

Path Forward Committee Meeting September 3, 2019



Agenda

- Opening comments
- NC Numeric Nutrient Criteria Development Plan, Scientific Advisory Committee – Status and Analyses of High Rock Lake
 - Clifton Bell
 - Marty Lebo
- Upcoming meeting with UNC Collaboratory
- UNRBA Decision Framework Development
- UNRBA Alternative Implementation Approach—A Prospective Framework
- Transition Monitoring Options for FY2021
- Modeling and Regulatory Support status (Information Only—MRSW Follow-up)
- Other status items

**Status of the NC Numeric
Nutrient Criteria Development
Plan – Scientific Advisory
Committee**

**Clifton Bell
Marty Lebo**



Upcoming Meeting with UNC Collaboratory

Upcoming Meeting September 20th

- UNRBA to meet with UNC Collaboratory managers and researchers
 - Provide review of UNRBA monitoring data and special studies, data access portal, and UNRBA reports
 - Identify this data and information for supporting Collaboratory work on Falls Lake
 - Discuss general observations/trends from the UNRBA 2019 Annual Monitoring Report
 - Discuss ways to use the general observations to guide Collaboratory studies to clarify the trends shown in the data
 - Potential for a chlorophyll-a standard evaluation

UNRBA Decision Framework Development

General Plan for Development of the UNRBA's Decision Framework

- Kickoff discussion August 13th
- Three types of decisions identified
 - Procedural/Administrative
 - Who decides what?
 - How are decisions made?
 - Others?
 - Technical
 - Model development
 - Model scenarios
 - Others?
 - Policy
 - Strategy development
 - Draft rule language
 - Others?

Questions Related to Each Type of Decision

- Who provides input and how?
 - UNRBA members
 - External stakeholders
- Who ultimately makes the decision?
 - MRSW
 - PFC
 - BOD
- How are decisions made?
 - Voting
 - Consensus
 - Hybrid approach
 - Other

Anticipated Schedule

- October, November, December PFC meetings:
 - Establish processes
 - List out major decisions to be made in the future
 - Describe types of information needed to support discussions and decisions
 - Discuss how uncertainty will affect decision making and timing
 - Discuss how unknowns may affect ultimate outcomes and how adaptive management will be incorporated into the decision making process
 - Start meetings at 9:00 AM?
- January PFC meeting
 - Finalize framework for submission to the Board
- January BOD meeting
 - Board approves or requests changes to the framework

Preliminary Brainstorming of Decisions to be Made

Procedural/Administrative	Technical	Policy
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Alternative Implementation Approach - Strawman

Alternative Implementation Approach

- Following the August PFC meeting, a strawman framework has been developed for consideration
- Today's information is for discussion purposes only
- Strawman distributed prior to the September PFC meeting
- Funding levels discussed at the August PFC meeting do not reflect any decision on consideration of this alternative approach
- Strawman incorporates additional flexibility to better utilize the efficiencies of existing programs

Objectives of the Alternative Implementation Approach

- Promote reasonable progress and communicate a commitment to maintain uses and provide water quality improvement
 - Implement projects in the watershed while the re-examination continues toward completion
 - Use a simplified framework based on funding levels to overcome challenges with the Rules as currently written
- Demonstrate commitment of the UNRBA to a reasonable, fair, and equitable management strategy
- Utilize existing programs when available to efficiently implement eligible projects and activities
 - Minimize administrative and process delays
 - Seek ways to lower costs in the development and installation of projects

Example Investment Distribution Discussed at August Meeting

- Would only apply to the period leading up to the new strategy
- Assumes a total annual funding of \$1.5 million per year
- Applies the existing UNRBA fee structure
- Allows for rollover from one year to the next

Member	Annual Funding Level	Member	Annual Funding Level
Town of Butner	\$23,393	Town of Hillsborough	\$34,221
City of Creedmoor	\$16,926	Orange County	\$161,943
City of Durham	\$337,587	Person County	\$114,394
Durham County	\$133,300	City of Raleigh	\$466,081
Franklin County	\$19,058	Wake County	\$88,968
Granville County	\$100,453	Town of Wake Forest	\$13,692

Potential Eligible Activities

- Stormwater control measures, green infrastructure, and best management practices
- Programmatic measures addressing
 - Fertilizer application education for businesses and homeowners
 - Onsite wastewater treatment system inspection, maintenance tracking, and tank pump-out programs
 - Pet-waste education and waste management stations
- Infrastructure and wastewater improvements including
 - Repair and replacement of leaky infrastructure
 - Reduction of sanitary sewer overflows
 - Extension of sewer lines to areas using onsite wastewater treatment systems or package plants
 - Repair and replacement of malfunctioning septic systems and discharging sand filter systems

Potential Eligible Activities, Continued

- Illicit discharge detection and elimination
- Stream and riparian buffer restoration and enhancement
- Land conservation
- Greenways and parks with water quality and quantity benefits
- Projects and activities implemented to address other state and federal water quality regulations (MS4 permits/Phase I or II communities, TMDLs on streams, etc.)
- Additional projects and activities beyond those listed above pending vetting with other UNRBA members and DEQ

What would be the Role of the UNRBA?

- Assist the members in the establishment of a workable framework
- Compile progress reports from UNRBA members
- Summarize progress from the membership as a whole
- Coordinate funding activities as appropriate, depending on approach taken by the jurisdictions to fund projects

Funding Options

- Self-funded – An individual member may use funds for eligible projects and activities within and managed by their own jurisdiction.
- Interlocal agreement – Individual members may enter into an interlocal agreement where eligible projects and activities are jointly funded.
- Funding other local programs –
 - Individual members may contribute funds to other local programs including local Soil and Water Conservation Districts, County Health Departments, watershed associations, and land conservation groups.
 - The receiving local program would be responsible for prioritizing and selecting eligible projects and activities.
 - Use of funds by other local programs would be limited to projects and activities associated with water quality and quantity benefits.

Funding Options, Continued

- Contribution to UNRBA pool of funds –
 - Individual members may contribute to a joint funding pool that would be used by the UNRBA to fund eligible projects and activities.
 - May expend these funds through existing local programs, a mitigation bank, contractor, etc.
 - A joint selection process would be used to select projects and activities
 - May accumulate funds for one or more years until sufficient funds are acquired to support a meaningful project or activity

Reporting to Support Tracking

- UNRBA Role to be determined
- Each member would submit reports annually noting:
 - Funding option(s) used and additional partners
 - Primary organization responsible for management and distribution of funds
 - Types and locations of projects and activities planned
 - Status of projects and activities
 - Funds allocated (cash and in-kind)
 - Estimated nitrogen and phosphorus reductions associated with projects and activities if quantifiable or other tracking metric to be determined by the UNRBA for activities without crediting methods

Duration

- Begin in the FY2021 budgeting cycle
- Continue until a revised nutrient management strategy is put in place and implementation begins
- Previous and ongoing nutrient reduction activities and projects will count in the newly developed management strategy
- Investments made to maintain water quality/uses and improve water quality would include work performed previously

Compliance Determination

- Two compliance options exist for jurisdictions
 - Existing Falls Lake Rules
 - Assignment of jurisdictional loads
 - Tracking pounds of nutrients reduced, annual accounting
 - Passage of a bill authorizing use of the AIA (if approved by the UNRBA)
 - Investment-based, annual accounting
 - Distribution among members to be determined by the UNRBA
 - Documentation and reporting including tracking metrics for specific practices
 - Submittal of compiled annual reports to DWR

Options for FY2021 Transitional Monitoring Program

Six Potential Options for FY2021 Transitional Monitoring Program

- (1) Discontinue the Transition Monitoring Program
- (2) Continue Transition Monitoring Program (no change)
 - Monthly sampling, no field parameters
 - 12 stations: total phosphorus, total Kjeldahl nitrogen, total ammonia, and total nitrate+nitrite
 - 6 stations: total organic carbon
- Expand to cover 3 additional stations in City of Durham
 - (3) Same nutrient parameters as current program
 - (4) With addition of some metals
 - (5) With addition of fecal coliform
- (6) Fee for service
 - Monthly sampling for nutrient parameters
 - Establish per station cost and allow jurisdictions to fund stations as they choose (more or less stations)

Preliminary Costs for FY2021 Monitoring Options

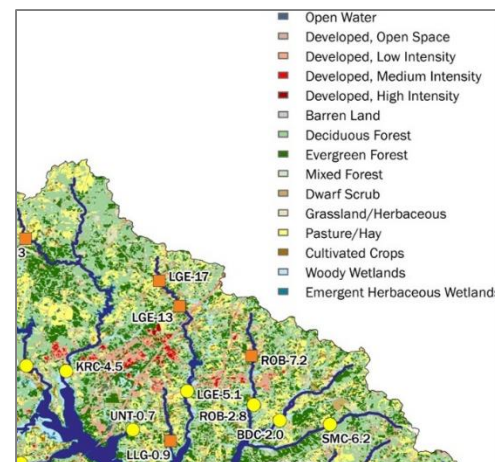
Option	Annual Cost Compared to Current Program	Total Annual Cost
(1) Discontinue	-\$44,000	\$0
(2) Continue as is	\$0	\$44,000
(3) Add 3 stations (nutrients only)	+\$6,000	\$50,000
(4) Add 3 stations (nutrients and metals)	+\$28,500	\$72,500
(5) Add 3 stations (nutrients, metals, fecal coliform)	+\$31,000	\$75,000
(6) Fee for service (nutrients only; per station)	Variable	\$3,700 per station

Costs do not include changes to the UNRBA Monitoring Plan, Monitoring QAPP, data portal, or supplemental monitoring report content which currently focuses on nutrients and total organic carbon at some locations.

Modeling and Regulatory Support Status – Information, Future Discussion with the MRSW

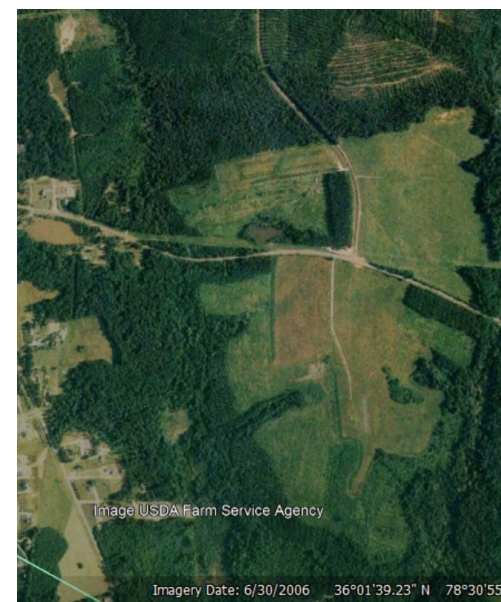
Agricultural Land Use and Crop Data

- NC Department of Agriculture provided county-level crop and pasture acreages
- Modelers selected 12 agricultural land use categories to represent agriculture
 - Ignores categories with less than 1 percent of the agriculture in every county
 - **Confirm approach with MRSW**
- Modelers are coordinating with NC Dept. of Ag. on the development of model inputs and parameters:
 - Nitrogen application rates
 - Phosphorus application rates
 - Planting and harvest dates
 - Biomass accumulation (growth) and removal (harvest)



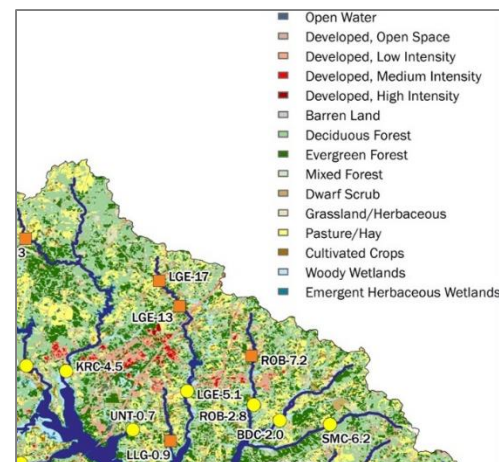
Merging Land Use Data from the USGS NLCD and NC Department of Agriculture

- USGS National Land Cover Data (NLCD) provides data for cultivated crops and hay/pasture
- USGS has reported technical difficulties in distinguishing crops, pasture, grass, etc.
- NLCD crop and pasture areas are not sufficient to “cover” the county-level data provided by NC Dept. of Ag, especially in 2006
- Modelers need to “borrow” area from other NLCD land uses for accounting
 - Herbaceous grass
 - Shrub/scrub
 - Forest
- Will “borrow” area from subwatersheds that include NLCD crop and pasture
- **Confirm approach with MRSW**



Land Use Data: Coordination with NC DOT

- NC DOT is providing refined baseline data relative to what was used in the State's baseline model
- Providing a 2017 roads database to represent the recent modeling period
- Data will address DOT-maintained roads
- Tracking non-DOT roads
 - Specify a separate land use
 - Lump in with local government “development” consistent with USGS NLCD designations
 - **Discuss with MRSW**



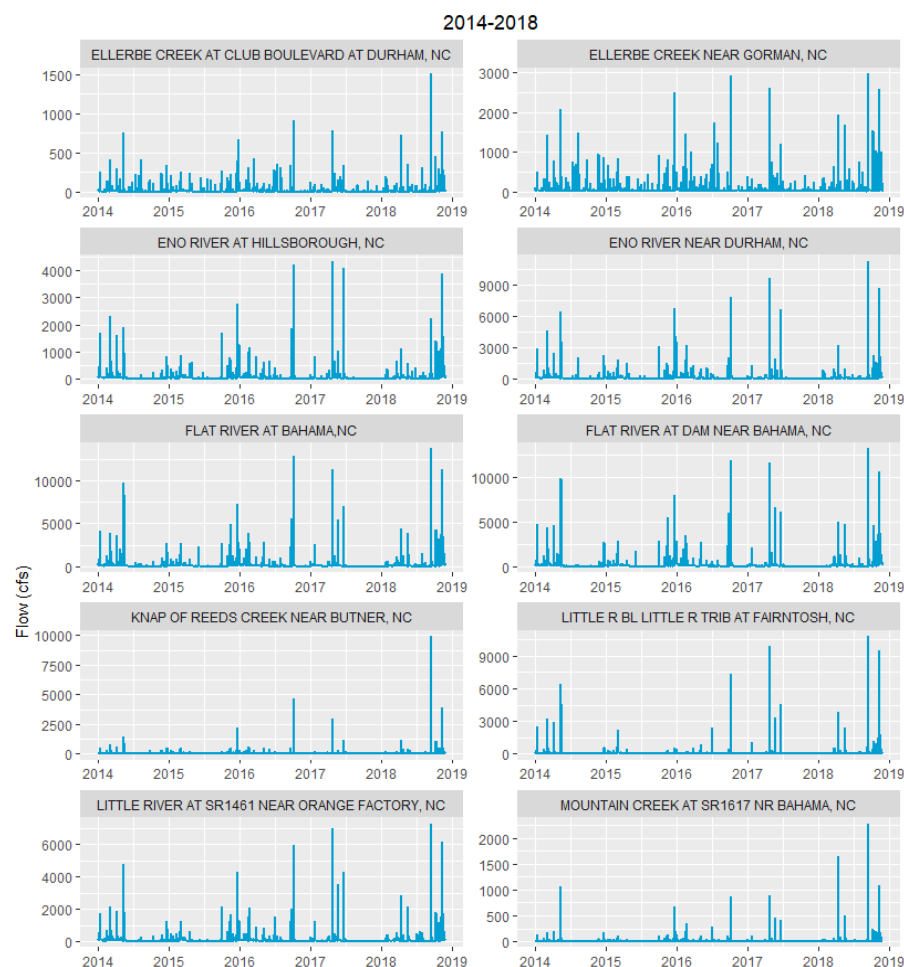
Meteorological Data

- Modelers have received and formatted the weather inputs for WARMF using the NLDAS and NEXRAD data
 - 6-hr time steps to run model
 - Decided by MRSW at March 2019 meeting
- Nathan Hall (UNC Collaboratory) is reviewing and QAQC'ing weather inputs (3rd party review)



USGS Stream Flow Data

- Modelers have processed the USGS stream flow data for
 - Model calibration
 - Specification of outflows from two impoundments
 - 6-hr time steps
- Nathan Hall (UNC Collaboratory) is reviewing and QAQC'ing USGS flow data (3rd party review)



Onsite Wastewater Treatment Systems: Number and Type of Systems

- Modelers are compiling local data on the number and type of onsite wastewater treatment systems in the watershed
- Three counties have parcel level data with year of occupancy and presence of onsite system
 - Durham County
 - Orange County
 - Granville County
- Person County is compiling similar data
- Franklin County is developing an online database that will identify systems permitted since 2004
 - 2012 inventory of number of systems in the watershed will be used to approximate the number of older systems present

Onsite Wastewater Treatment Systems: Model Parameters

- Modelers are coordinating with researchers at the UNC Collaboratory to help develop model inputs (proposal submitted but not yet approved and funded)
 - Based on data collected in the watershed and literature reviews
 - Researchers proposing additional targeted monitoring
- Model inputs include pollutant concentration data, discharge flow rates, and discharge layer
- Potentially 12 to 15 types of systems
 - Category: Conventional; discharging sand filter
 - Type: Functioning, malfunctioning; single pass, recirculating, TS-II, etc.
 - Discharge layer: Surface or subsurface
 - Wetland treatment via incidental overland flow

Onsite Wastewater Treatment Systems: Model Code Development

- Current version of WARMF simulates 3 types of onsite wastewater treatment systems
- Simulation of more types of systems would require development of custom model code
- Systech Water Resources estimates a budget of approximately \$17,000 to develop
- Could include this development in FY2021 MRS budget
- **Discuss with MRSW**

3rd Party Review by UNC Collaboratory

- Nathan Hall is beginning to review model input files associated with publicly available data
- When reviewing other input files, it may be helpful for him to review raw data files from UNRBA members
- Some members have indicated their data should not be shared outside of the modeling team
 - How can we best manage the concerns of the local governments while facilitating the third party review?
 - Can members of the Collaboratory be considered part of the modeling team for the purposes of information sharing?
 - Should 3rd party review only include model input files?
 - Would non-disclosure agreements stating that data would not be further distributed alleviate concerns?
- **Discuss with MRSW**

Establishing Process for MRSW Review

- Focus has shifted from monitoring to modeling
- Several options are available for moving forward
- Last fiscal year
 - Scheduled meetings as needed
 - Sometimes delayed progress when meetings were rescheduled for weather, etc.
- September PFC meeting – mentioned topics for follow up with MRSW
 - Is this helpful to the PFC and MRSW?
 - Prefer to mention to MRSW first?
- Moving forward
 - Prefer to schedule meetings and calls as needed?
 - Prefer to schedule recurring meetings, calls, or webinars?
 - Interested in initiating some topics via email with follow up as needed?

Other Status Items

Communications

- Planning continues for the upcoming non-technical stakeholder session in January/February
- Input is needed from the UNRBA membership to develop an expanded stakeholder list for invitation.

Next Meeting is October 1, 2019

PFC to Confirm Start Time

Closing Comments Additional Discussion