Background Information on the UNRBA, Falls Lake Nutrient Management Strategy, and Re-examination

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
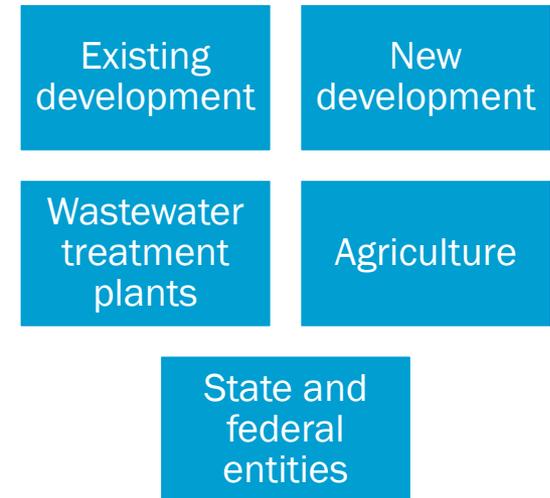- UNRBA shifted focus in 2011 to re-examination of Stage II

Falls Lake Challenges and the UNRBA

- Falls Lake is a valuable, regional resource
  - Provides drinking water for 550,000 customers
  - Regional recreational facility
  - Provides habitat to aquatic and terrestrial wildlife
  - Protects water quality downstream
- Exceedances of the 40 µg/L chlorophyll-a standard resulted in the lake being listed as impaired
- The State developed a nutrient management strategy
  - Stage I
  - Stage II

Falls Lake Nutrient Management Strategy

- Assigns load reduction targets for individual sectors
- Includes the highest nutrient reductions ever passed in NC
- Required reductions are technically infeasible
- Uncertain that chlorophyll-a standard could be achieved
- Uncertainty with the modeling and the UNRBA Consensus Principles outline the steps for a re-examination of Stage II

Existing development	New development
Wastewater treatment plants	Agriculture
State and federal entities	

The Falls Lake Nutrient Management Strategy developed by the State includes two stages of implementation and is estimated to cost over $1.5 billion.

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 Re-examination
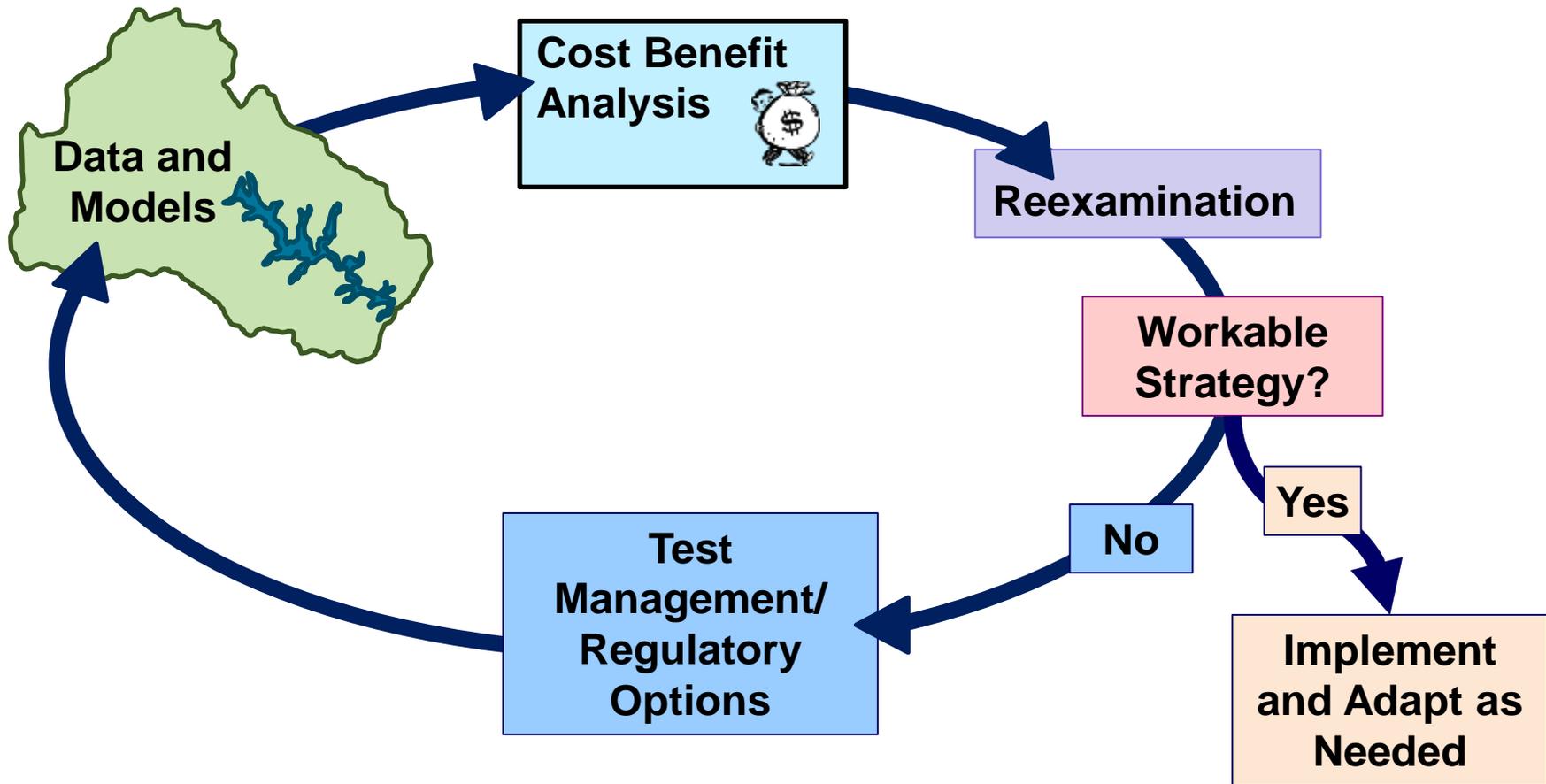
Current Conditions of Falls Lake

- **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

Stage II Re-examination Components	Progress
Monitoring ($3.5 million) • DWR-Approved Monitoring Plan • DWR-Approved Quality Assurance Plan • Exceeded the minimum data requirements	**All elements complete;** **51 months of data**
Modeling • Modeling Quality Assurance Plan approved by DWR • Develop nutrient loading model for the watershed • Develop lake response model for Falls Lake • Identify cost-effective, feasible solutions	**Underway**
Stakeholder Involvement • Provide status updates • Solicit input • Work toward acceptable solution	**Continuous effort** with open meetings, technical workshops, website postings
Re-examination • Work with stakeholders to formalize selected strategy • Provide recommendation in 2023	**Starting soon** Most of this work will begin after the modeling is complete

Current Efforts of the Re-examination

- Build and apply models
  - Use data and information collected during monitoring
  - Understand sources of nutrient loading to the lake
  - Test different management actions and their impact on lake water quality, particularly chlorophyll-a
  - Factor in cost and technical limitations
  - Support evaluation of regulatory options
- Evaluate regulatory options led by Barnes and Thornburg (Fred Andes and Erica Powers)
  - Site specific criteria for chlorophyll-a in Falls Lakes
  - Sub-classification use attainability analyses
  - Variances