Path Forward Committee Meeting
September 3, 2024

Agenda

- Opening Comments, Agenda Review/Revisions
- Concerns with Development and Opportunity to Collaborate with Stakeholders
- Modeling and Regulatory Support Status
- Annual IAIA Reports Due September 30th
- Continued Rule Development for Jordan Lake and High Rock Lake Watersheds
- Falls Lake Rules Readoption Process
- Evaluation of a Specific Falls Lake 303(d) Assessment Methodology and Site-Specific Chlorophyll-a Standard
- Communications Support
- Other Status Items
- Closing Comments

Opening Comments, Agenda Review/Revisions

Concerns with Development and Opportunity to Collaborate with Stakeholders

Concerns with Development and Turbidity

- Over the past several months, we have discussed
  - Concerns with development near Falls Lake
  - Information provided and blogs discussing turbidity in streams that drain to Falls Lake
- The UNRBA's initiatives have been and continue to be limited in scope to the Falls Lake Rules (nutrients)
- The UNRBA's initiatives do not address
  - Local regulatory responsibilities regarding development
    - Requirements
    - Guidance and programs
    - Code enforcement
  - Local growth plans, development patterns, or zoning
  - Construction related impacts of new development,

Opportunity to Collaborate with Stakeholders

- The Board has identified growth and development in the watershed as an issue for discussion
- The UNRBA team has been, and will continue, providing background and information to assist in these discussions
- We have also identified one area where the New Development Rule implementation efforts can contribute positively
  - Site soil stability during and following development
  - Reduced nutrient impacts
- We propose collaborating on State approval of a practice to
  - Help address turbidity and other water quality issues
  - Meet the objectives of several stakeholders
  - Continue to improve water quality in the basin

Existing Regulations that Affect Development

- **Local governments**
  - Planning and zoning
  - Unified development ordinance
- **State rules and regulations**
  - Neuse Buffer Rules
    - Limits land use changes within 50 feet of the stream
  - NC Sediment and Erosion Control (S&EC) Act
    - Regulates sediment leaving a site (scoopable)
    - Does not regulate turbidity (suspended particles)
  - Falls Lake New Development Rules
    - Limit the annual loading of nitrogen and phosphorus leaving the site using stormwater control measures
  - National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System (NPDES MS4)
  - NC Water Quality Standards for turbidity (next slide)

Note that UNRBA is not on this list

15A NCAC 02B .0211
FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS C WATERS

TURBIDITY: THE TURBIDITY IN THE RECEIVING WATER SHALL NOT EXCEED 50 NEPHELOMETRIC TURBIDITY UNITS (NTU) IN STREAMS NOT DESIGNATED AS TROUT WATERS AND 10 NTU IN STREAMS, LAKES, OR RESERVOIRS DESIGNATED AS TROUT WATERS; FOR LAKES AND RESERVOIRS NOT DESIGNATED AS TROUT WATERS, THE TURBIDITY SHALL NOT EXCEED 25 NTU; IF TURBIDITY EXCEEDS THESE LEVELS DUE TO NATURAL BACKGROUND CONDITIONS, THE EXISTING TURBIDITY LEVEL SHALL NOT BE INCREASED. COMPLIANCE WITH THIS TURBIDITY STANDARD SHALL BE DEEMED MET WHEN LAND MANAGEMENT ACTIVITIES EMPLOY BEST MANAGEMENT PRACTICES (BMPS), AS DEFINED BY RULE .0202 OF THIS SECTION, RECOMMENDED BY THE DESIGNATED NONPOINT SOURCE AGENCY, AS DEFINED BY RULE .0202 OF THIS SECTION.

UNRBA Approach

- Conduct scientific research
- Work with subject matter experts
- Develop innovative approaches
- Focus on voluntary, cost-effective actions
- Provide multiple benefits
- Implement a watershed health approach
- Promote water resource projects that benefit water quality and water quantity
- Promote long-term protection of Falls Lake

Benefits of this Approach

- All affected stakeholders can participate
- Ensures feasible solutions are proposed
- Higher rates of implementation
- Cost effective solutions
- Acknowledgement of constraints

Addressing Turbidity Concerns

- Turbidity measures the scattering of light by suspended particles; it is not a mass or concentration
- Difficult to address turbidity once particles are suspended
- Presentations to address how our members are dealing with turbidity
  - Ryan Eaves from Durham County
  - Terry Hackett from Town Hillsborough
- Forrest will close with an invitation for interested parties to collaborate with the UNRBA to seek State approval of the soil improvement practice

TRIASSIC PARK: DURHAM COUNTY ADOPTS NEW REQUIREMENTS TO ADDRESS THE CHALLENGES OF TRIASSIC SOILS

RYAN D. EAVES, PE, CPESC, CFM

DURHAM COUNTY STORMWATER AND EROSION CONTROL



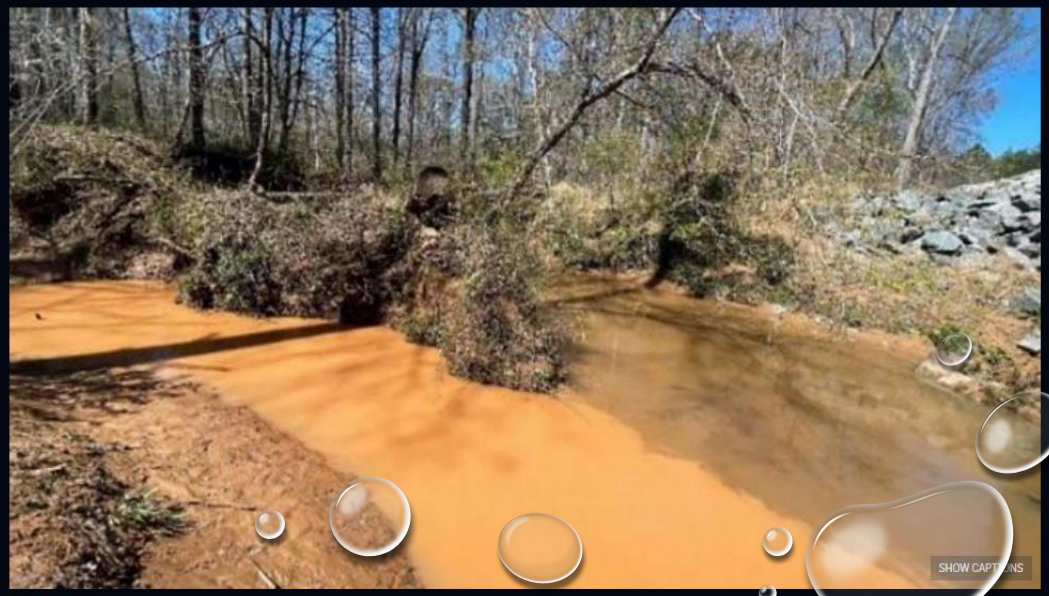
TOMATO SOUP

The News&Observer
Part of the McClatchy Media Network

LOCAL

Sediment levels in Durham's Lick Creek are rising. So are emotions about development.

BY **ADAM WAGNER** AND **MARY HELEN MOORE**
MARCH 09, 2023 6:28 PM



LOCAL NEWS

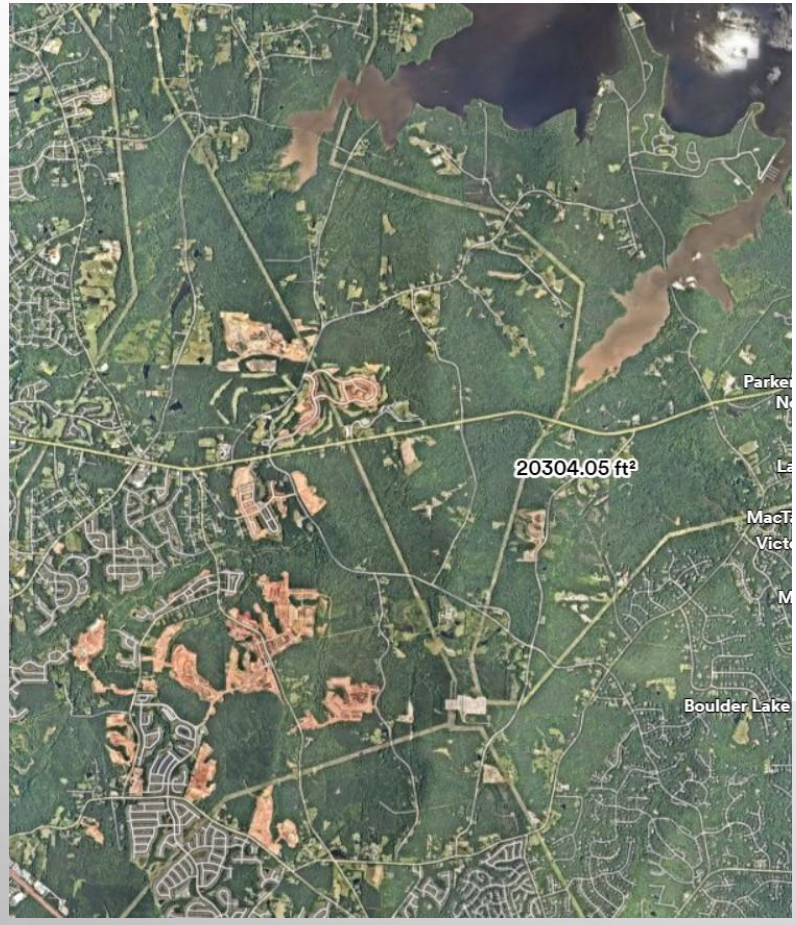
A lawsuit filed by Sound Rivers Inc. alleges developer Mungo Homes is violating the Clean Water Act by polluting Martin Branch Creek with sediment.

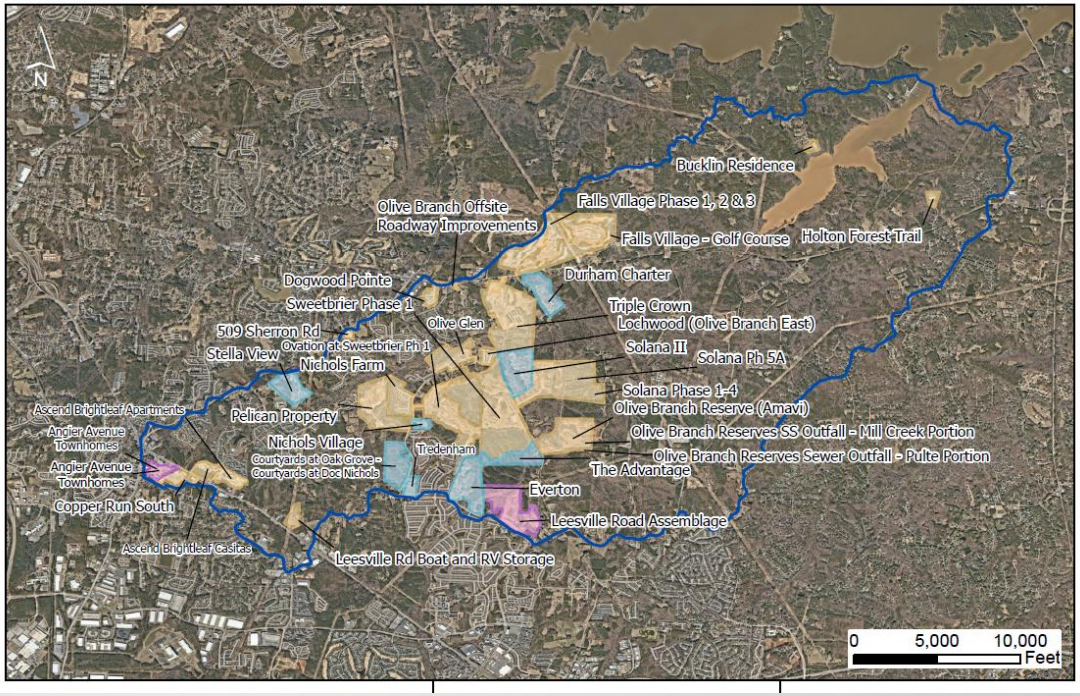
WHAT DID DURHAM COUNTY DO?

NEW EROSION CONTROL REQUIREMENTS

- Double Row of Silt Fence along Buffers
- Triassic Soil Requirements:
  - Larger Basins
  - Longer Dewatering Time
  - Matting/Hydroseeding on Slopes
  - Flocculant Plan and Application
- Revised Checklist
- Stop Work Orders

June 2024





Tan parcels are grandfathered into old rules

Blue must meet new rules

Pink are renewed permits that have some new rules applied

Sediment filter bags remove sediment, but effluent is still turbid due to particle size.

Silt fences help reduce sediment but must be installed properly and maintained – this is "offsite sediment" and is a violation.

Waddles help reduce sediment but do not have much impact on turbidity.

Ground cover is the best way to reduce turbidity.
The water is still turbid, but not like the other photos.

Side by side comparison with and without ground cover.

TRIASSIC SOILS: SLOPE STABILIZATION

UDO 12.10.4.M.3: MODERATE AND STEEP SLOPES SHALL BE STABILIZED BY EITHER **MATTING OR HYDROSEEDING** IN ORDER TO MORE RAPIDLY PROVIDE GROUNDCOVER.

SLOPES MEETING THIS REQUIREMENT SHOULD BE CALLED OUT ON PLANS, PREFERABLY SHADED OR HATCHED FOR EASY IDENTIFICATION.

GROUNDCOVER TIMING REQUIREMENTS STILL APPLY.

Town of Hillsborough Town Hall
Existing Development

- “Enhanced” infiltration area
- Designed a weir cut through the existing sidewalk
- Aeration and adding a mulched area
- Resolved the nuisance flooding
- Storm events under ½ inch of rainfall did not result in stormwater runoff

Town of Hillsborough Cates Park East Side
Existing Development

March 2019

July 2020

- Before (left)
- After disk tilling and addition of compost (right)

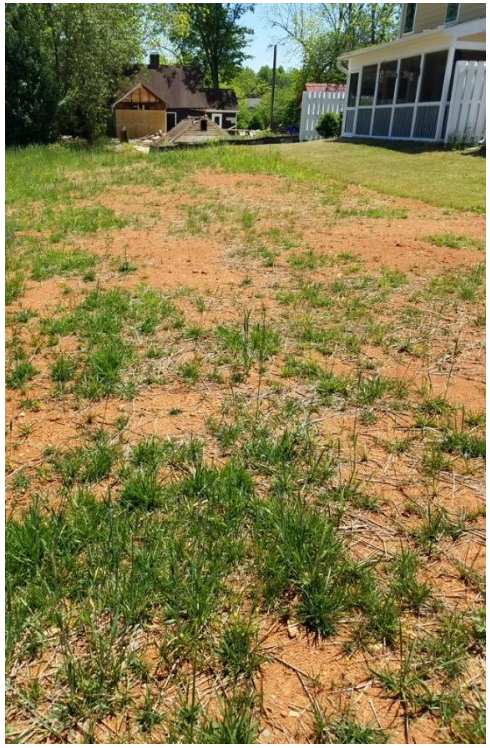
Town of Hillsborough Cates Park West Side –
Existing Development

March 2019

July 2020

- Before treatment (left)
- After treatment (right)

Town of Hillsborough Elin's Pond – New Development



- Treatment (left) – developers had requested to "waste" stockpiled topsoil on site; instead it was used to bolster vegetation growth on slopes that lead to the stormwater pond; soils were ripped first
- No treatment (middle and blown up at right) – required remediation, costing home owners additional money

Soil Improvement Practice (link)

- Developed during UNRBA Nutrient Credit Project; includes
  - Tillage with compost
  - Establishment and maintenance of ground cover
- Approved by the Division of Water Resources (DWR)
  - Quantifies nitrogen and phosphorus credits based on how much water is stored in the soil matrix
  - Applicable to meeting Existing Development Rules only
  - Eligible practice under the IAIA
- Since 2017, the UNRBA has been trying, unsuccessfully, to get it approved as an option to comply with the New Development Rule
  - DEMLR would not approve until successful demonstration on existing development
  - DWR also raised concerns about implementation and regulatory considerations – UNRBA provided responses in December 2023

Opportunity to Collaborate

- Increased turbidity occurs mostly during construction when
  - Land has been cleared for development
  - Compacted soils are exposed to rainfall
- Removing turbidity from runoff is very difficult because the particles are so small and do not settle or filter out
- The best way to reduce turbidity is to stop it before the soil particles are dislodged and suspended in runoff
  - Establish and maintain ground cover early
  - Increase pore spaces in soils to infiltrate rain
- The UNRBA feels strongly that a collaboration on this practice with a broad range of stakeholders will have multiple benefits for the watershed
  - Reduced turbidity
  - An additional, cost effective “tool in the tool box” to comply with new development rules
  - Providing support for our members as they address concerns in their jurisdictions

Potential Partners

- Preserve Rural Durham
- Sound Rivers
- American Rivers
- Piedmont Conservation Council
- Developers / Home Builders Association
- Local governments
- Subject matter experts

We are requesting that the PFC support our going back to DWR and DEMLR on the soil improvement practice for new development, to press for approval for its use for compliance with the New Development Rule, and to coordinate with other stakeholders to encourage the agency to approve this practice as an option for new development.

Modeling and Regulatory Support Status

Watershed Model Report

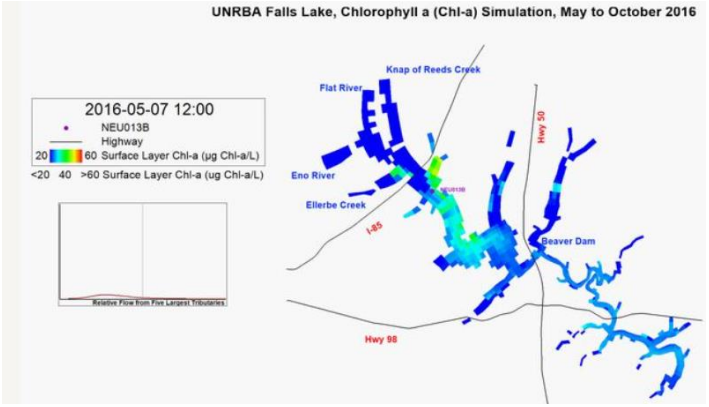
- The UNRBA submitted the final watershed modeling report and watershed modeling files to DWR and the EMC in December 2023.
- The Executive Director requested a formal statement from DWR as specified in Section (5)(f)(iii) of the Falls Lake Rules which require that “the Division shall assure that the supplemental modeling is conducted in accordance with the quality assurance requirements of the Division.”
- The UNRBA submitted and the Division approved the UNRBA Modeling Quality Assurance Project Plan, and this document represents “the quality assurance requirements of the Division.”
- On July 31, 2024, Karen Higgins provided an email confirmation that the watershed modeling report met the provisions of the QAPP.
- In early August, the Executive Director has requested a formal response from the Director.

Lake Model Report and Modeling Files

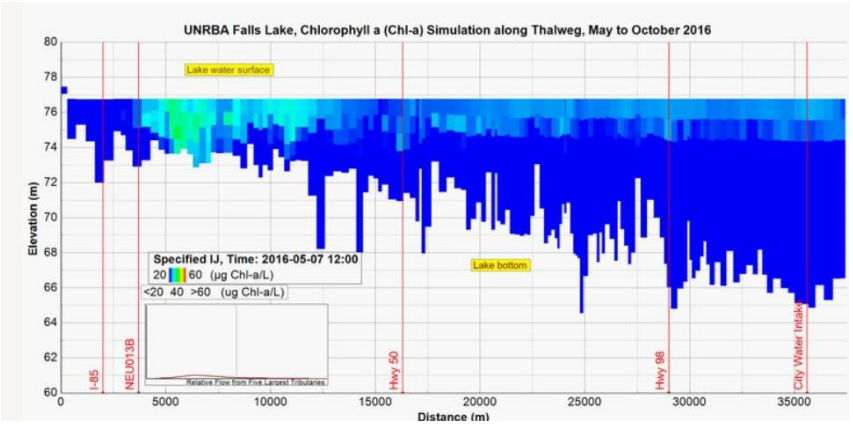
- The UNRBA also submitted lake modeling files for two of three lake models (WARMF and EFDC) and a draft lake modeling report.
- The modeling team has received comments on the draft report from PFC members and DWR and is responding accordingly
  - Points of clarification
  - Requests for summaries of varies aspects of modeling (uncertainties, applications, etc.)
- The third lake model (statistical/Bayesian) has recently been completed and results were shared with the PFC during the August meeting.
- Additional information about the statistical model has been incorporated in the redline version of the report.
- The redline report will be provided to the PFC and DWR following review the Executive Director and PFC Co Chairs.
- The UNRBA will submit a final lake report and appendices to DWR for review and approval under Falls Lake Rule 15A NCAC 02B .0275

EFDC Lake Simulation Videos

- EFDC model simulations for key parameters have been converted into videos for the May to October 2016 period
- Examples were shown during the August PFC meeting
- Updated examples will be reviewed during the September meeting
- Once PFC input has been received, the videos will be finalized and posted to the UNRBA website and/or You Tube.



Plan view – surface layer (not averaged over the entire depth as shown in August.



Profile view – from upstream shallow end downstream toward the dam along the deepest part of the lake.

Annual IAIA Reports Due September 30th

Annual IAIA Reports Due September 30th

- The third-year of the Stage I Existing Development Interim Alternative Implementation Approach (IAIA) ended June 30th
- Annual reports from each participant are due to John Huisman at the Division of Water Resources (DWR) with a copy to the Executive Director and Alix Matos by September 30, 2024.
- The latest version of the template is available here
- The annual summary report will be drafted for PFC review at the November meeting.
- The Compliance Group Committee will review and approve the annual summary report for submittal to DWR at their November 20th meeting (during the UNRBA Board meeting time).

Continued Rule Development for Jordan Lake and High Rock Lake Watersheds

Continued Rule Development for Jordan Lake and High Rock Lake Watersheds

- We continue to monitor DWR's
  - Draft proposal for changes to post-construction stormwater rules for the High Rock Lake Watershed
  - Rules readoption process for Jordan Lake Watershed
- We are concerned that these processes will impact
  - The Falls Lake rules readoption process and timeline
  - Could be inconsistent with the UNRBA's recommendations
- We also are concerned that seeking more aggressive development controls for the Falls Watershed will put at risk existing and future management efforts required under the Falls Rules.
- The UNRBA seeks to ensure that productive programs continue in the Falls watershed and are not inadvertently put at risk by seeking new and potentially more restrictive requirements for new development.

Falls Lake Rules Readoption Process

Status of Falls Lake Rules Readoption

- The UNRBA submitted the UNRBA Concepts and Principles for the Reexamination and Consensus Principles II in November 2023.
- The NC Collaboratory submitted their final report in December 2023
- These submittals trigger the initiation of the Falls Lake Rules Readoption Process. The following activities are ongoing:
  - UNRBA will continue to pursue a legislative change to § 77-141; planning a meeting to discuss benefits of this approach with members of Home Builders Association
  - Planning a meeting with DWR staff to discuss activities, milestones, and actions for rules readoption, and a proposed plan for incorporating the assistance and engagement of the UNRBA in this process
  - The Executive Director and support team have begun drafting a very preliminary set of proposed revisions to the Rules to support the Rules Readoption process based on the UNRBA recommendations (see next slide)

Developing Preliminary Set of Rules

- For existing land use in the watershed, we anticipate a similar approach to how the IAIA is structured and currently implemented
- The Legal Group will develop a strategy for rules readoption to be reviewed by the PFC
- The process will include stakeholder engagement and outreach to interest groups that have not had significant engagement to this point, as well as to all our stakeholders
- Workgroups will include UNRBA members, staff from DWR, representatives of agriculture, development, wastewater treatment plants, etc.
- The workgroup process needs to begin soon
- UNRBA will coordinate the schedule of this effort with DWR so our efforts can be integrated with the overall process
- These workgroups need to include the work and input from the Collaboratory's report.

Schedule for Rules Readoption

- The UNRBA is engaging on every aspect of this process and how other actions or proposals may impact our efforts to achieve a balanced and productive set of new rules.
- The UNRBA will continue to identify opportunities to work with other stakeholders as we begin coordinating, collaborating, and supporting DWR in rules review process
- June to December 2024
  - DWR to begin rule making and their stakeholder process
  - Meetings with the Chairs of the Environmental Management Commission (EMC) and its Water Quality Committee
- 2026/2027
  - DWR anticipates rules readoption

Evaluation of Specific Falls Lake 303(d) Assessment Methodology and Site-Specific Chlorophyll-a Criteria

Evaluation of Falls Lake Specific Assessment Methodology and Site-Specific Chlorophyll-a Criteria

- The UNRBA continues to focus on our primary priority: coordination with DWR and stakeholders in the development of a revised management strategy through the rules review process.
- Noting that two additional goals remain under consideration:
  - Modifications of the 303(d) water quality assessment method for chlorophyll-a in Falls Lake
  - Development of a proposed site-specific chlorophyll-a criteria
- As approved by the Board in June, Dr. Marty Lebo was provided with a new contract to continue this work and he is coordinating his efforts with the statistical modeling effort
- Nathan Hall is also an important contributor to these discussions and evaluations.

Communications Support

Communications Support

- The UNRBA continues to coordinate with DWR
  - Rules readoption process
  - Potential modifications to the water quality assessment methods
  - Development of a site-specific chlorophyll-a criteria for Falls Lake
- The work with DWR will intensify greatly following submittal of the UNRBA's and NC Collaboratory's recommendations in December 2023.
- We still seek to have additional meetings to gather input from NC Collaboratory staff, researchers, and representatives of NGOs.
- As we have continued to do, we encourage our jurisdictions to identify additional communication needs and to request support from the UNRBA team as needed

Additional Information and Activities

- Presented to Whole Orange on August 26th
- Met with Donna Myers from American Rivers on August 27th
- Met with Grace Messinger from Piedmont Conservation Council and David Harris from Durham County Soil and Water Conservation District on August 27th
- Supported City of Raleigh staff presentation to the Growth and Natural Resources Committee on August 27th
- A template slide deck has been drafted for use by UNRBA members to present the UNRBA recommendations
- Planning a forum for elected officials the morning of November 20th at the new City of Durham facility, followed by a short Board meeting
- Coordinating with American on a series of videos related to their 2023 Neuse River as “River of the Year” and how the work being done in the upper part of the basin helped contribute to that designation

Coordination with Stakeholders

- The UNRBA will continue to identify opportunities to work with other stakeholders as we move through rules readoption.
- The “open” nature of all UNRBA meetings remains a key component of our transparent communications approach.
- We encourage member representatives and interested individuals to speak up about ideas and opportunities to communicate our work and the importance of our recommendations on a revised strategy and a site-specific standard.

Other Status Items

Other Status Items

- DWR Neuse Watershed Model / Delivery Factors for WWTP

Future Meetings Currently Scheduled:

Next BOD Meeting: September 18, 2024, 9:30 AM to Noon

Next PFC Meeting: October 1, 2024, 9:30 AM to Noon

Closing Comments
Additional Discussion