



# RICHLAND COUNTY NPDES MS4 ANNUAL REPORT

Reporting year July 1, 2021 – June 30, 2022

*Prepared by the  
Stormwater  
Management  
Division*

**South Carolina NPDES Permit # SCS400001  
 Medium Municipal Separate Storm Sewer System (SMS4)  
 Annual Report**

**Permit Coverage** SCS400001 **Reporting Period:** July 1, 2021 – June 30, 2022

**Permittee:** Town of Arcadia Lakes, City of Forest Acres, and Richland County

**Program Name:** Richland County MS4

This is the Sixth Annual Report for the County’s five year NPDES MS4 Permit SCS400001 (effective July 1, 2016 and expired July 1, 2021). The County is continuing to operate under the expired permit. The reporting period for the Sixth Annual Report is from July 1, 2021 through June 30, 2022. A summary of the annual reporting dates for the last six years can be found below:

Date	Period Covered	Date Due
1 <sup>st</sup> Annual Report	July 1, 2016 - June 30, 2017	<i>November 1, 2017</i>
2 <sup>nd</sup> Annual Report	July 1, 2017 - June 30, 2018	<i>November 1, 2018</i>
3 <sup>rd</sup> Annual Report	July 1, 2018 - June 30, 2019	<i>November 1, 2019</i>
4 <sup>th</sup> Annual Report	July 1, 2019 - November 30, 2020	<i>January 1, 2021</i>
5 <sup>th</sup> Annual Report (Should expired permit continue)	July 1, 2020 - June 30, 2021	<i>November 1, 2021</i>
6 <sup>th</sup> Annual Report	July 1, 2021 - June 30, 2022	<i>November 1, 2022</i>

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*(Enter the information of the principal executive officer, mayor, or other duly authorized employee/elected official.)*

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**Certification**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly 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 fine and imprisonment for knowing violations.

**Responsible Official Signature (Richland County):** Leonardo Brown **Date:** 10/19/2022  
*(The responsible official may authorize another person or person occupying a specific position to certify this report if this authorization is made in writing and submitted to the Department. Please attach a copy of the authorization with this report, if applicable)*

**Responsible Official Signature (City of Forest Acres):** [Signature] **Date:** 10/28/22  
*(The responsible official may authorize another person or person occupying a specific position to certify this report if this authorization is made in writing and submitted to the Department. Please attach a copy of the authorization with this report, if applicable)*

**Responsible Official Signature (Town of Arcadia Lakes):** Mark Hugley **Date:** 10/24/2022  
*(The responsible official may authorize another person or person occupying a specific position to certify this report if this authorization is made in writing and submitted to the Department. Please attach a copy of the authorization with this report, if applicable)*

**Submit the annual report to:**  
South Carolina Department of Health and Environmental Control (SCDHEC)  
ATTN: Bureau of Water / Compliance Assurance Division  
2600 Bull Street  
Columbia, SC 29201-1708

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## **II. SWMP Evaluation**

### **A. Objective of the SWMP**

The purpose of Richland County's Stormwater Management Plan (SWMP) is to reduce the discharge of pollutants from Richland County's Municipal Separate Storm Sewer System (MS4) to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate requirements of the Clean Water Act (CWA). The goals in the SWMP are expected to change over time due to the iterative process of developing and updating the SWMP. The SWMP is reviewed annually to reflect accomplishments, potential revisions to program components, and additions to other activities or expanded efforts.

### **B. Major Findings (Water Quality Improvements or Degradation)**

Water quality continues to improve throughout Richland County (the County). The County updated its water quality monitoring program to meet the Total Maximum Daily Load (TMDL) and impaired water quality monitoring requirements. This created a better correlation between stormwater activities and water quality improvements. Since the update, staff has investigated areas where water quality standards were outside of the allowable range, identified maintenance needs, and utilized the data to guide education and outreach efforts. The County will continue to review and update the water quality monitoring plan and make program improvements based off monitoring results.

### **C. Major Accomplishments**

The County successfully updated its SWMP to meet the requirements of the NPDES MS4 permit (SCS400001 effective July 1, 2016).

Major accomplishments include:

- The removal of over 1428 tons of dirt and debris from the County's storm drain system through the vac truck and street sweeper program.
- The removal of 19.12 tons of materials from the County's catch basin inserts and water quality units.
- The removal of 745.44 tons of litter through the various litter control programs.
- A total of 702 illegal dump requests were investigated and cleaned.
- The completion of two capital projects: Danbury Drive basin drainage improvements and the Knollwood Drive drainage pocket park upfit.
- Through partnerships with Buonasera, Free Times, Natural Awakenings, and Richland County PIO along with, publications, workshops, festivals, presentations, and trainings the Public Education and Outreach program reached 4,222,069 people.
- Forest Acres City Council has approved \$2.8 million for the construction of a park on Forest Lake Place Drive, immediately adjacent to Gills Creek. Several components of the park will be geared towards educating the public on the importance of urban waterways and the ecosystems of the creek. In addition to these components, the stormwater system for the area is being improved and greenspace is being added.

#### **D. Overall Program Strengths/Weaknesses**

Efforts in 2021 continued to focus on a return to normalcy with the County's Stormwater Program. The County was able to recover from COVID-19 impacts by meeting program monitoring and inspection requirements.

The Stormwater Division experienced turnover with the loss of the watershed program coordinator in 2020 and the inability to successfully fulfill the position long term. The County utilized the efforts of its on-call Stormwater consultant, Woolpert, to ensure watershed program needs were met during the turnover. A new watershed coordinator was hired in January 2022.

#### **E. Future Direction of the Program**

The goal of Richland County's SMWP is to continue to grow and improve through further integration of water quality monitoring results into other areas of the stormwater program. In the 2021 reporting year, the transition of monitoring data into the Aquarius software was completed which allows ease of analyzing data. This provides the County with additional guidance for maintenance, inspections, and new program goals based on water quality trends. Best Management Practices (BMPs) identified in TMDL implementation plans will be included in the overall Capital Improvement Projects (CIP) program.

ArcGIS online is now being utilized for industrial and facility inspections. The digital inspection forms for industrial and facility inspections were successfully implemented in November 2021. The migration to digital inspection forms for ponds is currently underway.

Based on the feedback from citizens during the virtual focus group meetings in 2020, virtual water quality, capital project, and education and outreach dashboards were developed to provide citizens more access to water quality data and information about the County's programs. Additionally, the County created an ESRI Story Map that provides an overview of the County's monitoring network and how it helps protect local waterways including the Congaree National Park. The move to an online dashboard has increased transparency about the County's programs while also improving education and involvement efforts. The County will continue to develop new ways to present information to public through dashboards and story maps.

#### **F. Permit Reapplication and Program Modifications**

Richland County has worked diligently over the permit term to fully implement NPDES MS4 Permit No. SC400001 and to protect water quality within Richland County. The annual reports submitted demonstrate the County's commitment to preserving water quality and, where possible, making improvements. The County utilized the 2021 annual report as the principal reapplication document as stated in the Federal Register (Vol. 61, No. 155 [FRL-5533-7]).

Included in the 2021 permit renewal package were the following items.

1. Cover letter
2. Fourth Annual Report including a Permit Reapplication and Program Modifications section
3. Draft Third Cycle Permit Parts III, IV, and V (See Appendix A)
4. NPDES MS4 Permit No. SC400001 Modification Requests (See Appendix B)

As part of the 2021 renewal package, the County submitted draft language for Parts, III, IV, and V of the new permit. Those sections of the permit are the more challenging sections to implement and have not produced all the data needed to make sound scientific, engineering-based watershed management decisions. Therefore, the County prepared draft language for SCDHEC's consideration and inclusion in the new permit (See Appendix A). The County believes the proposed language provides the County with flexibility to design a monitoring program to gather appropriate data, while still meeting the intent of the CWA and SCDHEC's regulatory needs.

A table of proposed changes to the existing permit was also submitted. A thorough review was completed post-issuance of the permit by County staff and discussions were held with SCDHEC regarding the proposed modifications. Lacking a reasonable mechanism to make changes to the existing permit, clarifications were discussed but changes were not incorporated into the existing permit. While the County preferred to prepare and submit a complete working draft permit for SCDHEC's review and consideration, at a minimum, the County requested that the submitted changes be considered and addressed, as appropriate.

### III. Summary Table of SWMP Elements

As required per Richland County Phase I NPDES permit, the following table summarizes the appropriate SWMP annual activities for each permittee. The purpose of the Summary Table is to document in a concise form the program activities and permittees' compliance status with quantifiable permit requirements. Program elements that are administrative (e.g. planning procedures, program development, and pilot studies) are inappropriate for the summary table and are discussed in the narrative section of this report.

Program Element	Permittee Name	Requirement	Frequency of Required Activities	Complied With (Y/N)?	Activities Accomplished During Calendar Year	Comments
Structural Controls and Stormwater Collection System Operation	Richland County	Detention Ponds Maintained	Annually	Y	Summary in Section IV.A (Structural Controls)	38 inspections for County-owned ponds 17 inspections for private ponds 25 inspections performed on commercial ponds
		Maintenance of Other Components	1/permit cycle	Y	Summary in Section IV.A (Structural Controls)	20.37 miles of ditches inspected and sprayed
		Inspect Outfalls	1/permit cycle	Y	Summary in Section IV.A (Structural Controls)	100% complete
Areas of New Development & Redevelopment	Richland County, Forest Acres, Arcadia Lakes	Implement planning procedures to develop, implement, and enforce controls to reduce the discharge of pollutants from the MS4 that receive discharges from areas of new development and significant redevelopment after construction is complete	1/permit cycle	Y	Revised stormwater design standards to incorporate into the new Land Development Manual	The revised Land Development Manual includes requirements to control or reduce the discharge of pollutants from the MS4 from areas of new development and significant redevelopment. It was implemented and released in February 2022. The LDM can be viewed at <a href="https://www.richlandcountysc.gov/Portals/0/Departments/PublicInformationOffice/LATEST%20LDM.pdf">https://www.richlandcountysc.gov/Portals/0/Departments/PublicInformationOffice/LATEST%20LDM.pdf</a> .
		The planning process must include public participation	N/A	Y	Monthly meetings with the development community and separate stakeholder meetings	The Community Development and Planning Department coordinates monthly meetings with the development community in Richland County. Changes to the design standards were presented at these meetings and were comments accepted for review and possible incorporation
Existing Roadways	Richland County	Stormwater structure maintenance	As needed	Y	Summary in Section IV.C (Existing Roadways)	64 catch basins investigated/repaired 62 paved/resurfaced roads maintained 352 drainage problems investigated 198 dirt road culverts inspected 272 unpaved roads maintained 135 streets swept 148 catch basins vacuumed

Program Element	Permittee Name	Requirement	Frequency of Required Activities	Complied With (Y/N)?	Activities Accomplished During Calendar Year	Comments
Flood Control Projects	Richland County	Richland County shall assess flood control projects for water quality	Annually	Y	New projects that are considered and designed to manage storm events with a recurrence frequency of 100 years or less are considered for water quality	2 new flood control projects 2 completed CIP projects
Municipal Facilities	Richland County	Municipal facility inspections	Annually for high priority	Y	Summary in Section IV.E (Municipal Facilities)	43 Richland County facilities inspected 8 Forest Acres facilities inspected Arcadia Lakes has 0 facilities
		Comprehensive site compliance evaluation	Annually	Y	Summary in Section IV.E (Municipal Facilities)	Completed for high priority facilities
Application of PHF	Richland County	Training	Annually (recommended)	Y	Summary in Section IV.F (PHF)	Blue Thumb Landscaper Workshop for staff and landscaping companies held on February 11, 2022.
		Inspections	Annually (recommended)	Y	Summary in Section IV.F (PHF)	11 PHF inspections conducted
Illicit Discharges and Improper Disposal	Richland County, Forest Acres, Arcadia Lakes	Dry weather screening	All major outfalls/permit cycle	Y	Summary in Section IV.G (IDID)	172 Major outfalls screened 1 IDID incident
Industrial Runoff	Richland County	Update database	Annually	Y	Summary in Section IV.H (Industrial Facilities)	100% of 140 facilities inspected during the permit term.
Construction Site Runoff	Richland County, Forest Acres, Arcadia Lakes	Inspections	N/A	Y	Summary in Section IV.I (Construction Planning and Construction Inspections)	Updating construction site SOPs
Public Education & Public Participation	Richland County, Forest Acres, Arcadia Lakes	Public education and outreach	Annually	Y	Numerous outreach activities and public involvement activities were conducted	Additional information included in the public education narrative and associated appendices.

## **IV. Minimum Control Measures (MCM)**

### **A. Minimum Control Measure 1: Structural Controls and Stormwater Collection System Operation**

#### **Objective**

Continue operation and maintenance of the County's structural stormwater controls to improve water quality.

#### **General Discussion of SWMP Element**

Crews in the Roads and Drainage Division of Public Works and private contractors perform maintenance on the County-owned portions of the storm drainage system, as well as within Arcadia Lakes and Forest Acres.

*Inspections* – The Stormwater Division inspected County-owned stormwater structural controls. The Stormwater Division conducts yearly inspections on 20.37 miles of ditches and 38 County-owned ponds. Catch basin inserts are inspected quarterly and water quality units are inspected twice a year. Inspection findings are documented using an Excel spreadsheet with plans to convert to ArcGIS online in 2022. Requests for storm drainage maintenance are directed to the Roads and Drainage Division via the County's service request program called One Stop. Structural control maintenance requests submitted by other departments or by the public are tracked via the Department of Public Works Work Order System.

*Inspection and Maintenance Procedures and Training* – Procedures for inspection and maintenance of the County's drainage system were reviewed during the first year of the permit cycle and updated as needed. Public Works crews are provided training related to operation and maintenance activities via presentations and webinars during the annual Public Works All Hands training. Dates and attendee information is included in Appendix C.

*Maintenance Schedule* – The Stormwater Division contracts with one outside firm, EcoGroup, for maintenance of County-owned ponds, water quality units, and catch basin inserts. EcoGroup maintains County-owned ponds twice a year. EcoGroup is required to comply with the County's stormwater control measures, good housekeeping practices, and specific stormwater management procedures. EcoGroup also attended the Stormwater Division's yearly Blue Thumb Landscaper training held on February 11, 2022. Water quality units are inspected twice a year and catch basin inserts are inspected quarterly. Any requests for maintenance from these inspection findings are submitted to EcoGroup. Additional maintenance needs observed by EcoGroup are reported to the Stormwater Division for approval. EcoGroup reports the tonnage of materials removed during their maintenance activities, which is provided in the first table below under Measurable Goal Summary section.

*Inspections and Maintenance Activities* – The Stormwater Division inspects privately owned and maintained ponds annually. The County has no contractual agreements for maintenance of privately owned stormwater structural controls. If the Stormwater Division notes deficiencies during an inspection of a private facility, the owner receives a Notice of Violation (NOV). Progress to correct deficiencies is tracked until the work is complete, and if necessary, enforcement is elevated per the established Enforcement Response Guide. The Stormwater Division and the Roads and Drainage Division responded to 4562 requests for service/maintenance on the County's drainage system during this reporting period. Maintenance needs that are identified by County staff are routed through the Work Order System versus

the One Stop system, which relies on citizen complaints. This proactive approach cuts down on the amount of maintenance requests received by the public.

The County utilizes a street sweeper and vacuum truck to prevent pollutants from private conveyances (including floatables) from entering waterways. Notes are recorded for areas that require sweeping or vacuuming and areas that may require maintenance at a higher frequency, such as neighborhoods within a TMDL watershed. The vacuum truck is deployed to certain neighborhoods and areas within the County that are known to have more frequent storm drainage needs prior to expected large storm events. The County also uses curb screens on some inlets to inhibit floatables from entering the storm drainage system.

**Assessment of Controls**

The Structural Controls and Stormwater Collection System Operation section of the permit is fully implemented. There was no significant change in the amount of NOV's issued for commercial ponds. Commercial pond compliance is high due to the amount of interaction between Stormwater inspectors and private pond owners. Stormwater inspectors work with pond owners throughout the process from initial inspection to final pond compliance.

**Measurable Goal Summary**

1. Complete the list below for the last reporting year:

Total number of proactive inspections performed on County-owned and/or maintained ponds:	38
Total number of proactive inspections performed on private ponds:	17
Total number of proactive inspections performed on commercial ponds:	25
Tons of materials removed from curb screens and water quality units:	19.12 tons
Number of private ponds that received NOV's:	4
Number of commercial ponds that received NOV's:	3
Miles of ditches sprayed for maintenance:	20.37
Number of new structural controls added to inventory:	54
Number of County-owned implemented control measures:	104 (16 water quality units, 49 curb screens, 38 ponds, and 1 rainwater harvester)

2. Use the table below to summarize structural controls action items, goals, and progress for the current reporting year. In the “activities conducted and planned” section, focus on activities that were conducted in the last reporting year and those that are planned for the upcoming reporting year, providing implementation dates. Add rows where needed and attach additional sheets if necessary.

<b>Structural Controls Action Item</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s)</b>	<b>Activities Conducted and Planned (specific implementation dates)</b>
Report any QA/QC completed, and any field studies conducted for data accuracy during the reported year	Field verify outfall location	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Obtain maps from GIS and field verify size and location. Ongoing since July 1, 2016.
Update procedures to develop and maintain an inventory of all structural controls BMPs	Check eTRAKiT monthly for new Stormwater BMPs	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Stormwater Division staff pulls new stormwater structures from eTRAKiT and updates the inventory monthly.
Improve coordination between Stormwater, Roads and Drainage, and Engineering	Conduct weekly coordination meetings between the three divisions	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Weekly project meetings have been reduced to bi-monthly. The projects standard operating procedure was officially approved in 2021.
Continue to review and update guidance documents on maintenance activities	Yearly review of guidance documents and updated based on lessons learned	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Review all guidance documents and add to the Public Works SOP as procedures are finalized.
Maintenance schedule for the upcoming year	Inspect structural stormwater controls	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	The Stormwater Division actively inspects structural stormwater controls throughout Richland County on a quarterly basis.
Transition pond and structural control inspections from Excel spreadsheets to ArcGIS	Use of ArcGIS Collector and Survey123 for inspection reports	<input checked="" type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Inspection reports are converted to the digital format. The Stormwater Division will continue to work with the County's GIS division on the conversion.

### Control Measure Evaluation

#### 1. Evaluate the success of this MCM. What are the program's strengths?

The County's Structural Control program is successful. The Stormwater Management and Roads and Drainage Divisions continue to work together to meet maintenance needs. This is evident by the decrease in NOVs issued to private and commercially owned ponds since the first annual report and the increase in proactive maintenance through the County's Work Order System and a reduction in maintenance requests in One Stop.

#### 2. Provide an evaluation of where the program needs improvement and explain any actions that will be taken to achieve objectives:

A Department wide Work Order System would improve efficiency and assist with implementing a more proactive maintenance schedule on the drainage system.

## **B. Minimum Control Measure 2: Areas of New Development and Redevelopment**

### **Objective**

To reduce the discharge of pollutants in stormwater runoff from areas of new development and redevelopment to predevelopment levels, to the MEP, and to protect water quality.

### **General Discussion of SWMP Element**

This section of the permit relates to plan review, site inspections, and the implementation of post-construction BMPs.

*Land Development Manual (LDM)* – The County’s storm drainage regulations were revised to a comprehensive LDM. The LDM includes updates to the stormwater and road design standards. The updates incorporate components of the 2012 Construction General Permit (CGP) and the 2016 NPDES MS4 Permit. It also includes site performance procedures, requirements for water quality aimed at meeting the Water Quality Based Non-Numeric Effluent Standards for *E. coli* and dissolved oxygen, encouraging the reduction of impervious areas, a list of structural and non-structural BMPs in the program area, and specific redevelopment requirements.

Major changes in the LDM include:

- Requirement for water quality treatment during significant redevelopment
- Requiring a downstream analysis for all new development and redevelopment projects. The downstream analysis will take into consideration any local flooding concerns during the plan review process
- Requiring a quantitative and qualitative analysis for construction projects disturbing 25 acres or more that discharge to a TMDL or a 303(d) listed impaired waterbody
- Summarization of the plan submittal process
- Submittal requirements and the plan review process
- Guidelines for designing and constructing roads in accordance with South Carolina Department of Transportation (SCDOT) standards
- Roadway testing requirements
- Guidelines for designing, implementing, and maintaining stormwater BMPs to be used in the County to improve water quality and minimize stormwater runoff impacts due to increased flow volumes and peak discharge rates from developed areas

The LDM will accomplish the following objectives:

- Reduce stormwater impacts on water quality
- Reduce stormwater impacts on water quantity
- Protect downstream areas from adverse stormwater impacts resulting from development
- Ensure that roads added to the County’s inventory are designed and constructed to last for at least 25 years
- Address all sites, including “hot spots,” to ensure adequate water quality BMPs are selected

Two Water Quality Design Standards:

Water Quality Design Standard	Non-sensitive Watersheds	Sensitive Watersheds
<b><u>WQ Design Standard #1:</u></b> Water Quality Storm Event Design Standard	Manage the runoff from the Water Quality Storm Event	
<b><u>WQ Design Standard #2:</u></b> TSS Removal Design Standard	Obtain 85% removal efficiency of the annual TSS loading	Demonstrate that the annual post-development pollutant loading does not exceed the annual pre-development pollutant loading for the pollutant(s) of concern
<b><u>Hardship Criteria</u></b> Alternative TSS Removal Design Standard	Demonstrate the annual post-development TSS load should be no more than 600 pounds/acre/year	

The County has implemented a new requirement in the new Land Development Manual, which encourages engineers to use the Integrated Design, Evaluation, and Assessment of Loadings (IDEAL) model for all permitted projects. This model evaluates the performance of post-construction BMPs and calculates loads and concentrations of sediment, nitrogen, phosphorus, and bacteria based on designer inputs and local, historic soil and rainfall data.

The draft LDM was presented to the development community on May 30, 2019 and the RCCC on August 19, 2019. Both communities have come to an agreement with the changes related to the water quality requirements. County Administration was updated on the proposed major changes on October 21, 2020 where the implementation plan was reviewed and discussed. Copies of the updated manual were provided to County Council in September 2021 and County Council approved the new LDM during the September 26, 2021 zoning board meeting. The Richland County Land Development manual was implemented and released in February 2022. The Richland County Land Development manual can be viewed at <https://www.richlandcountysc.gov/Portals/0/Departments/PublicInformationOffice/LATEST%20LDM.pdf>.

**Current Design Standards** – A Comprehensive Stormwater Pollution Prevention Plan (C-SWPPP) is required to identify the performance of selected BMPs and confirm that stormwater discharges will not cause or contribute to any adverse impact downstream.

**Commonly used Sediment Control BMPS:**

- Inlet Protection
- Outlet Protection
- Sediment Basins
- Sediment Traps
- Silt Fence

**Commonly used Structural BMPs:**

- Wet/Dry Ponds
- Vegetated Swales
- Underground Detention Systems

The County encourages the use of water quality “treatment trains” during construction and post-construction to meet water quality standards.

Current standards include requirements for water quality buffers and the Community Development and Planning Department's open space requirements. The Neighborhood Planning Division includes stormwater improvement recommendations in their neighborhood master plans.

New development proposals are reviewed for impacts to natural resources. Developers are required to depict areas of constrained and unconstrained open space on development plans utilizing the Open Space Code. All subdivision submittals are required to include a Natural Resource Inventory. This inventory identifies natural resource features such as 100-year floodplain area, riparian buffers, protected trees, wetlands, and steep slopes.

The City of Forest Acres continues to enforce their version of the Water Quality Buffer Ordinance and Floodplain Management Ordinance as they both relate directly to stormwater management and stormwater quality. The City of Forest Acres is maintaining an additional codes enforcement position, in part due to the increased regulatory activity associated with stormwater management. This affords three personnel who are available to respond to stormwater issues.

The amendments to the current Land Development Code, which foster more environmentally sensitive site development, such as decreasing the minimum caliper size for grand trees and increasing the tree replacement ratio to increase tree protection, continue to be enforced through the approval of land development plans.

More information on the County's current standards can be found at the following location: <http://rcgov.us/DevServ/QuickLinks/CodesandRegulations.aspx>

Pre-construction meetings are held for every project that is issued a Land Disturbance Permit. The following topics are discussed at these meetings:

- Approved C-SWPPP, stormwater calculations, and construction plans
- Enforcement procedures and expectations
- Environmentally sensitive areas or any known flooding problems in the watershed
- eTRAKiT software logistics
- Clemson University's Certified Erosion Prevention and Sediment Control Inspector Program
- Closeout process & stabilization requirements

*Inspections and Maintenance of Post-Construction BMPs* – The Community Development and Planning Department revised 'Inspector Areas' for efficiency and production: The Stormwater Division analyzed its operations and developed a strategic plan for improvement. The plan improves coverage in assigned areas and a change in area boundaries, along with procedural changes based on identified deficiencies throughout the division.

The Stormwater Division continues to ensure proper long-term maintenance of post-construction BMPs through its post-construction inspection program. Maintenance agreements for post-construction BMPs are submitted during the plan review process. Copies of maintenance agreements are kept digitally in the eTRAKiT software. The Stormwater Division accompanies the Community Development and Planning Department on final inspections where new stormwater BMPs are added to the system. The new BMP is then added to stormwater post-

construction BMP inspection list. Privately owned BMPs are inspected once every permit cycle. The stormwater inspector contacts the property owner and submits an inspection report to the owner after the inspection if there are any violations. The stormwater inspector works closely with the property owner and/or their contractor on any maintenance needs related to the BMPs. All records of work completed are documented both digitally and in print, with plans to convert inspection forms to ArcGIS online. The Stormwater Division currently has over 200 ponds included in the private pond database.

### **Assessment of Controls**

Richland County reviews new development and redevelopment plans to ensure compliance with water quality requirements, site performance standards, and post-construction BMP needs. Post-construction BMPs are inspected once per permit cycle and the owner is contacted if maintenance is needed. New ponds are added to the inventory yearly, which results in an increased number of post-construction ponds inspected.

The County worked to improve enforcement procedures by looking to establish a more standardized process for the most common infractions. This has been effective in setting better expectations. The County has improved upon anticipating issues and alerting contractors to them before they happen, warning them of potential enforcement measures and the expected timeline.

The Community Development and Planning Department is already operating in a digital environment but seized upon opportunities to improve data sharing. Due to the size of reports received, the New Development Division experienced delays in the transmission of these reports. To avoid compromising efficiency or quality of the report, the New Development Division transitioned to a cloud-based operation. Reports are generated while onsite and emailed to all parties prior to leaving the site. The cloud-based operation has allowed ease of transmission and improved data-storage and sharing.

Through the County’s monitoring program, the County is assessing improvements in sensitive waters. The County is collecting macroinvertebrate samples that are discussed in the quarterly reports which are included in Appendix D. Macroinvertebrate lab reports are also provided in these quarterly reports.

### **Measurable Goal Summary**

1. Were there any regulation changes during the reporting period?

The major changes to the Land Development Manual were presented to County Council and approved in September 2021. The LDM was implemented and released in February 2022.

2. Use the table below to summarize areas of new development and redevelopment action items, goals, and progress for the current reporting year. In the “activities conducted and planned” section, focus on activities that were conducted in the last reporting year and those that are planned for the upcoming reporting year, providing implementation dates. Add rows where needed and attach additional sheets if necessary.

<b>New Development and Redevelopment Action Item</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s)</b>	<b>Activities Conducted and Planned</b> <i>(specific implementation dates)</i>
Continue to enforce the current County zoning and land use requirements and development standards to reduce the discharge of pollutants from areas of new development and significant redevelopment after construction is completed.	Update current standards, policies and procedures. Incorporate language in the drainage regulations that encourage impervious area reduction.	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	New LDM developed which incorporates current and new requirements aimed at reducing the discharge of pollutants from areas of new and significant redevelopment.
Update County Design Standards to include requirements listed in MS4 Permit.	Develop new LDM.	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Land Development Manual was presented to County Council and approved in September 2021. It was implemented and released in February 2022.
Evaluate and modify, as necessary, the post-construction program.	Get Stormwater Division access to approved as-built drawings so they can be included in final inspections.	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Stormwater Division now has access to eTRAKiT and can view approved as-built drawings for inspections. The County's stormwater inspector is invited to final inspections when a new stormwater BMP is installed.
Track water quality improvements achieved due to the enforcement of this program.	Track monitoring results in impaired watersheds where new BMPs have been installed.	<input checked="" type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Will look at BMPs implemented in impaired or TMDL watersheds.
Educate staff on the new LDM standards and procedures.	Host internal trainings on the new requirements in the LDM.	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Internal IDEAL/LDM training held in October 2021.
Educate the design community and the public on new LDM standards and procedures.	Host trainings and public meetings on the new requirements in the LDM.	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	The County held an in-person IDEAL/LDM info session in November 2021 and a virtual IDEAL/LDM training in December 2021.

## Control Measure Evaluation

<b>1. Evaluate the success of this MCM. What are the program's strengths?</b>
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Despite continued delays in the approval of the new Land Development Manual, including the COVID-19 public health emergency which shutdown the County for several months, the Land Development manual was finalized and implemented in February 2022.
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<b>2. Provide an evaluation of where the program needs improvement and explain any actions that will be taken to achieve objectives</b>
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The County will continue to develop a successful way to track water quality benefits through the New Development/Redevelopment control measures. The requirement to manage the water quality storm event could provide an effective method to track the amount of stormwater runoff treated onsite by New Development/Redevelopment projects.
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### **C. Minimum Control Measure 3: Existing Roadways**

#### **Objective**

Operation of public streets, roads, and highways to reduce the discharge of pollutants through implementing SOPs, policies, and other regulatory requirements.

#### **General Discussion of SWMP Element**

The Existing Roadways element requires an analysis of the County's road construction, maintenance, and permitting requirements to reduce the risk of pollutant discharge into waterways, to the MEP. This includes paved and unpaved County roads. The County is responsible for the maintenance of 633 miles of paved roads and 203 miles of unpaved roads. Richland County's Public Works Department operates and maintains the County's roads. The Stormwater Division works closely with the Roads and Drainage Maintenance and Engineering Divisions related to maintenance performed on the County's roads.

*Standard Operating Procedures (SOPs)* – During the first year of the permit, the SOPs for County maintained roads were reviewed and updated. Annual training is held during the Public Works All Hands training session, which includes presentations on proper roadway maintenance procedures and a refresher on the NPDES MS4 permit requirements. The Roads and Drainage Division implemented training sessions for crew leaders and supervisors on various operating and maintenance topics and group viewing of webinars.

For most projects, the Richland County Transportation Department ensures all current County drainage standards are met by direct coordination with plan review staff in the Community Development and Planning Department. Plan review staff ensures that drainage standards are met and followed. For those projects that are permitted through the SCDOT encroachment permit process instead of the County MS4 process, the Department ensures all SCDOT drainage standards are met. The Richland County Transportation Department's inspectors oversee implementation of these standards during the construction process. For transportation improvement projects, project engineers evaluate the impact of the project at each outfall location. This requires an outfall-specific watershed analysis, which involves documentation of drainage area, land use, and rainfall data. The watershed analysis is a pre versus post construction evaluation that includes an assessment of downstream conditions. This analysis is used to determine the need for stormwater BMPs to address potential stormwater issues. The stormwater design includes an emphasis on velocity control using additional drainage structures, as needed, to minimize potential erosion downstream of the projects.

The Richland County Transportation Department ensures that drainage and hydraulic studies are being performed to certify that stormwater structures are reducing volume and stormwater runoff velocity from newly paved roads. For transportation improvement projects, project engineers are responsible for determining the applicable design criteria (roadway and drainage) and standards for development of the project upon initiation of design services. Each project is scoped with the project engineer to determine the applicable and controlling standards in order to ensure the project is developed with proper standards. The Richland County Stormwater Management Design Standards and the SCDOT Hydraulic Design Manual are utilized for determining the

applicable project criteria; this document is based upon all requirements as set forth by SCDHEC and applicable federal and state regulations. A stormwater management report, based on the design standards, is developed for each transportation project to identify drainage areas, hydrology and design hydraulics, as applicable documentation for the preparation of a land disturbance permit.

*Inspections, Operation and Maintenance* – The Stormwater Division works closely with the Roads and Drainage Division on appropriate maintenance activities that can reduce or minimize the amount of pollutants captured in stormwater runoff from roadways. Both Divisions inspect the County roadway network and submit service requests to address maintenance concerns observed in the field. The County does not perform de-icing activities. Sand is used when necessary to prevent ice on roadways.

Visual inspections of high-risk flooding areas are conducted before large storm events. The Roads and Drainage Division uses the street sweeper and vacuum trucks to clean any debris identified in the drainage system. This not only reduces the chance of localized flooding but also removes potential pollutants from entering the system.

*Maintenance Schedule* – The Stormwater Division and Roads and Drainage Division continue to work on the creation of a proactive maintenance schedule for the County’s roadway network. The Stormwater Management Division provided identified high-risk areas to the Roads and Drainage Division for focused usage of the street sweeper and vac trucks. This reduces the risk of clogged infrastructure along the County’s road network and removes potential pollutants from entering the system.

The Solid Waste Division and Special Services Division both have active litter pick up programs. Refuse Control Officers in the Special Services Division, are responsible for ensuring cars and trucks carrying debris are covered while on the highway, check illegal dumping sites on lots and roads and issue citations for violations of the County’s Solid Waste Ordinance. The Special Services Division also has an inmate labor program, which utilizes inmates from the SC Department of Corrections to provide litter pick up along County maintained streets. Special Services also partners with HOAs and community leaders to organize annual community clean up events. These events provide an opportunity for citizens to properly dispose of unwanted items not collected at curbside by regular trash collections.

### **Assessment of Controls**

The County has a fully implemented existing roadways program and continues to investigate ways to increase proactive maintenance of the roadways. Through the County’s street sweeping and vac truck programs 135 streets were swept and 1,428 tons of material were removed from the County’s drainage network. Over 745 tons of litter were prevented from entering the County’s MS4 through various litter control activities.

For transportation improvements projects, the County’s Transportation Department paved five (5) dirt roads. Reducing the number of dirt roads reduces the amount of erosion and sedimentation associated with those dirt roads. The Transportation Department continues to address the increase in runoff from paving dirt roads through their plan review and approval process.

## Measurable Goal Summary

1. Complete the list below for the last reporting year:

Number of Community Clean Sweeps:	71
Number of warning letters issued by Special Services Division:	119
Number of citations issued by Special Services Division:	28
Number of dirt road culverts proactively inspected by the Stormwater Division:	198
Number of dirt road culverts requiring maintenance from inspection by the Stormwater Division:	22
Number of ditches investigated/cleaned/cutback/maintained:	380
Number of drainage problems investigated/maintained:	352
Number of catch basins investigated/repared:	64
Number of manhole lid problems:	19
Number of dirt roads paved penny tax:	5
Number of paved/resurfaced roads maintained	62
Number of unpaved roads maintained	272
Number of streets swept:	135 streets 540 tons of material removed
Number of miles of streets swept:	346 miles swept
Number of catch basins vacuumed:	148 catch basins 888 tons of material removed
Number of litter control activities by Special Services:	71 special clean-up projects 650 roads with litter picked up 1,501 tires picked up 320 trailer loads of debris dumped 702 illegal dump sites cleaned 14,765 estimated litter bags collected 745.44 tons of litter collected

2. Use the table below to summarize roadway maintenance action items, goals, and progress for the current reporting year. In the “activities conducted and planned” section, focus on activities that were conducted in the last reporting year and those that are planned for the upcoming reporting year, providing implementation dates. Add rows where needed and attach additional sheets if necessary.

Roadway Maintenance Action Item	Measurable Goal(s)	Progress on Goal(s)	Activities Conducted and Planned <i>(specific implementation dates)</i>
Maintain and modify policies, procedures, or regulatory requirements for the use of structural and nonstructural controls	Review current policies and procedures and update as necessary	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	The road maintenance standard operating procedures were updated along with the Public Works Stormwater Pollution Prevention Plan
Perform routine inspections of each maintenance facility to ensure BMPs are operational and determine changes that are necessary to improve runoff quality.	Continue yearly and quarterly inspections of the county owned BMPs.	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Water quality units are inspected twice a year and curb screens are inspected quarterly. County-owned ponds inspected annually. 25% of major outfalls screened annually.
Increase frequency of street sweeping.	Develop a proactive schedule for the use of the street sweeper.	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Created a pilot project with Roads and Drainage for proactive use of the street sweeper. Visual inspections of high-risk flooding areas are conducted before large storm events and the Roads and Drainage Division uses the street sweeper and vac trucks to focus on those areas.
Dissipate energy from stormwater discharges on new pipe installed.	Require the use of energy dissipation BMPs on pipes installed on new roads.	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	The Penny Transportation Program installs all new pipe outfalls with riprap aprons to dissipate the energy from the stormwater discharge and to protect against scour.

## Control Measure Evaluation

1. Evaluate the success of this MCM. What are the program's strengths?

1. Evaluate the success of this MCM. What are the program's strengths?
This program is fully implemented. The Stormwater Division proactively inspects unpaved roads and culvert crossings on unpaved roads. The Public Works Department works closely with the Transportation Department to stress the importance of water quality on new road paving projects.
2. Provide an evaluation of where the program needs improvement and explain any actions that will be taken to achieve objectives:
Continued coordination between the Stormwater and Roads and Drainage Division on identifying areas for proactive street sweeping and vac truck deployment will further improve removing pollutants from the MS4.

## **D. Minimum Control Measure 4: Flood Control Projects**

### **Objective**

Incorporate water quality criteria into the design and construction of projects to manage storm events with a recurrence frequency of 100 years or some less frequent storm events.

### **General Discussion of SWMP Element**

Capital Improvement Project List - The Stormwater Management and Engineering Divisions respond to flooding complaints and evaluate those complaints for possible inclusion on the County's Capital Improvement Project (CIP) list. The CIP list is created using a Project Database Tool. The Project Database Tool uses evaluation criteria to cover a range of considerations that are important in the implementation of a potential capital improvement project. By applying the criteria in a systematic method, each potential project is objectively evaluated and compared. The evaluation criteria include improving stormwater drainage, floodplain management, water quality, fiscal responsibility, customer service, and the workforce. Projects that improve floodplain management and water quality are weighted higher than projects that do not improve these areas.

Once a project is added to the CIP list, either the Engineering Division or an outside consultant completes the design. The Stormwater Division has a CIP Manager who oversees the design and construction of Stormwater CIPs.

The Stormwater Division requires designers to follow the Land Development Manual which includes procedures and policies related to water quality of projects, including flood control projects. Water quality design requirements are implemented and thus are assessing water quality impacts.

The County has implemented a new standard in the new Land Development Manual, which encourages engineers to use the IDEAL model for all permitted projects. This model evaluates the performance of BMPs and calculates loads and concentrations of sediment, nitrogen, phosphorus, and bacteria based on designer inputs and local, historic soil and rainfall data.

### **Assessment of Controls**

The Flood Control component is fully implemented. The Stormwater Division requires projects to meet the water quantity and quality standards and has bi-weekly project meetings with the Engineering and Roads and Drainage Divisions to discuss flood control projects. The bi-monthly meetings improved coordination when it comes to addressing water quality in both CIP and force account projects. The County's on-call consultant, Woolpert, is working with the Stormwater and Engineering Division to update the County's 25-year Stormwater Plan and project ranking database to meet new program needs.

There have been more projects moving forward to construction in recent years. Since the October 2015 flood, the Stormwater Division has leveraged disaster recovery funds to design and construct additional flood control projects.

**Summary of CIP/Flood Control Projects:**

*Site 1: Spring Valley Little Jackson Creek Stream mitigation, Stream restoration and Regenerative Stormwater conveyance (Estimated Cost: \$1.2 Million)*

Status:	In progress (Design Phase: 100% complete & Construction Phase: 0% complete)
Location:	Spring Valley Subdivision adjacent to stream
Description:	The project began in early 2013 and is part of an overall strategy to improve water resources and quality in the Gills Creek Watershed. Erosion of the streambed and side slopes has potentially compromised the integrity of the adjacent rail bed and is beginning to cause property damage along the adjacent residential properties (Spring Valley Subdivision). Transported sediment has contributed to siltation in Lake reducing the capacity for regional drainage detention, degrading water quality and creating a negative impact on the lake habitat.

*Site 2: Melody Gardens Stream/Ditch Stabilization Project (Estimates Cost: \$165,847.00 Design & \$400,000 Construction)*

Status:	In progress (Study/Design Phase: 100% complete & Construction Phase: 100% complete)
Location:	Upstream drainage ditch stabilization near Firelane Road on the backside of Moonglo Circle.
Description:	Channel stabilization will be addressed as part of this project, but the overall goal of the project will now be to permanently address water quality for this area as much as practical and feasible with the property and resources available to the County.

*Site 3: Danbury Basin Area Improvements Project (Estimates Cost: \$280,000.00 Design/ CGBD-DR Grant \$2.1 Million)*

Status:	In progress (Study/Design Phase: 100% complete & Construction Phase: 80% complete)
Location:	The project area will extend from the North 21 Terrace development above Mason Road down to the regional detention pond on the Full Gospel Word & Worship church property at 6015 N. Main Street.
Description:	Channel stabilization will be addressed as part of this project, but the overall goal of the project will now be to permanently address water quality for this area as much as practical and feasible with the property and resources available to the County. These improvements are to help the existing pond on the church property to provide more peak detention during design events and help the drainage system within the basin to meet the 10-year level of service.

**Site 4: Knollwood Drive Drainage Project (Estimates Cost: \$99,063.00 Design & \$700,000.00 Construction)**

Status:	In progress (Design/Study Phase: 100% complete & Construction Phase: 90% complete)
Location:	Flooding of Properties along channel between Knollwood Drive and Planter Drive
Description:	This project will consist of the design and installation of measures to improve drainage and flooding issues in an existing drainage ditch/channel. The project area will extend between Knollwood and Planters Drive. The goal is for these improvements to help the existing channel to reduce flooding at peak flows during design events and help the drainage system within the basin to meet the 10-year level of service. The design must take into consideration all county design standards for water quantity and quality. These improvements are to serve as an innovative example of stormwater best management practice.

**Measurable Goal Summary**

1. Complete the list below for the last reporting year:

Number of completed CIP projects:	2
Number of new CIP projects:	2
Number of drainage projects completed with in-house labor:	19

2. Use the table below to summarize floodplain management action items, goals, and progress for the current reporting year. In the “activities conducted and planned” section, focus on activities that were conducted in the last reporting year and those that are planned for the upcoming reporting year, providing implementation dates. Add rows where needed and attach additional sheets if necessary.

<b>Floodplain Management Action Item</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s)</b>	<b>Activities Conducted and Planned</b> <i>(specific implementation dates)</i>
Create a Flood Control Program document (SOPs).	Procedures for the permitting process to include as assessment of water quality impacts on receiving water for flood management projects identified in the watershed planning process.	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	This was completed by January 2022.
Update the Flood Control Program	Implement new stormwater design standards.	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Design standards were approved by County Council in Fiscal Year 2022.

Assess pollution discharge procedures, processes, and methods to control the discharge of pollutants from Flood Control Projects into waterbodies and publicly owned lakes.	Projects selected from the County's 25-year Stormwater plan will be reviewed and assessed to see how water quality can be implemented in FY 2023.	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	This action item is complete, and the process will be ongoing throughout the permit term.
Improve coordination within the Public Works Department on drainage and CIP projects.	Hold regular meetings between Engineering, Roads and Drainage, and Stormwater Management.	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Bi-weekly projects meeting coordinated by the Deputy Public Works Director.

### Control Measure Evaluation

<b>1. Evaluate the success of this MCM. What are the program's strengths?</b>
This program is fully implemented. The Public Works Department has a dedicated Capital Improvement Project Manager who oversees design and construction of the Stormwater Capital projects. The Capital Improvement Project Database ranks capital projects based on flood control and water quality benefits. Over half of the projects on the Stormwater Divisions CIP list have complete designs and are ready for construction.

<b>2. Provide an evaluation of where the program needs improvement and explain any actions that will be taken to achieve objectives:</b>
The County will receive additional disaster recovery funding for mitigation projects. This will require increased coordination between project managers and the Stormwater Management Division to include water quality benefits in future projects.

## **E. Minimum Control Measure 5: Municipal Facilities**

### **Objective**

Implement a pollution prevention and good housekeeping program that involves regular inspections, maintenance, and training with the goal of preventing or reducing pollutant runoff from municipal operations.

### **General Discussion of SWMP Element**

The County must identify priorities and procedures for inspecting and implementing controls for stormwater discharges from county facilities such as landfills, hazardous waste treatment, storage and disposal facilities.

*Facility Inventory and Prioritization* - Richland County's Stormwater Management Division has reviewed and updated the County-owned municipal facilities. Facilities are ranked low, medium, and high priority. All County-owned industrial facilities, locations with a previously developed SWPPP, or locations with a Spill Prevention, Control, and Countermeasure (SPCC) plan are considered high priority and are inspected yearly. Low and medium risk facilities are inspected once every permit cycle. The County has six (6) facilities that store a combined total 1,320 or more gallons of fuel, used oil containment, and have a SPCC plan. Each facility with a SPCC plan has an onsite spill cleanup and containment kit.

The Stormwater Division maintains a list of industrial facilities owned or operated by the County that are subject to the SCDHEC NPDES General Permit for Stormwater Discharges Associated with Industrial Activity along with a list of BMPs that are located at each County facility. The Division has identified and located all landfills. A copy of the facility inspection reports completed is located in Appendix F.

The Town of Arcadia Lakes does not own any facilities but helps promote stormwater quality awareness where possible. The Town of Arcadia Lakes developed a Stormwater BMPs fact sheet to educate employees.

The City of Forest Acres owns a Public Works facility and some parks. The Public Works facility has a SWPPP and distributed a Stormwater BMPs fact sheet to all City staff. The City has a CESPCI certified inspector on staff.

*Inspections, Operations, and Maintenance* - The Operational Services Division is responsible for maintenance of County facilities. The Stormwater Division conducts the yearly inspections for high-risk facilities. Any concerns noted during an inspection are forwarded to the appropriate department head along with the Operational Services Department manager.

Operational Services oversees the annual Underground Storage Tank (UST) inspections. UST inspections occurred at the main Public Works location, DPW Ballentine Campus, the Landfill, Eastover, and the Hamilton-Owens airport, by Precision Tank Services. All of the sites passed their line and detection tests, as required. All UST sites are inspected monthly by a County employee who has passed SCDHEC testing and designated as a "Class A Operator". The annual SCDHEC inspection is followed at all of these sites. All issues found at the sites during the

inspections were corrected in a timely manner, and the permits for the new year were issued and are posted at each site. Examples of necessary repairs included spill bucket replacements, modifications to shear pins, and hose and line replacements. The sites that include above ground tanks are being reviewed for possible inclusion in an annual program for replacement of the tanks with newer, double-walled containment storage tanks. The Operational Services Department is budgeting for one site per year to remove old tanks and install new, larger double wall tanks. Last year a double-walled tanked was added to Upper Richland EMS/Fire station. Site selected for the next tank replacement will be Spring Valley EMS/Fire Station.

The Solid Waste and Recycling Division (SWR) has added additional covered storage in the recycle area to contain potential pollutants. The majority of ponds have been mucked out to remove silt and sediment to restore the original capacity, limiting the potential for silty discharge. SWR has taken efforts to reduce storm water pollution by implementing weekly litter control practices inside the landfill perimeter, utilizing mulch on bare slopes to prevent erosion from entering ditches and ponds and monthly covering of the landfill.

The SWR is continuing efforts to address stormwater runoff. The onsite ditches were deepened and graded to create positive flow to the designated ponds. The closed and open phases on the property are largely covered in vegetation preventing unwanted silt and sediment. Vegetative cover has been maintained to limit the speed in which water flows through the ditches, limiting erosion events. SWR, as normal practice, keeps as much waste off the ground and in containers as possible.

A stormwater inspector completes monthly inspections for the main Public Works facility at 400 Powell Road. The Central Garage located on the main Public Works yard is also inspected monthly by the County maintenance vendor, First Vehicle Services. The monthly Environmental Inspection Report provided by First Vehicle Services includes inspections of the shop's hydraulic equipment (lifts), outside facility and parking areas, the fluid storage areas including waste oil and new fluid tanks and drums, and the equipment used in the maintenance of the County equipment.

### **Spill Prevention and Containment**

There are six sites under this program and Operational Services works with other agencies and County Departments to implement this program. These agencies include the County Stormwater Division, Columbia – Richland Fire Department, Eagle Aviation, and the Solid Waste and Recycling Department.

The Hamilton – Owens airport program oversight is handled by a Fixed Base Operator (FBO), Eagle Aviation, due to their work of transporting and fueling aircraft. The Airport Director also works to ensure compliance of the program by the FBO.

Four sites are County fire stations manned by City of Columbia fire personnel: #17 Upper Richland, #19 Gadsden, #24 Sandhill, and #26 Blythewood. The City personnel maintain the SPCC inspection reports and report to County Facilities Maintenance any concerns by utilizing an e-mail address set up for this purpose. Emergency contacts are also provided in each on site binder to include home numbers for immediate needs. All requests are then inputted into the

maintenance work-order system to ensure follow-up and completion for any non-urgent issues and tracking of any urgent items.

**Training** - The County has a Stormwater Pollution Prevention Plan (SWPPP) video that is presented to the appropriate staff and high-risk facilities are targeted. A SWPPP and Industrial General Permit (IGP) training are held annually. The topics included are consistent year to year and include different groups to cover items related to the Public Works SWPPP, SCDHEC information and updates, and MS4 related topics related to inspections, good housekeeping, BMPs, industrial runoff, and water quality monitoring. This year’s annual training was conducted on May 16, 2022. Forty employees attended the training. A spreadsheet of those in attendance is included in the Appendix C. The training was recorded and made available through the Department of Public Works intranet site for new employees and those unable to attend.

City of Forest Acres Codes Enforcement Officers receive informal training in, and application of, Water Quality Buffer Ordinance, Erosion and Sediment Control, and Flood Damage Prevention Ordinance. The Code Enforcement Officers are under the supervision of Keith Lindler, who is a registered Professional Engineer (#10846) and registered Building Official (#2240) with the State of South Carolina. City Code Enforcement staff joined the South Carolina Association of Stormwater Managers in January 2019 and will attend the affiliated conferences. Public works staff began receiving formal training semi-annually in 2020. Other training provided to Town staff is listed below:

- September 2, 2021, one staff member attended the SCASM 3<sup>rd</sup> Quarter meeting.
- November 4, 2021, two staff members attended the SCASM 4<sup>th</sup> Quarter meeting.
- March 3, 2022, two staff members attended the SCASM 1<sup>st</sup> Quarter meeting.

**Assessment of Controls**

The Municipal Facilities SWMP component is fully implemented. County facilities are ranked using a low, medium, or high priority scale, with high priority facilities receiving annual inspections. Facilities with SWPPPs and SPCC plans that are currently in place are included on the high priority list.

**Measurable Goal Summary**

1. Complete the list below for the last reporting year:

Number of monitored municipal facilities:	43 (Richland County), 8 (Forest Acres)
Number of added monitored municipal facilities:	3
Number of SWPPP inspections completed:	37
Number of SWPPP locations needing enforcement:	2
Number of SPCC inspections completed:	6
Number of SPCC locations needing enforcement:	0
Number of newly implemented control measures:	0

2. Have yearly comprehensive inspections been conducted at high priority facilities? If not, indicate a status and planned completion date in the chart below.

Yes  No  In Progress (*explain*): \_\_\_\_\_

3. Has training been conducted for employees? If not, indicate a status and planned completion date in the chart below.

Yes  No  In Progress (*explain*): \_\_\_\_\_

4. Use the table below to summarize municipal facility pollution prevention action items, goals, and progress for the current reporting year. In the “activities conducted and planned” section, focus on activities that were conducted in the last reporting year and those that are planned for the upcoming reporting year, providing implementation dates. Ensure that the maintenance and inspection of MS4 catch basins and structural storm water controls are addressed in the chart. Add rows where needed and attach additional sheets if necessary.

<b>Pollution Prevention Action Item</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s)</b>	<b>Activities Conducted and Planned</b> <i>(specific implementation dates)</i>
Assess all municipally owned or operated facilities	Complete by June 1, 2018	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Item was completed by July of 2016.
Based on assessment create a high priority facilities list	Complete by June 1, 2018	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Item was completed by July of 2016.
Perform an annual inspection of high priority facilities	Start by June 1, 2018	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	High priority facility inspections were completed in 2021-2022 and inspections are ongoing throughout the permit term.
SWPPP Training	Hold training for County-owned SWPPP facilities	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Held a training on SWPPP requirements for County industrial facilities on May 16, 2022.

## Control Measure Evaluation

### **1. Evaluate the success of this MCM. What are the program's strengths?**

The County has a successful good housekeeping program. Most of the high priority facilities have SWPPP or SPCC already in place. The Stormwater Inspector has good communication with other divisions responsible for high priority facilities. Both the Operational Services Department and Fleet Services Division are well versed in the SWPPP and SPCC requirements and actively monitor the buildings and grounds they are responsible for maintaining.

### **2. Provide an evaluation of where the program needs improvement and explain any actions that will be taken to achieve objectives:**

Improve record keeping by integrating the files and inspection reports in an ArcGIS based system instead of using Excel spreadsheets.

## **F. Minimum Control Measure 6: Application of Pesticide, Herbicide, and Fertilizers (PHF)**

### **Objective**

Implement a program to reduce, to the MEP, pollutants in discharges from the County associated with the application of PHFs including educational activities, permits, certifications, and other guidance related to using, storing, and disposing of PHFs.

### **General Discussion of SWMP Element**

Richland County has fully implemented its PHF program. The Stormwater Division reviewed and updated the PHF program in 2016. This included updating the PHF SOP, list of facilities, and applicators for inspections. The database is prioritized with criteria and level of risk.

*Certifications* - The County's Operational Services Division is responsible for grounds maintenance. Mr. Wells is certified by Clemson University, certification number N006492, which expires in December 2023, to handle restricted use pesticides. Mr. Wells possesses emergency spill response training.

*Usage* – The Stormwater Division maintains an inventory of all Department of Pesticide Regulation (DPR) approved chemicals and where they are located. The Stormwater Division inspects all county owned facilities where PHFs are used and stored. The Division also inspects facilities not owned by the County that are operating under a Clemson PHF certification.

Operational Services uses two (2) types of application equipment that requires calibration; a backpack sprayer and a 25-gallon tank sprayer. The fertilizer spreader is filled on a sidewalk, driveway when possible, or over plastic to control any unforeseen spills. Delivery rates and patterns are done to a small area before proceeding to the treatment of a larger area to help ensure accuracy, and the deflector shield is used to ensure minimal runoff.

All facilities under the oversight of Operational Services are treated with appropriate materials to aid in healthy greenery and distributed according to the specification of the product label in conjunction with any literature regarding that product (LABELING). Chemicals are mixed in a contained area, and empty chemical containers are triple rinsed and disposed of according to manufactures specification. Chemicals are applied to plant material with a backpack hand pump sprayer and tank sprayer. A surfactant is added for maximum adherence to plants with minimum application amounts along with an identification dye to track where the chemical is being applied. Calibration and repair of all applicators are completed in house.

The County does not use pesticides for repelling or mitigating insects or rodents, with the exception of mosquito control.

The following is a list of chemicals that are presently used by Operational Services by product name and active ingredient:

<b>Non Selective Herbicide</b>	<b>Active Ingredient</b>
Prosecutor/Ranger Pro	Glyphosate N- Glycine (36%-41%)
Mojave	Imaxapyr/Diuron
*Oust	Sulfometuron Methyl
Tribune	Diquat Bromide
Pramatol	2-4 D Bis Cesopropylamino
Selective Herbicide	Active Ingredient
Speedzone southern	2-4 Dichlorophenoxyacetic
*Weedar	2-4 Dichlorophenoxyacetic
*Image	Imazaquin
*Manor	Metsulfuron
Cesuis	Thiencarbazone-methyl
*Cross Bow	Isopropylamine Salt of Glyphosate 41%
Fungicides	Active Ingredient
Eagle	Myclobutanil
Alpine WSG	Active Ingredient
Insecticides	Dinotefuran
*Top Choice	Fipronil
Lesco Crosscheck	Bifenthrin
Bandit	Imidacloprid

**\*Currently NOT in Operational Services Stock**

**Standard Operating Procedure** - When a chemical is purchased, the amounts/quantities used are tracked to identify total application amounts for each facility. To minimize storm runoff of the applied chemicals, weather conditions are monitored to provide as many dry days as possible after applications. Facility sprinkler systems are also turned off after applications. If chemicals are to be stored for any length of time, they are placed in a containment shed at the County's Gregg Street facility, which has limited access.

**Training** - Operational Services continues to utilize on-the-job opportunities for educating and training other grounds staff members on the proper use, care, and application of pesticides and

herbicides. This is being accomplished through classes provided by the Stormwater Management Division and hands-on training by the grounds manager. Copies of sign in sheets from training activities are located in Appendix C.

The Stormwater Management Division holds an annual Blue Thumb Workshop focused on pesticide, herbicide, and fertilizer usage. Landscapers across the County are invited along with EcoGroup and licensed applicators who work for the County. The Blue Thumb Workshop was held on February 11, 2022.

***Contractor*** – The County utilizes EcoGroup, a licensed pesticide and herbicide applicator through the state of South Carolina, to assist in administering chemicals along County maintained ditches. Contracted applicators are required to have proper certification and licensure for pesticides application through Clemson Extensions DPR.

The Hamilton – Owens Airport has herbicides and pesticides applied by the EcoGroup through a statewide contract administered through the SC Aeronautics Commission.

The following applications on the Hamilton-Owens Airport took place during the preceding twelve-month period:

- Herbicide                                      Airfield lights                                      Spring 2022
- Herbicide                                      Taxi lane pavement                                      Spring 2022
- Herbicide                                      Perimeter fence line                                      Spring 2022
- Pesticide (Fire Ant killer)                      Airfield lights                                      Spring 2022

**Assessment of Controls**

The County is implementing the PHF Program to control PHFs from entering stormwater runoff. There are no sites that required enforcement this year. This year, twenty (20) sites could not be inspected due to scheduling conflicts or the sites being closed to the public. The Stormwater Division reports locations that are not under its jurisdiction to Clemson.

**Measurable Goal Summary**

1. Complete the list below for the last reporting year:

Total number of PHF inspections performed:	11
Number of sites with unsatisfactory/noncompliant inspection results:	0
Number of sites that could not be inspected	20
Number of sites with requiring enforcement	0

3. Use the table below to summarize PHF application action items, goals, and progress for the current reporting year. In the “activities conducted and planned” section, focus on activities that were conducted in the last reporting year and those that are planned for the upcoming reporting year, providing implementation dates. Add rows where needed and attach additional sheets if necessary.

<b>PHF Site Action Item</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s)</b>	<b>Activities Conducted and Planned</b> <i>(specific implementation dates)</i>
Identify areas known to have high applications of PHFs and prioritize problem areas	Complete	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Completed by July 2016.
Maintain an inventory of on hand PHF and information about product formulations	Complete	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Inventory reviewed and updated throughout the permit term.
Develop and implement a program to detect the improper usage of PHFs	Complete	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Updated PHF SOP in December 2016.

### **Control Measure Evaluation**

<b>1. Evaluate the success of this MCM. What are the program’s strengths?</b>
The County has successfully implemented the PHF Program. A list of departments and individuals that utilize PHFs and the list of chemicals stored by those departments is kept in the Stormwater Division. The Stormwater Division provides annual PHF conference for internal and external PHF contractors.
<b>2. Provide an evaluation of where the program needs improvement and explain any actions that will be taken to achieve objectives</b>
Not Applicable

## **G. Minimum Control Measure 7: Illicit Discharges and Improper Disposal**

### **Objective**

To develop processes, procedures, and legal authority to track and eliminate illicit discharges and improper disposal into the storm sewer system.

### **General Discussion of SWMP Element**

Richland County Ordinance 26-203 prohibits illicit connections, illegal discharges, illegal dumping, and improper disposal, as well as addresses organic waste and spills. The Richland County Stormwater Management Division enforces this ordinance. The ordinance includes language concerning the reporting of SSOs within Richland County. The Stormwater Division also has a SOP for Illicit Discharge Detection and Elimination. The County's SOP includes procedures and checklists. Stormwater Division staff is trained on using field-screening testing kits for routine parameters, including *E. coli*, to take a quick screening sample to verify a suspected illicit discharge. If the Stormwater Division receives a suspected illicit discharge via One Stop, the County's service request system, or a phone call, a stormwater inspector investigates within 24 hours. A report is created from this inspection and proper enforcement and follow-up actions are determined. Paper copies of the inspections, reports, and follow-up letters sent are kept in the Stormwater Division.

Richland County Utilities Department has a rigorous Fats, Oil, and Grease (FOG) compliance program in effect. This program is aimed at reducing disruptions in service and overflows. The program's focus is on reducing FOG at the source, mainly commercial food service establishments (FSEs). Richland County Utilities (RCU) has issued six (6) notices of non-compliance to FSEs to ensure compliance with FOG specifications. Affected FSEs have responded accordingly by installing and updating grease traps/interceptors per RCU's code of regulation, Section 8.1.

The County has mapped its drainage network including pipes, outfalls, detention ponds, and channels. The County has mapped the entire drainage system, but a map of the entire drainage system is not included. A map of major outfalls and their locations is included in Appendix E.

*Field Screening* – The Illicit Discharge and Improper Disposal (IDID) element requires the identification and dry weather inspection of all MS4 outfalls into waters of the State. Dry weather field screening is scheduled for all outfalls over the five-year permit period with the goal of inspecting 25% annual basis for the first four (4) years with follow up any further investigations and reporting in the fifth permit year.

During dry weather field screening, investigation maintenance needs are identified and reported to the Roads and Drainage Division. A prioritized ranking system outlined in the IDID SOP provides the prioritization. While performing field screening throughout the County, field staff investigates all outfalls and further defines major outfalls. New outfalls and outfalls located while in the field are added to the database from as-built drawings. Outfalls are stored and updated in a GIS shape file.

In permit year 2019, the County's Stormwater Division implemented a small unmanned aerial system program in order to improve watershed and project assessments. This program utilizes a

small drone (operated by an FAA licensed pilot) and advanced remote sensing software to provide aerial imagery and topographic maps for decision-making processes. The Stormwater Division drafted SOPs in order to operate it as safely and effectively as possible. In the future, this will be an important tool for remote assessments of outfalls and potential illicit discharges, allowing the division to conduct inspections and gather information in a quick and cost-effective manner.

The County has the entire storm drainage system mapped. Due to the size of the system, the information is not available online but is maintained via an internal GIS system, which is updated yearly. A copy is available upon request. For ease of reporting a map of the County's outfall network is included in Appendix E.

The City of Forest Acres is maintaining an annual subscription to GIS-based software called Mobile311 that allows in the field documenting of conditions and uploading of photographs for support of codes enforcement/stormwater regulation.

The Special Services Department works to locate and prosecute illegal dumpers in Richland County. Enforcement actions taken by the Special Services Department are discussed in the Enforcement Section.

**Spill Response** - Another key element of the IDID program is an effective spill prevention and response program. Section 26-202(c)(8) of the County's ordinance addresses spill response and establishes the authority of the Richland County Director of Emergency Services (or an authorized fire official) to control and contain hazardous materials that are emitted into the environment and are considered a threat to public health or the environment. This section also establishes the right of entry of the official in charge of a situation onto any private property. If it is determined that a spill could potentially impact stormwater or a receiving stream, the Stormwater Manager is contacted immediately.

Spill Response Procedures are included in Section 8 of the "Standard Operating Procedures: Illicit Discharge Detection and Elimination Program" document. This includes procedures for reporting spills, cleaning up spills, and follow-up.

Sources with the greatest potential for spills are inspected during facility inspections and efforts are made to provide appropriate storage and containment to prevent spills.

Richland County has a Hazardous Material Contingency Plan that the Emergency Management Division is responsible for implementation and update.

**Public Reporting of Illicit Discharges** - The One Stop response system is available to Richland County residents for making illicit discharge reports along with calling the Stormwater Management office directly. The County has an Adopt-A-Stream program to get citizens actively involved with testing water quality. Citizens are trained to actively look for suspected illicit discharges and provided with information on how to report those to the County while volunteering for the program. Reports of suspected illicit discharges discovered by an Adopt-A-Stream volunteer are forwarded to the Stormwater Manager.

Various educational outreach tours are held at the Broad River Wastewater Treatment Plant (WWTP) for elementary through high school classes, college environmental courses, and various civic groups that discuss stormwater impacts upon the operation of wastewater collection and treatment systems and stormwater impacts upon the receiving waters that WWTP's discharge into.

The City of Forest Acres and Town of Arcadia Lakes have monitored siltation in local creeks from construction sites and they have contacted Richland County for support when necessary. Richland County's One Stop response system provides citizens with the resource to report any illegal discharges.

A copy of all suspected illicit discharges, SSOs and other investigations are included in Appendix F.

*Oil & Household Hazardous Waste* - The oil and household hazardous waste portion of the IDID element is aimed at residents. Public education about the proper way to dispose of these materials is key to ensure the elimination of discharges or dumping of oil and household hazardous waste. Richland Recycles Day is an annual event where residents can safely dispose of household hazardous waste.

Richland County sponsors a Clean Sweep program in neighborhoods throughout the County. This program provides residents with a convenient means to dispose of hazardous household materials (HHM) inappropriate for collection with solid waste. In addition, the County operates a construction and demolition (C & D) landfill that accepts C & D debris, used tires, used motor oil, used oil filters, antifreeze, appliances and yard waste. The County contracts with private companies to dispose of the waste collected at this landfill. There are also ten (10) sites located in the County that accept used oil, oil filters, and antifreeze. These sites are operated in conjunction with Santee Cooper Power.

*Sanitary Sewer and Septic Seepage* - Richland County has seven (7) sewer service providers, and Richland County Sewer Service is one of them. If there is a spill, the Utilities Department follows SCDHEC guidelines and will send a report within 24 hours including clean-up performed and corrective action plan assessed. Since each spill and related cleanup is so diverse, they do not have particular procedures identified for each type of spill. The Utilities Department follows SCDHEC guidelines in their submission of reports and submits monthly reports with all the findings. Any sewage seepage detected during dry weather screening is addressed.

For the specified time of this report (July 1<sup>st</sup>, 2021, to June 30<sup>th</sup>, 2022), six (6) SSOs were reported to the South Carolina Department of Health and Environmental Control by Richland County Utilities (RCU). The spills ranged in size from about 1,200 gallons to 15,000 gallons. The total gallons lost from all SSOs from July 2021 to June 2022 was 25,300 gallons. In addition, several SSOs were due to negligence by construction companies damaging (RCU) infrastructure. These were unforeseeable by Richland County Utilities (RCU), and yet RCU actively spot-checks job sites to ensure compliance with the PUPS program.

RCU has an updated, efficient, and effective electronic alert system through the Data Flow System (DFS), OMNI program, and High Tide Technologies alert systems. These systems are connected to all pump stations with dedicated secondary alarms to the major lift stations in the area of

operations. These systems generate an automatic alert sent to the on-call phone pager. If these alerts are not acknowledged, a calling tree series of automated calls to all RCUs goes into effect until the said alarm is acknowledged. In addition, the redundancy of these technologies, which sets as an additional safety protocol for the major pump stations, generates an alarm that automatically goes to all RCU personnel regardless of acknowledgment.

RCU started installing the Supervisory Control Data and Acquisition (SCADA) / DFS at pump stations within the collection system. The SCADA unit is a system that allows lift stations to monitor and control. This allows staff to control the system remotely as required, potentially eliminates the delayed response to emergency alarms, and limits future SSOs. The SCADA system will replace all OMNI and High Tide Technology at all RCU's pump stations. Most stations have become SCADA monitoring in RCU sewer and water systems. It is worth mentioning that RCU tracks the SSOs using its ArcGIS system. That provides more up-to-date information to the maintenance, operational, and engineering teams working to determine the cause of the SSOs and provide practical solutions to prevent these spills in the future. Also, RCU uses a hydraulic model of the sewer system to compute the amount of the SSO when information is available.

In addition to the electronic monitoring and controlling process, all lift stations in the area of operations can pump peak flow volume (PFV) if the primary pump becomes disabled, as all the stations have at least one pump of equal power as a backup. Large pump stations also have on-site generators capable of powering the pump stations at PFV until normal power is restored. Small pump stations are provided with electrical connections connected to a portable generator for generating power. RCU supplies fuel to these generators using its portable fuel tanks, which stand by at its facilities until a contractor takes over to provide energy for these generators.

RCU is aggressively combating Sanitary Sewer Overflows (SSO) and infiltration of sanitary sewage and septic seepage. As such, the maintenance staff has increased in size; the new personnel are trained not only to apply laws and regulations to perform their duties but also to perform the mechanical and practical aspects. Coupling this training with mission objectives, quality equipment, and access to reliable contractors, improve technicians' maintenance skills to make immediate decisions to contain or control any situation regardless of their tenure. Furthermore, full support from the Chain of Command at RCU is available 24/7.

The spill and clean-up procedures, included in the training for field maintenance crews, are for whoever receives a call for an issue related to the system to respond immediately on-site to resolve that issue. After ascertaining that the area of operation is safe to work in, the next step is to isolate and shut down the cause of the flow itself. Once the instantaneous flow stops, safety procedures are followed to protect the surrounding area from further contamination. The risk to the public health, surrounding workforce, and environment is minimized. Once the situation has stabilized, SSOs are reported to proper authorities. Proper investigations will be performed to prevent future occurrences or minimize them.

Upon responding to a sewer obstruction, maintenance crews will first determine if this obstruction falls under the responsibility of RCU. If there is an existing issue, the decision will be made based on what work must be done to rectify the problem.

Currently, there is a plan to commence using the SL-RAT system and CCTV to monitor the health system of the RCU gravity sewer mains. Furthermore, the plan will be conducted as needed to test the system following events such as after significant weather or indications that the reliability of the lines might have been compromised.

Maintenance crews are performing camera inspections when necessary to locate blockages, bellies, and other potential sources of sewer obstructions. Maintenance crews have found and repaired several sites where inflow and infiltration (I/I) were prevalent. In addition, maintenance has raised several manholes which were in floodplains. There are plans to raise/rehabilitate more in the near future.

Maintenance personnel are currently replacing the defective or less efficient air release valves in the system to reduce the potential of the SSOs.

*Summary on measurements taken to seal sanitary sewer lines* - RCU has taken a proactive approach to seal sewer lines and rehabilitating manholes over the thorough inspection of surface lines and manholes by responding to any issues with long-term and permanent solutions. Performing these actions is proven to be effective and efficient in reducing infiltration and preventing SSOs from occurring. RCU has raised/rehabilitated ~10 manholes in the Shady Grove lift station area. This has resulted in a noticeable reduction in I/I. The County is preparing to raise/rehabilitate ten more manholes to reduce I/I further.

Operations/Maintenance personnel replaced the manhole cover on the UV system influent manhole at Broad River WWTP with a higher vertical section. It resealed joints to stop past seepage and halt any leakage.

*Summary of approach to eliminate sanitary sewer failures* - As mentioned above, RCU takes an aggressive, professional, and dedicated stance on the issue of SSOs and their prevention. The philosophy, adopted not only by the Chain of Command, but also by field-level supervisors and all other workers, is that the prevention of an SSO far outweighs any response that can be mustered during or after one has occurred. Having stated that understanding, a reiteration of crucial points of this program is not without merit, as this further reinforces the main points of the response and reaction.

RCU maintains the necessary equipment and material to repair manholes, risers, and lids, which are on standby for immediate deployment as needed. Visual inspections of these lines using the SL-RAT and CCTV are conducted continuously. Also, because part of the procedure of Right-of-Way maintenance and mowing is to inspect the condition of manholes and lines visually, this further increases the chances of identifying any problems with the lines. The technicians identify the issues, mark them with paint, and immediately report any damages or issues to their supervisor. In addition, the inspection of lines is optimized by integrating the SL-RAT with the GIS layout of our sewer system and computing the SSO amount using the hydraulic model. Utilizing these procedures allows for accurate and real-time system updates and identification of any potential future hazards or issues.

Personnel are trained in the mechanical aspect of the system and the operations side, ensuring that there is at least an understanding of how the entire system works from the time the wastewater enters the system, adequately treated and released into the outfall. Safety, communication, and a working knowledge of the system and its relationship to the community are key points to preventing an SSO and anticipating where a problem may arise. These attributes, combined with the necessary equipment, access to contractors, and the ability of all personnel to make, informed decisions at the scene, add to maintaining a safe environment.

All crews are instructed to inspect the pump stations at least twice weekly, including the on-site generators, floats, transducers, and other necessary components. Accountability and documentation of these actions are also critical. Therefore, a consistent form was compiled for each pump station to record all observations at inspection time. These sheets are collected monthly and reviewed by the Maintenance Supervisor. They understood that any deviance in the usual operations of the pump station is to be immediately reported to the appropriate person for immediate action.

Our active compliance personnel conduct monthly inspections and enforcement to control fats, oils, and grease (FOG) in RCU's sewer system. Public education is also critical in preventing SSOs, such as informing homeowners about how to identify potential issues, when tanks should be pumped, and what is and is not appropriate for disposal into the system. The FOG program also enforces this doctrine at a commercial and residential level, ensuring quality standards are equally applied across the system. Combining these efforts into a concise method of operations has allowed RCU to react and, more importantly, reduce and prevent the number of SSOs in our area.

The Septic Elimination Program for Lower Richland has been contracted to a consulting and engineering firm. The plan for septic elimination has been approved and will be implemented accordingly. As property ownership is changed, RCU requires new owners to change the LETTS system to the STEP system per RCU's code of regulation section 10.1.

RCU staff has taken an active role in evaluating any plans, proposals, etc., submitted by consulting firms for adequacy, appropriateness, completeness, etc.

*Work identified/performed in correcting any sewer cross-connections-* RCU has installed proper backflow prevention devices where there is the potential for the sewer to be introduced to water systems. These backflow prevention devices are tested and certified as required by qualified individuals.

*Employee Training* – The Public Works Department offers an annual “All Hands” meeting, which is held every December. All employees in the Public Works Department are required to attend. A variety of topics are covered at this meeting including, but not limited to, Spill Prevention and Control, Good Housekeeping Practices, Illicit Discharge Detection and Elimination, and Roadway Maintenance Pollution Prevention. Reference Appendix C.

RCU Maintenance, Operations, and Engineering staff regularly attend conferences, training sessions sponsored by WEASC, on-site training given by vendors, confined space entry training, on-the-job training, tailgate safety meetings, informal one on one training, etc.

**Assessment of Controls**

The County has a fully implemented Illicit Discharge Detection and Elimination Program. The County’s efforts to effectively prohibit illicit discharges through inspections, reporting, and increased awareness may have resulted in a decrease in the number of suspected illicit discharges. RCU implemented an aggressive monitoring, reporting, and response system for SSOs.

**Measures to improve operational standards with innovative techniques to reduce probable pollution of stormwater.**

Using a Smart cover flow meter, flows are continuously monitored at the manholes upstream of each major pump station. This is used to monitor the inflow trend to the treatment facility and help identify possible infiltration and inflow (I&I) in the collection system. Also, RCU staff periodically run an on-site sewer line assessment using (SL-RAT) to determine the integrity of the sewer system to minimize SSOs.

**Measurable Goal Summary**

1. How can the public notify the MS4 of suspected illicit discharges?

Citizens can contact the Stormwater Management Division or the Ombudsman’s office at 803-929-6000.

Complete the list below for the last reporting year:

Total number of suspected illicit discharges investigated by Richland County Stormwater:	4
Total number of illicit discharges found by Richland County Stormwater:	1
Number of suspected illicit discharges/improper disposal City of Forest Acres:	3
Total number of illicit discharges found by City of Forest Acres:	0
Number of proactive dry weather inspections:	172 major outfalls screened
Number of SSOs investigated by Stormwater:	4
Number of SSOs investigated by Richland County Utilities:	6
Number of SSOs reportable to DHEC by Richland County Stormwater:	2
Number of SSOs reportable to DHEC by Richland County Utilities:	6
Number of NOV’s issued related to Fats, Oil & Grease program:	6

Number of household hazardous materials collected at hazardous material recycling event:	16.42 tons
Number of recycled material collected by Solid Waste:	1309.25 tons of scrap metal 319.40 tons of E-waste 12.43 tons of batteries 124.48 lbs. of motor oil 1193.83 tons of tires 1.10 tons of antifreeze 92 tons of bulbs 11.64 tons of carpet padding 19.40 tons of cooking grease 191.53 tons of mattresses 80.14 tons of paint 4285.05 tons of yard waste diverted from landfill 10,010.32 tons collected at curbside and events

2. Use the table below to summarize IDDE action items, goals, and progress for the current reporting year. In the “activities conducted and planned” section, focus on activities that were conducted in the last reporting year and those that are planned for the upcoming reporting year, providing implementation dates. Add rows where needed and attach additional sheets if necessary.

<b>IDDE Action Item</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s)</b>	<b>Activities Conducted and Planned</b> <i>(specific implementation dates)</i>
Update dry weather screening/IDDE manual.	Review manual to see if there are any updates	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Completed by June 30, 2017.
Identify all field screening points	Work with GIS to identify new outfalls	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	GIS updates outfall inventory throughout the year.
Update illicit discharge inspection form	Review form to see if any changes need to be made due to new permit	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Completed in July of 2016.

## Control Measure Evaluation

### **1. Evaluate the success of this MCM. What are the program's strengths?**

This program is successfully implemented. All stormwater staff is trained in the proper response procedure in identifying and responding to an illicit discharge and other departments are trained on proper illicit discharge inspection and reporting procedures. Richland Utilities has a robust program to identify sewer leaks, repairs and upgrade infrastructure, and respond to sanitary sewer overflows.

### **2. Provide an evaluation of where the program needs improvement and explain any actions that will be taken to achieve objectives:**

Transitioning to a digital inspection form that will automatically map the location of illicit discharges will ease in drawing a correlation between potential increases in pollution levels in monitoring data. The Stormwater Division, working with the County's GIS Division, fully implemented the change to a digital inspection form for dry weather screening to, ArcGIS Online, in 2022.

## **H. Minimum Control Measure 8: Industrial Runoff**

### **Objective**

Implement a program that monitors and controls pollutants, to the MEP, in stormwater discharges to the County's MS4 from industrial facilities.

### **General Discussion of SWMP Element**

Legal Authority- Richland County's ordinance, Section 26-203 provides the County with authority for inspectors to implement the inspection schedule.

Facility Inventory - The County maintains an inventory of all industrial facilities and updated procedures for inspecting, monitoring and responding to non-compliance at industrial facilities. Updates include identifying and controlling pollutants in stormwater discharges to the Richland County MS4 from any municipal landfill(s), hazardous waste treatment, storage, disposal (TSD) and recovery facilities, and facilities that have reported under the requirements of the Emergency Planning and Community Right to Know Act (EPCRA) Title III, Section 313. The list is updated annually and includes the closest waterbody, watershed, and sub watershed that the facility drains to. The inventory of industrial facilities is included in Appendix G.

Inspections - Any facilities that have closed/moved were removed from the facility inventory. Landfills are included in the inventory and are inspected annually. By the end of this reporting year, there were 140 facilities on the list. All 140 facilities have been inspected. The County will continue to implement the program by inspecting twenty-five percent (25%) of the industrial facilities in the upcoming permit year. In addition to updating the industrial facility database, the inspection report includes detailed information such as receiving waters, priority classification, and County tax map number. Before an inspection, the facility is contacted to schedule a date and time that a representative can be present. The County inspector walks the site and notes any concerns during the inspection. A follow-up letter and inspection form are submitted to the industry concerning any deficiencies found. If there is a significant deficiency, a NOV is submitted to the industry and a follow-up inspection is conducted.

All inspection reports are filed in the central repository in the Stormwater Management Division's Office and are available upon request. A list of inspected industrial sites is provided in Appendix G.

The industrial program has continued to grow and evolve. One such way was the development and testing of a digital inspection form to replace the current paper form. Richland County GIS Division has developed the form and presented it for field-testing in April of 2021. It is an ESRI based platform, using the Survey123 app. Stormwater personnel began testing the form and have provided feedback. The form was successfully implemented in November 2021.

Monitoring – The County implemented a self-monitoring program for industrial sites. The majority of the industrial facilities inspected by the County are covered under the SCDHEC IGP and perform their own monitoring. The IGP permittees perform monitoring at industrial facilities, and the Stormwater Division checks that results are maintained at the facility during inspections.

The County did not find evidence of industrial facilities non-compliant with their monitoring requirements. If the County has a reason to believe, through analysis of its monitoring program, that an industrial site is the source of the discharge of pollutants downstream the County has the legal authority to inspect the site and conduct additional monitoring.

### Assessment of Controls

The Industrial Runoff Program is fully implemented. The COVID-19 pandemic concerns forced many industries to suspend operations or go to a no visitor policy in 2020. Therefore, there were no inspections completed in the later half of 2020 and early 2021. However, industrial inspections have resumed and a total 42 inspections were conducted in this reporting year. All industrial facilities have been inspected within the allotted timeframe of the permit.

### Measurable Goal Summary

1. Complete the list below for the last reporting year:

Total number of inspections performed:	42
Number of sites with unsatisfactory/noncompliant inspection results:	0
Number of active industrial users in Richland County:	140
Number of sites with enforcement escalation (action taken beyond written warning):	0
Percentage of industrial facilities inspected:	100%

2. Use the table below to summarize industrial runoff action items, goals, and progress for the current reporting year. In the “activities conducted and planned” section, focus on activities that were conducted in the last reporting year and those that are planned for the upcoming reporting year, providing implementation dates. Add rows where needed and attach additional sheets if necessary.

Industrial Site Action Item	Measurable Goal(s)	Progress on Goal(s)	Activities Conducted and Planned <i>(specific implementation dates)</i>
Develop and begin testing digital inspection form to replace current paper form.	Complete testing and implement new form.	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	The digital inspection form was tested and successfully implemented in November 2021.
Review and update Industrial Runoff program SOP.	SOP update completed.	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Started using updated SOP on July 1, 2017 in daily activities.

Industrial Site Action Item	Measurable Goal(s)	Progress on Goal(s)	Activities Conducted and Planned <i>(specific implementation dates)</i>
Ensure new water quality industrial monitoring plan includes consideration for industrial runoff.	Locate wet weather stations at industrial outfalls.	<input type="checkbox"/> In Planning <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Evaluation	The County's monitoring plan is focused on TMDL watersheds, 303d listed impairments, and sensitive waters. The County provides general oversight of industries to ensure they are following the monitoring plans in their IGP. If any questionable spikes in County collected samples/monitoring data occur that may point towards an industrial facility as the potential source, more targeted monitoring at or near the industrial facility will be considered.

### Control Measure Evaluation

<b>1. Evaluate the success of this MCM. What are the program's strengths?</b>
This program is successfully being implemented. The Stormwater Division has hired a dedicated inspector in the fall of 2021. All industrial inspections have been completed within the permit term.

<b>2. Provide an evaluation of where the program needs improvement and explain any actions that will be taken to achieve objectives:</b>
The Division has converted paper inspection forms to a digital inspection form in November 2021. The conversion to a digital inspection form automatically maps locations, while keeping the reports tied to each facility. This form conversion has been successfully implemented.

## **I. Minimum Control Measure 9: Construction Site Runoff**

### **Objective**

Reduce erosion and sedimentation associated with construction sites by implementing the appropriate ordinances and procedures to require the design, installation, and maintenance of effective pollution prevention measures for construction site operators.

### **General Discussion of SWMP Element**

Richland County continues to implement its sediment and erosion control standards. The County has developed and implemented a Land Development Manual that will fully incorporate the changes required in the MS4 permit and the Construction General Permit.

*Plan Review and Approval* - Sediment & Erosion Control Plan Reviews are performed by the Community Development and Planning Department. The Community Development and Planning Department also conducts plan reviews for the Town of Arcadia Lakes and the City of Forest Acres. Richland County utilizes a plan review checklist to review submitted information prior to approval and issuance of a land disturbance permit. The checklist includes items to ensure that sediment and erosion control measures during the land disturbance and stormwater management practices are completed and adequate.

County staff can take a maximum of 18 days to complete the first stage of the plan review. Any modifications or changes to be made are then discussed and resubmitted for further review. Plan review is all completed electronically. A plan submittal may not be submitted to the County for review until all required items are included. Any questions or issues that arise during plan review are followed up on prior to approval.

Chapter 26 of Richland County's ordinance establishes regulations for erosion and sediment control, land development regulations, zoning, and landscape requirements. The Enforcement Response Guide for Stormwater Management and Floodplain Management programs addresses the appropriate enforcement actions related to specific violations. The County's Land Development Manual and ordinance provide the requirements related to permit approval and the specific erosion and sediment control BMPs required. Guidelines for site specific SWPPPs are also included in the Land Development Manual and on the Richland County Development Services website.

Qualified County staff conduct plan and SWPPP reviews. Richland County provides training for the plan reviewers through Clemson's Certified Stormwater Plan Reviewer (CSPR) certification program.

Richland County reviews SWPPPs to verify that consideration has been given to TMDL waters, 303(d) listed impaired waters, wetlands, and sensitive waters and what water quality impacts the discharges may have. The Land Development Manual includes special design provisions for construction projects that disturb 25 acres or more and discharge to a TMDL or impaired waterbody to have BMPs in place during construction and after construction to meet antidegradation requirements.

Additional information on the process of plan review, inspection, and enforcement is provided on the County's website: <http://rcgov.us/DevServ/QuickLinks/CodesandRegulations.aspx>

*Sediment and Erosion Control Inspections* - The Community Development and Planning Department conducts sediment and erosion control inspections on all sites undergoing construction weekly and after large storm events. These inspections continue throughout all phases of construction, until the project is closed out. When applicable, the inspection includes enforcement actions as required in the County's Enforcement Response Guide for Stormwater Management and Floodplain Management programs. Community Development and Planning Department Inspectors are authorized by Richland County to enforce the requirements of the Land Development Ordinance.

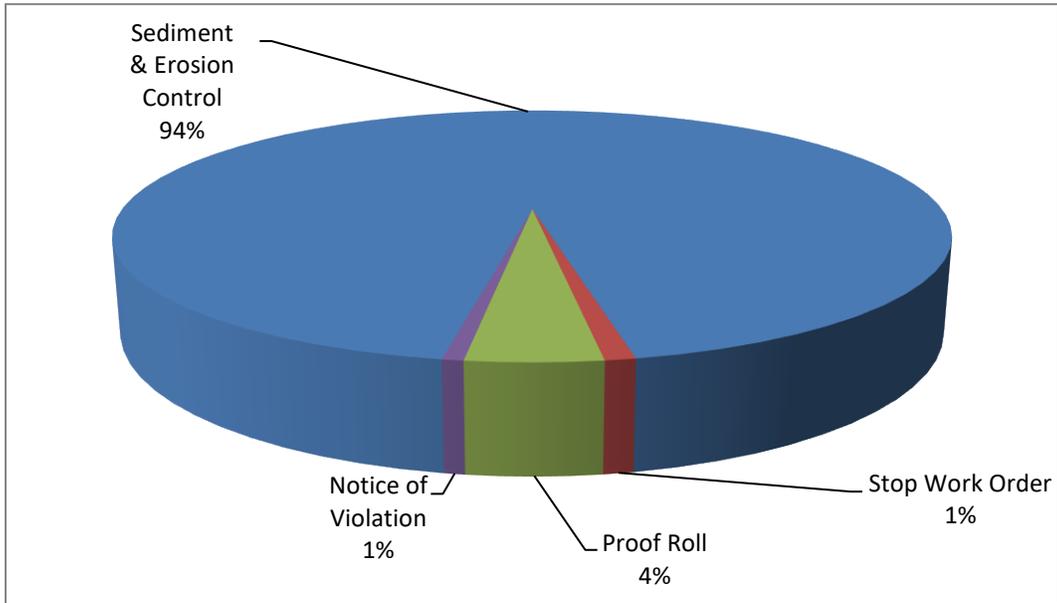
If a deficiency is found the site is given a NOV or Stop Work Order (SWO) depending on the level of deficiency. NOVs are submitted in writing and a card is posted onsite if immediate compliance is required. The Division gives the violator seven (7) working days of the inspection to comply. A SWO halts all land disturbing activity. A SWO shall be submitted in writing and a card is posted onsite immediately.

If there is any off-site impact, it is deemed a failed inspection. Failed inspections are given the opportunity to submit and act upon a corrective action plan approved by the Community Development and Planning Department.

The Community Development and Planning Department has four inspectors who are assigned specific areas of the County where they conduct sediment and erosion inspections, road construction inspections, and special investigations.

This past year has presented challenges to the compliance staff due to a staff shortage, budget reductions and, COVID-19. Despite these challenges, compliance in the field remained high. Inspectors and plan reviewers developed a positive working relationship with the developers and made "Education and Outreach" a big part of the inspection process. This has provided a much greater understanding and appreciation among the regulated community of MS4 requirements and County expectations. The judicious use of enforcement tactics, i.e., NOVs and SWOs along with a more positive interaction with the regulated community has led to greater compliance in the field. While the threat of a SWO is immediately effective in bringing about corrective action, education and outreach for the regulated community appears to have had an extremely beneficial effect as compliance has become a collaborative effort between the permit holders and compliance staff.

**New Development Engineering Inspections  
Total Inspections from June 2021 to June 2022**



**Year 2021-2022**

<b>Sediment &amp; Erosion Control Inspections:</b>	2201
<b>Proof Rolls:</b>	124
<b>Notices of Violation:</b>	17
<b>Stop Work Orders:</b>	26
<b>Active Sites:</b>	412

**Training** - While education and training measures for construction site operators and those associated with the implementation of sediment and erosion control measures at constructions is daily and on-going; training for our inspectors has been a challenge due to budget cuts, staff reductions, and COVID-19. Additional inspectors have been hired. Training for all inspectors is expected to accelerate this year now that COVID-19 seems to be more controlled and more outreach to communities has been planned. For this past calendar year, there were 3 CEPSCI Certifications and 2 Plan Reviewer Certifications.

**Lunch Time Outreach**- Compliance staff met with building supervisors in an effort to enlighten builders on the need of installing required BMP's and the importance of maintaining these BMP's. This has led to less debris in streets and fewer off-site impacts. These sessions were held with Mungo Builders, Great Southern Home Builder and D.R. Horton Builders.

## Inspection Staff

INSPECTOR	PRIMARY DUTIES	SECONDARY DUTIES
Robert H. (Hop) Ridgell	MS4 Inspections	Special Investigations & Roads
Ryan Hamner	MS4 Inspections	Roads & Drainage
Ryan Kopp	MS4 Inspections	Roads & Drainage
Lee Thomas	MS4 Inspections	Roads & Drainage
Bill Pierce	MS4 Inspections	Roads & Drainage
Webster Lyons	Plan Review	Inspections
Kathleen Hatchell	Plan Review	Inspections
Tommy Delage	Floodplain Coordinator	Inspections

### Inspections Team – Supervisor and 4 Inspectors

- **Certified Erosion Prevention and Sediment Control Inspectors (CEPSCI) (All)**
- **Certified Asphalt Roadway Technician (2)**
- **Certified Earthwork, Drainage & Base Inspector (2)**
- **Certified Nuclear Gauge Safety Training Program (2)**
- **Certified Stormwater Plans Reviewer (CSPR) (2)**
- **Plan Review (4)**
- **Certified Floodplain Manager (CFM) (1)**

### Assessment of Controls

Richland County has sediment and erosion control plan review procedures in place. Richland County has an Enforcement Response Guide in place as well as a priority decision matrix to aid in construction site inspections.

The judicious use of enforcement tactics, i.e., Notices of Violations and Stop Work Orders along with a more positive interaction with the regulated community has led to greater compliance in the field. While the threat of a Stop Work Order is immediately effective in bringing about corrective action, education and outreach for the regulated community appears to have had an extremely beneficial effect as compliance has become a collaborative effort between the permit holders and compliance staff. The number of construction sites decreased slightly during this reporting period from 485 to 412. The number of NOV's decreased but this correlation is expected considering the decrease in active construction sites.

### Measurable Goal Summary

1. How can the public notify the MS4 of possible noncompliance at construction sites?

Citizens can contact New Development or the Richland County Ombudsman's office at 803-929-6000.

Complete the list below for the last reporting year:

Total number of active construction sites:	412
Number of stop work orders:	26
Number of notice of violations:	17
Number of proof rolls:	124
Number of sediment erosion control inspections:	2201
Number of new stormwater BMPs approved:	0

2. Use the table below to summarize construction and post-construction site action items, goals, and progress for the current reporting year. In the “activities conducted and planned” section, focus on activities that were conducted in the last reporting year and those that are planned for the upcoming reporting year, providing implementation dates. Add rows where needed and attach additional sheets if necessary.

Construction Site Action Item	Measurable Goal(s)	Progress on Goal(s)	Activities Conducted and Planned <i>(specific implementation dates)</i>
Review construction SOP. Update as necessary.	Make changes to the construction SOP during the creation of the land development manual.	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Finalize construction SOP after land development manual approval.
Identify additional local trainings for staff to attend.	Send staff to sediment and erosion control training as it becomes available.	<input type="checkbox"/> In Planning <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Completed <input type="checkbox"/> Evaluation	Schedule staff to attend trainings yearly to the MEP.

### Control Measure Evaluation

1. Evaluate the success of this MCM. What are the program’s strengths?
The successful implementation of improved technology in the Community Development and Planning Department allowed the program to continue during the COVID-19 shut down. During the last year Community Development and Planning improved consistency from all of the inspectors, which increased compliance from the regulated community. The Department seldom sees more than 5% non-compliance rate on a weekly basis.
2. Provide an evaluation of where the program needs improvement and explain any actions that will be taken to achieve objectives:
Increased coordination between Community Development and Planning and the Department of Public Works though this should improve with the start of monthly Public Works and Community Development and Planning meetings.

## **J. Minimum Control Measure 10: Public Education & Public Participation**

### **Objective**

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

### **General Discussion of SWMP Element**

Town of Arcadia Lakes, City of Forest Acres, and Richland County must implement a public education program to distribute educational materials or conduct equivalent outreach activities about the impacts of stormwater discharges on waterbodies and the steps that the public can take to reduce pollutants in stormwater runoff. The successful implementation of each component of the SWMP requires the education and input of all residents of Arcadia Lakes, Forest Acres, and the unincorporated areas of Richland County.

Richland County's Stormwater Division has a full-time outreach and public involvement coordinator. The County has a comprehensive public outreach plan.

*Identify and Analyze Pollutants of Concern* – Richland County has identified the pollutants of concern (POC) for the County's MS4 area. These include *E. coli*/Fecal Coliform, phosphorus/nutrients, and litter.

Richland County staff analyzed the POCs and narrowed down their sources to better target pollutant-focused programs. Richland County waterways have a great economic and recreational value that will encourage the public to be more involved in maintaining and improving the water quality. TMDL watersheds, impaired waterbodies, and input from the County's monitoring results were also considered.

*Program Highlights* – During the 2021-2022 permit year Richland County addressed POC-targeted outreach through workshops (in-person and virtual), events, newsletter publications, and media campaigns.

The annual "Blue Thumb Landscaper Conference" targets lawn maintenance professionals and landscape architects. Topics in the conference's sixth year included fungi and soil health; backyard snakes; mosquito, fly, and midge control; alternative lawn design, rain garden maintenance, planting for pollinators, scale insects, pesticide inspections and record-keeping; and weed control. Due to the COVID-19 pandemic, the conference was held virtually with 59 attendees. The "Blue Thumb Landscaper" program also hosted two rain barrel and compost bin sales during which citizens were able to purchase rain barrels and compost bins at a discounted price while learning about the importance of composting to reduce landfill waste, reducing use of fertilizers in gardens, and recycling roof runoff. These sales resulted in 138 rain barrels and 88 compost bins being distributed.

"Trash the Poop" is an ongoing program that works to encourage pet owners to pick up their pet waste and educate the public on how this affects water quality. This program includes sponsoring neighborhoods to receive free pet waste stations that the neighborhood can maintain, mass media

campaigns, and the distribution of leash bag holders. Every year Richland County partners with the City of Columbia and the Columbia Fireflies baseball team to host the Trash the Poop Dog Days of Summer at the Fireflies games, during which attendees bring their dogs to the games. During the 2021 season, and a portion of the 2022 season, Richland County staff gave out 260 leash bag holders and provided the materials to install two pet waste stations at Segra Park. Because of the partnership, Segra Park has seen a reduction in the amount of dog waste within the park during games. The Division also provided materials for three pet waste stations as a part of the neighborhood program.

The “Drains Aren’t Dumps” campaign communicates the message about how illicit discharges and illegal dumping affects water quality. While COVID-19 limited the amount of activity, community volunteers marked seven neighborhoods across Richland County. Another component of the Drains Aren’t Dumps campaign is the geocache series. Community members in Richland County (and beyond) used the Geocaching app to find caches that were located near storm drain inlets that were painted in 2019. Since the program began, 18 participants have found the caches and learned about illicit discharges in the process.

Richland County participated in a rain garden maintenance workshop in partnership with the Midlands Green Business group. The workshop covered rain garden installation as a stormwater best management practice, a cost-benefit analysis of rain garden installations, and proper rain garden maintenance.

In 2018, the Division’s Outreach Program Coordinator wrote a children’s activity book called “Tessa’s Tale” in which a rainbow trout’s habitat is impacted by land disturbance and pollutants entering a waterway. During the 2021-2022 permit year, an artist was hired to illustrate “Tessa’s Tale,” which will soon be distributed to the public.

*Digital Outreach* – During the 2020-2021 permit year, in-person events typically hosted by Richland County Stormwater Management Division could not be held due to COVID-19 and the division focused its efforts on mass media campaigns and digital outreach. Those tactics were so impactful (and COVID-19 was still affecting the community) that the Division continued using them for the 2021-2022 permit year. Three new educational videos covering detention ponds, stormwater management, and good housekeeping were created. Training videos on SWPPPs and spill control were also featured during department-wide meetings.

Through partnerships with Buonasera, Free Times, Natural Awakenings, and Richland County Public Information Office, Richland County covered illicit discharges, illegal dumping, litter prevention, proper yard debris disposal, pond maintenance, and pet waste disposal using billboards, OTT, targeted emails, newsletter articles, digital ads, and print ads. Digital outreach topics were developed based on the target POCs, upcoming events, and geographic areas in which impaired watersheds are located.

Forest Acres City Council has maintained funds in the 2021-2022 budget for a targeted recycling educational tool. Waste Wizard is an online tool that allows users to sign up for notices about recycling pickup and provide online interactive games to teach people about property recycling. Through an enhanced recycling program, the City feels more debris can be properly disposed of and less will find its way into the watershed.

### Assessment of Controls

In a typical year, education and public involvement efforts include surveys given at the end of workshops, verbal feedback at meetings and events, and written feedback submitted on Facebook pages. Because very few in-person events were held during the permit year, assessments were limited to the number of interactions through digital platforms. These assessments are useful for evaluating a single event or specific topic but may not show overall behavior change.

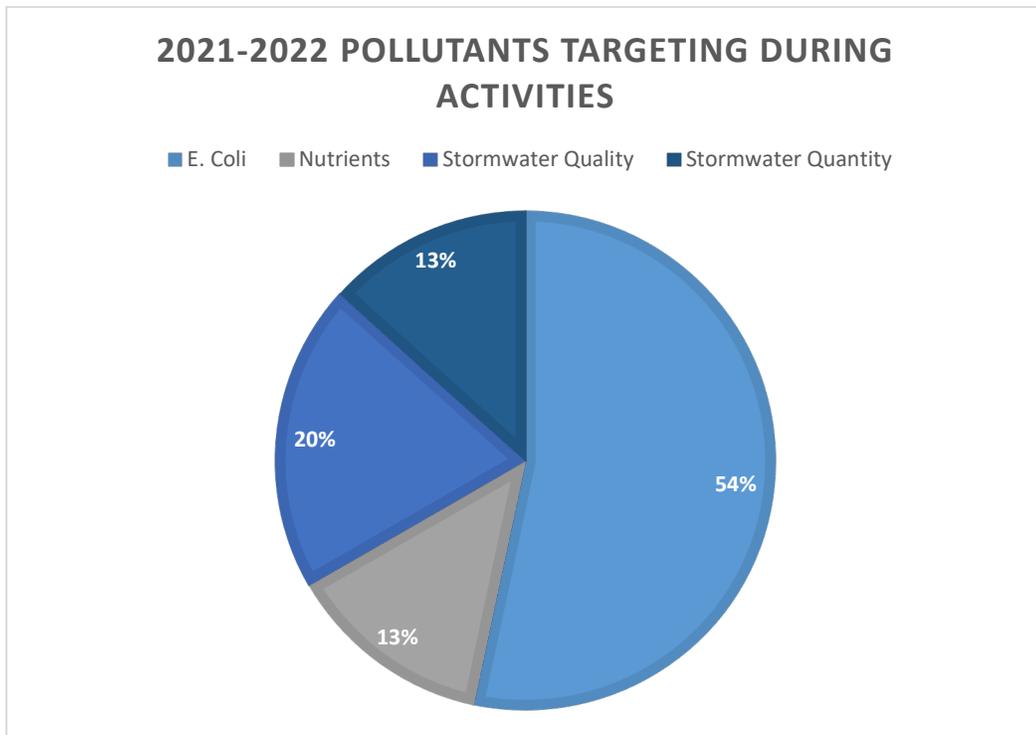


Fig. 1 Pollutants targeted during workshops, presentations, and trainings.

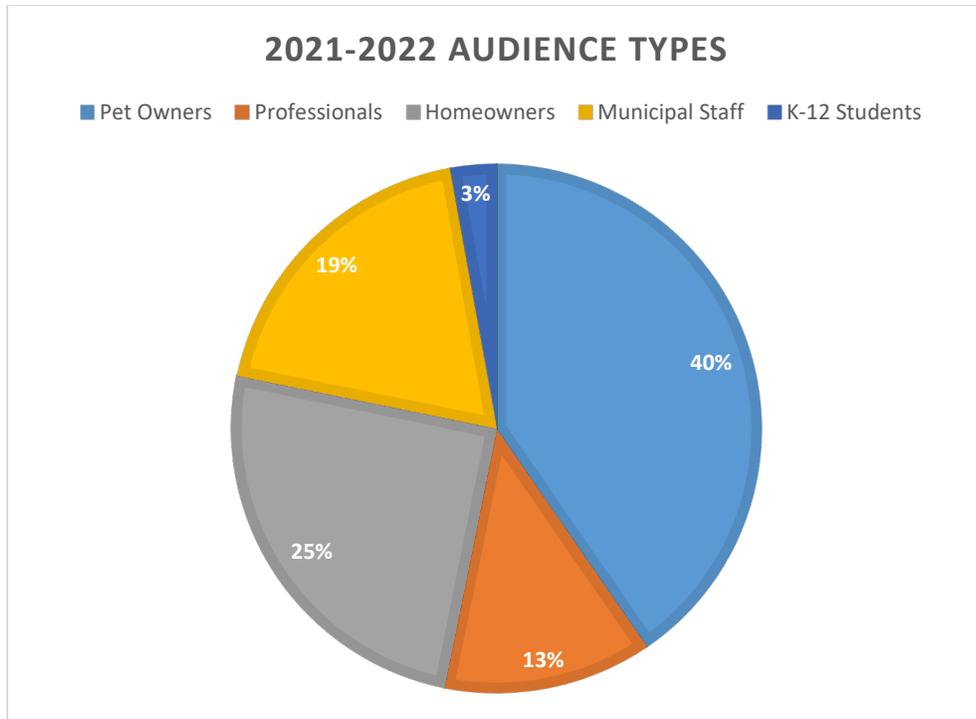


Fig. 2 Audience type reached through workshops, presentations, and trainings.

### Measurable Goal Summary

Number of people reached via internet resources	3,967,236
Number reached via publications, newsletters, and articles:	254,170
Number reached via presentations:	18
Number reached via workshops & trainings:	643
Number of workshops hosted by Richland County Stormwater Management	2
Number of trainings:	3
Number of training attendees:	Blue Thumb-59 SWPPP-40 Good Housekeeping-103

### Control Measure Evaluation

#### 1. Evaluate the success of this MCM. What are the program's strengths?

The County has a fully implemented Public Education and Public Participation Program. By changing the outreach platform and approach to a digital format, the County was still able to maintain the ability to execute most of the requirements outlined in the permit.

#### 2. Provide an evaluation of where the program needs improvement and explain any actions that will be taken to achieve objectives:

Not Applicable

## V. Monitoring Activities

### A. Objective

As directed in its MS4 permit, the County continues to implement appropriate monitoring activities directed at the improvement of water quality conveyed by its MS4. Overall objectives for monitoring are to 1) characterize the quality of stormwater conveyed through the County's MS4, 2) assess in-stream water quality conditions in impaired watersheds across the County, 3) assess and observe water quality conditions in TMDL watersheds as outlined in the County's TMDL monitoring plans, 4) observe the biotic health of sensitive waters found throughout the County and 5) decrease (ideally eliminate) pollutants entering stormwater runoff and discharging into waters of the State to the Maximum Extent Practicable. To meet objectives 1 through 4, the County continues to implement the monitoring activities described in its MS4 NPDES Monitoring Plan (Appendix K) and summarized in this section. To meet objective 5, the County continues to implement its dry weather-screening program, described in Section IV.G of this report.

### B. General Discussion of SWMP Element

As directed in its MS4 permit, Richland County developed and continues to implement a monitoring program consisting of three (3) main elements: An Impaired Waters Monitoring Program, a TMDL monitoring program, and a Sensitive Waters Monitoring Program. The activities conducted under these three programs are outlined in the County's Monitoring Plan (Appendix K). These monitoring activities aid the County in understanding the impact of its MS4 on receiving waterbodies and in tracking water quality in its receiving streams. As part of its Monitoring Plan, the County collects ambient samples, wet weather samples, macroinvertebrate samples, and conducts continuous monitoring of dissolved oxygen, as appropriate.

### C. Ambient Water Quality Monitoring Program

Richland County has developed and implemented a water quality-monitoring plan designed to meet requirements contained in the County's permit, while also informing the County on water quality conditions in waterways that receive discharge from the County's MS4.

The County's monitoring plan includes three major components:

- 1. TMDL Monitoring:** The County's TMDL monitoring relies upon wet weather sampling at selected outfall locations.
- 2. Impaired Waters Monitoring:** The County's impaired waters monitoring program primarily involves the collection of in-stream water quality samples to characterize conditions in impaired waterbodies. This information is supplemented with macroinvertebrate sample collection, sediment sampling, and periodic deployments of continuous dissolved oxygen (DO) sensors where appropriate, based upon the pollutant of concern.
- 3. Sensitive Waters Monitoring:** This program includes the collection of macroinvertebrate samples in order to characterize overall stream health of sensitive waterbodies at locations in the County's MS4 area.

The County reviews and reports on data collected under its monitoring program in several ways. Under each of its TMDL Implementation Plans, the County reviews data collected in the corresponding TMDL watershed and includes results from that analysis as part of each TMDL Implementation Plan. All updated TMDL Implementation Plans are located in Appendix M. In addition to these reporting procedures, the County has initiated quarterly sampling reports to provide a more immediate overview of sample results as the implementation of its monitoring program continues. Appendix D includes all the quarterly reports from the 2021-2022 reporting period. Each report includes a brief description of the County’s sampling program, an overview of the specific quarterly sampling activities, and highlights notable results. Lab results for the macroinvertebrate samples (2021-2022) and sediment samples are included within the quarterly reports in Appendix D.

A summary of the TMDL, impaired, and sensitive waters sampling locations and samples collected in the 2021-2022 reporting year can be found in Tables 1 through 3 below.

<b>Table 1. TMDL Implementation Monitoring Stations Sampled in 2021-2022 Reporting Year</b>		
<b>Station Name</b>	<b>Abbreviated Station Name</b>	<b>Number of Samples Collected</b>
<b>100 Huckleberry Court</b>	HLS-TMDL-1	4
<b>Business Park Boulevard</b>	CRN-TMDL-2	4
<b>6616 Dare Circle</b>	GIL-TMDL-3	4
<b>Hampton Trace</b>	GIL-TMDL-4	4
<b>Peake Road</b>	BER-TMDL-5	4
<b>Pine Grove Road</b>	HRS-TMDL-6	4
<b>Northpoint Boulevard</b>	CRN-TMDL-7	4
<b>Old Still Road</b>	JAK-TMDL-8	4
<b>Williamsburg Drive</b>	BRD-TMDL-10	4
<b>Jayne Lane</b>	BRD-TMDL-11	4
<b>Upland Trail Road</b>	KLY-TMDL-13	4

**Table 2. Impaired Watershed Monitoring Stations Sampled in 2021-2022 Reporting Year**

<b>Station Name</b>	<b>Abbreviated Station Name</b>	<b>Number of Samples Collected</b>
Clarkson Rd at Cedar Creek	CDR-IMP-1/2	4
South Cedar Creek Rd at Unnamed Tributary	CDR-IMP-3	4
Bluff Rd at Toms Creek	TOM-IMP-4	4
Clement Rd at Smith Branch	BRD-IMP-5	4
Fairfield Rd at Crane Creek	CRN-IMP-6	4
Unnamed Tributary (to Smith Branch) at Bethune Court	SMI-IMP-7	4
Monticello Rd at Crane Creek	CRN-IMP-8	4
Muddy Ford Rd at Wateree Creek	WTR-IMP-9	4
Leesburg Rd at Mill Creek	MIL-IMP-10	4
Zeigler Rd at Toms Creek	TOM-IMP-11	4
Pineview Rd at Reeder Point Branch	RDR-IMP-12	4
Old Garners Ferry Rd at Mill Creek	CGR-IMP-13	4
Blackberry Rd at Toms Creek	TOM-IMP-14	4
Legrand Rd at Little Jackson Creek	LWK-IMP-15	4
Percival Rd at Colonels Creek	CLN-IMP-16	4
Senate St at Congaree River	CGR-IMP-17	3
Sandfield Rd at Twenty-five Mile Creek	TFM-IMP-18	4
Cedar Creek Rd at Cedar Creek	BCD-IMP-19	4
Piney Woods Rd at Stoops Creek	SLD-IMP-20	4
Forest Drive at Gills Creek	GIL-IMP-21	2

**Table 3. Sensitive Waters Monitoring Stations Sampled in 2021-2022 Reporting Year**

<b>Station Name</b>	<b>Abbreviated Station Name</b>	<b>Number of Samples Collected</b>
Old Bluff Road at Cedar Creek	CDR-SEN-1	1
Blackberry Road at Toms Creek	TOM-SEN-2	1

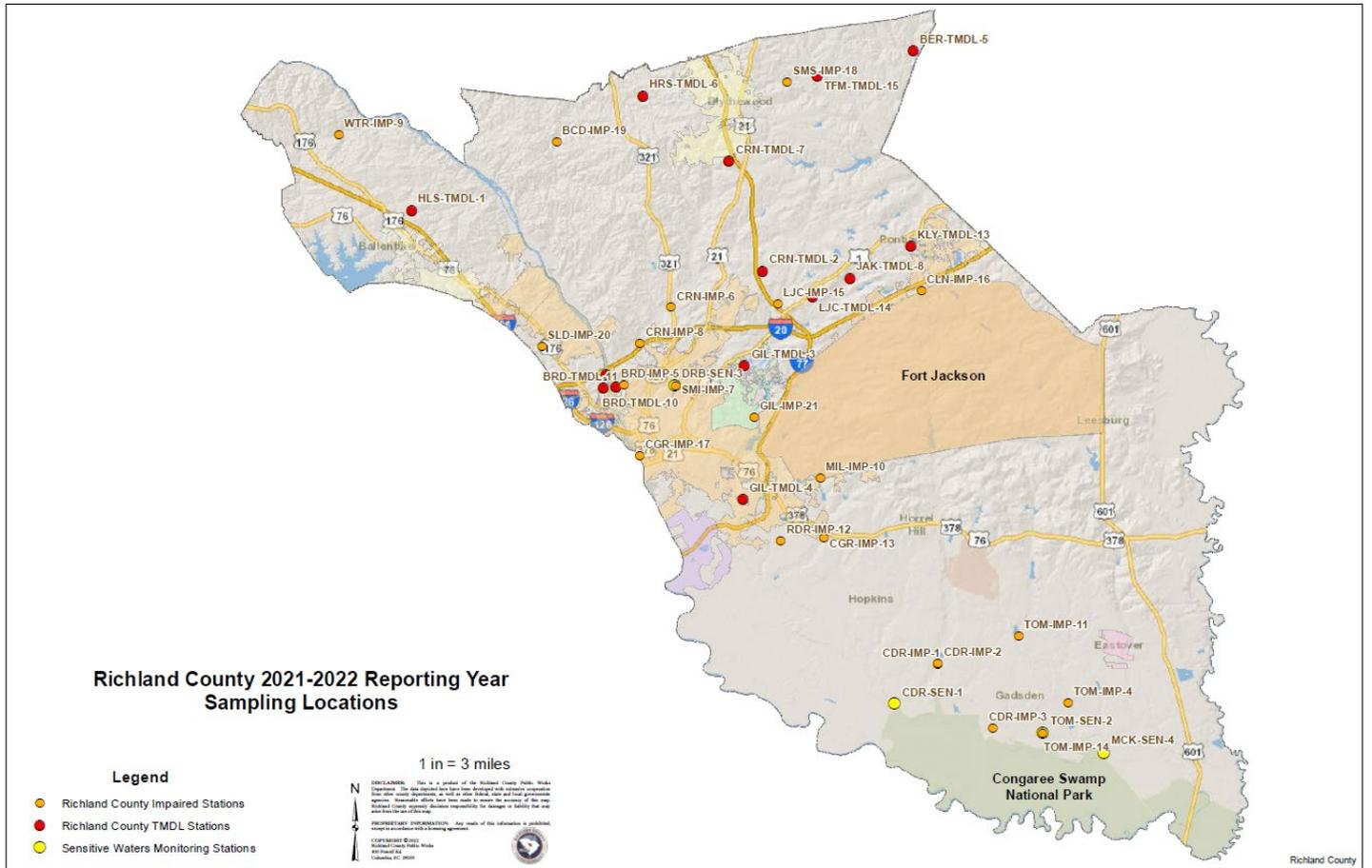


Figure 3. Sampling Locations for the 2021-2022 Reporting Year

## VI. Fiscal Analysis

**1. What is the source of funds proposed to meet the necessary expenditures?**

Ad valorem tax assessment.

**2. What are the legal restrictions on the use of the funds?**

The funds are subject to millage cap legislation.

3. Use the table below to summarize the fiscal analysis for the program implementation both for the past calendar year as well as the next.

<b>Fiscal Year</b>	<b>Stormwater Budget</b>	<b>Source of Funding</b>
FY 16/17	\$5,289,806	Ad valorem tax assessment
FY 17/18	\$3,861,269	Ad valorem tax assessment
FY 18/19	\$4,053,471	Ad valorem tax assessment
FY 19/20	\$3,482,654	Ad valorem tax assessment
FY 20/21	\$3,083,362	Ad valorem tax assessment
FY 21/22	\$3,570,448	Ad valorem tax assessment

## **VII. Summary of SWMP and Monitoring Modifications**

The Richland County SWMP includes actions that when implemented will aid in the reduction of pollutants discharged from Richland County's MS4 to the Maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate requirements of the Clean Water Act. The contents of the SWMP will change due to the iterative process of implementing the stormwater program. The SWMP will be revisited on an annual basis to reflect accomplishments, potential revisions to program components, and additions of other activities or expanded efforts.

The SWMP is organized into the following sections: Introduction, Stormwater Management Plan, SWMP Requirements, Monitoring and Fiscal Analyses. A copy of the SWMP is included in the Appendix L.

## VIII. Water Quality Based Effluent Limitations (WQBEL)

Richland County has established and is implementing a water quality-monitoring plan designed to meet WQBEL requirements contained in the County's municipal separate storm sewer system (MS4) National Pollutant Discharge Elimination System (NPDES) permit, while also informing the County on water quality conditions in waterways that receive discharge from the County's MS4. During the 2021-2022 reporting period, Richland County went above and beyond to overcome challenges associated with maintaining a robust monitoring program.

To better understand and interpret the sampled metals data required by the permit the County began collecting hardness samples at the TMDL monitoring sites in 2020 Q3. This data is used by the County to calculate sample specific chronic criteria for metals using the equations provided by SCDHEC in Regulation 61-68: Water Classifications and Standards. A conversion calculation is used to estimate the dissolved metal concentration of the sample given the sampled total concentration and hardness. A partitioning coefficient is also calculated using the sampled TSS. Together these factors were used to calculate a total recoverable adjusted CCC (Criterion Chronic Concentration). The County has expanded this to include all new stations in 2021-2022 that incorporate metals, including impaired sites.

A new station, GIL-IMP-21, was established at Forest Drive at Gill's Creek to monitor for the lead impairment at SCDHEC station C-017 listed on the most recent 303(d) list. The station location was selected because it captures approximately 48 sq mi of the 66.4 sq mi watershed draining to C-017, which represents the vast majority of the County's contribution to the downstream station. The portion of the watershed downstream of the selected location is comprised almost entirely of drainage from the City of Columbia's jurisdiction. The County proactively began sampling for baseline parameters in 2022 Q1; two quarters prior to the monitoring start date of 2022 Q3 listed in the latest version of the Richland County MS4 NPDES Monitoring Plan (rev. Oct 2021). Lead and hardness will be included in samples collected at this station by the 2022 Q3 sampling event.

The new EXO sonde stationed at SCDHEC station B-316 along Crane Creek was repeatedly becoming buried by sediment during large storm events. Sediment buildup has a potential to damage sonde probes and can prevent the sonde from collecting data. The County decided to proactively relocate the sonde to an upstream location where Monticello Rd crosses Crane Creek, at the existing CRN-IMP-8 sampling location. This location provides more consistent water depths and flows conducive to protecting the sonde from sedimentation. The sonde was first deployed at this new location on June 8, 2022. This allows the continued collection of high-quality data, which provides valuable information on the patterns governing water quality conditions in Crane Creek.

The County has made a continued effort this reporting period to further investigate abnormal sample results. During the 2022 Q2 sampling event, County staff noted abnormally dark and turbid water with a blackish-brown color at GIL-TMDL-3. This abnormal event led to several elevated parameters at this station, including *E. coli*. Although County staff were unable to definitively locate a source, they collected two additional *E. coli* samples on June 8, 2022 and June 28, 2022, and found that the conditions were below the SCDHEC standard of 349 MPN/100 mL. This extra effort provided evidence that the conditions during the initial sampling were likely a one-time event and not a recurring problem.

## **IX. Appendices**

Appendix A: Draft Third Cycle Permit Parts III, IV, and V

Appendix B: NPDES MS4 Permit No. SC400001 Modification Requests

Appendix C: Employee Training Sign-in Sheets

Appendix D: Water Quality Monitoring Quarterly Reports

Appendix E: Outfall and CIP Map

Appendix F: MS4 Illicit Discharges, SSOs, Inspections, and Investigations

Appendix G: List of Industrial Sites

Appendix H: Location of Stormwater Structural Controls

Appendix I: Gills Creek Watershed Annual Report

Appendix J: Education and Outreach Program Plan

Appendix K: MS4 NPDES Monitoring Plan

Appendix L: Stormwater Management Plan

Appendix M: TMDL Implementation Plans

\*Appendix C through Appendix M are included in digital format on attached CD.

## **Appendix A: Draft Third Cycle Permit Parts III, IV and V**

### **Part III. Water Quality Based Effluent Limitations**

#### **A. WOBEL**

There are no numeric effluent limitations at the time of permit issuance. Should the need arise for an effluent limitation, a permit modification may be necessary, and the permit can be reopened according to Part VIII. The permit modification should reflect the terms of compliance with the effluent limitation(s) imposed. Effluent limitations, when determined by the Department to be necessary, will be imposed by modification of this permit in accordance with SC Regulation 61-9.

### **Part IV. Monitoring Requirements**

#### **A. Monitoring Requirements**

**Monitoring Strategy** - In order to assess and address the impact of MS4 discharges on surface water quality the Permittee shall develop a monitoring strategy to determine the most efficient monitoring locations for collecting data useful to both the Permittee and SCDHEC. The strategy should consider all watersheds within the MS4 with an emphasis on currently impaired or TMDL watersheds and watersheds that contain a large portion of Permittee owned stormwater infrastructure. The strategy should utilize available data to assess the potential for and impact of pollutants, including but not limited to the following factors:

- SCDHEC TMDL, impaired, and sensitive watersheds and monitoring locations
- Risk and consequences to water quality and quantity such as:
  - o SSOs, EPA sites of interest, sewer lines, highly developed areas, potable water source intakes, recreation areas, and flood prone areas
- Trends from historical monitoring data
- MS4 area and existing infrastructure
- Other monitoring efforts (Adjacent MS4, USGS, volunteer)

**Monitoring Plan** - Upon completion, the strategy should be used to develop a monitoring plan that includes a schedule for implementing and tracking the progress of monitoring activities and BMPs. The monitoring plan update should be treated as an iterative process and should be reevaluated based on collected monitoring data. The monitoring plan should be updated as necessary, with the most up to date plan submitted annually with the Annual Report.

#### **B. TMDL**

**Existing TMDL** - There are existing TMDLs applicable to Permittees as of the effective date of this permit. If a TMDL is approved for any waterbody into which the MS4 discharges, the Permittee is to review the TMDL to determine whether the TMDL includes a Wasteload Allocation (WLA) applicable to the Permittee. If there are WLA applicable to the permittee, the Permittee is required to implement the TMDL within a timeframe consistent with the TMDL and with applicable parts of this permit.

**Newly Established TMDL** - Once a TMDL has been established, or approved, for any watershed into which the MS4 discharges, any limitations, conditions and requirements contained in the TMDL applicable to the discharges authorized herein, including monitoring frequency and reporting required becomes part of this permit. Applicable limitations, conditions and requirements contained in the TMDL are those limitations, conditions and requirements set forth in the TMDL implementation plan and attributed to discharges from the MS4.

Should an applicable TMDL, approved for a water body located within the permit area, be either more rigorous, or more stringent than the conditions of this permit, the affected Permittee(s) shall be responsible for implementation of the TMDL as prescribed. Implementation of the TMDL shall consist of incorporating into the SWMP, to the maximum extent practicable (MEP), the necessary measures to reach the goal of the TMDL and a schedule to accomplish the measures, with the schedule becoming a part of the permit requirements.

**TMDL Implementation Plan** - The Permittee will develop and submit to SCDHEC a TMDL Implementation Plan after development of any TMDL applicable to the Permittee. The TMDL Implementation Plan will contain details including, but not limited to the frequency of monitoring, the monitoring approach, and monitoring locations. The Permittee may develop one overall TMDL Implementation Plan to outline the proposed assessment approach for all applicable TMDL due to the number of currently effective TMDL. The Permittee may use innovative technological approaches to assess potential sources of the POC in the TMDL watersheds. If the source identification yields a pollutant source within the Permittee's control, the Permittee will subsequently implement BMP to address the contribution of the POC to protect water quality. For all other identified sources of the POC, the Permittee will notify the appropriate party to mitigate or remove the pollutant source. Monitoring associated with Part IV of this permit may be used in conjunction with data collected in the TMDL Implementation Plans to address the POC. Where a TMDL Wasteload Allocation (WLA) is assigned to point sources, Permittee shall review its SWMP requirements for the control of stormwater discharges to WQMS identified in the TMDL. For MS4 discharges of the pollutant(s) of concern to TMDL waters, Permittee shall identify discharges located in the TMDL watershed draining to the impaired WQMS. The SWMP shall include a TMDL Implementation Plan for each effective, or approved TMDL.

1. The TMDL Implementation Plan shall be developed within 12 months of the effective date of this permit for existing TMDL and within 12 months from the EPA approval or establishment date for new TMDL.
2. The Permittee may utilize existing monitoring data or initiate additional monitoring, as deemed necessary by the Permittee.
3. Data must be assessed to guide the Permittee to the implementation of BMP to address the WLA.
4. The TMDL Implementation Plan must identify BMP and schedule of implementation of BMP to achieve progress towards addressing the TMDL WLA, as long as the intended uses are not supported. The TMDL Implementation Plan shall be updated to include this information within 48 months for existing TMDL and within 48 months from the EPA approval or establishment date for new TMDL. It is expected that implementation of BMP will begin during the current permit term and continue through the next permit.

### **C. Impaired Water Quality Monitoring Stations (WQMS)**

The SWMP will address discharges to water bodies listed as impaired on the most current 303(d).

1. *For each impaired WQMS*, the Permittee should determine from its IDDE and Water Quality monitoring program whether discharges from the MS4 contribute the pollutant of concern to waterbodies with impaired WQMS listed in the most current 303(d) list. This determination shall be included in the *first ANNUAL REPORT* and updated in the ANNUAL REPORT following issuance of a new 303(d) list. All POC contributing to the impairments listed must be effectively addressed.
2. The **SWMP Requirements** must be updated as appropriate to address the discharge of the POC present in MS4 stormwater discharges that contribute, to impaired waterbodies, to the MEP, in the *second ANNUAL REPORT*.

## **Part V. Sampling Collection and Analytical Requirements**

Sample collection frequency and parameters analyzed will be outlined in the County's monitoring plan. At a minimum the following General Monitoring Requirements outlined in Part V.A below will be followed.

### **A. General Monitoring Requirements.**

1. Each year the sampling program shall be described by the submitted date, conducted after the approval and the results included in the ANNUAL REPORT by the reported date. For the purposes of this permit, the location of each monitoring station shall be inventoried and identified on a map and in a database, included in the SWMP, and the ANNUAL REPORTS and the method used in identifying them in each subsequent year. In addition, the ANNUAL REPORT will include all measured analytical data if requested.

The methods, parameters, and field techniques shall be in accordance with SC Regulation 61-9.122.26(d)(1)(iv)(D). Records of all analytical results shall be maintained in accordance with Part VII.R. of this permit.

2. The Department may allow or establish appropriate site specific sampling procedures or requirements, including sampling locations, the season in which the sampling takes place, the minimum duration between the previous measurable storm event and the storm event sampled, the minimum or maximum level of precipitation required for an appropriate storm event, the form of precipitation sampled (snow melt or rain fall), protocols for collecting samples under 40 CFR Part 136, that quantitative data shall be provided for additional parameters, and additional time for submitting data on a case-by-case basis.
3. The monitoring and sampling locations shall be selected such that the permittee can use the information collected in a useful manner to evaluate any trends in the reduction of pollutants loads discharged to waters of South Carolina during the term of the permit. The pollutant loading trends will be used to evaluate the effectiveness of the Permittee's SWMP to reduce the discharge of pollutants to the MEP and to not cause nor contribute to violations of Water Quality Standards.
4. When the permittee is unable to collect samples due to adverse climatic conditions, the permittee must submit in lieu of sampling data, a description of why samples could not be collected, including available documentation of the event. Adverse climatic conditions which may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, etc.).

## Appendix B: NPDES MS4 Permit No. SC400001 Modification Requests

The National Pollutant Discharge Elimination System Permit (NPDES) Stormwater Permit No. SCS400001 issued to Richland County and effective on July 01, 2016 contains several conflicting deadlines, ambiguous/absolute language, and conflicting/unrealistic requirements that make permit compliance impractical. A number of these items were presented to the South Carolina Department of Health and Environmental Control (SCDHEC) during the permit drafting and negotiation period. These issues were also presented to SCDHEC during the public comment period and again during an in-person meeting between SCDHEC and Richland County staff on October 4, 2016.

Some of the permit requirements are relatively minor and may be clarified through simple revisions to current permit language, while other issues are more significant and threaten the County's ability to remain permit compliant. For these issues, it may be more prudent to completely revise specific sections of the permit.

At the request of SCDHEC, the County sent a table containing the critical issues that if not addressed would put the County in a position where it would be impossible to meet some requirements in the permit. A response from SCDHEC was received by the County on December 16, 2016 to address these critical issues. After a thorough review of the SCDHEC responses, the summary table below shows the status of the clarifications found in the SCDHEC response. For a more detailed explanation of the response status, see the tables on the following pages.

<b>Critical Issues</b> <b>(Red Comments)</b>			
Compliance Issue	<b>SCDHEC Response Status</b>		Compliance Issue
	Did SCDHEC sufficiently address the County concerns?	Absolute Language	
Part II.B.2.c.iii.(pg.8)	<b>No</b>	Part II.B.2.d.ii.(pg.9)	<b>Yes</b>
Part II.B.2.k.v.(pg.15)	<b>Partially Addressed</b>	Part II.B.3.b.ii.(pg.16)	<b>No</b>
Part II.B.3.(pg.15)	<b>No</b>	Part II.B.7.c.iii.(e)(pg.25)	<b>Yes</b>
Part II.B.8.c.(pg.30)	<b>Partially Addressed</b>	Part II.B.7.g.iv.(pg.27)	<b>Partially Addressed</b>
Part III.A.2.a.iv.(pg.49)	<b>No</b>	Part II.B.9.c.v.(d)(pg.36)	<b>Partially Addressed</b>
Part III.A.2.a.vi.(pg.49)	<b>No</b>	Part III.A.2.a.i.(pg.48)	<b>No</b>
Part III.A.2.b.i.(pg.50)	<b>No</b>	Part III.A.2.a.iii.(a)(pg.48)	<b>No</b>
Part III.A.2.b.ii.(pg.50)	<b>No</b>	Part III.A.2.b.vii.(pg.51)*	<b>No</b>
Part III.A.2.b.vi.(pg.51)	<b>No</b>		
Part IV.C.(pg.61)	<b>No</b>		

\*2 instances in the same section of permit

During the October 4, 2016 meeting, County staff presented all critical, major and minor issues that were identified within the permit. It was agreed at that time that SCDHEC would only address the critical issues, since addressing the major and minor issues would have required the reopening of the permit. The County requests that SCDHEC address the issues in the following table while developing the new third cycle permit. All critical, major, and minor issues listed in the tables have a corresponding permit reference where the complete permit language can be found and reviewed in context with the entirety of the related sections of the permit. Highlights within the permit are color coded to correspond to the types of issue (**Critical Issue**, **Major Issue**, **Minor Issue**), and in

## Appendix B: NPDES MS4 Permit No. SC400001 Modification Requests

most cases are accompanied by a comment box that explains the issue in more detail. The County is acceptable to a meeting during the permit negotiation process to discuss any of the issues outlined in this document so that a resolution can be reached between both parties.

Major Issues (Orange Comments)				Minor Issues (Yellow Comments)		
Compliance Issue	RC	Scheduling Conflict	RC	Clarification Needed	RC	Permit Reference
Part II.B.2.a.(pg.7)	10	Part II.B.2.k.(pg.14)		Part II.B.1.d.vii.(pg.7)	7	Part II.A.1.(pg.3)
Part II.B.2.c.v.(pg.9)	17, 18	Part II.B.5.a.ii.(a)(pg.18)		Part II.B.2.(pg.7)	8, 9	Part II.B.1.c.(pg.5)
Part II.B.2.d.(pg.9)	19, 20	Part II.B.5.a.iii.(pg.19)	50	Part II.B.2.b.(pg.8)	11	Part V.A.1.3.a.iv.(f)(p.68)
Part II.B.2.d.i.(pg.9)	21	Part II.B.7.c.(pg.23)	58	Part II.B.2.c.(pg.8)	12, 13	Part VI.A.1.a.(pg.70)
Part II.B.2.j.i.(pg.13)*		Part II.B.7.c.iii.(pg.24)		Part II.B.2.d.iii.(pg.9)		
Part II.B.3.b.vi.(pg.16)	49	Part II.B.7.c.iii.(f)(pg.25)		Part II.B.2.d.iv.(pg.9)	24	
Part II.B.5.a.iii.(a).(pg.19)	50	Part II.I Table II.I.4(pg.47)		Part II.B.2.g.(pg.10)		
Part II.B.7.g.vi.(a)-(c)(pg.27)	63	Part VI.A.1.a.(pg.70)		Part II.B.2.h.(pg.10)	34	
Part II.B.8.a.(pg.29)		Part VI.C.1.(pg.74)		Part II.B.3.a.(pg.15)		
Part II.B.10.c.Table(pg.41)		Appendix F		Part II.B.3.b.iv.(pg.16)	48	
Part III.A.2.a.iii.(c)(pg.48)	88			Part II.B.5.b.i.(pg.20)		
Part III.A.2.a.v.(pg.49)				Part II.B.5.b.ii.(pg.20)		
Part III.A.2.b.(pg.50)	96, 97			Part II.B.6.b.v.(pg.21)	55, 56	
Part III.A.4.a.v.(pg.53)				Part II.B.7.c.iii.(d)(pg.25)		
				Part II.B.7.h.(pg.28)	*64*	
				Part II.B.10.a.vii.(pg.40)		
				Part III.A.4.c.(pg.54)		

After the October 4, 2016 meeting the following critical issues that were identified in the current permit were submitted to SCDHEC for a response. This submittal included a proposed clarification section (See COUNTY REQUEST headings) to properly address these concerns. SCDHEC sent a response to the County on December 17, 2016, which can be seen in the table below under the SCDHEC RESPONSE headings. The County is now submitting a counter response (See COUNTY COUNTER RESPONSE headings) which are shown within the blue highlights in the tables below.

No.	Critical Compliance Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
1.	Part II.B.2.c.iii.(pg.8)	These may include practices such as infiltration, evapotranspiration, rain harvesting and storm water reuse and recharge that demonstrate the runoff reduction and pollution removal necessary to maintain pre-development levels to the MEP and to protect water quality.	This permit does not have the authority to require runoff reduction.	<p><b>COUNTY REQUEST (10/4/2016):</b> Runoff reduction is one of a variety of methods for reducing pollutant loadings. This section does not require use of runoff reduction, but rather allows for runoff reduction methods to be used when appropriate.</p> <p><b>SCDHEC RESPONSE (12/17/2016):</b> Methods used to support establishment of the New Development and Redevelopment Standards part of the Area of New Development and Redevelopment element of the permit must be defensible and be consistent with the MEP standard, be protective of water quality and be satisfactory to the appropriate water quality requirements of the CWA.</p> <p><b>COUNTY COUNTER RESPONSE (1/1/2021):</b>                      The SCDHEC response does not sufficiently address the issue of runoff reduction having to be demonstrated. Runoff reduction is one of a variety of methods for reducing pollutant loadings. This section should not require the use of runoff reduction, but rather allow for runoff reduction methods to be used when appropriate. The County should have the ability to decide which method is most appropriate.</p>
	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	<p>New development or redevelopment standards to be used can be either one, combination, or equivalent combination of design strategies, control measures, practices or provisions. These may include practices such as infiltration, evapotranspiration, rain harvesting and stormwater reuse and recharge that demonstrate the runoff reduction and pollution removal necessary to maintain pre- development levels to the MEP and to protect water quality. The first inch of runoff must be managed</p> <p>Richland County, Town of Arcadia Lakes, City of Forest Acres and potential future permittees must establish, implement and enforce a requirement that owners or operators of new development and redeveloped sites discharging to the MS4, which disturb greater than or equal to one acre (including projects that disturb less than one acre that are part of a LCP), design, install, implement, and maintain stormwater control measures that approximate pre-development conditions to the MEP and protect water quality by the second ANNUAL REPORT.</p>		

## Appendix B: NPDES MS4 Permit No. SC40001 Modification Requests

	<p>New Development Standards to be used can be either one, combination, or equivalent combination of design strategies, control measures, practices or provisions such as infiltration, evapotranspiration, rain harvesting, and stormwater reuse and recharge that demonstrate the runoff reduction and pollutant removal necessary to maintain pre-development conditions to the MEP and to protect water quality. The first inch of runoff must be addressed. Appendix A contains examples of specific standards that could be adopted. Permittees must describe the site design strategies, control measures and other practices deemed necessary by the MS4 to maintain, or in the case of redevelopment improve, pre-development hydrology in order to meet these requirements.</p> <p>Incentives for Redeveloped Sites. - When considered at the watershed scale, certain types of developed sites can either reduce existing impervious surfaces, or at least create less 'accessory' impervious surfaces. MS4 may develop a program to allow adjustments to the performance standard for new development or redevelopment sites that qualify.</p> <p>For areas of new development, there shall be no increase in the discharge of pollutants with respect to pre-development levels to the "effective prohibition" and "MEP" standards from Section 402(p)(3)(B) of the Clean Water Act;</p> <ul style="list-style-type: none"> <li>i. Impervious surfaces shall be minimized;</li> <li>ii. BMP with the best pollutant removal performance shall be selected for post construction storm water management;</li> <li>iii. Forested stream buffers and wetlands shall be protected; and,</li> <li>iv. Drainage "hot spots" shall be effectively addressed.</li> </ul> <p>For areas of significant redevelopment, incentives for water quality improvements shall be developed prior to the SECOND ANNUAL REPORT and provided to the MEP when upgrading components of the MS4 or, when replacing deteriorating components of the MS4, to meet appropriate water quality criteria;</p> <ul style="list-style-type: none"> <li>i. Forested riparian buffers will be restored;</li> <li>ii. Controls including, but not limited to, BMP, control techniques, and system, design and engineering methods are required to reduce the discharge of pollutants to the MEP as deemed appropriate for the control of such pollutants; and,</li> <li>iii. Implementation of redevelopment water quality requirements, including incentives to encourage re-development to the MEP</li> </ul> <p>Evaluate and modify, as necessary, the post-construction element. Individual BMP, measurable goals, and responsible persons for the program must be described. This narrative must be included in the SWMP, and in the ANNUAL REPORT. It must include the following information, at a minimum:</p> <ul style="list-style-type: none"> <li>(a) Description of the existing program to address stormwater runoff from new development and redevelopment projects, including any specific priority areas for this program, and modifications completed during the reporting period</li> <li>(c) List of non-structural BMP in the program, including, as appropriate:</li> </ul> <p>Policies and ordinances that provide requirements and standards to direct growth to identified areas, protect sensitive areas such as wetlands and riparian areas, maintain and/or increase open space, provide buffers along sensitive water bodies, minimize impervious surfaces, and minimize disturbance of soils and vegetation.</p> <p>Policies or ordinances and incentives that encourage infill development in higher density urban areas, and areas with existing storm sewer infrastructure;</p> <p>Education programs for developers and the public about project designs that minimize water quality impacts; and Measures such as: minimization of the percentage of impervious area after development, use of measures to minimize directly connected impervious areas, and source control measures often thought as good housekeeping, preventive maintenance and spill prevention.</p> <p>Methods used to support establishment of the New Development and Redevelopment Standards part of the Area of New Development and Redevelopment element of the permit must be defensible and be consistent with the MEP standard, be protective of water quality and be satisfactory to the appropriate water quality requirements of the CWA.</p>
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## Appendix B: NPDES MS4 Permit No. SC400001 Modification Requests

No.	Critical Compliance Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
2.	Part II.B.2.k.v.(pg.15)	MS4 and commercially owned, operated or maintained structural controls, storm water collection system and post-construction BMP shall be inspected and maintained, if necessary, yearly. The remaining structural controls, storm water collection system and post-construction BMP shall be inspected and maintained, if necessary, on a 25% /year basis.	<p>This section requires the inspection and maintenance of commercially owned BMPs annually. This could be interpreted that the County must provide maintenance rather than require maintenance by the owner. This places an unusual burden on the MS4.</p> <p>Further, there is a scheduling conflict with annually and 25% per year. Richland County should set the inspection schedule in the SWMP in accordance with the IDDE requirements and their knowledge of critical points within the system.</p>	<p><b>COUNTY REQUEST (12/10/2016):</b> This section requires that County owned structural controls should be maintained as necessary and inspected a minimum of 25%/year. The County should require that commercially owned, operated, or maintained storm water controls and BMPs be inspected yearly at a minimum and maintained as necessary.</p> <p><b>SCDHEC RESPONSE (12/17/2016):</b> It is expected that MS4 and commercially owned, operated or maintained structural controls, storm water collection system and post-construction BMP shall be inspected and maintained, if necessary, yearly. The remaining structural controls, storm water collection system and post-construction BMP shall be inspected and maintained, if necessary, on a 25% / year basis. Detailed inspection reports with extensive explanation of results and correction actions taken must be part of the MS4 inventory of Structural Controls and Storm Water Collection System and of Post-Construction BMP in areas where new development and redevelopment has taken place. Whether permittees conduct the inspection and maintenance (or require commercially owned facilities to perform it by themselves), or if the permittees themselves contract the inspection and maintenance shall be stated in the written SOP. Documentation and reporting of Inspection and maintenance of Post Construction BMP are expected in the quantity and, frequency required by the permit.</p> <p><b>COUNTY COUNTER RESPONSE (1/1/2021):</b> SCDHEC clarifies that the County may require owners to inspect, but the response does not address the scheduling conflict or what is meant by "remaining structural controls". If SCDHEC does not clarify what constitutes "remaining structural controls", then Richland County will define what those structures are in the updated SWMP that corresponds with the third cycle permit.</p>
	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	<p>"Storm water point source" means a conveyance or system of conveyances (including but not limited to pipes, conduits, ditches and channels) primarily used for collecting and conveying storm water runoff and that is located in an urbanized area as designated by the Bureau of the Census; discharges from lands of facilities used for industrial or commercial activities.</p> <p>Permittees are expected to have a Written Standard Operating Procedures (SOP). The Structural Controls and Storm Water Collection System Operation and the Areas of New Development and Redevelopment elements of the SWMP must be effectively addressed in accordance to a written SOP no later than 18 months from the effective date of the permit. Among other components expected to be clearly specified in the SOP by the first ANNUAL REPORT, there are agreements where maintenance responsibilities are in place.</p> <p>It is expected that MS4 and commercially owned, operated or maintained structural controls, storm water collection system and post-construction BMP shall be inspected and maintained, if necessary, yearly. The remaining structural controls, storm water collection system and post-construction BMP shall be inspected and maintained, if necessary, on a 25% / year basis.</p> <p>Detailed inspection reports with extensive explanation of results and correction actions taken must be part of the MS4 inventory of Structural Controls and Storm Water Collection System and of Post-Construction BMP in areas where new development and redevelopment has taken place.</p> <p>Whether permittees conduct the inspection and maintenance (or require commercially owned facilities to perform it by themselves), or if the permittees themselves contract the inspection and maintenance shall be stated in the written SOP. Documentation and reporting of Inspection and</p>		

## Appendix B: NPDES MS4 Permit No. SC40001 Modification Requests

		maintenance of Post Construction BMP are expected in the quantity and, frequency required by the permit.
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No.	Critical Compliance Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
3.	Part II.B.3.(pg.15)	<ul style="list-style-type: none"> <li>Water turnouts, drainage systems designed to reduce the volume and velocity of ditch flow, shall be constructed in conjunction with the roadside drainage ditches in accordance with accepted roadway drainage practices</li> <li>Existing turnouts must direct diverted flow onto vegetated areas where it can be adequately dispersed. The turnouts shall not direct diverted flow or road runoff into Waters of the State to the MEP.</li> </ul>	<p>The County was told during the permit negotiation process that these bullets would be removed.</p> <p>This section regulates volume and velocity and is not supported by the federal register. This section is very confusing (e.g., are volume controls required in every ditch?) and required compliance with SCDOT standards (not allowing for more or less stringent standards, if desired, and what is SCDOT standards change or are rescinded?).</p>	<p><b>COUNTY REQUEST (12/10/2016):</b>  <b>Option A:</b>                      Delete language through a minor modification to the permit.</p> <p><b>Option B:</b>                      Clarify that the section implies that these standards will be applied where appropriate.</p> <p><b>SCDHEC RESPONSE ABBREVIATED RESPONSE (12/17/2016):</b> The Existing Road Runoff Element of the Storm Water Management Program must implement practices for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters from discharges from these areas including pollutants discharged.</p> <p><b>COUNTY COUNTER RESPONSE (1/1/2021):</b>                      The County requests that this language <u>not</u> be included in the third cycle permit, as agreed upon by SCDHEC during the negotiations for the second cycle permit.</p>
	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	In response to comments, this section was edited prior to the final permit decision to avoid prescriptiveness. Water turnouts are drainage systems designed to reduce the volume and velocity of ditch water flow. These water turnouts shall be constructed in conjunction with the roadside drainage ditches in accordance with accepted roadway drainage practices. Existing turnouts must direct diverted water flow onto vegetated areas where flow energy can be adequately dispersed prior to discharge. Turnouts shall not direct diverted water flow or road runoff directly into waters of the State to the MEP. <i>The Existing Road Runoff Element of the Storm Water Management Program must implement practices for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters from discharges from these areas including pollutants discharged.</i>		

No.	Critical Compliance Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
4.	Part II.B.8.c.(pg.30)	Monitor for Industrial Runoff: The County shall continue to implement a monitoring (or self monitoring) program as required in Parts III. A. I, 2.a.viii & b.viii, 3, 4; IV and V, which includes analytical monitoring for stormwater discharges associated with:	Could require monitoring at a large number of facilities. Also, facilities that are covered under the IGP are already required to monitor. Tables referenced in vii do not exist in Appendix D. Redundant with IDDE program. Why sample the industrial discharge if POC is not showing up at the outfall?	<p><b>COUNTY REQUEST (12/10/2016):</b> In the context of this requirement, “self-monitoring” means that the County does not have to monitor facilities identified in parts i., v., vi., and vii. that are currently monitoring themselves. Further, outfall dry weather screening constitutes “monitoring”.</p> <p><b>SCDHEC RESPONSE (12/17/2016):</b> This section was edited prior to the final permit decision. Richland County is expected to have adequate legal authority to:</p> <ol style="list-style-type: none"> <li>Control through ordinance, permit, contract, order or similar means, the contribution of pollutants to the MS4 by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity, and,</li> </ol>

## Appendix B: NPDES MS4 Permit No. SC400001 Modification Requests

		<p>i. industrial facilities identified in II.B.8.a, above,  v. facilities subject to effluent guidelines (40 CFR Subchapter N), SC R. 61-9 122.26(b)(14)(i),  vi. facilities with existing NPDES permit,  vii. facilities where it is known, or there is reason to believe, that any of the pollutants Tables II, III &amp; IV of Appendix D is present as required under SC R. 61-9 122.21(g)(7)(vi) &amp; (vii).</p>		<p>2. Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and non-compliance with permit conditions. (See subparts II.A, above, and II.F &amp; I, below, in this permit). The County must have the legal authority necessary to require industries to self-monitor in order to provide analytical data necessary to demonstrate compliance with permit conditions affected by their discharges.</p> <p><b>COUNTY COUNTER RESPONSE (1/1/2021):</b>  SCDHEC response does address legal authority but does not discuss the issue of duplicating monitoring efforts at facilities. The County requests that the terms “self-monitoring” and “monitoring” be clarified in the third cycle permit.</p>
	<p><b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b></p>	<p>Richland County is required to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the County determines are contributing a substantial pollutant loading to the MS4. The monitoring program for storm water discharges associated with the industrial facilities identified in paragraph (d)(2)(iv)(C) of this section, to be implemented during the term of the permit, includes the submission of quantitative data on the following constituents: any pollutants limited in effluent guidelines subcategories, where applicable; any pollutant listed in an existing NPDES permit for a facility; oil and grease, COD, pH, BOD5, TSS, total phosphorus, total Kjeldahl nitrogen, nitrate plus nitrite nitrogen, and any information on discharges required under this permit. Tables II, III &amp; IV of Appendix D refer to Refer to 40 CFR Part 122, Appendix D; where, table II is the Organic Toxic Pollutants in Each of Four Fractions in Analysis by Gas Chromatography/Mass Spectroscopy (GS/MS), table III is the Other Toxic Pollutants (Metals and Cyanide) and Total Phenols, and table IV is the Conventional and Nonconventional Pollutants Required To Be Tested by Existing Dischargers if Expected to be Present. Quantitative results for Hazardous Substances Required To Be Identified by Existing Dischargers if Expected To Be Present in stormwater discharges should also be submitted. <a href="https://www.gpo.gov/fdsys/pkg/CFR-2010-title40-vol21/pdf/CFR-2010-title40-vol21-part122-appD.pdf">https://www.gpo.gov/fdsys/pkg/CFR-2010-title40-vol21/pdf/CFR-2010-title40-vol21-part122-appD.pdf</a>  This section was edited prior to the final permit decision.  Richland County is expected to have adequate legal authority to:</p> <ol style="list-style-type: none"> <li>1. Control through ordinance, permit, contract, order or similar means, the contribution of pollutants to the MS4 by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity, and,</li> <li>2. Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and non-compliance with permit conditions. (See subparts II.A, above, and II.F &amp; I, below, in this permit). The County must have the legal authority necessary to require industries to self-monitor in order to provide analytical data necessary to demonstrate compliance with permit conditions affected by their discharges.</li> </ol>		

No.	Critical Compliance Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
5.	Part III.A.2.a.iv.(pg.49)	iv. Where redevelopment occurs, water quality must be improved when upgrading, or replacing MS4 components to meet the WLA / WQS as follow:	This sets an unrealistic requirement that cannot always be obtained and should be deleted or revised. Even if discharge of DO depleting pollutants is reduced to zero from a single site, there may not be a noticeable change in the receiving water DO levels.	<p><b>COUNTY REQUEST (12/10/2016):</b> “Where redevelopment occurs, water quality must be improved” means the water quality associated with storm water runoff from the site must be improved to the MEP.</p> <p><b>SCDHEC RESPONSE (12/17/2016):</b> When evaluating compliance with water quality-based effluent limitations in this permit, it shall be ensured that:</p> <ol style="list-style-type: none"> <li>A. The level of water quality achieved by implementing the limitations on point sources established under the derived from, and complies with all applicable water quality standards; and</li> <li>B. WQBEL implemented to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available</li> </ol>

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			<p>Since this is under the Dissolved Oxygen section, does this standard only apply to DO?</p>	<p>wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7.</p> <p><b>COUNTY COUNTER RESPONSE (1/1/2021):</b>          The SCDHEC response is confusing, but may address the issue assuming item A. is meant to imply that runoff from redevelopment sites must meet water quality standards, as opposed to each redevelopment site having to show improvement downstream. The County requests that the term "Where redevelopment occurs, water quality must be improved" be revised to include the MEP standard in the third cycle permit. The County has included revised Part III, IV, and V sections of the permit as a part of the permit renewal package that would adequately address this issue if the sections were included in the third permit cycle.</p>
	<p><b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b></p>	<p>The NPDES storm water program regulates MS4 discharges to protect water quality. The proposed permit requires the development, implementation, and enforcement of a storm water management program designed to reduce the discharge of pollutants from the MS4 to the MEP, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.</p> <p>Elements in Part II of the permit include BMP designed to satisfy the "best available" and "best conventional" (BAT &amp; BCT) technology requirements. Implementation of these BMP consistent with the SWMP provisions in Part II constitute compliance with the standard of reducing pollutants to the "MEP". Where sources located within the jurisdiction of a discharger are subject to WQBEL, pollutant sources in that specific jurisdiction shall be subject to the same WQBEL.</p> <p>MS4 discharges authorized in the proposed permit have been determined to contribute to a violation of a water quality standard or to be a significant contributor of pollutants to waters of the State. The following factors were considered while imposing these WQBEL:</p> <ul style="list-style-type: none"> <li>(A) The location of the discharge with respect to receiving waters;</li> <li>(B) The size of the discharge;</li> <li>(C) The quantity and nature of the pollutants discharged; and</li> <li>(D) Factors such as Total Maximum Daily Loads (TMDL), Water Quality Monitoring Station (WQMS) impairments (303(d)) and sensitive waters (classified as ONRW, ORW and TPGT).</li> </ul> <p>These WQBEL are needed based on a "TMDL" approved or established by EPA that addresses the pollutant(s) of concern, impaired water quality monitoring stations (303(d) WQMS) that do not have a TMDL and sensitive waters. Waste Load Allocations (WLA) for point sources in TMDL are needed to protect water quality based on consideration of existing in-stream concentrations and in pollutant contributions from MS4 sources, among other factors. Pollutants of concern in Part III of the proposed permit include Dissolved Oxygen (DO), Escherichia Coli (E.coli), BIO (or a parameter that addresses macroinvertebrate impairment such as imperviousness), Copper (Cu) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the MS4. Authorized storm water discharges subject to these WQBEL will occur, within the drainage area addressed by the TMDL, 303(d) WQMS or whose presence is deleterious to sensitive waters and its intended uses.</p> <p>Water bodies receiving MS4 discharges, include downstream segments, lakes and estuaries, where pollutants from the MS4 discharges accumulate and cause water degradation. WQBEL apply to; areas where there are known water quality impacts to TMDL watersheds and to 303(d) and sensitive waters; discharges that causes, has a reasonable potential to cause, or contributes to an instream excursion above an applicable water quality standard, including designated uses; and, reflect water quality concerns requiring the MS4 to assess, evaluate, prioritize and retrofit control devices to provide the additional pollutant removal necessary to protect water quality by considering the adverse impacts associated with MS4 discharges. The goal of these WQBEL is to prevent MS4 discharges from causing exceedances of water quality standards, including impairment of designated uses, or other adverse water quality impacts, including habitat and biological impacts. For the purpose of Part III, the non-numeric, narrative, effluent limitations requiring implementation of specific BMP are the most appropriate form of WQBEL (including reduction of pollutants to the MEP) to protect water quality. WQBEL are based on TMDL, 303(d) WQMS) and Sensitive Waters. The proposed permit requires that the permittee monitors parameters in the stream receiving permitted discharges to identify water quality improvements. WQBEL are necessary to achieve water quality standards (WQS) by; controlling all 303(d) pollutants of concern (POC); accounting for existing controls on point and nonpoint sources of pollution for discharges that cause, has the reasonable potential to cause, or contributes to in-stream excursions of WQS; ensuring that WQBEL are consistent with the assumptions and requirements of any available WLA for the discharge. The WQBEL listed in Part III.A.2.a from i to xi, specifically apply, in the manner prescribed, to watersheds draining to WQMS impaired for DO.</p> <p>When evaluating compliance with water quality-based effluent limitations in this permit, it shall be ensured that:</p> <ul style="list-style-type: none"> <li>(A) The level of water quality achieved by implementing the limitations on point sources established under the derived from, and complies with all</li> </ul>		

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		<p>applicable water quality standards; and</p> <p>(B) WQBEL implemented to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7.</p>
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No.	Critical Compliance Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
6.	Part III.A.2.a.vi.(pg.49)	vi. Municipal operations, and activities, in the watershed must eliminate their potential to discharge oxygen depleting pollutants.	<p>This is similar in nature to comments on Section III.A.2.a.iv, p 49 and exceeds the MEP standard. No mention of MEP.</p> <p>For example, a tree (dead leaves) has the potential to cause a discharge of oxygen depleting pollutants.</p>	<p><b>COUNTY REQUEST (12/10/2016):</b> "Eliminate their potential" means to eliminate sources to the MEP.</p> <p><b>SCDHEC RESPONSE (12/17/2016):</b> While there is a practical aspect to Storm Water Management Program (SWMP) implementation, the minimum requirement of the permit is to develop, implement, and enforce a SWMP designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. After two permit cycles, increased number of adverse water quality impacts, non-numeric water quality based effluent limitations expressed as permit requirements became necessary to achieve water quality standards and /or to protect narrative water quality criteria, numeric water quality criteria, or both, as consistent with the assumptions and requirements of available wasteload allocations. <i>Implementation of the WQBEL in Part III.A of the permit is expected to reverse the adverse pollution trends; therefore, protecting water quality.</i></p> <p><b>COUNTY COUNTER RESPONSE (1/1/2021):</b> While there is mention of MEP in the SCDHEC response, it still reinforces the permit requirement. The second half of the response discounts MEP. The County requests that the use of MEP be applied to this permit requirement in the third cycle permit. The County has included revised Part III, IV, and V sections of the permit as a part of the permit renewal package that would adequately address this issue if the sections were included in the third permit cycle.</p>
	<b>SCDHEC FULL RESPONSE (12/17/2016):</b>	While there is a practical aspect to Storm Water Management Program (SWMP) implementation, the minimum requirement of the permit is to develop, implement, and enforce a SWMP designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. After two permit cycles, increased number of adverse water quality impacts, non-numeric water quality based effluent limitations expressed as permit requirements became necessary to achieve water quality standards and /or to protect narrative water quality criteria, numeric water quality criteria, or both, as consistent with the assumptions and requirements of available wasteload allocations. Implementation of the WQBEL in Part III.A of the permit is expected to reverse the adverse pollution trends; therefore, protecting water quality.		

No.	Critical Compliance Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
7.	Part III.A.2.b.i.(pg.50)	i. Structural controls, including flood control projects, detaining large amounts of water over a period of time shall be managed to prevent increased bacteria levels.	<p>This is not possible to control except through extraordinary means.</p> <p>What is a large amount of water?</p>	<p><b>COUNTY REQUEST (12/10/2016):</b> Implies to control levels of bacteria from sources of pet and human waste to the MEP.</p> <p><b>SCDHEC RESPONSE (12/17/2016):</b> SEE SCDHEC RESPONSE IN 6. ABOVE</p> <p><b>COUNTY COUNTER RESPONSE (1/1/2021):</b> While there is mention of MEP in the SCDHEC response, it still reinforces the permit requirement. The second half of the response discounts MEP. The County requests that the use of MEP be applied</p>

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				to this permit requirement in the third cycle permit. The County has included revised Part III, IV, and V sections of the permit as a part of the permit renewal package that would adequately address this issue if the sections were included in the third permit cycle.
	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	See SCDHEC response in item 6. above		

Critical Compliance Issues (Red Comments)				
No.	Permit Section	Permit Language	Comment	Proposed Clarification
8.	Part III.A.2.b.ii.(pg.50)	ii. The storm sewer system shall be proactively maintained with the frequency necessary to ensure that pathogens will not be discharged.	This is impossible to achieve.	<p><b><u>COUNTY REQUEST (10/4/2016):</u></b> The emphasis of this section is pathogens, therefore, activities should focus on detecting, locating and correcting cross-connections with sanitary sewer systems to the MEP.</p> <p><b><u>SCDHEC RESPONSE (12/17/2016):</u></b> SEE SCDHEC RESPONSE IN 6. ABOVE</p> <p><b><u>COUNTY COUNTER RESPONSE (1/1/2021):</u></b> While there is mention of MEP in the SCDHEC response, it still reinforces the permit requirement. The second half of the response discounts MEP. The County requests that the use of MEP be applied to this permit requirement in the third cycle permit. The County has included revised Part III, IV, and V sections of the permit as a part of the permit renewal package that would adequately address this issue if the sections were included in the third permit cycle.</p>
	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	See SCDHEC response in item 6. above		

Critical Compliance Issues (Red Comments)				
No.	Permit Section	Permit Language	Comment	Proposed Clarification
9.	Part III.A.2.b.vi.(pg.51)	vi. Municipal activities, and operations, in the watershed must eliminate their potential to discharge pathogens.	Same as comment for Sections III.A.2.a.iv and III.A.2.a.vi. No mention of MEP here and this is an unrealistic requirement that cannot always be obtained. For example, a bird flying overhead has the potential to cause bacteria to be deposited and washed off of the site.	<p><b><u>COUNTY REQUEST (12/10/2016):</u></b> "Eliminate their potential" means to eliminate sources to the MEP. Further, the emphasis of this section is pathogens, therefore, activities should focus on eliminating human waste to the MEP.</p> <p><b><u>SCDHEC RESPONSE (12/17/2016):</u></b> SEE SCDHEC RESPONSE IN 6. ABOVE</p> <p><b><u>COUNTY COUNTER RESPONSE (1/1/2021):</u></b> While there is mention of MEP in the SCDHEC response, it still reinforces the permit requirement. The second half of the response discounts MEP. The County requests that the use of MEP be applied to this permit requirement in the third cycle permit. The County has included revised Part III, IV, and V sections of the permit as a part of the permit renewal package that would adequately address this issue if the sections were included in the third permit cycle.</p>
	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	See SCDHEC response in item 6. above		

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No.	Critical Compliance Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
10.	Part IV.C.(pg.61)	C. Impaired Water Quality Monitoring Stations (WQMS)	This section implies that monitoring will be required at all outfalls in watersheds with a known impairment. This is overly burdensome and unnecessary.	<p><b>COUNTY REQUEST (12/10/2016):</b> Compliance means, “monitoring only those outfalls determined to contribute directly, or indirectly, to the impairment.”</p> <p><b>SCDHEC RESPONSE (12/17/2016):</b> Part III.B provides the opportunity to establish a baseline to assess direct and indirect MS4 pollutant loads contributing to these impairments. In this way, the level of analytical monitoring effort necessary to demonstrate the effective implementation of the WQBEL required in Part III.A to correct and improve WQMS impairments as required in Part IV.C can be discerned. <i>Correction and /or improvement of the alluded impairment is the measure of compliance for the WQMS in question.</i></p> <p><b>COUNTY COUNTER RESPONSE (1/1/2021):</b> The SCDHEC response implies that the permit language “provides the opportunity” to establish a baseline. However, the permit language <u>requires</u> monitoring at each outfall. These are contradicting statements and should be addressed in the third cycle permit. The County has included revised Part III, IV, and V sections of the permit as a part of the permit renewal package that would adequately address this issue if the sections were included in the third permit cycle.</p>
				<p><b>SCDHEC FULL RESPONSE (12/17/2016):</b></p> <p>Part III.B provides the opportunity to establish a baseline to assess direct and indirect MS4 pollutant loads contributing to these impairments. In this way, the level of analytical monitoring effort necessary to demonstrate the effective implementation of the WQBEL required in Part III.A to correct and improve WQMS impairments as required in Part IV.C can be discerned. Correction and/or improvement of the alluded impairment is the measure of compliance for the WQMS in question.</p>

No.	Critical Absolute Language Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
11.	Part II.B.2.d.ii.(pg.9)	ii. BMP with the best pollutant removal performance shall be selected for post construction storm water management;	This section only allows consideration of highest pollutant removal. Setting the standard of BMP with the best pollutant removal performance discounts other practices that may be able to achieve the required results with less operation and maintenance, life cycle costs, more effective use of space, etc.	<p><b>COUNTY REQUEST (12/10/2016):</b> For the purpose of this permit “best pollutant removal” considers the impact of operation and maintenance, life cycle costs, and other design and construction criteria and does not imply that a BMP with a higher removal efficiency should be selected over one that meets the design criteria, but has lower costs, more effective use of land, etc.</p> <p><b>SCDHEC RESPONSE (12/17/2016):</b> Part II of the permit, the SWMP, is predicated on MEP standard. It means that if implemented to the MEP (Maximum Extent Practicable), and not the mep (minimum extent possible) pollutant loads from urban runoff discharges should not have a deleterious effect on receiving water quality. MEP consists of five elements: the effectiveness to address the pollutant(s) of concern, public acceptance, cost, technical feasibility, and compliance with Federal, State and local laws and regulations. The following link (NO ENDORSEMENT TO THE PRODUCT ADVERTISED) clearly illustrates the ‘balance’ of the MEP concept. <a href="https://www.youtube.com/watch?v=qsQPGVseIHM">https://www.youtube.com/watch?v=qsQPGVseIHM</a></p> <p><b>COUNTY COUNTER RESPONSE (1/1/2021):</b> The response by SCDHEC is adequate in addressing the County’s concerns on this permit requirement.</p>

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<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	Part II of the permit, the SWMP, is predicated on MEP standard. It means that if implemented to the MEP (Maximum Extent Practicable), and not the mep (minimum extent possible) pollutant loads from urban runoff discharges should not have a deleterious effect on receiving water quality. MEP consists of five elements: the effectiveness to address the pollutant(s) of concern, public acceptance, cost, technical feasibility, and compliance with Federal, State and local laws and regulations. The following link (NO ENDORSEMENT TO THE PRODUCT ADVERTISED) clearly illustrates the ‘balance’ of the MEP concept. <a href="https://www.youtube.com/watch?v=qsQPGVseIHM">https://www.youtube.com/watch?v=qsQPGVseIHM</a>
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No.	Critical Absolute Language Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
12.	Part II.B.3.b.ii.(pg.16)	ii. Amount of soil disturbance must be limited to just the immediate area under repair,	Almost always need a larger area than "just the area under repair".	<p><b><u>COUNTY REQUEST (12/10/2016):</u></b> Immediate area means the area under construction and an appropriate adjacent area required to safely and properly complete construction.</p> <p><b><u>SCDHEC RESPONSE (12/17/2016):</u></b> Measures described in II.B.3 of the permit are appropriate to control pollutants in storm water discharges associated with small linear construction activities like those found in road projects identified by this SWMP elements. The observed practice of stockpiling sediment alongside areas beyond “just the immediate area” under repair are indicative of sediment control practices that may be qualified as marginal at best. Land disturbing activities beyond “just the immediate area” under repair are; ineffective in addressing sediment; resulting sediment mounds, at the very least, create an eyesore; cubic yards resulting from unnecessary disturbance result in increasing costs; and, run counter to Federal, State and local requirements to properly control sediment. <i>Implementation of the SOP required in the permit will effectively address the lack of stormwater pollution prevention in road maintenance, BPJ (Best Professional Judgement).</i></p> <p><b><u>COUNTY COUNTER RESPONSE (1/1/2021):</u></b> The response by SCHEC is inadequate in addressing the County’s concerns on this permit requirement. The third cycle permit should include language that allows for the MEP standard to be applied to the entirety of Section II of the new permit, or the permit language should be revised in accordance with the comment provided above in the COUNTY REQUEST (12/10/2016).</p>
	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	Measures described in II.B.3 of the permit are appropriate to control pollutants in storm water discharges associated with small linear construction activities like those found in road projects identified by this SWMP elements. The observed practice of stockpiling sediment alongside areas beyond “just the immediate area” under repair are indicative of sediment control practices that may be qualified as marginal at best. Land disturbing activities beyond “just the immediate area” under repair are; ineffective in addressing sediment; resulting sediment mounds, at the very least, create an eyesore; cubic yards resulting from unnecessary disturbance result in increasing costs; and, run counter to Federal, State and local requirements to properly control sediment. Implementation of the SOP required in the permit will effectively address the lack of stormwater pollution prevention in road maintenance, BPJ.		

No.	Critical Absolute Language Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification

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13.	Part II.B.7.c.iii.(e)(pg.25)	(e) An internal log documenting the results of all field screening performed shall be maintained. This shall include identification of direct and illicit discharges and a surveillance inspection program to effectively address high bacteria count concerns by eliminating all illicit sources to achieve the "effective prohibition" and "MEP" standards from Section 402(p)(3)(8) of the Clean Water Act and to be consistent with South Carolina Pollution Control Act, Title 48, Chapter I of the Code of Laws of South Carolina.	As noted in the IDDE section of the permit, it is not always possible to determine the source of an illicit much less eliminate it. This requirement will almost certainly cause the County to be in non-compliance with the permit from the effective date onward.	<p><b>COUNTY REQUEST (12/10/2016):</b> While this section contains “eliminating all illicit inspections” it also contains the MEP standard. The County is required to identify and eliminate discharges containing high bacteria counts. Further all bacteria means “non-naturally” occurring pathogenic bacteria such as pet waste and human waste.</p> <p><b>SCDHEC RESPONSE (12/17/2016):</b> Permits for discharges from municipal storm sewers may be issued on jurisdiction-wide basis; shall include a requirement to effectively prohibit illicit discharges; and shall require controls to reduce the discharge of pollutants to the MEP. For the third iteration of this, a phase I Medium MS4 NPDES stormwater permit, <i>field screening, including identification of direct and illicit discharges and a surveillance inspection program to effectively address high bacteria count concerns, to eliminate all illicit sources is the minimum level of effort expected to be implemented to achieve compliance with the "effective prohibition" and "MEP" standards from Section 402(p)(3)(B) of the Clean Water Act and to be consistent with South Carolina Pollution Control Act, Title 48, Chapter 1 of the Code of Laws of South Carolina.</i></p> <p><b>COUNTY COUNTER RESPONSE (1/1/2021):</b> The response by SCHEC is inadequate in addressing the County’s concerns on this permit requirement. The third cycle permit should include language that allows for the MEP standard to be applied to the entirety of Section II of the new permit, or the permit language should be revised in accordance with the comment provided above in the COUNTY REQUEST (12/10/2016).</p>
	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	Permits for discharges from municipal storm sewers may be issued on jurisdiction-wide basis; shall include a requirement to effectively prohibit illicit discharges; and shall require controls to reduce the discharge of pollutants to the MEP. For the third iteration of this, a phase I Medium MS4 NPDES stormwater permit, field screening, including identification of direct and illicit discharges and a surveillance inspection program to effectively address high bacteria count concerns, to eliminate all illicit sources is the minimum level of effort expected to be implemented to achieve compliance with the "effective prohibition" and "MEP" standards from Section 402(p)(3)(B) of the Clean Water Act and to be consistent with South Carolina Pollution Control Act, Title 48, Chapter 1 of the Code of Laws of South Carolina.		

No.	Critical Absolute Language Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
14.	Part II.B.7.g.iv.(pg.27)	iv. Permittees will detect and address all infiltration, inflow and cross connections through the Public Sewer Districts (PSD) in the MS4. Previously unknown problems shall be addressed upon discovery. Advise appropriate utility owner of violation if constituents common to wastewater contamination are discovered in the MS4 during field screening or routine system inspections.	Unrealistic to address all infiltration etc., further, this is a function of the sanitary sewer provider.	<p><b>COUNTY REQUEST (12/10/2016):</b> It is expected that the County will work with public sewer districts within Richland County to detect and address infiltration, inflow, and cross connections to the MEP.</p> <p><b>SCDHEC RESPONSE (12/17/2016):</b> One of the regulatory requirements of the Illicit Discharges and Improper Disposal element of the SWMP is to detect and remove (or require the discharger to the MS4 to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer. The Illicit Discharges and Improper Disposal element shall include controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary.</p> <p><b>COUNTY COUNTER RESPONSE (1/1/2021):</b></p>

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				The response by SCHEC is adequate in addressing the County's concerns on this permit requirement assuming the third cycle permit will apply the MEP standard to this requirement and/or the entirety of Section II of the permit.
	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	One of the regulatory requirements of the Illicit Discharges and Improper Disposal element of the SWMP is to detect and remove (or require the discharger to the MS4 to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer. The Illicit Discharges and Improper Disposal element shall include controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary.		

No.	Critical Absolute Language Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
15.	Part II.B.9.c.v.(d)(pg.36)	(d) Retain at least one Certified Stormwater Operator/Inspector on staff at all times (these individuals shall be either field supervisors, heavy equipment operators actively involved in County earth moving activities, or engineering staff responsible for specifying erosion control measures for Permittees activities).	The County has no control on when people leave employment. Even if the County hires several certified inspectors, it is conceivable that they could all leave at one time leaving the County non-compliant. There should be some time allowance to provide for hiring of staff.	<p><b><u>COUNTY REQUEST (12/10/2016):</u></b> SCDHEC realizes that the County may have periods of time without a Certified Stormwater Operator/Inspector on staff. During such times the County must proceed with training of existing staff or be actively engaged in the hiring process of appropriately trained replacement staff to replace the unfilled position in a timely manner.</p> <p><b><u>SCDHEC RESPONSE (12/17/2016):</u></b> Municipalities must secure resources to comply with permit conditions and to implement the storm water program. The storm water program shall include the staff required to implement the program. BMP, control techniques, and proper system design and engineering methods are all integral part of this element. It makes it paramount to count on qualified and certified personnel. When found deficient, as the Department audit for this element demonstrated, the necessary resources to implement this element shall be met. <i>Audit recommendations are expected to be fully addressed. Training and retention requirements are expected to be met.</i></p> <p><b><u>COUNTY COUNTER RESPONSE (1/1/2021):</u></b> The response by SCHEC is adequate in addressing the County's concerns on this permit requirement assuming the third cycle permit will apply the MEP standard to this requirement and/or the entirety of Section II of the permit.</p>
	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	Municipalities must secure resources to comply with permit conditions and to implement the storm water program. The storm water program shall include the staff required to implement the program. BMP, control techniques, and proper system design and engineering methods are all integral part of this element. It makes it paramount to count on qualified and certified personnel. When found deficient, as the Department audit for this element demonstrated, the necessary resources to implement this element shall be met. Audit recommendations are expected to be fully addressed. Training and retention requirements are expected to be met.		

No.	Critical Absolute Language Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
16.	Part III.A.2.a.i.(pg.48)	i. Pollutants (including floatables) from all conveyances (including roadways) must be controlled. It must be demonstrated that removal efficiency of oxygen depleting pollutants for BMP implemented to this effect must approximate the WLA I WQS.	Will not be possible to have this apply to all conveyances  Confusing language.	<p><b><u>COUNTY REQUEST (12/10/2016):</u></b></p> <ol style="list-style-type: none"> <li>This section should only reference dissolved oxygen issues. Consider deleting "(including floatables) as a minor permit modification.</li> <li>SCDHEC realizes that controlling pollutants from all conveyances including roadways is unreasonable. The MEP standard should apply to this section.</li> <li>Issue a minor permit modification such that the second sentence reads, "The removal efficiencies of BMPs for oxygen depleting pollutants must approximate the WLA/WQs, to the MEP".</li> </ol> <p><b><u>SCDHEC RESPONSE (12/17/2016):</u></b> As stated in the answer to comments 7, 8 &amp; 9, above, Part II of the permit deals with the implementation of the SWMP. Proper implementation of the</p>

## Appendix B: NPDES MS4 Permit No. SC40001 Modification Requests

				<p>SWMP is predicated on the MEP standard. Adverse water quality impacts makes it necessary to develop water quality-based non-numeric effluent limitations (WQBEL) to ensure that water quality standards are protected and that applicable provisions of the CWA are met.. WQBEL contained in part III.2.a of the permit must be implemented to effectively address impairments where DO is the POC. Illicit discharges of sewage and seepage are expected to be completely eradicated for reaches adversely impacted by E.coli.</p> <p><b><u>COUNTY COUNTER RESPONSE (1/1/2021):</u></b>                  The response provides conflicting resolution. One portion says that MEP applies, but the next sentence uses the absolute phrase “completely eradicated”. It may not be possible to completely eradicate illicit discharges and still meet MEP standards. The County requests that the MEP standard be applied to the entirety of Section III of the third cycle permit, or the permit language should be revised in accordance with the comments provided above in the COUNTY REQUEST (12/10/2016). The County has included revised Part III, IV, and V sections of the permit as a part of the permit renewal package that would adequately address this issue if the sections were included in the third permit cycle.</p>
	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	As stated in the answer to comments 7, 8 & 9, above, Part II of the permit deals with the implementation of the SWMP. Proper implementation of the SWMP is predicated on the MEP standard. Adverse water quality impacts makes it necessary to develop water quality-based non-numeric effluent limitations (WQBEL) to ensure that water quality standards are protected and that applicable provisions of the CWA are met. WQBEL contained in part III.2.a of the permit must be implemented to effectively address impairments where DO is the POC. Illicit discharges of sewage and seepage are expected to be completely eradicated for reaches adversely impacted by E.coli.		

No.	Critical Absolute Language Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
17.	Part III.A.2.a.iii.(a)(pg.48)	(a) BMP with the best removal performance for oxygen depleting substances must be implemented to the MEP.	This phrase is used throughout this section and leaves no room for other considerations such as cost, safety, efficiency etc. Even though a BMP may meet the requisite criteria, only the one with the best removal performance can be used.	<p><b><u>COUNTY REQUEST (12/10/2016):</u></b> For the purpose of this permit “best pollutant removal” considers the impact of operation and maintenance, life cycle costs, and other design and construction criteria and does not imply that a BMP with a higher removal efficiency should be selected over one that meets the design criteria, but has lower costs.</p> <p><b><u>SCDHEC RESPONSE (12/17/2016):</u></b> SEE SCDHEC RESPONSE IN 16. ABOVE</p> <p><b><u>COUNTY COUNTER RESPONSE (1/1/2021):</u></b>                  The response by SCHEC is inadequate in addressing the County’s concerns on this permit requirement. The third cycle permit should include language that allows for the MEP standard to be applied to the entirety of Section III of the current permit, or the permit language should be revised in accordance with the comment provided above in the COUNTY REQUEST (12/10/2016). The County has included revised Part III, IV, and V sections of the permit as a part of the permit renewal package that would adequately address this issue if the sections were included in the third permit cycle.</p>

## Appendix B: NPDES MS4 Permit No. SC40001 Modification Requests

	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	SEE SCDHEC RESPONSE IN 16. ABOVE
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No.	Critical Absolute Language Issues (Red Comments)			
	Permit Section	Permit Language	Comment	Proposed Clarification
18.	Part III.A.2.b.vii.(pg.51)*	vii. All illicit discharges of sewage and /or seepage must be detected and eliminated. These include dry and wet weather overflows from sanitary sewers, infiltration of seepage from sanitary sewers and from septic tanks. The "effective prohibition" in 402(p)(3)(B)(ii) of the CWA is applicable to these non-stormwater discharges. Fully documenting the total eradication of these discharges is required.	Impossible/unrealistic requirement	<p><b><u>COUNTY REQUEST (12/10/2016):</u></b> This section is subject to the MEP standard. It is also recognized that the County does not have authority over all Public Sewer Districts in the County.</p> <p><b><u>SCDHEC RESPONSE (12/17/2016):</u></b> SEE SCDHEC RESPONSE IN 16. ABOVE</p> <p><b><u>COUNTY COUNTER RESPONSE (1/1/2021):</u></b> The County requests that the MEP standard will be applied to the entirety of Section III of the third cycle permit. The County has included revised Part III, IV, and V sections of the permit as a part of the permit renewal package that would adequately address this issue if the sections were included in the third permit cycle.</p>
	<b><u>SCDHEC FULL RESPONSE (12/17/2016):</u></b>	SEE SCDHEC RESPONSE IN 16. ABOVE		

<b><i>Basis for Performance Standard</i></b>	<b><i>Description</i></b>	<b><i>Performance Standard</i></b>
Rainfall	Minimum storm volume to be retained on site.	Design, construct, and maintain stormwater management practices that manage rainfall on-site, and prevent the off-site discharge of the precipitation from [insert standards, such as “the first one inch of rainfall from a 24-hour storm preceded by 48 hours of no measurable precipitation”]. Discharge volume reduction can be achieved by canopy interception, soil amendments, evaporation, rainfall harvesting, engineered infiltration, extended filtration and/or evapotranspiration and any combination of the aforementioned practices. This first one inch of rainfall must be 100% managed with no discharge to surface waters, except when the permittee chooses to implement the Incentives for Redeveloped Sites in Part II.B.2.j.i, above.
Rainfall	Minimum storm size to be retained on site	Design, construct, and maintain stormwater management practices that manage rainfall on-site, and prevent the off-site discharge of the precipitation from all rainfall events less than or equal to [insert standards, such as “the 95th percentile rainfall event”]. This objective must be accomplished by the use of infiltration, evapotranspiration and/or harvest and reuse of rainwater. The 95th percentile rainfall event is the event whose precipitation total is greater than or equal to 95 percent of all storm events over a given period of record.
Recharge/Runoff	Hydrologic Analysis	Design, construct, and maintain stormwater management practices that preserve the pre- development runoff conditions following construction. The post-construction rate, runoff volume, peak flow, duration and temperature of discharges must not exceed the pre-development rates and the pre-development hydrograph for 1, 2, 10, 25, 50 and 100 year storms must be replicated through site design and other appropriate practices. These goals must be accomplished through the use of infiltration, evapotranspiration, and/or rainwater harvesting and reuse practices. Defensible and consistent hydrological assessments and modeling methods must be used and documented.
Recharge	Groundwater Recharge	Any “major development” project, which is one that disturbs [insert standards, such as at least one (1) acre of land or creates at least 0.25 acres of new or additional impervious surface], must comply with one of the following two groundwater recharge requirements:

## Appendix B: NPDES MS4 Permit No. SC400001 Modification Requests

	Requirements	<ul style="list-style-type: none"><li>• Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100 percent of the average annual pre-construction groundwater recharge volume for the site; or</li><li>• Demonstrate through hydrologic and hydraulic analysis that the increase of stormwater discharges volume from pre-construction to post-construction for the two-year storm is infiltrated.</li></ul>
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