

# Welcome



# Upper Neuse River Basin Association (UNRBA) and NC Division of Water Resources (DWR) Joint Forum on Falls Lake

UNRBA Reexamination and Recommendations for Revised Rules

November 20, 2024



# Upper Neuse River Basin (UNRBA)



- Members
  - Six counties
  - Seven municipalities
  - One water utility
  - Soil and water conservation districts
- Active External Stakeholders
  - Agriculture
  - Environmental groups
  - Land conservation organizations
  - State and Federal agencies

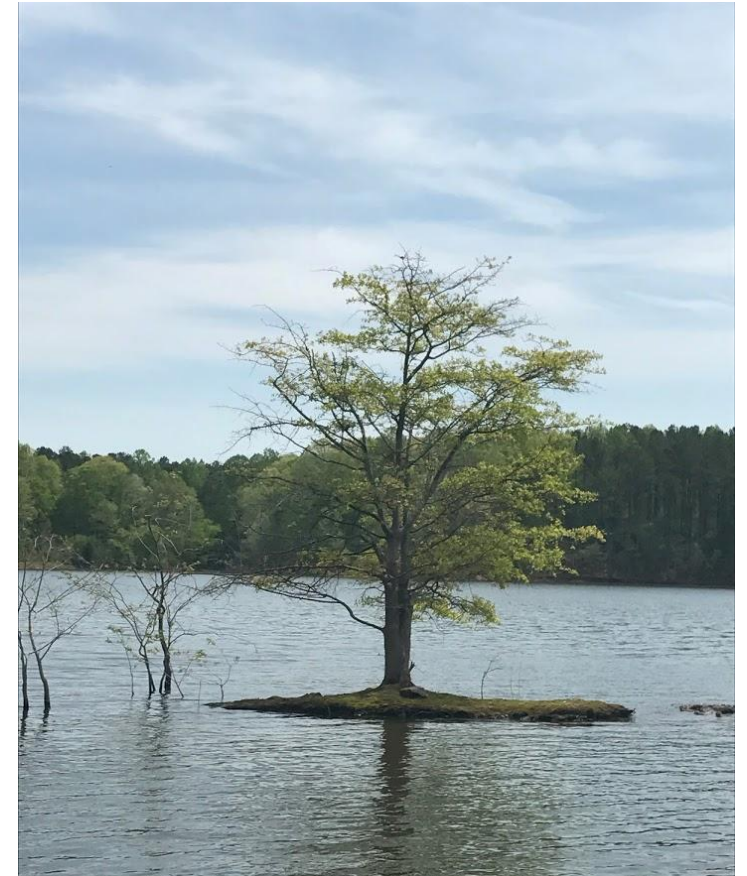
# Falls Lake Designated Uses and Benefits

- Provides drinking water for over 500,000 customers
- Minimizes downstream flooding
- Protects water quality downstream
- Provides habitat, regional recreation, and fishing



# Nutrients and Water Quality Standards for Falls Lake

- Nitrogen and phosphorus are the primary nutrients needed by algae to grow
- Algae supports the base of the food chain, but too much can cause biological imbalances
- Chlorophyll-a measures the amount of green pigment in water and is used an indicator for algae
- Measurements in Falls Lake often exceed the water quality standard for chlorophyll-a (40 micrograms per liter), so a nutrient management plan is required

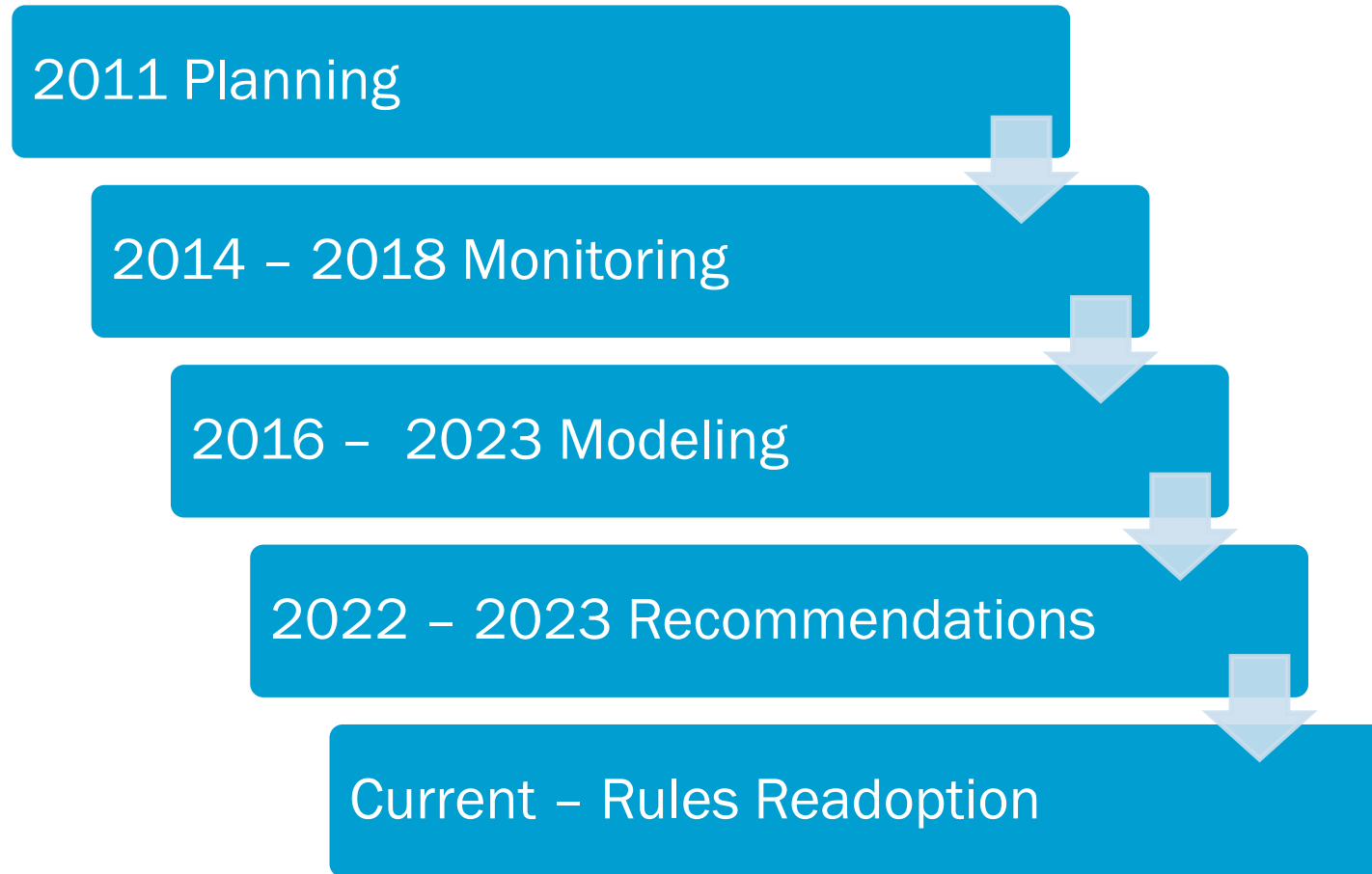


# Current Falls Lake Regulatory Framework (2011)

- Estimated to cost \$1.5 Billion
- Affects all existing managed land use activities in the watershed and wastewater treatment
- New development requirements fully implemented
  - 2012-2024
- Two stages of nutrient reductions (from 2006)
- Stage I – met by all sectors
  - 20% reduction for TN, 40% for TP
  - **Fully implemented and reductions achieved**
- Stage II – requirements are infeasible
  - 40% reduction for TN, 77% for TP
- Rules allow for the re-examination of Stage II



# UNRBA Reexamination of Falls Lake Rules



\$11 million of local money funded the UNRBA reexamination.

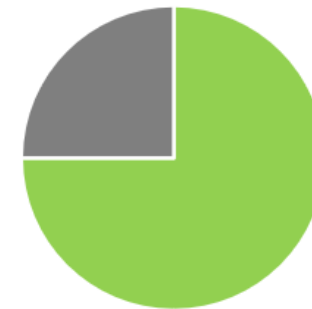
Stakeholder engagement occurred throughout and will continue during rules readoption.





# Key Findings of the UNRBA Reexamination

- Higher rainfall amounts increase nutrient loading, especially from unmanaged/natural areas
- Significant reductions in nutrient loading have already occurred, particularly from point sources
- Water quality in Falls Lake has improved and stabilized
- Further nutrient reductions will not be as significant
- An updated strategy is needed to continue protection of Falls Lake

**75% of land use in the Falls Lake Watershed is unmanaged**



-  **Unmanaged or natural areas (forests, wetlands, non-pasture grassland)**
-  **Managed lands (urban, agriculture)**



# Resulting UNRBA Recommendations

- Recognizes the scientific realities of the lake and watershed
- Fosters cooperative interaction with stakeholders
- Promotes state-local government partnership
- Provides direction toward realistic, technologically achievable, and effective actions
- Supports local implementation and decision making
- Results in specific consensus principles to guide development of the revised rules



# **Key Aspects of the Consensus Principles**

**Where we need to go from here**

# Conserve Unmanaged Land

- 75 percent of the watershed is unmanaged
- These areas provide important nutrients to waters that sustain aquatic life
- High rainfall periods can flush nutrients and organic material from these areas to downstream waters
- Protecting and conserving these areas is critical to the long-term health of Falls Lake
- Conservation is achieved through private landowner agreement



Land conservation site; photo courtesy of Person County

# Incentivize Water Quality Management Activities

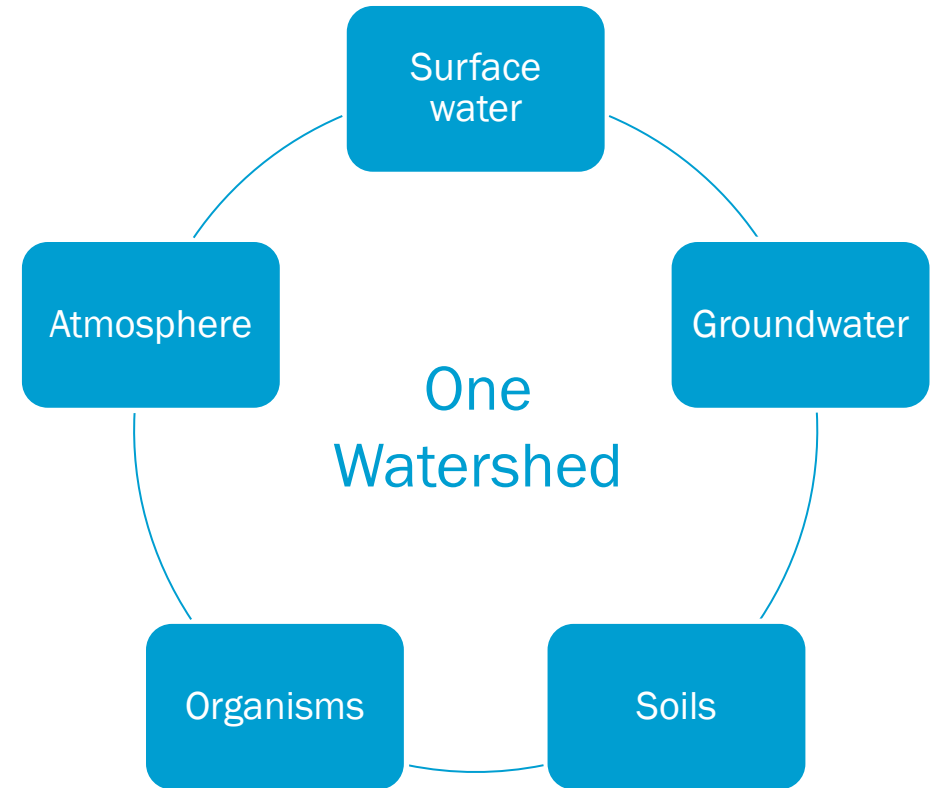
## Use an Investment-based, Joint-compliance Approach

- The UNRBA worked with watershed stakeholders and DWR to develop an alternate compliance approach
  - Focusing on project implementation, rather than nutrient accounting
  - IAIA (Interim Alternative Implementation Approach)
- The NC Environmental Management Commission approved the program in January 2021
- Because of the effectiveness of this approach, it is being considered by DWR for other watersheds

UNRBA members are required to invest at least \$1.5 million each year toward eligible projects and activities. Actual investments have been much higher. Over the first three years, members have invested **\$8.7 million more** than required! This does not include funds contributed by non-members or grant funding.

# Comprehensive, Holistic Approach to Watershed Management

- Includes watershed stabilization projects
  - Land conservation
  - Streambank stabilization
  - Floodplain restoration
- Multi-benefit projects including flood control and water retention, habitat improvement, etc.
- Cooperation across organizations and all land uses
- Optimize the current, high-level nutrient treatment at wastewater treatment plants in the Falls Lake watershed



# Carefully Consider Environmental Benefits, Costs, and Impacts

- Reasonable, cost-effective actions
- Upstream contributors and users of the lake should share in the implementation costs
- Promotes broad cooperation and commitment
- The NC Collaboratory has funded several related studies that support this approach  
<https://nutrients.web.unc.edu/resources/>
- Work completed yields a science-driven approach aimed at realistic and effective actions



# Continue Adaptive Management

- Promote ongoing monitoring of the lake and watershed
- Track progress and identify issues as program is implemented
- Establish routine evaluations and reporting (e.g., every 5 years)
  - Nutrient loading estimates
  - Lake and watershed conditions
  - Evaluate trends
  - Update studies as needed
- Falls Lake rules should also be reviewed on a long-term basis (e.g., 25 years)
- Framework should allow for flexibility
  - Responding to changes in technology
  - Updating the strategy



# Continue Successful Implementation of Current Programs

- Treat stormwater runoff from new development
- Track emerging technologies and optimize treatment of wastewater
- Allow repair and replacement of failing onsite wastewater treatment systems in compliance framework
- Track projects implemented, funding levels, and nutrient reductions when a crediting method is available
- Allow for joint compliance

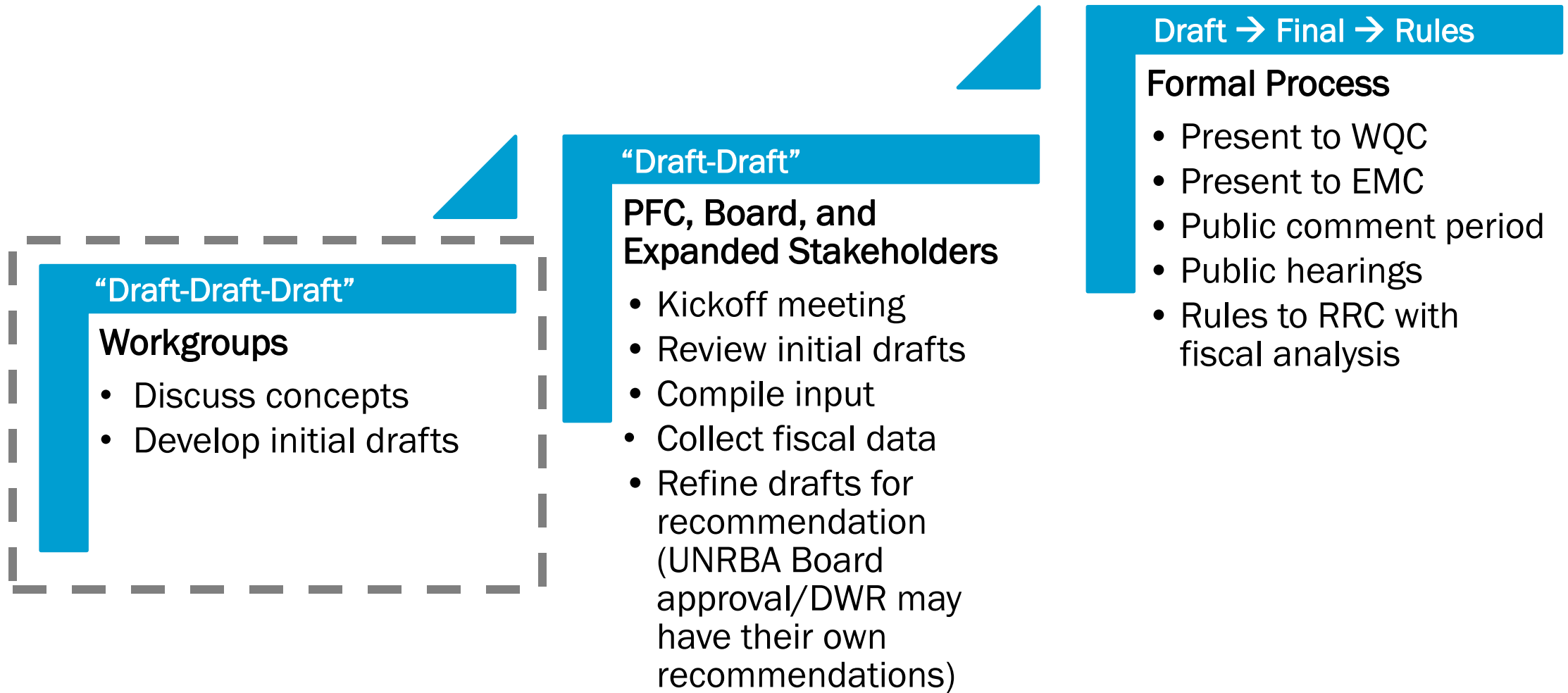
New development rules have been enforced since 2012

Major wastewater treatment plants updated nutrient removal by 2016

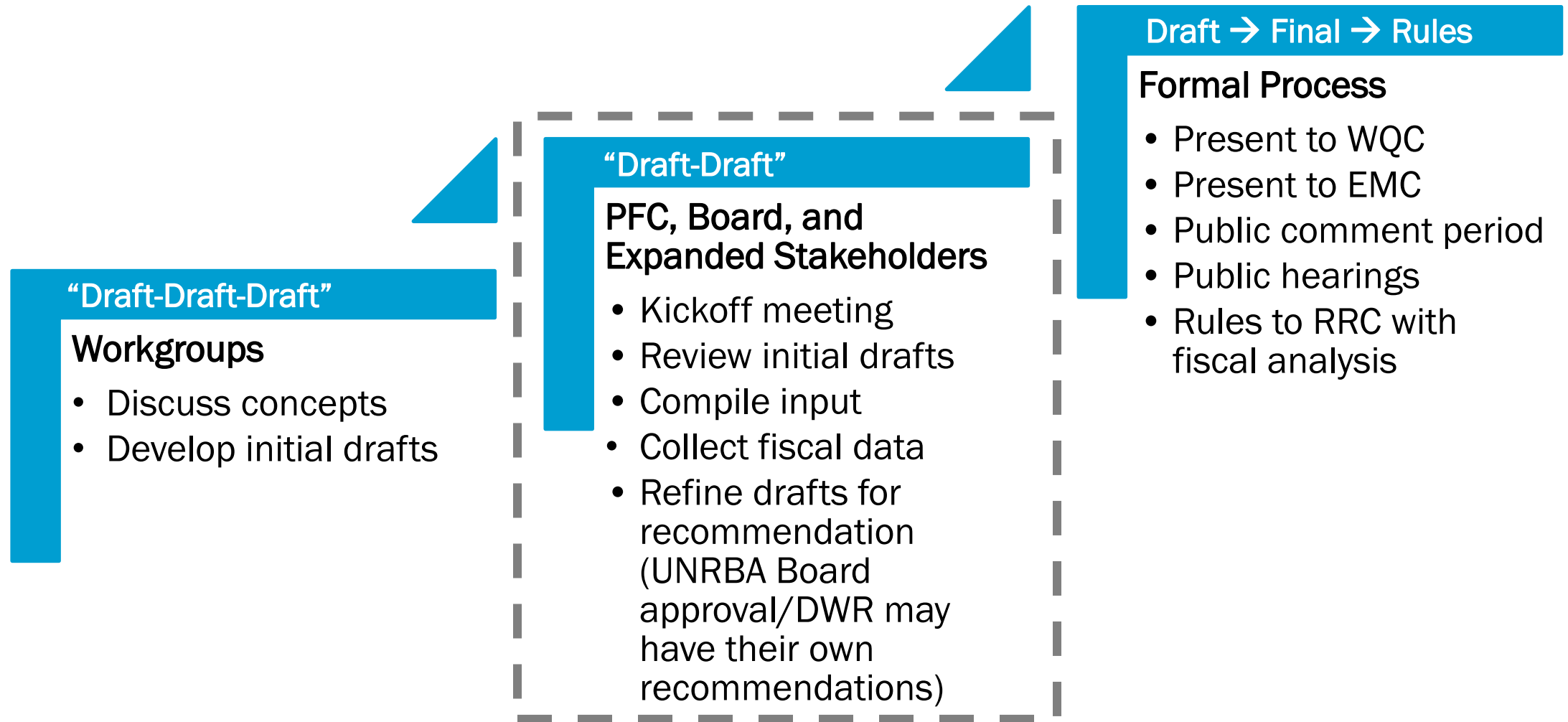
Investment-based compliance and reporting for existing development started in 2021



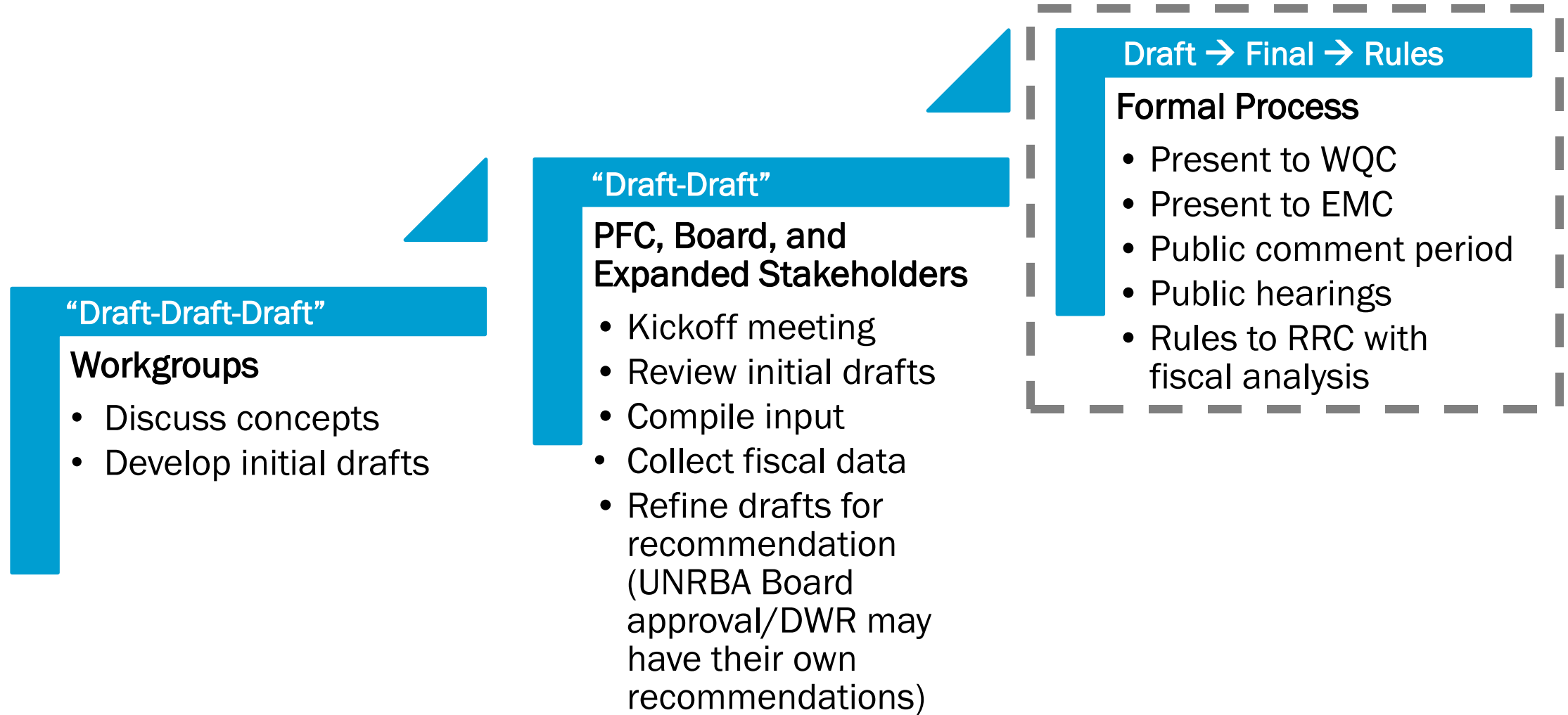
# Move Forward with the Rule Development Process



# Move Forward with the Rule Development Process



# Move Forward with the Rule Development Process



# Additional Information

- UNRBA website - <https://unrba.org/>
- Key reference documents
  - [Comprehensive UNRBA Monitoring Data Report](#)
  - [Developing An Innovative Approach to Nutrient Management](#)
  - [UNRBA Watershed Modeling Report](#)
  - [UNRBA Concepts and Principles for a Revised Nutrient Management Strategy](#)
  - [UNRBA Revised Consensus Principles](#)
- [NC Division of Water Resources 2021 Falls Lake Status Report](#)
- NC Collaboratory Falls Lake Study website - <https://nutrients.web.unc.edu/resources/>

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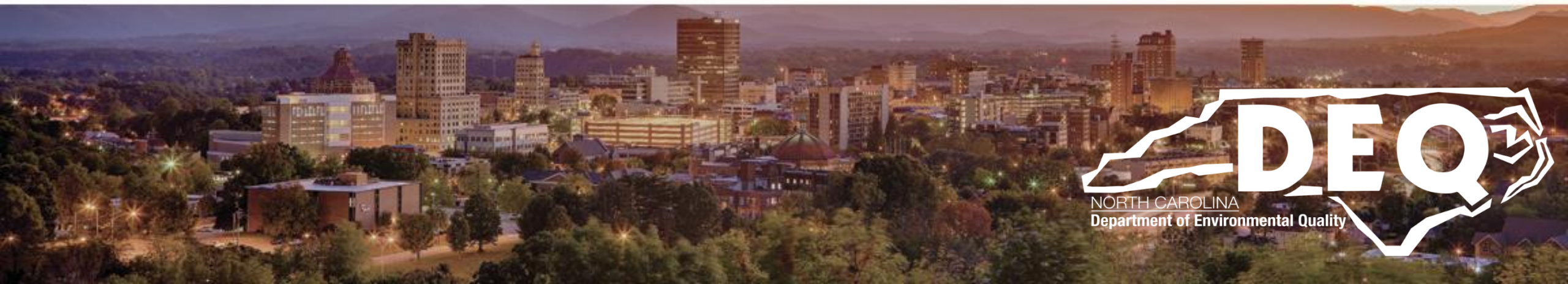


# *Falls Lake Rules Readoption Process & Schedule*

*November 20, 2024 – Falls Lake Joint Forum (UNRBA & DWR)*

*John Huisman*

*Division of Water Resources, Nonpoint Source Planning Branch*



# *Falls Lake Rules Readoption Background*

- Falls Lake Rules – Effective January 2011
- S.L. 2017-10 and S.L. 2018-5
  - Call for Falls Lake Collaboratory Study
  - Establish Deadline for Initiating Rules Readoption (December 2024)
- Key Elements that will Inform Rules Readoption Process
  - Falls Lake Collaboratory Study Final Report
  - UNRBA Watershed & Lake Model and Monitoring Data Reports
  - UNRBA Concepts & Principles Document
  - Stakeholder Input

# *Acronyms*

- **DWR:** Division of Water Resources
- **EMC:** Environmental Management Commission
- **WQC:** Water Quality Committee
- **RRC:** Rules Review Commission
- **OSBM:** Office of State Budget & Management

# Falls Lake Rules Readoption Timeline

Rules Readoption Tasks & Milestones	2024	2025				2026				2027										
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1										
<b>Informal Stakeholder Input Process</b>																				
Initial Workgroup Process	█	█	█	█																
All Stakeholder Group Review					█	█														
Finalize Draft Rule Revisions							█	█												
Develop Fiscal Analysis (Costs & Benefits)							█	█	█	█										
<b>DWR Formal Rulemaking Process</b>																				
WQC: Present Draft Rules & Fiscal Analysis											█	█								
EMC: Request to Proceed to Public Comment													█	█						
Public Comment Period & Hearings (60-Days)															█	█	█	█		
EMC: Present Final Rules for Approval																			█	█
RRC: Review & Adoption																			█	█



# Falls Lake Stakeholder Email List

- DWR will Maintain Falls Lake Stakeholder Email List
- To Join Falls Email List Visit:  
<https://www.deq.nc.gov/about/divisions/water-resources/water-planning/nonpoint-source-planning#listservs-4023>
- My Contact Information:
  - Email: [john.Huisman@deq.nc.gov](mailto:john.Huisman@deq.nc.gov)
  - Phone: (919) 707-3677

## listservs

To stay up-to-date, please consider joining any of our mailing lists.

Full Name:

Email:

NC\_205JGrant

NPS\_319\_Notes

High Rock lake

Jordan Lake

Falls Lake





Thank you.  
Questions?



# Question and Answer Session-General Topics

## **Technical/Scientific**

Watershed Characteristics

Lake Response

## **Policy Implications**

Addressing Point Sources

Consideration of new development

Water quality impacts from existing  
land use in the watershed

## **Revision of the Falls Lake Rules:**

### **Process developed to gather input**

Drafting of revised regulations

Providing for public input

Building support for a well-vetted proposal

### **Implementation of revised rules**

Role of the Regulatory Agency

Role of local communities

Assessment of progress

Adaptative Management Provisions