Upper Neuse River Basin Association

Environmental Review Commission
February 10, 2016

Forrest Westall - Executive Director

Jim Wrenn - Stormwater Utility:
Granville & Person Counties and
Towns of Butner, Creedmoor, Stem

A Brief History of the UNRBA

- Formed in 1996 due to concerns about the future water quality of Falls Lake
- Following the adoption of Falls Lake Nutrient Management Strategy and the Falls Lake Rules in 2010, the organization shifted focus

- **Updated goals and objectives**
  - **Assist member jurisdictions with Strategy implementation**
  - **Reexamine the Stage II Rules**

The Stated Purpose of the UNRBA, 2011 By-Laws

…to jointly address issues of concern relating to water quality and waste water management in the Upper Neuse River Basin and the Falls Lake Watershed.

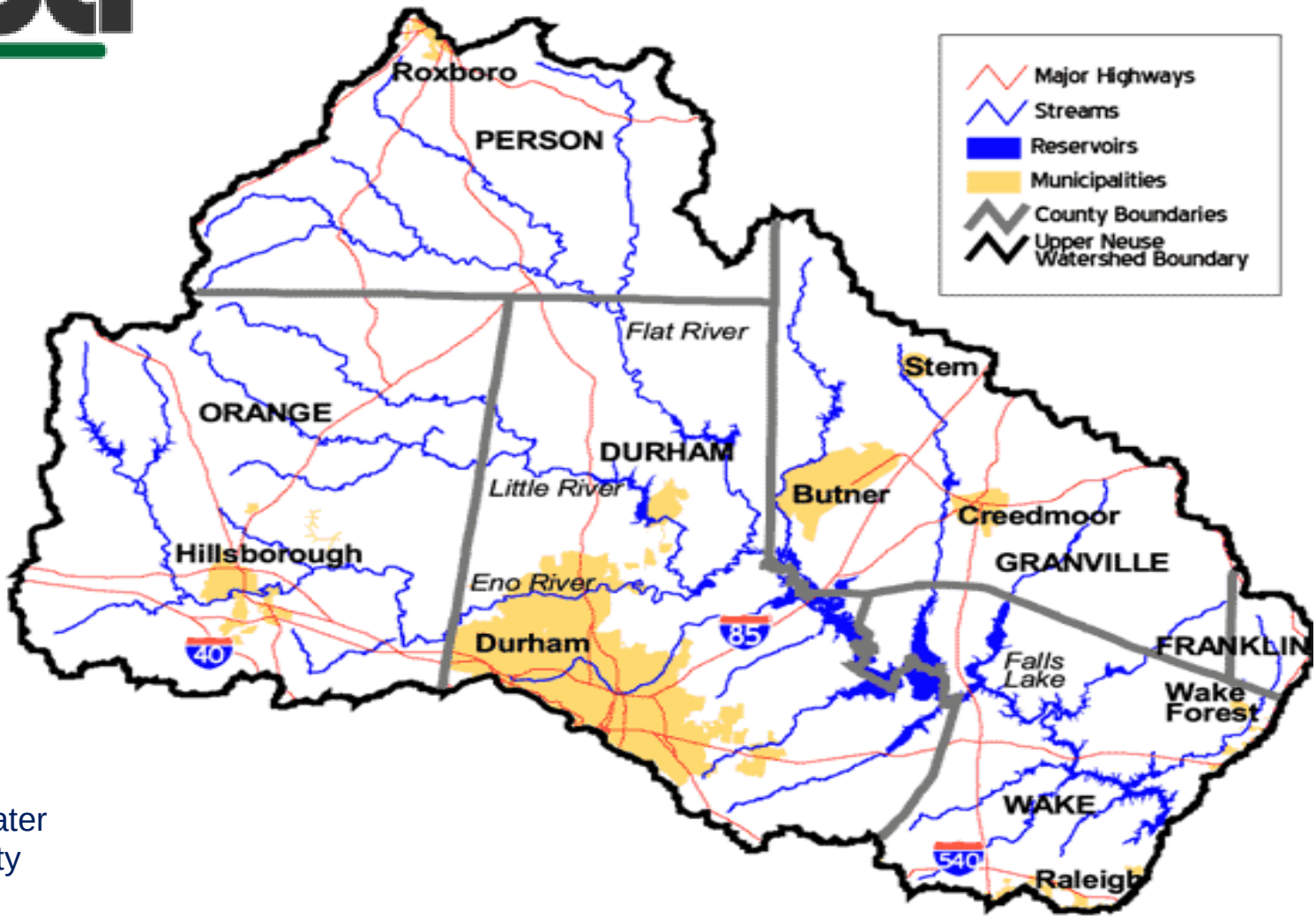
Unrba

Municipalities
Butner
Creedmoor
Durham
Hillsborough
Raleigh
Stem
Wake Forest

Counties
Durham
Franklin
Granville
Orange
Person
Wake

South Granville Water and Sewer Authority (SGWASA)

Soil and Water Conservation Districts (Ex Officio)



History of the Issues Leading to Consensus Principals

- **Draft Falls Lake Rules raised concerns**
  - Cost and technology issues
  - Water quality improvement schedule
  - Water supply considerations

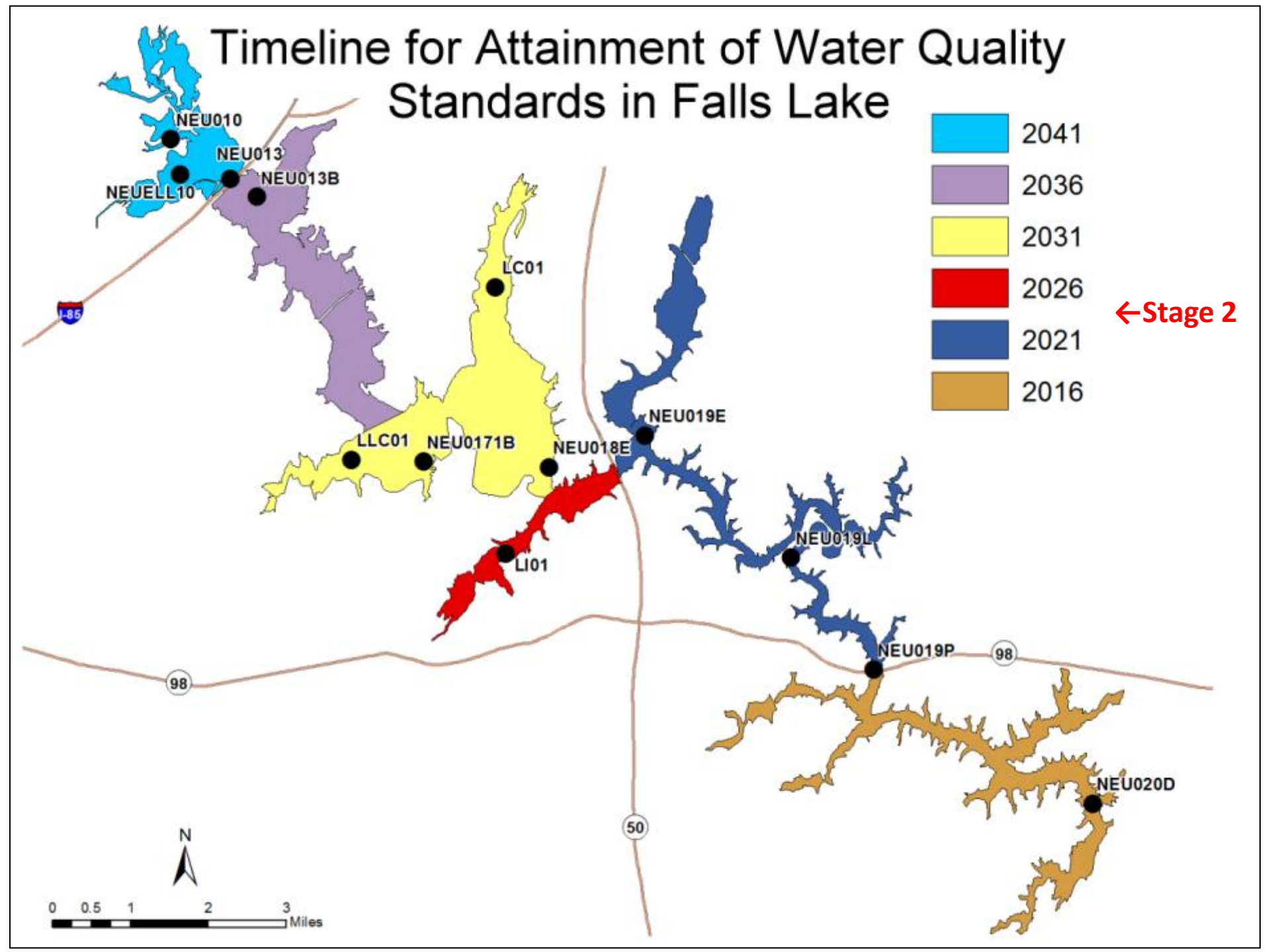
- **Result:**
  - “Consensus Principles”
  - A memorandum of agreement between stakeholders
  - A two-stage approach
  - Adaptive management provision

Challenges and Realities: Resource and Burden

- Primary source of water for one jurisdiction
- Water quality concerns – chlorophyll *a* impairment
- Legislative action required nutrient management
- Falls Lake adopted rules
  - Very restrictive nutrient requirements
  - Existing development nutrient reductions
  - Stage I requirements expensive
  - Extremely costly Stage II requirements
- Consensus Principles

Nutrient Reduction Requirements

- Stage I (2011- 2021)
  - Achieve standards in lower lake by 2021
  - Initial reductions watershed wide
  - Reduce loading by 20% for TN and 40% for TP
  - New development requirements implemented in 2012
- Stage II (2021 – 2036)
  - Achieve standards in entire lake by 2041
  - Additional reduction in upper watershed
  - Reduce loading by 40% for TN and 77% for TP
  - Continue new development requirements


Timeline for Attainment of Water Quality Standards in Falls Lake
2041
2036
2031
2026
2021
2016
←Stage 2
NEU010
NEU013
NEU013B
NEUELL10
LC01
LLC01
NEU0171B
NEU018E
NEU019E
NEU019L
NEU019P
LI01
NEU020D
I-85
98
98
50
N
0 0.5 1 2 3
Miles

Progress and Accomplishments

Based on the most recent years of data collected by the State:

- Lower Lake is in compliance with the chlorophyll *a* standard
- Upper Lake improvements have been observed

Water quality improvements are encouraging

- Differences in climate (dry periods versus wet periods)
- Reductions in loading from wastewater treatment plants
- Collaborative land conservation purchases
- Stormwater projects in the watershed

Ongoing Efforts to Reduce Nutrients: New Tools and Experimental Technologies

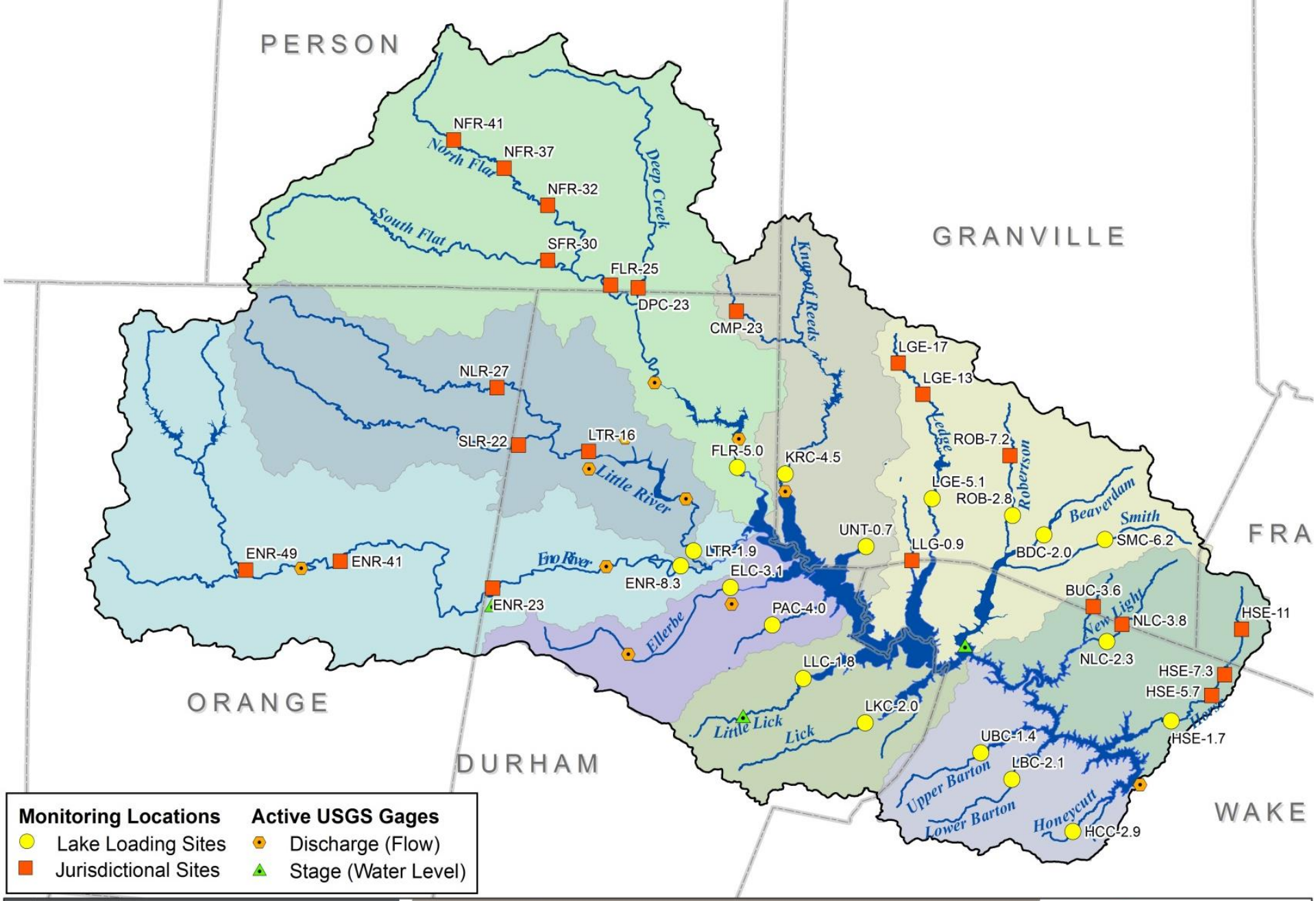
- Credits tool box
- Algal Turf, green infrastructure, and Rain Catchers

Collaboration in the Era of the Falls Lake Rules

- Providing a forum to review and discuss innovative approaches to restore, protect and maintain water quality.
- A robust and innovative trading program with a transparent and accessible system for recording and maintaining nutrient offsets and credits
  (Consensus Principals #11, Session Law 2010-115)
- Technical assistance for all jurisdictions. Service needs vary based on the jurisdiction's size and existing programs.
- A re-examination of the nutrient management strategy that answers key questions about the impacts of reductions and the feasibility of Stage II requirements.
  Consensus Principals #9, 15A NCAC 02B.0275(5)

Primary Driving Forces of the UNRBA

- Protect lake water quality for the purpose of water supply
- Stage II feasibility
  - Costs greater than $1 billion
  - Requirements are not technically feasible
- Reexamination
  - Enhanced monitoring program - $800,000 per year
  - Remodeling/updated data analysis – recalculate nutrient targets & loads
- Nutrient credits development project
  - Expansion of BMP Toolbox
- Development of alternative regulatory options
- Interim rules modification under State's regulatory reform actions



Monitoring Locations
- Lake Loading Sites
- Jurisdictional Sites

Active USGS Gages
- Discharge (Flow)
- Stage (Water Level)

N

0 2.25 4.5 9 Miles

UNRBA and DWR Monitoring Locations

Upper Neuse River Basin Association
North Carolina

Cardno
Shaping the Future
5400 Glenwood Ave, Suite G-03, Raleigh, NC 27612 USA
Phone (+1) 919-239-8900 Fax (+1) 919-239-8913
www.cardno.com

Reexamination Effort Status

- Monitoring began August 2014
- Interim report released November 13, 2015
- Annual monitoring report due in Spring 2016
- RFQ for modeling and data analysis contract released by June 2016
- EPA and DWR meeting in 2016 to discuss alternative regulatory options
- Special studies are underway

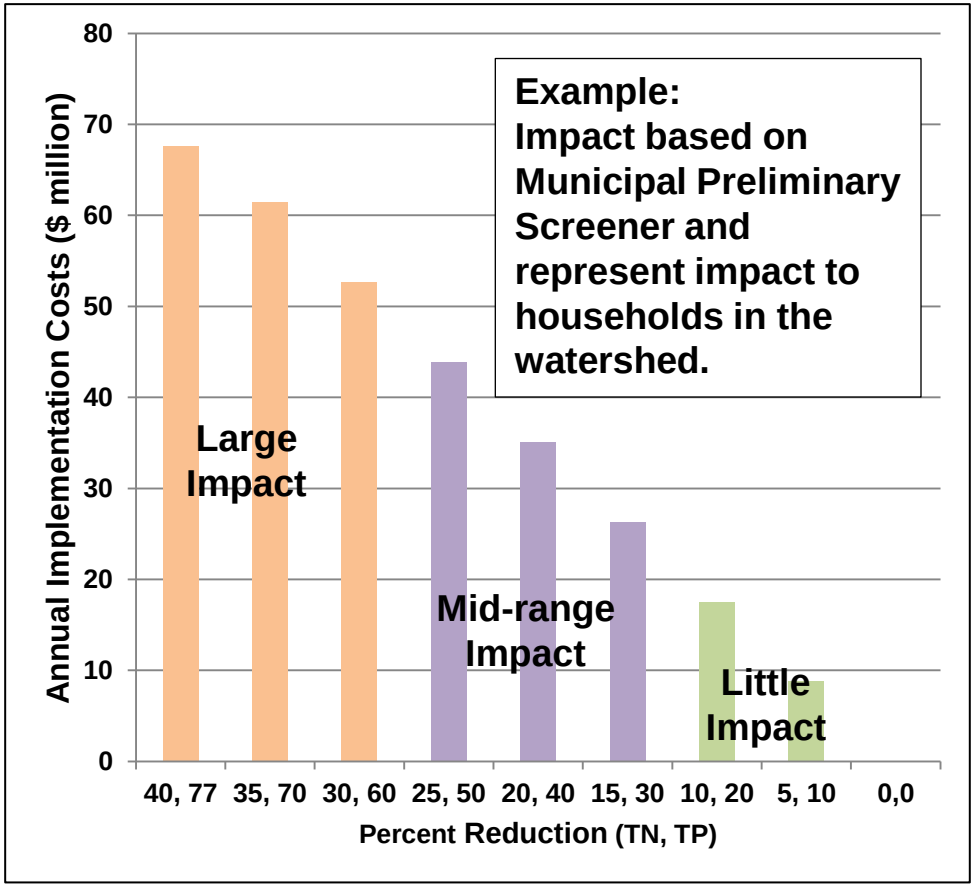
Nutrient Credits Project

- Develop nutrient credits for measures that currently do not have State approved credits
- Develop a tool that local governments can use to track credits towards compliance
- $300,000 contributed by the UNRBA
- $50,000 grant from the State

Infiltration device, photo courtesy of NCSU-BAE

Potential Alternative Regulatory Options

- Use attainability analysis
  - Naturally occurring conditions or hydrologic modification
  - Significant and widespread social and economic impacts
- Variance
- Site specific criteria



Joint UNRBA Falls Lake Rules Comments, Filed 11-20-2015

- The use of regional BMPs serving multiple project sites for compliance with new and existing development projects
- Threshold requirements triggering a formal stormwater impact review of single family resident development lots
- Stage I, Existing Development implementation related dates and processes
- Postpone Stage I and Stage II implementation dates and processes

Summary of Falls Reexamination
- a measured, stepwise, reexamination process

- Local governments want to improve water quality
- Local governments' burden is over $1,000,000,000
- Local governments want the best science
- Achieve improved water quality by applying economic, scientifically supportable and reasonable actions

Working to Balance Action With Level Of Problem