

**Path Forward Committee Meeting**  
**10:40 AM on September 1, 2020**  
**Remote Access Only (see next slides)**



# Remote Access Options

Equipment Type	Access Information	Notes
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# Remote Access Guidelines

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# Agenda

- Opening comments
- Steps Toward Establishing the Interim Alternative Implementation Approach
- Update on the UNC Environmental Finance Center Falls Lake Study
- DWR 2020 Integrated Report and 303(d) Assessments
- Status report on comments EPA has received on their Draft Ambient WQ Criteria for Lakes and Reservoirs
- Plan for Development of a Site-specific Chlorophyll-a Standard
- Modeling and Regulatory Support Status
- Communications Support
- Other items
- Closing comments

# **Steps Toward Establishing the UNRBA Stage I Existing Development (ED) Interim Alternative Implementation Approach (IAIA)**

# IAIA Program Status

- Distributed Program Document to Legal Group and PFC, no additional comments; provide to Board for their September meeting
- Additional items to develop by January 2021
  - Interlocal agreement
  - Agreements with other local governments
  - Agreements with other parties
- Core principles document distributed July 17<sup>th</sup>
- Legal Group's report on Bylaw changes and ILA
  - Review key provisions of Bylaw changes, ILA provisions and template contract/ILAs
  - UNRBA Board would need to approve modifications to Bylaws, but text to be drafted by IAIA members
  - Develop template contracts for agreements with non-member organizations

# Summary of PFC Discussion August 4, 2020

- Jurisdictions that are likely to participate, pending finalization of documents and no unforeseen issues
  - Hillsborough
  - Butner
  - Person County
  - City of Durham
  - Durham County
  - Granville County
  - Creedmoor
  - Orange County (communicated via email following the meeting)
- Discussions with local leadership ongoing
  - City of Raleigh
  - Wake County
  - Wake Forest
- Jurisdictions that were not present for the discussion
  - Franklin County

[Additional PFC discussion during September meeting](#)

## Development Schedule for UNRBA IAIA Program Implemented under the Falls Lake existing rules for a potential start date in July 2021.

July 2020:

- ~~DWR provides a revised draft Model Program for UNRBA review~~
- PFC discuss with local decision makers the likelihood of participation ✓
- ~~PFC review the DWR Model Program~~

Aug 2020:

- PFC discuss preliminary input from local leaders on participation (Aug 4<sup>th</sup>) ✓
- PFC review DWR Model Program and provide comment to DWR
- PFC finalizes IAIA Program Document for Board review
- UNRBA prepare for information update to the EMC Water Quality Committee ✓

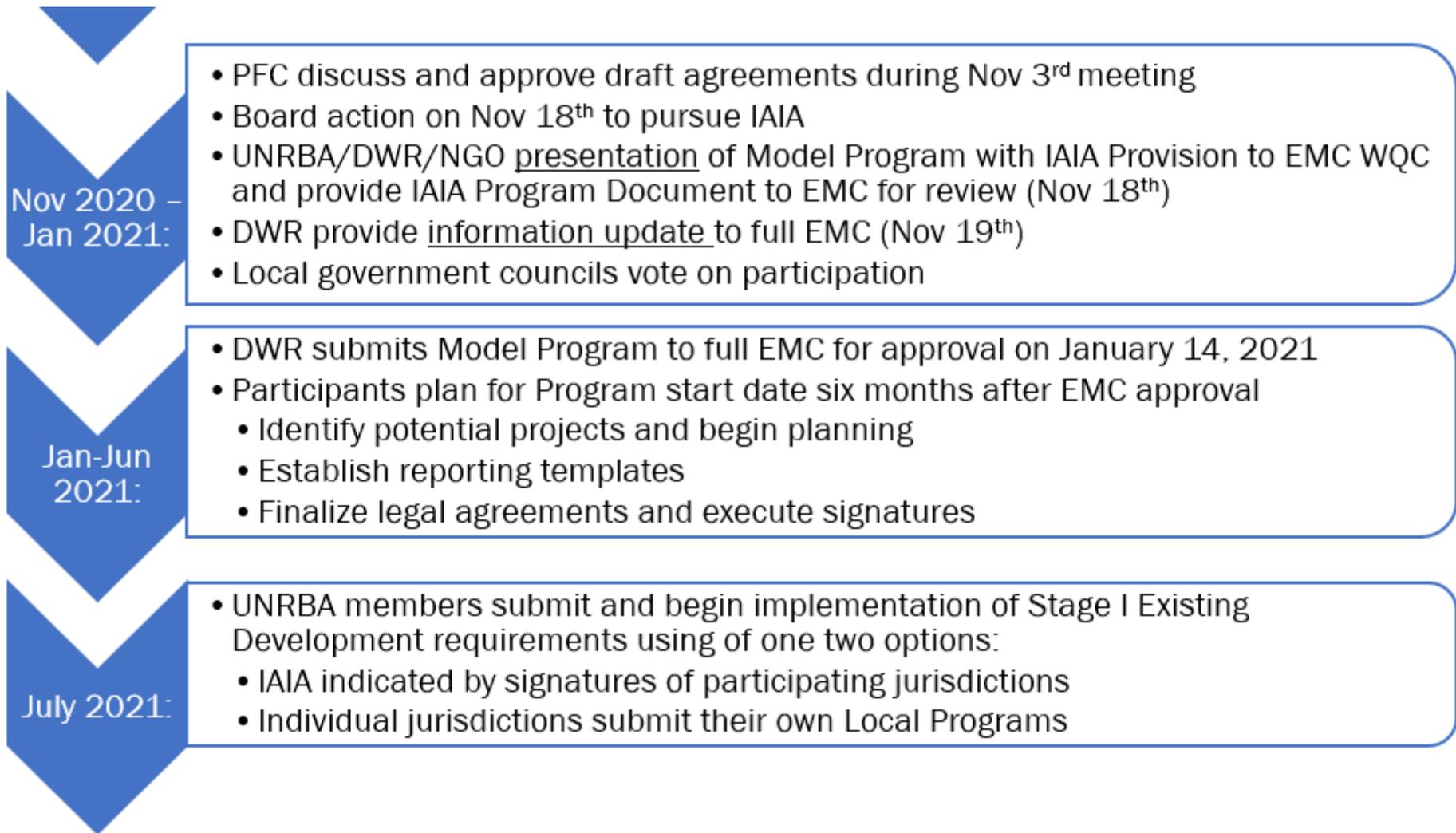
Sep 2020:

- DWR finalizes draft Model Program
- PFC discuss progress on decision making at local level (Sep 1<sup>st</sup>) ✓
- DWR/UNRBA provide information update to EMC WQC (Sep 9<sup>th</sup>)
- UNRBA Board meeting (Sep 16<sup>th</sup>): present IAIA Program
  - Vote on local participation (pending finalization of documents)
  - Authorize legal representatives of likely participants to develop agreements

Sep-Oct  
2020:

- Local governments brief local councils and decision makers on IAIA Status
- UNRBA/DWR/NGO prepare for presentation to EMC WQC
- Legal representatives of likely participants develop agreements
- PFC representatives of likely participants review draft agreements

## Development Schedule for UNRBA IAIA Program Implemented under the Falls Lake existing rules for a potential start date of July 1, 2021.



# Review of IAIA Status – Ongoing Actions

- DWR scheduled to provide draft Model Program for review by UNRBA
- Local governments reporting on participation in the IAIA Program
  - Preliminary feedback August 4<sup>th</sup> (PFC meeting)
  - Intentions discussed September 1<sup>st</sup> (PFC meeting)
  - Intentions formalized September 16<sup>th</sup> (Board meeting)
- Legal representatives of likely participants to work toward modification of UNRBA Bylaws and development of agreements to formalize participation
- PFC to begin discussing reporting templates for the Program in October or November

Key objective for today's meeting is PFC members report on status of local discussions and participation in the IAIA Program.

**Update on the UNC  
Environmental Finance Center  
Falls Lake Study**

# Overview

- The UNC Environmental Finance Center (EFC) has recently completed the Year 1 Report for their Falls Lake Study.
  - Executive Director and consultants are reviewing the draft and plan to offer comments
- The EFC is currently engaging local governments in the watershed with interviews to understand more about
  - Measures being used to implement nutrient management practices
  - Costs of actions
  - Local funding strategies.
- Mr. Kirk and Ms. Mullins will summarize the Year 1 report for the PFC and provide a status update on the interviews and next steps.

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**Elsemarie Mullins**

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# DWR 2020 Water Quality Assessments, Integrated Report, and 303(d) list

The DWR draft Integrated Water Quality Assessment Report and the 303(d) list for 2020 were previously anticipated for June 2020.

This target date has been pushed back to probably late September 2020 or perhaps even later.

**Status report on comments EPA has received on their Draft Ambient WQ Criteria for Lakes and Reservoirs**

**~72 Comments Posted on the Docket**

## **EPA Draft Criteria for Lakes and Reservoirs**

**~25 State Agencies**

**(blue - states with at least partial chlorophyll-a std.)**

**AR, AZ, CO, FL, ID, IA, KS, KY, LA, MD, MA,**

**MO, MN, MT, NB, NC, NV, NJ, OR, SC, TX, UT, VA, WI,**

**WY**

**~4 Individuals**

- Angelo and DeLashmit**
- G. Hess former EPA Attn.**
- Robert Kortmann, Consultant**
- Paul Stacey, Consultant**

## **~37 Associations (part 1)**

- **American Water Works Association (AWWA)**
- **Association of Clean Water Administrators (ACWA)**
- **Association of Metropolitan Water Agencies (AMWA)**
- **California Sanitation Agencies and Central Valley Clean Water Assoc**
- **Idaho Power Company**
- **National Association of Clean Water Agencies (NACWA)**
- **National Council Air and Stream Improvement (NCASI)**
- **New England Interstate Water Pollution Commission (NEIWPC)**
- **Oregon Lakes Association**
- **Public Employees for Environmental Responsibility (PEER)**
- **Riverkeeper Inc.**
- **Texas Water Environment and Texas Assoc of Clean Water Agencies**
- **Tip of the Mitt Watershed Council**
- **Upper Neuse River Basin Association (UNRBA)**
- **Virginia Association of Municipal Wastewater Agencies (VAMWA)**
- **Wasatch Front Water Quality Council**

## **~37 Associations (part 2)**

- **The Ohio Manufacturers' Association (OMA)**
- **Coalition of Greater Minnesota Cities (CGMC)**
- **Tulane Institute on Water Resources Law and Policy**
- **Missouri Public Utility Alliance (MPUA)**
- **Mississippi River Collaborative et al.**
- **California Water Boards**
- **Iowa League of Cities**
- **Center for Biological Diversity**
- **Alliance for the Great Lakes**
- **North Carolina Water Quality Association (NCWQ)**
- **City of Springfield, Missouri**
- **Federal Water Quality Coalition (Fred Andes for the FWQC)**
- **Association of Missouri Cleanwater Agencies (AMCA)**
- **Center for Regulatory Reasonableness**
- **Metropolitan St. Louis Sewer District (MSD)**
- **American Fisheries Society et al.**

## **~37 Associations (part 3)**

- **The Ohio Manufacturers' Association (OMA)**
- **Clean Water Action et al.**
- **Footprints in the Water, LLC**
- **National Wildlife Federation (NWF)**
- **American Farm Bureau :**
  - **American Farm Bureau Federation, Agricultural Retailers Association, Illinois Farm Bureau, Indiana Pork Producers Association, Iowa Farm Bureau Federation, Minnesota Agricultural Water Resource Center, National Cattlemen's Beef Association, Missouri Corn Growers Association, Missouri Soybean Association, National Corn Growers Association, National Cotton Council, National Council of Farmer Cooperatives, National Milk Producers Federation, National Pork Producers Council, Ohio AgriBusiness Association, Ohio Corn & Wheat Growers Association, Ohio Soybean Association, the Fertilizer Institute, United Egg Producers, US Poultry and Egg Association**

# Comments NC Division of Water Resources

- **Criteria do not result in singular criteria recommendations.**
- **Should be technical guidance not 304a Criteria.**
- **States flexibility to decline guidance given its limitations.**
- **Further guidance is critical: Bayesian critical intervals, desired ratio of zooplankton to phytoplankton growth etc.**
- **?’s climactic conditions, limited data, minimum data requirements**
- **Modeling Review had many questions and potential inconsistencies**
  - **The phytoplankton/zooplankton relationship?**
  - **The depth class distinguishing feature?**
  - **Do Criteria apply on a station-by-station basis or lakewide?**
  - **The depth differences within a single lake?**
  - **Should different criteria or models be used for each station?**
  - **Geomeans seem appropriate as a measure of central tendency for parameters with a wide range of values such as Fecal Coliform, but does not seem appropriate for the ranges seen in Chlorophyll-a.**
  - **The relationship between algal density and microcystin is weak. Only certain types of algae can produce microcystin?**

# **NC Water Quality Association (NCWQA)**

- **Significant improvement upon the 2000 ecoregional criteria.**
- **Should not undermine NC's NCDP (i.e. SAC) approach.**
- **Concurs with growing season geometric mean.**
- **Technical guidance document rather than as 304(a) criteria.**
- **Criteria should be state-led and stakeholder-informed regulations.**
- **Risk endpoints are not appropriate for use in North Carolina**
- **Zoo/Phyto not a valid aquatic life use attainment measure**
- **Microcystin finished water (0.3 ug/L) should not apply to raw water.**
- **Criteria balance multiple uses and consider historic condition.**
- **Criteria balance fish production with other uses.**
- **Consider both numeric and narrative measures of use attainment.**
- **Differentiate between natural lakes and manmade reservoirs.**
- **Allowable frequency of exceedance (e.g., 1-in-3 or 2-in-6 years).**
- **N&P criteria optional and placed in a bioconfirmation framework.**

**Paul Stacey\***,

**Owner and Principal Scientist**

**FOOTPRINTS IN THE WATER LLC, Connecticut**

***“Aggregation of all lakes and reservoirs into a single class for model development and analysis misrepresents the diversity of lake and reservoir features that should be sustained, and diminishes the potential range of diverse and resilient ecosystems that support a wide variety of ecosystem goods and services and designated uses, contrary to Clean Water Act goals.”***

**\*Research Coordinator Great Bay National Estuarine Research Reserve**

**\*Div. Director Connecticut Dept of Energy and Environmental Protection**

**\*Fisheries Biologist Academy of Natural Sciences, Philadelphia, PA**

**Plan for Developing  
Recommendations for Support  
of a Site-specific Chlorophyll-a  
Standard For Falls Lake**

# Summary of August 20<sup>th</sup> Legal Group Meeting with Barnes & Thornburg

- Discussed FY2021 legal support scope of work
  - Task 1 – Support Development of UNRBA Petition for Site Specific Criteria
    - Plan for EPA engagement
    - Outline of legal and regulatory requirements for site-specific petition
    - Draft legal sections of site-specific petition
  - Task 2 - Support development of Memorandum of Agreement with DEQ
    - Review draft MOA as needed.
    - Support UNRBA efforts to negotiate/finalize MOA.
- Discussed plan to move forward with development of recommendations for a site specific criteria for Falls Lake (next slide)

# Planning for Development of a Petition for Site Specific Criteria

- Engage EPA early to seek their input
- Use a science-based approach to develop proposed criteria
- Consider other processes that may affect the outcome
  - Approaches used in other states approved by EPA
  - NC Nutrient Criteria Development Plan and the site specific criteria developed for High Rock Lake
  - EPA proposed criteria for lakes and reservoirs
- Integrate with the UNRBA Statistical Modeling that will link lake water quality to designated uses (anticipated MRSW topic for November)
- Discuss timing of submittal of petition relative to modeling and submittal of the re-examination package

# **Modeling and Regulatory Support (MRS) Status**

# Modeling Status

- Modifying the Watershed Analysis Risk Management Framework (WARMF) model code to simulate many types of onsite wastewater treatment systems is underway
- Model development for WARMF watershed water quality modeling is underway
  - Sanitary sewer overflows
  - Wastewater treatment plant effluent
  - Nutrient application rates
  - Onsite wastewater treatment systems
- Discussed WARMF Lake segmentation with Executive Director and subject matter experts
  - Presented recommendation during the September 1, 2020 MRSW meeting earlier today
- Discussed status of the interim reporting with the MRSW earlier today and setting up a meeting with DWR soon to review the EFDC hydrodynamic calibration

# **Communications Support**

# Existing Work Products

# Communication Approach and Existing Work Products

- Team approach building on successes and work products developed over the past couple of years
- Previously developed work products (next slides)
  - UNRBA Communications Plan developed in 2018
  - Infographic
  - Fast Facts
  - Template presentations
  - Public facing website: <https://upperneuse.org/>
  - Communication tool, use tracking survey: <https://www.surveymonkey.com/r/UNRBA>



# Communication Plan

Prepared September 2018

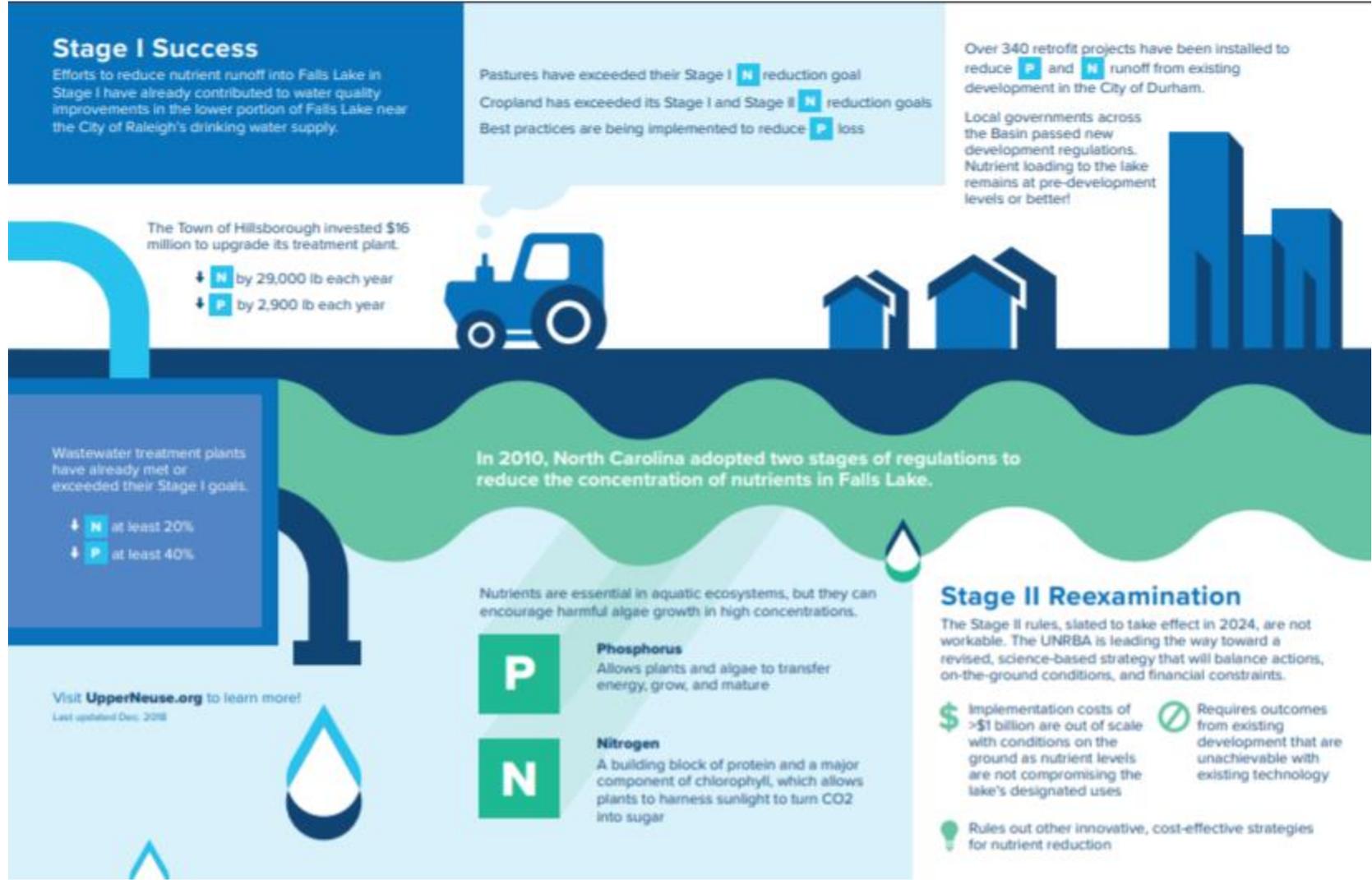
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Available from the Communications Page on the UNRBA Website:

<https://www.unrba.org/sites/default/files/Communication%20Plan%20Sept%202018.pdf>

# Infographic (Page 2 captured)



Available from the Communications Page on the UNRBA Website:

[https://www.unrba.org/sites/default/files/UNRBA\\_Infographic-Dec-2018\\_FINAL\\_190115\\_0.pdf](https://www.unrba.org/sites/default/files/UNRBA_Infographic-Dec-2018_FINAL_190115_0.pdf)

# Fast Facts to Address (FAQ Style):

- What is the UNRBA?
- Why is Falls Lake important?
- What is the Falls Lake Nutrient Management Strategy?
- Who do the Falls Lake Rules regulate?
- What do the Rules require (Stage I and Stage II)?
- Successes in Stage I
- Stage II stumbling blocks
- Can the Stage II rules be reexamined and revised?
- What steps has the UNRBA taken to reexamine the Stage II rules?
- Where can I learn more?

Available from the Communications Page on the UNRBA Website:

[https://www.unrba.org/sites/default/files/URNBA\\_Fast-Facts-Dec-2018\\_FINAL\\_190115\\_0.pdf](https://www.unrba.org/sites/default/files/URNBA_Fast-Facts-Dec-2018_FINAL_190115_0.pdf)

# Template for Members to Use when Presenting on the UNRBA

- Background on Falls Lake and the UNRBA
- Summary of the requirements and goals of the Falls Lake Nutrient Management Strategy
  - Stage I
  - Stage II
- Reexamination
- Path forward



Available from the Communications Page on the UNRBA Website:

[https://www.unrba.org/sites/default/files/UNRBA\\_Presentation\\_FINAL\\_181115\\_0.pdf](https://www.unrba.org/sites/default/files/UNRBA_Presentation_FINAL_181115_0.pdf)

# **Communications Planning for FY2021**

# Anticipated Meetings for FY2021

- Routine meetings (MRSW, PFC, Board)
- IAIA related meetings
  - Environmental Management Commission (EMC) and Water Quality Committee (WQC) Meetings
  - Other IAIA meetings as needed (DWR, local governments)
- Meetings with DWR and Modeling
  - Monitoring: 2019 Annual Report Summary
  - Modeling: WARMF Watershed Hydrologic Calibration and EFDC Hydrodynamic Calibration
- Coordination with EPA on the modeling
- UNRBA Technical Workshop (February (?) 2021)
  - Potential to extend invites to MRSW meetings
- WRI Annual Conference (March 2021)
- Spring Symposium with the UNC Collaboratory (May 2021)
  - Follow up on questions raised during the February 2020 UNRBA Regulatory Forum

# Anticipated FY2021 Meetings from Scope

Month Year	PFC	BOD	MRSW	Other Anticipated Meetings
Jul 2020	●	-	JL Models	-
Aug 2020	●	-	EFDC Hydro Calibration	-
Sept 2020	●	●	WARMF Lake Segments	DWR – Monitoring Report
Oct 2020	●	-	-	-
Nov 2020	●	●	Statistical Modeling Framework	IAIA Presentation to EMC WQC
Dec 2020	●	-	Watershed Modeling Inputs	-
Jan 2021	●	●	-	-
Feb 2021	-	-	-	Technical Stakeholder Workshop
Mar 2021	●	●	-	WWRI Conference
Apr 2021	●	-	-	DWR – Watershed Modeling
May 2021	●	●	Watershed Model Water Quality Calibration	Spring Symposium with UNC Collaboratory
Jun 2021	●	●	Preliminary EFDC Water Quality Calibration	-

# PFC Communications Planning for FY2021

- Work through external meetings iteratively
  - Identify audience
  - Discuss key messages
  - Identify supporting materials
- October PFC meeting (no MRSW meeting)
  - Work through as many upcoming meetings as we have time for (technical stakeholder workshop, WRRRI, etc.)
  - Amy developing facilitation plan for October
- Subsequent PFC meetings
  - Discuss remaining FY2021 meetings
  - Begin discussing additional meetings raised by MRSW
    - Model Training
    - Discussions with local leaders
    - Interactions with the public
    - Seeking input on re-examination proposals

**September 9th DWR/UNRBA  
Information update to EMC WQ  
Committee: IAIA and Model  
Program**



# **Upper Neuse River Basin Association (UNRBA) and Actions to Implement the Falls Lake Rules**

Environmental Management Commission,  
Water Quality Committee September 9, 2020



# History of the UNRBA

- Formed in 1996 to address water quality issues
- Engaged on the development of the Falls Rules
  - Consensus Principles
  - Two stages of nutrient reduction goals
  - Allowed for adaptive management including re-examination of Stage II
- **Stage II Rules were the most stringent passed in NC**
  - Anticipated to cost over \$1.5 billion
  - Goals are not feasible
  - Regulated sectors are siloed
- **UNRBA shifted focus in 2011 to re-examination of Stage II**

Stage II Re-examination Components	Progress
<p><b>Monitoring (\$3.5 million)</b></p> <ul style="list-style-type: none"> <li>• DWR-Approved Monitoring Plan</li> <li>• DWR-Approved Quality Assurance Plan</li> <li>• Exceeded the minimum data requirements</li> </ul>	<p><b>All elements complete;</b> <b>51 months of data</b></p>
<p><b>Modeling</b></p> <ul style="list-style-type: none"> <li>• Modeling Quality Assurance Plan approved by DWR</li> <li>• Develop nutrient loading model for the watershed</li> <li>• Develop lake response model for Falls Lake</li> <li>• Identify cost-effective, feasible solutions</li> </ul>	<p><b>Underway</b></p>
<p><b>Stakeholder Involvement</b></p> <ul style="list-style-type: none"> <li>• Provide status updates</li> <li>• Solicit input</li> <li>• Work toward acceptable solution</li> </ul>	<p><b>Continuous effort</b> with open meetings, technical workshops, website postings</p>
<p><b>Re-examination</b></p> <ul style="list-style-type: none"> <li>• Work with stakeholders to formalize selected strategy</li> <li>• Provide recommendation in 2023</li> </ul>	<p><b>Starting soon</b> Most of this work will begin after the modeling is complete</p>

# Current Conditions of Falls Lake

- **Provides safe drinking water to over 500,000 customers**
  - Algal toxins are below guidelines and thresholds
- **Supports aquatic life and recreation**
  - No nutrient-related fish kills have occurred
  - Most of the volume of the reservoir provides sufficient oxygen levels (except deep water in summer)
  - Falls Lake provides swimming and boating opportunities
  - Supports large, regional fishing tournaments
- **Provides flood protection and improved water quality to Neuse River**

See [UNRBA 2019 Annual Monitoring Report](#) for more details

# Implementing Stage I Rules

- **Regulated sectors have made progress toward the implementation of Stage I Rules**
  - New development rule is being implemented
  - Stage I reductions have been met for agriculture
  - Wastewater treatment plants have reduced loading to Falls Lake beyond Stage I requirements, resulting in **temporary credits** of almost
    - 50,000 pounds of nitrogen per year and
    - 9,700 pounds of phosphorus per year
- **Stage I Existing Development Rules have several obstacles that have limited implementation**
  - Jurisdictional and DWR **estimated ranges of required reductions** are
    - 6,000 to 15,100 pounds of nitrogen per year and
    - 800 to 1,900 pounds of phosphorus per year

# Stage I Existing Development Interim Alternative Implementation Approach (IAIA)

- **Innovative** concept originated by NGOs in March 2018
- Developed by UNRBA as an **alternative to Stage I** Rules for Existing Development – does not focus on counting pounds
- Focuses on investment and implementation of projects to **improve water quality**
- Provides more **flexibility** and **promotes cooperation** - expands eligible practices and actions, removes regulatory silos, and encourages joint ventures
- **Voluntary** program – members choose to implement individual local programs under current rules or the IAIA
- **Interim** until the Stage II re-examination is complete (pilot)



IAIA (Interim Approach)

New Management Strategy

# Critical Steps and Schedule

- **September 9, 2020** information update to the EMC WQC
- **September 16, 2020** UNRBA Board authorizes development of formal agreements
- **October 2020** Local government members to brief their councils
- **November 18, 2020** UNRBA Board of Directors' vote to pursue IAIA
- **November 18, 2020** DWR, UNRBA, NGO present Model Program and IAIA Program to EMC WQC
- **November 19, 2020** DWR provide information update to full EMC
- **January 14, 2021** DWR submits Model Program to full EMC for approval; 6-month clock starts for implementation
- **July 1, 2021 (potential start date)** Local governments begin Stage I Existing Development implementation under either the IAIA or a local program

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***Executive Director***

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**Website:** <https://upperneuse.org/>

# Other Status Items

# Ongoing Items

- Ongoing DEQ/DWR Items
  - 2019 UNRBA Data Report meeting
    - Schedule for face to face when possible
  - Follow up meeting on EFDC Hydrodynamic Calibration questions
  - IAIA Program meeting with DEQ/DWR
    - Schedule for face to face when possible

## **Future Meetings as Currently Scheduled:**

### **Next BOD Meeting**

September 16, 2020, 9:30 AM to Noon  
Remote Meeting

### **Next PFC Meeting**

October 6, 2020, 9:30 to Noon  
Remote Meeting

### **Next MRSW Meeting**

November 3, 2020, 9:00 AM to 10:30 AM  
Remote Meeting

# Closing Comments Additional Discussion