

NPDES Phase II Stormwater Annual Report City of Roxboro

Fiscal Year

2023 – 2024

PERMIT NO: NCS000547

Prepared by:
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And

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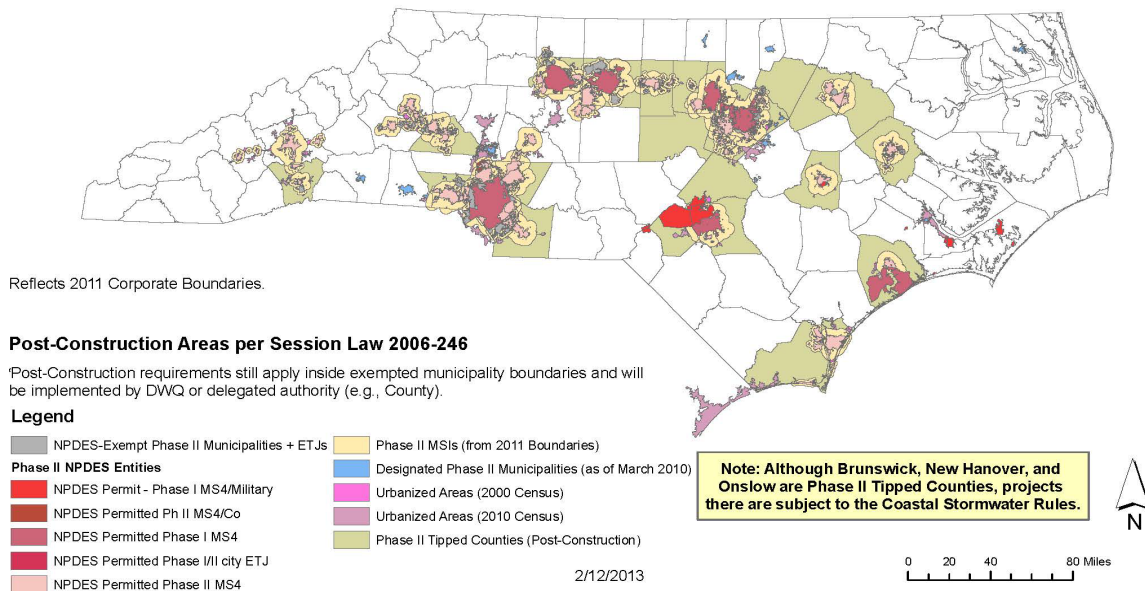
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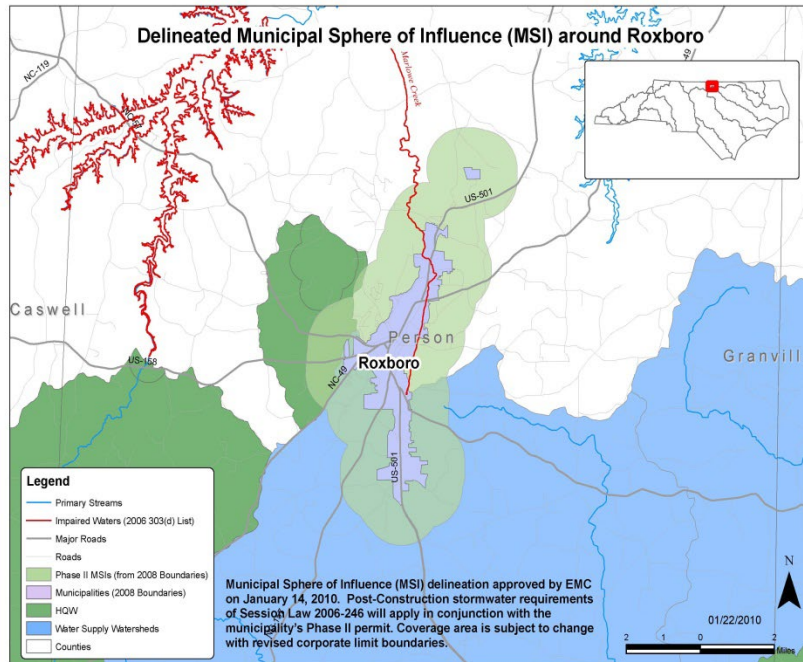
Introduction

On July 1, 2005, The North Carolina Division of Water Quality (DWQ) in the Department of Environmental Quality (DEQ formerly DENR) began issuing Phase II stormwater permits to municipalities in North Carolina under the National Pollutant Discharge Elimination System Program (NPDES). At the time, the NPDES Phase II Program was the latest stormwater program stemming from the Federal Clean Water Act of 1972. Prior to the Phase II program, EPA and NC DEQ had issued NPDES Phase I Stormwater Permits to Cities larger than 100,000 persons. In North Carolina these cities were Raleigh, Charlotte, Fayetteville, Durham, Greensboro, and Winston Salem. The Phase II Program included distribution of Phase II permits to municipalities less than 100,000 residents and began with municipalities within Municipal Spheres of Influence (MSI) that were greater than 50,000 citizens.

NPDES Phase I/II Communities, Exempted Municipalities*, & Tipped Counties with County-wide Post-Construction



Since 2006, Additional Communities have been designated as Phase II Communities due to size, population density, and potential water quality impacts. The City of Roxboro was designated in 2010 because of a combination of population density and the Falls Lake Nutrient Strategy.



The Phase II stormwater program was created with the intention of improving the quality of the nation's waterways by reducing the quantity of pollutants that stormwater transports into stormwater systems and discharges to surface water bodies. The permit requires permittees at a minimum to develop, implement, and enforce a stormwater program designed to reduce the discharge of pollutants from the municipal separate storm sewer system (MS4) to the maximum extent practicable.

The stormwater program is composed of the following six management measures:

- 1. Public Education and Outreach**
- 2. Public Involvement and Participation**
- 3. Illicit Discharge Detection and Elimination**
- 4. Construction Site Runoff Controls**
- 5. Post-Construction Site Runoff Controls**
- 6. Pollution Prevention and Good Housekeeping for Municipal Operations**

Each of these measures consists of required Best Management Practices (BMPs), measurable goals for each BMP and an implementation schedule for the 5 year permit cycle. Additionally, the City of Roxboro has a Comprehensive Stormwater Management Program and completes annual reporting about the NPDES Phase II Program. Because the NPDES Program concentrates on water quality it has limited provisions concerning water quantity and flooding controls.

The City's permit was officially issued in late 2011 and a copy of the permit is available either through Josh Johnson, P.E. or through NC Division of Energy, Mineral and Land Resources (NC DEMLR – NPDES –

MS4 Program) - DEQ. The City was audited in May of 2021 and is currently in the process of Permit renewal. DEQ is reviewing an updated Comprehensive Stormwater Management Plan (CSWMP). It will be adopted once CSWMP is approved by DEQ and the City council.

This Report is intended to complete the Annual Report specifying the City's progression in implementing the NPDES Permit and Comprehensive Stormwater Management Plan. It is also a staff review of the items implemented during this fiscal year.

It is intended to give readers a comprehensive idea of the City's full Stormwater Program including reporting information for the implementation of the Falls Lake Rules as well as the City's current funding structure. Additional Falls Lake reporting is likely to be needed after the EMC approval of the City's interim period program.

NPDES Phase II Minimum Control Measures

Each of the 6 Minimum Control Measures (MCM's) has a set of best management practices (BMP's) that are intended to foster compliance with both the City's Permit and CSWMP. These specific BMP's can be found in both the Permit and the CSWMP but highlights and specific actions will be noted in the report.

Public Education and Outreach

The City operates a Public Education and Outreach program that is designed to educate the general public about the need to improve water quality in stormwater. The general objectives are to distribute education materials to the community and/or to conduct equivalent outreach activities about the impacts of storm water discharges on surface waters and the steps the public can take to reduce pollutants in stormwater runoff. These objectives have been further refined to target residents, school children, local businesses (specifically gas station owners and landscaping companies) and industry because these groups have the most impact on stormwater pollution prevention. Residents were targeted with the vehicle maintenance theme on the weekends because that is when activity may take place.

The education program targets total suspended solids (TSS and sediment) and nutrient loading because turbidity, sedimentation, and nutrients are the pollutants of concern in downstream waters.

The City has stormwater handouts on display at the Roxboro City Hall in English and Spanish. The City's website also maintains a Stormwater Link: <https://www.cityofroxboro.com/government/planning-and-development/watershed-protection> which has information on the stormwater ordinance. Two requests for public education materials were addressed FY23-24. One direct education event took place at North End Elementary School, reaching 75 students.

Roxboro also partners with the **Clean Water Education Partnership (CWEP)**, an education and outreach organization hosted by the Triangle J Council of Governments (TJCOG). CWEP is a cooperative group

that is funded by 42 communities in North Carolina. It was created in 2001 to provide education and outreach for MS4 systems. CWEP has a large Mass Media Campaign that includes an educational website, TV, Radio and Social Media campaigns. Through this resource CWEP is able to bring stormwater education to a large population in the City of Roxboro and surrounding areas. In 2018 CWEP hired its first AmeriCorps service member to conduct direct environmental education and outreach with children and adults in CWEP communities. This program was very successful and continued through 2024.

CWEP Vehicle Maintenance information was posted to their website and social media outlets such as Meta/Instagram, Amazon, NextDoor, and YouTube. They had digital campaigns on Radio and TV platforms too. Physical pamphlets are made available at City Hall, year round. Roxboro can send information out to all of customers via water bills and typically sends one stormwater related mailer per year.

The CWEP staff include:

Patty Barry, Senior Water Resources Planner – pbarry@centralpinesnc.gov –
ph. 919-558-9389 or 919-558-9455

Austin Duncan, Stormwater Ed. Coord. - AmeriCorps – aduncan@centralpinesnc.gov – ph. 919-558-9341

For additional information about stormwater education the CWEP website has the most up to date information available at <http://www.nccleanwater.org/>.

CWEP Digital Media Impression Impact on Roxboro and surrounding communities

Partner	Population* for FY24	Impressions
Town of Apex	61,446	395,703
Town of Benson	4,080	26,275
Town of Butner	8,422	54,236
Town of Carrboro	21,233	136,737
Town of Cary	177,716	1,144,463
Town of Chapel Hill	53,209	342,658
Chatham County	60,970	392,637
Town of Clayton	28,188	181,526
City of Creedmoor	4,912	31,633
City of Durham	287,074	1,848,712
Durham County	36,631	235,898
City of Fayetteville	193,955	1,249,040
Town of Fuquay-Varina	36,017	231,944
Town of Garner	32,332	208,213
City of Goldsboro	33,723	217,171
City of Havelock	17,762	114,384
Town of Hillsborough	9,601	61,829
Town of Holly Springs	43,269	278,646
Town of Hope Mills	18,067	116,349
Johnston County	160,936	1,036,403
City of Kinston	19,749	127,180
Town of Knightdale	19,674	126,697
Town of Leland	25,313	163,012
Town of Morrisville	31,464	202,623
Nash County	41,375	266,449
Town of Nashville	5,729	36,894
City of New Bern	32,337	208,245
Orange County	55,240	355,737
City of Oxford	8,691	55,969
Town of Pittsboro	4,627	29,797
City of Raleigh	462,140	2,976,109
City of Rocky Mount	54,429	350,514
Town of Rolesville	9,894	63,716
City of Roxboro	8,183	52,697
Town of Siler City	7,699	49,580
Town of Smithfield	11,710	75,411
Town of Spring Lake	11,735	75,572
Town of Tarboro	10,535	67,844
Town of Wake Forest	48,766	314,045
Wayne County	76,130	490,265
Town of Wendell	10,694	68,868
Town of Zebulon	7,436	47,887
Total	2,253,093	14,509,566

Public Participation and Involvement

The City has a responsibility to solicit and consider public opinion on all matters, including stormwater management. Many times, this involvement is lacking but the City is often times required to continue to solicit public involvement. The City of Roxboro is currently in this situation. The City originally involved the public with a public hearing in 2010 and has attempted to create a stormwater committee but has not found a receptive audience. The City answers questions from citizens and maintains a **Helpline - City Hall at (336) 599-5658** and has worked with CWEP but continues to struggle to establish effective Public Participation and Involvement. The city clerk updates city stormwater website as needed. The City plans to resume Stormwater Public Meetings once per year as new permit is issued. This public meeting will seek input on the stormwater program and will provide both input to the City as well as education to the citizens. The City of Roxboro sponsors litter cleanups three times a year. See table below for details. In addition, there is an annual Yard Waste Removal day for grass clippings, leaves, and tree trimmings.

Litter Sweep 4/15/23 Participants 42 - collected 26 bags

Litter Sweep 9/16/23 Participants 30 - collected 18 bags

Litter Sweep 4/20/24 Participants 101 – collected 65 bags

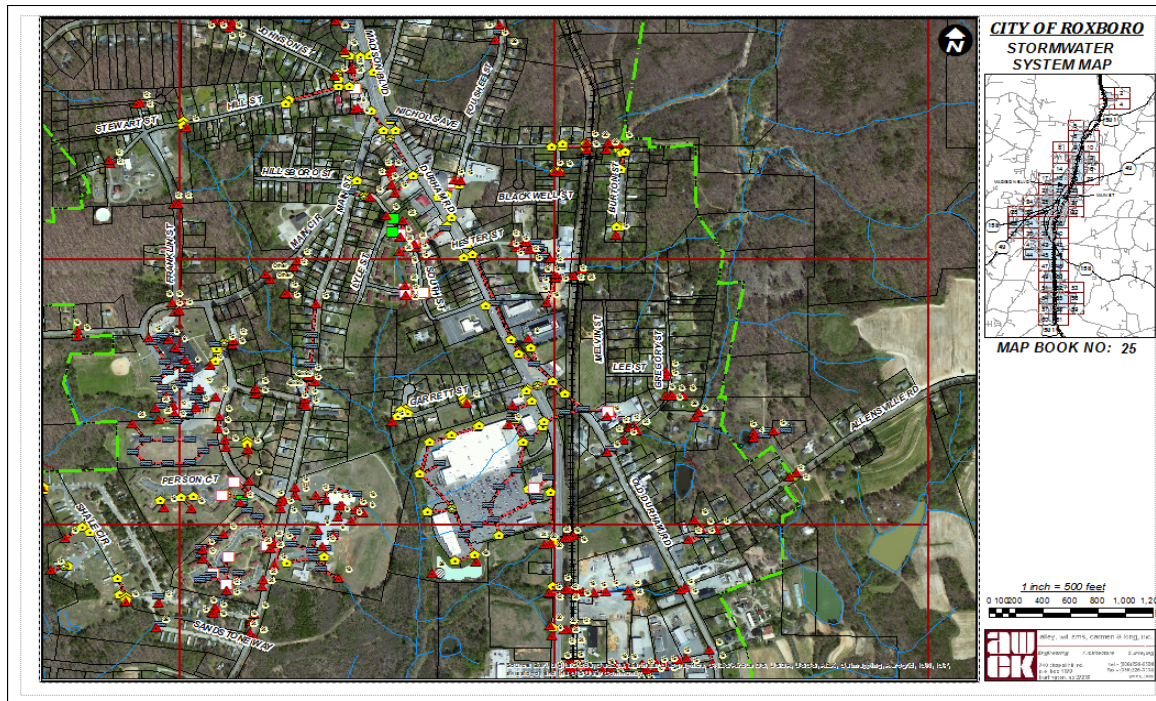
Illicit Discharge Detection and Elimination

The City of Roxboro has a full Illicit Discharge Detection and Elimination (IDDE) Program. The IDDE Program is intended to reduce discharges to the stormwater system that are not entirely composed of stormwater. There are a few permitted discharges and firefighting related discharges that are allowed.

An illicit discharge is typically dirt, soap, pet waste, litter, oil, fertilizer, pesticides, or raw sewage and often times comes from “generating sites.” Generating sites are points of pollution that continue over a period and are recurring at regular or irregular intervals.

The backbone of the IDDE program is the IDDE Ordinance that the City passed in June 2012 (at the same time as its Phase II and Falls Lake New Development Ordinances). This ordinance was revised on **February 12, 2019**. The IDDE ordinance provides permits specific discharges into the MS4 as legal, provides legal authority to restrict illegal discharges, prohibits illicit connections, provides conditions for cleaning up and preventing polluted spills, provides for right of entry into property to investigate prohibited activities, and provides the City with options for enforcing the Ordinance. The IDDE Ordinance is based on the NC DWQ’s Model Ordinance.

The second basis for the IDDE program is the City’s MS4 Map. The City’s mapping effort is complete. The map includes the entire MS4 system and provides for easy access to aid in the investigation of illicit discharges. An investigator with the map could find an illicit discharge and then easily follow the flow of the discharge upstream until finding a source of the discharge. The map is available for use through GIS and is printable for non-GIS users.



MS4 Sample Map

The IDDE program also includes dry weather testing of outfalls into the stream system. In the first permit cycle this is conducted in coordination with the mapping. Outfalls that have dry weather flows are reported and investigated.

In 2023-2024, the City of Roxboro had no private storm drain failures, no illicit connections, and no rerouted wastewater to stormwater connections. Two cases of illegal dumping were found and handled by Code Enforcement. There was one sanitary sewer overflow handled by Public Utilities Superintendent. Debris was cleaned from the line. Sewer or storm drains were videoed as needed. The City contracts out sewer outfall cleaning as needed.

In FY 23-24, a stormwater culvert was replaced at Mt. Bethel Church road at an expense of \$115,000. Also, outfall sections of stormwater culvert on Holley Street and South Street were replaced. Estimated material and contracted labor was \$7,715.00. This estimate did not include City employee labor or equipment use.

The City's Capital Improvement Budget for 2023-2024 includes the completion of 25 Million Dollars of Upgrades at the WWTP in August 2024; primarily to reduce bypass overflows. Roxboro is also planning a \$25M Tanyard Branch Stormwater Project and making application to the NC NRCS's PL 566 Program. A \$26M Western Sewer System Project is proposed to bid in 2024-25. This project will eliminate potential sewer overflows on the Marlowe's Creek which is on the impaired list.

City Staff needs training to identify illicit discharges and the reporting process for these discharges. Additional staffing may assist with this task in the future. This training is combined with the Pollution Prevention and Good Housekeeping training of public works, utilities, and some administrative staff. A

possible future improvement would be virtual trainings and/or including personnel from other departments including fire and police personnel. Virtual training of new hires might also be a good addition.

Construction Site Runoff Controls

The City of Roxboro delegates the Construction Site Runoff Controls to the NC DEQ Division of Land Quality. The City of Roxboro does not have a delegated erosion control program but does make sure that plans it approves that will disturb greater than 1.0 acres of land apply for, and receive, and erosion control plan. The City of Roxboro also has the ability to call NC DEQ to report known sedimentation issues.

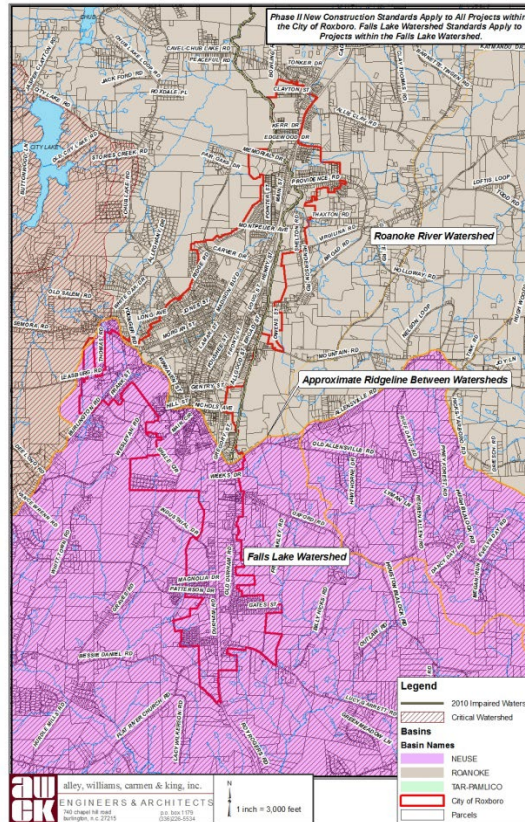
Post Construction Site Runoff Controls

The City of Roxboro has a typical NPDES Phase II Post Construction Program. This includes a Post Construction Ordinance, administrative forms that support it, and a review process. The Post Construction Program is intended to treat two different watersheds. The northern portion of Roxboro is in the Roanoke River Watershed and has only typical NPDES Phase II Stormwater Controls. The southern portion of the City drains to the Neuse River and is within the Falls Lake Watershed. The Falls Lake Watershed is subject to both the Water Supply Watershed restrictions and the Falls Lake Rules restrictions. The below table further explains the differences in the two watersheds.

Stormwater Standards Summary Table		
	Falls Lake Watershed	Roanoke River Watershed
Residential Exemption	< 1/2 ac	<1 ac
Commercial Exemption	<12,000 sq ft	<1 ac
Low Density Option	N/A	Yes (<24% impervious)
Total Suspended Solids (TSS)	85% reduction	85% reduction
Post Development Flow	10-yr 24 hr	10-yr 24 hr
Treatment Volume	1"	1"
Drawdown Time	48 hour minimum	48 hour minimum
Stream Buffers	50' (30' undisturbed)*	30' pervious
Nitrogen Loading	2.2 lb/ac/yr (40% reduction)	No
Phosphorus Loading	0.33 lb/ac/yr (77% reduction)	No
O&M	Bond Required	Bond Required
Easements	Required	Required

* Projects that impact the 50' riparian buffers on USGS Streams within the Falls Lake Watershed will be required to obtain approval from NC DWQ unless a separate buffer program is adopted by the City of Roxboro.

The City passed its New Development Ordinance in June 2012 (*Revised Feb. 12, 2019*) and the ordinance contains language explaining the different watersheds and establishing the different standards. The City’s ordinance also allows for the Stormwater Administrator to require peak flow matching for the 100 year – 24 hour storm.



Roxboro River Basin Map

When a project is submitted to the City it goes through the City Planning Department. Out of 11 plan reviews, 3 triggered stormwater ordinance. No existing permitted projects were completed. During the review process the Public Services Director reviews the project from both a stormwater and a utility perspective. At that point, review comments are made about the project and addressed. After approval of the project, the owner is required to complete an Operation and Maintenance Agreement for the stormwater control measures. This O&M agreement is then recorded with the register of deeds so that it can be reviewed at a later point in time. The City of Roxboro requires as-builts and annual inspection reports from new stormwater control measures (SCM). The city has 25 SCMs.

Pollution Prevention and Good Housekeeping

Pollution Prevention is an overall goal of the City’s stormwater management plan and Good Housekeeping is a key to that goal. Municipalities, in general, conduct many activities that can pose a

threat to water quality. Municipal facilities are the primary potential source of contamination but with good housekeeping habits this potential can be reduced or eliminated. The City attempts to minimize stormwater pollution from municipal operations by complying with best management plans for each City facility. The BMP's are written into a City Facilities O&M Plan that is intended to reduce or eliminate stormwater exposure of oil, grease, pesticides, herbicides, fertilizers, sediment, and other materials used by the City. Each of the City facilities is inspected annually and any issues are noted, written into the Facility O&M Plan, and discussed with the facility supervisor.

The City operates a City Hall/Fire Department, Police Station, 2 Fire Stations, Public Services Facility, Water Treatment Plant, Wastewater Treatment Plant, and an Old Public Works Facility. Each of these facilities is inspected annually and any new facilities will be added to the inspection list.



Salt Storage at Public Works

City staff with the greatest exposure to stormwater are trained on PPGH once annually. At three Thursday safety meetings, about a dozen participants were trained in stormwater related topics. The training is combined with illicit discharge detection and elimination training. The PPGH portion of the training concentrates on good housekeeping functions. This often includes identification of bad habits that can take place and how to fix the situation to reduce the risk of pollution to stormwater.

Roxboro used 2.5 tons of road salt during inclement weather in 2023-24 and the City recycled 410 gallons of used oil with Noble Oil Services in 2023-24.

The City of Roxboro sweeps the entire city's streets on a weekly basis, which they estimate to be 800 miles a month. The City's sweeping operation picked up 820 yds in 2023-24. As part of Pavement Management program, drains, grates, and culverts are inspected and cleaned before and after a storm event or as needed with jet truck or by hand.

A brush truck picks up curb items 5 days a week. The total estimated collected was 382 tons. In the Fall, two leaf removal trucks run M-F too. The total collected was estimated at 621 tons.

There are three pet waste stations downtown: 319 S Main St by Library/Park, 133 S Main St by Merritt Commons/Roxboro Square Park, 225 N Main St by Russell's Dept. Store. They are maintained by Public Works staff three times per week (MWF).

Impaired Waters and Total Maximum Daily Loads (TMDL)

The City of Roxboro discharges to one impaired stream in the Roanoke River Basin and a different portion of the City is in the Falls Lake Watershed. The impaired stream is Marlowe Creek. Marlowe Creek (22-58-12-6b) is impaired for aquatic life. The Falls Lake Watershed is covered later in this report.

Nutrient Sensitive Waters

Environmental conditions in North Carolina's rivers, estuaries and reservoirs are driven by complex interactions among rainfall, flows, temperatures, biological factors, and chemistry. Some of the waters of the state have a history of exceeding nutrient and chlorophyll a standards, and are deemed nutrient sensitive waters (NSW). Currently, the following watersheds have active nutrient sensitive waters strategies: Neuse River Basin, Tar-Pamlico River Basin and Jordan Lake Watershed.

New programs combine with the City's existing Jordan Lake Riparian Buffer and Jordan Lake Stage 1 programs to form the City's NSW Strategy. The City's NSW Strategy is intended to, and does, accomplish reductions in nutrient loading and is the maximum extent practicable per NC law. The City cannot legally implement a Jordan Lake New Development program.

Falls Lake Rules

A portion of the City of Roxboro is within the Falls Lake Watershed and is subject to the Falls Lake Nutrient Strategy. The Falls Lake Rules were adopted in January 2011 to restore water quality in the lake by reducing the amount of pollution entering upstream. The rules are a staged nutrient management strategy designed to reduce nutrient discharges to the lake from various sources, including stormwater runoff from new and existing development, wastewater treatment plants and agriculture. The following rules are often referred to as the Falls Lake Rules.:

[15A NCAC 02B .0275 - Purpose and Scope](#)

[15A NCAC 02B .0276 - Definitions](#)

[15A NCAC 02B .0277 - Stormwater Management for New Development](#)

[15A NCAC 02B .0278 – Stormwater Management for Existing Development](#)

[15A NCAC 02B .0279 – Wastewater Discharge Requirements](#)

[15A NCAC 02B .0280 – Agriculture](#)

[15A NCAC 02B .0281 – Stormwater Requirements for State and Federal Entities](#)

[15A NCAC 02B .0282 - Options for Offsetting Nutrient Loads](#)

[15A NCAC 02B .0235 – Amended Neuse River Basin Stormwater Requirements](#)

[15A NCAC 02B .0315 – Amended Neuse River Basin](#)

Falls Lake Background, Rules, and Implementation Schedules

The Falls Lake Project was begun in 1978 by the U.S. Army Corps of Engineers. Construction was completed in 1981. The lake was created to provide flood control, drinking water supply, protection of downstream water quality, fish and wildlife conservation, and recreation.

Following questions in 2004 over the condition of Falls Lake, DWQ began more intensive sampling for use support assessment. A Falls Lake Technical Advisory Committee (TAC) was formed in July 2005 to assist DWQ with the review and modification of the monitoring strategy and developing levels of confidence for decision making associated with the monitoring and lake modeling activities. The field study was completed in fall 2007. Based on water quality data collected between 2002 and 2006, Falls Lake was listed as impaired for chlorophyll a on the draft NC 2008 303(d) list. The portion of the lake above I-85 was also listed as impaired for turbidity.

Following the impairment listing and completion of the study a watershed and lake model were completed by NC DWQ staff in late 2008 and early 2009 and presented to the TAC for their review. At the same time a stakeholder process was conducted to educate watershed stakeholders on lake issues, modeling basics and results, as well as strategy design issues and options. In 2009 and 2010 NC DWQ, with input from stakeholders, drafted the Falls Lake Rules that would be approved by the Environmental Management Commission in November 2010.

The Falls Lake Rules are designed to protect and improve water quality in the lake. Specific issues addressed by the rules include reducing pollution from wastewater discharges, stormwater runoff from new and existing development, agriculture and fertilizer application.

The primary rules that affect local governments (like the City of Roxboro) are the Stormwater Management for New Development, Stormwater Management for Existing Development, Protection of Existing Riparian Buffers, Wastewater Discharge Requirements, and Options for Offsetting Nutrients Loads. The Protection of Existing Riparian Buffer Rules impacts development within the watershed but is implemented by NC DENR while the Wastewater Discharge Requirements do not apply to Roxboro because Roxboro's water supply and wastewater discharge are both in the Roanoke River Watershed.

The New Development Program's went into effect in 2012 and are discussed in the above section of the report with the NPDES Phase II Post Construction Program. The City of Roxboro adopted the first stage of its Existing Development Program in January 2012. The first stage for Roxboro was to complete a "Stage 1 Inventory." There are 21 Water Supply Watershed SCMs in Falls Lake watershed.

Existing Development Stage 1 Programs

The City of Roxboro's Stage 1 Inventory included information about its Wastewater Collection System, Discharging Sand Filter Systems and Septic Systems within the City, Potential Restoration Opportunities in Utility Corridors, Fertilizer Management Plans, Structural Stormwater Practices, and Restoration Opportunities for Wetlands and Riparian Buffers.

In 2022, a Stage 1 Interim Period Nutrient Reduction Program plan was created and sent in for approval. This contains plans to reduce any post-baseline interim loading within the City's jurisdictional area to the baseline loadings. This reduction required within Roxboro will be limited because all development within the Falls Lake Watershed in Roxboro is also within the Water Supply Watershed and has had at least a partial offset of nutrient loading. Additionally, development within the last 5 years has been limited within the Falls Lake Watershed.



City of Roxboro Falls Lake Stage 1 Inventory

To: John Huisman, Division of Water Quality

From: Josh Johnson, P.E.

Date: January 2012

Introduction

As part of the City of Roxboro’s Stormwater Program, the City has begun preparing an inventory of data and potential nutrient load reducing activities that the City may use in the future to comply with the Falls Lake Existing Development Rule. The City is a brand new NPDES Phase II Permit Holder and the City is in the process of creating and implementing many new stormwater programs.

Wastewater Collection Systems

The City of Roxboro operates a Wastewater Collection System that is permitted through NC DENR. The Collection System’s NPDES Permit Number is WQCS00048 and the system is in kept in compliance. The system was recently inspected by DWQ and no violations were noted.

Discharging Sand Filter Systems and Septic Systems

The City of Roxboro has no known discharging sand filters and very limited information about septic systems within the city limits. Septic Systems are regulated through the Person County Health Department. The City only knows of one area within the city limits that has septic and the City has plans to provide connections to these 5 homes in the near future. Any information concerning septic should be in an inventory prepared by Person County.

Restoration Opportunities in Utility Corridors

The City of Roxboro is not aware of any restoration opportunities within existing utility corridors.

Fertilizer Management Plans

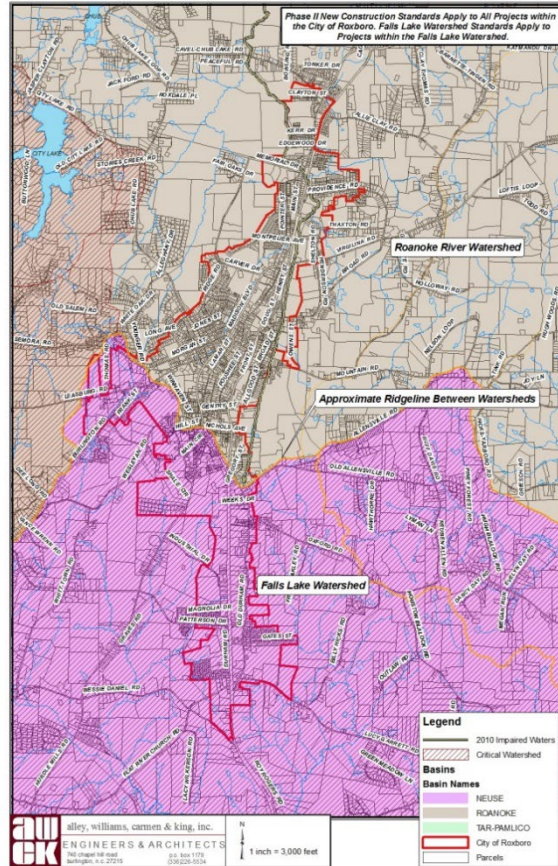
All Fertilizer Applicators for the City of Roxboro are appropriately licensed by the North Carolina Cooperative Extension Service and all application rates would be in accordance with NCCES guidelines.

Structural Stormwater Practices

The City of Roxboro has begun mapping their MS4. The mapping of the MS4 will prioritize the Falls Lake watershed within the City and will identify structural stormwater practices which will then be inspected during the mapping process.

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Future Existing Development Programs

The City of Roxboro will probably be required to establish a Stage 2 Existing Development Program in the future. This program will be intended to continue the Stage 1 program and for the City of Roxboro to provide either of the following:

- A. Achieve additional annual reductions in nitrogen and phosphorus loads from existing development greater than or equal to the average annual additional reductions achieved in the last seven years of Stage I.
- B. Provide for an annual expenditure that equals or exceeds the average annual amount the local government has spent to achieve nutrient reductions from existing development during the last seven years of Stage I.

However, it is certainly possible, perhaps even probable, that the regulations governing Stage 2 may change soon.

Stormwater Funding

The City of Roxboro funds its Stormwater Programs through a Stormwater Fee. The City collects a flat fee from utility users within the City Limits. The City uses this fee to pay for its Water Quality Programs including its NPDES Phase II, Falls Lake, and Street Sweeping Programs. The FY 23 - 24 Adopted Stormwater Budget was \$90,000.00. Annual revenue from Stormwater Fees is estimated at \$87,084 FY24-25. Stormwater activities (Non-Capital) are carried out in various departments within the City in the General and Enterprise Funds with support from the Stormwater Fund totaling \$227,000.

Stormwater Operations (Non-Capital)	
Admin, Permitting, Reporting	\$15,000
Stormwater Permits (Issuance, Inspection, Enforcement)	40,000
Ordinance Rewrite (State Law Changes, Fees)	\$10,000
Street Cleaning (Storm Culverts)	\$87,000
Street Maintenance (curbing/guttering)	\$50,000
FIRM Reviews (Planning and Zoning 5%)	\$25,000
Total	\$227,000

In the future, the stormwater budget will need to be increased in order to cover additional expenses for the Falls Lake Rules. These increases may be offset by converting the current flat fee into an Existing Residential Unit (ERU) style fee. The ERU is based on an impervious area per property calculation and will be a more equitable distribution of stormwater costs than the flat fee is. However, the ERU will have a substantially higher startup and maintenance costs than the current fee has. The future cost of Falls Lake may be offset by completion of the MS4 Mapping Program.

The Future of Stormwater

Stormwater, and Water Quality in particular, is an evolving field of regulation. The City of Roxboro is already involved in NPDES Phase II and Nutrient Sensitive Waters. Within the next decade the City needs to plan for further regulation of these issues as well as several other outstanding issues. As stormwater information and regulation continue to evolve, the City should expect to see additional regulations, costs, and improvements within their stormwater program.

Stormwater Program Contacts

Name	Position	Phone #	Email
Brooks Lockhart	City Manager	336-599-5658	blockhart@cityofroxboro.com
Bryan Garrett	Public Services Director	336-599-5658	bgarrett@cityofroxboro.com
Lauren Johnson	Planning Director	336-599-5658	lwjohnson@cityofroxboro.com
Josh Johnson	Stormwater Engineer	336-226-5534	josh@awck.com