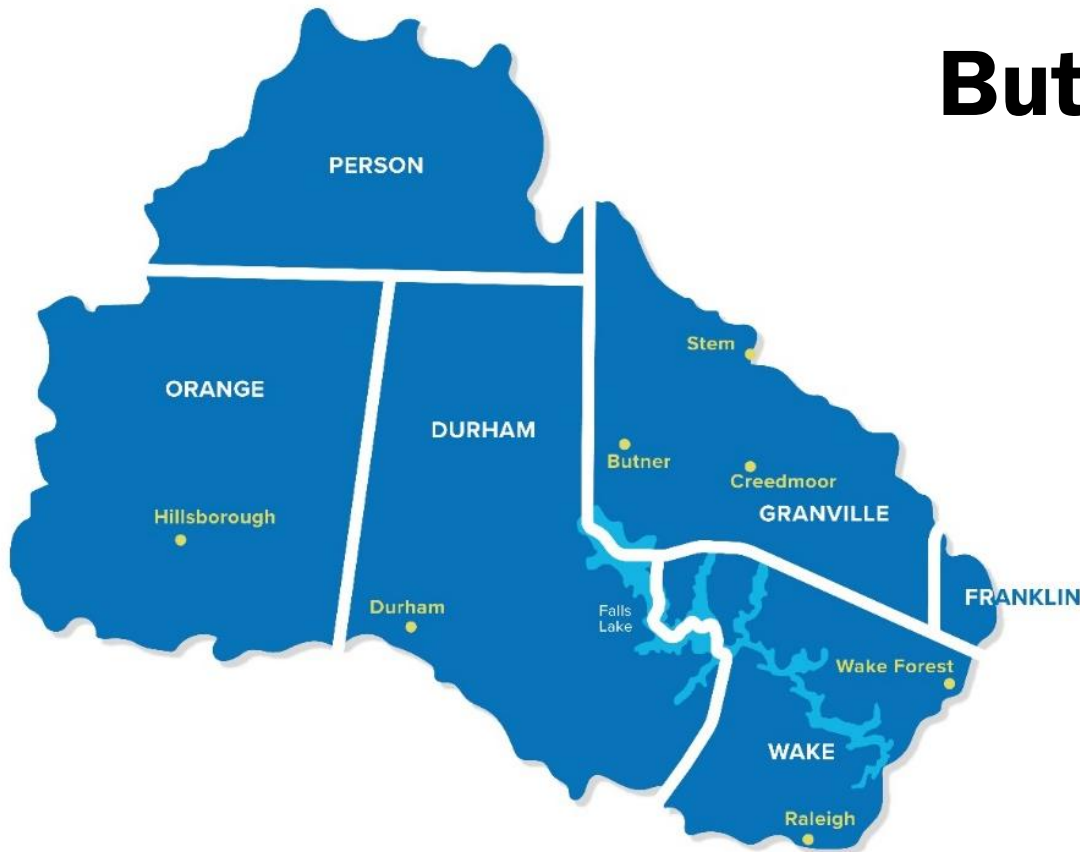




UNRBA Board Meeting September 18, 2024

Butner Town Hall



September 18, 2024, UNRBA Board Agenda

- **Opening—Wendy Jacobs, Chair**
- **Action Items**
 - Approval of June 12, 2024, Meeting Minutes
 - Approval of the Treasurer’s Report
 - Approval of 2025 Board and PFC Meeting Dates
 - Appointment of the Officer Nominating Committee
 - Appointment of the Personnel Committee
 - Appointment of the Audit Committee
- **Status Reports and Informational Items**
 - Concerns with Development in the Falls Lake Watershed
 - Annual IAIA Reports Due September 30th
 - Falls Lake Rules Readoption Process
 - Continued Rule Development for Jordan Lake and High Rock Lake Watersheds
 - Modeling and Regulatory Support Status and Evaluating a Falls Lake Assessment Methodology Site-Specific Chlorophyll-a Water Quality Standard
 - FY2026 Budget Discussion
 - Communications Support
 - Ongoing Discussions/Issues
- **Closing Comments**

Opening—Wendy Jacobs

Opening

- Introductions, Board member changes, and announcements
- Roll call for quorum
- Identification of any conflicts
- Review and approval of agenda

Action Items of UNRBA Board of Directors

**Approval of Draft Minutes for
June 12, 2024**

Approval of the Treasurer's Report

Balance Forward: (per bank statement - 5/31/2024)	Checking	\$	217,009.42
	Savings		1,021,199.45
Debits:			
McGill Asso. (2024 Invs)		\$	47,099.69
Brown & Caldwell (MRS, FY 2024 Invs)			147,733.77
Phthisic Consulting, Inc.			1,356.54
River Delta Consulting, Inc.			35,000.00
WSP, Inc.			2,875.00
MFG Consulting, LLC (2024 Invs)			600.00
			<hr/>
Total Debits		\$	234,665.00
Credits:			
Interest (checking)		\$	124.40
Interest (savings)			7,729.64
Membership Dues			491,784.98
Transfer from Savings Acc't to Checking Acc't			-
			<hr/>
Account Balance (per bank statement - 8/31/2024)	Checking	\$	474,253.80
	Savings		1,028,929.09
			<hr/>
Total UNRBA Account Balances:		\$	1,503,182.89
			<hr/>
Outstanding invoices/deposits in process since the close of bank statement (8/31/2024):			
Debits:			
McGill Asso. (2024 Inv)		\$	-
Phthisic Consulting, Inc.			1,328.54
Brown & Caldwell (July, FY 2024)			17,913.33
The Insurance Shoppe			1,257.00
Penn National			646.00
Credits:			
Transfer from Savings to Checking		\$	-
			<hr/>
Current Account Balances:	Checking	\$	455,011.93
	Savings		1,028,929.09
			<hr/>
Total UNRBA Account Balance :		\$	1,483,941.02
			<hr/>

Approval of 2025 Meeting Dates

Board Meeting Dates:

January 15, 2025
March 19, 2025
May 21, 2025
June 18, 2025
September 17, 2025
November 19, 2025

Path Forward Committee:

January 7, 2025
February 4, 2025
March 4, 2025
April 1, 2025
May 6, 2025
June 3, 2025
July 1, 2025
August 5, 2025
September 2, 2025
October 17, 2025
November 4, 2025
December 2, 2025

Meeting dates are subject to change. The times of these meetings will be included in the invitations and announcements for these meetings. Please verify all meeting times on the UNRBA website at <https://unrba.org/meeting>.

Appointment of Officer Nominating Committee

Appointment of Officer Nominating Committee

- Perspective Nominating Committee Members – appointment
 - Carl Rist
 - Terry Hackett
 - Carolyn Bachl
 - Other proposed members as identified by the Board
- [Vote to appoint the Committee members](#)

Appointment of Personnel Committee

Appointment of Personnel Committee

- The Personnel Committee will meet in December to assess this year's activities and review the work provided under the Executive Director Services Contract
- Note: The Personnel Committee provides an invitation for participation and input from all UNRBA Board Directors, Alternates and PFC Members
- Proposed membership:
 - Wendy Jacobs, Chair
 - Aarin Miles
 - Jane Harrison
 - Russ May
 - Ryan Eaves
 - Reggie Hicks
 - Carolyn Bachl
 - Jim Wrenn
 - Other proposed members as identified by the Board
- **Vote to appoint the Committee members**

Appointment of Audit Committee

Appointment of Audit Committee

- The Bylaws require appointment of an audit committee to review the audit
- The audit report will be presented at the November 20, 2024, Board meeting.
- Suggested membership (Executive Committee):
 - Wendy Jacobs
 - Jane Harrison
 - Russ May
 - Ryan Eaves
 - Other proposed members as identified by the Board
- [Vote to appoint the Committee members](#)

Status Reports and Informational Items

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 and charge 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 (LGs)**
 - Planning and zoning
 - Unified development ordinance
- **State rules, regulations, and programs administered by LGs**
 - **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)
 - **Water Supply Watershed Protection Rules**
 - **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

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



WRAL NEWS



NEWS

WEATHER

SPECIALISTS

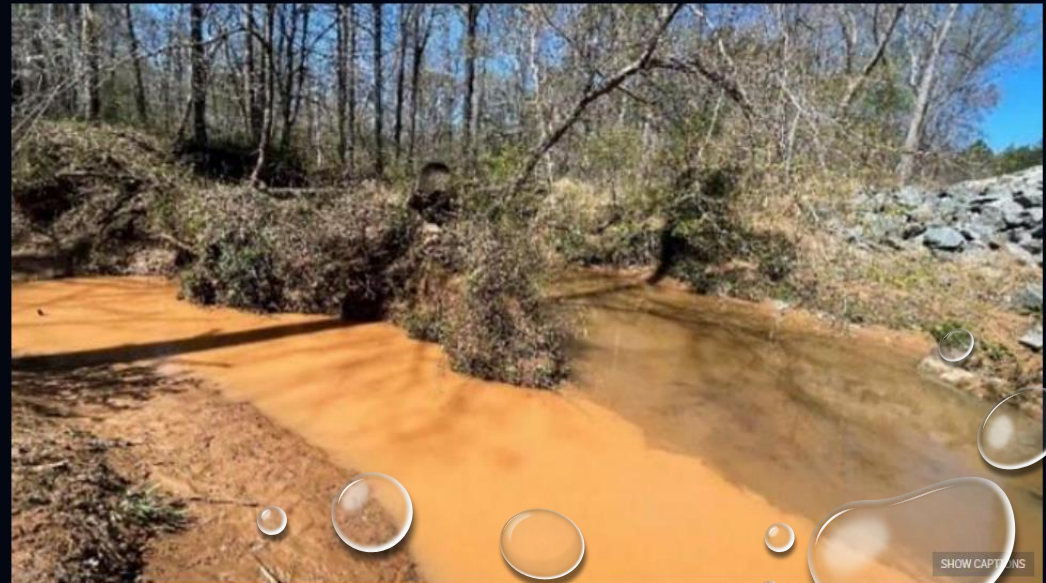
SPORTS

BUSINESS

OPINION

CONSUMER

HEALTH



SHOW CAPTIONS

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.



Double Row of Silt Fence along Buffers

Triassic Soil Requirements:

- Larger Basins
- Longer Dewatering Time
- Matting/Hydroseeding on Slopes
- Flocculant Plan and Application

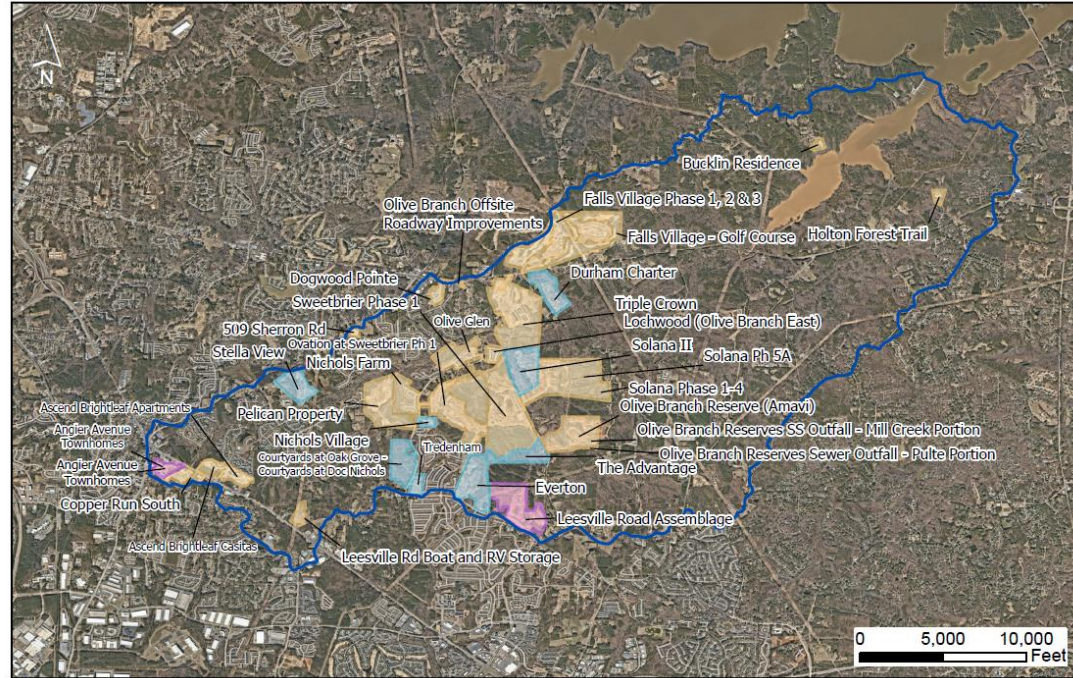
Revised Checklist

Stop Work Orders

**WHAT DID
DURHAM
COUNTY DO?**

**NEW EROSION
CONTROL
REQUIREMENTS**

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.

Groundcover



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 GROUND COVER.

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

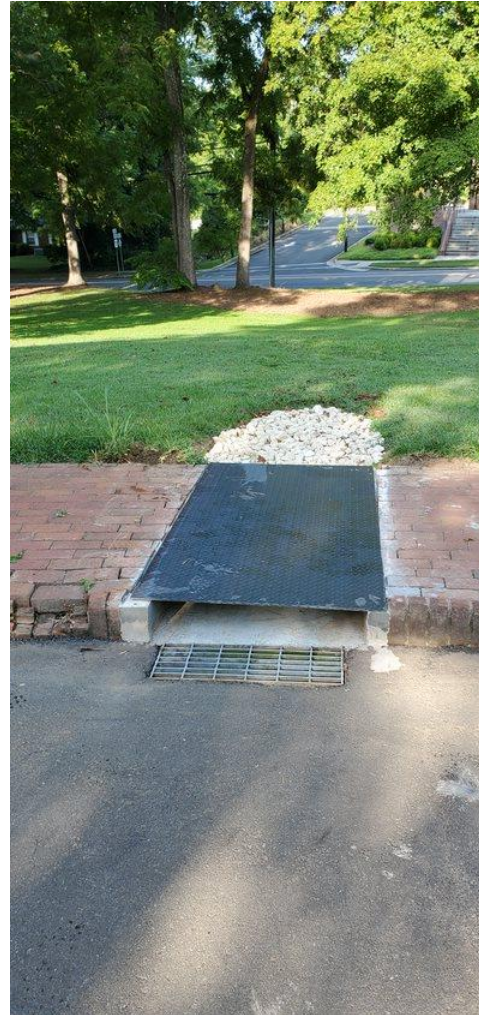
GROUND COVER TIMING REQUIREMENTS STILL APPLY.



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 $\frac{1}{2}$ 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

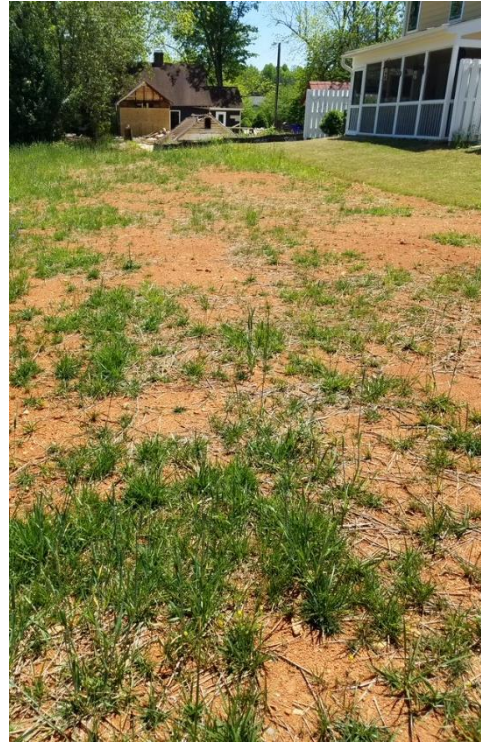


July 2020



- 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 Board support our going back to DWR and to 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.

**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) is ending soon.
- 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).

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

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.

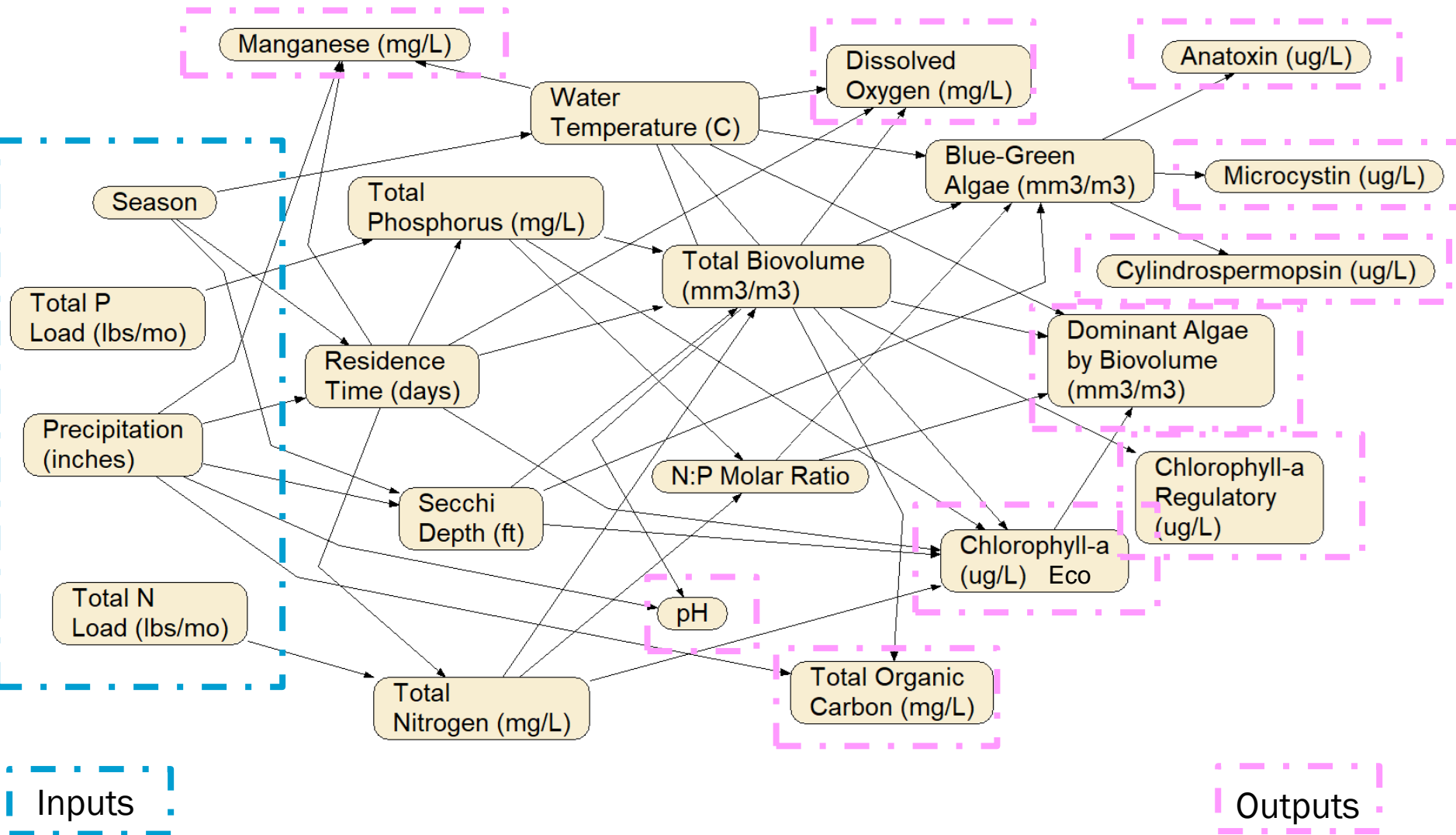
Modeling and Regulatory Support Status

**Evaluating a Falls Lake
Assessment Methodology Site-
Specific Chlorophyll-a Water
Quality Standard**

Status of Modeling Files and Reporting

- Section (5)(f)(iii) of the Falls Lake Rules requires 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 for this purpose.
- The UNRBA has submitted the final watershed modeling report and watershed modeling files to DWR and EMC.
- The Executive Director has requested a formal statement from DWR as specified in Section (5)(f)(iii)
- The lake model report has been drafted
 - The PFC and DWR have reviewed and provided comments
 - Modeling team is responding to comments and revising the report which will include the statistical model
 - The UNRBA will submit the lake report to PFC and DWR for review and approval

Statistical/Bayesian Model Network



Statistical/Bayesian Model Key Findings

Nutrient and Chlorophyll-a Concentrations

- Neither are strongly correlated to nutrient load
- Season (temperature) and precipitation (residence time) generally have greater explanatory value
- Higher concentrations in the upper lake, lower in the lower regardless of the inputs (rainfall, season, nutrient load)

Exceedances of the Chlorophyll-a Standard (40 µg/L)

- Nutrient concentrations and load have near zero explanatory value
- In upper lake, most likely to exceed in cool season if it is also dry, and in warm season under average rain conditions.
- In lower lake, scenario inputs have near zero influence

Total Organic Carbon

- High values most often occur with average precipitation

Manganese

- High values most often occur with high temperatures and long residence times (extended warm, dry conditions)

Algal Toxins

- Exceedances of guidelines have not occurred under the wide range of conditions and observations in Falls Lake
- No model input scenario predicts exceedances of algal toxins

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
- Dr. Marty Lebo is coordinating with the statistical modeling effort on his continued evaluation of a Falls Lake-specific assessment methodology and site-specific chlorophyll-a.

Preliminary FY2026 Budget Discussion

FY2026 Budget Discussion – Scope Items

- UNRBA has moved into a period of supporting the use of Consensus Principles II in the development of revised Falls Lake Rules.
- In FY2025, the UNRBA will support its members and DWR by facilitating workgroups to draft rule language.
- This activity will be followed by a larger stakeholder process, presentation of a rule package to the EMC by DWR, a formal comment period, and ultimately readoption of the rules.
- We will proceed with working on a specific 303(d) assessment methodology for Falls Lake and for continuing the development of a site-specific chlorophyll-a standard.
- The UNRBA members have also discussed the importance of continued tributary monitoring in the watershed to track progress and changes in water quality. This would require updates to the previously developed monitoring program and quality assurance project plan. Depending on when monitoring would begin, these updates may be needed during FY2026.

FY2026 Budget Discussion – Process

- UNRBA Board members have requested a budget amount before January to consider during the local government annual budgeting process.
- At this point, we do not have a specific budget proposal.
- The FY2025 budgeting process for the Modeling and Regulatory Support Project was extended relative to previous years. A budget amount was approved by the Board in November 2023 but modified through February 2024 to address concerns that the budget was too high.
- The PFC will discuss in October and November, and the Board will discuss in November
- Today, we are seeking preliminary comments from the Board

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 (see next slide)
- 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

Planning for November 20th Forum

- Targeted to elected officials
- Location: City of Durham, Department of Water Management, 1600 Mist Lake Drive, Durham, NC
- Topics
 - Overview of scientific studies
 - UNRBA recommendations for revised rules
 - Collaboration with stakeholders
 - Process moving forward/working with DWR
- Tentative agenda
 - 8:30 AM – 9:00 AM: check in, coffee, pastries
 - 9:00 AM – 9:45 AM: presentation
 - 9:45 AM – 10:30 AM: question and answer session
 - 10:30 AM - 10:45 AM: break
 - 10:45 AM – 12:00 PM: UNRBA Board/CGC regular meeting
(CGC = Compliance Group Committee)

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.

Ongoing Discussions/Issues

Ongoing Discussions/Issues

- DWR Neuse Watershed Model/Delivery Factors for WWTP
 - John Huisman indicated at the September PFC meeting that the model results will be reported out soon with stakeholder input to follow
- NC State University UNRBA and Jordan Lake One Water research study
- Impacts of PFAS/PFOS on treatment costs and local governments

Closing Comments

Next UNRBA Board Meeting:

November 20, 2024

**City of Durham, Department of Water
Management, 1600 Mist Lake Drive,
Durham, NC**

10:45 AM to Noon

Following the 8:30 AM to 10:30 AM Forum