UNRBA Status Update October 2012

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Agenda

- Status update on project
- Discuss preliminary list of future monitoring studies
  - Lessons learned in Tasks 1, 2, 3, and 4
  - Objectives for monitoring studies
  - Identify potential studies needed to meet each objective

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Status Update:
Tasks 1 through 4

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Task 1 – Develop Framework for Reexamination

- Obtained available use attainment data
  - NCWRC fish surveys
  - Falls Lake State Park visitation
- Need to obtain
  - Wake County beach closure data
  - Raleigh WTP pounds of ferric used
- Developing spreadsheet tool to link water quality to designated uses

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Task 2 – Summary of Existing Data and Knowledge

- Submitted draft TM to Path Forward Committee
- Incorporated comments and performed requested analyses
- Finalizing TM and Appendices in near future

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Task 3 – Load Estimation (Tributary and Jurisdictional)

- Summarized differences between existing watershed models
- Currently assessing tributary loading for upper five watersheds with and without Hurricane Alberto
- Need to estimate internal phosphorus loading with Nurnberg method
- Plan to submit draft TM to Path Forward Committee in early November

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Task 4 – Recommendations for Monitoring and Modeling Studies

- Conducted review of existing models
  - WARMF
  - EFDC
- Provided preliminary list of future monitoring studies to Path Forward Committee
  - Draft recommendations
  - Likely to change once model(s) are selected
  - Will require strategic planning and coordination with UNRBA and other agencies
- Will recommend future modeling studies to support the reexamination

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Data Gaps Identified in Tasks 1 through 4

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Task 1 Data Gaps

- Limited data available to link water quality in Falls Lake to designated uses:
  - Fish surveys only conducted in Lower Lake
  - Recreational counts are conducted monthly
- Additional data is required to
  - Support regulatory options
  - Demonstrate linkage between water quality and designated uses

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Task 2 Data Gaps

- Tributary data collected in upper reaches
- Water quality data needed near the mouths of the tributaries
- NCDWQ used in-lake chlorophyll *a* and TOC data to simulate tributary loads
  - Affects model development
  - Simulation of lake response to nutrient reductions may be inaccurate

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Task 3 Data Gaps

- Limited flow and water quality data available at the mouths of tributaries to estimate tributary loads
- Existing watershed models are highly uncertain with respect to estimation of jurisdictional loads
- Geologic effects are largely unknown
  - Source loading
  - Fate and transport
- Legacy issues are not addressed
- Specific sources are not well quantified
  - Streambank erosion
  - Onsite wastewater systems

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Task 4 Data Gaps

- We will be recommending future modeling studies to support the re-examination
- Once the models are selected, additional monitoring studies may be needed to fill knowledge gaps

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Review Monitoring Objectives

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Objectives for Future Monitoring Studies

1. Reduce uncertainty associated with source load allocation and estimation of jurisdictional loading
2. Demonstrate compliance / nutrient reductions
3. Support lake response modeling
4. Describe linkage between water quality and designated uses
5. Provide basis for credit estimation, trading, and best management practice (BMP) effectiveness
6. Support pursuit of various regulatory options: use attainability analysis (UAA), site specific criteria, etc.
7. Prioritize BMP Implementation
8. Others???

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Considerations for Future Monitoring Studies

- Different types of monitoring needed to meet all objectives
- Design monitoring programs to meet multiple objectives
- Obtain input from the UNRBA to
  - Prioritize objectives and monitoring studies
  - Refine the list of studies
- Utilize strategic planning to
  - Reduce monitoring costs
  - Coordinate multiple monitoring studies and organizations
  - Seek grants and funding partners

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Further Considerations for Future Monitoring Studies

- Focus on filling watershed data gaps
  - Jurisdictional loading
  - Source specific loads
  - Tributary loading to Falls Lake
- Falls Lake water quality is generally well characterized assuming existing monitoring continues
- Falls Lake studies are needed to link water quality to designated uses

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Future Monitoring Studies Focus on

- Additional Flow Data
- Field parameters
- Water quality parameters
- Designated use attainment

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Discussion of Table 1 Handout and Questions

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