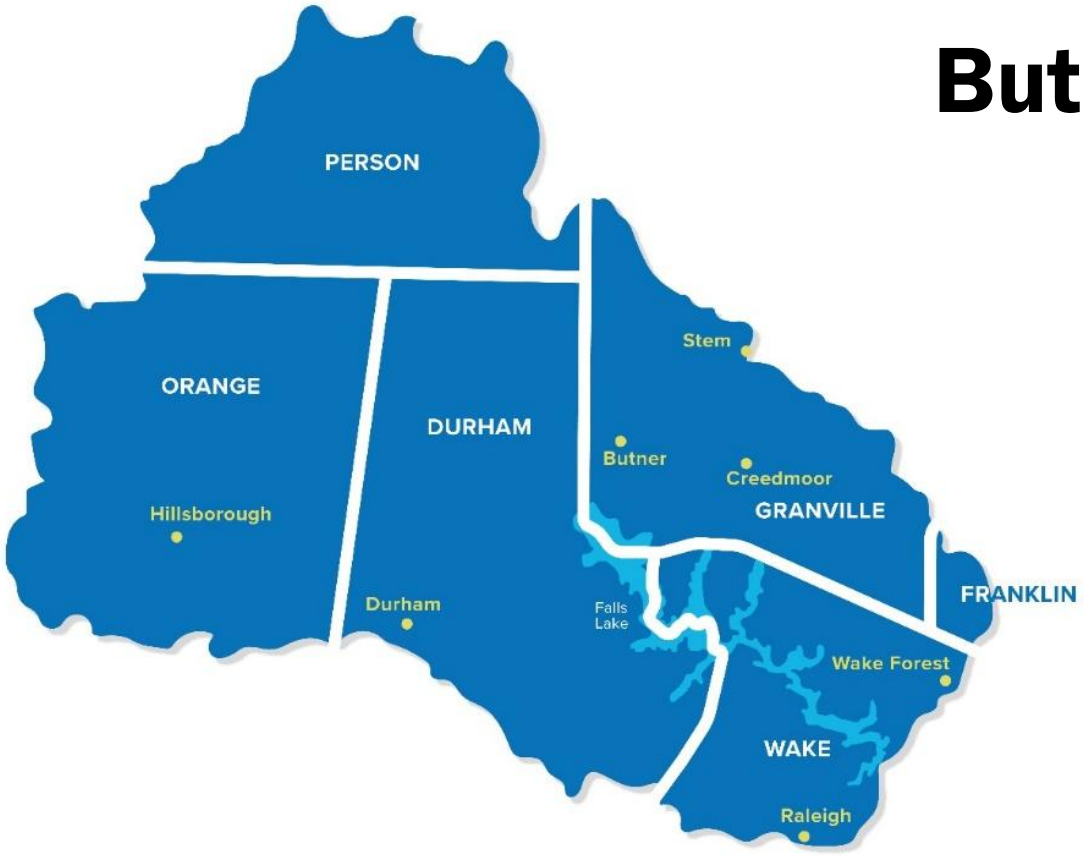
UNRBA Board Meeting
September 17, 2025

Butner Town Hall



September 17, 2025, UNRBA Board Agenda

- Opening—Wendy Jacobs, Chair
- Action Items
  - Approval of June 18, 2025, Meeting Minutes
  - Approval of the Treasurer's Report
  - Schedule a Special Meeting of the Board for October 21, 2025
  - Authorization to Develop a Letter of Engagement with Smith Anderson for Limited Support on Legal Aspects for a Petition of Rule Making
  - Tax Return, for July 1, 2024 through June 30, 2025, 990 Form
- Status Reports and Informational Items
  - Status of the Falls Lake Rules Readoption Process
  - Extension of IAIA Program
  - Continued Rule Development for Jordan Lake and High Rock Lake Watersheds
  - Modeling and Regulatory Support Status and Evaluating a Falls Lake Assessment Methodology and Site-Specific Chlorophyll-a Water Quality Standard
  - Communications Support
  - Ongoing Discussions/Issues
- Closing Comments

Opening

Opening

- Introductions and announcements
- Roll call for quorum
- Identification of any conflicts
- Review and approval of agenda

Action Items of UNRBA Board of Directors

Approval of June 18, 2025, Meeting Minutes (link)

Approval of the Treasurer's Report

9/4/2025

Balance Forward: (per bank statement - 07/31/2025)		Checking	$	183,156.48
		Savings		1,283,728.36
Debits:				
	Winston, Williams, Creech & Evans (July Invoice)		$	950.00
	Brown & Caldwell (July Invoice)			25,232.50
	WSP, Inc (July Invoice)			2,355.00
	McGill (July Invoice)			20,814.72
	The Insurance Shoppe			1,294.00
	Total Debits		$	50,646.22
Credits:	Interest (checking)		$	56.28
	Interest (savings)			3,274.85
	Membership Dues			445,410.03
Account Balance (per bank statement - 08/31/2025)		Checking	$	577,976.57
		Savings		1,287,003.21
	Total UNRBA Account Balances:		**$**	**1,864,979.78**

Outstanding invoices/deposits in process since the close of bank statement (08/31/2025):

Debits:			
	WSP (Aug Invoice)		4,880.00
	Penn National Insurance		677.00
Credits:			
	Current Account Balances:	Checking	$ 572,419.57
		Savings	1,287,003.21
	Total UNRBA Account Balance :		**$ 1,859,422.78**

Schedule a Special Meeting of the Board for October 21, 2025, from 9:30 AM to 11:30 AM as a virtual meeting

Authorization to Develop a Letter of Engagement with Smith Anderson for Limited Support on Legal Aspects for a Petition of Rule Making

2024-2025 UNRBA Tax Return

The UNRBA is a 301(c)(3) Organization

Tax Filing is on a Fiscal Year Basis (this year, July 1, 2024 through June 30, 2025)

The Return was Provided to the Board Prior to the Meeting

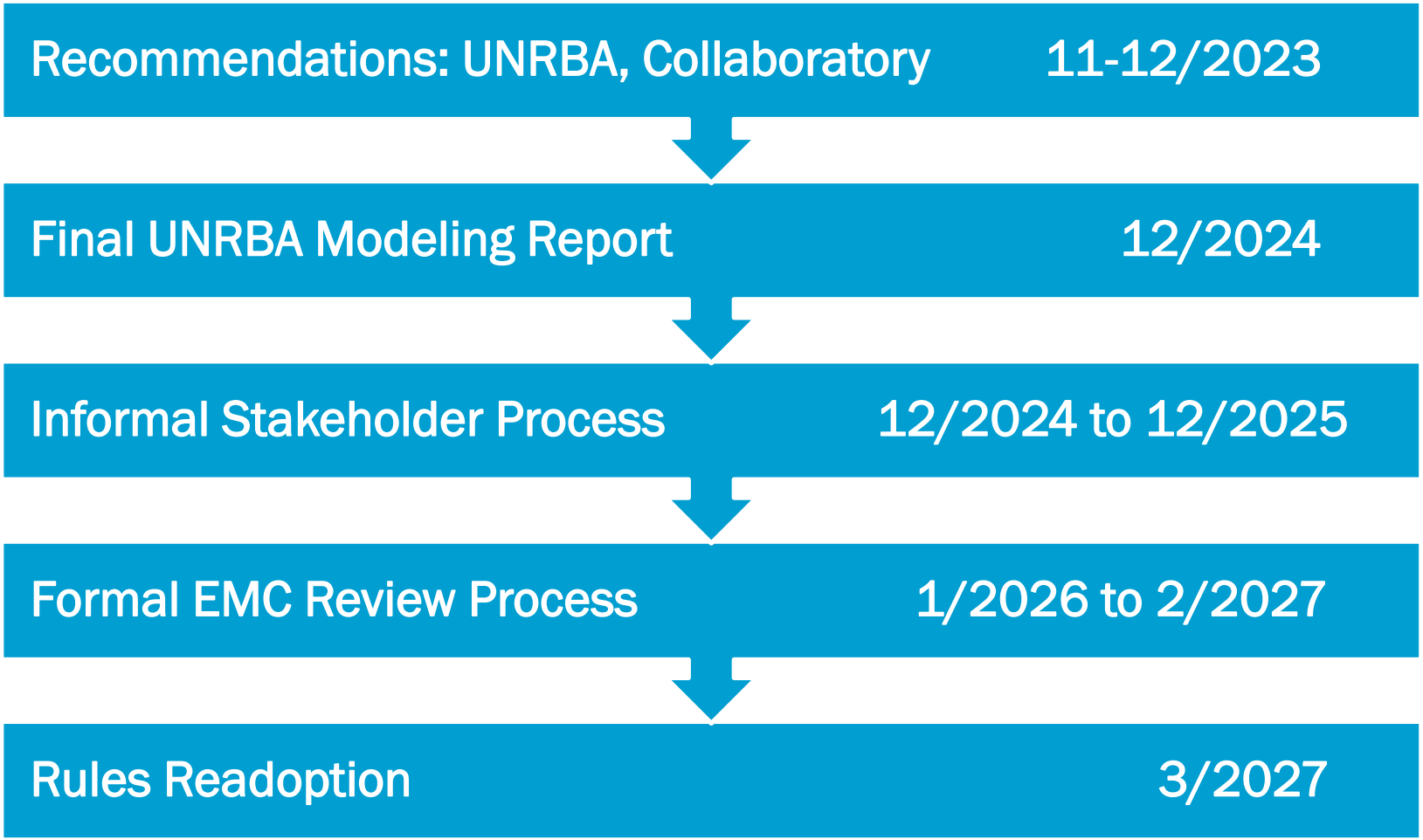
Opportunity for Review

Chair to Sign Form

Status Reports and Informational Items

Status of the Falls Lake Rules Readoption Process

Rules Readoption Schedule



UNRBA: Upper Neuse River Basin Association
EMC: Environmental Management Commission

Rule Development Process

Draft-Draft-Draft

Four Workgroups

- 12/24 to 4/25
  - 18 workgroup meetings
  - 2 workshops
- Discussed concepts and challenges
- Developed initial drafts

Draft-Draft

PFC, Board, EMC informational items, and Expanded Stakeholders

- 5/2025 to 12/2025
- Review initial drafts
- Compile input
- Collect fiscal data
- Refine drafts for recommendation (UNRBA Board approval; DWR may have their own recommendations)

Draft → Final → Rules

Formal Process

- 1/2026 to 2/2027
- Present to WQC
- Present to EMC
- Public comment period
- Public hearings
- Rules to RRC with fiscal analysis

EMC: Environmental Management Commission
WQC: EMC Water Quality Committee
RRC: Rules Review Commission

Status of UNRBA Rule Development

- The UNRBA is extremely grateful to the workgroup members, Path Forward Committee (PFC) members, and stakeholders representing several interests for their support in the development of draft-draft rules since December 2024
- Iterative versions of UNRBA drafts have been made available to DWR and stakeholders for review during this process
- The PFC received redline and clean copies of the **UNRBA's** draft-draft rules for review and discussion at the September 2nd PFC meeting
- Our goal had been to bring draft rules for the Board to discuss and consider at the September 17, 2025, meeting
- UNRBA learned that DWR was developing their own draft rules during the May 8, 2025, EMC meeting
- **DWR** provided the UNRBA their draft rules on August 25th
- UNRBA did not have time to evaluate DWR's draft rules for the September 2nd PFC meeting other than a high-level review
- *Continued on next slide*

Status of UNRBA Rule Development

- The Executive Director, support team, and PFC Co-Chairs met with DWR staff on August 28th to broadly discuss DWR's drafts
- There remain important, outstanding issues between the DWR and UNRBA versions of the rules. We have been working diligently to address these, but the specifics are only recently available; we met with DWR to discuss these issues
  - August 29th to discuss the Purpose and Scope Rule including a Falls-specific assessment methodology
  - September 16th to discuss the Wastewater Rule.
- The PFC decided Sept. 2nd to incorporate **some** of DWR's draft language into a joint set of rules to be considered at their Oct. 7th meeting incorporating simplified or improved language
    - Rules should state requirements only
    - Easier to implement requirements **if** consistent with the intent with the UNRBA's draft-draft rules
- *Continued on next slide*

Status of UNRBA Rule Development

- After the PFC finalizes draft rules, they will be provided to the Board for review as soon as possible.
- To meet our schedule of providing final draft rules to the EMC at their November 12th Water Quality Committee meeting,
  - UNRBA Executive Committee has scheduled a special, virtual meeting of the Board on October 21st from 9:30 to 11:30 AM.
  - Review and consider approving the submittal of the UNRBA's draft rules to the Commission as an information item.
- *Continued on next slide*

Status of UNRBA Rule Development

- The UNRBA is also working on supplemental fiscal information to provide to the Commission to provided ahead of the petition.
  - Not required, but will help process efficiency
  - The EMC will ask DWR to create a fiscal note for the rules.
  - Our providing this information is critical to timely readoption
- The supporting fiscal information will go through the UNRBA approval process before it is submitted to the EMC
- Our goal is to submit the petition to the EMC at their January meeting including the draft rules and supplemental fiscal information.
- This would begin a rules review process that is projected to be acted upon by the Rules Review Commission in March 2027.

House Bill 926 - Update

MODIFY THE FALLS RESERVOIR WATER SUPPLY NUTRIENT STRATEGY RULES **TO EXEMPT NEW RESIDENTIAL DEVELOPMENT DISTURBING LESS THAN ONE ACRE**: SECTION 9.(b) Falls Lake New Development Rule. – Until the effective date of the revised permanent rule that the Commission is required to adopt pursuant to Section 9(d) of this act, the Commission shall implement the Falls Lake New Development Rule as provided in Section 9(c) of this act.
SECTION 9.(c) Implementation. – Except as required pursuant to federal law or permit, **no stormwater permit, management plan, or post-construction stormwater controls shall be required under the Falls Lake New Development Rule or local ordinances adopted thereunder for single family and duplex residential and recreational development that cumulatively disturb less than 1 acre, which is not part of a larger common plan of development.**
Notwithstanding any authority granted under the Falls Lake New Development Rule or pursuant to other statute or rule, no local government may establish requirements more restrictive than that established by this section.
SECTION 9.(d) Additional Rulemaking Authority. – **The Commission shall adopt a rule to amend the Falls Lake New Development Rule consistent with Section 9(c) of this act.**

House Bill 926 was approved by the House but not by the Senate. We continue to track this bill as it affects our draft New Development Rule.

Purpose and Scope Rule and a Falls-Specific Lake Assessment Methodology

Fundamental Differences: UNRBA and DWR Rules

- UNRBA's Draft Purpose and Scope Rule
  - Continues with the 4B alternative currently established by the Falls Rules (a nutrient management strategy).
  - Aims to improve water quality, protect designated uses, and work toward achieving the chlorophyll-a water quality standard using a Falls-specific assessment methodology.
- DWR's Draft Purpose and Scope Rule
  - Sets a goal of reducing total nitrogen load by 20 percent and total phosphorus load by 40 percent from a baseline year of 2006.
  - Imposes delivery factors when acquiring or calculating the need for new development or wastewater offset credits
- These two approaches are fundamentally different and impose different implementation requirements on the individual rule sections.

Fundamental Differences: UNRBA and DWR Rules

- UNRBA Workgroup Process
  - Included DWR
  - Structured the draft Falls Rules around an integrated watershed health approach.
- DWR's version of the Rules
  - Reverts back to counting pounds
  - Limits implementation of more holistic approaches by requiring a prioritization of nutrient pounds counting.
- DWR has acknowledged in recent meetings that though nutrient loading to Falls Lake has decreased, chlorophyll-a concentrations have not responded in a comparable manner.
- This reservoir is a hydrologically modified, complex system that does not exhibit a predictable relationship between nutrient loading and chlorophyll-a concentrations.

Fundamental Differences: UNRBA and DWR Rules

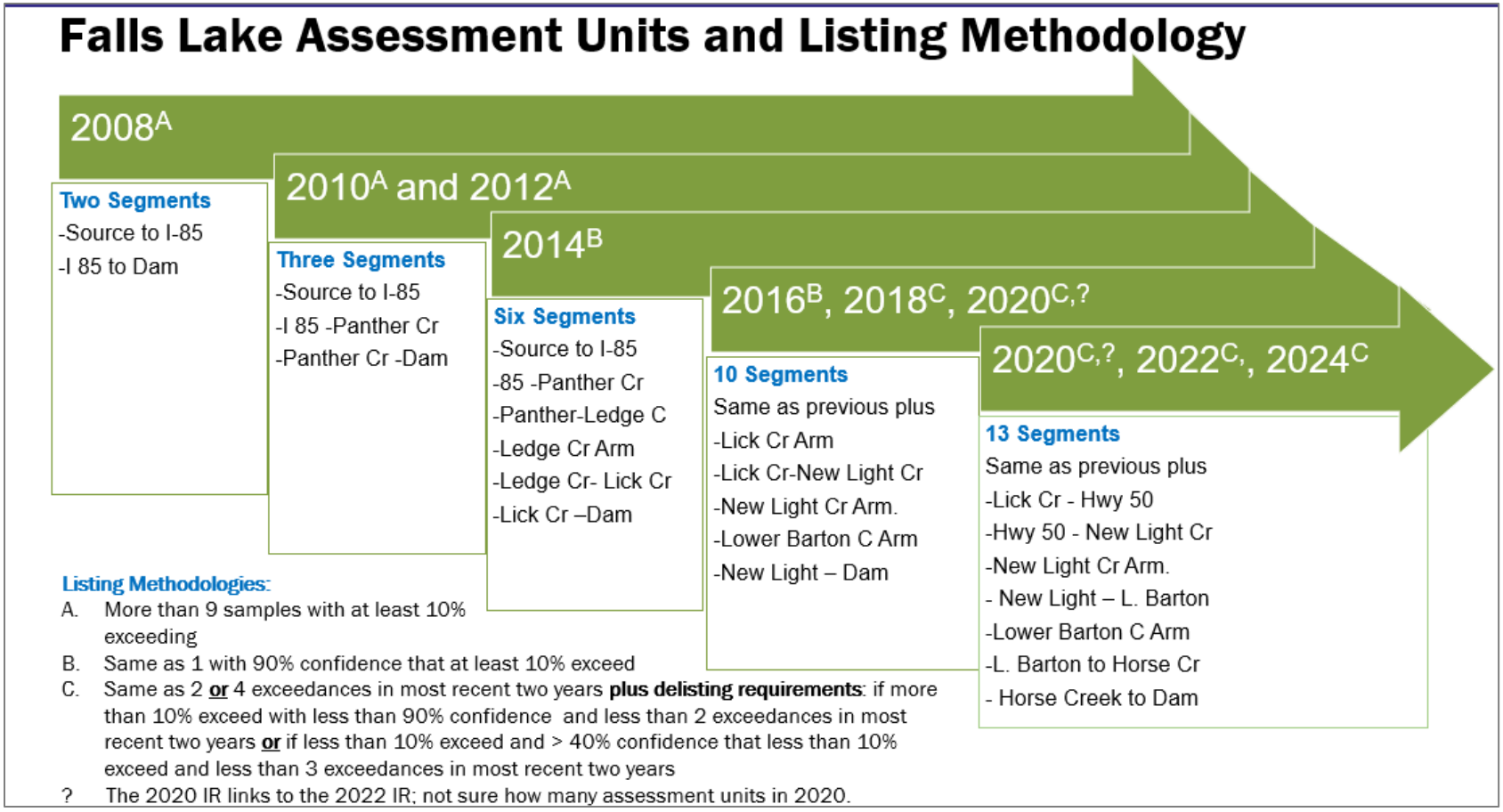
- The UNRBA strongly supports continued nutrient management
  - Improve the overall ecological health of the system
  - Use science-based, feasible solutions
- We will not accept overly restrictive, costly, ineffective requirements that “look good on paper” but do little to improve water quality.

UNRBA Proposed Falls-Specific Assessment Approach

- Addresses future 303(d)/305(b) Integrated Reporting
- Falls Lake has been, and continues to be, monitored at 12 stations, monthly, every year since 2010.
- NC samples 160 other lakes and reservoirs only during the warm months on a five-year rotating schedule.
- Only Jordan Lake is monitored at a similar level as Falls.
- The NC Assessment Methodology triggers non-compliance with water quality standards with only two to four exceedances.
- For a lake monitored as heavily as Falls, this small-number trigger is not scientifically valid.
- A Falls-specific assessment approach is needed for a comparable evaluation to the other 160 lakes and reservoirs evaluated by the State

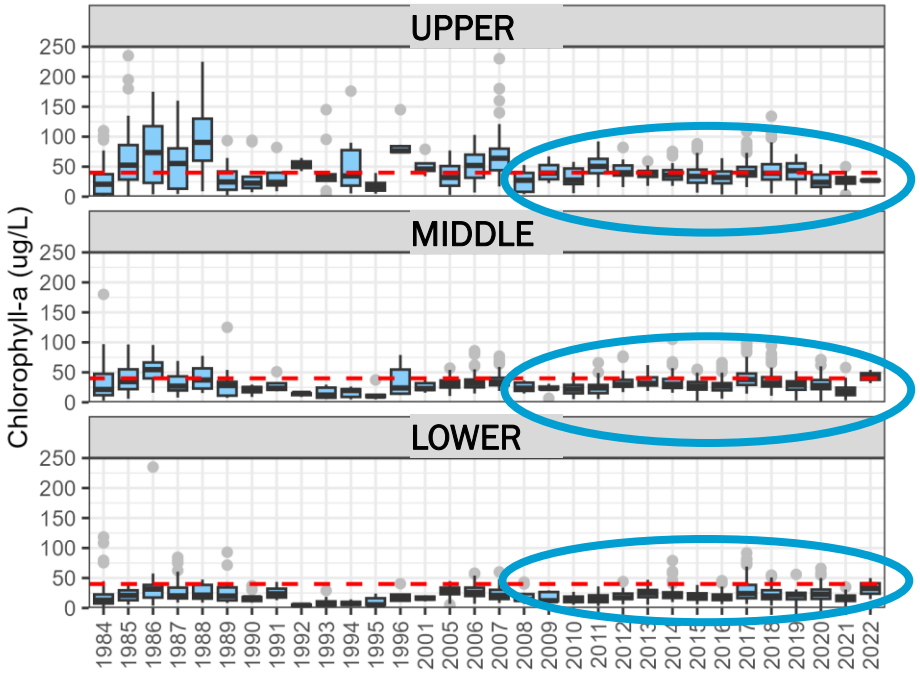
Falls Segments and 303(d) Assessment Methodology

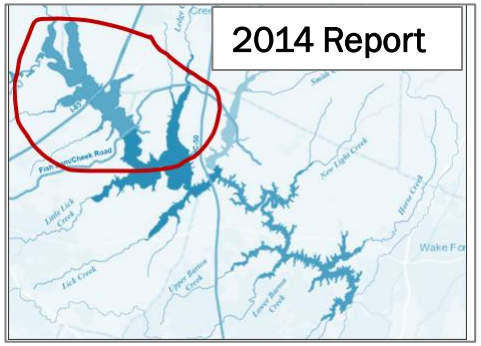
- Falls Lake has been assessed 9 times since 2008
- The methods and/or segments have changed 6 times in 9 assessment periods

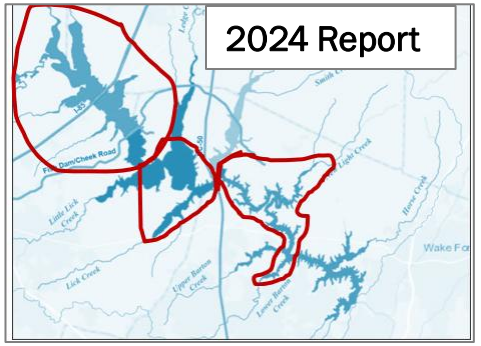


Impacts of Changing Methodology

- Moving target shows worsening conditions over past decade, even in lower lake
- Not true: chlorophyll-a has been stable over this period throughout the lake
- Lower lake has been stable since construction

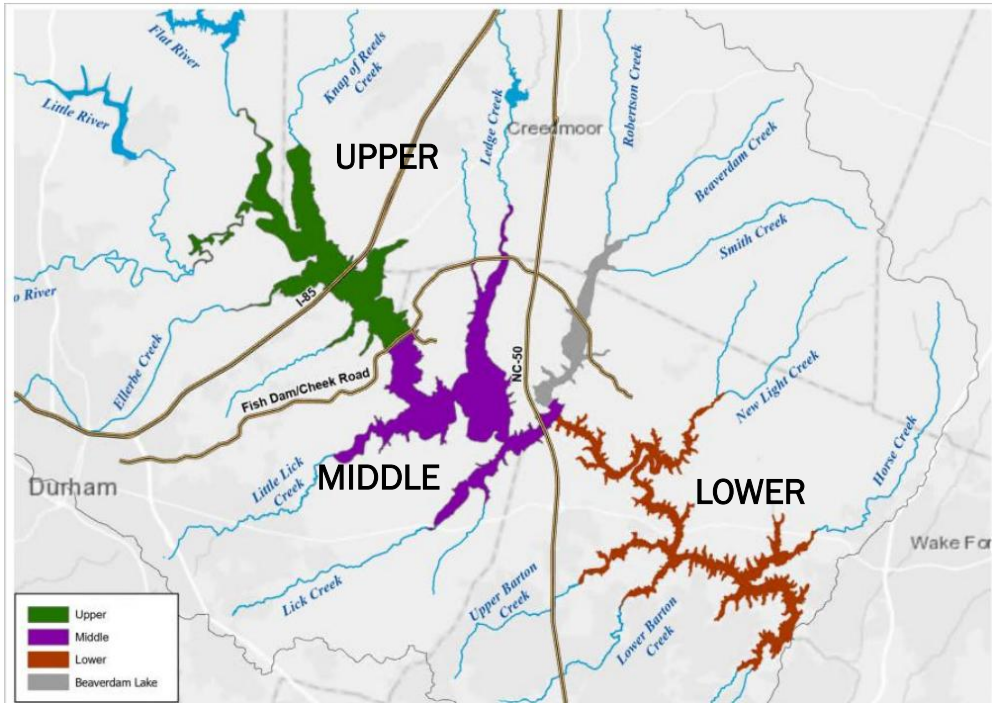






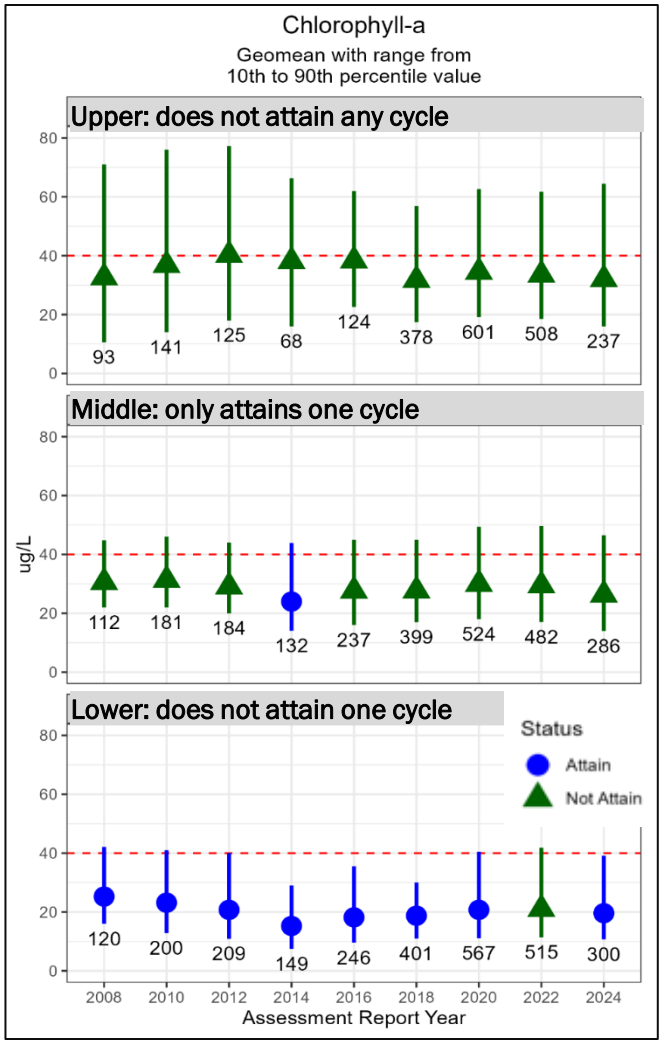
UNRBA's Proposal:

- Three lake units
- All monitoring stations within a unit combined
- At least nine samples per unit per 5-yr assessment period
- Only stations with depth at least 6 feet at normal pool
- Using only data collected within photic zone
- Retain DWR's statistical approach but eliminate the few-sample triggers for non-compliance



Results Using UNRBA's Approach

- Stable results, consistent with monitoring data
  - Upper lake: "not attaining" all periods
  - Middle lake: usually not attaining
  - Lower lake: usually attaining
- UNRBA's proposed draft-draft rules require nutrient management until <u>all three</u> segments are attaining the standard
- Our goal is <u>not</u> to show attainment everywhere, but to have a stable, scientifically-based approach
- Important to show impacts of nutrient reductions that have occurred



UNRBA Proposed Falls-Specific Assessment Approach

- Our contractor, Dr. Martin Lebo has conducted an evaluation and made recommendations for a Falls-specific assessment methodology.
- The UNRBA's proposal does not put the lake in compliance.
- Rather, it provides for a stable, scientifically valid approach that can be used to evaluate lake response to future management actions.
- We have also proposed an expanded evaluation of trophic status to include not only evaluation of water quality standards but also designated use support

UNRBA Proposed Falls-Specific Assessment Approach

- We continue to keep development of a site-specific chlorophyll-a standard as an important long-term goal, but we do not want to deter moving forward with revised rules and a Falls specific 303(d) assessment methodology.
- We greatly appreciate that the NC Collaboratory is provided additional funding to Dr. Nathan Hall to provide input on some of the ecological processes in Falls Lake (including algal species and edibility of higher trophic level organisms) related to development of a Falls Lake-specific assessment methodology and site-specific chlorophyll-a.

Wastewater Rule and UNRBA Modeling of Permitted Flow Scenarios

Fundamental Differences: UNRBA and DWR Rules

- UNRBA's Draft WW Rule
  - Sets effluent limits at 3.0 mg-N/L and 0.1 mg-P/L
  - Requires investment in watershed health to offset incremental increases in nutrient loading
  - Modeling confirms this would not impact water quality
- DWR's Draft WW Rule
  - Requires load reductions relative to 2006 of 20% TN 40% TP
  - Requires purchasing credits when exceeding undefined best available technology (BAT) limits
    - Credit prices could increase considerably; annual adjustments
    - Unknown if sufficient credits would be available
    - Language is unclear about the payment schedule
    - Requires purchasing 10 years of credits
    - Requires an additional 50% credit purchase if credits come from non-point source projects
    - Imposes delivery factors
- Both rules allow for group compliance / bubble permit

UNRBA Modeling of Permitted Flow Scenarios

- The current Falls Wastewater Rules includes load allocations that are not possible for WWTPs to meet at permitted flows.
- WWTPs are currently in compliance with the Stage I loads because they are operating at half capacity.
- UNRBA has evaluated a permitted flow scenario assuming WWTP effluent concentrations consistent with plant upgrades installed to meet Stage I requirements
  - Watershed Analysis Risk Management Framework (WARMF) for the watershed and lake
  - Environmental Fluid Dynamics Code (EFDC) lake model
- Simulated impacts to chlorophyll-a under this scenario.
- The PFC reviewed the results of this modeling at their September 2nd meeting
- *Summary of findings follows*

Three Modeling Scenarios for Major WWTPs

- **Calibrated Model**
  - 2015 to 2018 conditions (rainfall, lake sediment releases, etc.)
  - Actual discharges from WWTPs
- **Qp_3.0N_0.1P (same as Calibrated Model except for 3 WWTPs)**
  - Permitted flows
  - Effluent concentrations of 3.0 mg-N/L and 0.1 mg-P/L (five-stage biological nutrient removal)
- **Qp_StageII (same as Calibrated Model except for 3 WWTPs)**
  - Hypothetical, permitted flow scenario
  - Effluent concentrations of 1.12 mg-N/L and 0.06 mg-P/L
  - Similar to Stage I load allocations at permitted flow
  - Both Stage I and II would require reverse osmosis (not feasible)
    - Hillsborough (a 3 MGD facility that serves 10,000 people): Upgrades of $100 million in capital costs
    - Generates a “reject” stream with high concentrations of nutrients and other pollutants that is usually discharged to the ocean

Finding: Projected Load Increases are a Fraction of Year-to-Year, Rainfall Driven Variability

Nitrogen

Average watershed load (2015-18):	1.65 million lb/yr
Rainfall driven load increase (2017 to 2018):	1.1 million lb/yr
Projected increase above 2015-18 average for permitted flows at 3.0 mg-N/L	167,000 lb/yr
Projected increase as a % of rainfall driven variability	15%

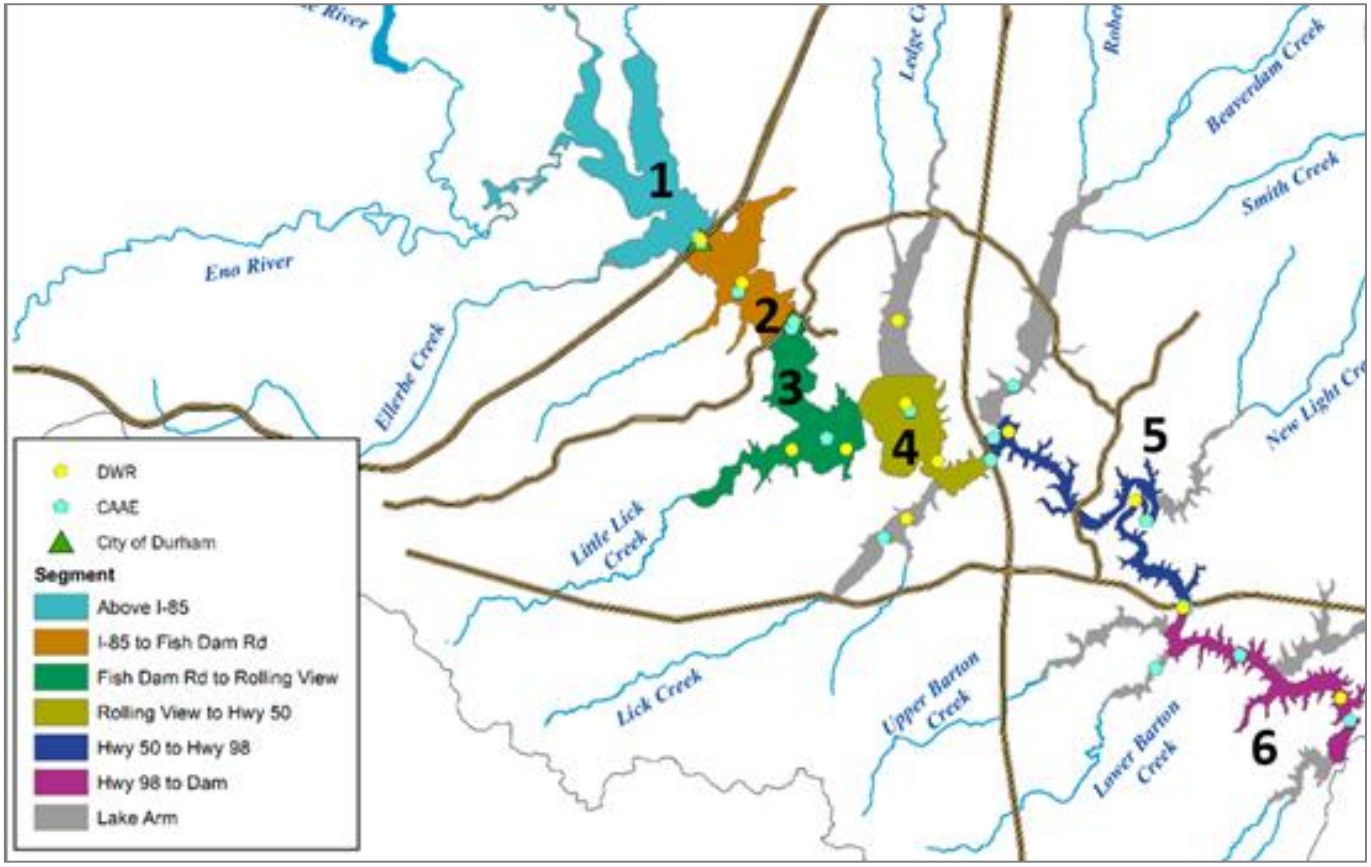
Phosphorus

Average watershed load (2015-18):	183,000 lb/yr
Rainfall driven load increase (2017 to 2018):	128,000 lb/yr
Projected increase above 2015-18 average for permitted flows at 0.1 mg-P/L	2,600 lb/yr
Projected increase as a % of rainfall driven variability	15%

Simulated load increases for the WWTPs are well within annual variability for our modeling period. Thus, we would not expect to see significant changes outside of observed or modeled 2015 to 2018 conditions.

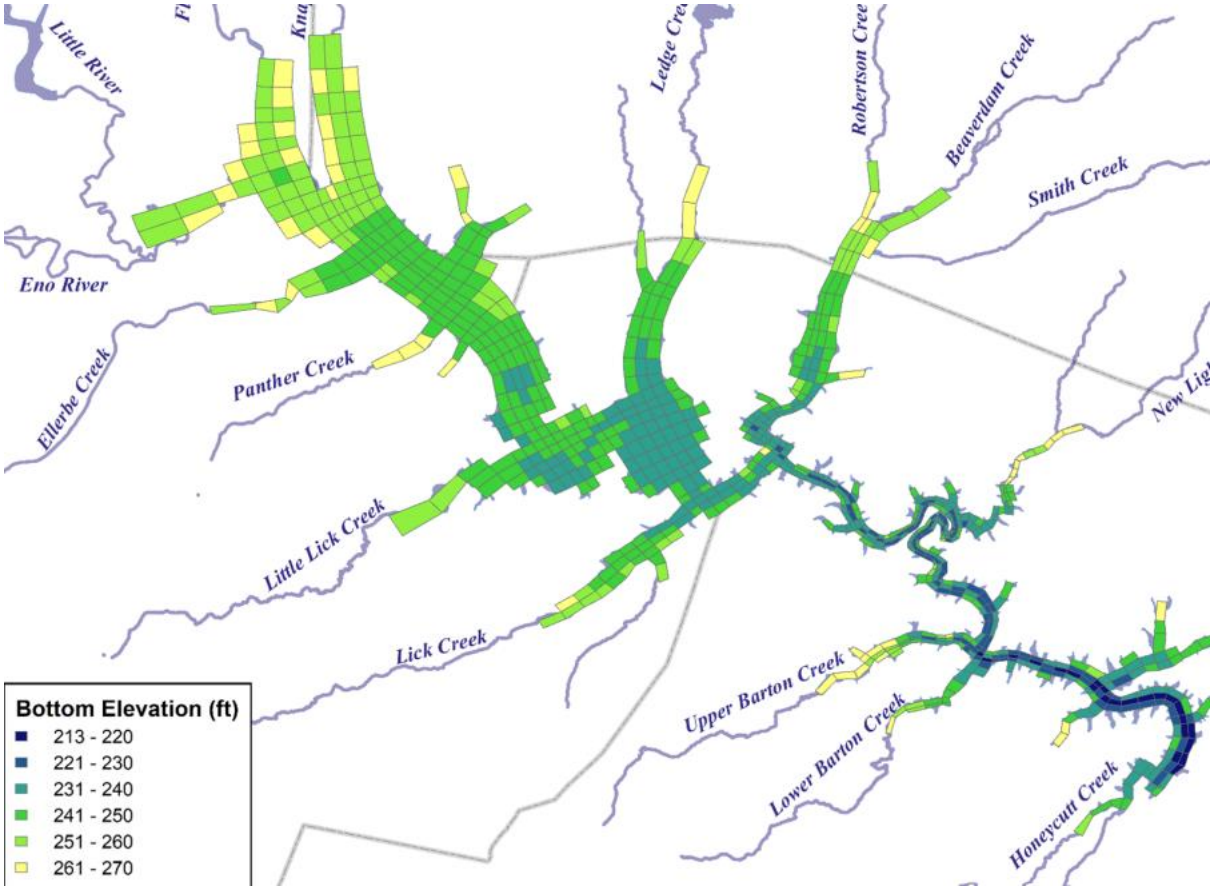
UNRBA Lake Models - WARMF

- UNRBA developed two lake models for Falls Lake
  - Watershed Analysis Risk Management Framework (WARMF)
    - Simulates the watershed and the lake
    - Six mainstem lake segments
    - See Sept 2nd PFC slides for WARMF results

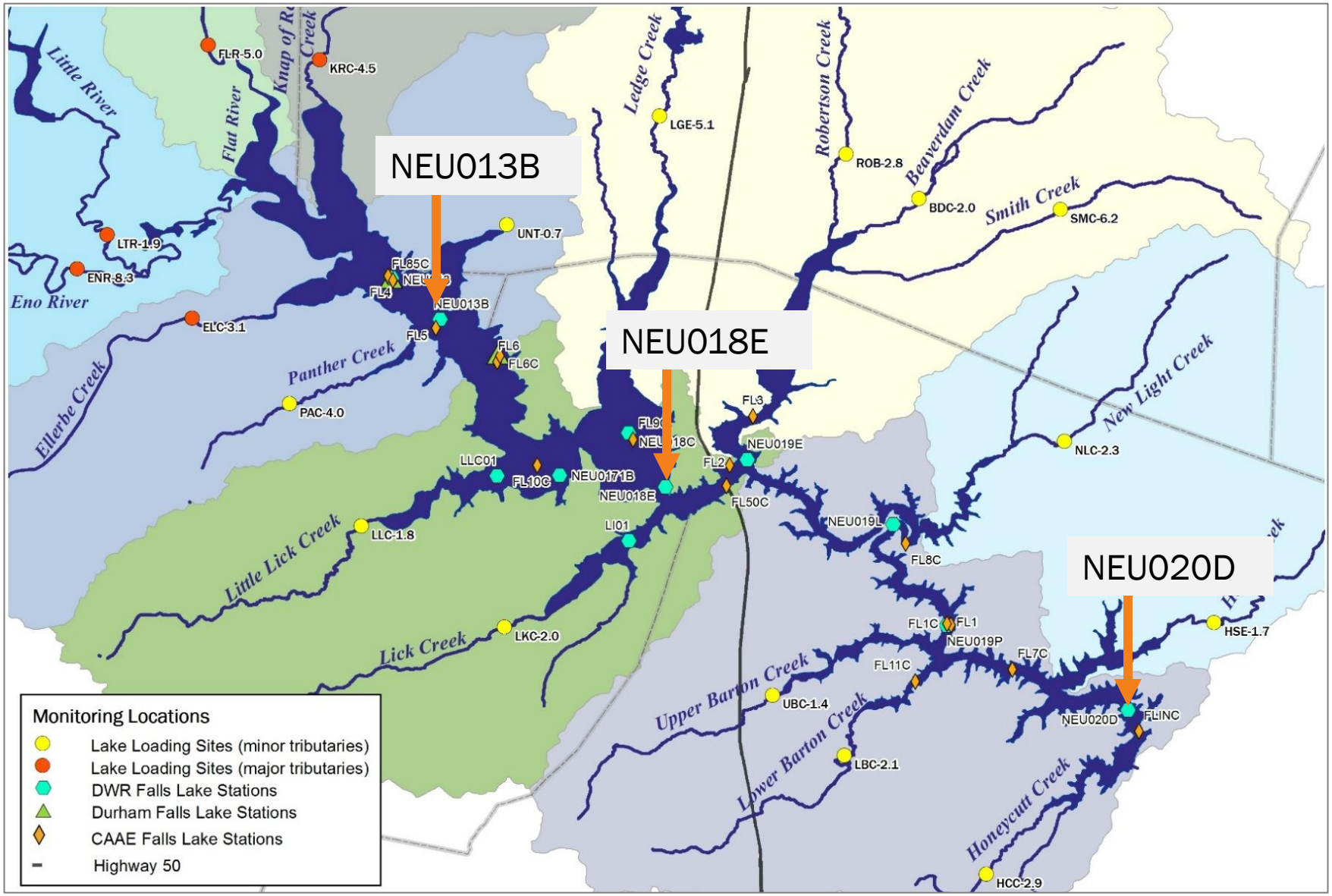


UNRBA Lake Models - EFDC

- UNRBA developed two lake models for Falls Lake
  - Environmental Fluid Dynamics Code (EFDC)
    - Hydrodynamic/water quality model of Falls Lake
    - 864 grid cells



Water Quality Monitoring Stations for Calibration

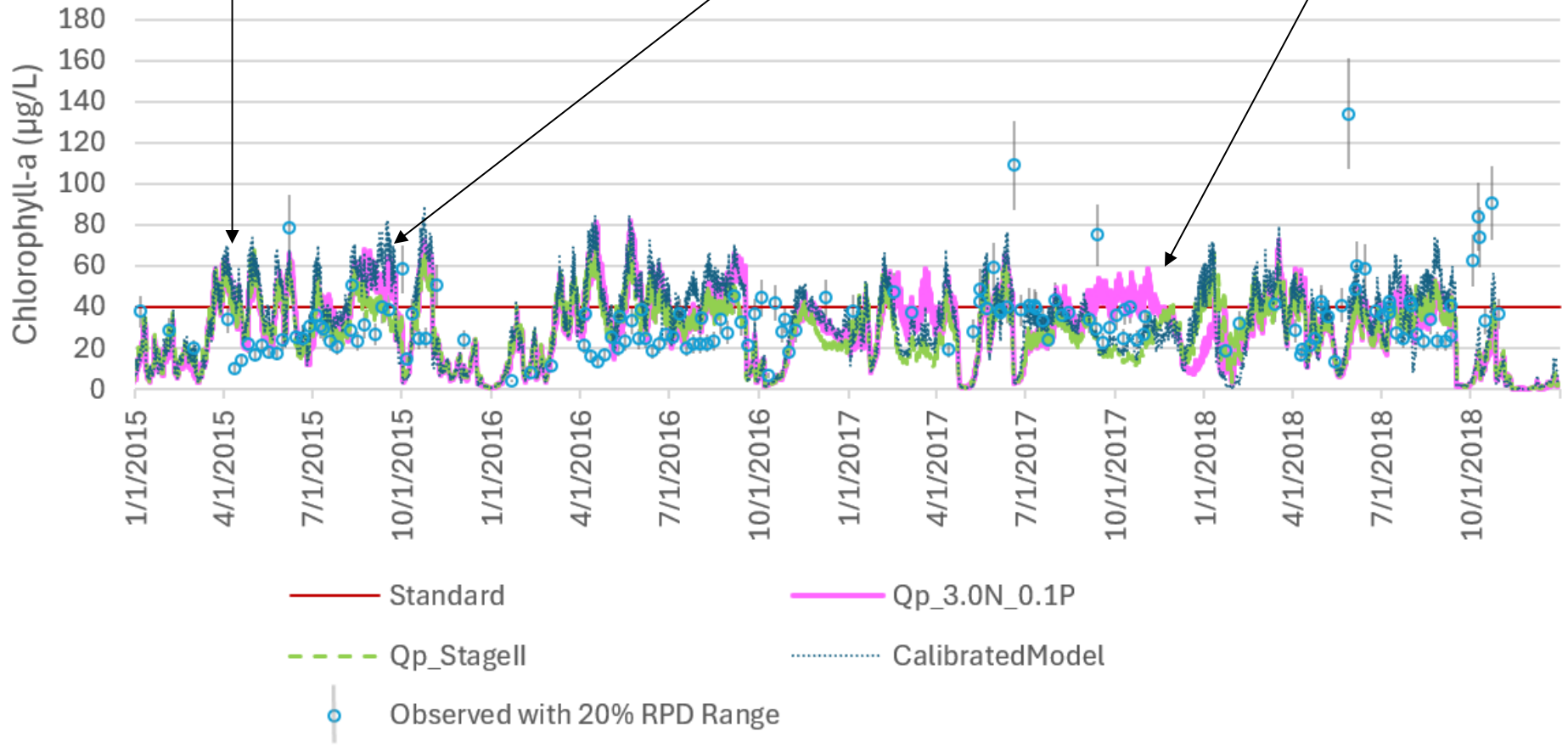


EFDC Model, Chlorophyll-a Station NEU013B: compliance station

Usually, the three scenarios predict similar results, often higher than observations.

BAT sometimes results in **lower** chlorophyll-a than Calibrated Model.

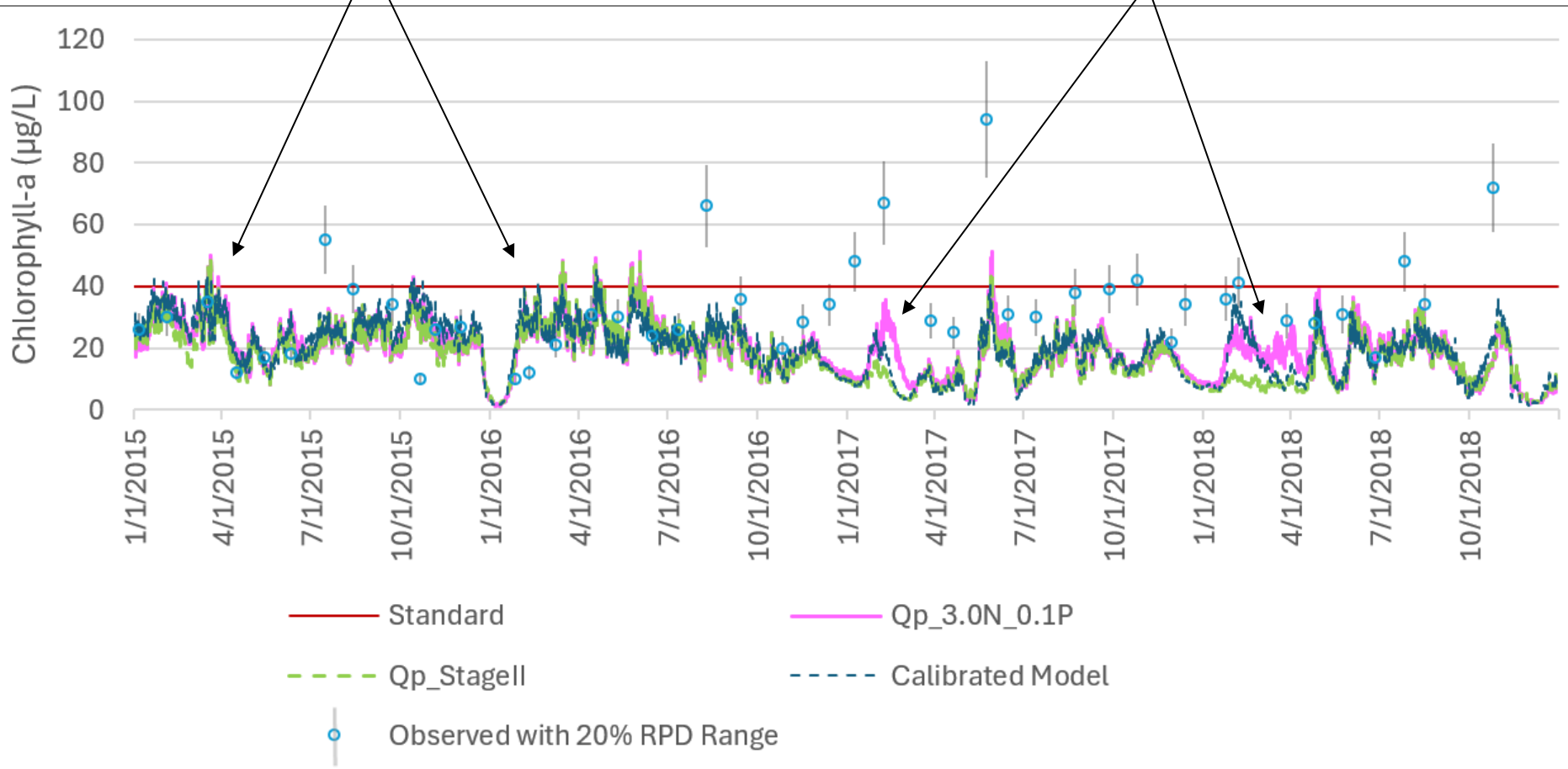
EFDC is more sensitive to BAT in 2017; closer to some observations.



EFDC Model, Chlorophyll-a NEU018E

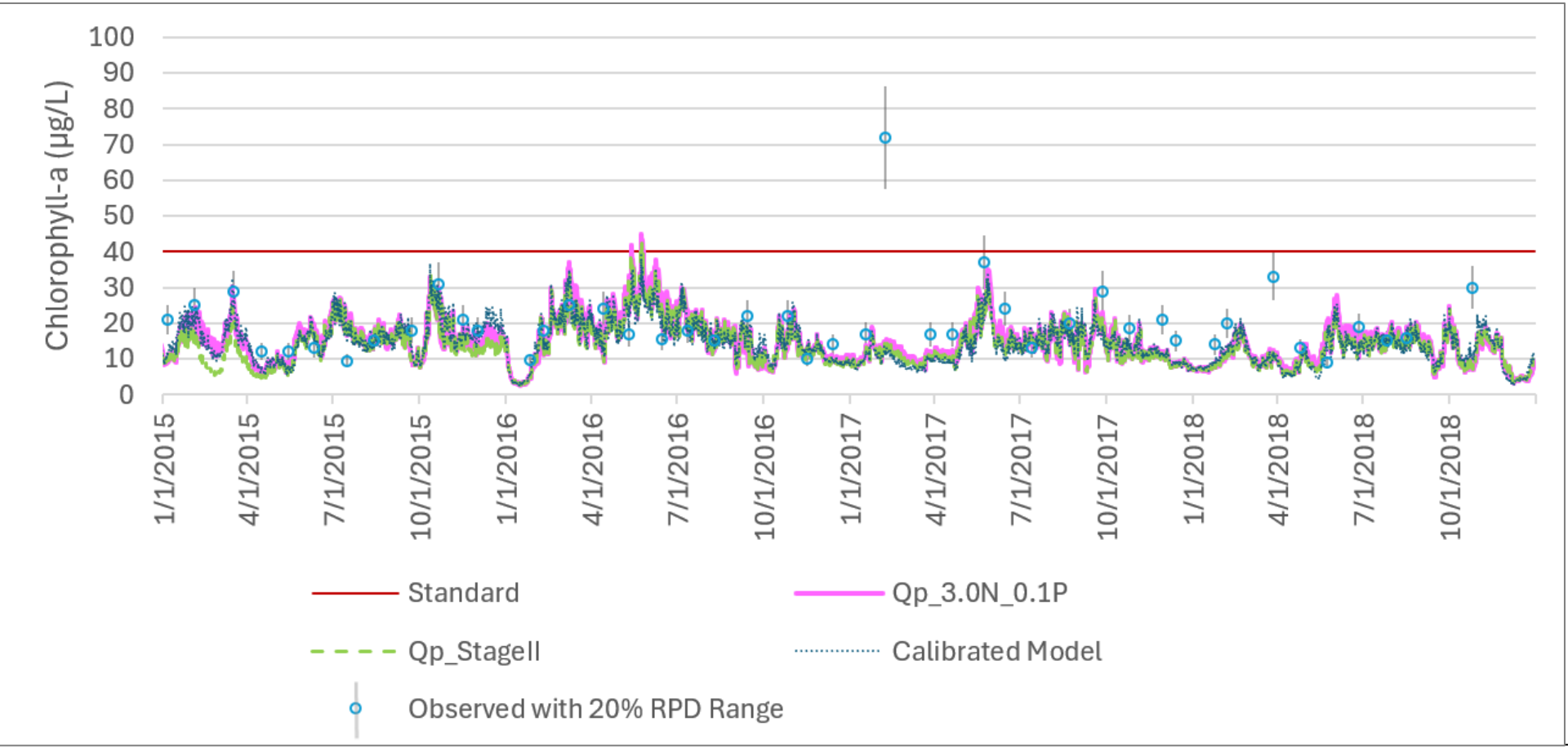
Usually, the three scenarios predict similar results

Sometimes, BAT results in slightly higher chlorophyll-a for very short periods, within RPD, and usually below the standard



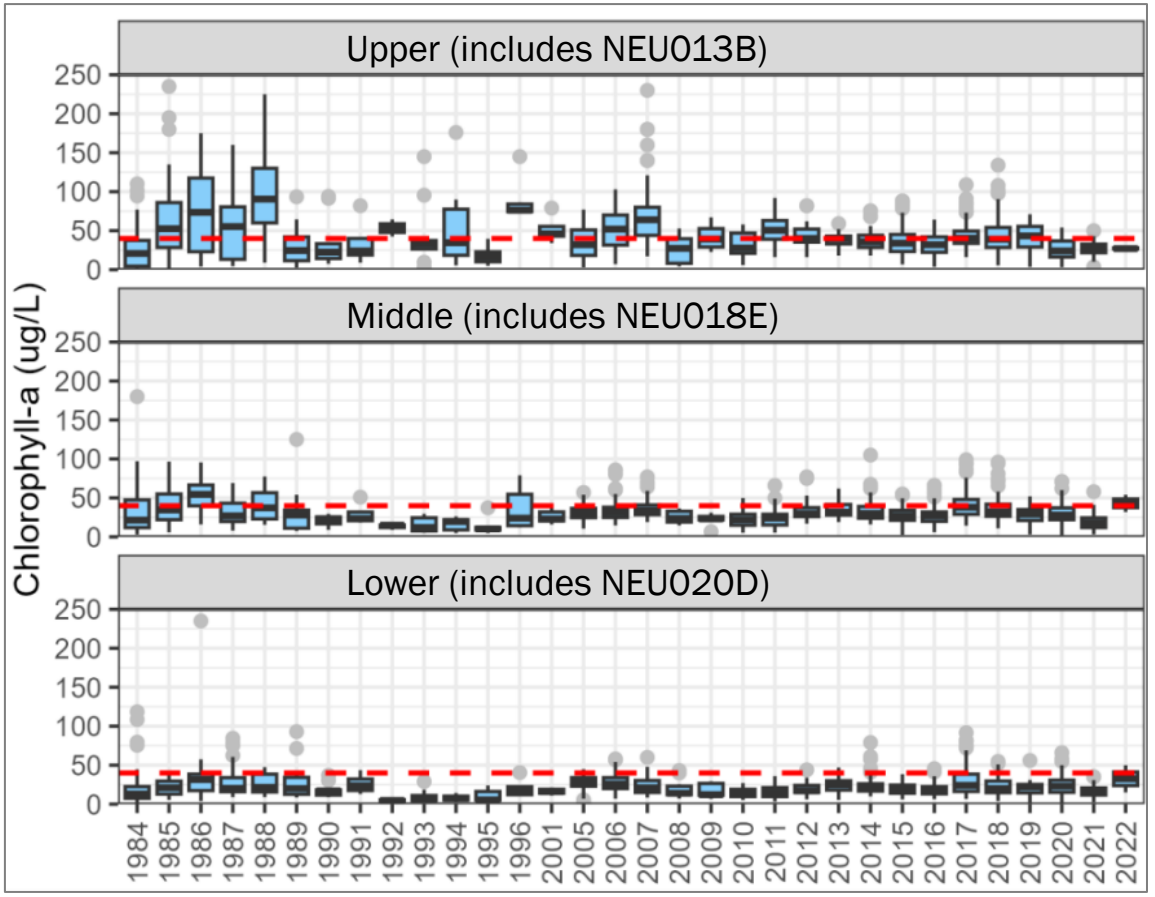
EFDC Model, Chlorophyll-a NEU020D

At NEU020D near the dam, there is little difference in the simulated values across the three scenarios.



Model Comparison to Long-Term Chlorophyll-a Data

- Consistent patterns
  - Upper: high variability
  - Lower: little variability
- Lake is relatively stable within the loads simulated
  - Increased load
  - Stage II load
- Nutrient loading in the 1980s was two or three times higher than 2015 to 2018 though rainfall was dry to average



UNRBA Proposal - Multi-faceted, Adaptive Approach

- Set effluent limits at 3.0 mg-N/L and 0.1 mg-P/L
- Allow facilities to utilize permitted flows
- Track emerging technologies; optimize facilities
- Invest combined $500,000/yr in watershed health
- Monitor receiving streams and Falls Lake to support adaptive management as flows increase
- Use predictive modeling to evaluate chlorophyll-a (proposed rules and future changes)

Existing Managed Lands Rule

Land Conservation

- DWR continues to propose capping the investment credit for land conservation in their draft of the Existing Managed Lands Rule.
  - Allows full credit for areas of a site where water quality improvement projects are implemented (e.g., stream restoration),
  - Limits the investment credit for other areas of the site that are not “enhanced” to 25 percent
- This cap on investment credit will limit the extent of land conservation in the Falls Watershed and leave upland areas that drain to riparian areas of a site at risk for future development.
- No stakeholders in the Falls or Jordan Watersheds have expressed support a cap on investment credit for land conservation.
- At the Falls and Jordan stakeholder meetings that we have attended, only DWR staff support their position.
- **The UNRBA draft rules will not include an investment cap on this critical practice.**

Other Issues with DWR's Draft EML Rule

- Other elements of DWR's Existing Managed Lands Rule are untenable
  - Requiring 2-yr forward looking projections of projects, funding sources, and partners;
  - Limiting credit for early implementation to 15 percent a year (potentially requiring reductions beyond the goal of their Purpose and Scope Rule)
  - Requiring the investment-based compliance group to jointly select projects and develop 2-year projections.
- The administrative burden of these requirements will severely limit their efficacy and potentially nullify the group compliance option.
- DWR staff were receptive to this feedback during the September PFC meeting.

New Development Rule

Issues with DWR's Draft New Development Rule

- UNRBA has been tracking DWR's draft rules for other watersheds including Jordan and High Rock Lake with a particular focus on their New Development Rules.
- DWR's draft Falls New Development Rule included provisions and methodologies that have not been discussed with the UNRBA or presented in any other draft watershed rules.
- Some of the provisions in their New Development Rule appear helpful, and the UNRBA is reviewing these aspects for potential incorporation into our draft rule.
- Other aspects require the use of a reconfigured stormwater nutrient load accounting tool that has not been thoroughly tested, vetted, or even applied to example projects according to DWR staff comments during the September PFC meeting.
- The UNRBA is supportive of tool updates that improve functionality, but we do not support use of this tool for regulatory purposes until it has been properly vetted and approved by the EMC.

Extension of the IAIA Program

Extension of IAIA and Submitting Year 4 Reports

- IAIA is approved as a five-year program with an option to extend until Falls Rules are readopted.
  - The five-year period ends June 2026
  - Likely rule readoption date is in March 2027
  - IAIA program will need to be extended.
- During the November 19, 2025, UNRBA Board meeting, we will include a Compliance Group Committee (CGC) meeting
  - Consider submitting a request to the EMC to approve an extension of the IAIA program
    - Five years, or
    - Until the Falls Rules are readopted and an updated watershed protection plan is developed and approved by the Commission (i.e., an updated Program Document)
  - Annual reports for Year 4 from each individual participant are due by September 30, 2025, to DWR with a copy to Forrest and Alix to allow for generation of the UNRBA Annual Summary Report.

Continued Rule Development for Jordan Lake and High Rock Lake Watersheds

Continued Rule Development for Jordan Lake and High Rock Lake Watersheds

- Continue to monitor DWR's
  - Draft rules for the High Rock Lake Watershed
  - Rules readoption process for Jordan Lake Watershed
- Concerned that these processes could negatively impact
  - The Falls Lake rules readoption process and timeline
  - Could be inconsistent with the UNRBA's recommendations
- Seek 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 which could generate considerable push back by stakeholders.

Communications Support

Communications Outreach and Preparation to Support Rule Readoption

- Continue to coordinate with DWR
- Additional opportunities for public input during the formal EMC process
- Jurisdictions should identify additional meetings where support from the UNRBA team is needed.
- 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.

Additional Information and Activities

- Status updates to the EMC
- Planning a meeting with the new Secretary of DEQ
- Planning a meeting with staff from the NC Office of State Budget Management
- Meeting with EPA

Ongoing Discussions/Issues

Ongoing Discussions/Issues

- Ongoing NC State University UNRBA and Jordan Lake One Water research study
- Impacts on implementation of nutrient requirements in light of PFAS/PFOS and other emerging requirements on wastewater management costs to local governments. DWR developing an implementation plan for control of these pollutants—EMC to review

Closing Comments

Next UNRBA PFC Meeting
October 7, 2025
Butner Town Hall
9:30 AM to 12:00 PM

Special UNRBA Board Meeting
October 21, 2025
9:30 AM to 11:30 AM
VIRTUAL ONLY

UNRBA Board Meeting
November 19, 2025
Butner Town Hall
9:30 AM to 12:00 PM