

Path Forward Committee Meeting
11:30 AM on June 1, 2021
Remote Access Only (see next slides)



Remote Access Options

Equipment Type	Access Information	Notes
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Remote Access Guidelines

- This meeting will open 10 minutes prior to the first meeting start time (e.g., MRSW) to allow users to **test equipment** and ensure communication methods are working
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Agenda

- Opening comments
- Review of Contracts for FY2022
- Implementation of the UNRBA Stage I Existing Development Interim Alternative Implementation Approach (IAIA)
- Status of the Draft DWR 2021 Falls Lake Status Report
- Status of UNRBA Comments on the Proposed High Rock Lake Site-Specific Chlorophyll-a Criteria
- Modeling and Regulatory Support Status
- Development of a Statistical Model and Evaluation of Regulatory Options Relative to the Water Quality Standard
- Communications Support
- Other Status Items
- Closing Comments

Review of Contracts for FY2022

Contracts for FY2022

- Contract renewals:
 - Brown and Caldwell Modeling, Regulatory Support and Communications Support (\$790,000, includes Systech Water Resources, Dynamic Solutions, KDV Decision Analysis and Brindle Creek subcontracts)
 - Sauber Water Quality Consulting (\$40,000)
 - Phthisic Consulting (\$10,000)
 - MFG Consulting LLC (web support) (\$6,000)
 - Executive Director Services (\$213,517)
- New contract:
 - Support for site-specific criteria development (Dr. Marty Lebo)

**Implementation of the UNRBA
Stage I Existing Development
Interim Alternative
Implementation Approach (IAIA)**

Implementation of the IAIA Program

- Board approved the IAIA Program Document and the Revised UNRBA Bylaws on March 17, 2021
- Board formed the Compliance Group Committee (CGC) comprised of Board Directors to represent the local governments participating in the Program
- CGC to meet on June 16, 2021 to finalize resolution for the IAIA participants to submit the IAIA for group compliance to DWR and the EMC at the end of June 2021
- Program to formally start in July 2021
- Local government planning continues
- A draft template for reporting is under development and is being revised in response to IAIA Reporting Workgroup comments; this workgroup includes a representative from DWR

**Draft Resolution for the Submission of the
Interim Alternative Implementation Approach
For Compliance with the Falls Lake Rule For
Existing Development**

Status of the Draft 2021 Falls Lake Status Report

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- John Huisman (DWR) provided an overview of the draft report, and the PFC provided comments during the April 6, 2021 PFC meeting.
- John is revising the draft report to respond to UNRBA comments and has reached out to the Executive Director for clarification
- DWR will provide a revised draft for review by the UNRBA
- DWR plans to present to the water quality committee and full EMC at the July meetings

Status of UNRBA Comments on the Proposed High Rock Lake Site Specific Chlorophyll-a Criteria

Status of UNRBA Comments on the Proposed High Rock Lake (HRL) Site Specific Chlorophyll-a Criteria

- At the January 2021 Board meeting, the Board authorized the Executive Director and the UNRBA subject matter experts to comment on the proposed HRL site specific chlorophyll-a criteria
- DWR's HRL proposal was presented at the May EMC Water Quality Committee (WQC) meeting
- DWR made a presentation on the proposal at the [Yadkin/Pee Dee River Basin Association](#) (YPDRBA) meeting on April 9th
- The UNRBA, YPDRBA, and the NC Water Quality Association filed comments on the proposal in December 2020, February 2021, and April 2021, respectively
- The UNRBA provided a summary of comments to the EMC ahead of their May meeting and noted that no responses had been provided and no changes to the proposal had been made since its release in December 2020
- The EMC WQC instructed DWR to provide responses to comments as part of the record and to revise the proposal where warranted

Modeling and Regulatory Support (MRS) Status

Modeling Status

- Watershed Analysis Risk Management Framework (WARMF) model
 - Water quality calibration in the rivers and streams is being finalized
 - WARMF Lake model component is under development
- Environmental Fluid Dynamics Code (EFDC) Falls Lake Model (more complex than WARMF Lake model)
 - Modelers are refining the calibration of water levels and temperatures in Falls Lake
 - Water quality calibration will begin when the watershed model has been calibrated for water quality

Status of Two Scenario Workgroups

- The MRSW and PFC have formed two workgroups to provide input to the modeling team on scenarios
- The Model Scenario Output Workgroup
 - Discussing reporting formats for comparing scenario descriptions and model output
 - The 6th meeting for this workgroup was held April 12th
 - Decision to transition to an online reporting tool
- The Scenario Screening Workgroup
 - Developing a selection process for choosing scenarios and a preliminary list of scenarios to evaluate
 - The 5th meeting for workgroup was held May 24th
 - Two subgroups are working on scenario forms for scenarios preliminarily assigned a high priority
 - Discussion of three scenarios today

Model Scenario Output Form – Part A

Scenario (short) name/ Scenario ID number: 01_All Forest Scenario

Scenario description: Would the lake meet water quality standards if all of the land were forested or wetlands, all wastewater and nutrient application were ceased, etc.?

Convert all land uses that are not forest or wetlands to mixed use forest; remove point sources and nutrient application (except atmospheric deposition?); bypass upstream impoundments. Run the scenario for the 2015-2018 time period. Evaluate the change in nutrient load loading by year. Evaluate changes to lake water quality (nutrients and chlorophyll) by year.

Scenario type: Infeasible maximum limit; regulatory consideration

Count(ies) affected: All counties

Municipality(ies) affected: All municipalities

Sectors affected: Removes all sectors

Water Quality Models used: Watershed model (WARMF), Simple Lake Model (WARMF)

Consultants involved: Systech Water Resources

Simulation considerations: Tbc by modeling team.

Preliminary cost to run scenario: Medium

PFC approved for evaluation: TBD

PFC recommended scenario priority: High

“All Forest” Scenario for PFC Consideration

- The MRSW voted to recommend an “all forest” scenario for evaluation with the watershed model and assign a High priority
- This is not an actionable scenario.
 - Places a limit on what is possible in Falls Lake with most human impacts removed.
 - Evaluates what happens over time when the watershed has most human impacts removed.
 - Infeasible maximum scenario that describes the “best” condition that could possibly be achieved in the lake if human sources are removed
- Purposes
 - Limits the number of nutrient reduction scenarios that need to be evaluated for reduction curves
 - Provides basis to consider regulatory options such as site specific criteria

Model Scenario Output Form – Part A

Scenario (short) name/ Scenario ID number: 07_Reducing sediment nutrient soil pore water concentrations in watershed

Scenario description: Test effects of reducing the initial pore water concentrations used to calibrate the watershed water quality model. Revised initial starting points may be determined by running the watershed model for several repeating years to determine equilibrium under current or reduced nutrient application/deposition rates.

Scenario type: Nutrient management; regulatory consideration

Count(ies) affected: All counties

Municipality(ies) affected: All municipalities

Sectors affected: Developers, local govts, DOT/State, agriculture, forestry

Water Quality Models used: Watershed model (WARMF), Simple Lake Model (WARMF)

Consultants involved: Systech Water Resources

Simulation considerations: Each catchment has different initial pore water concentrations; equilibrium conditions may differ more in some catchments than others relative to the calibrated model and the current (or reduced) nutrient loading rates from fertilizer application and atmospheric deposition

Preliminary cost to run scenario: Medium to high (requires many iterative runs or revision of initial soil conditions at the catchment level)

PFC approved for evaluation: TBD

PFC recommended scenario priority: Medium

“Watershed Soils” Scenario for PFC Consideration

- The Scenario Screening Workgroup voted to recommend this scenario as Medium priority
- This is not an actionable scenario.
 - Provides information on how long it would take for the watershed soils to reach equilibrium in response to reduced inputs of nutrients in the watershed (fertilizer, atmospheric deposition, etc.)
 - May be better as a scenario in conjunction with another nutrient management scenario rather than a stand alone scenario
- Purposes
 - Provides basis to consider regulatory options such as site specific criteria or long-term variances

Model Scenario Output Form – Part A

Scenario (short) name/ Scenario ID number: 08_Lake Sediment Scenario

Scenario description: Test effects of decreasing sediment nutrient concentrations in the lake sediments over time and how that affects nutrient loading from the sediments and water quality in the lake.

Scenario type: Regulatory consideration - Understand potential need for variance in terms of complying with (revised) water quality standards

Count(ies) affected: All counties

Municipality(ies) affected: All municipalities

Sectors affected: All sectors (nutrient inputs into the lake via water and via sediments both affect sediment nutrient concentrations)

Water Quality Models used: Sediment diagenesis models within WARMF, EFDC later, and accounting in the Statistical/Bayesian model

Consultants involved: Systech Water Resources, Dynamic Solutions, KDV Decision Analysis, BC

Simulation considerations: Sediment diagenesis models need to run for decades to reach steady state, so a limited number of scenarios can be evaluated

Preliminary cost to run scenario: High (requires decadal model runs)

PFC approved for evaluation: TBD

PFC recommended scenario priority: High – later (need to identify which nutrient management scenario(s) to evaluate)

“Lake Sediments” Scenario for PFC Consideration

- The Scenario Screening Workgroup voted to recommend this scenario as High-later priority
- This is not an actionable scenario.
 - Provides information on how long it would take for the lake sediments to reach equilibrium in response to reduced inputs of nutrients to the lake
 - We need to identify one or two nutrient management scenarios to conduct in conjunction with this scenario
- Purposes
 - Provides basis to consider regulatory options such as site specific criteria or long-term variances

Statistical Model Development and Regulatory Options for Water Quality Standards

Planning for Development of a Petition for Site Specific Criteria

- A primary task for the legal team is to begin consideration of a petition for site specific criteria for Falls Lake
- The UNRBA Statistical Model of Falls Lake will be used to support this effort
- Evaluation of other State's site-specific standards for chlorophyll-a and nutrient-related standards is ongoing.
- The legal team and the statistical modeling team are coordinating on this effort
- The Technical Advisors Workgroup was formed at the January 2021 PFC meeting and initial meeting held in May
- We have identified a Subject Matter Expert for assistance to the UNRBA in the site-specific effort, Dr. Marty Lebo who was part of the High Rock Lake SAC. We have developed an agreement for support of the UNRBA effort.

Communications Support

Symposium with the UNC Collaboratory

- The UNRBA and UNC Collaboratory held a joint symposium on May 19, 2021 to discuss the ongoing nutrient management strategies for Falls Lake.
- The symposium discussed the individual efforts and the coordination between the two organizations.
- Approximately 100 attended the event, and all presentations and recordings of interactive discussions will be made available online
- The symposium was a big success and the UNRBA is grateful to the Collaboratory for coordinating the event and highlighting the work of the UNRBA.

UNRBA Technical Stakeholder Workshop

- The UNRBA Technical Stakeholder Workshop has been postponed until FY2022 due to COVID-19 and the Collaboratory/UNRBA Symposium.
- Anticipate first half of meeting to provide an update on model calibration for WARMF and EFDC and loading summaries to Falls Lake
- Second half is typically small group sessions; potential topics include review and stakeholder input of
 - Discussion of scenarios under consideration
 - Data sources for the statistical model
 - Output metrics for the statistical model

External Stakeholder Communication Needs

- Objectives continue to be reviewed relative to communication opportunities with stakeholders.
- To support the re-examination process and achieve broad support for the UNRBA recommendations, additional outreach to external stakeholders including DWR, DEQ, and other interested stakeholders is needed;
- Coordination with local leaders to convey messages and facilitate outreach will be necessary.
- This effort will require the support of the UNRBA membership, staff and Board representatives.
- As a reminder, the [Infographic](#) and [Fast Facts](#) are available online <https://upperneuse.org/resource-library>
- An [Overview of the Work of the UNRBA](#) provided to the UNC Collaboratory for inclusion in their reporting is available online <https://nutrients.web.unc.edu/resources/>

Other Status Items

Ongoing Items

- Importance of communication outreach efforts: IAIA press release, upcoming workshops and meetings
- Intensive workgroup activity and management of expectations and resources—A lot to do between now and recommendations in 2023
- Leadership and organizational changes at DEQ and EPA
- Coordination with UNC Collaboratory on Falls Lake studies
- Ongoing DEQ/DWR Items
 - MOA
 - 2019 UNRBA Final Monitoring Report meeting
 - Schedule for face to face when possible
 - Neuse Watershed Model Information Session – Delivery Factors for WWTP

Future Meetings as Currently Scheduled:

**Next BOD Meeting: June 16, 2021, 9:30 AM to Noon,
Remote Access**

**Next MRSW Meeting: July 6, 2021, 9:30 AM to Noon,
Remote Access**

**Next PFC Meeting: August 3, 2021, 9:30 AM to Noon,
Remote Access**

Closing Comments Additional Discussion