPA also recommends that the permit require the permittee to provide appropriate educational and training measures for construction site operators and require stormwater pollution prevention plans for construction sites within the MS4's jurisdiction that discharge into the system. See § 122.44(s).

6.5. POST-CONSTRUCTION/PERMANENT STORM WATER MANAGMENT

40 CFR 122.34(b)(5)
0400-40-10-.04

This permit incorporates the newly adopted rules for post-construction/permanent stormwater management. As such, this control measure if formatted slightly differently than the others. Sections 4.2.5.1 through 4.2.5.8 are copied from Tennessee Rule 0400-40-10-.04 with slight editing to clarify references. Tennessee Rule 0400-40-10-.04 establishes what constitutes Maximum Extent Practicable (MEP) for this control measure.

Section 4.2.5.9 establishes how the elements of MEP will be measured and reported in the annual report. It is important to note some reporting elements won't be required in the annual report until the implementation plan is completed.

The rule requires updated legal instruments for post-construction/permanent stormwater management. The Division recognizes that non-traditional MS4s may not have the ability for codes or ordinances. These MS4s can implement their "legal authority" through other legally binding mechanisms such as contracts, agreements, or other binding mechanism.

6.6. POLLUTION PREVENTION/GOOD HOUSEKEEPING

6.6.1. General

40 CFR 122.34(b)(6)

While the previous permit was clear in the types of municipal operations covered under this MCM, it did not provide specific management practices for the implementation of this measure. Therefore, the proposed permit includes specific management measures. While specific management measures are listed, the permittee still has the flexibility to refine those measures in their SWMP. For example, the permittee may define what constitutes Good Housekeeping for all municipal operations or based on the different types of facilities.

Additionally, the previous permit required "all maintenance activities must be documented, with methods such as photos, maintenance logs, and/or contractor invoices". This requirement has been replaced with "the permittee must keep records of the implementation of the management practices and document the record keeping requirements in the O&M Program." In the O&M Program documentation, the permittee should specify what type of records should be maintained for each type of management practices. For example, preventative maintenance log or a daily task tracker for good housekeeping. The records provide evidence of program implementation.

Guidance for developing Operation and Maintenance Plans
https://www.epa.gov/system/files/documents/2021-11/bmp-municipal-facilities-management.pdf

https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater-pollution-prevention-and-good

https://www.epa.gov/sites/default/files/2015-11/documents/guidance_document.pdf

Examples of sources of pollutants of concern materials may include, but are not limited to, lubricants, fuels, sand, gravel, soil, salt, pesticide, fertilizer, garbage, trash, clippings, vehicles, equipment, and other wastes.

If the MS4 tracks this as part of a personnel record, it should be able to provide evidence of training as requested while protecting confidential information.

When determining the target audience for employees, the stationed location and the duties of the job classification should be evaluated. Permittees are encouraged to evaluate all job functions.

The language "the permittee must consider ways to evaluate new flood management projects and assess the impacts on water quality and examine existing projects for incorporating additional water quality protection devices or practices" has been removed from the permit. While the Division encourages communication with flood control agencies on water quality impacts, flood control requirements are managed through FEMA programs in Tennessee. Additionally, this language was moved to the guidance section of the federal rule.

Guidance for NPDES permitting authorities and regulated small MS4s: EPA recommends that the permit address the following: Maintenance activities, maintenance schedules, and long-term inspection procedures for structural and non-structural stormwater controls to reduce floatables and other pollutants discharged from the 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 permittee, 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, floatables, 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 should be an integral component of all stormwater management programs. This measure is intended to improve the efficiency of these programs and require new programs where necessary. Properly developed and implemented operation and maintenance programs reduce the risk of water quality problems.

6.6.2. Tennessee Multi Sector Permit

The proposed permit includes the following exclusion to an O&M Facility Plan, "An O&M Facility Plan does not need to be developed for a facility if the permittee has either a no exposure certification for the discharge under the Tennessee Multi-Sector General Permit (TMSP) or the discharge is authorized under another NPDES permit, e.g. TMSP."

For most facilities, the details in an O&M plan will be substantially similar to the SWPPP requirements found in the TMSP. As such, municipal facilities covered under the TMSP General Permit or a certification of no exposure will not be

required to develop or implement an O&M Plan. This will clarify the expectation in order to avoid a duplication of effort on behalf of the municipality or agency. To reiterate, any municipal facility that meets the requirements of section 1.2 of the TMSP are to obtain either TMSP Coverage or a certification of No Exposure. Subpart 4.2.6 of this permit applies to all other municipal facilities as identified as applicable.

7. ANNUAL REPORT

40 CFR 122.34(d)(3)
40 CFR 122.41

This permit requires a submittal of an annual report as described by Part 5. It is important to note that the individual elements of the report are identified throughout the permit typically in a table or narrative format. The annual report due September 30, 2022, will be submitted under the requirements of the 2016 permit. The annual report due September 30, 2023, will be the first annual report due under the proposed permit.

8. NOI

40 CFR 127

Part 2 establishes a provision for a waiver from electronic reporting. Many if not most of these municipalities are already reporting electronically through MyTDEC Forms for other reports. Therefore, the Division does not expect to receive or approve many (if any) waiver applications for traditional MS4s. Likewise, many of the non-traditional MS4s are colleges or universities which tend to have access to technology, so few, if any, waivers are expected from these permittees. The Division anticipates the waiver language in subpart 6.2 to rarely be used. However, the provision is necessary to allow for episodic waivers for reports in case the electronic system is down for prolonged periods of time.

Part 2 requires submittal of the required maps in the application electronically. The current preferred method is through a geo spatial REST service. However, since technology advances rapidly, an alternative submittal mechanism may be approved by the Division.

9. ELECTRONIC REPORTING

40 CFR 122.34(d)(3)
40 CFR 127

The NPDES Electronic Reporting Rule (eRule), which became effective on December 21, 2016, replaces most paper-based reporting requirements with electronic reporting requirements.

10. ANTIDEGRADATION STATEMENT / WATER QUALITY STATUS

Tennessee's Antidegradation Statement is found in the Rules of the Tennessee Department of Environment and Conservation, Chapter 0400-40-03-.06. It is the purpose of Tennessee's standards to fully protect existing uses of all surface waters as established under the Act.

Streams across Tennessee may be identified as:

Outstanding Natural Resource Water (ONRW)
No new discharge or expansion will be allowed unless 1) existing ONRW water quality conditions will continue to be met or exceeded; or 2) no permanent degradation of water quality above the level of *de minimis* will be allowed.

These streams can be identified on our dataviewer at
https://dataviewers.tdec.tn.gov/pls/enf_reports/f?p=9034:34304::::::

Exceptional Tennessee Water
No permanent degradation of water quality above the level of *de minimis* will be allowed unless the applicant demonstrates to the Division that the degradation is for necessary economic or social development and will not interfere with or become injurious to any existing uses. The specific requirements for this demonstration are described in the Rules of the Tennessee Department of Environment and Conservation, Chapter 0400-40-03-.06(4).

These streams can be identified on our dataviewer at
https://dataviewers.tdec.tn.gov/pls/enf_reports/f?p=9034:34304::::::

Available Conditions Waters (meeting designated uses)
These waters are fully supporting of its designated uses. The Division has maintained, and shall continue to assess, the water quality of the stream to assure that the water quality is adequate to protect the existing uses of the stream fully, and to assure that there shall be achieved the highest statutory and regulatory

requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

Unavailable Conditions Waters (assessed as needing additional pollution controls)
These waters partially/does not support(s) designated uses due to various causes from various sources.

These streams can be identified on our mapviewer at:
https://tdeconline.tn.gov/dwr/

Total Maximum Daily Loads (TMDLs) have been developed and approved and can be found on our website at:
https://tdec.tn.gov/document-viewer/#/search/tmdl

The proposed terms and conditions of this permit comply with the wasteload allocations of these TMDLs.

11. PERMIT TERM

This permit will be issued for a 5-year term.

APPENDIX 1 –
NOTICE OF INTENT (NOI)