



STORMWATER MANAGEMENT PLAN

City of Hendersonville Engineering Department
305 Williams Street Hendersonville, NC 28792

NPDES PERMIT No.: NCS000489

Reporting Year: July 1, 2019 – June 30, 2020

Table of Contents

| | |
|---|----|
| Stormwater Management Plan Overview | 3 |
| Status Of Implementation | 3 |
| Water Quality | 3 |
| Current FY 19-20 Adopted Budget..... | 5 |
| Organizational Chart | 6 |
| Capital Improvement Projects | 8 |
| Yearly Maintenance Activities | 9 |
| Minimum Control Measures | 10 |
| Public Education and Outreach | 10 |
| Public Involvement and Participation | 17 |
| Illicit Discharge Detection and Elimination (IDDE) | 19 |
| Construction Site Runoff Controls..... | 25 |
| Post-Construction Site Runoff Control | 26 |
| Pollution Prevention And Good Housekeeping | 34 |
| Total Maximum Daily Loads (TMDL's) | 40 |

Stormwater Management Plan Overview

The City of Hendersonville is a federally designated National Pollutant Discharge Elimination System (NPDES) Phase II community and operates under the authority of the Stormwater Management Program which operates as a division of the Engineering Department. The North Carolina Division of Water Quality renewed NPDES Phase II Permit NCS000489 to the City of Hendersonville November 30, 2016 – November 10, 2022. The Stormwater Management Plan is the City of Hendersonville’s program to comply with NDPEs Permit NCS000489 authorization to discharge Stormwater from the Municipal Separate Storm Sewer System (MS4s) located within the City of Hendersonville Jurisdictional Area.

The plan is a guidance document used by City staff and the general public.

Status of Implementation

The City of Hendersonville is pleased to report progress for year 12 compliance with requirements of NPDES Phase II permit in the following six minimum control measures in the plan:

- Public Education and Outreach
- Public Participation and Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Site Runoff Control
- Pollution Prevention and Good Housekeeping for Municipal Operations

On April 7, 2011 the City of Hendersonville Council approved Stormwater Ordinance No. 11-0419 Article III.

Water Quality

The City of Hendersonville is delegated by the state to enforce the Stormwater and Illicit Discharge regulations within our jurisdictional area. The city has adopted and enforces a stormwater ordinance. (Chapter 24 Article III of the Code of Ordinances)

The City reviews and approves all development plans associated with grading, stormwater, and erosion control. For projects that cumulatively disturb more than one acre a formal plan is required. All formal plans are required to be prepared by a qualified registered NC professional engineer or landscape architect.

For projects that disturb less than an acre and are not part of a larger development are exempt from the stormwater ordinance. For all other projects, stormwater controls must

be designed by a licensed professional and installed. The city requires 85% removal of Total Suspended Solids and also requires that the post construction discharge not exceed pre-development discharge for the 2-year and 10-year storm event with the ability to pass the 25-year event. Additionally, the Zoning ordinance regulates a 30' undisturbed vegetated stream buffer with an additional 20' transitional buffer where no impervious surfaces are allowed. All projects have a buffer unless exempt by a variance or have been previously disturbed.

Budget

Current FY 19-20 Adopted Budget

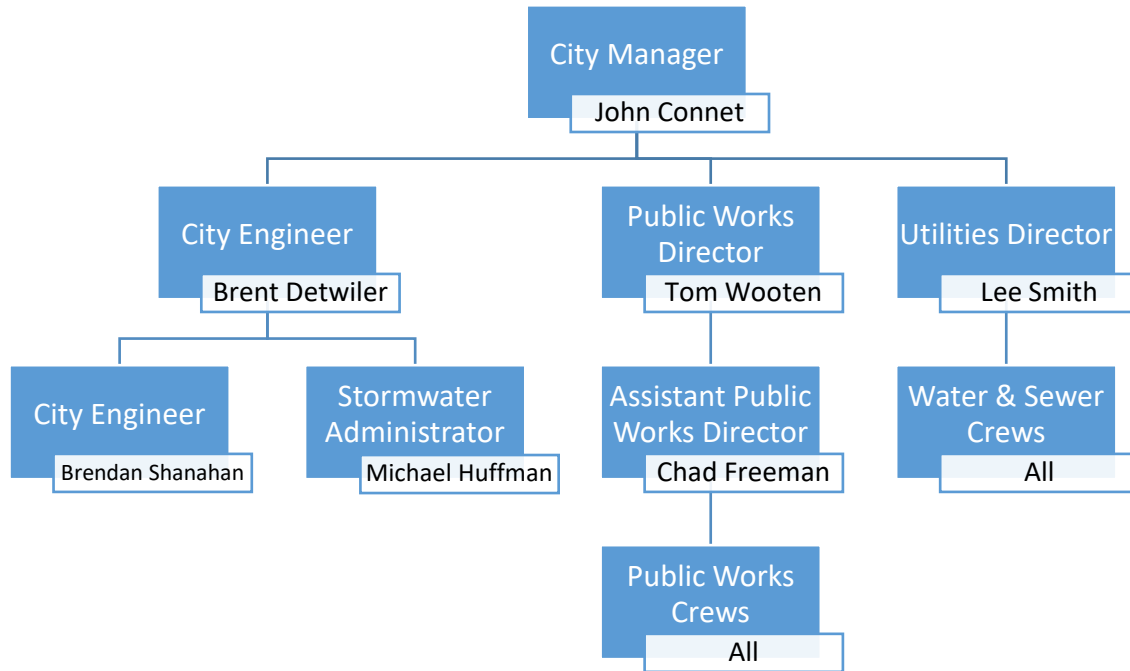
Stormwater Fund

| | |
|---------------------------------|------------------|
| Budgeted Revenues | \$(326,760) |
| Charges for Services | (325,000) |
| Other Taxes & Licenses | (-) |
| Unrestricted Intergovernmental | (-) |
| Restricted Intergovernmental | (-) |
| Permits & Fees | (1,040) |
| Sales & Services | (-) |
| Investment Earnings | (750) |
| Miscellaneous | (-) |
| Budgeted Expenditures | 538,152 |
| Stormwater | 538,152 |
| Other Financing Sources | (211,362) |
| Proceeds of Debt | (226,000) |
| Transfer (In) | (-) |
| Transfers Out | 30,000 |
| Fund Balance Appropriated | (15,362) |
| Sub-Total Appropriations | \$568,152 |

**Note: There is 1 Full-Time Equivalent (FTE) employee in the Stormwater Fund; however, a portion of wages for other City employees is accounted for via the Stormwater Fund*

Organization Chart for Engineering Department (17/18 FY)

Organizational Chart



Summary of Responsible Parties

| SWMP Component | Responsible Position | Staff Name | Department/Division |
|---|--|---|---------------------------------------|
| Stormwater Program Administration | Stormwater Administrator | Michael Huffman | Stormwater |
| SWMP Management | Stormwater Administrator | Michael Huffman | Stormwater |
| Public Education & Outreach | Stormwater Administrator | Michael Huffman | Stormwater |
| Public Involvement & Participation | Stormwater Administrator | Michael Huffman | Stormwater |
| Illicit Discharge Detection & Elimination | Stormwater Administrator, Public Works & Water/Sewer crews | Michael Huffman, Tom Wooten, Chad Freeman, All PW and W/S Field Crews | Stormwater, Water Sewer, Public Works |
| Construction Site Runoff Control | Henderson County | Natalie Berry | Engineering |

Organization Chart for Engineering Department (17/18 FY)

| | | | |
|---|--|---|---|
| Post-Construction Stormwater Management | Stormwater Administrator, City Engineering Department | Michael Huffman, Brendan Shanahan | Stormwater, Engineering |
| Pollution Prevention/Good Housekeeping for Municipal Operations | Stormwater Administrator, Public Works & Water/Sewer Crews | Michael Huffman, Tom Wooten, Chad Freeman, All PW and W/S Field Crews | Stormwater, Public Works, Water and Sewer |
| Municipal Facilities Operation & Maintenance Program | Stormwater Administrator, Public Works Director, Assistant Public Works Director | Michael Huffman, Tom Wooten, Chad Freeman | Stormwater, Public Works |
| Spill Response Program | Stormwater Administrator, Fleet Maintenance Manager | All Public Works and Water Sewer Staff | All Public Works and Water Sewer Staff |
| MS4 Operation & Maintenance Program | Stormwater Administrator, Public Works Director, Assistant Public Works Director | Michael S. Huffman, Tom Wooten, Chad Freeman | Stormwater, Public Works |
| Municipal SCM Operation & Maintenance Program | Stormwater Administrator | Michael S. Huffman | Stormwater |
| Pesticide, Herbicide & Fertilizer Management Program | Public Works Director, Assistant Public Works Director | Tom Wooten, Chad Freeman | Public Works |
| Vehicle & Equipment Cleaning Program | All Public Works Staff | All Public Works Staff | Public Works |
| Pavement Management Program | Public Works Director, Assistant Public Works Director, Street sweeper | Tom Wooten, Chad Freeman, Stacey | Public Works/ Stormwater |
| Total Maximum Daily Load (TMDL) Requirements | N/A | N/A | N/A |

Capital Improvement Projects

Capital Improvement Projects

| | |
|-------------------------------|-----------|
| New Street sweeper | \$226,000 |
| Stormwater Utility Rate Study | \$99,000 |

Operation and Maintenance

Yearly Maintenance Activities

Maintenance activities include pipe repair, storm drain cleaning, grate replacement, catch basin repair, culvert repair, shoulder repair and ditching. These activities are conducted by the PW Streets and Parks crews.

Stormwater Work Orders FY19-20

| | |
|---------------------|----|
| Blocked Storm Drain | 9 |
| Repair Storm Drain | 4 |
| Ditching | 4 |
| Curbing/Runoff | 4 |
| Sinkhole | 2 |
| | |
| Total | 23 |

Yearly Operation Activities Total Number

Inspections (7/1/19 – 6/30/20)

| | |
|----------------------|-----|
| Stormwater | 110 |
| Notice of Violations | 30 |

Plan Reviews (7/1/19 – 6/30/20) Total Number

| | |
|----------|---|
| Received | 7 |
| Reviewed | 8 |
| Approved | 7 |

Public Education and Outreach

Minimum Control Measures

Public Education and Outreach

1. Objectives for Public Education and Outreach

Distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps the public can take to reduce pollutants in stormwater runoff.

2. BMPs for Public Education and Outreach

The permittee shall implement the following BMPs to meet the objectives of the Public Education and Outreach Program and shall notify the Division prior to modification of any goals.

| BMP | Measurable Goals |
|-------------------------|--|
| a. Goals and Objectives | Defined goals and objectives of the Local Public Education and Outreach Program based on community wide issues |

19-20 Accomplishment

The City of Hendersonville performs a public education and outreach program currently through community meetings, local schools, local news, and events. Currently the program includes providing lessons on general stormwater, watershed management, clean water and the steps people can take to reduce polluted stormwater runoff.

20-21 Objectives

The City will continue to develop public education and outreach opportunities with our target audiences. City stormwater staff will continue participating in existing education events and partnering with community organizations in order to educate the public about the stormwater program.

| BMP | Measurable Goals |
|--|---|
| b. Describe target pollutants and/or stressors | The permittee shall maintain a description of the target pollutants and/or likely stressors and likely sources. |

Public Education and Outreach

19-20 Accomplishment

The City of Hendersonville participates in chemical and biological stream monitoring with Mountain True for the testing of five stream sites within the city. Mountain True has been developing an on-going water quality database of Western North Carolina watersheds. The purpose of this research is to continue and expand the long-term monitoring of stream sites within Henderson County. The cost was being shared by the Henderson County Board of Commissioners and MountainTrue. The major focus of the monitoring is to identify problem areas as well as areas with high water quality that need to be maintained and to monitor areas where water quality improvement projects will be taking place. (The Mountain True contract with EQI offers technical assistance through laboratory analysis of samples and statistical data analysis of monitoring results.)

The overall goal of the proposed research is to assess the present water quality of representative streams and rivers within the City of Hendersonville. Specific objectives include:

- Analyze water samples from five sites in Hendersonville for eight chemical parameters monthly, with this contract it brings the total number of monitoring sites in Henderson County to 37.
- Analyze data statistically for trends between sites (spatial) and trends within sites over time (temporal); and
- Use the results of the analyses to assess the ability of the streams to support their various current, intended, and potential uses.

EQI laboratory analyzes all samples for the following parameters: pH, ammonia-nitrogen, nitrate-nitrogen, orthophosphate, total suspended solids, alkalinity, turbidity, and conductivity.

Based on results from the VWIN and SMIE programs, NCDEQ 303 (d) Impaired Waterbodies list, and local water quality issues the City has developed the following list of target pollutants and likely sources:

| Target Pollutant | Likely Source |
|-------------------------|---|
| Sediment | Erosion from active construction, streambank instability |
| Biological Contaminants | Pet waste, SSO, sewer leaks, failing septic systems |
| Gross waste | Leaking dumpsters/trash compactors, improperly managed dumpsters/ Littering |
| Oil/Grease/Heavy Metal | Restaurants/ Car washes and road runoff |

Public Education and Outreach

| | |
|-----------|--|
| Nutrients | Over application of lawn and garden products |
|-----------|--|

These pollutants were selected because they can harm fish and wildlife population, foul drinking water supplies, kill native vegetation, and make recreational areas unsafe.

20-21 Objectives

The City will continue to assist Mountain True in their VWIN and SMIE monitoring programs. City Stormwater staff will continue to monitor target pollutants in the MS4

| BMP | Measurable Goals |
|------------------------------|--|
| c. Describe target audiences | The permittee shall identify, assess annually and update the description of the target audiences likely to have significant stormwater impacts and why they were selected. |

19-20 Accomplishment

The City of Hendersonville target audiences are youth groups, residential property owners /homeowner's associations, restaurants/food stores. Youth groups were chosen in order to educate children early as they can help educate their parents. Property owners and homeowner's associations were selected because of the large impact they can have on the stormwater in the community. Restaurants and food stores were chosen in order to reduce contaminated stormwater runoff general kitchen cleaning operations.

20-21 Objectives

Continue our educational outreach to youth groups, community members, and commercial stakeholders.

| BMP | Measurable Goals |
|--|---|
| d. Describe residential and industrial/commercial issues | The permittee shall describe issues, such as pollutants, the likely sources of those pollutants, potential impacts, and the |

Public Education and Outreach

| | |
|--|--|
| | physical attributes of stormwater runoff, in their education/outreach program. |
|--|--|

19-20 Accomplishment

The city's education/outreach program for residential property owners, contractors, auto shops, restaurants and food stores has focused on the following pollutants:

| Target Pollutant | Likely Source |
|-------------------------|---|
| Sediment | Erosion from active construction, streambank instability |
| Biological Contaminants | Pet waste, SSO, sewer leaks, failing septic systems |
| Gross waste | Leaking dumpsters/trash compactors, improperly managed dumpsters/ Littering |
| Oil/Grease/Heavy Metal | Restaurants/ Car washes and road runoff |
| Nutrients | Over application of lawn and garden products |

20-21 Objectives

Continue to educate target audiences on the impacts of these pollutants and how they can better manage their impact on water quality.

| BMP | Measurable Goals |
|--------------------------|--|
| e. Informational Website | The permittee shall promote and maintain an internet website designed to convey the program's message. |

19-20 Accomplishments

The Engineering Department continues to maintain an educational stormwater website: <http://www.hendersonvillenc.gov/stormwater-management>. The website provides information about the stormwater program and the importance of clean water to the citizens of Hendersonville. It provides links to regional and national stormwater resources and contact information for the City's stormwater hotline number.

Public Education and Outreach

20-21 Objectives

Continue to maintain and update our current website with stormwater projects and activities. Addition of maps that detail the city's stormwater outfalls and infrastructure.

| BMP | Measurable Goals |
|--|--|
| f. Distribute public education materials to identified target audiences and user groups. | The permittee shall distribute stormwater educational material to appropriate target groups. Instead of developing its own material the permittee may rely on Public Education and Outreach materials supplied by state, and/or other entities through a cooperative agreement, as available, when implementing its own program. |

19-20 Accomplishment

The City distributed stormwater education materials via email, direct mail, educational events and news media. Materials included:

| Material | Number Distributed |
|--|--------------------|
| Water Protection Guide for Restaurant Owners/Employees | 5 |
| General Stormwater information | 23500 |
| Benefits of rain barrels and rain gardens | 530 |

20-21 Objectives

Continue distributing stormwater educational material to target audiences.

| BMP | Measurable Goals |
|-------------------------------|---|
| g. Maintain Hotline/Help line | The permittee shall promote and maintain a stormwater hotline/helpline for the purpose of public education and outreach |

Public Education and Outreach

19-20 Accomplishments

The City provides a stormwater hotline 828-697-3013 for citizens to report illicit discharge, accidental discharge, spills, erosion/sediment problems, and other stormwater related issues. This number is promoted on the city website and flyers/brochures mailed to citizens.

20-21 Objectives

Continue to maintain and promote the stormwater hotline/helpline.

In 2019 a new streetsweeper was purchased by the Stormwater Division. A vinyl wrap was purchased for the sweeper that has educational information about Stormwater program and provides the stormwater hotline.

| BMP | Measurable Goals |
|--|--|
| h. Implement a Public Education and Outreach Program | The permittee outreach program, including those elements implemented locally or through a cooperative agreement, shall include a combination of approaches designed to reach the target audiences. For each media, event or activity, including those implemented locally or through a cooperative agreement the permittee shall estimate and record the extent of exposure. |

19-20 Accomplishments

| Event | Exposure (approximate) |
|--|------------------------|
| Classroom/Outdoor Lessons | 420 Students |
| WLOS Cost of Growth report | 100,000+ |
| Rain Barrel Program | 200 residents |
| Council Conversations | 100 residents |
| Stream Repair Workshop | 35 residents |
| Stream Clean ups/ Trash Trout Events x 3 | 50 volunteers |
| Live staking events | 40 volunteers |

Public Education and Outreach

20-21 Objectives

Continue to:

- Search for public education and outreach opportunities
- Maintain and update website
- Mail informational brochures to target audiences
- Work with other City departments and local organizations to provide stormwater education and outreach.

Public Involvement and Participation

Public Involvement and Participation

1. Objectives for Public Involvement and Participation

Comply with State and Local public notice requirements when implementing a public involvement and participation program

2. BMP's for Public Involvement and Participation

The permittee shall implement the following BMP's to meet the objectives of the Public Involvement and Participation program and shall notify the Division prior to any modifications of any goals

| BMP | Measurable Goals |
|--|---|
| a. Volunteer community involvement program | The permittee shall include and promote volunteer opportunities designed to promote ongoing citizen participation |

19-20 Accomplishments

The City of Hendersonville partners with Mountain True to provide an Adopt-a-park program. Groups and organizers are encouraged to help reduce litter by participating in Hendersonville's Adopt-a-Park program. Participants agree to pick up litter from local parks and streams at least 4 times a year. The City provides groups with bags, vests, gloves, and grabbers. The City of Hendersonville provides garbage pickup and signs to recognize litter reduction efforts.

The City of Hendersonville partnered with Asheville GreenWorks to install a litter reduction device named the "Trash Trout" in a local river. The device catches floating trash that is then collected by volunteers. The City stormwater specialist participates in clean ups and helps with trash pickup. The device collected over 5000 lbs. of trash from June 2017- June 2020. Additionally, over 100 volunteers have participated in maintaining the device and in water quality monitoring associated with the device.

The City of Hendersonville created a drain stenciling program in which volunteers can stencil drains with a message that aims to prevent illegal dumping into storm drains. The City provides stencils, paints, gloves, and other necessary items for the events and the stormwater administrator participates in all drain stenciling events.

The City of Hendersonville promotes and participates in NC Big Sweep river clean up every year. This event encourages community members to participate in a one-day river

Public Involvement and Participation

cleanup project. In 2019 the City hosted a team of 18 people who cleaned a 1.5-mile section of Mud Creek and removed approximately 1000 lbs. of trash. Other teams throughout the City also participated but were organized by various community groups.

The City of Hendersonville participates in a volunteer-based water quality monitoring program sponsored by local non-profit Mountain True. The project is monitoring 30 locations within the watershed for Fecal Coliform and E. Coli in order to prioritize streams where illicit connections or discharges may be occurring.

The City of Hendersonville organized 2 live staking events with local non-profit Mountain True to educate residents about erosion prevention methods.

20-21 Objectives

The City will continue to look for partnership opportunities to perform various stormwater activities

Illicit Discharge Detection and Elimination (IDDE)

1. Objectives for Illicit Discharge Detection and Elimination

- a. Implement and enforce a program to detect and eliminate illicit discharges into the MS4;
- b. Maintain a storm sewer system map, showing the location of major outfalls and the names and locations of waters of the United States that receive discharges from those outfalls;
- c. Prohibit, through ordinance, or other regulatory mechanism, non-stormwater discharges except as allowed in this permit and implement appropriate enforcement procedures and actions;
- d. Implement a plan to detect and address non-stormwater discharges, including illegal dumping into the MS4;
- e. Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste; and
- f. Address the following categories of non-stormwater discharges or flows (i.e., illicit discharges) only if you identify them as significant contributors of pollutants to the MS4: waterline flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, 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 habitat and wetlands, dechlorinated swimming pool discharges, and street wash water (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 of the United States)

2. BMPs for Illicit Discharge Detection and Elimination

The permittee shall implement the following BMPs to meet the objectives of the Illicit Discharge Detection and Elimination Program and shall notify the Division prior to modification of any goals.

| BMP | Measurable Goals |
|--|---|
| a. Maintain adequate legal authorities | The permittee shall annually review the IDDE ordinances or other regulatory mechanisms, or adopt any new ordinances or other regulatory mechanisms that provide the permittee with adequate legal authority to prohibit |

| | |
|--|--|
| | illicit connections and discharges and enforce the approved IDDE Program |
|--|--|

19-20 Accomplishment

The City of Hendersonville Council approved and adopted ordinance No. 11-0419 Article III on April 7, 2011. This ordinance addresses stormwater and illicit discharge.

19-20 Objective

Continue to follow the ordinance and update annually as necessary.

| BMP | Measurable Goals |
|---|---|
| b. Maintain a Storm Sewer System Base Map of Major Outfalls | The permittee shall maintain a current map showing major outfalls and receiving waters. |

19-20 Accomplishment

The City maintains and updates maps of the stormwater system throughout the city in ArcGIS, a GIS based system. The maps are updated annually to show new storm drainage systems that have been installed. This mapping system shows locations of streams, rivers, ponds, lakes, SCM's, storm drains, outfalls, and drainage networks.

20-21 Objectives

Continue to maintain and update maps of the stormwater system in ArcGIS. Publish stormwater system map online for general public to access.

The City has contracted with an outside consultant to complete a Stormwater Asset inventory for all City Owned stormwater infrastructure.

| BMP | Measurable Goals |
|-----------------------------|--|
| c. Detect dry weather flows | The permittee shall develop and implement a program for conducting dry weather flow field observations in accordance with a written procedure for detecting and removing sources of illicit discharge. |

19-20 Accomplishment

City of Hendersonville stormwater staff conduct dry weather screening of major outfalls for dry weather flows with a goal of surveying 20% of all major outfalls annually. This ensures a complete survey of major outfalls is conducted each permit cycle. If a dry weather flow is detected a sample is collected and screened using the LaMotte MS4 stormwater screening kit to determine if the discharge contains pollutants. The stormwater administrator is familiar with the stormwater system and conducts annual inspection of publicly maintained storm drain systems throughout the city.

If a suspected illicit discharge is discovered, or a resident of the city reports a questionable discharge, the stormwater administrator is notified and visits the site to investigate the report. In the event the City is unable to identify the discharge, the NC Division of Water Quality is contacted for testing purposes. Assuming there is evidence of an illicit discharge, the property owner is notified in person (if possible) or by letter about what has been found, the amount of time to take corrective action and enforcement procedures should they choose not to comply in accordance with section 24-163 of the stormwater ordinance which covers civil penalties.

20-21 Objectives

Stormwater administrator will continue to perform routine inspections. Additionally, municipal staff will be trained in illicit discharge detection procedures.

| BMP | Measurable Goals |
|---|---|
| d. Investigation into the sources of all identified illicit discharges. | The permittee shall maintain and evaluate annually written procedures for conducting investigations of identified illicit discharges. |

19-20 Accomplishment

City of Hendersonville Stormwater Administrator responds to illicit discharge concerns which include identifying the source and working with the property owner to resolve the issue.

Developed a formal written standard operating procedure (SOP) for identifying illicit discharges and connections. Developed a formal SOP for investigating, reporting and documenting IDDE reports from the community. Developed a formal SOP for dry weather screening

20-21 Objectives

Continue to administer the City’s IDDE Program and review/update the plan annually

| BMP | Measurable Goals |
|---|---|
| e. Track investigations and document illicit discharges | The permittee shall track all investigations and document the dates the illicit discharge was observed; the results of investigation; any follow-up of the investigation; and the date the investigation was close. |

19-20 Accomplishment

The City of Hendersonville investigates all discharge complaints. All complaints are documented with pictures and the date the investigation was closed, as well as any follow-up needed.

19-20 Objective

Continue to track all illicit discharge complaints.

| BMP | Measurable Goals |
|----------------------|--|
| f. Employee Training | The permittee shall implement and document a training program for appropriate municipal staff, which, as part of their normal jobs responsibilities, may come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system. |

19-20 Accomplishment

Conducted Municipal stormwater pollution prevention training for the following departments:

| Division | Number of Employees | Date of Training |
|------------------------------|---------------------|------------------|
| Water/Sewer and Public Works | 59 | 2/20/20 |

20-21 Objectives

Hold training for other departments within the organization that may come in contact with or otherwise observe and illicit discharge to the storm sewers system.

| BMP | Measurable Goals |
|-----------------------------|---|
| g. Provide Public Education | The permittee shall inform public employees, businesses, and the general public of the hazards associated with illegal discharges and improper disposal of waste. |

19-20 Accomplishment

Educational brochures were included in combined utility bills sent to all Water/Sewer customers. The brochure included information associated with illicit discharges and improper disposal of waste.

20-21 Objectives

Continue mailing brochures to businesses and the public informing them of the hazards associated with illicit discharges and improper disposal of waste.

| BMP | Measurable Goals |
|-------------------------------|---|
| h. Public reporting mechanism | The permittee shall promote, publicize, and facilitate a reporting mechanism for the public and staff to report illicit discharges and establish and implement citizen request response procedures. |

19-20 Accomplishment

The City operates a telephone number in which residents or staff members can report issues related to illicit discharges, off-site sedimentation and other stormwater issues. This telephone number is located on the City of Hendersonville website and on educational brochures mailed annually to the public.

20-21 Objectives

Continue to provide a telephone hotline to report issues related to illicit discharge, off-site sedimentation and other stormwater issues. Develop an online reporting tool for Illicit discharges.

| BMP | Measurable Goals |
|----------------|--|
| i. Enforcement | The permittee shall implement a mechanism to track the issuance of notices of violation and enforcement actions administered by the permittee. This mechanism shall include the ability to identify chronic violators for initiation of actions to reduce noncompliance. |

19-20 Accomplishment

City of Hendersonville Stormwater ordinance No. 11-0419 allows the enforcement of notices of violations for illicit discharges.

20-21 Objectives

Develop a database for NOV's and enforcement actions. Continue to enforce the City's stormwater ordinance.

CONSTRUCTION SITE RUNOFF CONTROLS

Construction Site Runoff Controls

The City of Hendersonville has delegated the Local Erosion and Sediment Control program to Henderson County

Post-Construction Site Runoff Control

Objectives for Post-Construction Site Runoff Controls

- a. Implement and enforce a program to address stormwater runoff from new and redevelopment projects, including public transportation maintained by the permittee, that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, which would discharge into the small MS4. The program shall ensure that controls are in place that would prevent or minimize water quality impacts. The program shall apply to private development sites and sites developed by the permittee, including public transportation maintained by the permittee.
- b. Implement strategies which include a combination of structural and/or non-structural best management practices (BMPs) appropriate for the community.
- c. Enforce an ordinance to address post-construction runoff from new and redevelopment projects.
- d. Ensure adequate long-term operation and maintenance of BMPs through an inspection and maintenance program.

1. BMPs for Post-Construction Site Runoff Controls

The permittee shall implement the following BMPs to meet the objectives of the Post-Construction Stormwater management program. To the extent there is any conflict between the permittee and post-construction ordinances adopted by the N.C. Division of Water Quality, the post-construction ordinances shall apply with regard to permit compliance.

| BMP | Measurable Goals |
|-------------------------------|---|
| a. Adequate legal authorities | <p>Maintain through ordinance, or other regulatory mechanism, adequate legal authorities to meet the objectives of the post-construction site runoff control stormwater management program.</p> <p>The permittee shall have the authority to review designs and proposals for new development and redevelopment to determine whether adequate stormwater control measures will be installed, implemented, and maintained.</p> <p>The permittee shall have the authority to request information such as stormwater plans, inspection reports, monitoring</p> |

| | |
|--|---|
| | <p>results, and other information deemed necessary to evaluate compliance with the post-construction stormwater management program.</p> <p>The permittee shall have the authority to enter private property for the purpose of inspecting at reasonable times any facilities, equipment, practices, or operations related to stormwater discharges to determine whether there is compliance with the post-construction stormwater management program.</p> |
|--|---|

19-20 Accomplishment

The primary regulatory mechanism for the City of Hendersonville is the Stormwater Ordinance. Specifically, Article III Section 24 deals with stormwater and illicit discharges and connections.

Section 24-148(a) calls for all development and redevelopment to which this subsection applies shall comply with the standards herein. The design of facilities to comply with these standards shall be based on procedures contained in DEQ’s Stormwater BMP Manual or as approved by the Stormwater Administrator guided by the purpose and intent of this section.

Section 24-147 (b) (1) calls for all treatment measures to treat either the runoff from the disturbed area volume calculated utilizing the one-year, one-hour design storm rainfall depth; or the difference in stormwater runoff volume between the pre- and post-development conditions for the one-year, 24-hour storm; whichever is greater. Section 24-147 (c) calls for stormwater quality control that discharges stormwater at a rate equal to or less than the pre-development discharge rate for both the two-year, 24-hour storm and the ten-year, 24-hour storm with the ability to pass the 25-year, 24-hour storm.

Section 24-147 (b) (2) calls for the Runoff volume drawdown time to be a minimum of 48 hours, but not more than 120 hours. Section 24-147 (b) (3) calls for all structural stormwater treatment systems used shall be designed to have a minimum of 85 percent average annual removal for total suspended solids (TSS). Section 24-147 (e) calls for approval of the stormwater permit to require an enforceable restriction on property usage that runs with the land, such as recorded deed restrictions or protective covenants, to ensure that future development and redevelopment maintains the site consistent with the approved project plans. Every structural BMP installed pursuant to this ordinance shall be made accessible for adequate maintenance and repair by a maintenance

easement. The easement shall be recorded, and its terms shall specify who may make use of the easement and for what purposes.

19-20 Objective

Continue to operate our program.

| BMP | Measurable Goals |
|--|---|
| b. Strategies which include BMPs appropriate for the MS4 | The permittee shall adopt the DWQ MDC for Stormwater Control Measures |

19-20 Accomplishment

The City of Hendersonville requires that all projects that involve a structural stormwater BMP have an Operation and Maintenance Agreement filed with the city and recorded in the Henderson County Register of Deeds office before a final plan approval and Certificate of Occupancy are granted. The agreement binds the owner and any future owners. The agreement requires the owner to maintain, repair and if necessary, reconstruct the structural BMP and shall state the terms, conditions, and schedule of maintenance for the structural BMP. It shall also grant the city a right of entry in the event that the Stormwater Administrator has reason to believe that it has become necessary to inspect, monitor, maintain, repair or reconstruct the structural BMP. The agreement shall state that if the Stormwater Administrator has deemed an order directing the correction, repair, replacement, or maintenance of the facility has not been satisfactorily compiled within a reasonable period of time the city may, after notice to the owner enter the land and perform any necessary work to place the facility in proper working condition.

Section 24-154 (b) established special requirements for homeowner’s and other associations within the City’s jurisdiction. For all structural BMPs required pursuant to the article and that are to be or are owned and maintained by a homeowners' association, property owners' association, or similar entity establishment of an escrow account, which can be spent solely for sediment removal, structural, biological or vegetative replacement, major repair, or reconstruction of the structural BMPs. If structural BMPs are not performing adequately or as intended or are not properly maintained, the city, in its sole discretion, may remedy the situation, and in such instances the City of Hendersonville shall be fully reimbursed from the escrow account. Escrowed funds may be spent by the association for sediment removal, structural, biological or vegetative replacement, major repair, and reconstruction of the structural BMPs, provided that the city shall first consent to the expenditure. Allowing the city to recover from the association and its member’s any and all costs the city expends to maintain or repair the structural BMPs or to correct any operational deficiencies. Failure to pay the city all of its expended costs, after 45 days' written notice, shall constitute a breach of the agreement. In case of a deficiency, the city shall thereafter be entitled to bring an action against the association and its members to pay, or foreclose upon the lien hereby authorized by the agreement against the

property, or both. Interest, collection costs, and attorney fees shall be added to the recovery.

The City of Hendersonville Public Works Department operates a vacuum truck that cleans out storm drainage pipes and structures. The city operates the truck on a cycle and cleans drains on an as-needed basis. The city also operates a street sweeper to assist in preventing any materials from entering into the storm drainage system. The City of Hendersonville’s Public Works staff will also respond to complaints on storm drains and other drainage structures as needed.

20-21 Objectives

Continue to require that all projects that involve a stormwater BMP have an Operation and Maintenance Agreement filed with the city and recorded in the Henderson County Register of Deeds office before plan approval and Certificate of Occupancy are granted.

| BMP | Measurable Goals |
|-----------------|---|
| c. Plan reviews | The permittee shall conduct site plan reviews for all new development and redeveloped sites that disturb equal to or greater than one acre (including sites that disturb less than one acre that are part of a large common plan of development or sale). The site plan review shall address how the project applicant meets the performance standards and how the project will ensure long-term maintenance. |

19-20 Accomplishment

The Stormwater ordinance provides the mechanism for the City of Hendersonville to review plans.

20-21 Objectives

Continue to enforce the stormwater ordinance.

| BMP | Measurable Goals |
|--|--|
| d. Inventory of projects with post-construction structural stormwater control measures | The permittee shall maintain an inventory of projects with post-construction structural stormwater control measures installed and implemented at new development and redeveloped sites, including both public and private sector |

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| | sites located within the permittee's jurisdiction that are covered by its post-construction ordinance requirements. |
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19-20 Accomplishment

Every SCM constructed within the City of Hendersonville is required to have an operation and maintenance agreement written that describes the location of the structure, list the owner, describes the structure proper, and describes the function and required maintenance. The owner of the SCM is required to have the structure inspected by a certified professional every year and provide the results of the inspection to the City of Hendersonville Stormwater Administrator. The City of Hendersonville inspected all public and private sector SCM's that have filed Operation and Maintenance agreements and are located within the city's jurisdiction

20-21 Objectives

The City of Hendersonville plans to continue the inspection of all public and private sector SCM's that have filed Operation and Maintenance agreements and are located within the city's jurisdiction.

| BMP | Measurable Goals |
|--|--|
| e. Deed Restrictions and Protective Covenants or Recorded Operation and Maintenance Agreements | The permittee provides mechanism such as recorded deed restrictions and protective covenants or recorded operation and maintenance agreements that ensure development activities will maintain the project consistent with approved plans. |

19-20 Accomplishment

The Operation and Maintenance Agreement is recorded with Henderson County Register of Deeds. The City also maintains a hard copy of the agreement and electronic listing of each BMP which included the location, owner and running list of inspection dates.

20-21 Objectives

Continue to require a recorded Operation and Maintenance Agreement for BMPs.

| BMP | Measurable Goals |
|--|--|
| f. Provide a mechanism to require long-term operation and maintenance of structural BMPs | The permittee shall implement or require an operation and maintenance plan for the long-term operation of the structural BMPs required by the program. The operation and maintenance plan shall require the owner of each structural BMP to perform and maintain a record of annual inspections of each structural BMP. Annual inspection of permitted structural BMPs shall be performed by qualified professional. |

19-20 Accomplishment

City of Hendersonville ordinance requires that an annual inspection of permitted structural BMPs shall be performed by a qualified professional and a copy sent to the city.

The City performs annual inspections of all public and privately owned SCM's within the city's ETJ

20-21 Objectives

The City of Hendersonville's Stormwater Administrator will continue the annual inspections of all SCM's operated in the city ETJ

| BMP | Measurable Goals |
|----------------|--|
| g. Inspections | To ensure that all stormwater control measures are being maintained pursuant to its maintenance agreement, the permittee shall conduct and document inspections of each project site covered under performance standards, at least one time during the permit term. Before issuing a certificate of occupancy or temporary certificate of occupancy, the permittee shall conduct a post-construction inspection to verify that the permittee's performance standards have been met or a bond is in place to guarantee completion. The permittee shall document and maintain records of inspection findings and enforcement |

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| | actions make them available for reviewing by the permitting authority. |
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19-20 Accomplishment

To ensure that all stormwater control measures are being maintained pursuant to maintenance agreements, the City of Hendersonville conducts random inspections at each project site covered under the performance standards, at least one time during the permit term. Before issuing a certificate of occupancy or temporary certificate of occupancy a post-construction inspection is performed.

20-21 Objectives

Continue inspections for all stormwater control measures within the city ETJ

| BMP | Measurable Goals |
|--|---|
| h. Educational materials and training for developers | The permittee shall make available through paper of electronic means, ordinances, post-construction requirements, design standards checklist, and other materials appropriate for developers. New materials may be developed by the permittee, or the permittee may use materials adopted from other programs and adapted to the permittee’s new development and redevelopment program. |

19-20 Accomplishments

Ordinances, post-construction requirements, design standards checklist, and other materials appropriate for developers are available electronically on our website (<http://www.hendersonvillenc.gov/stormwater-management>). All close out documents are given to developers during the pre-con meetings and are available upon request.

20-21 Objectives

Continue to maintain the website and provide documents to developers during pre-con meetings.

| BMP | Measurable Goals |
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| i. Enforcement | The permittee shall track all issuances of notices of violation and enforcement actions. This mechanism shall include the ability to identify chronic violators for initiation of actions to reduce noncompliance. |
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19-20 Accomplishment

A digital file is created for all notices of violation that contains all information pertinent to the project including owner information, contractor information, project address, any permit numbers attached to the project, a copy of the written notice of violation and any photos that were taken. These digital files are broken down by year. Every time a new violation is discovered, the inspector reviews digital files containing previous notices of violation to discover if a pattern of repeat violations is beginning to occur with a particular contractor or owner prior to the new notice of violation being written.

20-21 Objectives

Continue to track the issuance of notices of violation and enforcement actions.

Pollution Prevention and Good Housekeeping

1. Objectives for Pollution Prevention and Good Housekeeping for Municipal Operations.

- a. Implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.
- b. Provide employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

2. BMPs for the Pollution Prevention and Good Housekeeping for Municipal Operations.

The permittee shall implement the following BMPs to meet the objectives of the Pollution Prevention and Good Housekeeping Program and shall notify the Division prior to modification of any goals.

| BMP | Measurable Goals |
|--|---|
| a. Inventory of municipally owned or operated facilities | The permittee shall maintain current inventory of facilities and operations owned and operated by the permittee with the potential for generating polluted stormwater runoff. |

19-20 Accomplishment

The Stormwater Administrator maintains a current inventory of facilities and operations owned and operated by the City that have a General or Individual Stormwater Permit.

20-21 Objectives

Update the current inventory of facilities to include Fire stations, parks, and other facilities with the potential for generating polluted runoff.

| BMP | Measurable Goals |
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|---|---|
| <p>b. Operation and Maintenance (O&M) for municipally owned or operated facilities.</p> | <p>The permittee shall maintain and implement, evaluate, annually and update as necessary an Operation and Maintenance (O&M) program for municipally owned and operated facilities with the potential for generating polluted stormwater runoff. The O&M program shall specify the frequency of inspections and routine maintenance requirements.</p> |
|---|---|

19-20 Accomplishment

Stormwater staff is in the process of working with each individual facility within the City of Hendersonville to formalize and implement an Operation and Maintenance program for each facility. The O&M will specify the frequency of inspections and routine maintenance requirements.

20-21 Objectives

Finalize the O&M program for each City of Hendersonville facility.

| BMP | Measurable Goals |
|---|---|
| <p>c. Spill Response Procedures for municipally owned and operated facilities</p> | <p>The permittee shall have written spill response procedures for municipal operations.</p> |

19-20 Accomplishment

As part of the O&M program for each City facility, a written spill response procedure will be included

20-21 Objectives

Finalize spill response procedures for all City facilities as part of the O&M program. Supply Spill kits and Good Housekeeping posters to City facilities.

| BMP | Measurable Goals |
|---|--|
| <p>d. Streets, road, and public parking lot maintenance</p> | <p>The permittee shall evaluate BMPs to reduce polluted stormwater runoff from municipally owned streets, roads, and public parking lots within their corporate limits. Within 12 months the permittee must update the Stormwater Plan to include the BMPs selected.</p> |

19-20 Accomplishment

The City of Hendersonville reduced polluted stormwater runoff from streets, road, and public parking lots within our corporate limits by street sweeping and the use of a vacuum truck. During this fiscal year the street sweeper covers approximately 80 miles of curb and gutter at least 5 times.

20-21 Objectives

Continue our street sweeping program. Develop a written O&M plan for street, road, and parking lot maintenance.

| BMP | Measurable Goals |
|--|--|
| e. Streets, road, and public parking lot maintenance | Within 24 months, the permittee must implement BMPs selected to reduce polluted stormwater runoff from municipally-owned streets, road, and public parking lots. The permittee must evaluate the effectiveness of these BMPs based on the cost and the estimated quantity of pollutants removed. |

19-20 Accomplishment

The City's street sweeping program deposits its collected material at the waste water treatment facility and weight is not recorded.

20-21 Objectives

Continue our street sweeping program

| BMP | Measurable Goals |
|--|---|
| f. Operation and Maintenance (O&M) for municipally-owned or maintained catch basins and conveyance systems | Within 12 months, the permittee shall develop, and implement, an O&M program for the stormwater sewer system including catch basin and conveyance systems that it owns and maintains. |

19-20 Accomplishments

The City of Hendersonville's maintenance program consists of leaf and garbage pickup, yard waste and brush removal, street sweeping, and storm-drain cleaning and maintenance within the City's right of way.

The City of Hendersonville’s Engineering Department currently maintains one full time equivalent position for operations. This position is responsible for inspections of the storm drain system maintained by the City.

Public Works staff periodically cleans catch basins when necessary in our maintained system.

Public Works Department upgrades or rehabilitates existing structures when warranted. Public Works staff also street sweeps approximately 80 miles of curb on an annual basis, our target is 4-6 times per year

Public Works Department operates a vacuum truck that can clean out storm drainage infrastructure when necessary.

Public Works operates a street sweeper to assist with preventing any material from entering into the storm drainage system.

The Stormwater Administrator also responds to complaints on storm drains and other structures as needed.

20-21 Objectives

Public Works and Stormwater staff will continue to clean and inspect all catch basins in our system. The goal is to continue to operate vacuum trucks cleaning out storm drainage pipes on a periodic basis, continue to remove blockages from the storm drainage system on an annual basis and the City of Hendersonville plans to continue to perform street sweeping operations.

| BMP | Measurable Goals |
|---|---|
| g. Identify municipally owned and maintained structural stormwater controls | The permittee shall maintain a current inventory of municipally-owned or operated structural stormwater controls installed for compliance with the permittee’s post-construction ordinance. |

19-20 Accomplishments

The City of Hendersonville began developing and inventory of municipally owned and operated stormwater control structures.

20-21 Objectives

Continue to update and maintain the database.

| BMP | Measurable Goals |
|--|--|
| h. (O&M) for municipally-owned or maintained | The permittee shall maintain and implement an O&M program for municipally-owned or maintained structural stormwater controls |

| | | |
|---------------------|------------|---|
| structural controls | stormwater | <p>installed for compliance with the permittee’s post-construction ordinance.</p> <p>The O&M program shall specify the frequency of inspections and routine maintenance requirements.</p> <p>The permittee shall inspect and maintain all municipally-owned or maintained structural stormwater controls in accordance with the schedule developed by permittee. The permittee shall document inspection and maintenance of all municipally-owned or maintained structural stormwater controls.</p> |
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19-20 Accomplishments

Maintenance takes place on an as needed basis, mainly with City crews or volunteers. Structural stormwater controls are inspected at least annually by the Stormwater Administrator.

20-21 Objectives

Continue maintenance when needed.

| BMP | Measurable Goals |
|---|---|
| i. Pesticide, Herbicide and Fertilizer Application Management | The permittee shall ensure municipal employees and contractors are properly trained and all permits, certifications, and other measures for applicators are followed. |

19-20 Accomplishments

The City of Hendersonville Public Works and Parks departments ensures that municipal employees and contractors are properly trained on application of pesticide, herbicide, and fertilizer.

20-21 Objectives

Public Works and Parks departments will continue to require this training.

| BMP | Measurable Goals |
|-------------------|--|
| j. Staff training | The permittee shall implement an employee training program for employees involved in |

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| | implementing pollution prevention and good housekeeping practices |
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19-20 Accomplishments

Stormwater staff conducted Municipal Stormwater Pollution Prevention training to the following divisions: Public Works/ Water and Sewer

20-21 Objectives

Conduct Municipal Stormwater Pollution Prevention training for the remaining departments within the city.

| BMP | Measurable Goals |
|--|---|
| k. Prevent or Minimize Contamination of Stormwater Runoff from all areas used for Vehicle and Equipment Cleaning | The permittee shall describe measures that prevent or minimize contamination of the stormwater runoff from all areas used for vehicle and equipment cleaning. |

19-20 Accomplishments

The City has a wash bay with an oil water separator where vehicles and equipment are cleaned.

20-21 Objectives

Continue to require vehicles and equipment be washed at the city's wash bay.

TOTAL MAXIMUM DAILY LOADS (TMDL's)

Total Maximum Daily Loads (TMDL's)

NO TOTAL MAXIMUM DAILY LOADS HAVE BEEN ESTABLISHED IN THE MS4