

# 2017-2018 Annual Stormwater Report



October 5, 2018





# 2017-2018 Annual Stormwater Report

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## I. Introduction

During 2000, the Environmental Management Commission (EMC) adopted a set of nonpoint source rules under the Tar-Pamlico Nutrient Sensitive Waters Strategy. One component of these rules addresses stormwater runoff in urbanized areas of the basin. These rules establish certain requirements for local programs based on the nutrient strategy's goal of reducing Nitrogen loading to the estuary by 30% from 1991 levels. Pitt County was one of five counties required to implement the program.

On September 9, 2004, Planning Staff made the final edits and resubmitted the draft documents to the Division of Water Quality for approval. A public hearing to adopt the stormwater documents was held on September 22, 2004. The Board of County Commissioners voted 8-1 in favor of adopting the documents. Since the vote was not unanimous, a second reading was scheduled for October 11, 2004. At this meeting, the Board voted unanimously to adopt the stormwater ordinance, plan, appendices and fee schedule with an effective date of October 12, 2004.

On May 15, 2006, the Pitt County Stormwater Ordinance was amended to include language which allows an option for developers to pay a one-time offset payment to a private mitigation bank or to the North Carolina Ecosystem Enhancement Program's Riparian Buffer Restoration Fund using the applicable nitrogen and phosphorous offset payment calculations specified in the Nutrient Offset Payments Rule (15A NCAC 02B.0240). This option allows the developer to make the required payment in lieu of installing stormwater best management practices.

Pitt County is required to submit an annual report to the North Carolina Division of Water Quality each October. The annual reporting for the thirteenth year, which is detailed in Table 1 of this report, demonstrates that Pitt County reviewed plans for four new development projects. There was one new plan submitted for the Tar-Pamlico River Basin, which totaled 66.83 acres. This site purchased nutrient credits through a private mitigation bank in addition to installing best management practices. Five plans were located in the Neuse River Basin and involved a total of 86.31 acres. Three of these sites met the rule criteria for nutrient loading and attenuation purposes and two made payments to mitigation banks to meet the rule criteria (See Table 2).

## II. Public Education

In July, 2006, Pitt County completed the construction of a stormwater wetland at Pactolus Elementary School, which was funded through a grant from the Albemarle-Pamlico National Estuary Program. In April 2010, Pitt County completed work on a stream restoration/stormwater wetland project on the campus of J.H. Rose High School. The project consisted of improving approximately 1,000 linear feet of an open channel stream located on the campus of the high school and the installation of a stormwater wetland to treat runoff from upstream properties. The project's goals are to provide improvement of water quality of receiving waters from an unnamed tributary of Green Mill Run that provides flood relief of surface waters from an urban watershed within the City of Greenville and to improve the recreational facilities at Rose High School. These two wetlands serve to educate the design community on the impacts of stormwater runoff and to educate local students about wetlands by serving as an outdoor classroom.

Pitt County utilized an EnviroScape Model to teach middle school students about point source and nonpoint source pollution. During the past year, the model was used for ten presentations, reaching over 200 students. By using this model, stormwater pollution and runoff are visually apparent when rain falling over the landscape top carries soil (cocoa), chemicals (colored drink mixes) and oil (cocoa and water mixture) through a watershed to a body of water. Stormwater runoff and storm drain functions are also addressed. Best management practices include felt buffer strips as vegetation, clay to create berms and other methods to show conservation and water pollution prevention measures at work. This model shows nonpoint source pollution and the steps everyone can take to help prevent environmental contamination. The EnviroScape model also teaches an overall watershed concept. Two waterways flow into a larger water body, which is representative of a lake, river, bay, or ocean and demonstrates the movement of water through a watershed and the pollution that runoff may cause.

Pitt County Staff continued to update and maintain its website, [www.pittcountync.gov/192/Planning-Development](http://www.pittcountync.gov/192/Planning-Development) during the past year. This page provides public information about our stormwater management program, links to our local County stormwater ordinance and stormwater plan, and contains a link to the North Carolina Department of Environmental Quality's Stormwater and Runoff pollution page, [www.deq.nc.gov/about/divisions/energy-mineral-land-resources/stormwater](http://www.deq.nc.gov/about/divisions/energy-mineral-land-resources/stormwater). Planning staff developed brochures to educate citizens on the different types of best management practices (BMP's) that can be found in Pitt County. The brochures are intended to educate citizens on the purpose of the BMP's and how to properly maintain them. These brochures are available from a wall display

in the hallway of our department. They will also be provided to homeowners who request information about the type of BMP located in their neighborhood.

## 2017-2018 Public Education Action Plan

The public action report and plan for Pitt County can be found in Table 3 of this document. The plan for 2017-2018 consists of two demonstration sites. In July, 2006, Pitt County completed the construction of a stormwater wetland at Pactolus Elementary School, which was funded through a grant from the Albemarle-Pamlico National Estuary Program. In April 2010, Pitt County completed work on a stream restoration/stormwater wetland project on the campus of J.H. Rose High School. The project consisted of improving approximately 1,000 linear feet of an open channel stream located on the campus of the high school and the installation of a stormwater wetland to treat runoff from upstream properties. The project's goals are to provide improvement of water quality of receiving waters from an unnamed tributary of Greens Mill Run that provides flood relief of surface waters from an urban watershed within the City of Greenville and to improve the recreational facilities at Rose High School. These two wetlands serve to educate the design community on the impacts of stormwater runoff and to educate local students about wetlands by serving as an outdoor classroom. Placards and informational posters will be placed at the sites to inform visitors of the importance of stormwater BMP's in improving water quality.

Pitt County is also planning a technical workshop that will be held for engineers and contractors to learn more about the installation and maintenance of stormwater BMP's. The estimated cost of the workshop is \$500.00 and will provide an opportunity for attendees to review the changes to the updated North Carolina BMP Manual.

Additionally, new items will be uploaded on our departmental website, as well as printed materials outlining other facets of our stormwater management program. Pitt County believes in educating its citizens on the effects of stormwater runoff and has received great responses from its current website and brochures. Improvements to our website will include pictures of BMP's installed in Pitt County and facts pertaining to each of them. The cost associated with this expansion is \$200.00 which will be done in-house by the Planning Department. The brochure will also be produced in-house and will have an estimated cost of \$100.00 for printing.

Also, staff will continue to investigate complaints of illicit discharges that are reported via the toll-free environmental hotline. The State will take the information concerning the complaint and relay the information to Pitt County Staff, who will conduct the inspection of the illicit discharge and ensure necessary corrective action is taken. This hotline service is offered by the State free of charge to Pitt County.

Pitt County will also continue to reward outstanding efforts by engineers, contractors and developers in the design, installation and maintenance of BMPs through our Environmental Excellence Award Program. Recipients of this award will receive a plaque, an announcement in the Daily Reflector Newspaper and on the Pitt County Planning Department's website, and a sign will be posted on the site that receives the

award. The cost associated with this program is \$100.00 for the purchase of a plaque and newspaper advertisement announcing the winner of the award.

The final item included in the Education Action Report is running a segment on Pitt TV, which informs residents about illicit discharge and its adverse impacts on the environment. This project will involve the resources of the Pitt County Public Information Office.

### III. Illicit Discharge Detection



Drainage outfall used as a checkpoint for detection of illicit discharges in Pitt County.

Pitt County does not have a stormwater collection system present in any of its jurisdiction. Stormwater is collected in the state roadside ditches, natural drainage ways and privately owned drainage laterals. However, Pitt County is committed to detecting and eliminating illicit discharges in its planning jurisdiction. Pitt County has established urges citizens who witnesses someone dump anything onto street surfaces, into storm drains, or into any other device built to contain rainfall or runoff to report it by calling 919-

807-6363 (1-877-623-6748 during nights and weekends) or use the form at <http://www.ncstormwater.org/pages/complaintform.html>. This service is provided by the State and all complaints that are received will be forwarded to the Pitt County Stormwater Administrator for investigation and follow-up.

**Table 1**

**Pitt County Annual Reporting Requirements for Tar-Pamlico River Basin NSW Stormwater Management Program**

**Program Element: New Development Review / Approval**

**I.**

| Development Types                                  | Total # Projects | Total # Acres |
|--|------------------|---------------|
| New development projects meeting rule criteria     | 4                | 75.37         |
| New development projects requiring BMPs            | 2                | 77.77         |
| New development projects requiring Peak Rate Match | 0                |               |

**II.**

| Best Management Practice (BMP)<br>Nutrient Removal Efficiencies | Number of BMPs implemented |
|---|----------------------------|
| Wet Detention Pond  | 1                          |
| Stormwater Wetland  | 3                          |
| Sand Filter   | 0                          |
| Bioretention  | 0                          |
| Dry Detention Pond  | 0                          |
| Grass Swales  | 0                          |
| Vegetated Filter Strip With Level Spreader                      | 0                          |
| <b>Total Number of all BMPs Implemented</b>                     | <b>0</b>                   |

**III.**

Provide description of off-site options used for each project and calculations demonstrating how equivalent load reduction was achieved. During the past year there were no off-site options used for any projects within our jurisdiction.

**IV.**

Explain results of any applicable jurisdictional review of planning issues.

**Program Element: Compliance & Enforcement**

**V.**

| Construction Compliance & Enforcement  | # of Projects 2013 | # of Projects 2014 | # of Projects 2015 | # of Projects 2016 | # of Projects 2017 |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|
| Construction projects completed and signed off                                       | 2                  | 2                  | 0                  | 1                  | 0                  |
| Construction Projects with enforcement action taken for deficient stormwater systems | 1                  | 2                  | 1                  | 4                  | 2                  |

**Annual Reporting Requirements for Tar-Pamlico River Basin NSW Stormwater Management Program**

**VI.**

| Operation and Maintenance Compliance & Enforcement | # of Projects 2013 | # of Projects 2014 | # of Projects 2015 | # of Projects 2016 | # of Projects 2017 |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|
| Total of newly completed projects                  | 2                  | 0                  | 0                  | 0                  | 1                  |
| Projects submitting reports                        | 13                 | 13                 | 13                 | 10                 | 14                 |
| Projects Inspected by the local government         | 13                 | 13                 | 13                 | 10                 | 14                 |
| Projects with significant deficiencies             | 1                  | 2                  | 1                  | 1                  | 1                  |
| Projects w/ significant deficiencies corrected     | 1                  | 0                  | 0                  | 0                  | 1                  |
| Projects w/ enforcement action taken               | 0                  | 0                  | 0                  | 3                  | 1                  |

**VII.**

Provide description of any construction and / or O&M compliance issues.

The Operation and Maintenance reports that are submitted to Pitt County do not include the monthly maintenance logs. Some of the BMP's that were installed in 2005-2006 are not functioning correctly due to lack of maintenance and/or improperly designed.

**VIII.**

Provide description of any enforcement actions taken and provide the current status of the enforcement action.

There are currently three sites that are under Notice of Violation for failure to submit annual reports.



**TAR-PAMLICO STORMWATER RULE  
NEW DEVELOPMENTS PROJECTS SUMMARY TABLE  
OCTOBER 2016 - SEPTEMBER 2017**

**Table 2**

| Project ID / Catchment #                               | Advanced Fence* | Harris Ridge, Phase 2* | Kinsaul Place, Section 2 * | Kinsaul Place, Section 3* | Luke's Landing % | Stow & Go Mini Storage * |
|--|-----------------|------------------------|----------------------------|---------------------------|------------------|--------------------------|
| <b>Pre-Development Project Acreage (Acres)</b>         |                 |                        |                            |                           |                  |                          |
| Transportation Impervious                              | 0               | 0.17                   | 0                          | 0                         | 0.15             | 0.89                     |
| Roof Impervious  | 0               | 0.07                   | 0                          | 0                         | 0.31             | 0.21                     |
| Managed Pervious                                       | 1.57            | 21.68                  | 20.39                      | 31.06                     | 51.37            | 9.84                     |
| Wooded Pervious  | 0               | 0                      | 0                          | 0                         | 15               | 0                        |
| <b>Post-Development Project Acreage (Acres)</b>        |                 |                        |                            |                           |                  |                          |
| Transportation Impervious                              | 0.57            | 3.07                   | 3.55                       | 4.43                      | 14.02            | 2.99                     |
| Roof Impervious  | 0.01            | 1.22                   | 1.26                       | 1.86                      | 5.45             | 1.65                     |
| Managed Pervious                                       | 0.99            | 17.64                  | 16                         | 24.77                     | 44.13            | 6.3                      |
| Wooded Pervious  | 0               | 0                      | 0                          | 0                         | 3.23             | 0                        |
| <b>Total Acres</b>                                     | <b>1.57</b>     | <b>21.93</b>           | <b>20.81</b>               | <b>31.06</b>              | <b>66.83</b>     | <b>10.94</b>             |
| <b>Predevelopment Nutrient Export</b>                  |                 |                        |                            |                           |                  |                          |
| Nitrogen lbs/year                                      | 3.39            | 55.27                  | 43.77                      | 67.01                     | 68.74            | 23.79                    |
| Nitrogen lbs/acre/year                                 | 2.16            | 2.52                   | 2.16                       | 2.16                      | 1.03             | 2.17                     |
| Phosphorous lbs/year                                   | 0.98            | 15.95                  | 12.73                      | 19.48                     | 19.48            | 4.2                      |
| Phosphorous lbs/acre/year                              | 0.63            | 0.73                   | 0.63                       | 0.63                      | 0.29             | 0.38                     |
| <b>Post-development &amp; Pre-BMP Nutrient Export</b>  |                 |                        |                            |                           |                  |                          |
| Nitrogen lbs/year                                      | 11.26           | 81.09                  | 89.92                      | 118.39                    | 356.52           | 87.12                    |
| Nitrogen lbs/acre/year                                 | 7.17            | 3.7                    | 4.32                       | 3.81                      | 5.33             | 7.96                     |
| Phosphorous lbs/year                                   | 1.5             | 12.95                  | 13.83                      | 18.78                     | 50.81            | 10.98                    |
| Phosphorous lbs/acre/year                              | 0.95            | 0.59                   | 0.66                       | 0.6                       | 0.76             | 1                        |
| <b>BMPs Implemented</b>                                |                 |                        |                            |                           |                  |                          |
| Number of BMPs   | 0               | 0                      | 0                          | 0                         | 3                | 1                        |
| <b>Post-development &amp; Post-BMP Nutrient Export</b> |                 |                        |                            |                           |                  |                          |
| Nitrogen lbs/year                                      | 11.26           | 81.09                  | 89.92                      | 118.39                    | 134.7            | 37.55                    |
| Nitrogen lbs/acre/year                                 | 7.17            | 3.7                    | 4.32                       | 3.81                      | 4.49             | 3.43                     |
| Phosphorous lbs/year                                   | 1.5             | 12.95                  | 13.83                      | 18.78                     | 15.3             | 6.1                      |
| Phosphorous lbs/acre/year                              | 0.95            | 0.59                   | 0.66                       | 0.06                      | 0.51             | 0.56                     |

% Payment Made to Mitigation Bank

\* Located in Neuse River Basin

# BMP Installed for Attenuation Purposes

*(The Categories Listed Below Are Automatically Calculated)*

| <b>LOADING SUMMARY CALCULATIONS</b>                        |                         |
|--|-------------------------|
|  | Units                   |
| Sum of All Project Acres Post Development                  | <b>153.14</b> Acres     |
| Sum of Nitrogen Load For All Projects Post Development     | <b>472.91</b> N lbs/yr  |
| N Load per acre per year for all Projects Post Development | <b>3.09</b> N lbs/ac/yr |
| Sum of Phosphorus Load For All Projects Post Development   | <b>68.46</b> P lbs/yr   |
| P Load per acre per year for all Projects Post Development | <b>0.45</b> P lbs/ac/yr |

Table 3

| Public Education Action Report and Plan for Pitt County   |   |             |                               |   |                        |                                   |                       |                  |
|---|---|-------------|-------------------------------|---|------------------------|-----------------------------------|-----------------------|------------------|
| Jurisdiction: Pitt County   |   |             |                               | Date September 30, 2018 Submitted: October 30, 2018 |                        |                                   |                       |                  |
|   | Activity  | Point Value | # Done Last Yr (10/17_-10/18) | Points  | Cost                   | # Planned Next Yr (10/18 - 10/19) | Points Anticipated    | Anticipated Cost |
| 1   | Demonstration Sites (for BMPs)                              | 4 each      | 2                             | 8   |                        | 2                                 | 8                     | \$1,000.00       |
| 2   | Local Newspaper Article                                     | 2 each      |                               |   |                        |                                   |                       |                  |
| 3   | Technical Workshop (1st year, 2 required)                   | 4 each      |                               |   |                        | 1                                 | 4                     | \$500.00         |
| 4   | Environmental Contest / Field Day                           | 4 each      | 1                             | 4   |                        | 1                                 | 4                     | \$500.00         |
| 5   | Arrange Speakers For Civic Organizations                    | 1 each      | 2                             | 2   |                        | 2                                 | 2                     | \$100.00         |
| 6   | Clean Water Proclamation, with Newspaper Article            | 2           |                               |   |                        |                                   |                       |                  |
| 7   | Web Page / Web Site Links                                   | 2 / year    | 1                             | 2   |                        | 1                                 | 2                     | \$200.00         |
| 8   | Pet Waste Ordinance   | 5 / year    |                               |   |                        |                                   |                       |                  |
| 9   | Factsheets/Brochures/Flyers/Enviro freebies (public places) | 2 / year    | 1                             | 2   |                        | 1                                 | 2                     | \$100.00         |
| 10  | Utility Bill Inserts or Messages on Bills                   | 3 / year    |                               |   |                        |                                   |                       |                  |
| 11  | Close-out Packages / Info for New Homeowners                | 3 / year    |                               |   |                        |                                   |                       |                  |
| 12  | Storm Drain Marking (24 minimum per year)                   | 2 / year    |                               |   |                        |                                   |                       |                  |
| 13  | Sponsor new/expand Adopt-A-(Street-or-Stream) Program       | 4 / year    |                               |   |                        |                                   |                       |                  |
| 14  | Recognition Program (environmentally friendly participants) | 1 / year    | 1                             | 1   |                        | 1                                 | 1                     | \$100.00         |
| 15  | Toll Free Environmental Hotline (1-800 or Local)            | 3 / year    | 1                             | 3   |                        | 1                                 | 3                     | \$0.00           |
| 16  | VWIN Monitoring Force (Water Quality Reporting)             | 6 / year    |                               |   |                        |                                   |                       |                  |
| 17  | Other Water Quality Reporting Program                       | 3 / year    |                               |   |                        |                                   |                       |                  |
| 18  | Major Media Advertising                                     | 6 / year    |                               |   |                        |                                   |                       |                  |
| 19  | Local Access TV or Radio Spots                              | 3 / year    | 1                             | 3   |                        | 1                                 | 3                     | \$0.00           |
|   |   |             |                               |   | Total Points Reported: | 25                                | Total Points Planned: | 29               |
| <b>Please attach copies of articles, flyers, photographs, etc. documenting your activities, labeled for each type of activity.</b>  |   |             |                               |   |                        |                                   |                       |                  |
| <b>Note: Ongoing Activities will continue to receive the education points for each year that they are in effect.</b>  |   |             |                               |   |                        |                                   |                       |                  |
| <b>Note: If your locality has put together an exceptional effort for any of the above activities, you may be entitled to additional points for that activity. Please attach a description of the activity, a merit rationale, and a point proposal.</b> |   |             |                               |   |                        |                                   |                       |                  |
| Submitted By: Jonas Hill  |   |             | Title:                        | Senior Planner                                      |                        |                                   |                       |                  |
|   |   |             | Date:                         | 5-Oct-18  |                        |                                   |                       |                  |
|   |   |             | Signature:                    |   |                        |                                   |                       |                  |