

WELCOME

to the
**Falls Lake
Regulatory Forum**

Hosted by **Unrba**



Presenters

Forrest Westall

UNRBA Executive Director

Sig Hutchinson

UNRBA Chair

Jimmy Clayton

UNRBA Vice-Chair

Kenny Waldroup

Path Forward Committee Co-Chair

Terry Hackett

Board Alternate/Path Forward Committee

Michelle Woolfolk

Path Forward Committee Co-Chair

Supported by UNRBA Board and the Path Forward Committee

An aerial photograph of a large reservoir, likely a dam, with a dense forest surrounding it. The water is dark blue, and the land is a mix of green and brown. A dam structure is visible in the lower right corner. A dark blue horizontal band is overlaid across the top of the image, containing white text.

Your guidance is critical.

We need your engagement, cooperation, and suggestions.

Today's Agenda

Reexamination Briefing

- Now – 1:10 p.m.

Full-group Q&A

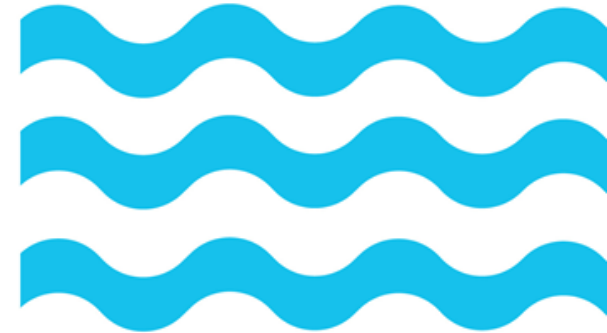
- 1:10 p.m. – 1:40 p.m.

Short Break

- 1:40 p.m. – 1:50 p.m.

Key Issue Roundtables

- 1:50 p.m. – 2:30 p.m.





The Punchlines

Prohibitively Expensive
Technologically Infeasible
Data and Model Uncertainty

Scientifically Sound Monitoring / Modeling
Consensus Building

Origin of the Rules

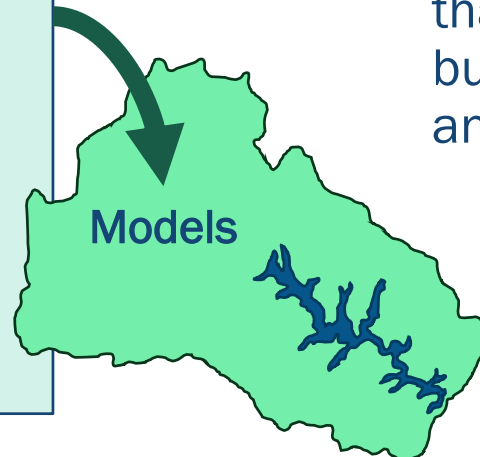


- 2002 - 2006
Chlorophyll-a exceeds the state's standard
- 2008
Falls Lake Listed as impaired
- 2010
UNRBA Consensus Principles
- 2011
State passes Falls Lake Rules



Chlorophyll-a

- Nutrient loading to the lake
- Internal nutrient loading in the lake
- Atmosphere / weather / rainfall / bathymetry
- Soils, land use, topography, depth, light
- Wastewater, storm events
- Sunlight, shape of the lake
- Retention-time, velocity



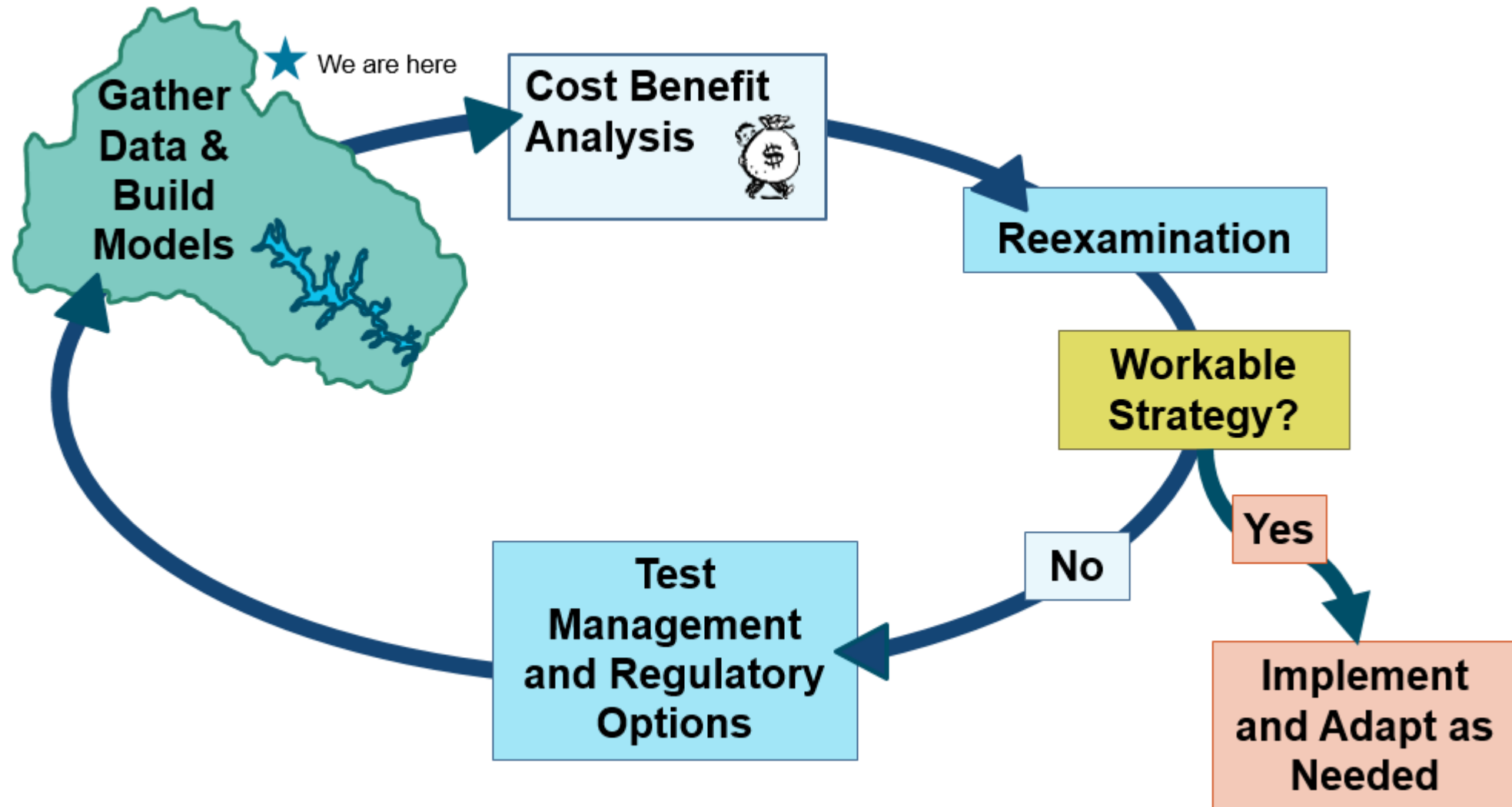
- In 2008, exceedances of the 40 $\mu\text{g/L}$ chlorophyll-a standard resulted in the lake being listed as impaired.
- Chlorophyll-a is the green photosynthetic pigment that plants use to harness sunlight to grow. Chlorophyll-a is also an indicator of the amount of algae in the lake.
- While high levels of algae can suggest the presence of too much nitrogen and phosphorous, the variables that control algal growth are not only highly complex, but they are also dynamic – changing between years and seasons.
- That is why water quality monitoring and modeling is required to evaluate the most effective and efficient opportunities for improving and sustaining the water quality of Falls Lake.

The Consensus Principles



- Consensus Principles were established by UNRBA members
- Resulted in language in the Rules that allowed for reexamination if certain steps were taken
- Provided the framework for the UNRBA re-examination process
- Parties agreed to the protection of Falls Lake as a drinking water supply

Framework for the Reexamination



Falls Lake Nutrient Management Strategy

Stage I: 2011 to 2024

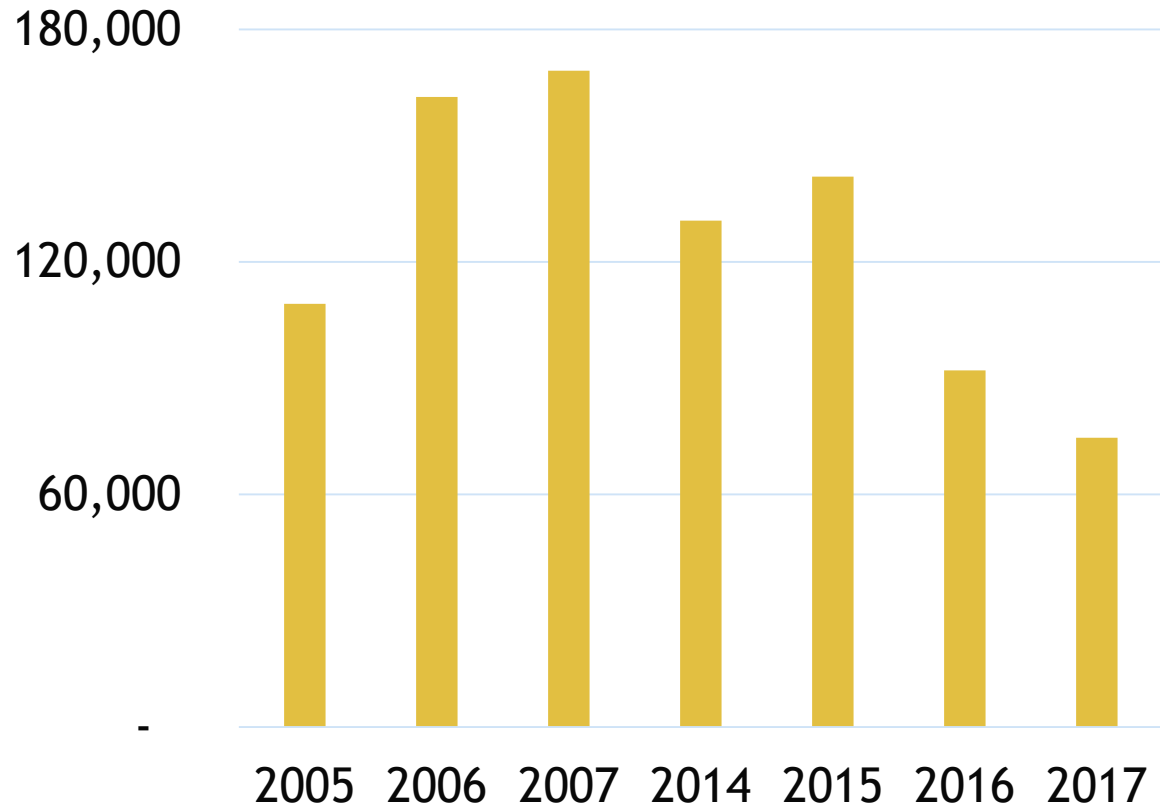
- Meet nutrient-related water quality standards in the lake below Hwy 50
 - Improve algae levels in the upper lake
-
- Lower nitrogen and phosphorus loading to the lake from all sectors
 - Prevent new development from increasing nutrient loading

Stage II: 2024 to 2041

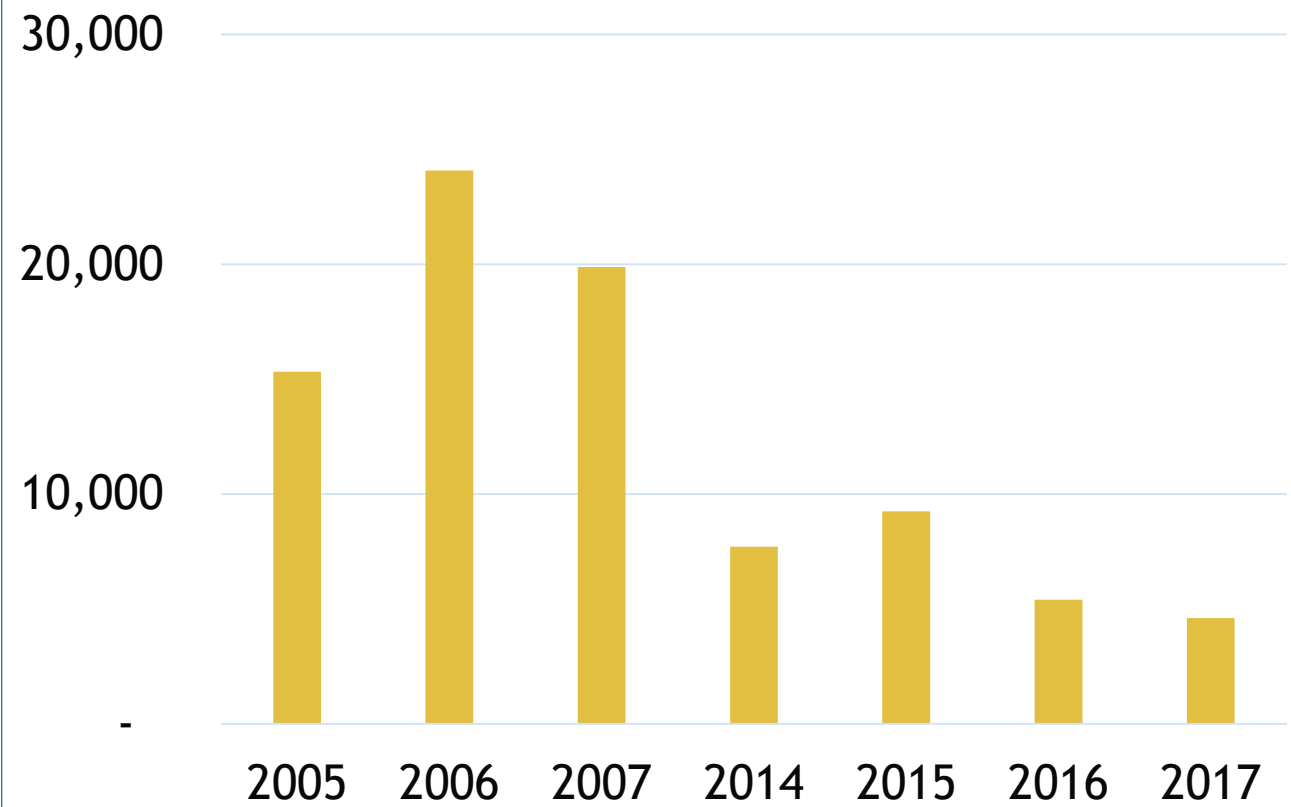
- Meet nutrient-related water quality standards in both the lower and upper portions of the lake
-
- Decrease nitrogen loading to the lake by 40 percent
 - Decrease phosphorous loading to the lake by 77 percent

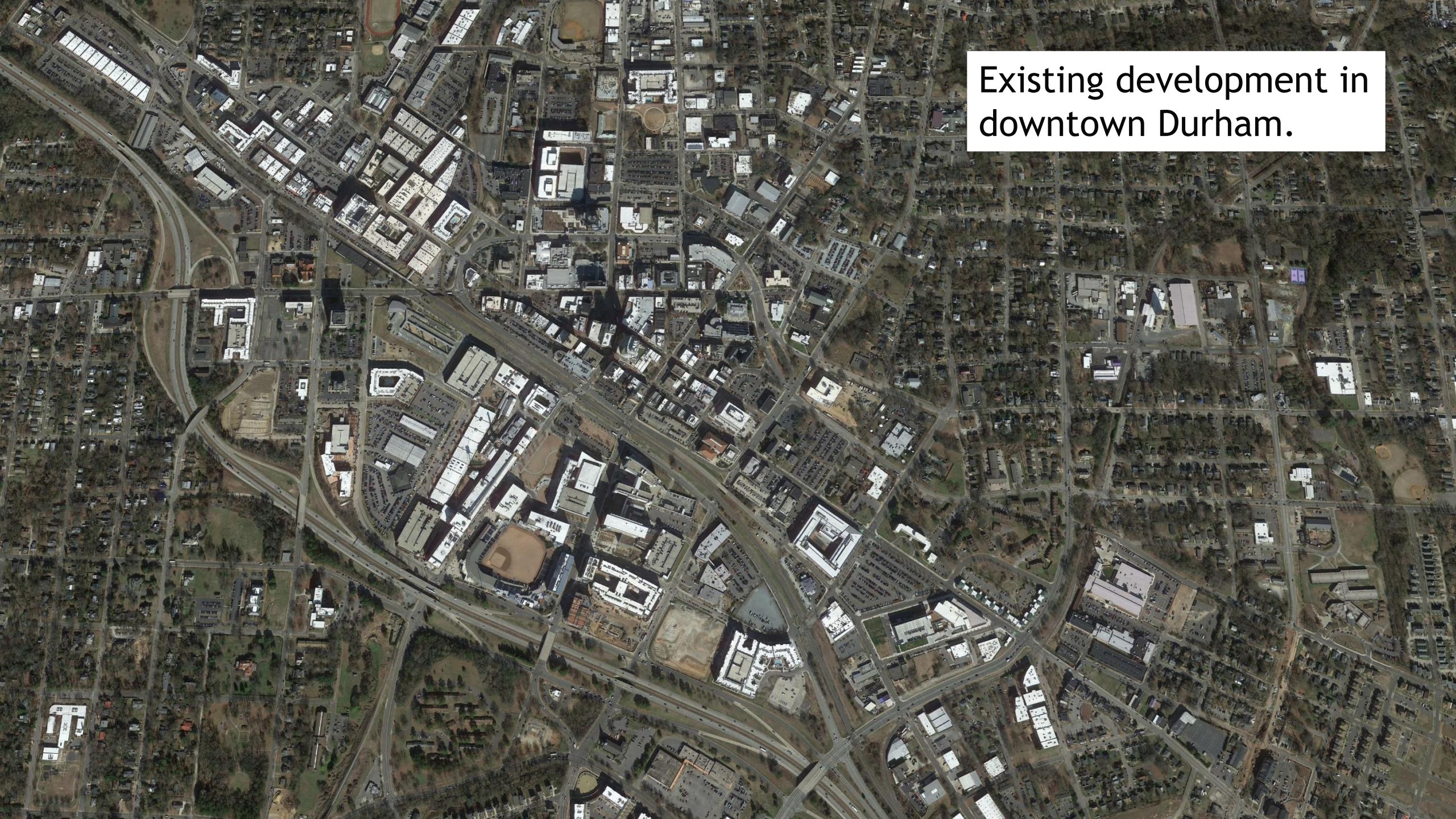
Visible Progress

**Nitrogen Loads from Major
Wastewater Treatment Plants
(pounds per year)**



**Phosphorus Loads from Major
Wastewater Treatment Plants
(pounds per year)**





Existing development in downtown Durham.

Reexamination Timeline

2011 to
2018

Successful investments in nutrient reduction throughout the basin improve water quality in Falls Lake



DWR approves modeling framework and procedures | UNRBA begins model set-up



UNRBA hosts two technical workshops and compiles data from stakeholders



UNRBA develops framework for Stage II Reexamination



DWR approves monitoring program | UNRBA begin monitoring in 2014 and finishes



NC General Assembly sets a 2023 end date for the reexamination process

Final Monitoring Report

Robust data for a scientifically informed alternative



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Program collects over 28,000 observations!



NC General Assembly sets a 2023 end date for the reexamination process

What's Next?

The role of jurisdictional leadership over the next five years

MODELING STREAM FLOWS AND LAKE LEVELS

2
0
2
0

Falls Lake
Regulatory Forum



Third Technical
Stakeholder Workshop



UNC Collaboratory
continues its Falls
Lake evaluation



UNRBA calibrates
models to observed
stream flows and lake
water levels



Communication and
support-building
continue

MODELING WATER QUALITY

2021

Fourth Technical Stakeholder Workshop



The UNC Collaboratory releases its first interim report on Falls Lake



UNRBA calibrates models to observed water quality in streams and Falls Lake



UNRBA begins reaching out to stakeholders to develop and vet potential replacement strategies for managing nutrients



Communication and support-building continue

COMPARING MANAGEMENT ACTIONS

2
0
2
2

UNRBA uses models to compare nutrient management actions



UNRBA releases its Final Modeling Report



Communication and support-building continue



Watershed and lake models complete!

UNRBA submits models to DWR for review and approval.



Fifth Technical Stakeholder Workshop



The UNC Collaboratory releases its second interim report on Falls Lake

PROPOSING A NEW STRATEGY

2
0
2
3

UNRBA releases its draft strategy proposal



Communication and support-building continue



The UNC Collaboratory releases its final report on Falls Lake



Sixth Technical Stakeholder Workshop



UNRBA Water Summit on Nutrient Management Recommendations



UNRBA submits its recommendations to the EMC

REACHING CONSENSUS ON A STRATEGY ADOPTION PROCESS

2
0
2
4

Communication and support-building continue throughout the basin



Revised strategy implementation steps begin!



Seventh Technical Stakeholder Workshop



Strategy adoption approach selected

Q&A Panel

Forrest Westall

UNRBA Executive Director

Sig Hutchinson

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Key Topics Roundtables



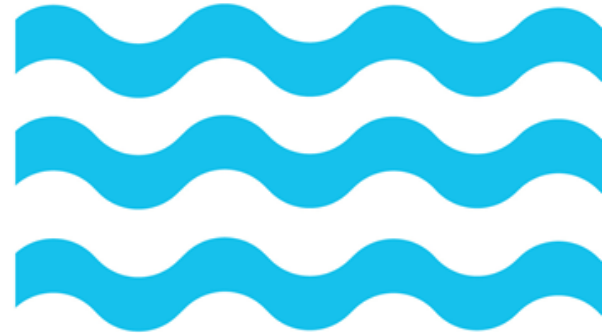
Ground Rules

- Focus on one conversation.
- Please contribute and share the available time with others
- Be specific. Use examples whenever you can.
- Conversation isn't commitment. Ask questions and test ideas. We will not hold you to your brainstorming.
- Do disagree; don't be disagreeable.



Topic 1

Do you have any questions about the reexamination that weren't addressed or fully answered during the Q&A session?



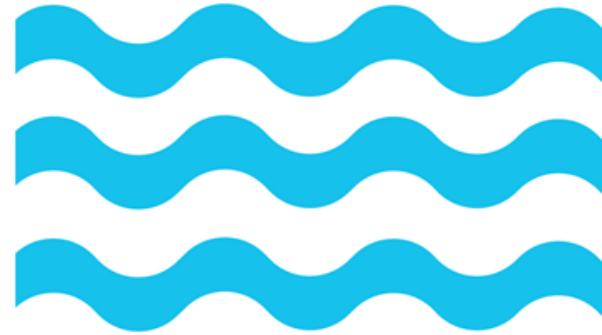
Topic 2

What type of support from the UNRBA would help you feel prepared to make decisions about nutrient management options?



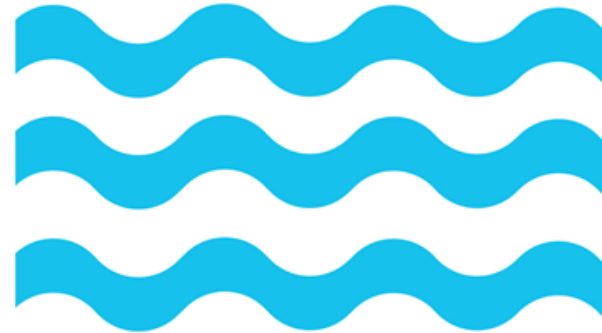
Topic 3

Does anything we talked about during the briefing concern you? Did we leave something out that's important to your jurisdiction?



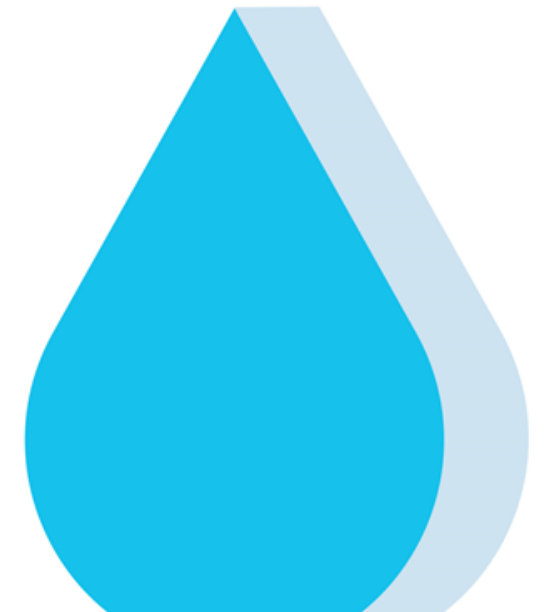
Topic 4

Can we do anything to support your efforts to communicate with your constituents about these issues?



Report Out

Key topics from each table





General Information:

UpperNeuse.org

Technical Information:

UNRBA.org

Contact Information:

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