Eno River Watershed Improvement Plan

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Durham – Where Great Things Happen
Presentation Agenda

• Project Background
• Stormwater Control Measure (SCM) Evaluation
• Stream Assessments
• Project Next Steps
• Discussion

Please Sign in!

Kid’s (and adult’s) activity!
Durham’s Nutrient Sensitive Waters

City of Durham, NC

Falls Lake

Jordan Lake
Durham’s Nutrient Sensitive Waters

• Regulatory Framework
  – State Nutrient Sensitive Waters Strategies
    • Neuse River: Nitrogen reduced by 30%
    • Falls Lake: Nitrogen reduced by 40%, Phosphorus reduced by 77%
Local Streams that have “Impaired” Water Quality

- Ellerbe Creek
- Third Fork Creek
- Northeast Creek
- Lick Creek
- Little Lick Creek
- Eno River
  (Orange County)
Citywide Initiation of
Watershed Improvement Plans

Ellerbe Creek WIP - 2010
Third Fork Creek WIP - 2012
 Northeast Creek &
 Crooked Creek WIP - 2013
Little Lick Creek WIP - 2016
Eno River WIP - Current
Eno River Watershed
151 square miles
Eno River Watershed Plan Goals

• Evaluate water quality and watershed health
• Identify “hotspot” areas
• Evaluate the benefits of SCMs (new and retrofit) and stream restoration opportunities
• Meet Federal and State water quality regulations
Stormwater Control Measure (SCM) Inventory Goals

Assess current SCM conditions

Identify water quality issues

Find SCM opportunities (new & existing)
Stormwater Control Measure Types

- **Dry pond**: water drains out between storms
- **Wet pond**: store and treat stormwater
- **Wetland**: plants help remove pollutants
- **Bioretention**: store and filter via media layers
- **Tree Box**: engineered media filters water
- **Sand Filter**: sand treats stormwater
Stormwater Control Measure
Field Work Process

• Prescreen sites
  – Geographical limits
  – Conflicts with utilities, other land uses
  – Favor publicly owned lands

• Prepare tablets and maps

• Visit sites to collect data
Existing Stormwater Control Measure Assessment

- Background Information
- Control Structure Data
- Site Constraints
- Retrofit potential for Existing SCMs
- Site Photographs

**Structural Retrofits**

- SCM Structural Retrofits Recommendation #1
  - None
  - Simple Control Structure Modification
  - Lower Water Level to Gain Storage
  - Redesign Control Structure
  - Redesign Wet Pond
  - Redesign Constructed Wetland
  - Redesign Pocket (Undersized) Wetland
New Stormwater Control Measure Site Assessment

- Background Information
- Potential New SCM Feasibility
- Photographs
Stormwater Control Measure Assessments

Existing SCMs
- 32 to be further evaluated
- 62 total

New SCMs
- 35
- 78 total
Stream Inventory Purpose and Goals

Assess current stream conditions

Identify water quality issues

Find stream restoration opportunities

Find SCM opportunities (new & existing)
Two Assessment Levels

Level 1
- Physical Measurements
- Water Quality Problems
- Utility Interactions
- Potential Projects
- Rapid Stream Assessment (RSAT)

Level 2 =

Level 1
- Bank Erosion Hazard Index
- Near Bank Stress
- Large Woody Debris Count
- Copper Testing
Field Approach
Rapid Stream Assessment (RSAT) - Evaluation of Overall Reach Condition

• Based on six parameters
  – e.g. Channel stability, Water quality, Biological indicators

• Each parameter is assigned a numerical score

• Overall rating is based on total points
  – Excellent = 42 – 50
  – Good = 30 – 41
  – Fair = 16 – 29
  – Poor = < 16
Level 2 Assessment
Bank Erosion Hazard Index (BEHI)

- Other characteristics:
  - Near Bank Stress
  - Large Woody Debris
  - Copper
Preliminary Stream Recommendations

- Restoration (approximately 2.6 mi)
- Enhancement Level 1 (approximately 3.8 mi)
- Enhancement Level 2 (approximately 2 mi)
- Bank Stabilization (approximately 1.15 mi)
- Preservation (approximately 24 mi)
Next Steps

• Further evaluate identified projects
  – Computer Modeling, Cost Estimates
• Project Prioritization
• Public Meeting #2 (Late 2017)
• Draft Watershed Improvement Plan
• Public Meeting #3 (Mid-2018)
• Final Watershed Improvement Plan
• Stay Tuned
Thank you for coming!

Please visit the activity stations & share your feedback with us -

We want to know what is important to you!

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