



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
 1-888-891-8332 (TDEC)

Phase II Small Municipal Separate Storm Sewer System (MS4) Annual Report

1. MS4 Information

Name of MS4: City of Hendersonville		MS4 Permit Number: TNS075353
Contact Person: Helen Morrison		Email Address: hmorrison@hvilletn.org
Telephone: (615) 822-1016		MS4 Program Web Address: https://www.hvilletn.org/departments/public-works/stormwater
Mailing Address: 101 Maple Drive North		
City: Hendersonville	State: TN	ZIP code: 37075

What is the current population of your MS4? 60,000

What is the reporting period for this annual report? July 1 2021 to June 30 2022

2. Discharges to Waterbodies with Unavailable Parameters or Exceptional Tennessee Waters (Section 3.1)

- A. Does your MS4 discharge into waters with unavailable parameters (previously referred to as impaired) for pathogens, nutrients, siltation or other parameters related to stormwater runoff from urbanized areas as listed on TN's most current 303(d) list and/or according to the on-line state GIS mapping tool (tdeconline.tn.gov/dwr/)? If yes, attach a list. Yes No
- B. Are there established and approved TMDLs (<http://www.tn.gov/environment/article/wr-ws-tennessees-total-maximum-daily-load-tmdl-program>) with waste load allocations for MS4 discharges in your jurisdiction? If yes, attach a list. Yes No
- C. Does your MS4 discharge to any Exceptional Tennessee Waters (ETWs - http://environment-online.tn.gov:8080/pls/enf_reports/f?p=9034:34304:4880790061142)? If yes, attach a list. Yes No
- D. Are you implementing specific Best Management Practices (BMPs) to control pollutant discharges to waterbodies with unavailable parameters or ETWs? If yes, describe the specific practices: Increased buffer widths for sites discharging to waterbodies with unavailable parameters or ETWs. The City requires construction sites discharging to ETWs to strictly adhere to TWRA & TDEC required timelines to protect the Streamside Salamander. Sites discharging to ETWs and waterbodies with unavailable parameters are inspected twice a month. Yes No

3. Public Education/Outreach and Involvement/Participation (Sections 4.2.1 and 4.2.2)

- A. Have you developed a Public Information and Education plan (PIE)? Yes No
- B. Is your public education program targeting specific pollutants and sources, such as Hot Spots? If yes, describe the specific pollutants and/or sources targeted by your public education program: See Attachment 3B Yes No
- C. Do you have a webpage dedicated to your stormwater program? If yes, provide a link/URL: <https://www.hvilletn.org/departments/public-works/stormwater> Yes No

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- D. Summarize how you advertise and publicize your public education, outreach, involvement and participation opportunities: The City advertises and publicizes events using social media, the City's main webpage, the City's stormwater webpage, public notices, mail-out flyers, pamphlets, and Channel 3 public access channel.
- E. Summarize the public education, outreach, involvement and participation activities you completed during this reporting period: The City participated in several education events including Tennessee Tree Day 2022, Rockland Park Water Education Event, George Whitten Elementary Career Day. City staff update the stormwater webpages throughout the year to provide new educational content. City staff also provided permit required stormwater education to applicable departments/staff.
- F. Summarize any specific successful outcome(s) (e.g., citizen involvement, pollutant reduction, water quality improvement, etc.) fully or partially attributable to your public education and participation program during this reporting period: The City of Hendersonville was able to mail stormwater educational flyers to all property owners in the City, approximately 22,000 flyers were mailed out to Hendersonville residents. The City has worked with other agencies to provide vital protections to the Streamside Salamander implementing water quality riparian buffers. A total of 400 trees were distributed from the City of Hendersonville. Public education events reached a total of 247 members of the public. Had a total of 736 new page views for the stormwater education webpages.

4. Illicit Discharge Detection and Elimination (Section 4.2.3)

- A. Have you developed and do you continue to update a storm sewer system map that shows the location of system outfalls where the municipal storm sewer system discharges into waters of the state or conveyances owned or operated by another MS4? Yes No
- B. If yes, does the map include inputs into the storm sewer collection system, such as the inlets, catch basins, drop structures or other defined contributing points to the sewerhed of that outfall, and general direction of stormwater flow? Yes No
- C. How many outfalls have you identified in your storm sewer system? 715
- D. Do you have an ordinance, or other regulatory mechanism, that prohibits non-stormwater discharges into your storm sewer system? Yes No
- E. Have you implemented a plan to detect, identify and eliminate non-stormwater discharges, including illegal disposal, throughout the storm sewer system? If yes, provide a summary: See attachment 4E Yes No
- F. How many illicit discharge related complaints were received this reporting period? 5
- G. How many illicit discharge investigations were performed this reporting period? 5
- H. Of those investigations performed, how many resulted in valid illicit discharges that were addressed and/or eliminated? 5

5. Construction Site Stormwater Runoff Pollutant Control (Section 4.2.4)

- A. Do you have an ordinance or other regulatory mechanism requiring:
 - Construction site operators to implement appropriate erosion prevention and sediment control BMPs consistent with those described in the TDEC EPSC Handbook? Yes No
 - Construction site operators to control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste? Yes No

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- Design storm and special conditions for unavailable parameters waters or Exceptional Tennessee Waters consistent with those of the current Tennessee Construction General Permit (TNR100000)? Yes No
- B. Do you have specific procedures for construction site plan (including erosion prevention and sediment BMPs) review and approval? Yes No
- C. Do you have sanctions to enforce compliance? Yes No
- D. Do you hold pre-construction meetings with operators of priority construction activities and inspect priority construction sites at least monthly? Yes No
- E. How many construction sites disturbing at least one acre or greater were active in your jurisdiction this reporting period? 68
- F. How many active priority and non-priority construction sites were inspected this reporting period? 77
- G. How many construction related complaints were received this reporting period? 14
6. Permanent Stormwater Management at New Development and Redevelopment Projects (Section 4.2.5)
- A. Do you have a regulatory mechanism (e.g. ordinance) requiring permanent stormwater pollutant removal for development and redevelopment projects? If no, have you submitted an Implementation Plan to the Division? Yes No
 Yes No
- B. Do you have an ordinance or other regulatory mechanism requiring:
- Site plan review and approval of new and re-development projects? Yes No
- A process to ensure stormwater control measures (SCMs) are properly installed and maintained? Yes No
- Permanent water quality riparian buffers? If yes, specify requirements: See attachment 6B. Yes No
- C. What is the threshold for development and redevelopment project plans plan review (e.g., all projects, projects disturbing greater than one acre, etc.)? All projects are reviewed.
- D. How many development and redevelopment project plans were reviewed for this reporting period? 33
- E. How many development and redevelopment project plans were approved? 15
- F. How many permanent stormwater related complaints were received this reporting period? 33
- G. How many enforcement actions were taken to address improper installation or maintenance? 0
- H. Do you have a system to inventory and track the status of all public and private SCMs installed on development and redevelopment projects? Yes No
- I. Does your program include an off-site stormwater mitigation or payment into public stormwater fund? If yes, specify. City Ordinance 18-204 (2)(b) Provisions are made to manage stormwater by an off-site facility. The off-site facility must be in place and designed to provide the level of stormwater control that is equal to or greater than that which would be afforded by on-site practices. Further, the facility must be operated and maintained by an entity that is legally obligated to continue the operation and maintenance of the facility. Yes No

7. Stormwater Management for Municipal Operations (Section 4.2.6)

- A. As applicable, have stormwater related operation and maintenance plans that include information related to maintenance activities, schedules and the proper disposal of waste from structural and non-structural stormwater controls been developed and implemented at the following municipal operations:
- | | | |
|--|---|--|
| Streets, roads, highways? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Municipal parking lots? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Maintenance and storage yards? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Fleet or maintenance shops with outdoor storage areas? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Salt and storage locations? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Snow disposal areas? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Waste disposal, storage, and transfer stations? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
- B. Do you have a training program for employees responsible for municipal operations at facilities within the jurisdiction that handle, generate and/or store materials which constitute a potential pollutant of concern for MS4s?
- Yes No
- If yes, are new applicable employees trained within six months, and existing applicable employees trained and/or retrained within the permit term?
- Yes No

8. Reviewing and Updating Stormwater Management Programs (Section 4.4)

- A. Describe any revisions to your program implemented during this reporting period including but not limited to:
- Modifications or replacement of an ineffective activity/control measure. N/A
- Changes to the program as required by the division to satisfy permit requirements. Implementation of Operation and Maintenance Plans for city facilities.
- Information (e.g. additional acreage, outfalls, BMPs) on newly annexed areas and any resulting updates to your program. None
- B. In preparation for this annual report, have you performed an overall assessment of your stormwater management program effectiveness? If yes, summarize the assessment results, and any modifications and improvements scheduled to be implemented in the next reporting period. City staff met to review the current plans review process and discuss implementation of upcoming MS4 permit requirements. Proposed program changes will be indicated on the upcoming NOI. The process in which plans are reviewed for land disturbance permitting will be modified and included in the overall Planning review.
- Yes No

9. Enforcement Response Plan (Section 4.5)

- A. Have you implemented an enforcement response plan that includes progressive enforcement actions to address non-compliance, and allows the maximum penalties specified in TCA 68-221-1106? If no, explain. _____ Yes No
- B. As applicable, identify which of the following types of enforcement actions (or their equivalent) were used during this reporting period; indicate the number of actions, the minimum measure (e.g., construction, illicit discharge, permanent stormwater management), and note those for which you do not have authority:

<u>Action</u>	<u>Construction</u>	<u>Permanent Stormwater</u>	<u>Illicit Discharge</u>	<u>In Your ERP?</u>
Verbal warnings	# <u>0</u>	# <u>0</u>	# <u>0</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Written notices	# <u>410</u>	# <u>1</u>	# <u>5</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Citations with administrative penalties	# <u>0</u>	# <u>0</u>	# <u>0</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Stop work orders	# <u>1</u>	# <u>0</u>	# <u>0</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Withholding of plan approvals or other authorizations	# <u>1</u>	# <u>1</u>	# <u>0</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Additional Measures	# <u>20</u>	# <u>0</u>	# <u>0</u>	Describe: <u>Hold Building Permits and Codes Inspections</u>

- C. Do you track instances of non-compliance and related enforcement documentation? Yes No
- D. What were the most common types of non-compliance instances documented during this reporting period? Failure to properly design, install, and maintain BMPs; Littering

10. Monitoring, Recordkeeping and reporting (Section 5)

- A. Summarize any analytical monitoring activities (e.g., planning, collection, evaluation of results) performed during this reporting period. Analytical monitoring activities were completed and provided in the 2019-2020 reporting period.
- B. Summarize any non-analytical monitoring activities (e.g., planning, collection, evaluation of results) performed during this reporting period. Non-analytical monitoring activities were completed in the the 2019-2020 reporting period.
- C. If applicable, are monitoring records for activities performed during this reporting period submitted with this report. Yes No

11. Certification

Attachment 2A.

Table 1: Waters with Unavailable Parameters within the City of Hendersonville

Waterbody Name	Waterbody I.D. # (Milage)	Cause(s)	Source Name(s)	VSA	Benthic	<i>E. Coli</i>
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
		<i>Escherichia coli</i>	Municipal (Urbanized High Density Area)			
Waterbody Name	Waterbody I.D. # (Milage)	Cause(s)	Source Name(s)	VSA	Benthic	<i>E. Coli</i>
Unnamed Trib to Cheatham Reservoir	TN05130202001T_0600 (1.13 miles)	Chlorine	Municipal Point Source Discharges	X	X	
		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)	X	X	
Unnamed Trib to Drakes Creek	TN05130201047_0200 (2.28 miles)	Alteration in stream-side or littoral vegetative covers	Municipal (Urbanized High Density Area)	X	X	

Hendersonville MS4 Permit Public Information and Education Plan

Issue Date: 6/23/2020

Version: 2

Review Frequency: Annual

1. Introduction

The Public Information and Education (PIE) Plan is a requirement in the State of Tennessee's Small Municipal Separate Storm Sewer System (MS4) General National Pollution Discharge Elimination System Permit (hereafter referred to as the "NPDES permit"). Coverage under this permit was granted to the City of Hendersonville on April 3, 2017 under Permit Tracking Number TNS075353. The requirements of the PIE plan are listed in section 4.2.1 of the NPDES permit. Under this section, the City of Hendersonville must provide for the following:

- Detail specific goals and public information events/activities that will occur over the remainder of the permit cycle;
- Document all public education and outreach components;
- Incorporate an evaluation of components to assess overall effectiveness and the need for improvement;
- Include targeted educational campaigns addressing the following issues:
 - a. General public awareness on the impacts on water quality from general housekeeping maintenance/activities;
 - b. Home owner associations and other operators of permanent BMPs awareness of the importance of maintenance activities;
 - c. Local engineering and development community awareness of the stormwater ordinance, regulations, and guidance materials related to long-term water quality impacts;
 - d. General public and professional chemical applicators awareness on the proper storage, use, and disposal of pesticides, herbicides and fertilizers;
 - e. General public and related commercial and professional stakeholders awareness on the proper storage, use and disposal of oil and other automotive-related fluids;
 - f. General public and municipal employees on the awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.;
 - g. Local engineering, development, and construction community awareness of stormwater ordinances, regulations and guidance materials related to construction phase water quality impacts; and
 - h. Municipal employee/contractor awareness of water quality impacts from daily operations.

This PIE plan presents an outline for the City of Hendersonville's public education and outreach program and documents the City's plan for compliance with the requirements.

2. Public Education and Participation & Goals

The City of Hendersonville participates in several special events throughout the year. Stormwater staff attend monthly stormwater group meetings, distribute trees for 250K Tree Day, and attend several community events to promote water quality in the community. Table 1 depicts the City of Hendersonville's active and planned efforts to provide targeted educational campaigns to address specific issues.

Table 1- City Efforts for Required Educational Campaigns		
Required Educational Campaigns	City Activities	Measurable Goals
a. General public awareness on the impacts on water quality from general housekeeping maintenance/activities;	<ul style="list-style-type: none"> Public education on good housekeeping maintenance/activities displayed on website Educational power points/videos shown on public access Channel 3 All special events advertised on Stormwater website 	<ul style="list-style-type: none"> Number of website visits between July 1 and June 30 each year. Number of recorded conversations with residents regarding stormwater (ex. BMPs, SCMs, drainage concerns, IDDE).
b. Homeowner associations and other operators of permanent BMPs/SCMs awareness of the importance of maintenance activities;	<ul style="list-style-type: none"> Provide educational information on permanent BMP maintenance on website Send out letters to owners/managers annually requesting inspection reports on permanent BMPs/SCMs. Require Operation and Maintenance (O&M) Agreement for permanent BMPs/SCMs to be submitted with the plans review/permit application process. 	<ul style="list-style-type: none"> Number of website visits between July 1 and June 30 each year. Number of recorded conversations with the community regarding BMP/SCM maintenance. Number of O&M Agreements submitted and recorded. Number of inspection reports submitted annually.
c. Local engineering and development community awareness of the stormwater ordinance, regulations, and guidance materials related to long-term water quality impacts;	<ul style="list-style-type: none"> All EPSC plans are reviewed by 3rd party contractor/consultant with education component to guide designers on how to properly design EPSC measures Provide educational information (TDEC Erosion and Sediment Control Handbook, Permanent BMP Manual, Stormwater Ordinance, EPSC plan review checklist) on website Provide educational information on importance of BMPs during construction and post-construction SCMs. Distribute brochure(s). 	<ul style="list-style-type: none"> Number of website visits between July 1 and June 30 each year. Number of plan sets reviewed by City staff and 3rd party contractor/consultant. Number of BMP/SCM brochures distributed. Number of plan sets that are prepared and submitted by personnel who have completed the TDEC Level 2 Design Course.
d. General public and professional chemical applicators awareness on the proper storage, use, and disposal of pesticides, herbicides and fertilizers;	<ul style="list-style-type: none"> Provide educational information for proper storage, use, and disposal of pesticides, herbicides, and fertilizers Distribute educational material to business owners/operators during hot spot inspections. Add education information to website 	<ul style="list-style-type: none"> Frequency of hot spot inspections. Number of brochures/information distributed during hot spot inspections. Number of businesses reached.
e. General public and related commercial and professional stakeholders awareness on the proper storage, use and disposal of oil and other automotive-related fluids;	<ul style="list-style-type: none"> Plan targeted mail outs to commercial and professional stakeholders regarding proper storage, use and disposal of oil and other automotive-related fluids. Distribute educational material to business owners/operators during hot spot inspections. Add education information to website. 	<ul style="list-style-type: none"> Frequency of hot spot inspections. Number of brochures/information distributed during hot spot inspections. Number of businesses reached.
f. General public and municipal employees on the awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.;	<ul style="list-style-type: none"> Develop IDDE website subpage with educational information to identify illicit discharges/connections, sanitary sewer seepage, spills, etc. 	<ul style="list-style-type: none"> Number of website visits between July 1 and June 30 each year. Number of recorded conversations with residents/community regarding non-stormwater discharges (IDDE). Number of illicit discharges observed during hot spot inspections.
g. Local engineering, development, and construction community awareness of stormwater ordinances, regulations and guidance materials related to construction phase water quality impacts; and	<ul style="list-style-type: none"> Create webpage to provide ordinance education and design criteria for engineers, develops, and construction community Educational Day (1 per permit term) 	<ul style="list-style-type: none"> Number of website visits between July 1 and June 30 each year. Number of attendees at educational day.
h. Municipal employee/contractor awareness of water quality impacts from daily operations.	<ul style="list-style-type: none"> Provide permit required training to municipal employees and contractors on stormwater pollution prevention and IDDE methods, etc. Provide training to applicable, new employees within 6 months of employment date. 	<ul style="list-style-type: none"> Record of training materials provided. Number of employees trained (initial and refresher trainings). Number of employees trained in association with O&M Plan and SPCC plan requirements.

3. Responsible Personnel

The Hendersonville Stormwater Division is wholly responsible for developing and implementing the PIE plan and meeting program specific goals. Table 2 depicts general PIE plan objectives and the responsible personnel.

Table 2- PIE Plan Responsible Personnel		
Personnel	PIE Plan Responsibility	Contact Information
Duane Allen	<ul style="list-style-type: none"> Oversees PIE Plan objectives. Reviews/Approves all distribution of public information/education materials and website content. 	615-822-1016 dallen@hvilletn.org
Helen Morrison	<ul style="list-style-type: none"> 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 hmorrison@hvilletn.org
Christopher Rapp	<ul style="list-style-type: none"> Promotes education and outreach events through various means Provides educational programming at special events Performs hot spot inspections. Performs post construction BMPs/SCM inspections. Distributes educational material during inspections and/or owner/operator/contractor meetings. 	615-590-4659 crapp@hvilletn.org

4. PIE Plan Ultimate Goal

The ultimate goal of the City of Hendersonville PIE Plan is to minimize the discharge of pollutants to receiving streams by providing educational material and activities to raise awareness and promote behavior change within the local residential, commercial and development community, City employees, and their contractors. A summary of typical pollutants of concern and the source of pollutants can be seen in Table 3 below. Considerations for future PIE Plan initiatives should be able to tie back to prevention of these pollutants in stormwater.

Table 3- Typical Pollutant Runoff from Major Land Use Categories			
Major Land Use	Typical Pollutants	Typical Source	Resulting Water Quality Degradation to Target in Educational Messages
Residential	<ol style="list-style-type: none"> 1. Nutrients 2. Sediment 3. Pathogens 4. Organics 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. Hydrocarbons (Oil & Grease) 2. Trash 3. Nutrients 4. Sediment 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. Metals 2. Sediment 3. Hydrocarbons (Oil & Grease) 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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.

Source: Metro Nashville Municipal Separate Storm Sewer System Permit Public Information & Education Plan (2016)

5. Program Recordkeeping and Evaluation

City Stormwater Personnel will track PIE Plan initiatives (City Activities and progress toward meeting Measurable Goals in Table 2) throughout the year and will meet annually to review this information. The program's overall effectiveness will be evaluated based on the example criteria presented below and the need for improvement and/or modification will be determined based on the results of the program evaluation.

Suggested Criteria for Program Evaluation:

- Fewer violations noted during hot spot inspections.
- Fewer series of reviews for design plan submittals.
- Increased/Sustained maintenance of post construction BMPs/SCMs.
- Continuous/Increased website visits.
- Public participation.

APPENDIX A

Documentation of City Activities



The City of Hendersonville is known as the “City by the Lake,” but the City also has 32 miles of streams. This means that the quality of water in our waterways is essential. Listed below are common pollutants within the City’s waterways along with some suggestions for how we can work together as a community to reduce these pollutants. By doing so, we will improve water quality and be able to enjoy our waterways for generations to come!



ORGANICS

YARD WASTE

Placing organic matter (leaves, grass, limbs, etc.) in ditches and streams can cause blockages in the storm sewer system, resulting in infrastructure failures and flooding. Decomposing organic matter depletes oxygen in our streams and Old Hickory Lake resulting in algal blooms and fish kills. Below are a few tips for disposing of yard waste:

- Collect leaves, twigs & grass clippings (no trash) in biodegradable paper bags (not plastic). Bags can be purchased at local home improvement and hardware stores. Place yard waste collection bags curbside by 6 AM on Monday for weekly collection.
- Place bagged yard waste and limbs within 12 feet of the edge of pavement for collection. For a list of additional yard waste guidelines visit: <https://www.hvilletn.org/departments/public-works/residential-collection-services/yard-waste-removal>
- **Do not block ditches, roadways, sidewalks or waterways with yard waste.**



SEDIMENT

CONSTRUCTION SITE MAINTENANCE

Below are some common construction issues that need to be brought to the City’s attention to help reduce stormwater pollution:

- Sediment tracked into the street or carried into a waterway
- Illegal dumping of substances or spills (paints, concrete, oils)
- Excessive trash and debris

If any of these conditions or other construction site maintenance concerns are noted, please email the City at construction@hvilletn.org



PET WASTE

SCOOP THE POOP

Pet waste is a major cause of E. Coli in our streams and rivers. Bacteria found in dog feces can cause serious diseases in humans if contaminated water comes in contact with an open wound or is ingested. Clean up after your pet and encourage others to do so. What is left behind ends up in our streams and Old Hickory Lake.



PAINTS & OILS

PAINT AND OIL DISPOSAL

All motor oils, paints and solvents contain toxic chemicals that are hazardous to people, wildlife and plants.

- Latex paint can be dried and disposed of in the trash.
- Oil-based paint must be properly disposed of by scheduling an appointment with the Sumner County Resource Authority. Please call **615-452-1114** to schedule an appointment.
- Use drip pans to catch fluids during vehicle maintenance. Bring used motor oils to a local recycling facility.



FERTILIZERS & PESTICIDES

LIMIT USE OF FERTILIZERS & PESTICIDES

- Follow the instructions on fertilizer packaging to avoid excess fertilizer that can be washed into our storm sewer system. Mulched leaves and grass can be spread over your yard as a natural fertilizer. Composting is an affordable way to recycle yard waste and feed your plants. Visit <https://www.epa.gov/recycle/composting-home> for more information on composting at home.
- Natural pesticides/insecticides are better for the environment, your family, and pets.
- Excess nutrients (phosphorus, nitrogen) from fertilizers can cause algal blooms that reduce the amount of dissolved oxygen available to aquatic life in streams and Old Hickory Lake.



DID YOU KNOW?

DID YOU KNOW?

- Every time it rains, stormwater washes over the land and picks up pollutants that are transported to our streams and Old Hickory Lake.
- One quart of motor oil can contaminate up to 250,000 gallons of fresh water.
- The City of Hendersonville is home to the State Endangered Streamside Salamander.
- You and your family can make a difference by being proactive and taking small steps to eliminate stormwater pollution. For additional information on the City's Stormwater Management Program visit: <https://www.hvilletn.org/departments/public-works/stormwater>

Recycling Locations:

Batteries and Light Bulbs

Batteries + Bulbs
1002 Glenbrook Way
Hendersonville, TN 37075
615-590-8988

Used Motor Oil

Advance Auto Parts
Auto Zone
O'Reilly's Auto Parts
Walmart Auto Care Center

Limbs and Leaves

Check the City Limb Collection webpage for an up-to-date schedule for Residential Yard Waste Drop-Off Days

*Only for City Limit Residents (Bring ID)

501 Forest Retreat Road
Hendersonville, TN 37075

<https://www.hvilletn.org/departments/public-works/residential-collection-services/limb-collection>

Solid Waste and Recycling

Sumner County Resource Authority
625 Rappahannock Wire Road
Gallatin, TN 37066
615-452-1114

Drug Drop Off Box

Hendersonville Police Department
3 Executive Park Drive
Hendersonville, TN 37075
615-822-1111

Call the Hendersonville Stormwater Division at 615-822-1016 to report illegal dumping into the storm drain.

Departments » Public Works »

Stormwater Management Program

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Rapp, Christopher
Stormwater Inspector
(615) 822-1016
crapp@hvilletn.org

[MORE STAFF >](#)

The City of Hendersonville is currently operating under the Phase II National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small MS4's (Permit #: TNS075353). The permit allows the municipality to discharge stormwater runoff from municipal drainage systems into waters of the state. The permit requires that the City of Hendersonville develop and implement specific programs and best management practices to protect water quality through a Stormwater Management Program (SWMP). The Hendersonville SWMP is required to address stormwater quality through six minimum control measures.

MS4 Permit Minimum Control Measures:

1. Public Education and Outreach
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff and Pollution Control
5. Permanent Stormwater management at New Development and Redevelopment Projects
6. Pollution Prevention/Good Housekeeping for Municipal Facilities

Additional Permit Requirements:

- Analytical and Non-Analytical Monitoring (Current Permit Cycle Reports can be found in the 2019-20 Annual MS4 report)
- Record Keeping

- [2019-20 Annual MS4 Report](#) (posted 8/7/2020)
- [2018-19 Annual Report](#)
- [2017-18 Annual Report](#)

DOCUMENTS

- [Hendersonville Stormwater Ordinance](#)
- [Land Disturbance Permit Application](#)

Free viewers are required for some of the attached documents. They can be downloaded by clicking on the icons below.



Departments » Public Works » Stormwater »

Public Education and Outreach

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We're not just the "City by the Lake"

The City of Hendersonville is known as the "City by the Lake," but the City also has 32 miles of streams. This means that the quality of water in our waterways is essential. The video below outlines common pollutants within the City's waterways along with some suggestions for how we can work together as a community to reduce these pollutants. First let's define stormwater pollution and look at simple steps to take to prevent pollution.

What is Stormwater Pollution?

Stormwater runoff is generated from rain and snowmelt events that flow over land or impervious surfaces, such as paved streets, parking lots, and building rooftops, and does not soak into the ground. Stormwater runoff picks up pollutants like trash, chemicals, oils, and dirt/sediment that can harm our rivers, streams, lakes, and coastal waters.

Stormwater Education for Homeowners



Marshall Boyd is the current Public Works Director

Free viewers are required for some of the attached documents. They can be downloaded by clicking on the icons below.



Public Works

- ADA
- Projects
- Residential Trash Information
- Permits
- Stormwater
- Public Education and Outreach
- Good Housekeeping
- Stormwater for Kids
- Stormwater Construction
- Illicit Discharge Detection & Elimination
- Streamsides Salamander
- Stormwater Utility Fee
- Transportation
- Mosquito Reduction

EVENTS

- FY 2020-2021 Budget Workshop
04/14/2021 5:00 PM
- Special Called Parks Board Workshop
04/16/2021 6:00 PM
- Golf Course Committee Meeting via Zoom
04/19/2021 4:00 PM

[MORE EVENTS >](#)

Departments > Public Works > Stormwater > Public Education and Outreach >

Pollution Prevention & Good Housekeeping for Homeowners

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TENNESSEE SMART YARD

- Tennessee Smart Yard Workbook
- Tennessee Smart Yard Yardstick
- Rainwater: Your Liquid Asset
- Leveraging Your Landscape
- Sustainable Landscaping
- Rain Garden Builder's Guide

SEPTIC SYSTEM GUIDANCE

- Septic System Maintenance
- Septic System Checklist

POLLUTION PREVENTION GUIDANCE

- Stormwater Pollution Prevention at Home and Work
- Landscaper, Gardener, Pest Control Brochure
- Annual Pollution Prevention Flyer

Water Quality

As water from rain or melting snow either seeps into the ground or "runs off" to lower areas, it makes its way into streams, lakes, and other water bodies. While traveling through the watershed the water can pick up and carry many substances that pollute water. This water comes from farms, yards, parking lots, construction sites, and roadways.

Examples of Common Stormwater Pollutants:

- Fertilizers, pesticides, and herbicides from gardens and homes
- Failing septic systems
- Pet wastes
- Prescription medications
- Hazardous wastes
- Oils, grease, and coolants from vehicles
- Salts
- Trace metals
- Grass clippings, leave and other organic matter placed into ditches and streams
- Litter
- Harsh detergents and other chemicals from vehicle washing or industrial cleaning
- Soil from construction sites and other bare ground
- Accidental spills, leaky storage containers, and other chemicals that end up on the ground

Quick Tips to Protect Water Quality

QUICK LINKS

- [Electronics Recycling Solutions](#)
- [Household Hazardous Waste FAQs](#)
- [Sumner County Resource Authority](#)
- [Used Oil Program](#)
- [UT-K Watershed Restoration & Management](#)
- [Is a Rain Garden Right for You?](#)
- [How Do I Become a Master Gardener?](#)

Departments > Public Works > Stormwater > Public Education and Outreach >

Stormwater for Kids

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STORMWATER RESOURCES FOR KIDS

- [Cumberland River Compact](#)
- [EPA Stormwater Resources for Kids](#)
- [Rethink Runoff](#)
- [What is a watershed?](#)

What is stormwater?

When it rains, water hits the grass, trees, roads and sidewalks.

- When it hits the grass, the rain goes into the ground.
- When it hits the sidewalks, roads and buildings, the rain runs into the street and becomes stormwater.
- Stormwater runs down the street and into storm drains which flows into the rivers, lakes and streams.
- Along the way it picks up Pollutants.

What is a pollutant?

- A substance that makes something (as air or water) impure and often unsafe.
- Pollutants include trash, dog poop, chemicals used on our lawn and gardens, dirt, oils and greases from our cars.

Interactive Websites:

[Discover Water](#)- Learn about the water cycle, oceans, saving water, and more!

[Tip Tank](#)- Play a matching game while learning fun facts about water.

[iCreek](#)- iCreek is an interactive tool developed by the [Cumberland River Compact](#) and [The Nature Conservancy of Tennessee](#). If you live in the Cumberland River Basin, the tool will tell you if your neighborhood waterway is healthy. If your waterway is unhealthy, the tool will also list activities you can do and resources you can use to help your stream.

DOCUMENTS

- [Clean and Conserve Your Water Activity Booklet](#)
- [Thirstin's Wacky Water Adventure](#)

Free viewers are required for some of the attached documents. They can be downloaded by clicking on the icons below.

Departments » Public Works » Stormwater »

Stormwater Construction

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Construction sites within the City of Hendersonville are required to adhere to the water quality and water quantity requirements laid out in the Stormwater Ordinance. The City requires that these construction site operators properly design, install and maintain stormwater pollution prevention measures throughout construction.

The City has provided several resources below, including an informational video, to help designers, developers, and contractors to adhere the City, State, and Federal water quality laws. To comply with the City Ordinance, those developing in the City must understand local requirements and follow the proper procedures to obtain permit coverage.

The Tennessee Department of Environment and Conservation has provided a useful map tool to assist developers and engineers with preparation of Stormwater Pollution Prevention Plans for construction sites. The map is specific to requirements of the Construction Stormwater Permit and shows drainage areas and streams with unavailable parameters (impaired due to siltation and habitat alteration due to in-channel erosion) where special conditions apply. For your convenience, the map also has a tab at the top of the page that links to the list of Exceptional Tennessee Waters. Visit the [Construction General Permit Map Viewer](#) for more information.

Below are some common construction issues that need to be brought to the City's attention to help reduce stormwater pollution:

Sediment tracked into the street is discharged into a nearby stream

If you observe any of the above issues or other possible problems on a local construction site please notify the City at construction@hvilletn.org or call 615-822-1016 to speak with the Stormwater Inspector.

STORMWATER DESIGN RESOURCES

- Hendersonville Stormwater Ordinance
- Tennessee Permanent Stormwater Management and Design Guidance Manual-1st Edition
- TDEC BMP Details (pdf)
- TDEC EandS Handbook 4th Edition
- Construction General Permit (effective 2016)

Departments » Public Works » Stormwater »

Illicit Discharge Detection & Elimination

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What is an illicit discharge?

In general, illicit discharges include any discharge into a storm drain system that is not entirely composed of stormwater. The exceptions include water from firefighting activities and discharges from facilities already under an NPDES permit. Illicit discharges are a problem because, unlike wastewater, which flows to a treatment plant, stormwater generally flows to waterways without any additional treatment. Illicit discharges often contain pathogens, nutrients, surfactants, and various toxic pollutants.

What is an illicit connection?

An illicit connection is an illegal and/or unauthorized connection to the municipal separate storm sewer system (MS4) whether or not such connections result in discharges into that system.

What can you do?

If you see something, say something. Even if you are unsure what the discharge may be, you can report any suspicious spills, leaks, and/or discharges to the City. City of Hendersonville Staff are trained to identify unlawful discharges of pollutants to the storm drain system, but we need help from you.

You can help us by reporting any pollution you observe, by using the form below (Reports can be submitted anonymously). If you see any of the following, please let us know:

- water pollution activity
- see material spilled or dumped into a waterway
- observe conditions near a storm drain or stream that indicate a polluting activity

Sources of Illicit Discharges:

- Sanitary wastewater
- Effluent from septic tanks

FAQS

How often will my trash be picked up by Waste Pro?

What waste will not be picked up by Waste Pro?

Are hazardous items allowed in containers?

[MORE FAQS >](#)

Helen Morrison

From: Helen Morrison
Sent: Thursday, April 22, 2021 9:53 AM
To: City Hall Employees
Subject: Happy Earth Day!
Attachments: Stormwater Education Flyer- Property Tax.pdf; Stormwater Pollution Prevention at Home and Work.pdf; Landscapers Homeowners Gardener Stormwater BMPs City of Hendersonville.pdf

Happy Earth Day!

To help provide education and spread awareness in honor of our great planet, the City of Hendersonville Stormwater Division is providing the location to our Storm Watch training video folder (P:\Storm Watch). This folder contains a video providing stormwater education and simple steps that City employees can take to help reduce and/or eliminate stormwater pollution.

If you decide to watch the video, and would like to check your stormwater pollution knowledge there is a quick quiz included in the folder (there is no requirement to take the quiz). Tracking of educational components is a requirement of the City's MS4 Permit, if you watch the video please send me an email so I can document how many views we get by City employees.

I've also attached some helpful stormwater brochures and our annual stormwater flyer. These brochures provide helpful information about landscaping, pesticide use, recycling opportunities, and simple steps we can all take to protect our planet. Our website also has tons of helpful information: <https://www.hvilletn.org/departments/public-works/stormwater/good-housekeeping>

If anyone has any questions, please send an email or give me a call.

Respectfully,
Helen Morrison
Stormwater Coordinator
City of Hendersonville
615-590-4649

Sumner County: City of Hendersonville: 101 Maple Drive North - Tree List

Thank you for Participating in Tennessee Tree Day 2021.

Here is your list of participants who will be picking trees up from you during your open hours of operation. We recommend pre-bundling the day before to help your lines move quickly and thus prevent groups of people from waiting together.

When dividing bags or bundles of trees, **keep tree roots wet, away from sunlight, and re-wrap immediately (squeeze the air out, divide into different trash bags and label with a black sharpie).**

First Name	Last Name	Pine, Shortleaf	Baldcypress	Oak, N. Red	Wild Plum	Tulip Poplar	Red Mulberry	Eastern Redbud	Buttonbush	Pecan, Native Sweet	Sweetgum	Silky Dogwood	Oak, White	Beautyberry	Total # Trees
Michael	Adams							5							5
Lisa	Alfriend								1						1
Lisa	Alfriend				1										1
Lisa	Alfriend				1		2	1	2	1		2			9
Diana	Arcuri					2		2							4
Katelan	Barron							2				1			3
Oliver	Barry			2											2
Ryan	Bodnar				1	1			1			1			4
Kathryn	Breeding								3			3			6
Lou Ann	Brown	1	2			2									5
Dana	Callahan				2		2	2	1	2					9
Charlie	Campbell					10		5							15
Lucia	Castrejon							1							1

Jerry	Coffey							3				2			5
Brandy	Coker		1		1			1	2			2			7
Jennifer	Cortes							1							1
Allan	Crowson					1		1							2
Donald	Demarse				5		5								10
Karen	Disney					1		1							2
Stacy	Douglas			2	2					2					6
Robert	Ebelhar			10						10			10		30
Loree	Fulle	5						2	1						8
Laura	Galloway	2							5						7
Cathie	Green									1		1			2
Carolyn	Gregory					2				1		2			5
Randy	Held	2	3					1	2						8
Jason	Johnson			3	2	2	3			2					12
Joann	Maggart					2		2							4
Joe	Martin			1	1		1	2	1				1		7
Ronald	Martinelli					3		2							5
James	McConnell									1					1
Jennifer	Meares											4			4
Jennifer	Meares									1		5			6
Nicole	Mitchell				2		1								3
Elizabeth	Moss							3							3
MJ	MURPHY							1				1			2
Kelsey	Nicklaw			2				6							8
Kat	Osborn			2	1	2	1	2	1		2				11
Valerie	Payne							2							2
Madison	Pestka					2		5							7
Adrianna	Pickstock							3							3

JoAnn	Pitzer									3					3
Andrea	Reeds				1	1	2		1		1				6
Dan	Riley					2	8	8	6						24
Doug	Rogers					1				3					4
Caitlin	Shinn			1											1
Crystal	Sircar					1									1
Rona	Siscoe			5		2									7
Amanda	Slaton				1			3	2					3	9
Barbara	Smith			1	1	2	3	4	4			3			18
Julie	Smith										2				2
Steven	Sonnenblick			2						2			1		5
Carrie	Sublett				1			1	4					3	9
Wendy	Swaby					3		3					2		8
Lynn	Takacs	3		1		1	1		1	2					9
Jason	Travis			1						1		1			3
Karen	Tugwell							5							5
Damon	Walls	5			10		10		5			10	10		50
Sandy	Watters		10												10
Lynda	Weaver			1	5			5	3						14
Kevin	Welch			1		1									2
Steve	White	5		5									5		15
Totals		23	16	40	38	44	39	85	46	32	5	38	29	6	441
Thank you for sponsoring TN Tree Day.															
Your Sponsor Trees are included with this shipment, as follows:															
Loblolly Pines		50	50												100



MTSG Agenda

April 27, 2021, 11:00 AM - 1:00 PM

Location: Jen-Hill Construction Materials Office
1025 Lavern Circle
Hendersonville, TN

Welcome Back Everyone!

1. TNSA Conference Registration is open: <https://www.tnstormwater.org/tnsa-conference>
 - a. October 19-21, 2021, Montgomery Bell State Park
2. 8th Annual Urban Runoff 5K & Water Quality Festival - August 7, 2021
 - a. <https://www.tnstormwater.org/urban-runoff-5k> and on Facebook: <https://www.facebook.com/NashvilleUrbanRunoff5k/>
3. Stream Cleanup Event CRC, Millersville & Goodlettsville on May 22, 2021
4. IECA in person Conference June 7-9 Huntsville AL.
5. Waterfest Moss Wright Park June 25, 2021
6. Recent Audits
 - a. Goodlettsville, Rutherford County, Gallatin
 - b. Hendersonville coming up next week – May 5th & 6th
7. Goodlettsville proposal for Stormwater fee increase submitted to City Manager
8. Other Items/Comments & Open Discussion
9. Jen-Hill Presentation

***Thank you Trey Hightower and Jen-Hill for hosting
today's MTSG meeting!***

JUNE 25 @ 10:00 AM - 12:00 PM



SUMNER COUNTY
UT EXTENSION
INSTITUTE OF AGRICULTURE
THE UNIVERSITY OF TENNESSEE











City of Hendersonville

IDDE Plan

April 2021

Illicit Discharge Detection and Elimination Plan Table of Contents

- I. Purpose
- II. Plan Components
 - 1. Mapping
 - 2. Monitoring
 - 3. Inspections
 - 4. Tracking
 - 5. Enforcement
 - 6. Reporting
- III. Evaluation
- IV. Appendices
 - A. MS4 IDDE Permit Requirements
 - B. Illicit Discharge Ordinance (Title 18, Chapter 3)
 - C. Storm Sewer System Map
 - D. Hot Spot Map
 - E. City of Hendersonville IDDE SOP
 - F. Tracking Spreadsheet
 - G. Enforcement Response Plan
 - H. IDDE Complaint Investigation Example

Illicit Discharge Detection & Elimination Plan

I. Purpose:

To develop and implement a plan to detect, identify, and eliminate non-stormwater discharges, including through illegal disposal, throughout the Hendersonville MS4 jurisdiction. IDDE permit requirements can be found in Appendix A. Non-stormwater discharges are defined in the City Stormwater Ordinance Title 18, Chapter 3 (Appendix B)

II. Plan Components:

The City of Hendersonville has provided illicit discharge identification education to employees and citizens. Illicit discharge/connection education is provided through the City's webpage (<https://www.hvilletn.org/departments/public-works/stormwater/illicit-discharge-detection-elimination>), public access Channel 3, videos, and flyers/pamphlets. Stormwater staff has distributed a training video and pamphlets to City employees to assist in the identification of illicit discharges and the appropriate methods to report. Each year the City sends out citizen's property tax bills, an educational flyer is included to provide helpful information to eliminate illicit discharges. All information included helps citizens identify small steps to take to reduce stormwater pollution.

1. Mapping

The City of Hendersonville recently updated the storm sewer system map to meet the permit required components specified in the IDDE minimum control measure (Appendix C). The City will continue to work with consultants to update the GIS map when new developments are completed or annexed into the City.

Stormwater staff completed a desktop analysis to identify potential hot spots in the City and those hotspots have been documented in a spreadsheet and corresponding GIS map (Appendix D). The City is working with the IT department to integrate the map and an inspection for into the Tyler Technologies Energov application for ease of tracking and reporting.

2. 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 hot spot locations within the City.

3. Inspections

City Stormwater Staff inspections are on a routine basis and complaint driven. The City of Hendersonville completes representative outfall inspections throughout the City monthly. When the City goes live with the Energov applications, the stormwater inspector will complete monthly hot spot inspections. Inspections for Illicit Discharge/Connections follow the City of Hendersonville Illicit Discharge Detection and Elimination SOP (Appendix E).

4. Tracking

The City of Hendersonville keeps records of illicit discharge complaints and routine inspections in a tracking spreadsheet with a corresponding illicit discharge folder (Appendix F). The City is currently working to set up inspection documents through the Tyler Technologies Energov application. The projected “go live” date for this application is July 1, 2021. The inspections to be completed will include Hot Spot Inspections, IDDE investigations, and representative outfall inspections.

5. Enforcement

Enforcement procedures for Illicit Discharges are identified in the City’s Enforcement Response Plan (Appendix G).

6. Reporting

The City of Hendersonville has provided citizens with a variety of ways to report illicit discharges within the City. Citizens can call into the City’s Illicit Discharge Hotline 615-822-1016, emailing complaints to drainage@hvilletn.org, and completing an illicit discharge/illicit connection report form on the City’s website (<https://www.hvilletn.org/departments/public-works/stormwater/illicit-discharge-detection-elimination/illicit-discharge-illicit-connection-report-form>). Appendix H includes an example of a reported illicit discharge complaint, investigation, and resolution.

III. Evaluation

Each year the City of Hendersonville meets to evaluate program components and overall program effectiveness.

site; and what measures, including infiltration, sheeting into buffers, etc., are going to be used to prevent the scouring of waterways and drainage areas off-site, etc.

- m) The projected sequence of work represented by the grading, drainage and sedimentation and erosion control plans as related to other major items of construction, beginning with the initiation of excavation and including the construction of any sediment basins or retention facilities or any other structural BMPs
- n) Specific remediation measures to prevent erosion and sedimentation run-off. Plans shall include detailed drawings of all control measures used; stabilization measures including vegetation and non-vegetation measures, both temporary and permanent, will be detailed. Detailed construction notes and a maintenance schedule shall be included for all control measures in the plan.
- o) Specific details for: the construction of rock pads, wash down pads, and settling basins for controlling erosion; road access points; eliminating or keeping soil, sediment, and debris on streets and public ways at a level acceptable to the City. Soil, sediment, and debris brought onto streets and public ways must be removed by the end of the workday by machine, broom or shovel to the satisfaction of the City Engineer. Failure to remove the sediment, soil or debris shall be deemed a violation of this ordinance.
- p) Proposed structures; location (to the extent possible) and identification of any proposed additional buildings, structures or development on the site.
- q) A description of on-site measures to be taken to recharge surface water into the ground water system through infiltration.

18-206. Water Quality Riparian Buffer.

1. Scope. A water quality riparian buffer shall be established, protected, and maintained along all community waters in areas of New Development for which a land disturbance permit and Construction General Permit coverage is required. 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. 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. The buffer requirement may be fulfilled with a combination of an inner and an outer zone. The predominant vegetation in the inner zone of the buffer (adjacent to the community water) should be trees. The outer zone (adjacent to the development) of 60-foot riparian buffers may be composed of herbaceous cover or infiltration-based SCMs. The outer zone allows for more flexibility in the type of vegetation and placement of SCMs.

Water Quality Riparian Buffer Requirements for Sites That Require CGP Coverage		
Community water characteristics	Permanent buffer	During construction (temporary) buffer
Community water drainage area < 1 square mile and <u>not</u> designated as impaired or an Exceptional Tennessee Water (ETW)	30-feet (No averaging)	30-feet (Can be established on an average basis as long as minimum is 15-feet. City-approved buffer enhancement plan required for CGP-allowable, temporary buffer encroachment.)
Community water drainage area < 1 square mile and designated as impaired or an Exceptional Tennessee Water (ETW)	30-feet (No averaging)	60-feet (can be established on an average basis as long as minimum is 30-feet)
Community water drainage area > 1 square mile and <u>not</u> designated as impaired or an Exceptional Tennessee Water (ETW)	60-feet (Can be established on an average basis as long as minimum is 30-feet.)	30-feet (Can be established on an average basis as long as minimum is 15-feet. City-approved buffer enhancement plan required for CGP-allowable, temporary buffer encroachment.)
Community water drainage area > 1 square mile and designated as impaired or an Exceptional Tennessee Water (ETW)	60-feet (Can be established on an average basis as long as minimum is 30-feet)	60-feet (Can be established on an average basis as long as minimum is 30-feet)

Notes: 1) "Impaired" refers to community water that have unavailable parameters for siltation and habitat alteration.

2) If a New Development project encompasses both sides of a community water, 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 community water channel; around the perimeter of a pond or lake identified as a community water measured as perpendicular to the contour at which normal pool is located around; and around the perimeter of a wetland identified as a community water.
- b. The water quality riparian buffer is to remain undisturbed except for the following disturbances which are allowed subject to approval by the Director of Public Works including the approval of an erosion prevention and sediment control plan:
 - (1) Limited disturbances to remove and/or plant trees or vegetation, as required to maintain the overall health of vegetation in the buffer area. This includes the removal of invasive exotic plants and the establishment of native vegetation, and/or other practices to restore the ecological integrity of the buffer. Removal of individual trees that are in danger of falling, causing damage to dwellings or other structures, are dead or diseased, or have been heavily damaged by storms. The root wad or stump should be left in place, where feasible, to maintain soil stability. The Public Works Director may require a Buffer Enhancement Plan prior to buffer disturbance.
 - (2) Disturbances necessary for the construction of utility access areas and approved stream crossings as long as the crossings are perpendicular or as near to perpendicular as possible to the channel.
 - (3) Disturbances as required to establish and/or restore buffer areas in accordance with an approved Buffer Enhancement Plan that demonstrates the pollutant removal function of the buffer is retained or improved.
 - (4) Passive recreation, pervious footpaths, biking or hiking paths, greenways, and boardwalks to approach the water resource as approved by the Director of Public Works. View corridors shall be allowed along greenways as approved by the Director of Public Works. Paths and greenways shall be designed to prevent the channelization of stormwater runoff, and should be constructed of pervious materials. 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. Trails

- constructed within the buffer must prevent or minimize the generation of pollutants.
- (5) Stormwater channels as approved by the Director of Public Works and subject to State and Federal permitting requirements.
 - (6) Cut and fill for floodplain compensations as approved by the Director of Public Works and in compliance with the most current Floodplain Ordinance.
- c. A determination that standards cannot be met may not be based solely on the difficulty or cost associated with implementation. Every attempt should be made for development and redevelopment activities not to take place within the buffer zone. A determination that water quality riparian buffer widths cannot be met on site may not be based solely on the difficulty or cost of implementing measures, but must include multiple criteria, such as: type of project, existing land use and physical conditions that preclude use of these practices.
 - d. Any approved disturbance of the water quality riparian buffer shall be revegetated in kind and/or enhanced. The vegetative target for the inner zone is mature, moderately dense forest (i.e., trees) with woody shrubs and understory vegetation. Where forest vegetation has the potential to impact traffic safety or limit access, areas immediately surrounding approved stream crossings and utility access areas may be vegetated with dense grasses.
 - e. For any proposed development and/or construction activity within or adjacent to a water quality riparian buffer, the following shall be required.
 - (1) The parameters 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.
 - (2) 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."
 - (3) 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 stockpiling. Buffer boundaries shall be marked during construction activities.

18-207. Post Construction and Inspection.

- 1. As built plans - All applicants are required to submit actual as built plans for any structures located on-site after final construction is completed. The plan must show the final design specifications for all stormwater management facilities and must be sealed by a registered