

Path Forward Committee Meeting Butner Town Hall, September 5, 2023



Agenda

- Opening Comments, Agenda Review/Revisions
- Modeling and Regulatory Support Status
- Developing Recommendations for a Revised Nutrient Management Strategy and a Petition for a Site-Specific Chlorophyll-a Water Quality Standard
- Status of the Economic Analysis
- Communications Support
- Other Status Items
- Closing

Opening Comments, Agenda Review/Revisions

Modeling and Regulatory Support Status

WARMF Watershed Model Report

- The watershed modeling report and appendices have been revised
 - Address MRSW and DWR comments
 - Include results of the watershed model sensitivity analyses and scenarios
- The Executive Director and Chair of the MRSW have reviewed the revisions and responses to comments; the editor is finalizing the draft
- The redline/responses-to-comments version will be distributed to the MRSW, DWR, and subject matter experts
- Clean versions will be distributed to these groups as well as the PFC and the participants in the UNRBA Technical Stakeholders Workshop
- Following additional refinements as needed, the report will be formally submitted to DWR by December 2023
- The WARMF model executable, input files, and output files have been provided to DWR

Lake Model Report

- The lake model report is under development and will address all three UNRBA lake models
- This report will include the results of the lake sensitivity and scenario evaluations.
- Model-specific appendices are also under development

EFDC Model Training

- The technical appendix for EFDC has been drafted and reviewed by the Executive Director and Chair of the MRSW.
- Once the main lake report has been drafted and reviewed by them, the main report and EFDC appendix will be provided to MRSW, DWR, and subject matter experts for review.
- The training for the EFDC model will be scheduled after these files have been distributed so trainees can review the materials prior to the training.
- This training had previously been scheduled for August 2, 2023, but had to be rescheduled to finalize file conversion so DWR can review the files without a proprietary tool.

UNRBA Statistical/Bayesian Modeling

- The third lake model is the Statistical/Bayesian/Decision Support model which is based on an extensive data base dating back to the 1990s.
- Developing the linkages between the model variables to build the network with “parents” and “children”
- Building tables of probabilities (conditional probability tables) to explain how the variables relate to one another
- Work with subject matter experts and Technical Advisors Workgroup to fill in gaps where we have too little data

**Developing Recommendations
for a Revised Nutrient
Management Strategy and a
Petition for a Site-Specific
Chlorophyll-a Water Quality
Standard**

Development of Concepts and Principles for a Revised Strategy / Revised Rules

- The UNRBA has been working for the past year on recommendations for the revised strategy / revised rules
- We received responses from several PFC members and some of our stakeholders on the June draft which was also distributed to the Board and posted on the UNRBA website.
- A final draft was produced and distributed on August 23rd based on feedback from the PFC, stakeholders, and participants at the Technical Stakeholders Workshop; the PFC will discuss this draft
- DWR has not yet provided comments on the drafts and has indicated they will provide comments on the August version.
- The Executive Director will be seeking a recommendation for bringing it to the Board of Directors for consideration at the September 20, 2023, Board meeting.
- If there are any final revisions, these will be prepared in response to PFC input, and we will consider input from DWR via email with the PFC prior to submitting a final version to the Board on or about September 13th.



Upper Neuse River Basin Association's Concepts for Nutrient Management in Falls Lake

UNRBA plays an important role in managing Falls Lake Reservoir



UNRBA unites stakeholders from many organizations to create innovative solutions for an updated nutrient management strategy. UNRBA has invested over \$10 million in research on the watershed and lake to craft scientifically-based, fiscally responsible, and effective solutions.



Watershed and Lake Successes:

- Falls Lake is the most studied reservoir in North Carolina.
- Nutrient loading has decreased significantly since 2006 when the State began tracking. Wastewater treatment plants have reduced phosphorus loads by 80 percent and nitrogen loads by 40 percent.
- Water quality in this man-made lake has stabilized and improved; water quality is better than originally predicted.
- The lake serves all anticipated needs: nurturing wildlife, providing recreational opportunities and drinking water supply for Raleigh, and preventing downstream flooding.
- An investment-based approach to watershed management was approved by the NC Environmental Management Commission to continue progress in the watershed and lake. This approach allows for projects with maximum flexibility to address not only nutrient reductions, but also climate impact and sustainability.

Why a New Strategy is Necessary:

- 75 percent of the watershed is natural land like forests; nutrient loading from these areas cannot be easily reduced.
- The current strategy is estimated to cost over \$1 billion and would not necessarily improve water quality.
- Even if human impacts were removed and all the watershed was forested, the goals of the existing management strategy could not be met.
- Eliminating the existing management strategy is not an option. Without appropriate management, water quality in the lake may decline due to development pressures.
- Data and modeling suggest that large storms and climate change are significant drivers of nutrient loading.
- A holistic, data driven management strategy is needed to protect this lake in the future.

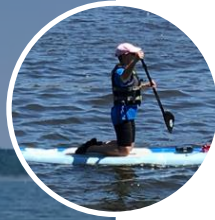


What's next on the path to support Falls Lake Reservoir?

ACTION IS NEEDED

In-depth research and analysis show the need for a revised nutrient management strategy for Falls Lake. Chlorophyll-a concentrations are stable, but still above the criteria in parts of the lake.

Based on monitoring and modeling studies, these areas are unlikely to ever meet the criteria, but the lake is meeting its uses. Therefore, the UNRBA is reevaluating strategies that take a more holistic approach to nutrient reduction actions and activities to achieve the greatest possible benefits.



The UNRBA is developing recommendations for a revised nutrient management strategy that incorporate the latest data and information. The UNRBA encourages input during the crafting of the revised strategy from all stakeholders to identify opportunities, constraints, and solutions. Our internal and external stakeholders have a shared vision to maximize the life of the reservoir and continue to maintain its uses and benefits.

A Reflection on the Best Path Forward

The UNRBA is looking at the big picture...taking a step back and focusing on watershed health using sustainable, fiscally responsible actions. The UNRBA has spent the last decade collecting water quality data and using models to simulate the lake and the watershed. These tools improve our understanding and support development of a long-term nutrient management strategy.

MOVING FORWARD, THE UNRBA SUPPORTS:

INVESTING in projects and communities.

SUPPORTING climate change and sustainability goals.

RECOMMENDING a new strategy, based on science and research.

SEEKING input and support from the State, environmental groups, and local communities to develop consensus-based recommendations.

SUPPORTING economic development while protecting Falls Lake with fiscally responsible implementation plans.

LISTENING to the community's ideas and concerns to inform strategies to protect Falls Lake and the interests of current and future businesses, farms, and neighborhoods.

ADDITIONAL INFORMATION

An initial draft of the UNRBA's recommendations is available for your review at: <https://unrba.org/reexamination>.

The UNRBA welcomes your review and input as it develops recommendations (the final proposal is due in December 2023). Please send your comments to the UNRBA Executive Director, Forrest Westall, forrest.westall@unrba.org.

Development of Consensus Principles II (CPII)

- The UNRBA Concepts and Principles document has been used to develop a focused set of consensus principles for readoption of the Falls Lake Rules called Consensus Principles II (CPII).
- This document has been reviewed by the UNRBA legal group.
- The PFC has received the final draft of CPII and will discuss at today's meeting (next slides).
- The PFC will be asked to recommend CPII for Board approval along with the Concepts and Principles document at the September 20th Board meeting.
- CPII is supported and further discussed in the Concepts and Principles Document

Consensus Principles II (CPII)

1. The UNRBA recognizes the importance of this lake as a water supply source, ecological and recreational resource, and flood control reservoir. Revised rules are needed to promote effective action and sustainable investment by local governments, utilities, and other partners to meet the goals of maintaining, protecting, and improving water quality in the lake into the future.
2. The chlorophyll-a standard for Falls Lake should be changed. The UNRBA supports a site-specific chlorophyll-a standard for Falls Lake. The UNRBA will continue to work with and seek cooperation and collaboration with DEQ-DWR, EPA, and other stakeholders to achieve a site-specific standard.
3. NC DEQ-DWR and the EMC should move forward promptly with the revisions to the Falls Lake rules taking into consideration these Consensus Principles. The UNRBA does not recommend delaying rule revisions while the site-specific standard is being developed because this will limit and delay ongoing implementation efforts in the watershed.

Consensus Principles II (CPII)

4. The revised rules should embrace a systems approach focusing on solutions that consider the interactions among surface water, land surfaces, groundwater, soils, and atmospheric and climatological drivers. This watershed-health approach should consider environmental benefits, costs, and impacts to users of the water resource and those upon whom the costs of the regulations are imposed. The revised rules should improve water quality throughout the watershed and should not prioritize activities solely based on the reduction of nutrients to Falls Lake.

Consensus Principles II (CPII)

5. The revised rules should include adaptive management. Implementation of the rules should be reviewed every 5 years with an assessment report to address new information, conditions, or concerns that have developed during the previous 5 years. The UNRBA proposes that the adaptive management provision also include a detailed re-evaluation of the rules to be completed 25 years after the date the revised rules are enacted. A detailed re-evaluation should incorporate additional monitoring data collected by DWR and other organizations, data analysis, modeling evaluations, and consideration of technological advancements for improving water quality. The 25-year review should include a re-examination of the rules, so that changes may be proposed and put forward for consideration.

Consensus Principles II (CPII)

6. The revised rules should include a provision for a watershed organization to promote voluntary coordination of the investment-based, joint-compliance approach.
7. The revised rules should not require nutrient load reductions from natural or unmanaged areas including forests, land in forest succession, scrubland, non-pasture grassland, and wetlands. Nutrient loads from these areas should not be directly or indirectly assigned to other source categories.
8. The revised rules should promote land conservation and preservation of natural or unmanaged areas as an investment credit.
9. The revised rules for managed lands should be an investment-based, joint-compliance approach. Managed lands include residential, commercial, and institutional (schools, hospitals, other state and federal facilities, etc.); agriculture (cropland and pasture); road rights of way; parks; etc.

Consensus Principles II (CPII)

10. The revised rules should 1) maintain the annual loading limits specified in the current new development rule, 2) provide a more flexible evaluation-of-need for stormwater nutrient control for individual residential lots or subdivision of large family parcels for the purposes of passing land to heirs for building homes, 3) allow local governments to consider more innovative approaches to stormwater management, and 4) include joint consultation among watershed organization members to assess and document consistent application of new development requirements.

11. Major and minor wastewater treatment plant owners should continue to optimize treatment performance using currently installed technologies. Review of plant performance should be included as a provision of the 25-year review. Plant owners should continue to 1) track emerging technologies that may become technically and financially feasible in the future to further improvements to plant operations and 2) identify and eliminate exfiltration from sewer lines and sanitary sewer overflows.

Consensus Principles II (CPII)

12. The revised rules should incorporate requirements for new wastewater treatment facility requests or expansion requests including provisions for technology upgrades, joint-compliance permits (e.g., the Lower Neuse Compliance Association's permit), nutrient offsets, and/or trading with managed lands.
13. Investment credits should continue to be available for inspecting, identifying, and repairing or replacing malfunctioning onsite wastewater treatment systems.
14. Separate, State-required nutrient management requirements should not be applied to managed lands in separate areas of the watershed (draining to an upstream watershed impoundment, arms of Falls Lake, etc.). However, water quality in all areas of the watershed should be tracked, particularly sub-watersheds with water supply impoundments.

Consensus Principles II (CPII)

15. The revised rules should expand the types of projects that qualify for investment credit, include the option of developing new credit types, and provide opportunity for other voluntary partners. The revised rules should promote local government participation in other watershed improvement actions.

16. The revised rules should encourage local governments to base implementation decisions on the principles of fair and equitable treatment of members and the residents of the watershed. The revised rules should encourage input and participation from the public and interest groups, promoting opportunities for equitable stakeholder participation.

PFC discussion of CPII and consideration for submittal to the Board.

Schedule to Submit Recommendations

- **September 2023**
 - Discussion with DWR and NGOs to discuss Concepts and Principles
 - Finalize Concepts and Principles Document and Consensus Principles II (CPII)
 - UNRBA Board to endorse Concepts and Principles Document and CPII at September 20th meeting
 - Executive Director continue presentations to local government commissions, councils, and boards
- **October/November 2023**
 - Local government commissions & councils approve CPII
 - Meetings with the Chairs of the Environmental Management Commission (EMC) and its Water Quality Committee
 - UNRBA Board to approve package for submittal to DWR and the EMC including Concepts and Principles Document and CPII at November 15th meeting (tentative, virtual Board meeting scheduled December 13th if needed)
- **December 2023 - Legislative requirements for Submittals**
 - NC Collaboratory final Falls Lake report
 - Submittals from other groups (UNRBA)

Schedule for Rules Readoption

- **January to March 2024**
 - UNRBA/DWR meeting to discuss process for rule making and approval of UNRBA products
 - Regulatory Forum to present rule making process to UNRBA members and other stakeholders
 - UNRBA annotate existing rule language to mark for potential changes and review with DWR
- **DWR to begin rule making within 6 months of submittals and no later than December 2024**
 - DWR to begin their stakeholder process
- **DWR anticipates rules readoption by 2026/2027**
- **With UNRBA and member engagement on the readoption process, we hope to achieve rules readoption earlier**

Continued engagement with Collaboratory researchers

Coordination on Site-Specific Chlorophyll-a Standard

- The subject matter experts continue to evaluate other State's site-specific standards for chlorophyll-a and nutrient-related standards.
- The UNRBA continues to work with Dr. Marty Lebo to complete his work and integrate his results into the site-specific standard evaluation, statistical modeling, and regulatory support efforts.
- The UNRBA will coordinate with DWR, Collaboratory researchers, and other stakeholders throughout this process

Status of the Economic Analysis

Status of the Economic Analysis

- The UNRBA planned an economic analysis of alternatives to support development of the UNRBA recommendations for the revised strategy
 - Would update the DWR Fiscal Analysis and
 - Compare potential nutrient management actions that would meet the chlorophyll-a standard in Falls Lake
- However, none of the scenarios or options investigated can comply with the chlorophyll-a standard as currently applied
- Thus, a formal economic analysis of alternatives could not be conducted during development of the UNRBA recommendations
- Rather, the recommendations focus on an investment-based, joint compliance, watershed-health approach that focuses on incremental improvements rather than attainment of the current chlorophyll-a standard.
- The UNRBA will support DWR in developing a more thorough economic analysis during the rule revision process to evaluate impacts of rule language and alternative strategies as needed
- The UNRBA continues to compile information from the local governments and other stakeholders to support this effort to understand
 - Costs of past and possible future actions in the watershed
 - Environmental, ecological, and societal benefits.

Communications Outreach and Preparation

UNRBA Technical Stakeholders Workshop

- The UNRBA held a Technical Stakeholders Workshop on August 1, 2023
- Over 70 people participated either online or in person representing several organizations and entities
 - UNRBA members
 - Subject matter experts
 - Four non-governmental environmental organizations
 - Six State agencies
 - Two federal agencies
 - One local chamber of commerce
 - Representatives of agriculture
 - EPA Region 4
- Participants provided feedback on the recommendations for the revised nutrient management strategy which have been incorporated into the final draft distributed to the PFC in August

Coordination with DWR and EPA

- The UNRBA continues to coordinate with DWR
 - Preparations for the rules review process
 - Potential modifications to the water quality assessment methods
 - Development of a site-specific chlorophyll-a criteria for Falls Lake
- Staff from EPA Region 4 from the 303(d) TMDL unit and modeling unit attended the UNRBA Technical Stakeholders Workshop
 - Provided encouraging feedback regarding the need for a site-specific standard for Falls Lake
 - We will schedule a follow up call to discuss

Coordination with Governing Bodies

- The Executive Director will continue scheduling presentations at the meetings of UNRBA governing bodies to discuss the Concepts and Principles and CPII under their consideration.
- Earlier this year: City of Durham Environmental Affairs Board and the City of Creedmoor Board of Commissioners.
- Scheduled: Granville Co. Commissioners, Wake Co. Growth & Sustainability Committee, Durham Co. Commissioners, City of Raleigh Stormwater Committee, Durham City Council work session, and the Orange Co. Commissioners.
- It is extremely important that the Boards and Commissions for our members endorse CPII for submittal in December.
- We will provide a draft resolution for you all to use in presenting it to your Boards and Commissions.
- We are looking to the PFC member representatives to make sure CPII is presented to its governing bodies for approval.

Upcoming IAIA Submittals

- The Executive Director will continue to reach out to local government staff to identify needs and support staff with implementation of the IAIA Program
- Year 2 of the IAIA ended June 30th, and annual reports to DWR are due September 30th with a copy to UNRBA.

Upcoming Regulatory Forum

- A regulatory forum is being planned for spring 2024 to discuss the next steps in the rules readoption process.
- Following submittal of the UNRBA and NC Collaboratory reports and recommendations in December 2023, we anticipate that DWR will begin to formulate a plan for readoption of the rules.
- We continue to seek engagement with DWR on that process and, as already mentioned to DWR, work cooperatively with them as the new rules are drafted.
- DWR has been very positive in their feedback.

Coordination on River of Year Event

- As far as we know, American Rivers is still planning a “Neuse River of the Year” event for the upper part of the basin.
- The UNRBA is planning a press release to coincide with the timing of the event.
- This press release will also reference the successes of the IAIA and note the efforts to provide consensus principles for a revised set of rules.
- Plans to develop videos and messaging for UNRBA members to distribute on their social media accounts is being planned to coincide with this event to streamline videography.

Coordination with Stakeholders and SMEs

- 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 a 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

- Neuse Watershed Model Information Session – Delivery Factors for WWTP—Update provided by John Huisman
- The UNRBA provided a letter of support for a US Forest Service proposal for a research study on the impacts of prescribed burns on water quantity and water quality

Future Meetings as Currently Scheduled:

Next BOD Meeting: September 20, 2023, 9:30 AM to Noon

Next PFC Meeting: October 3, 2023, 9:30 AM to Noon

Closing Comments

Additional Discussion