

Path Forward Committee Meeting Butner Town Hall with Remote Access January 3, 2023



Agenda

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

Modeling Status

Watershed Model Report and Training Status

- The modeling team has compiled and addressed MRSW comments in a redline draft that is being reviewed by Forrest Michelle
- MRSW-approved watershed model sensitivity analyses and scenarios are also being summarized in the main report and described in Appendix H; these will be provided to Forrest and Michelle for review in early January
- After their review, it will be distributed to the MRSW for review and additional comment (January)
- Following refinements in response to the 2nd MRSW review, and clean version will be provided to the PFC for review and comment (February)
- Following additional refinements, the document will be formally submitted to DWR along with the model executable, input files, and output files (March)
- On Monday February 6th, the modeling team will host a training workshop on the new WARMF model GUI for DWR modeling staff and UNRBA members who have expressed interest in the training.

Watershed Model Sensitivity Analyses, Scenarios, and Loading Results

- A number of the MRSW comments were best addressed by running sensitivity analyses with the calibrated model; these analyses were discussed previously with the MRSW and subject matter experts
 - Evaluating a dry to average hydrologic condition
 - Every precipitation input was multiplied by 0.8
 - Best match to hydrologic conditions represented by the previous DWR watershed model (2005 to 2007) and US Forest Service monitoring studies (2008 to 2013)
 - Evaluating increases and decreases (+/-25%) to rates of atmospheric deposition
 - All constituents simulated by WARMF in wet or dry atmospheric deposition are affected
 - Evaluates model uncertainty with spatial variability in rates and also potential impacts of further air quality improvements

Watershed Model Sensitivity Analyses, Scenarios, and Loading Results, Cont.

- One of the MRSW-approved model scenarios is to evaluate “All Forest and Wetlands”
 - Removes point sources, onsite wastewater treatment systems, and fertilizer application
 - Meteorology, atmospheric deposition, soil chemistry and hydrologic soil properties are not changed
 - Provides lowest hypothetical loading to Falls Lake under average to wet hydrologic conditions
 - Run with and without watershed impoundments
- These scenarios and sensitivity analyses are being summarized in the main report and described in Appendix H and will be included before the documents are resubmitted to the MRSW

WARMF Lake Modeling

- As discussed at the December 6, 2022, PFC meeting, Systech Water Resources is modifying the code to allow the user to apply warm start files or reset initial conditions at different locations in the watershed
- To provide a more accurate starting point for the lake sediments for the 5th model run, a code modification is required to set lake sediments to initial conditions rather than using the warm start file generated by the 4th run
- Following testing of the model changes, this functionality has been applied to the fifth model run of the calibrated watershed model and the scenarios discussed on previous slides
- Updated statistics for the calibrated lake model will be shared with the MRSW this afternoon

EFDC Lake Modeling Status

- Dynamic Solutions has been refining the EFDC model calibration based on input during the November 17th call with DWR modeling staff and subject matter experts
- Today during the afternoon MRSW meeting, we will review the final calibration results for EFDC and seek approval from the MRSW
- Model performance for chlorophyll-a has improved, but the model still underpredicts phosphate flux when compared to the maximum USEPA flux measurements in the deeper part of the lake under anoxic conditions
- However, the lakewide phosphate flux estimates are four to five times higher than the ranges estimated by UNRBA based on Dr. Marc Alperin's data and Dr. Michael Piehler's more recent benthic flux estimates

Lake Model Reporting Status

- The modeling team is continuing to draft sections and appendices of the lake modeling report.
- The lake modeling report will include technical appendices for each lake model (WARMF Lake, EFDC, statistical/Bayesian)
- Sections of the draft lake model report will be reviewed by the MRSW in spring 2023
- The MRSW will discuss a simplified approach for comparing simulated and observed concentrations during the MRSW meeting this afternoon

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

Review of Status

- During the November and December 2022 meetings, the PFC discussed preliminary concepts regarding a revised nutrient management strategy for Falls Lake
- At the December meeting, important discussions regarding potential regulatory constraints for an investment-based approach were discussed as well as considerations for administration
- Today's meeting summarizes these discussions and continues the discussion of administration, potential partnering opportunities, and reporting
- The statistical modeling is underway following receipt and formatting/merging of all data sets
- DWR has not yet identified a contact for Falls Lake standards development but has hired Paul Wojoski as the Classifications and Standards Branch Chief

Feedback on Regulatory Constraints

- Original Falls strategy included nutrient pounds reductions
- Will DWR and/or EPA see an investment-based approach as less protective?
- Need enabling legislation to allow an investment-based approach rather than counting pounds of nutrients
- Need delegation of State authority for implementation with level of delegation defined
- Preliminary DWR comments
 - Open to exploring new concepts
 - Need to account for past 12 years of implementation, IAIA, etc.
 - Do not expect that revised Falls Lake rules will have to follow the revisions being made to Jordan; more likely that Jordan strategy will incorporate lessons learned from Falls
 - Agree we need to address the regulatory issues upfront

Additional regulatory considerations

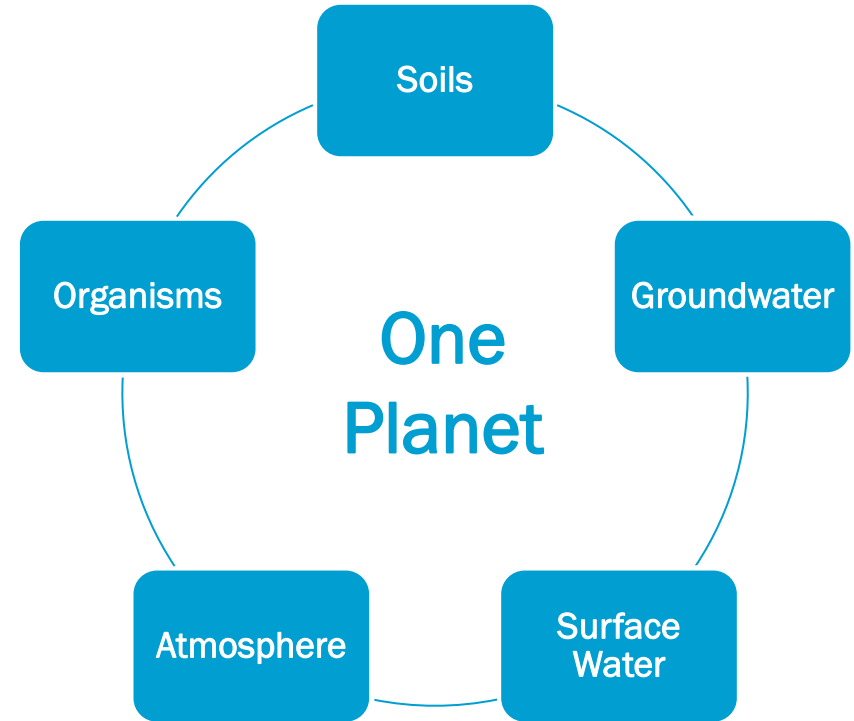
- Petition for rulemaking must be accompanied by a proposed rule
 - Need to start drafting the site-specific criteria
 - Need to demonstrate revised standard will not result in degradation
- The original rule was not challenged when adopted (potential issue)
 - If baseline is moved, that may be a justification for modifying the rule
 - The adaptive management provisions described in the rule also provide a pathway
- Referencing baseline conditions prevented DWR crediting land conservation for nutrients, but we know this is the best long-term protection of the lake
 - Maybe dates are not useful for a revised strategy; look forward, not backward
- Elements of existing rule that may be beneficial to the revised strategy
 - The Stage II requirements for WWTPs include provisions for technological and financial feasibility
 - The State and Federal requirements are based on number of projects implemented per year, not pounds reductions (similar to IAIA)
 - For nonpoint sources, Stage II required more money to be spent than the previous year (with no completion date)
 - Status reports every five years

Feedback on Reporting and Engagement

- Reporting
 - Representatives from agriculture indicate they would like to maintain their methods and reporting for reducing nutrient losses
 - Other sectors could provide funding to satisfy investment commitments
 - Actions and projects with State-approved nutrient reduction credits would continue to be tracked and reported in annual reports
 - Compliance would be based on investments (as with IAIA)
- Expand stakeholders beyond those engaged to this point
 - Developers/home builders
 - USACE
 - Farmers and landowners (outreach to be led by representatives of agriculture with support from UNRBA)
 - County Health Departments
 - EPA

Considerations for Nutrient Cycling

- Nitrogen and phosphorus are naturally occurring and required for our ecosystem
- Nutrients cycle through the air, soils, plants, groundwater, and surface waters
- We need to continue our conventional methods (e.g., SCMs) but we cannot expect drastic changes unless we apply a systems-approach to limit inputs and sequester nutrients



Feedback on Administration

- Watershed organization with expanded membership and membership tiers
 - Funding members (those with investment-based requirements)
 - Potential partners (voluntary)
 - Receive investment benefits
 - Maintain their own tracking and reporting
 - Maintain control of actions affecting their lands by leading sector-based committees

Other Considerations

- The goal is to maximize the serviceable life of the reservoir and maintain designated uses
- We need to avoid regulations that punish good intentions
- Identify other streams and impoundments in the watershed as covered by the strategy
 - These waters should not be considered Category 5 waters in future Integrated Reports and should not require separate, additional management strategies

Next Steps and Communications

- Coordinate with representatives from agriculture, NC Forest Service, and NC Forestry Association to engage farmers, foresters, and large landowners
- Discuss preliminary findings from the statistical modeling and implications for site-specific chlorophyll-a standard
 - Schedule a meeting with the Technical Advisors Workgroup in late January
 - Begin sharing data summaries and correlations with the PFC in February and March
- Schedule meeting with DWR to discuss concepts and site-specific criteria after standards point of contact has been identified
- Continue planning for March 22 and 23 WRRRI Annual Conference (3 presentations and 1 feedback session)

Timeline for Developing Recommendations for a Revised Nutrient Management Strategy

November 2022 through January 2023

Discuss PRELIMINARY DRAFT concepts, administration, reporting, and partnering options



February and March 2023

Discuss preliminary results of statistical model



April 2023

Draft concepts document

Expanded stakeholder engagement



Late summer 2023

Draft program document by late summer



Fall 2023

Stakeholder workshop to review a final draft document

Provide our report to the Collaboratory for reference



Legislative requirements for December 2023

NC Policy Collaboratory final Falls Lake report

Submittals from other groups



DWR to begin rule making within 6 months/no later than December 2024

DWR to begin their stakeholder process



DWR anticipates rules readoption by 2026/2027

Communications Outreach and Preparation

Communications Outreach and Preparation

- Continued engagement with DWR
- Planned workshops and symposia
 - WARMF Model Training with UNRBA and DWR
 - February 6, 2023
 - UNRBA Technical Stakeholder Workshop (see next slides)
 - Spring/Summer 2023
 - Workshop with DWR/NC Policy Collaboratory/NGOs
 - Spring/Summer Spring 2023
 - Joint symposium with NC Policy Collaboratory
 - Summer 2023
 - Stakeholder workshop to discussed final draft strategy
 - Fall 2023
- Recent staff changes at member local governments highlight the need for UNRBA engagement from multiple staff across the levels of each local government.

Communications Outreach and Preparation

- The Executive Director will continue to reach out to local government staff to identify needs and support staff with implementation of the IAIA Program and participation in developing the revised nutrient management strategy.
- The Year 1 annual report for the IAIA program including the number and types of projects has been posted to the UNRBA website
- CGC members suggested a follow up press release to highlight this information
- Planning a press release on the Neuse River of the Year for the upper part of the watershed following event details from American Rivers
- BC communications staff have been identified to support development of press releases and videos

Other Status Items

Ongoing Items

- More intensive outreach and stakeholder engagement and management of expectations and resources—A lot to do between now and recommendations in 2023
- Ongoing DEQ/DWR Items
 - Continued engagement with staff and leadership
 - Building agreement with timeline for EPA outreach
 - MOA
 - Neuse Watershed Model Information Session – Delivery Factors for WWTP—Update provided by John Huisman

Future Meetings as Currently Scheduled:

**Next BOD Meeting: January 18, 2023
9:30 AM to Noon**

**Next PFC Meeting: February 7, 2023
9:30 AM to Noon**