

Stormwater Update

May 5, 2025

Presentation Outline

- > Background
- > Stormwater Utility
- > Stormwater Projects
 - > Neal Middle School
 - > Whispering Pines Stream Restoration
- > Education and Outreach

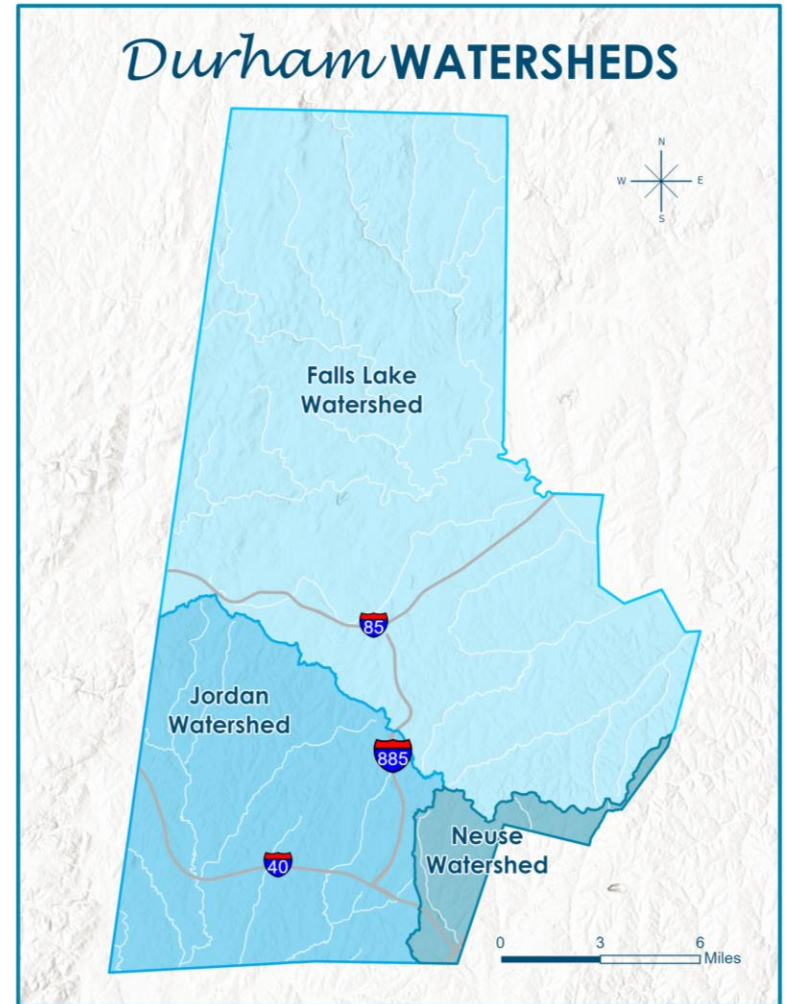
Background – Nutrient Management Strategies

- > Nutrient Sensitive Water Management Strategies are adopted legislation
- > Local municipalities and counties are required by law to comply with the nitrogen and/or phosphorous reductions required by the State
- > Durham County must comply with three separate rules:

Neuse River Basin Nutrient Strategy

Falls Lake Nutrient Management Rules

Jordan Lake Nutrient Management Rules



What does Durham County have to do?

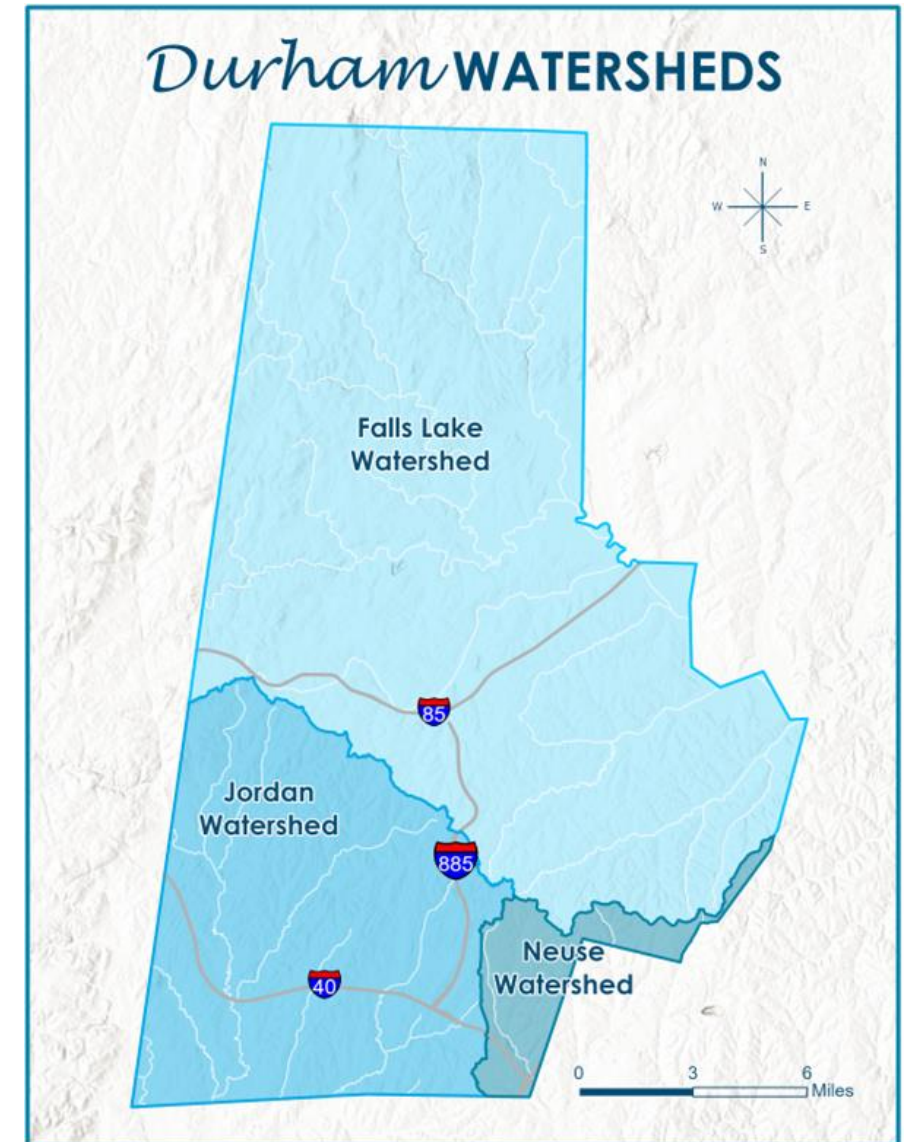
Reduce nutrients entering our waterways!

How?

- Require new development to meet nutrient rules on-site
- Design and construct stormwater control measures to help treat runoff before entering the stormwater system
 - Purchase undeveloped land for conservation
- Retrofit old stormwater measures to function better for water quality

Durham County Watersheds and Compliance Costs

- Neuse River - including **Falls Lake & Remainder**
- Cape Fear River - including **Jordan Lake**
 - Neuse River Rules = No New Cost
 - Falls Lake Rules (estimated costs):
 - Stage 1 = \$666,500 (IAIA)
 - Stage 2 = \$67,000,000 (current version)
 - Jordan Lake Rules (estimated costs):
 - Stage 1 = No New Cost
 - Stage 2 = \$5,900,000 (**on hold**)



Stormwater Utility Fee

- > 14,875 parcels billed in 2020-21 fiscal year
 - > Tiered Residential Structure
 - > NSFR for Commercial, Industrial, Gov't, etc.
- > Initial fee reduced to 1/3 based on financial burdens associated with COVID-19 to \$24 per ERU per year (ERU = 4,300 sq ft)
- > Annual increases – \$80 per ERU in FY2025
- > SL2024-32 prohibits cities and counties from imposing stormwater utility fees for property used for bona fide farm purposes

Stormwater Guiding Principles

Rules Compliance

Durham County's ultimate goal is to be in compliance with the Falls and Jordan Rules



Efficiency

Recognizing these are taxpayer dollars, seeks to get the best bang for your buck.

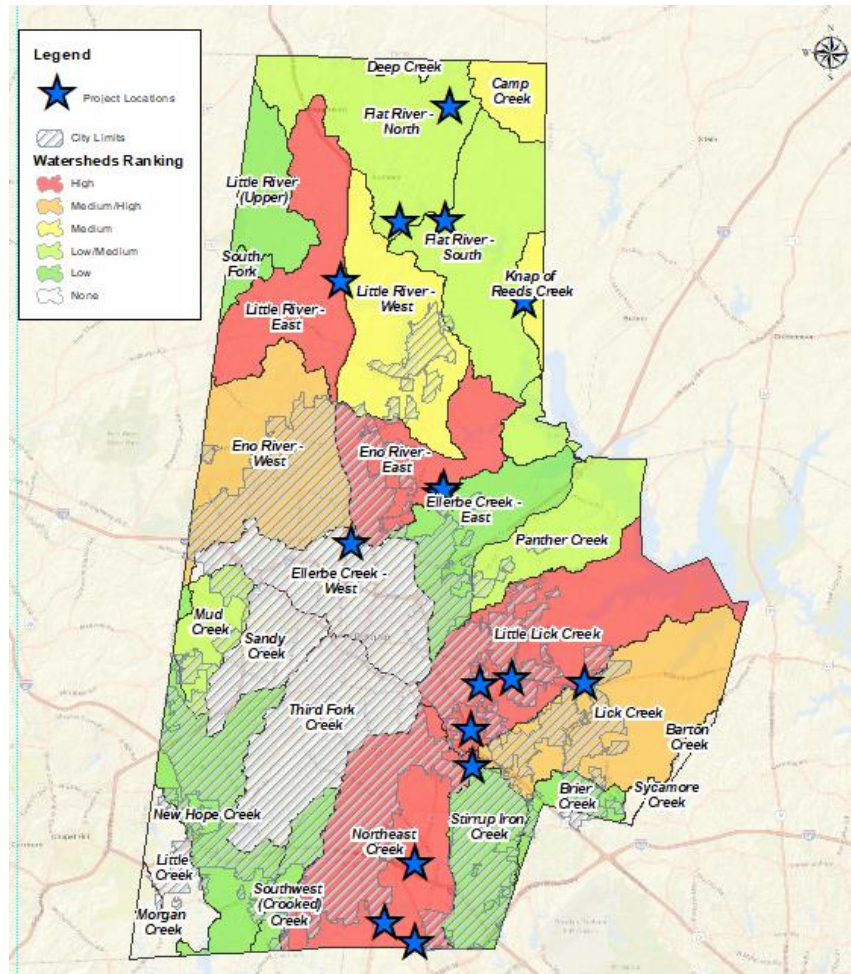
Resiliency

The County seeks out opportunities to address not only water quality, but the effects of climate change and flooding

Environmental Justice

Where possible, the County prioritizes underserved areas and populations for projects to improve watershed health.

Project Identification



				Durham Public Schools Operations	Little River Community Complex	Mangum Elementary School	Neal Middle School	Oak Grove Elementary School	Whispering Pines Mobile Home Park
Category	Criteria	Rating	Weighting Factor						
Water Quality Treatment									
	Nutrient Reduction (Total lbs) - Compliance	1 - 5	3	9	6	3	9	6	15
	Targeted Watershed - Compliance	1 - 5	1	5	5	2	5	5	5
Community Enhancement									
	Public Education - Efficiency	0 - 2	1	0	0	2	2	2	0
	Recreation Creation/Enhancement - Efficiency	0 - 3	2	0	6	0	0	0	4
	Environmental Justice/Equity - Environment Justice	0 - 5	2	2	0	10	2	6	10
Implementation Constraints									
	Property Ownership - Efficiency	1 - 3	3	9	6	9	9	9	3
	Site Accessibility for Construction and O&M - Efficiency, Resiliency	1 - 3	1	3	1	1	3	3	1
	Permitting Requirements - Efficiency	1 - 3	1	3	3	3	3	3	1
	Constructability - Efficiency	1 - 3	1	3	3	3	3	3	1
Public Safety & Public Property Considerations									
	Flood Protection or Reduction - Efficiency, Resiliency	1 - 5	1	1	1	1	1	1	5
	FEMA Floodplain - Efficiency, Resiliency	1 - 5	1	0	0	0	0	0	3
Costs - Construction and Maintenance									
	Cost Benefit - Efficiency	1 - 3	5	15	5	5	15	5	15
	Maintenance - Efficiency, Resiliency	1 - 3	1	1	1	1	1	2	1
Multi-Layer									
	Bonus for Achieving >1 of Counties Priorities - Efficiency	0 - 4	4	16	12	16	16	16	16
				TOTAL SCORE					
Total Maximum Score				67	49	56	69	61	80

Neal Middle School



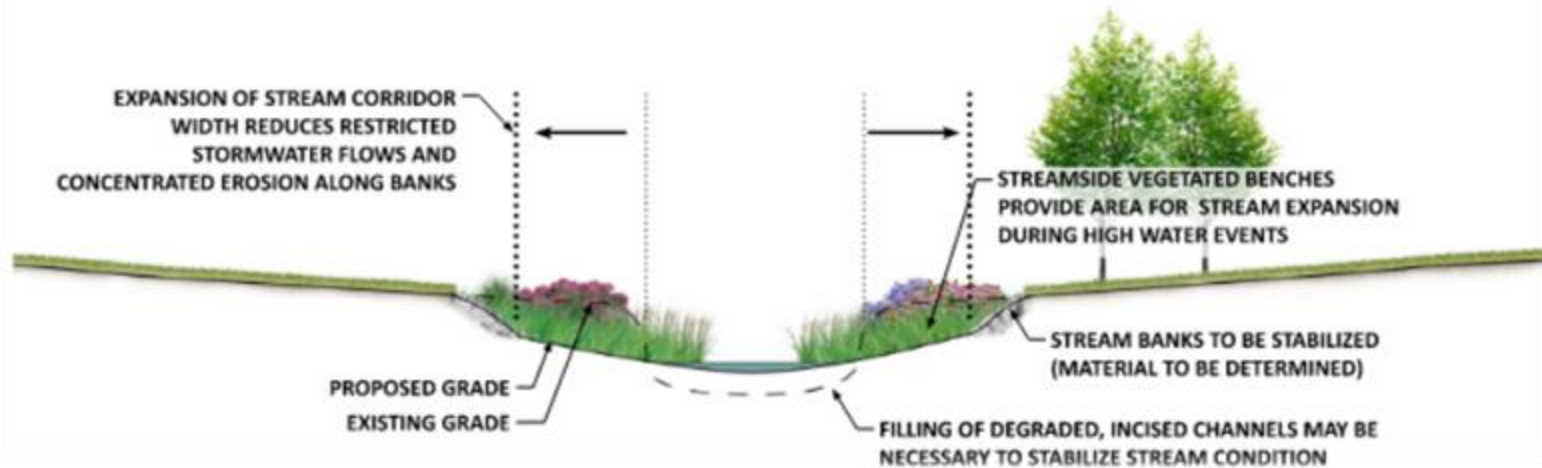
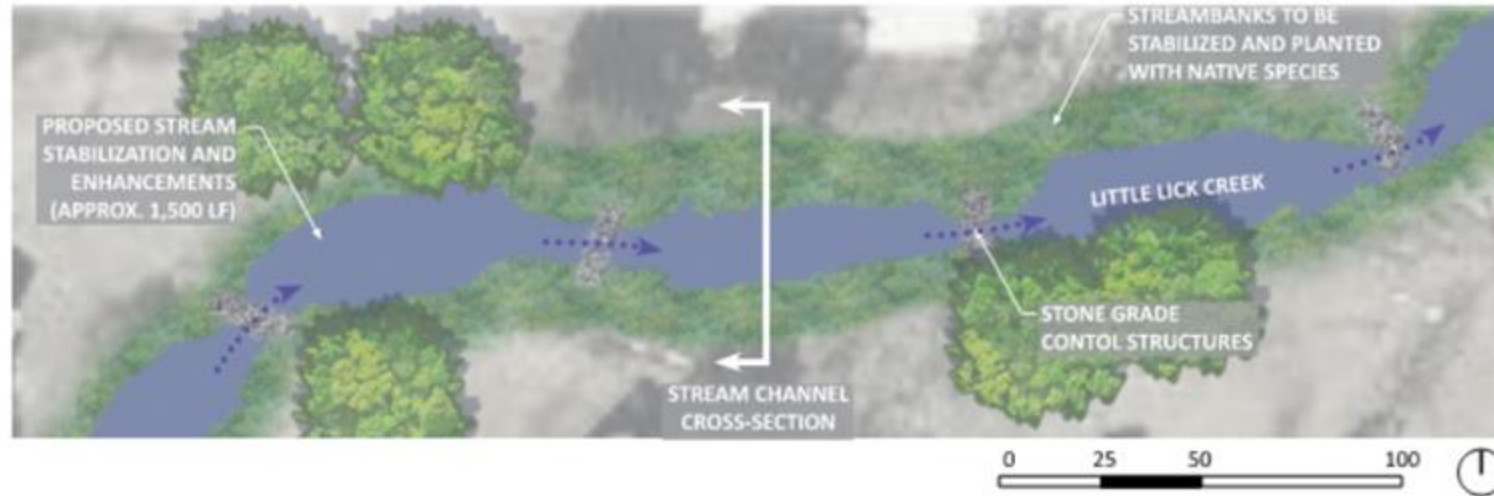


Whispering Pines – Stream Restoration

- > Mobile Home Park (Suburban neighborhood)
- > Located in the Falls Lake Basin
- > Contains approximately 4 acres of untreated impervious areas located on private property.



Design Goals – Stream “Restoration”



Design Goals – Water Quality Enhancements

- Install a ~1,500 sq. ft. bioretention/rain garden feature adjacent to the community recreation area.
- Redirect existing stormwater conveyance into the bioretention area.
- Existing concrete-lined swales with failing direct discharge outfalls will be converted to grass-lined bio-swales.
- Install educational signage promoting the protection of natural areas.



Project Funding

- > Neal Middle School - \$450K

 - > EEG Grant - \$225,000

- > Whispering Pines Stream Restoration - \$2.1M

 - > LASII - \$400K for Design and Permitting

 - > StRAP - \$500K for Stream Restoration

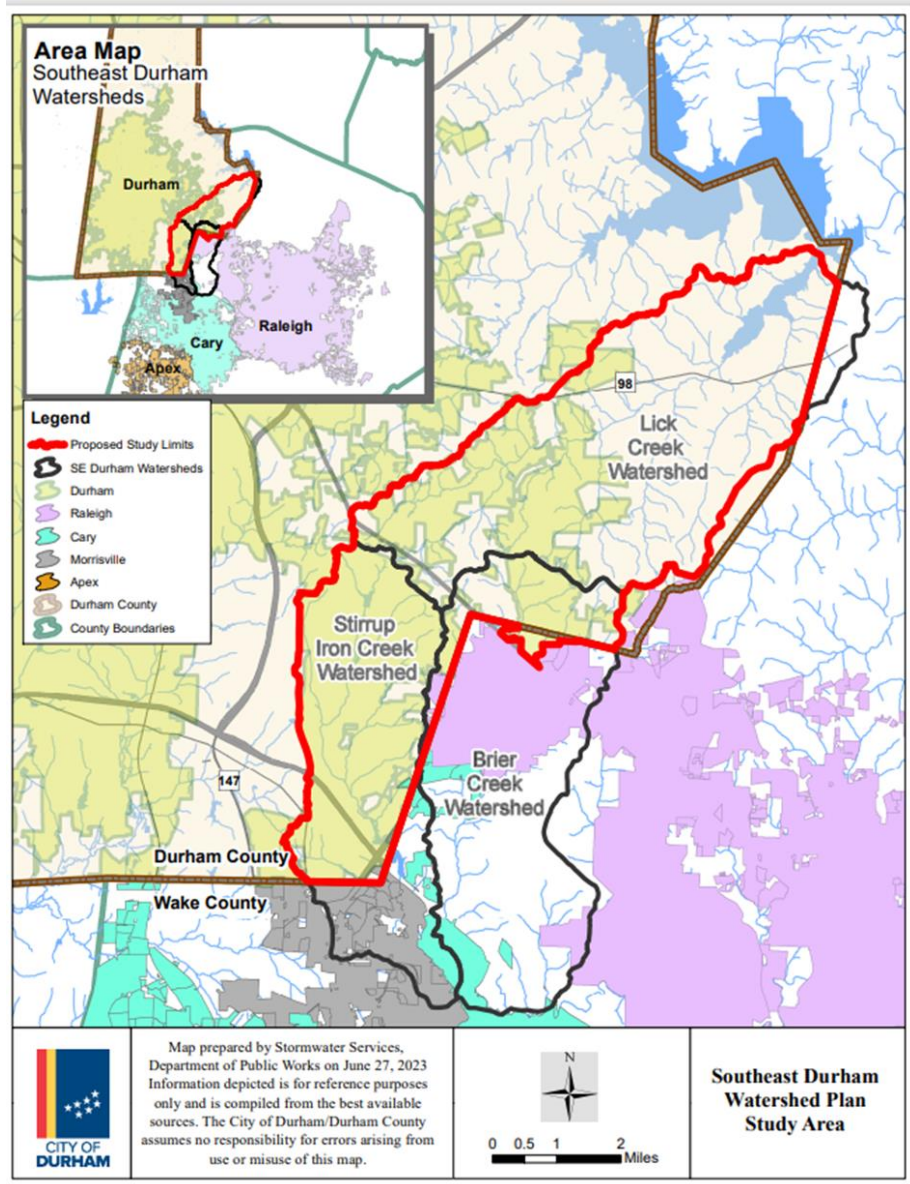
 - > WRDG - \$600K for Stream Restoration (Applied For)

 - > 319(h) Grant - \$240K for Bioretention (Application Due – May 30, 2025)

- > Balance Funded by Stormwater Utility Fee Dollars



Southeast Durham Watershed Improvement Plan



> Lick Creek, Stirrup Iron Creek, Brier Creek

> 33 sq miles – 50/50 City and County

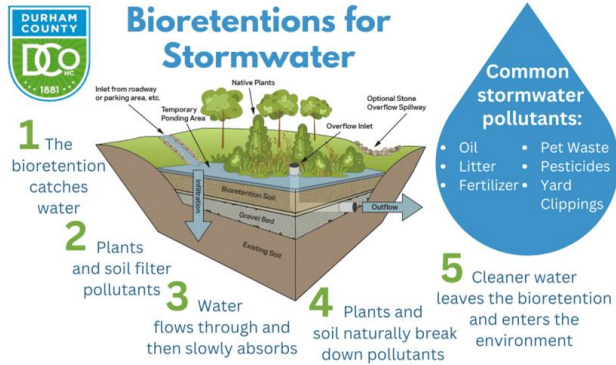
> Assess Watershed Health

> Streamwalks

> Identify Project and Retrofit Opportunities



Education and Outreach – Neal Middle



A bioretention cell is a shallow depression in the ground filled with sandy soil, gravel, and native plants to filter polluted water runoff through natural processes. This can reduce flooding, provide a habitat for small wildlife, and results in healthier water and environment.

For more information on Durham County Stormwater, visit <https://www.dconcc.gov/stormwater>

NEAL
MAGNET MIDDLE SCHOOL

FAMILY DAY BIORETENTION OPEN HOUSE

Wednesday, May 21st
5:30pm-7:30pm

Join Durham County at Neal Middle School Family Day to unveil their new bioretention! Durham County Stormwater staff will be present to showcase the bioretention, answer questions, and discuss school curriculum involvement.

DURHAM COUNTY
Engineering and Environmental Services



What's going on here?

This installation is a bioretention pond installed in 2024 by Durham County. A bioretention pond captures, holds, and filters stormwater runoff to naturally treat pollutants that may be in the water. These pollutants usually enter the environment by runoff from impervious surfaces.

How does it work?

- 1 The bioretention catches water
- 2 Plants and soil filter pollutants
- 3 Water flows through and then slowly absorbs
- 4 Plants and soil naturally break down pollutants
- 5 Cleaner water leaves the bioretention and enters the environment

Why is this important?

In addition to naturally filtering unwanted materials from water on Neal Middle's campus, this garden provides a variety of other benefits. Native plants will provide a habitat for small animals and insects and support local ecology. Plants and flowers will create a pleasant green space on campus. Spending time in green spaces is known to reduce stress and increase productivity. The close location to the school building and outdoor classroom also makes this an easily accessible site to incorporate into classes to allow students to learn more about nature, water, and garden maintenance. By collecting, holding, and slowly releasing water bioretentions also may reduce flooding.

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Common stormwater pollutants:

- Oil
- Litter
- Fertilizer
- Pet Waste
- Pesticides
- Yard Clippings

Tree Type
Trees are good. They do many good things. Here is a fun fact about this type of tree.

Shrub Type
Shrubs are good. They do many good things. Here is a fun fact about this type of shrub.

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DURHAM COUNTY
Engineering and Environmental Services
Stormwater Division

visit www.dconcc.gov/stormwater for more information about County Stormwater services.



Education and Outreach

City of Durham Durham City & County
Creek Week March 15-22 2025

MAR 10	Stormwater Q&A Panel Durham County Main Library
MAR 18	Trivia Night Gomo Brew Works - Durham
MAR 19	Trivia Night Common Market
MAR 20	Creek Week at the Museum Museum of Life and Science
MAR 21	Creek Critter Crawl Riverside Trail - Duke Forest
MAR 22	Storm Drain Art Competition Submissions due!

All Other Events!
Hosted by various Durham organizations

KEEP OUR WATERS BEAUTIFUL.ORG DURHAMVIGGOV/STORMWATER DCCOICGOV/STORMWATER



Education And Outreach

- > Durham County Stormwater has hosted/attended 13 events in 2025 (January-April) including
 - > Trivia Nights
 - > School Programs
 - > Outdoor Activities
 - > Durham Bulls Education Days
 - > An Educational Panel at the Durham County Main Library
- > Through these events we have reached an audience of ~1322 individuals
- > We have made connections and partnerships with a variety of schools, organizations, and professionals



Questions?