



Southeast Durham Development Concerns

A Multi-Departmental Overview of Mitigation Strategies

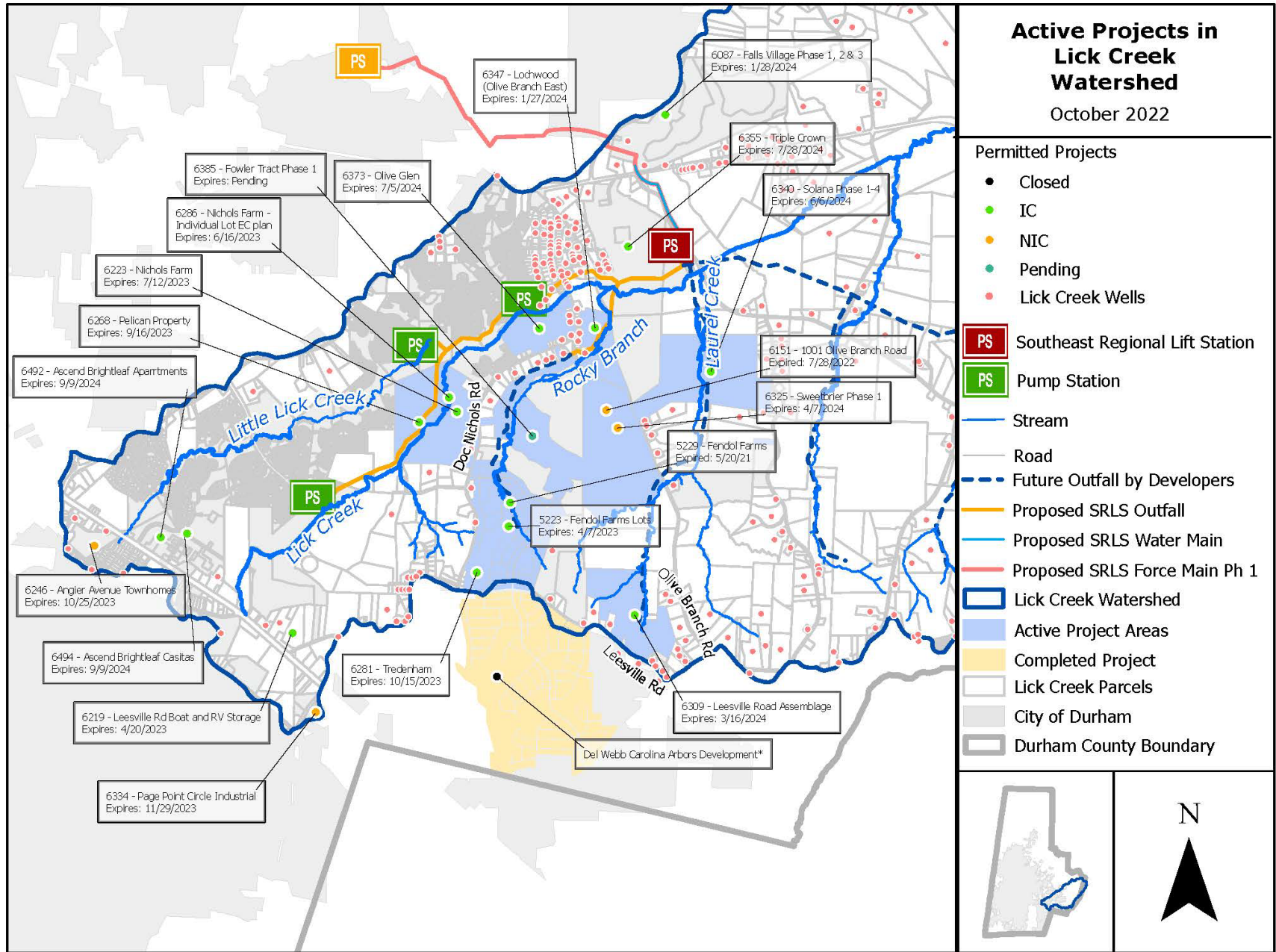


Volume of Development

as of 10.19.22

RESIDENTIAL UNITS IN SOUTHEAST DURHAM

Year(s)	2011-2019	2020	2021	2022	Total
Units Approved	2,671	580	3,059	566*	6,906
Units Pending Approval	-	-	-	2,143*	2,143*
Total Potential Units	-	-	-	2,739*	9,049*



Active Projects in Lick Creek Watershed

October 2022

Permitted Projects

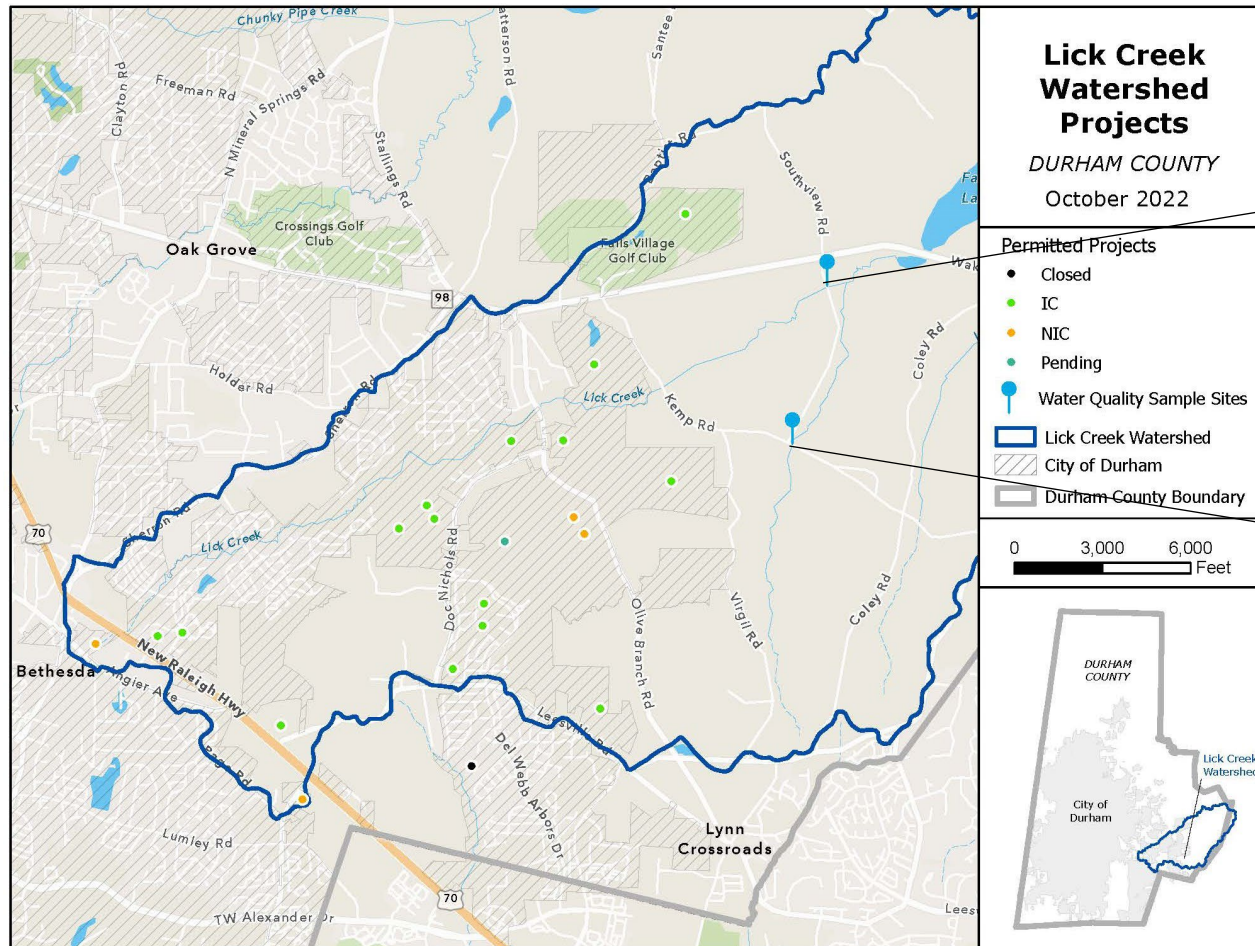
- Closed
- IC
- NIC
- Pending
- Lick Creek Wells
- PS** Southeast Regional Lift Station
- PS** Pump Station
- Stream
- Road
- - - Future Outfall by Developers
- Proposed SMLS Outfall
- Proposed SMLS Water Main
- Proposed SMLS Force Main Ph 1
- ▭ Lick Creek Watershed
- ▭ Active Project Areas
- ▭ Completed Project
- ▭ Lick Creek Parcels
- ▭ City of Durham
- ▭ Durham County Boundary

*Completed project.

0 2,500 5,000
Feet

Water Quality

City Stormwater Monitoring Stream Health Since 2004



Lick Creek in 2020:

- WQI = 75 (out of 100)
- High Bacteria*
- Mod-High Turbidity
- Good-Fair Biota

Rocky Branch Creek in 2020:

- WQI = 87 (out of 100)
- Mod Bacteria**
- Low Turbidity

*Continuing trend of increasing bacteria

**Improving bacteria since 2012

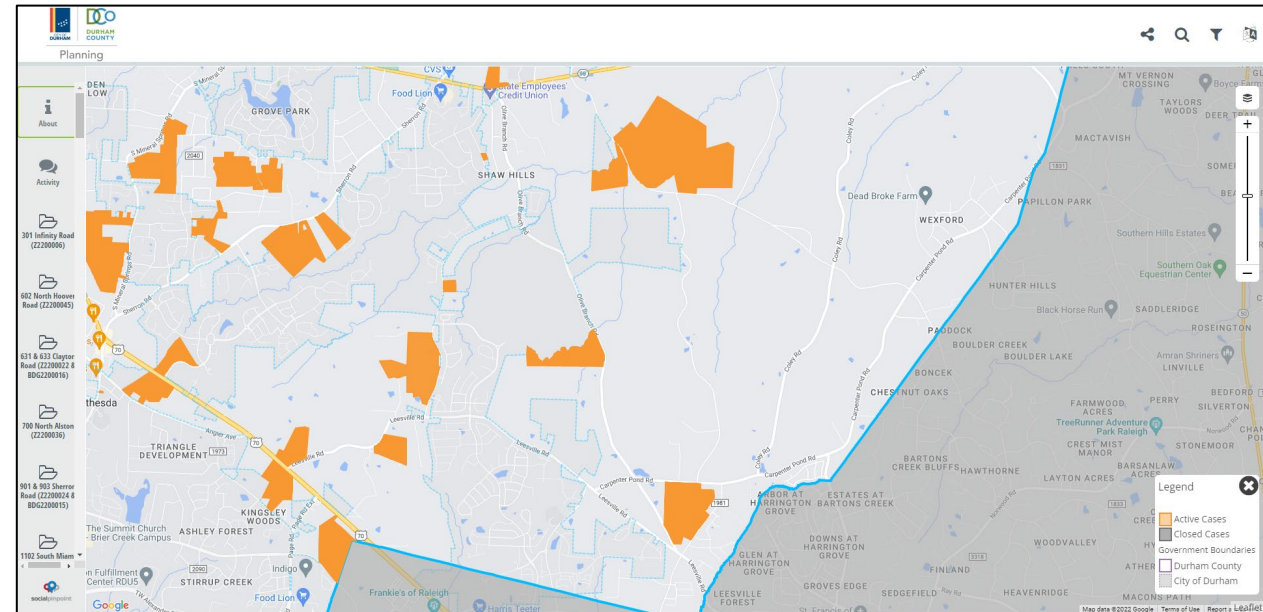
Water Quality

From City Stormwater Memo:

- “The state has a standard for **turbidity**. This standard is regularly exceeded in several Durham streams, including Lick Creek. The standard was exceeded prior to recent development.”
- “Very fine clay particles will stay suspended in water for days.”
- “In a special study that included Lick Creek...indicated that elevated turbidity during lower flows may be a result of instream conditions found in soils common to Durham.”

Planning Strategies

- Short-Term:
 - Mechanism for County Input on Pending Annexation Cases (implemented)
 - Development Plan Commitment Recommendations (implemented)
 - Maximum disturbed area
 - Additional open space
 - Expanded riparian buffers
 - Additional tree preservation
 - Additional erosion control measures
 - Higher stormwater standards



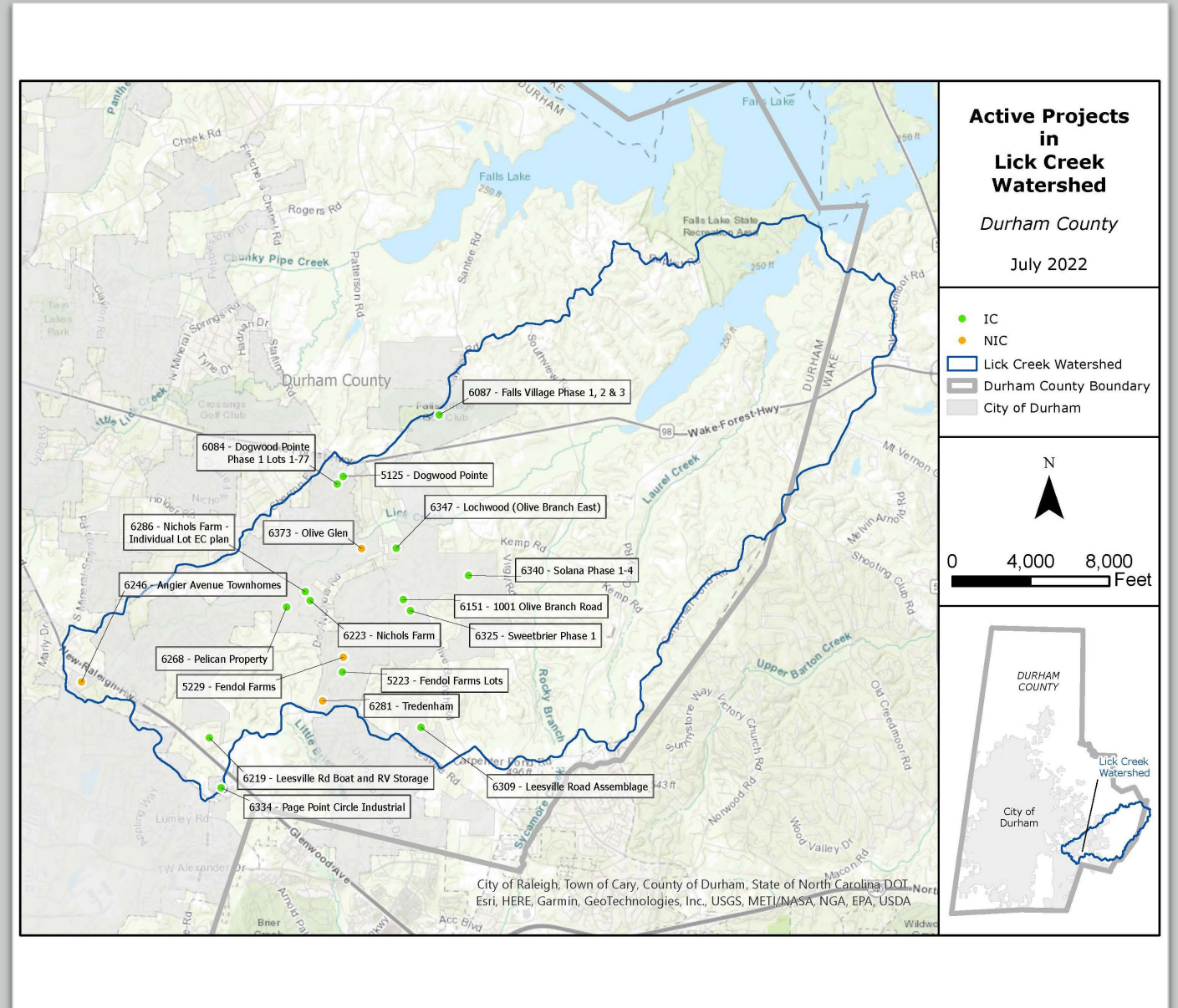
Planning Strategies

- Long-Term:
 - Mass Grading and Tree Preservation UDO Text Amendment (in progress)
 - Propose limits on how much land can be graded at one time
 - Revise tree coverage standards to further incentivize preservation over replanting
 - Draft proposal ready for next JCCPC meeting



Erosion Control Strategies

- Short-Term:
 - Work with sites to implement additional measures
 - Groundcover
 - Flocculants
 - Outlet Augmentations
 - Stream Crossing Installation
 - Increase Inspections
 - New Erosion Control Technician started on October 17th

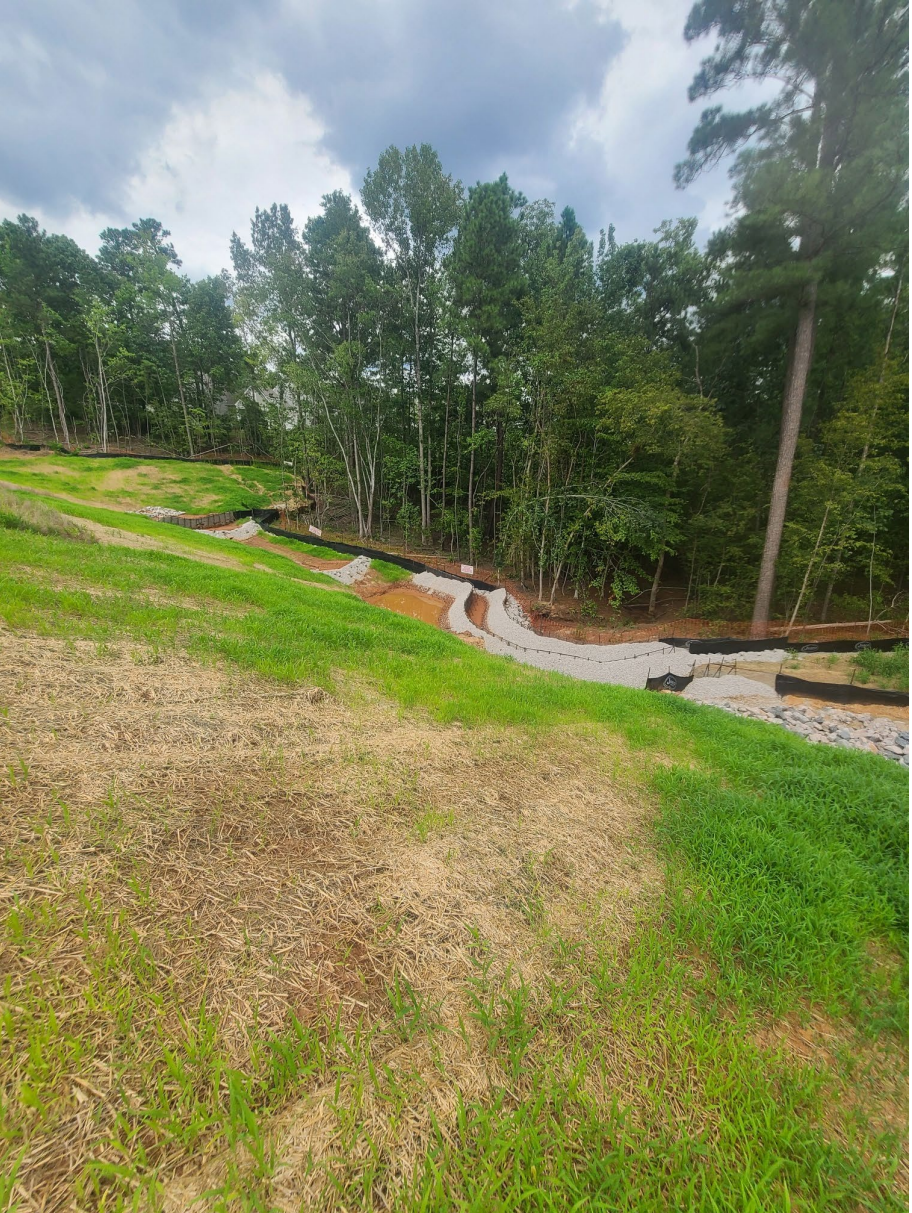


Tredenham

June 2022



August 2022



Pelican Property Stream Crossing



Erosion Control Strategies

- Long-Term:
 - Amend Erosion Control Ordinance in UDO
 - Proposed Amendments:
 - Double Row of Silt Fence in Sensitive Areas (already recommended by staff)
 - Triassic Soil-Specific Requirements:
 - Larger Sediment Basins and Slower Dewatering Times
 - Stricter Groundcover Requirements
 - Flocculants Required
 - Stop Work Orders
 - Ag Site Exemptions
 - Amendments must go to Sedimentation Control Commission
 - DCo is on the November 15th Agenda

The screenshot shows the North Carolina Environmental Quality website. At the top left is the logo for North Carolina Environmental Quality. To the right is a search bar with the text "Search...". Below the logo is a green navigation bar with links for Home, Divisions, Permits & Rules, Outreach & Education, and Energy &. Below the navigation bar is a breadcrumb trail: NC DEQ » About » Divisions » Energy, Mineral, and Land Resources » Erosion and Sediment Control. The main heading is "N.C. Sedimentation Control Commission" with a green underline.

The screenshot shows a document titled "Unified Development Ordinance". At the top is a navigation bar with icons for Home, Contents, Track, Share, Settings, and Help. Below the navigation bar is a table of contents with two columns. The first column lists text amendments 1 through 8, and the second column lists amendments 9 through 17. The document is titled "The Durham Unified Development Ordinance is current through legislation effective:" at the bottom.

Unified Development Ordinance	
Text Amendments	9 Landscaping and Buffering
1 General	10 Parking and Loading
2 Review Authority	11 Sign Standards
3 Applications and Permits	12 Infrastructure and Public Improvements
4 Zoning Districts	13 Additional Requirements for Subdivisions
5 Use Regulations	14 Nonconformities
6 District Intensity Standards	15 Enforcement
7 Design Standards	16 Design Districts
8 Environmental Protection	17 Definitions

FLOCCULANTS

It is your responsibility to make sure nothing but rain flows into stormdrains from your construction site. A flocculant is a product you can add to your Erosion Control Measures that separates the sediment from the stormwater before it flows off the active site. Flocculants can be used with wattles, sand/gravel bags, dams, and ditch liners to make your erosion control measures more effective.



Flocculant use strengthens your erosion control measures

To learn more about flocculants and other stormwater control measures, visit the City of Durham Pollution Prevention webpage.

durhamnc.gov/802



Flocculants

“Putting in even the best practices with great maintenance will never provide turbidity control unless chemical treatment is included, no matter what soil is being worked. The Triassic is just worse than most! And using the relatively inexpensive and simple passive treatments will never guarantee clear water, just much lower turbidity.”
-Dr. Rich McLaughlin, NCSU

1. APPLY EVENLY

More isn't better! Apply flocculants in an area well before the edge of the construction property. Spread the flocculant evenly. Don't dump it in piles. Over application of a flocculant can create stormwater pollution itself.



2. FOLLOW INSTRUCTIONS

When using flocculants, it's important to follow the instructions on the manufacturer's packaging or consult with local professionals for best guidance. There are specific amounts and specific locations where flocculants will work more efficiently.



3. CHOOSE THE RIGHT FORM

There are many kinds of flocculant, and depending on the construction site, one form might work better than another. Check with a local professional for guidance.



2022. 2. 24.

Environmental Health Potential Strategies

- Short-Term:


- Well Water Sampling for Homeowners

- 392 known wells in the Lick Creek watershed
 - Limited staffing – may require to be contracted
 - Could cost as much as **\$150,000**
 - Sampling is only for informational purposes - No Enforcement
 - Well age and construction must be considered

- Long-Term:

- Continued monitoring of well water every two (2) years in line with State guidelines
 - Depends on County funding

Mail
 Office
 Home



Public Health

DATE PAID
 West / / East
 Paid / /
 Cash Check CC OCC
 #

ENVIRONMENTAL HEALTH DIVISION
 414 E. Main Street, Durham, NC 27701
 Ph 919-560-7800 Fax 919-560-7830 healthinspector@dcoc.nc.gov

Water Analysis Application

Name: _____ Owner Tenant


Mailing Address: _____

Telephone Number: _____ Email Address: _____

Address to be SAMPLED: _____

Type of Test	Tests for	Cost	Check box that applies
Bacteriological	coliform and E-coli	\$135	<input type="checkbox"/>
Inorganic (includes Nitrate/Nitrite)	metals, pH and water hardness	\$135	<input type="checkbox"/>
Pesticide	traces of pesticide ingredients	\$135	<input type="checkbox"/>
Petroleum	traces of petroleum ingredients	\$135	<input type="checkbox"/>
Total			

*Are you experiencing any problems with your well water?



Environmental Health Division
 Human Services Building | 414 East Main Street, Durham, North Carolina 27701
 (919) 560-7800 | Fax (919) 560-7830 | dcoc.nc.gov

City and County Fire Marshal Potential Strategies

- Short-Term:
 - Educate Homeowners on their ability to file complaint with blasting company
 - Blasting permit requires liability insurance or bond
 - Homeowners *may* be compensated for damage
 - Encourage Homeowners to participate in Permit-Required Pre-Blast Survey
 - May include assessment of their well and well water

City and County Fire Marshal Potential Strategies

- Long-Term:
 - Amend the Blasting Permit Process
 - Require earlier notification
 - Expand pre-blast notification area from 750 to 1,000 feet
 - Require well testing after blast for turbidity in well water
 - Limit number of blasts per day and/or time of day when blasting is allowed
 - May require approval from Building Code Council
 - Adopt a local ordinance to regulate blasting companies
 - Monitor safety track records
 - Would require approval from Building Code Council

Next Steps

Work Underway:

- ✓ Increased Project Assistance
- ✓ Commissioner Input in Zoning
- ✓ Mass Grading and Tree Protection Ordinance Update
- ✓ Erosion Control Amendments
- ✓ City Water Quality Monitoring to Continue

Potential Additional Efforts:

- Well Water Sampling
- Homeowner Education on Blasting Permitting
- Update Blasting Requirements and Ordinance