



# KNIGHTDALE

## *stormwater*

### **NMS-SWMP Town of Knightdale NCS000460**

10/12/2024

The schedule for implementation document is set to coordinate with our new MS4 permit cycle, following its issuance.

While the implementation schedule will technically not be in effect until after the permit is renewed, all NMS elements included in this document will be implemented by the deadline provided by the EMC and tracked according to each associated metric.



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## **PART 1: INTRODUCTION**

The purpose of this Stormwater Management Plan (SWMP) is to establish and define the means by which the Town of Knightdale will comply with its National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit and the applicable provisions of the Clean Water Act to meet the federal standard of reducing pollutants in stormwater runoff to the maximum extent practicable.

This SWMP identifies the specific elements and minimum measures that the Town of Knightdale will develop, implement, enforce, evaluate and report to the North Carolina Department of Environmental Quality (NCDEQ) Division of Energy, Minerals and Land Resources (DEMLR) in order to comply with the MS4 Permit number NCS000460, as issued by NCDEQ. This permit covers activities associated with the discharge of stormwater from the MS4 as owned and operated by the Town of Knightdale and located within the corporate limits of the Town of Knightdale.

In preparing this SWMP, the Town of Knightdale has evaluated its MS4 and the permit requirements to develop a comprehensive 5-year SWMP that will meet the community's needs, address local water quality issues and provide the minimum measures necessary to comply with the permit. The SWMP will be evaluated and updated annually to ensure that the elements and minimum measures it contains continue to adequately provide for permit compliance and the community's needs.

Once the SWMP is approved by NCDEQ, all provisions contained and referenced in this SWMP, along with any approved modifications of the SWMP, are incorporated by reference into the permit and become enforceable parts of the permit. Any major changes to the approved SWMP will require resubmittal, review and approval by NCDEQ, and may require a new public comment period depending on the nature of the changes.

## PART 2: CERTIFICATION

By my signature below I hereby certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

I am also aware that the contents of this document shall become an enforceable part of the NPDES MS4 Permit, and that both the Division and the Environmental Protection Agency have NPDES MS4 Permit compliance and enforcement authority.

- ☐ I am a ranking elected official.
- ☐ I am a principal executive officer for the permitted MS4.
- ☐ I am a duly authorized representative for the permitted MS4 and have attached the authorization made in writing by a principal executive officer or ranking elected official which specifies me as (*check one*):
  - ☐ A specific individual having overall responsibility for stormwater matters.
  - ☐ A specific position having overall responsibility for stormwater matters.

Signature:	
Print Name:	William Summers
Title:	Town Manager
Signed this 21 day of November 2024.	

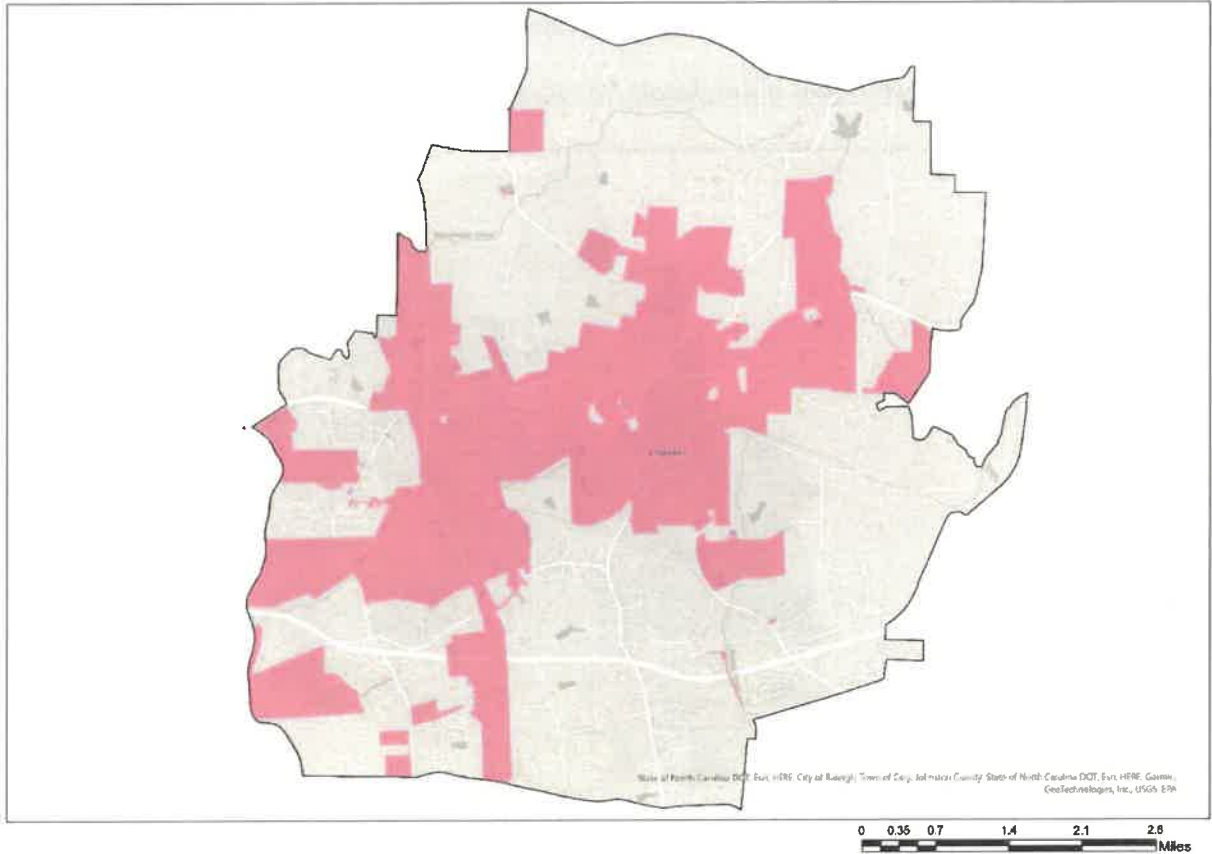
## PART 3: MS4 INFORMATION

### 3.1 Permitted MS4 Area

This SWMP applies throughout the corporate limits of the Town of Knightdale, including all regulated activities associated with the discharge of stormwater from the MS4. The map below shows the corporate limits of the Town of Knightdale as of the date of this document.

#### Legend

ETJ Boundary  
Knightdale  
KNIGHTDALE



### 3.2 Existing MS4 Mapping

The current MS4 mapping includes stormwater inflows, culvert drain pipes, channels, stormwater discharges, and SCM devices. Roughly 95% of the town's MS4 system has been mapped to date. However, previously unmapped stormwater infrastructure is still occasionally discovered and included. Stormwater inflows include information on material, diameter/box size, and length. Culvert drain pipes include information on diameter, box size, material, and length. Stormwater discharges include information on material, diameter/box size, and ownership. The stormwater discharges mapped include all outfalls, including 69 major outfalls meeting the designated criteria listed below. SCM devices mapped include information on facility type and ownership values.

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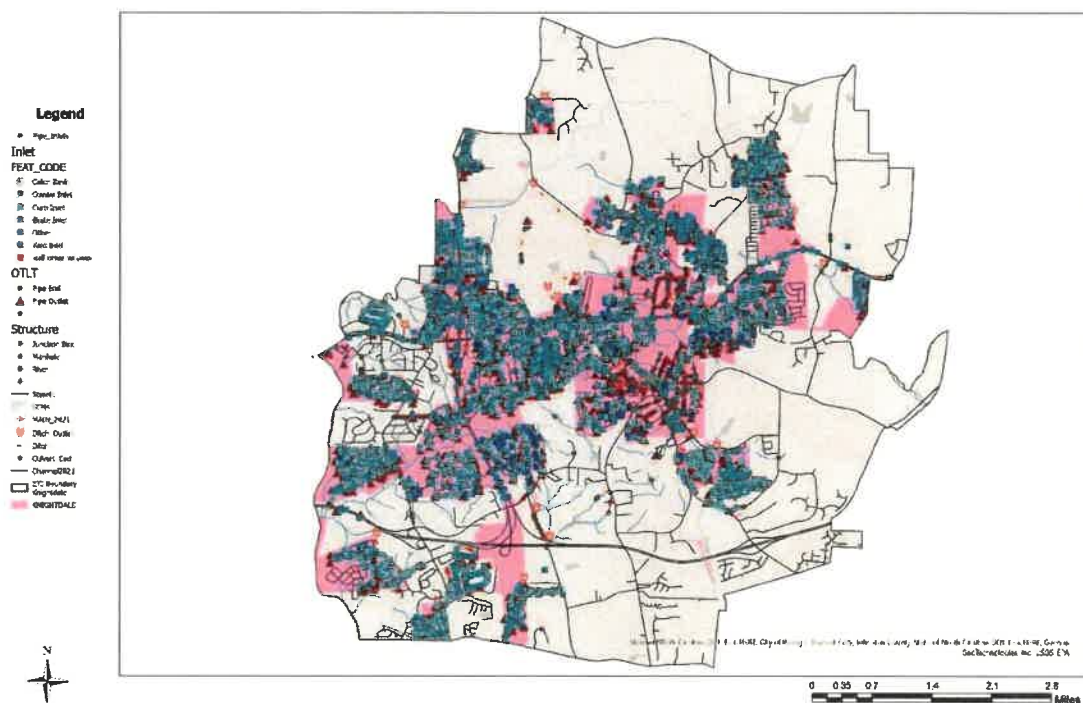


Table 1: Summary of Current MS4 Mapping

Percent of MS4 Area Mapped	95	%
No. of Major Outfalls* Mapped (Excluding Major outfalls discharging to SCM Devices)	69	total

*\*An outfall is a point where the MS4 discharges from a pipe or other conveyance (e.g. a ditch) directly into surface waters. Major outfalls are required to be mapped to meet permit requirements. A major outfall is a 36-inch diameter pipe or discharge from a drainage area > 50-acres; and for industrial zoned areas a 12-inch diameter pipe or a drainage area > 2-acres.*



### 3.3 Receiving Waters

The Town of Knightdale MS4 is located within the Neuse River Basin and discharges directly into receiving waters as listed in Table 2 below. Applicable water quality standards listed below are compiled from the following NCDEQ sources:

- [Waterbody Classification Map](#)
- [Impaired Waters and TMDL Map](#)
- Most recent NCDEQ Final [303\(d\) List](#)

Table 2: Summary of MS4 Receiving Waters

Receiving Water Name	Stream Index / AU Number	Water Quality Classification	303(d) Listed Parameter(s) of Interest
Beaver Dam Creek	27-29	C;NSW	Not Listed
Milburnie Creek	27-31	C;NSW	Not Listed
Mingo Creek	27-32	C;NSW	Not Listed
Poplar Creek	27-35	C;NSW	Not Listed
Marks Creek (Lake Myra)	27-38	C;NSW	Not Listed

### 3.4 MS4 Interconnection

The Town of Knightdale MS4 is interconnected with another regulated MS4 and directly discharges to the receiving waters as listed in Table 2 above.

The MS4 does interconnect with the statewide NCDOT MS4 and includes:

- a. The interconnection is receiving stormwater from the NCDOT MS4. The number of interconnections is unknown. Quantity: N/A
- b. The interconnection is discharging stormwater into the NCDOT MS4. The number of interconnections is unknown. Quantity: N/A
- c. The Town of Knightdale MS4 mapping does not identify interconnections with the NCDOT MS4.
- d. The Town of Knightdale MS4 mapping does include NCDOT MS4 outfalls.

### 3.5 Total Maximum Daily Loads (TMDLs)

The TMDL(s) listed in Table 3 below have been approved within the MS4 area, as determined by the map and list provided on the [NCDEQ Modeling & Assessment Unit web page](#). The table also indicates whether the approved TMDL has a specific stormwater Waste Load Allocation (WLA) for any watershed directly receiving discharges from the permitted MS4, and whether a Water Quality Recovery Program has been implemented to address the WLA.

Table 3: Summary of Approved TMDLs

Water Body Name	TMDL Pollutant(s) of Concern	Stormwater Waste Load Allocation (Y/N)	Water Quality Recovery Program (Y/N)
Neuse River Estuary	Total Nitrogen	Y	N
Statewide	Mercury	N	N

### 3.6 Endangered and Threatened Species and Critical Habitat

Significant populations of threatened or endangered species and/or critical habitat are identified within the regulated MS4 urbanized area. Based upon a review of the Endangered and Threatened Species and Species of Concern by County for North Carolina Map and Listed species believe to or known to occur in North Carolina map as provided by the U.S. Fish and Wildlife Service, the species listed in Table 4 have the potential to occur within the regulated MS4 urbanized area. Of those species listed, Table 4 summarizes the species that may be significantly impacted by the quality of surface waters within their habitat.

Table 4: Potential Federally Listed Species/Habitat Impacted by Surface Water Quality

Scientific Name	Common name	Species Group	Federal Listing Status
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Vertebrate	BGPA
<i>Noturus furiosus</i>	Carolina Madtom	Vertebrate	ARS
<i>Necturus Lewisii</i>	Neuse River Waterdog	Vertebrate	ARS
<i>Heterodon simus</i>	Southern Hognose Snake	Vertebrate	ARS
<i>Fusconaia masoni</i>	Atlantic Pigtoe	Invertebrate	ARS
<i>Alasmidonta heterodon</i>	Dwarf Wedgemussel	Invertebrate	E
<i>Lasmigona subviridis</i>	Green Floater	Invertebrate	ARS
<i>Lindera subcoriacea</i>	Bog Spicebush	Vascular Plant	ARS

BGPA – Bald and Golden Eagle Protection Act

ARS – At Risk Species

E – Endangered

### 3.7 Industrial Facility Discharges

The Town of Knightdale MS4 jurisdictional area includes the following industrial facilities which hold NPDES Industrial Stormwater Permits, as determined from the [NCDEQ Maps & Permit Data web page](#).

Table 5: NPDES Stormwater Permitted Industrial Facilities

Permit Number	Facility Name
NCGNE1376	Eaton Knightdale Warehouse Operation - KWO
NCGNE1634	Federal Express Corporation
NCGNE1600	Knightdale ARC NC115
NCG160159	Knightdale Asphalt Plant
NCG140418	Knightdale Batch Plant
NCG020030	Knightdale Quarry
NCG140242	Ready Mixed Concrete - Knightdale Plant
NCG100027	Price's Auto Parts LLC
NCGNE1182	Ametek ESP

### 3.8 Non-Stormwater Discharges

The water quality impacts of non-stormwater discharges have been evaluated by the Town of Knightdale as summarized in Table 6 below. The unpermitted non-stormwater flows listed as incidental do not significantly impact water quality. The Town of Knightdale has evaluated residential and charity car washing and street washing for possible significant water quality impacts.

Street washing discharges are addressed under the Pavement Management Program in Part 10 of this SWMP. The Division has not required that other non-stormwater flows be specifically controlled by the Town of Knightdale.

Wash water associated with car washing that does not contain detergents or does not discharge directly into the MS4 is considered incidental. However, these types of non-stormwater discharges that do contain detergents have been evaluated by the Town of Knightdale to determine whether they may significantly impact water quality. They were determined to be a possible source of water quality impacts and will be addressed through public education and outreach efforts. (See BMPs No. 3, 6 and 7.)

Table 6: Non-Stormwater Discharges

Non-Stormwater Discharge	Water Quality Impacts
Water line and fire hydrant flushing	Incidental
Landscape irrigation	Incidental
Diverted stream flows	Incidental
Rising groundwater	Incidental
Uncontaminated groundwater infiltration	Incidental
Uncontaminated pumped groundwater	Incidental
Uncontaminated potable water sources	Incidental
Foundation drains	Incidental

Air conditioning condensate	Incidental
Irrigation waters	Incidental
Springs	Incidental
Water from crawl space pumps	Incidental
Footing drains	Incidental
Lawn watering	Incidental
Residential and charity car washing	<b>Possible</b>
Flows from riparian habitats and wetlands	Incidental
Dechlorinated swimming pool discharges	Incidental
Street wash water	<b>Possible</b>
Flows from firefighting activities	Incidental

### 3.9 Target Pollutants and Sources

In addition to those target pollutants identified above, the Town of Knightdale is not aware of other significant water quality issues within the permitted MS4 area.

Table 7 below summarizes the water quality pollutants identified throughout Part 3 of this SWMP, the likely activities/sources/targeted audiences attributed to each pollutant and identifies the associated SWMP program(s) that address each. In addition, the Town of Knightdale has evaluated schools, homeowners and businesses as target audiences that are likely to have significant stormwater impacts.

Table 7: Summary of Target Pollutants and Sources

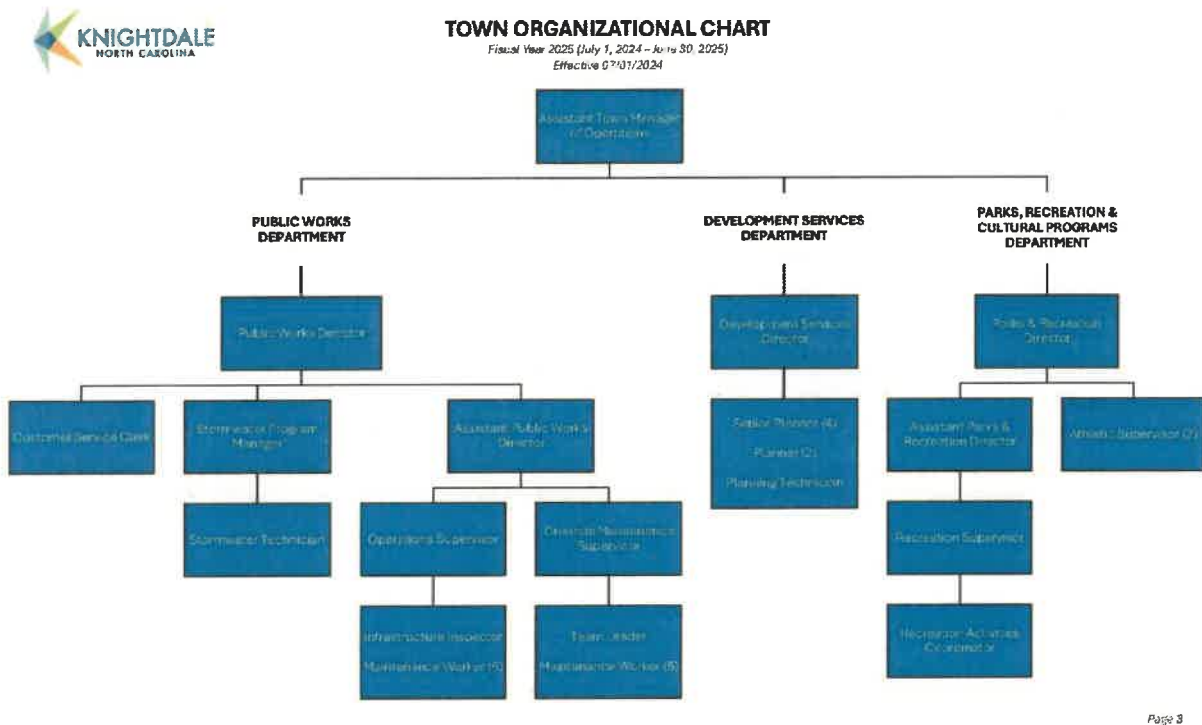
Target Pollutant(s)	Likely Source(s)/Target Audience(s)	SWMP Program Addressing Target Pollutant(s)/Audience(s)
Litter	Residents, Businesses, Schools	Public Education & Outreach
Yard Waste	Residential, Commercial	Public Education & Outreach, Pollution Prevention & Good Housekeeping
Sediment	Construction	Construction Site Runoff Control
Nutrients	Sewer Overflows, Failing Septic Systems, Urbanization, Schools	Public Education & Outreach, Illicit Discharge Detection and Elimination, Construction Site Runoff Control, Post-Construction Site Runoff Control, Pollution Prevention & Good Housekeeping
Fecal Coliform	Sewer overflows, Failing Septic Systems, Wildlife, Illicit Discharges	Public education & Outreach, Illicit Discharge detection and Elimination
Mercury/ Statewide TMDL	Atmospheric deposition	Public Education & Outreach (Fish Consumption Advisory)

Illicit Discharges	Residential, Commercial, Industrial, Municipal staff	Public Education & Outreach, Illicit Discharge Detection & Elimination, Pollution Prevention & Good Housekeeping
Illegal Dumping	Residential, Commercial, Industrial, Municipal staff	Public Education & Outreach, Illicit Discharge Detection & Elimination, Pollution Prevention & Good Housekeeping
Improper Disposal of waste	Residential, Commercial, Industrial, Municipal staff	Public Education & Outreach, Illicit Discharge Detection & Elimination, Pollution Prevention & Good Housekeeping
General Non-point Source Pollution	Residential, Commercial, Schools, Municipal staff	Public Education & Outreach, Pollution Prevention & Good Housekeeping

## PART 4: STORMWATER MANAGEMENT PROGRAM ADMINISTRATION

### 4.1 Organizational Structure

The Town of Knightdale stormwater program is implemented by the Public Works Department. The Public Works Director, with assistance from the Stormwater Manager and Stormwater Technician, is responsible for the management and implementation of all six minimum control measures. The Assistant Town Manager oversees this Program Implementation.



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Table 8: Summary of Responsible Parties

SWMP Component	Responsible Position	Staff Name	Department
Stormwater Program Administration	Assistant Town Manager (Operations)	Dustin Tripp	Administration
SWMP Management	Stormwater Program Manager	Ike Archer	Public Works
Public Education & Outreach	Stormwater Program Manager	Ike Archer, Mike Collins	Public Works

Public Involvement & Participation	Stormwater Program Manager, Stormwater Technician	Ike Archer, Mike Collins	Public Works
Illicit Discharge Detection & Elimination	Stormwater Program Manager, Stormwater Technician	Ike Archer, Mike Collins	Public Works
Construction Site Runoff Control	Stormwater Program Manager, Operations Supervisor	Ike Archer, John Stover	Public Works
Post-Construction Stormwater Management	Stormwater Program Manager, Stormwater Technician	Ike Archer, Mike Collins	Public Works
Pollution Prevention/Good Housekeeping for Municipal Operations	Stormwater Program Manager, Operations Supervisor, Stormwater Technician	Ike Archer, John Stover, Mike Collins	Public Works
Municipal Facilities Operation & Maintenance Program	Stormwater Program Manager, Operations Supervisor	Ike Archer, John Stover	Public Works
Spill Response Program	Fire Chief	Loren Cone	Fire Department
MS4 Operation & Maintenance Program	Stormwater Program Manager	Ike Archer	Public Works
Municipal SCM Operation & Maintenance Program	Stormwater Program Manager, Stormwater Technician	Ike Archer, Mike Collins	Public Works
Pesticide, Herbicide & Fertilizer Management Program	Stormwater Program Manager, Operations Supervisor (Grounds)	Ike Archer, Jason Eubanks	Public Works
Vehicle & Equipment Cleaning Program	Stormwater Program Manager, Operations Supervisor	Ike Archer, John Stover	Public Works
Pavement Management Program	Public Works Director, Assistant Public Works Director	Phillip Bunton, Larry Johnson	Public Works
Total Maximum Daily Load (TMDL) Requirements	Stormwater Program Manager	Ike Archer	Public works



## 4.2 Program Funding and Budget

In accordance with the issued permit, the Town of Knightdale shall maintain adequate funding and staffing to implement and manage the provisions of the SWMP and comply with the requirements of the NPDES MS4 Permit. The budget includes the permit administering and compliance fee, which is billed by the Division annually.

The Town manages operational and capital expenditures in a separate stormwater fund. These costs are funded by a user fee set by Town Council and reviewed on an annual basis. In fiscal year 2024, the Town collected \$1,261,369 in user fee revenue with total funding from all sources being \$1,662,819. Total expenditures for the same time period were \$1,247,337. Reserves for this fund at yearend were \$3,099,070.

The Town is working on a sustainability project whereby stormwater needs are addressed in both the short and long terms. This includes a 10-year capital improvement plan.

## 4.3 Shared Responsibility

The Town of Knightdale will share the responsibility of implementing the following minimum control measures, which are at least as stringent as the corresponding NPDES MS4 Permit requirement. The Town of Knightdale remains responsible for compliance if the other entity fails to fulfil the permit obligation, and may be subject to enforcement action if neither the Town of Knightdale nor the other entity fully performs the permit obligation. Table 9 below summarizes who will be implementing the component, what the component program is called, the specific SWMP BMP or permit requirement that is being met by the shared responsibility, and whether or not a legal agreement to share responsibility is in place.

Table 9: Shared Responsibilities

SWMP BMP or Permit Requirement	Implementing Entity & Program Name	Legal Agreement (Y/N)
BMP No. 3	Clean Water Education Partnership (CWEP)	Y

#### 4.4 Co-Permittees

There are no other entities applying for co-permittee status under the NPDES MS4 permit number NCS000460 for the Town of Knightdale. Table 10 summarizes contact information for each co-permittee.

Table 10: Co-Permittee Contact Information

Co-Permittee MS4 Name	Contact Person	Phone & E-Mail	Interlocal Agreement (Y/N)
n/a	n/a	n/a	n/a

#### 4.5 Measurable Goals for Program Administration

The Town of Knightdale will manage and report the following Best Management Practices (BMPs) for the administration of the Stormwater Management Program.

Table 11: Program Administration BMPs				
Permit Ref.	<b>2.1.2 Program Implementation</b> Measures to evaluate the performance and effectiveness of the SWMP program components at least annually. Results shall be used by the permittee to modify the program components as necessary to accomplish the intent of the Stormwater Program.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
#. 1	<b>Annual Self-Assessment</b>			
	Evaluate the performance and effectiveness of the program components at least annually. Results shall be used to modify the program components as necessary to accomplish the intent of the Stormwater Program.	1. Prepare, conduct and document an annual evaluation of the program components.	1. Annually Permit Year 1 – 5	1. Yes/No

**Table 11: Program Administration BMPs**

#. 2	<b>Shared Responsibility (Permit Ref. 1.4)</b>			
	Agreements with the Clean Water Partnership operating on behalf of the Town of Knightdale will be reviewed to confirm that the entity has agreed to implement part of the program on the municipalities behalf and that all required documentation will be submitted to the municipality for documentation and reporting purposes.	1. Review all agreements and confirm that they meet all requirements outlined in 1.4 of the MS4 permit.	1. Permit Year 1	1. Yes/No
#. 3	<b>Minimum Control Measures (Permit Ref. 2.2.2)</b>			
	Written programs will be updated and maintained to assure compliance with part 2.2.2 of the MS4 Permit. Written programs shall be reviewed on an annual basis and modified if needed to best outline the program and needs of the municipality.	1. Review written programs and modify/update.	1. Annually	1. Yes/No
#. 4	<b>Funding and Staffing (Permit Ref. 2.1.1)</b>			
	The funding and staffing status of the program will be evaluated by appropriate Town staff to confirm that the program is meeting permit requirements.	1. Review and analyze the current funding and staffing of the program.	1. Annually	1. Adequate/inadequate
#. 5	<b>Web Site (Permit Ref 2.1.7, 3.2.3 and 3.6.5(c))</b>			

**Table 11: Program Administration BMPs**

	The web page will provide information on the Town's stormwater program, including the permit, SWMP, applicable ordinances, administrative manual, and annual reports. The web page will also include a mechanism for reporting stormwater related issues, educational materials developed by the Town, and links to additional stormwater educational resources including CWEP. The web page will also serve to advertise the Stormwater Hotline.	1. Maintain the webpage – update any broken links, upload new education material, upload any updates made to the SWMP	1. Annually, once updates to the web page are complete	1. Yes/No
#. 6	<b>Stormwater Hotline (Permit Ref 3.2.5, 3.4.6 and 3.5.6)</b>			
	The current hotline will be maintained for citizens to ask stormwater related questions and report incidents for the purposes of IDDE, Public Education, and all associated programs.	1. Maintain current hotline phone number and train responsible staff to answer stormwater questions and concerns	1. Permit Year 1-5	1. Yes/no/status
		2. Publicize hotline in education materials developed for the stormwater program and advertise on the Town's stormwater web page.	2. Permit Year 1	2. Yes/no/status
		3. Establish a tracking mechanism to document the number and type of calls received	3. Permit Year 1	3. Report the number and type of calls received
<b>Permit Ref.</b>	<b>1.6: Permit Renewal Application</b> Measures to submit a permit renewal application no later than 180 days prior to the expiration date of the NPDES MS4 permit.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
#. 7	<b>Permit Renewal Application</b>			
	Submit a permit renewal application and Draft SWMP no later than 180 prior to permit expiration.	1. Draft SWMP applicable to the proceeding 5 years following permit re-issuance.	1. Permit Year 5	1. Yes/No

**Table 11: Program Administration BMPs**

		2. Certify the stormwater permit renewal application (Permit renewal application form and Draft SWMP for the next 5-year permit cycle) and submit to NCDEQ at least 180 days prior to permit expiration.	2. Permit Year 5	2. Date of permit renewal application submittal
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## PART 5: PUBLIC EDUCATION AND OUTREACH PROGRAM

The Town of Knightdale will continue to implement a Public Education and Outreach Program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and steps the public can take to reduce pollutants in storm water runoff.

The target audiences and identified pollutants listed in Part 3.9 of this SWMP, which will be addressed by the Public Education and Outreach Program, are summarized in Table 12 below. In addition, the Town of Knightdale is required to inform businesses and the general public of the hazards associated with illicit discharges, illegal dumping and improper disposal of waste.

Table 12: Summary of Target Pollutants & Audiences

Target Pollutants/Sources	Target Audience(s)
Litter	General Public
Yard Waste	Residential, Commercial, Municipal Employees
Sediment	Construction
Nutrients	Residential, Commercial, Schools
Fecal Coliform	Residential, Commercial, Schools
Mercury/statewide TMDL	Residential, Commercial
General non-point source pollution	Residential, Commercial, Schools, Municipal Employees

The Town of Knightdale will manage, implement, and report the following public education and outreach BMPs.

Table 13: Public Education and Outreach BMPs				
Permit Ref.	<b>3.2.2 and 3.2.4: Outreach to Targeted Audiences</b> Measures to identify the specific elements and implementation of a Public Education and Outreach Program to share educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and how the public can reduce pollutants in stormwater runoff. The permittee shall provide educational information to identified target audiences on pollutants/sources identified in table 12 above, and shall document the extent of exposure of each media, event or activity, including those elements implemented locally or through a cooperative agreement.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
#. 8	Partnership with CWEP			

**Table 13: Public Education and Outreach BMPs**

	The Town will continue engagement with the Clean Water Education partnership (CWEP) to assist with the development of Education and Outreach initiatives that will be administered by CWEP. Initiatives will focus on residential, commercial, and school audiences within the MS4 service area.	1. Maintain partnership and update legal agreement with the Clean Water Education Partnership	1. Permit Year 1	1. Yes/No
#. 9	<b>Town Sponsored Event or Festival</b>			
	The Town will continue to distribute education materials regarding stormwater during at least two (2) Town sponsored events or festivals a year such as the Christmas Tree Lighting Ceremony, 4 <sup>th</sup> of July Celebration, K-Fest Arts & Education Festival, and Easter Festivities.	1. Develop or identify additional informational handouts for distribution at the event that covers litter, nutrients, and non-point source pollution (including car washing)	1. Permit year 1	1. Yes/no/status
		2. Train municipal staff to man a stormwater booth during the event and distribute the flyers as well as additional educational materials related to stormwater and pollution prevention practices	2. Permit year 1	2. Report the number of staff members trained
		3. Provide Stormwater Education Booth at (2) two Town sponsored events and document the number of handouts distributed	3. Annually, beginning Permit Year 1	3. Report the number of events attended, and number of handouts distributed
#. 10	<b>Social Media Campaign</b>			
	The Town's existing social media page(s) will be used to reach the residential target audience and share information related to stormwater issues, with a minimum of (2) post per year.	1. The Town will create two social media outreach post per year regarding one of the identified target pollutants.	1. Annually, beginning Permit Year 1	1. Report the number of social media post
#. 11	<b>CWEP Regional Creek Week</b>			
	The Town will continue to participate in CWEPs Regional Creek Week and host at least (1) local event such as a Litter Sweep or StoryWalk.	1. Continue to participate in the annual Creek Week Planning Meetings.	1. Annually	1. Yes/no/status

**Table 13: Public Education and Outreach BMPs**

		2. Host at least (1) Creek Week Event in Town and track all interactions and impressions.	2. Annually	2. Number of events, number of participants and materials distributed
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## PART 6: PUBLIC INVOLVEMENT AND PARTICIPATION PROGRAM

This SWMP identifies the minimum elements and implementation of a Public Involvement and Participation Program that complies with applicable State, Tribal and local public notice requirements. The Land Use Review Board will continue to function as the Town's stormwater advisory board with the additional advisory of the stormwater administrator to highlight stormwater issues. A stormwater hotline and a stormwater issue reporting mechanism on the webpage will be used to collect public input. The Town of Knightdale will continue to coordinate with other departments to promote and plan town-wide litter cleanup events that provide volunteer opportunities and prevent floatable materials from entering the MS4. The Town of Knightdale will continue to manage, implement, and report the following public involvement and participation BMP's.

Table 14: Public Involvement and Participation BMPs				
<b>Permit Ref.</b>	<b>3.3.1: Public Input</b> Mechanisms for public involvement that provide for input on stormwater issues and the stormwater program.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
#. 12	<b>Land Use Review Board (LURB)</b>			
	Town staff will bring stormwater issues before the Land Use Review Board to receive citizen input and factor stormwater into development decisions.	1. Include a bi-annual agenda item for Town staff to report on stormwater concerns and receive input from the commission	1. Bi-annually, beginning Permit Year 1	1. Report the date of meetings and the stormwater topics discussed
<b>Permit Ref.</b>	<b>3.3.2: Volunteer Opportunities</b> Measures to provide volunteer opportunities designed to promote ongoing citizen participation.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
#. 13	<b>Annual Town Litter Sweep</b>			
	Organize and promote at least (1) annual Litter Sweep Event.	1.Coordiante clean-up of public areas	1. Annually, beginning Permit Year 1	1. Report the number of participants and the number trash bags filled.

**Table 14: Public Involvement and Participation BMPs**

#. 14	<b>Partnership with CWEP</b>			
	The Town will engage with CWEP to develop volunteer opportunities that will be administered by the Town. Opportunities will focus on residential, commercial, and school audiences within the MS4 area. This may include school presentations, direct education activities at town events, and local litter sweeps.	1. Coordinate with CWEP to develop and implement these opportunities	1. Annually, beginning Permit Year 2	1. Number of events hosted

## PART 7: ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

The Town of Knightdale will develop, manage, implement, document, report and enforce an Illicit Discharge Detection and Elimination Program which shall, at a minimum, include the following illicit discharge detection and elimination BMPs.

Table 15: Illicit Discharge Detection and Elimination BMPs				
<b>Permit Ref.</b>	<b>3.4.1: MS4 Map</b> Measures to develop, update and maintain a municipal storm sewer system map including stormwater conveyances, flow direction, major outfalls and waters of the United States receiving stormwater discharges.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
<b>#. 15</b>	<b>Continual Updates to MS4 Map</b>			
	The MS4 map will be continuously updated for completeness.	1. When new conveyances and outfalls are located or constructed add them to map	1. Continuously	1. Yes/no
<b>Permit Ref.</b>	<b>3.4.2: Regulatory Mechanism</b> Measures to provide an IDDE ordinance or other regulatory mechanism that provides legal authority to prohibit, detect, and eliminate illicit connections and discharges, illegal dumping and spills into the MS4, including enforcement procedures and actions.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
<b>#. 16</b>	<b>Maintain Legal Authority</b>			
	Review existing ordinance (UDO Chapter 9.4.j - Illicit Discharges and Connections) in order to maintain the legal authority to prohibit, detect, and eliminate illicit connections and discharges, illegal dumping, and spills into the MS4, including enforcement procedures and actions. Update ordinance if required.	1. Review ordinance and update if revision is required to maintain legal authority	1. Permit Year 1	1. Yes/no

**Table 15: Illicit Discharge Detection and Elimination BMPs**

<b>Permit Ref.</b>	<b>3.4.3: IDDE Plan</b> Measures to maintain and implement a written IDDE Plan to detect and address illicit discharges, illegal dumping and any non-stormwater discharges identified as significant contributors of pollutants to the MS4. The plan shall provide standard procedures and documentation to: <ul style="list-style-type: none"> <li>a) Locate priority areas likely to have illicit discharges,</li> <li>b) Conduct routine dry weather outfall inspections,</li> <li>c) Identify illicit discharges and trace sources,</li> <li>d) Eliminate the source(s) of an illicit discharge, and</li> <li>e) Evaluate and assess the IDDE Program.</li> </ul>			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
#. 17	<b>Outfall Inspections</b>			
	Perform regular dry weather (no rain in the previous 72 hours) outfall inspections to proactively identify illicit discharges and illicit connections.	1. Inspect all major outfalls annually in dry weather conditions and document any potential violations	1. Annually, beginning Permit Year 1	1. Number of outfalls inspected, and number of potential illicit discharges identified
		2. Inspect at least 50 non-major outfalls annually in dry weather conditions and document any potential violations	2. Annually, beginning Permit Year 1	1 Number of non-major outfalls inspected, and number of potential illicit discharges identified
#. 18	<b>Illicit Discharge Identification Procedure</b>			
	Revise and maintain a standard operating procedure (SOP) for investigating potential illicit discharges, illicit connections, and illegal dumping.	1. Review current IDDE Investigation SOP and update if revision is required to meet requirements of the new SWMP	1. Permit year 1	1. Completed? – yes/no/status
		2. Maintain a written IDDE Program	2. Continuously	2. Yes/no/status

**Table 15: Illicit Discharge Detection and Elimination BMPs**

<b>Permit Ref.</b>	<b>3.4.4: IDDE Tracking</b> Measures for tracking and documenting the date(s) an illicit discharge, illicit connection or illegal dumping was observed, the results of the investigation, any follow-up of the investigation, the date the investigation was closed, the issuance of enforcement actions, and the ability to identify chronic violators.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
<b>#. 19</b>	<b>Database Tracking System</b>			
	Maintain tracking system for observed IDDE violations and follow-on actions in order to identify “hot-spot” areas, chronic violators, and recurring issues.	1. Review current “Incident Report Form” and update if revisions are necessary to meet requirements of new SWMP. The “Incident Report Form” Should include illicit discharge indicators, date, location, and contacts made.	1. Permit Year 1	1. Yes/no/status
		2. Review current tracking spreadsheet to collect data from the “Incident Report Form” as well as the results of the investigation, any follow-up, date of closure, and enforcement taken	2. Permit Year 1	2. Yes/no/status
		3. Review of IDDE reports and identification of chronic violators, issues, and/or “hot-spot” areas	3. Annually, in conjunction with the annual assessment	3. Report the number IDDE reports received, the number of potential illicit discharges found, the number of illicit discharges verified, the number of illicit discharges resolved/removed, and any enforcement actions taken
<b>Permit Ref.</b>	<b>3.4.5: Staff IDDE Training</b> Measures to provide training for municipal staff and contractors who, as part of their normal job responsibilities, may observe an illicit discharge, illicit connection, illegal dumping or spills. Training shall include how to identify and report illicit discharges, illicit connections, illegal dumping and spills. Each staff training event shall be documented, including the agenda/materials, date, and number of staff participating.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>

**Table 15: Illicit Discharge Detection and Elimination BMPs**

#. 20	<b>Staff Training</b>			
	Develop a program to educate Town staff of indicators of potential illicit discharges/connections and illegal dumping and the appropriate avenues through which to report suspected illicit discharges. (See BMP No. 18 for SOPs by which to train staff).	1. Train all staff with Illicit Discharge & Detection responsibilities	1. Annually, beginning Permit Year 1	1. Report number of attendees
#. 21	<b>Fact Sheet</b>			
	Hang fact sheet posters in employee common areas to serve as a reminder of the basics on identifying and reporting illicit discharges, connections, and dumping.	1. Identify or develop illicit discharge fact sheet posters to display	1. Permit Year 2	1. Yes/no/status
		2. Display posters in employee common areas	2. Annually, beginning in Permit Year 2	2. Yes/no



## PART 8: CONSTRUCTION SITE RUNOFF CONTROL PROGRAM

In accordance with 15A NCAC 02H .0153, the Town of Knightdale relies upon the North Carolina Sedimentation Pollution Control Act (SPCA) of 1973 as a qualifying alternative program to meet a portion of the NPDES MS4 Permit requirements for construction site runoff control measures. The SPCA requirements include reducing pollutants in stormwater runoff from construction activities that result in land disturbance of greater than or equal to one acre, and includes any construction activity that is part of a larger common plan of development that would disturb one acre or more. The state SPCA Program is either delegated to a city/town, delegated to a county, or implemented by NCDEQ in non-delegated areas.

Table 16: Qualifying Alternative Program Components for Construction Site Runoff Control Program

Permit Reference	State or Local Program Name	Legal Authority	Implementing Entity
3.5.1 - 3.5.4	Town of Knightdale Delegated SPCA Program*	15A NCAC Chapter 04, NCDEQ Approved Delegation, Local Ordinance	Town of Knightdale

\* The local delegated SPCA Program ordinance(s)/regulatory mechanism(s) can be found at: [https://codelibrary.amlegal.com/codes/knightdale/latest/knightdale\\_nc/0-0-0-6892](https://codelibrary.amlegal.com/codes/knightdale/latest/knightdale_nc/0-0-0-6892)

The Town of Knightdale also implements the following BMPs to meet NPDES MS4 Permit requirements.

Table 17: Construction Site Runoff Control BMPs				
Permit Ref.	<b>3.5.6: Public Input</b> Measures to provide and promote a means for the public to notify the appropriate authorities of observed erosion and sedimentation problems.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
#. 22	<b>Municipal Staff Training</b>			
	Train municipal staff who receive calls from the public on the protocols for referral and tracking of construction site runoff control complaints.	1. Train municipal staff on proper handling of construction site runoff control complaints.	1. Annually Permit Year 1-5	1. Number of staff trained

**Table 17: Construction Site Runoff Control BMPs**

<b>Permit Ref.</b>	<b>3.5.5: Waste Management</b> Measures to require construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impact to water quality.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
#. 23	<b>Establish and Maintain Legal Authority</b>			
	Develop and implement an ordinance to require construction site operators to control waste.	1. Pass Ordinance	1. Permit Year 2	1. Yes/no/status
		2. Maintain legal authority	2. Continuously, after ordinance is adopted	2. Yes/no/status
#. 24	<b>Contractor Education</b>			
	Communicate new waste management requirements to construction site operators.	1. Identify/develop fact sheet to be included in approved CD submittals	1. Permit Year 1, after ordinance is adopted	1. Yes/no/status
		2. Distribute fact sheet at pre-construction meetings	2. Permit Year 1, after ordinance is adopted	2. Yes/no/status
		3. Add fact sheet to website	3. Permit Year 1, after ordinance is adopted	3. Number of fact sheets distributed



## PART 9: POST-CONSTRUCTION SITE RUNOFF CONTROL PROGRAM

This SWMP identifies the minimum elements to develop, implement and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that are located within the Town of Knightdale and discharge into the MS4. These elements are designed to minimize water quality impacts utilizing a combination of structural Stormwater Control Measures (SCMs) and/or non-structural BMPs appropriate for the community, and ensure adequate long-term operation and maintenance of SCMs.

In accordance with 15A NCAC 02H .0153 and .1017, the Town of Knightdale implements the following State post-construction program requirements, which satisfy the NPDES Phase II MS4 post-construction site runoff control requirements as Qualifying Alternative Programs (QAPs) in the MS4 area(s) where they are implemented.

Table 18: Qualifying Alternative Program(s) for Post-Construction Site Runoff Control Program

State QAP Name	State Requirements	Local Ordinance / Regulatory Mechanism Reference
Neuse River Basin Nutrient Sensitive (NSW) Management Strategy	15A NCAC 2B .0235	UDO Chapter 9.4

The Town of Knightdale has existing requirements other than the Qualifying Alternative Program(s) for implementation of the NPDES Phase II MS4 post-construction program requirements. These existing requirements are codified in local ordinance(s), and implementation is further defined in guidance, manuals and/or standard operating procedure(s) as summarized in Table 19 below.

Table 19: Summary of Existing Post-Construction Program Elements

Permit Requirements for <b>Plan Review and Approval</b>	Municipal Ordinance/Code Reference(s) and/or Document Title(s)	Date Adopted
3.6.2(a) Authority	Town of Knightdale UDO Chapter 9.4.a	July 21,2021
3.6.3(a) & 15A NCAC 02H.0153(c) Federal, State & Local Projects	Town of Knightdale UDO Chapter 9.4	July 21,2021
3.6.3(b) Plan Review	Town of Knightdale UDO Chapter 9.4.b	July 21,2021
3.6.3(c) NMS Review	Town of Knightdale UDO Chapter 9.4.g	July 21,2021
3.6.3(c) O&M Agreement	Town of Knightdale UDO Chapter 9.4.h	July 21,2021
3.6.3(d) O&M Plan	Town of Knightdale UDO Chapter 9.4.h	July 21,2021
3.6.3(e) Deed Restrictions/Covenants	Town of Knightdale UDO Chapter 9.4.h	July 21,2021
3.6.3(f) Access Easements	Town of Knightdale UDO Chapter 9.4.h	July 21,2021
Permit Requirements for <b>Inspections and Enforcement</b>	Municipal Ordinance/Code Reference(s) and/or Document Title(s)	Date Adopted
3.6.2(b) Documentation	Town of Knightdale UDO Chapter 9.4.h	July 21,2021
3.6.2(c) Right of Entry	Town of Knightdale UDO Chapter 9.4.i	July 21,2021
3.6.4(a) Pre-CO Inspections	Town of Knightdale UDO Chapter 9.4.c	July 21,2021
3.6.4(b) Compliance with Plans	Town of Knightdale UDO Chapter 9.4	July 21,2021
3.6.4(c) Annual SCM Inspections	Town of Knightdale UDO Chapter 9.4.h	July 21,2021
3.6.4(d) Low Density Inspections	BMP 32	TBD
3.6.4(e) Qualified Professional	Town of Knightdale UDO Chapter 9.4.h	July 21,2021
Permit Requirements for <b>Fecal Coliform Reduction</b>	Municipal Ordinance/Code Reference(s) and/or Document Title(s)	Date Adopted
3.6.6(a) Pet Waste	BMP 33	TBD
3.6.6(b) On-Site Domestic Wastewater Treatment	Wake County Environmental Services Application, Evaluation, and Permitting Procedures for Septic Systems and Well Construction	June 5, 2020

The annual reporting metrics for the post construction program are provided in Table 20: Post Construction Site Runoff Control BMPs below.

**Table 20: Post Construction Site Runoff Control BMPs**

<b>Permit Ref.</b>	<b>3.6.5(a), 3.6.5(b), and 4.1.3: Minimum Post-Construction Reporting Requirements</b> Measures to document activities over the course of the fiscal year (July 1 – June 30) including appropriate information to accurately describe progress, status, and results.
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**Table 20: Post Construction Site Runoff Control BMPs**

BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
#. 25	<b>Standard Reporting</b>			
	Implement standardized tracking, documentation, inspections and reporting mechanisms to compile appropriate data for the annual self-assessment process. Data shall be provided for each Post-Construction/Qualifying Alternative Program being implemented as listed in Tables 18 and 19.	1. Track number of low density and high-density plan reviews performed.	1. Continuously Permit Year 1-5	1. Number of plan reviews performed for low density and high density
		2. Track number of low density and high-density plans approved.	2. Continuously Permit Year 1-5	2. Number of plan approvals issued for low density and high density
		3. Maintain a current inventory of low density projects and constructed SCMs including SCM type or low density acreage, location and last inspection date.	3. Continuously Permit Year 1-5	3. Summary of number and type of SCMs added to the inventory; and number and acreage of low-density projects constructed
		4. Track number of SCM inspections performed.	4. Continuously Permit Year 1-5	4. Number of SCM inspections
		5. Track number of low-density inspections performed.	5. Continuously Permit Year 1-5	5. Number of low-density projects inspected
		6. Track number and type of enforcement actions taken.	6. Continuously Permit Year 1-5	6. Number of enforcement actions issued
Permit Ref.	<b>2.3 and 3.6: Qualifying Alternative Program(s)</b> Measures to develop, implement and enforce additional BMPs in order to comply with the QAP state program requirements.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
#. 26	<b>Review Plans for Compliance with Nutrient Management Strategy</b>			
	Conduct site plan reviews of all new development and development expansions for compliance with the stormwater treatment and nutrient reduction requirements in 15A NCAC 02B .0711, including reviews of nutrient calculations using a DWR-approved calculation tool	1. Establish application intake and review procedures	1. Continuously	1. Yes/no/status
		2. Conduct site plan reviews	2. Continuously	2. Number of plans approved annually

**Table 20: Post Construction Site Runoff Control BMPs**

#. 27	<b>Require Recordation of BUA Limits on Deeds or Plats</b>			
	Ensure that for lots in developments with a common plan of development that a BUA limit, based on the approved Stormwater Plan, is recorded with either the deed or plat	1. Establish legal authority through code revision	1. Permit Year 1	1. Report code reference and date adopted
		2. Include BUA review in plan review procedures	2. Permit Year 1	2. Yes/no/status
		3. Conduct site plan reviews	3. Continuously	3. Number of plans reviewed annually
#. 28	<b>Plan Review Staff Training on Nutrient Calculator Tool</b>			
	Ensure all plan review staff have gone through DWR-provided plan reviewer training for the approved nutrient calculator	1. All current plan review staff participate in live online training for SNAP calculator tool	1. Permit Year 1	1. Percent of review staff that have attended live online training
		2. Plan review staff who were unable to attend live online workshop view recording of training	2. Annually	2. Percent of review staff that have viewed recording of training
#. 29	<b>Standard Nutrient Management Strategy Reporting</b>			
	Implement standardized tracking, documentation, inspections, and reporting mechanisms to compile appropriate data for the annual self-assessment process. Data shall be provided for each Post-Construction/Qualifying Alternative Program being implemented as listed in Tables 18 and 19.	1. Track number of NMS-subject plan reviews approved	1. Continuously Permit Year 1-5	1. Number of plan reviews performed for NMS-subject plans
		2. Maintain a current inventory of developments and lots with BUA limits (BMP 29.3) and constructed SCMs including SCM type or location, and last inspection date (BMP 29.3).	2. Continuously Permit Year 1-5	2. Summary of number and type of SCMs added to the inventory; and number and acreage of low-density projects constructed
		3. Track number of post construction SCM inspections performed by staff in the past year	3. Continuously Permit Year 1-5	3. Number of SCM inspections

**Table 20: Post Construction Site Runoff Control BMPs**

#. 30	<b>Data Used in Nutrient Calculations</b>			
	Input data used for the calculation of nutrient export and reduction by SCMs for all development sites subject to <.0711 or .0731> will be collected for the year and submitted as an appendix for the Local Program's Annual Report.	1. Export SNAP input data from each development upon approval.	1. Continuously Permit Year 1-5	1. Nutrient calculation input data for all developments and expansions subject to the Neuse Stormwater Rule
		2. Provide adjusted SNAP input data from each development where completed landcovers are different from what was permitted.	2. Annually	2. Nutrient calculation data for these developments and a notice for which previously submitted data are to be replaced
#. 31	<b>Inventory of Developments and Lots with BUA Limits</b>			
	Develop and maintain a comprehensive inventory of projects that have BUA limits tied to their stormwater management or nutrient loading requirements to be used when reviewing new development plans. Develop and maintain a database BUA limits on development and individual lots within, with BUA limits based on their approved stormwater plans. Actual BUA amounts are updated as new development is approved for and occurs on individual lots.	1. Establish a list of developments with BUA limits	1. Permit Year 1	1. Number of developments
		2. Establish a list of parcels or lots with BUA limits	2. Permit Year 1	2. Number of parcels
		3. Add developments and lots within to the list when project as-builts are approved	3. Continuously	3. Total numbers of developments and lots
<b>Permit Ref.</b>	<b>3.6.2: Legal Authority</b> Measures to maintain adequate legal authorities through ordinance or other regulatory mechanism to: (a) review designs and proposals for new development and redevelopment to determine whether adequate stormwater control measures will be installed, implemented, and maintained, (b) request information such as stormwater plans, inspection reports, monitoring results, and other information deemed necessary to evaluate compliance with the Post-Construction Stormwater Management Program, and (c) 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.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
	<i>This permit requirement is fully met by the existing post-construction program, see references provided in Table 18 &amp; 19</i>			



**Table 20: Post Construction Site Runoff Control BMPs**

<b>Permit Ref.</b>	<b>3.6.3: Plan Review and Approval</b> Measures to maintain plan review and approval authority, standards and procedures to: (a) Require Federal, State, and local government projects to comply with Post-Construction Program requirements throughout the entire MS4 permitted area, unless the entity is subject to its own NPDES MS4 permit or a qualifying alternative program, (b) Conduct site plan reviews of all new development and redeveloped sites that disturb greater than or equal to one acre, and sites that disturb less than one acre that are part of a larger common plan of development or sale for compliance with 15A NCAC 02H .1017 and the qualifying alternative programs that apply within your jurisdiction, (c) Ensure that each project has an Operation and Maintenance Agreement that complies with 15A NCAC 02H .1050(12), (d) Ensure that each project has an Operation and Maintenance Plan that complies with 15A NCAC 02H .1050(13), (e) Ensure that each project has recorded deed restrictions and protective covenants, that require the project to be maintained consistent with approved plans, and (f) Ensure that each SCM and associated maintenance accesses be protected in a permanent recorded easement per 15A NCAC 02H 1050 (9) and (10).			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
	<i>This permit requirement is fully met by the existing post-construction program, see references provided in Table 19</i>			
<b>Permit Ref.</b>	<b>3.6.4: Inspections and Enforcement</b> Measures to maintain inspection and enforcement authority, standards and procedures to: (a) Conduct post-construction inspections prior to issuing a Certificate of Occupancy or a Temporary Certificate of Occupancy. Alternatively, the project owner may provide a surety bond to guarantee compliance with the approved plan(s), (b) Ensure that the project has been constructed in accordance with the approved plan(s), (c) Ensure annual inspection of each permitted SCM to ensure compliance with the approved Operation and Maintenance Agreement, (d) Ensure inspection of low density projects at least once during the permit term, and (e) Require that inspections be conducted by a qualified professional.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
<b>#. 32</b>	<b>Inspection of Low-density Projects</b>			
	Establish the legal authority for inspection of low-density projects at least once during the permit term; and carry out the inspections.	1. Establish legal authority through code revision	1. Permit Year 2	1. Report code reference and date adopted
		2. Conduct inspection of 20% of low-density projects each year	2. Continuously Permit Year 1-5	2. Number of low-density projects inspected

**Table 20: Post Construction Site Runoff Control BMPs**

<b>Permit Ref.</b>	<b>3.6.6: Fecal Coliform Reduction</b> Measures to control, to the maximum extent practicable, sources of fecal coliform per 15A NCAC 02H .1017(7). At a minimum, the program shall include: (a) A pet waste management component, which may be achieved by revising an existing litter ordinance, and (b) An on-site domestic wastewater treatment system component, if applicable, which may be coordinated with local county health department, to ensure proper operation and maintenance of such systems.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
<b>#. 33</b>	<b>Pet Waste Ordinance</b>			
	Revise current litter ordinance to include the addition of pet waste	1. Pass ordinance revision	1. Permit year 2	1. Yes/no/status
		2. Maintain legal authority	2. Continuously, after ordinance is adopted	2. Yes/no/status

## PART 10: POLLUTION PREVENTION AND GOOD HOUSEKEEPING PROGRAMS

This SWMP provides a comprehensive pollution prevention and good housekeeping strategy for the Town of Knightdale municipal facilities and operations. Pollution prevention and good housekeeping is accomplished through the implementation of seven required programs, which collectively address the ultimate goal of preventing or reducing pollutant runoff from municipal operations such as parks and open space maintenance, fleet and building maintenance, new construction and land disturbances, and municipal storm sewer system maintenance.

Pollution prevention and good housekeeping for municipal operations includes the following programs:

1. Municipal Facilities Operation and Maintenance Program
2. Spill Response Program
3. MS4 Operation and Maintenance Program
4. Municipal SCM Operation and Maintenance Program
5. Pesticide, Herbicide and Fertilizer Management Program
6. Vehicle and Equipment Maintenance Program
7. Pavement Management Program

Currently, large scale spill response procedures are handled by the Knightdale Fire Department while all other components of the pollution prevention and good housekeeping measures are implemented by the Public Works Department. The Town already provides street sweeping and yard waste collection services to residents but will begin to quantify and monitor for assessment. A facility inventory was completed in 2019 and will serve as the basis for developing the program and creating documentation for inspection requirements. The Town of Knightdale will manage, implement and report the pollution prevention and good housekeeping BMPs as specified in Table 21 below for each required program.

**Table 21: Pollution Prevention and Good Housekeeping BMPs**

<b>Permit Ref.</b>	<b>3.7.1: Municipal Facilities Operation and Maintenance Program</b> Measures to manage facilities that are owned and operated by the permittee and have the potential for generating polluted stormwater runoff. The permittee shall maintain a current inventory of municipal facilities; perform facility inspections and routine maintenance; establish specific frequencies, schedules, and standard documentation; provide staff training on general stormwater awareness and implementing pollution prevention and good housekeeping practices.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
<b>#. 34</b>	<b>Inventory of Municipal Facilities</b>			
	Maintain an up-to-date inventory of municipal facilities with potential to generate polluted runoff.	1. Maintain list of existing Town-owned facilities	1. Permit Year 1	1. Number of facilities inventoried; date list is complete



**Table 21: Pollution Prevention and Good Housekeeping BMPs**

		2. Perform initial inspection of facilities to determine which facilities may require an individual NPDES Industrial permit	2. Permit year 1	2. Number of facilities determined to require a NPDES Industrial Permit
		3. Update inventory as necessary when facilities are added or closed.	3. As required	3. Number of facilities added/revisions made
<b>#. 35</b>	<b>Facility Inspections</b>			
	Inspection of Town facilities to confirm good housekeeping practices are being followed, including vehicle and equipment cleaning (See BMP No. 44).	1. Establish a SOP for town facility inspections, including an inspection schedule, inspection reporting documentation, and tracking system	1. Permit year 2	1. Yes/no/status
		2. Implement annual inspections at all Town-owned facilities	2. Annually, beginning in Permit Year 2	2. Number of municipal facilities inspected
<b>#. 36</b>	<b>Staff Training</b>			
	Continue staff training program for general stormwater pollution prevention	1. Provide initial training for all new Town employees	1. Annually, as necessitated by staffing changes	1. Number of staff members trained
		2. Provide bi-annual refresher training to all Town employees	2. Bi-annually, beginning Permit Year 1	2. Number of staff members trained
		3. Provide annual in-person training for all Public Works staff	3. Annually, beginning in Permit Year 2	3. Number of staff members trained
<b>Permit Ref.</b>	<b>3.7.2: Spill Response Program</b> Measures for facilities and operations that store and/or use materials that have the potential to contaminate stormwater runoff if spilled. The permittee shall maintain written spill response procedures and train staff on spill response procedures.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
<b>#. 37</b>	<b>Inventory of Facilities with Spill Potential</b>			
	Develop a list of town facilities and operations storing materials that would be a pollutant if spilled and introduced into the stormwater conveyance system and classify each by hazard type and quantity (See BMP No. 34.2).	1. Update list of town facilities and operations with spill potential when facilities or operations are changed	1. When necessitated by changes in facilities or operations	2. Yes/no

**Table 21: Pollution Prevention and Good Housekeeping BMPs**

#. 38	<b>Spill Response Procedures</b>			
	Maintain spill response procedures and continue training of appropriate staff.	1. Review spill response procedures for Town facilities and operations with potential to produce high hazard spills	1. Permit Year 1	1. Are procedures adequate? – Yes/no/status
		2. Update procedures as facilities and operations are revised	2. As required	2. Yes/no
		3. Train new Fire Department staff on spill response procedures	3. As required	3. Number of staff trained
		4. Train Public Works staff that handle or store materials that have the potential to contaminate stormwater runoff if spilled.	4. Annually	4. Number of staff trained
<b>Permit Ref.</b>	<b>3.7.3: MS4 Operation and Maintenance Program</b> Measures to minimize pollutants in the stormwater collection system. The permittee shall provide operation and maintenance staff training on stormwater awareness and pollution prevention, perform MS4 inspections, maintain the collection system including catch basins and conveyances; and establish specific frequencies, schedules, and standard documentation.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
#. 39	<b>Staff Training</b>			
	Develop or identify a staff training program for general stormwater pollution prevention and provide to Public Works Department employees.	1. Develop or identify appropriate training program	1. Permit Year 2	1. Yes/no/status
		2. Provide initial training for all employees	2. Annually, beginning in Permit Year 3	2. Number of staff members trained
		3. Provide training for new hires	3. Annually, beginning in Permit Year 3, as necessitated by staffing changes	3. Number of new hires trained
#. 40	<b>MS4 System Inspections and Maintenance</b>			
	A proactive plan for MS4 system maintenance, requiring regular inspections and maintenance.	1. Develop a SOP that includes proactive inspection schedules, standard documentation, staff responsibilities, and proper maintenance training	1. Permit Year 3	1. Yes/no/status

**Table 21: Pollution Prevention and Good Housekeeping BMPs**

		2. Inspect an estimated 10% of all Town-owned stormwater infrastructure annually in accordance with developed SOPs	2. Annually, following schedule established in SOP, once SOP and tracking system (see BMP No. 40.1 and 40.4) are established	2. Percentage of infrastructure inspected
		3. Verify, document, and prioritize maintenance activities identified by inspections or citizen reports	3. Continuously, beginning in Permit Year 4	3. Yes/no
		4. Develop an inspection and maintenance tracking system to be used in accordance with the SOP and to identify “hot spot” locations for system maintenance	4. Permit Year 4	4. Yes/no/status
<b>Permit Ref.</b>	<b>3.7.4: Municipal SCM Operation and Maintenance Program</b> Measures to manage municipally-owned, operated, and/or maintained structural stormwater control measures (SCMs) that are installed for compliance with the permittee’s post-construction program. The permittee shall maintain a current inventory of SCMs, perform SCM inspections and maintenance, and shall establish specific frequencies, schedules, and documentation.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
<b>#. 41</b>	<b>Inventory of Municipal Structural SCMs</b>			
	Maintain the current inventory of all municipally owned structural SCMs.	1. Maintain inventory and map of existing Town-owned SCMs with information including type, year built, date of last inspection and maintenance actions	1. Permit year 1	1. Number of municipal structural SCMs
		2. Compile, and develop as needed, Operation and Maintenance Plans for all Town-owned SCMs	2. Permit year 2	2. Yes/no/status
		3. Update as necessitated by new Town development	3. As required	3. Number of updates to list
<b>#. 42</b>	<b>SCM Inspections and Maintenance</b>			
	Performance and documentation of regular inspection and maintenance of municipally owned structural SCMs.	1. Maintain NC SCM Inspection and Maintenance Certification for appropriate personnel	1. Continuously, beginning in Permit Year 2	1. Number of staff members with active certification

**Table 21: Pollution Prevention and Good Housekeeping BMPs**

		2. Maintain and update current SCM inspection forms to ensure compliance with MS4 permit requirements	2. Continuously, beginning in Permit Year 1	2. Number of additions/revisions made
		3. Inspect each device using SCM inspection form	3. Annually, beginning in Permit Year 1	3. Number of SCMs inspected, number of passing inspections, and the number of facilities requiring maintenance
<b>Permit Ref.</b>	<b>3.7.5: Pesticide, Herbicide and Fertilizer Management Program</b> Measures to minimize water quality impacts from the use of landscape chemicals. The permittee shall provide routine pollution prevention and chemical use, storage and handling training, and shall ensure compliance with permits and applicator certifications.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
<b>#. 43</b>	<b>Pesticide, Herbicide, Fertilizer, Applicator Training</b>			
	Training of Town staff who apply landscape chemicals in order to minimize water quality impacts from pesticides, herbicides, and fertilizers.	1. Maintain Right-of-Way Pest Control, Public Health Control, and Ornamental & Turf Pest Control applicator certifications for appropriate Town staff and external contractors as part of all contractual agreements.	1. Continuous	1. Yes/no/status
		2. Develop or identify pollution prevention and chemical use, storage, and handling training program	2. Permit year 2	2. Yes/no/status
		3. Provide staff training in pollution prevention and chemical use, storage, and handling	3. Annually, beginning in Permit Year 3	3. Number of staff trained, and topics covered

**Table 21: Pollution Prevention and Good Housekeeping BMPs**

<b>Permit Ref.</b>	<b>3.7.6: Vehicle and Equipment Maintenance Program</b> Measures to prevent and minimize contamination of stormwater runoff from areas used for municipal vehicle and equipment maintenance and/or cleaning. The permittee shall ensure that municipal industrial facilities subject to NPDES industrial permitting comply with those permit requirements, provide routine pollution prevention training to staff, perform routine inspections, and establish specific frequencies, schedules, and documentation.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
<b>#. 44</b>	<b>Vehicle and Equipment Cleaning Area Inspections</b>			
	As part of routine facility inspections, confirm all municipal equipment and car washing areas are following proper procedures to minimize water quality impacts from vehicle and equipment cleaning and maintenance.	1. Develop site specific inspection checklist for applicable facilities	1. Permit Year 2	1. Yes/no/status
		2. Perform inspections following checklist and notify facility manager of any corrective actions	2. Quarterly, beginning Permit Year 3	2. Number of inspections
<b>#. 45</b>	<b>Staff Training</b>			
	Provide general stormwater awareness training and pollution prevention training to employees working in vehicle maintenance and cleaning areas.	1. Develop or identify appropriate training program	1. Permit year 2	1. Yes/no/status
		2. Provide initial training for all employees	2. Annually, beginning in Permit Year 3	2. Number of staff members trained topics from training
		3. Provide training for new hires	3. Annually, beginning in Permit Year 3, as necessitated by staffing changes	3. Number of new hires trained and topics from training
<b>Permit Ref.</b>	<b>3.7.7: Pavement Management Program</b> Measures to reduce pollutants in stormwater runoff from municipally-owned streets, roads, and parking lots within the permittee's corporate limits. The permittee shall implement measures to control litter, leaves, debris, particulate and fluid pollutants associated with vehicles, and establish specific frequencies, schedules, and documentation.			
<b>BMP No.</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	<b>Description of BMP</b>	<b>Measurable Goal(s)</b>	<b>Schedule for Implementation</b>	<b>Annual Reporting Metric</b>
<b>#. 46</b>	<b>Street Sweeping</b>			



**Table 21: Pollution Prevention and Good Housekeeping BMPs**

	Street sweeping following a regular schedule in order to reduce pollutants from Town owned and maintained streets.	1. Maintain/update current contract for monthly street sweeping services to include SOP and documentation requirements	1. Permit year 1	1. Yes/no/status
		2. Ensure contract conditions are met, and that all streets are swept once per month during the 9-month cycle.	2. Annually, beginning in Permit Year 2	2. Total number of cycles completed
#. 47	<b>Leaf Collection</b>			
	Periodic collection of leaves and yard waste from residential and public areas to reduce pollutants and clogging of storm system inlets.	1. Develop a SOP, including a schedule and plan to document	1. Permit year 2	1. Yes/no/status
		2. Implement SOP and documentation	2. Regularly, beginning in Permit Year 3	2. Volume of material collected (tons)
#. 48	<b>Vehicle Spill Cleanup</b>			
	An organized vehicle spill cleanup response to prevent pollutants from vehicular accidents from entering the storm drain system.	1. Ensure proper spill response procedures are in place	1. Annually	1. Yes/no