



## **Request for Proposals**

### **Support of Long-Term Planning and Regulatory Nutrient Management Activities in the Falls Lake Watershed**

Date of Issue: July 11, 2011

Upper Neuse River Basin Association  
Post Office Box 12276  
Research Triangle Park, NC 27709

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# REQUEST FOR PROPOSALS

## Project Purpose

The Upper Neuse River Basin Association (UNRBA) is soliciting proposals for the development of methods by which the regulatory framework associated with the recently adopted Falls Lake Nutrient Management Rules can be evaluated. The Falls Rules are costly and require actions on the part of UNRBA member governments and other regulated parties that are unprecedented. In light of the potential financial impact of these rules and importance of the resource, the UNRBA wishes to secure assistance in evaluating the technical bases and regulatory framework for the Falls Rules, particularly the more costly Stage II. Local governments agree that protecting the use of Falls Lake as water supply is paramount and want to ensure that the standards applied to the watershed do so sufficiently and efficiently.

## Submittal Instructions

Offerors must submit all proposal components in Portable Document Format (PDF) on a compact disc. Paper copies will not be accepted. PDF files should include bookmarks that separate sections to allow easy document navigation. Address the Proposal disc to:

Upper Neuse River Basin Association  
Attention: Sarah Bruce, Director  
Post Office Box 12276  
Research Triangle Park, NC 27709

The UNRBA discourages overly lengthy and costly proposals; please limit proposals to 75 pages or less. In order for the UNRBA to evaluate proposals fairly and completely, Offerors should clearly follow the format set out herein and provide all of the information requested. It is important that cost information be provided in a separate document from the rest of the proposal as discussed under “Proposal Content and Format.”

Proposals must include the complete name and address of their firm and the name, mailing address, email address, and telephone number of the person the UNRBA should contact regarding the proposal. Proposals must be received no later than 3:00 pm on August 10, 2011. Fax, oral, or email proposals are not acceptable. See the section “Proposal Content and Format” for additional details on proposal requirements.

## Proposal Review Schedule

A pre-proposal conference call will be held for all Offerors to answer questions about the project on August 3, 2011. All proposal questions must be provided to the project manager, Sarah Bruce, via email to [sbruce@tjcog.org](mailto:sbruce@tjcog.org) by two days prior to call time. Questions will be addressed in the conference call.

The proposal and contract schedule represents the UNRBA’s best estimate of the schedule that will be followed. If a component of this schedule, such as the evaluation date, is delayed, the rest of the schedule may be shifted accordingly. The approximate schedule is as follows:

- Pre-proposal conference call for Q&A with UNRBA regarding proposals: August 3, 2011 at 3 pm (call (866) 456-0016 and the conferencing room number is \*7139028\*)

- Proposals due: August 10, 2011
- Select and notify candidates for interviews: August 22, 2011
- Proposal presentations and interviews: August 30-31, 2011
- Complete evaluations and provide notification of award: September 23, 2011
- Contract work shall begin as specified in the contract to be executed by the parties.

The UNRBA will make every effort to adhere to this schedule. Firms submitting proposals should make arrangements to provide the UNRBA with appropriate staff for the proposal presentations and interviews.

### Conditions

Offerors may submit only one proposal for evaluation. The UNRBA reserves the right to reject any or all proposals. The UNRBA will not pay any cost associated with the preparation, submittal, presentation, or evaluation of any proposal. All proposals and other materials submitted become the property of the UNRBA. All proposal information, including detailed price and cost information, will be held in confidence during the evaluation process. Thereafter, proposals become public information.

The UNRBA will issue at most one contract for this RFP to a primary contractor. The selected contractor may use subcontractors to perform work on this contract. If an Offeror will use a subcontractor(s), the Offeror must identify in their proposal the names of the subcontractor(s) and the portions of the work the subcontractor(s) will perform. The subcontractor(s) should also provide a written statement that clearly verifies that the subcontractor(s) is committed to render the services required by the contract.

The UNRBA is a non-profit organization composed of local governments located in the Upper Neuse River Basin. By signature on their proposal, Offerors certify that they comply with

- a. The laws of the State of North Carolina
- b. The applicable portion of the Federal Civil Rights Act of 1964,
- c. The applicable portions of the Americans with Disabilities Act of 1990,
- d. The Equal Employment Opportunity Act and the regulations issued there under by the federal government
- e. The Americans with Disabilities Act of 1990, and the regulations issued there under by the federal government,
- f. All terms and conditions set out in this RFP, and
- g. A condition that the proposal submitted was independently arrived at, without collusion, under penalty of perjury;

as well as that their offers will remain open and valid for at least 120 days.

Each proposal shall include a statement indicating whether or not the firm or any individuals working on the contract has a possible conflict of interest (e.g., anyone working for or on behalf of the State of North Carolina the Upper Neuse River Basin Association, or one of the UNRBA's member governments) and, if so, the nature of that conflict. The UNRBA Board of Directors

reserves the right to cancel the award if any interest disclosed from any source could either give the appearance of a conflict or cause speculation as to the objectivity of the program to be developed by the responder. The Board's determination regarding any questions of conflict of interest shall be final.

The UNRBA opposes discrimination on the basis of race and sex and urges all of its contractors to provide a fair opportunity for minorities, women, and other socially and economically disadvantaged individuals as defined in 15 U.S.C. 637 to participate in their work force and as subcontractors and vendors under UNRBA contracts.

This contract is anticipated to be the first of several that the UNRBA expects to execute regarding Falls Lake and the Falls Lake watershed. Successful completion of this scope of work will be a prerequisite to future contracts, for example, coordinating and implementing a monitoring program, modeling, or any other related tasks the UNRBA needs completed.

## Background

The waters of the Upper Neuse River Basin in North Carolina have many challenges meeting the demands of society and the environmental standards in place for those waters. Falls Lake is the primary source of drinking water for the City of Raleigh and its 450,000 customers and is immediately downstream of several urban centers, including the City of Durham. Constructed in the early 1980's, Falls Lake, like Jordan Lake, is a shallow Piedmont lake with inherent difficulty meeting water quality standards for chlorophyll-*a* because of its geology and its topographic location below pre-existing urban centers.

A complex set of rules, guidance, and policies governs activities in the Falls Lake watershed. The recently adopted Falls Nutrient Strategy Rules overlay several previous regulations, including the Neuse River Nutrient Strategy, NPDES Phase I and Phase II of the 1972 Clean Water Act, and state Water Supply Watershed regulations.

In 2008, the North Carolina Division of Water Quality (NC DWQ) and US Environmental Protection Agency (USEPA) placed Falls Lake on the Section 303(d) list of impaired waters because of violations of the State's water quality standards for chlorophyll-*a*, a proxy for algae. DWQ and EPA also listed Falls Lake above I-85 as impaired for turbidity in 2008.

In 2005, the North Carolina General Assembly enacted SL 2005-190 (SB 981, Clean Lakes Act), which directed the North Carolina Environmental Management Commission (EMC) to develop and adopt a nutrient management strategy to reduce nitrogen and phosphorus pollution in Falls Lake by July 1, 2008 (later extended to July 1, 2009). In 2009, the General Assembly enacted SL 2009-486 (SB 1020, Improve Upper Neuse River Water Quality), which extended the deadline again until January 15, 2011 and also allowed for a system crediting early adoption of nutrient reductions and required stricter sedimentation and erosion control measures in the watershed.

The DWQ, in consultation with a Technical Advisory Committee that included representatives of local governments in the watershed, developed a calibrated nutrient response model for Falls Lake. Technical documentation on models and their development is online, along with regulations and other related information (rules, fiscal note, public comments, etc), at <http://portal.ncdenr.org/web/wq/ps/nps/fallslake>.

Triangle J Council of Governments facilitated nine meetings for stakeholders to give input on the development of the Falls Rules from late 2008 until January 2010. Stakeholder meeting information is available at [www.fallslakestakeholder.org](http://www.fallslakestakeholder.org). In addition, DWQ held several public meetings with subsets of stakeholders to discuss particular portions of the Falls Rules (e.g., agriculture, new development, etc.).

At its March 2010 meeting, the EMC voted to send draft Falls Lake nutrient rules to public hearing and comment. Broken into two stages, the first stage (Stage I) of the rules was developed with the expectation that it will reduce nitrogen pollution by 20% and phosphorus pollution by 40% from the 2006 baseline within ten years, with most of those reductions occurring within the last four years. DWQ water quality modeling suggests that this reduction will be protective of the lower lake, where the City of Raleigh's raw water intake resides. Stage II of the Falls Rules, which would be implemented in 2025, was developed to bring the lake into compliance with the Federal and State water quality standard for chlorophyll-*a* (40 µg/L), involving ultimate reductions from the 2006 baseline of 40% nitrogen and 77% phosphorus. The fiscal note

accompanying the rules estimated the total cost to regulated entities of implementing both Stage I and Stage II could be on the order of \$1.5 billion in 2010 dollars.

In 2010, recognizing that major political disagreements over water quality in Falls Lake would affect their ability to solve other critical regional problems, many impacted local governments developed a set of “Consensus Principles” to help shape the proposed rules. The principles included three fundamental agreements: (1) that any rules would need to protect Falls Lake for the purpose of water supply, (2) that additional water quality monitoring would provide useful information, and (3) that North Carolina should consider that new information before going beyond those actions necessary to protect Falls Lake for the purpose of water supply. The City of Durham, Durham County, Granville County, City of Raleigh, Wake County, Orange County, Person County, Butner, Creedmoor, and the South Granville Water and Sewer Authority adopted the Consensus Principles in their comments on the rules. Section Nine of the Consensus Principles, which is most relevant to this RFP, states the following:

“The process by which the proposed regulatory scheme has been developed relied on a limited data base which will be substantially enhanced by a more rigorous program of sampling, monitoring and analysis. In addition, it may not be feasible to attain all currently designated uses in the Upper Lake and attempting to do so may result in substantial and widespread economic and social impact. The EMC should therefore begin a re-examination of its nutrient management strategy for Falls Lake by January 1, 2018 [later changed by rule to 2021]. **The re-examination should consider, among other things, (i) the physical, chemical, and biological conditions of the Lake with a focus on nutrient loading impacts and the potential for achieving the Stage I goal by 2021 [later changed in the final rule to 2024] as well as the feasibility of both achieving the Stage II reduction goals and meeting the water quality standard for chlorophyll-a in the Upper Lake, (ii) the cost of achieving, or attempting to achieve, the Stage II reduction goals and the water quality standard in the Upper Lake, (iii) the existing uses in the Upper Lake and whether alternative water quality standards would be sufficient to protect those existing uses, and (iv) the impact of the management of Falls Lake on water quality in the Upper Lake.** As the first step in the re-examination, a Scientific Advisory Board should analyze and review the information identified above along with the additional monitoring and modeling data compiled since the model was approved and should present its recommendations for changes in the Nutrient Management Strategy and its implementing rules to DWQ and the EMC by January 1, 2019 [later changed in the final rule to 2024]. In light of the report from the Science Advisory Board, the EMC should direct the DWQ to prepare proposed rule revisions, if any, and an updated fiscal note on Stage II by August 1, 2019 [later changed in the final rule to 2025]. In its development of any proposed rule revisions, DWQ shall consult with the local governments and other interested parties. Except to the extent that management measures identified as a part of Stage II are required to achieve the Stage I goal, local governments should not be required to begin implementing Stage II management measures without **a determination by the EMC of whether alternative goals and/or standards should be established for the Upper Lake.**” [emphases added]

To support regional cooperation on management of the Falls Lake watershed, the North Carolina General Assembly authorized a Falls Lake Watershed Association (Session Law 2010-155). The UNRBA has revised its bylaws to become the Falls Lake Watershed Association and has started

to consider the goals of Session Law 2010-155, particularly those related to a re-examination of the Falls Lake Strategy prior to commencement of Stage II management measures.

On November 18, 2010, the EMC adopted the nutrient management rules for Falls Lake, with an effective date of January 15, 2011. The North Carolina Rules Review Commission approved the rules with minor technical language changes and the rules took permanent effect on January 15, 2011. The rules address the re-examination prior to implementing Stage II in section 15A NCAC 02B.0275. Section (5)(f) describes specific requirements of any stakeholder desiring to submit data or modeling to the NCDWQ regarding Falls Lake and the requirement to re-examine the Stage II goals. This section of the rule follows:

- (f) Recognizing the uncertainty associated with model-based load reduction targets, to ensure that allowable loads to Falls Reservoir remain appropriate as implementation proceeds, a person may at any time during implementation of the Falls nutrient strategy develop and submit for Commission approval supplemental nutrient response modeling of Falls Reservoir based on additional data collected after a period of implementation. The Commission may consider revisions to the requirements of Stage II based on the results of such modeling as follows:
  - (i) A person shall obtain Division review and approval of any monitoring study plan and description of the modeling framework to be used prior to commencement of such a study. The study plan and modeling framework shall meet any division requirements for data quality and model support or design in place at that time. Within 180 days of receipt, the division shall either approve the plan and modeling framework or notify the person seeking to perform the supplemental modeling of changes to the plan and modeling framework required by the Division;
  - (ii) Supplemental modeling shall include a minimum of three years of lake water quality data unless the person performing the modeling can provide information to the Division demonstrating that a shorter time span is sufficient;
  - (iii) The Commission may accept modeling products and results that estimate a range of combinations of nitrogen and phosphorus percentage load reductions needed to meet the goal of the Falls nutrient strategy, along with associated allowable loads to Falls Reservoir, from the watersheds of Ellerbe Creek, Eno River, Little River, Flat River, and Knap of Reeds Creek and that otherwise comply with the requirements of this Item. Such modeling may incorporate the results of studies that provide new data on various nutrient sources such as atmospheric deposition, internal loading, and loading from tributaries other than those identified in this Sub-item. The Division shall assure that the supplemental modeling is conducted in accordance with the quality assurance requirements of the Division;
  - (iv) The Commission shall review Stage II requirements if a party submits supplemental modeling data, products and results acceptable to the Commission for this purpose. Where supplemental modeling is accepted by the Commission, and results indicate allowable loads of nitrogen and phosphorus to Falls Reservoir from the watersheds of Ellerbe Creek, Eno River, Little River, Flat River, and Knap of Reeds Creek that are

substantially different than those identified in Item (3), then the Commission may initiate rulemaking to establish those allowable loads as the revised objective of Stage II relative to their associated baseline values;

Other portions of the Falls Lake rules refer to nutrient loads and load reductions from existing development, particularly in the context of achieving the Stage II percent load reduction goals (e.g., 15A NCAC 02B .0278 (3)(e)(iii)). The Falls Lake watershed includes multiple local governments, both municipal and county. There are also state and federal lands within each watershed. The Department of Transportation (DOT) is a major stakeholder with an interstate and state highways passing through the Falls Lake watershed. However, other state and federal jurisdictional lands exist in the watershed, in some cases within a municipality. Each of these entities is required to achieve a percent load reduction from the 2006 baseline period load. However, neither the Falls Lake rules nor any documents produced to derive the nutrient management strategy have included calculations of loads by jurisdiction/responsible entity.

Related to the issue of addressing loads from existing development, a Nutrient Scientific Advisory Board was established under the Jordan Lake Rules to develop a method for estimating loads by jurisdiction (Session Law 2009-216 Section 3(b)(2)b). The website with meeting minutes and handouts is <http://portal.ncdenr.org/web/wq/nutrient-scientific-advisory-board>. The efforts of the Nutrient Scientific Advisory Board may or may not be applicable to Falls Lake due to the coarser watershed model in the Jordan Lake Nutrient Strategy and a more aggressive timeline in the Falls Lake Rules.

## SCOPE OF WORK

Due to the exact time frames provided in the Falls rules regarding monitoring data, models, and the re-examination, there is a need to begin the appropriate field studies in an expeditious manner. The UNRBA requires assistance from a qualified and experienced consulting firm of scientists and legal experts to determine how best to address the nutrient management rule requirements and the Consensus Principles regarding the re-examination of Stage II. There is also a strong need to calculate jurisdictional loads to inform local governments' development of programs to address load reduction requirements for existing development. The following project tasks are designed to provide the UNRBA with the information needed to make informed decisions regarding the next steps to implementation of the re-examination and to develop jurisdictional loads for regulatory and program implementation purposes.

### **Task 1: Develop Framework for a Re-examination of Stage II of the Falls Nutrient Strategy**

A framework that addresses the technical, legal/regulatory and political needs to successfully accomplish the re-examination shall be developed. The framework recommended by the selected contractor shall address each of the four relevant items mentioned in the Consensus Principles:

1. The physical, chemical, and biological conditions of the Lake with a focus on nutrient loading impacts and the potential for achieving the Stage I goal,
2. The cost of achieving, or attempting to achieve, the Stage II reduction goals and the chlorophyll-a water quality standard in the Upper Lake upstream of Highway 50,
3. The existing uses in the Upper Lake upstream of Highway 50 and whether alternative water quality standards would be sufficient to protect those existing uses, and
4. The impact of the management of Falls Lake on water quality in the Upper Lake.

The recent guidance issued by the USEPA to state government water quality programs regarding nutrients should be incorporated into the framework to the extent possible.

The re-examination shall consider the existing nutrient-related water quality standards for Falls Lake and the manner in which these standards are applied for the nutrient management strategy and 303(d) listing. Other nutrient and source water-related water quality standards, including total organic carbon, shall also be considered. The review of other water quality standards shall highlight southeastern US standards, but should include national and international standards that may be relevant.

In the context of state and federal laws and programs, the selected contractor will outline the various regulatory options available for revising the nutrient-related water quality standards for Falls Lake, specifically the chlorophyll-a and turbidity water quality standards, and the manner in which these standards are applied. It is expected that the regulatory options will include, but not be limited to, a Use Attainability Analysis, site-specific water quality standards, variances, and supplemental or secondary classifications. Short descriptions of the successful applications of these regulatory options should be described in a presentation to the UNRBA Board of Directors and in a detailed technical report.

The framework shall also describe any political and regulatory actions needed, with desired outcomes and schedules. This shall include any tasks the UNRBA should undertake and timelines for these tasks to support a successful outcome.

Any recommended technical actions to address the physical, chemical and biological conditions of the lake and the assessment of existing uses shall be included in a technical study plan in the Task 4 draft technical memorandum. The study plan should be comprehensive in scope covering the different types of studies that are needed with descriptions of information those studies should provide. A detailed monitoring and modeling plan, to be developed under Task 4, shall incorporate any studies identified as part of the re-examination.

Deliverables:

- a. Draft memorandum. The selected contractor shall develop a draft memorandum describing the regulatory options available and the recommended framework.
- b. Meeting with NC DWQ. During the review of the memorandum, the contractor shall attend a meeting with the NC DWQ to discuss the recommended framework for accomplishing the re-examination.
- c. Webinar/Webcast. After discussing revisions with a UNRBA committee, the selected contractor will host a webinar/webcast to discuss the regulatory options available and recommendations.

Rather than prepare a final memorandum, the revised information will be provided in a final project report describing Task 1, 3 and 4 deliverables.

## **Task 2: Review Existing Data and Reports to Summarize Knowledge of Falls Lake and the Falls Lake Watershed**

Since the construction of Falls Lake, a number of different private and public entities have conducted scientific studies of the biological and water resources of the lake and the watershed. These studies have generally not been performed in a coordinated fashion and may have conflicting results. The selected contractor will acquire, review, and summarize any recent (1999 or later) reports produced for the Falls Lake or the Falls Lake watershed on any of the following:

- water resource/water supply/source water studies
- water quality parameters
- surface water
- sediment monitoring
- biological monitoring, with a focus on benthic macroinvertebrate, fish, and avian species.

The technical memorandum shall discuss areas where water quality information is conflicting or lacking.

While there are multiple entities conducting monitoring in Falls Lake and the Falls Lake watershed, there has been no comprehensive effort to determine what data collection or laboratory analysis methods are similar and compatible. As a result, it is difficult to determine how data should be used in a regulatory context. As part of the data review, the selected contractor will compare data collection and laboratory analysis methods of entities monitoring Falls Lake and the Falls Lake watershed. At a minimum, this will include a review of available

quality assurance plans and standard operating procedures for data collection and highlight any monitoring efforts that are occurring without adequate documentation of field and laboratory methods. The comparison should include data collection methods (e.g., grab versus composite samples, streamside versus thalweg sites, depth-integrated lake samples versus surface grabs or samples at depth, profile frequency), laboratory methods including analysis method, method detection limits and reporting limits, monitoring locations, and supporting quality assurance documentation (e.g., chain of custody, field and laboratory quality control).

The selected contractor will acquire raw water resources/water quality data from the various entities collecting data on Falls Lake or in the Falls Lake watershed. Some of this monitoring data is available online (e.g., STORET, USGS database), while other data is available by request. The review of monitoring data shall focus on data available electronically. Data only available in hard copy, or not in a readily accessible format, will be catalogued for future review. Water quality data will be summarized and should include univariate statistics and other general graphical methods of presenting monitoring data including spatial methods. A detailed analysis of water quality data may be performed as an optional task.

Triangle J Council of Governments has already compiled a list of monitoring data sources. The selected contractor shall obtain and confirm the universe of data collection efforts, add details on the monitoring programs, and obtain the raw data for a technical memorandum (described under Deliverables, next). At a minimum, the review shall include monitoring data from the following sources:

- NC DWQ
- City of Durham Water Management and Stormwater Services
- Wake County Environmental Services
- City of Raleigh and their current and previous contractors (incl. NC State University, Ecological Associates, and Spirogyra)
- South Granville Water and Sewer Authority
- Town of Hillsborough
- Orange County
- US Geological Survey (USGS)

The selected contractor shall use the data collected to prepare a technical memorandum describing the types of monitoring in the watershed, entities performing monitoring, monitoring methods and differences between those methods, and general water quality summaries including statistics, graphs and spatial representations. Further, the review shall highlight those data and information used by the NC DWQ during the baseline evaluation period and currently.

Deliverables:

- a. Draft and final technical memorandum. A draft technical memorandum shall be prepared for review by a UNRBA committee and the NC DWQ. After addressing comments received, a final technical memorandum will be provided to the UNRBA.
- b. Presentation to the UNRBA Board of Directors. A presentation discussing the findings of the technical memorandum will be provided to the UNRBA Board of Directors. The presentation may be recorded for later viewing at UNRBA's discretion.

- c. Monitoring data. All monitoring data collected under Task 2 shall be provided to the UNRBA in an electronic format (e.g., MS Excel or Access). The monitoring data will be provided to UNRBA on CD or DVD with the final report or shall be hosted on a web site/server at that time.

### **Task 3: Review Methods for Delivered and Jurisdictional Nutrient Loads**

The Falls Lake Rules require regular reporting of the nutrient loads delivered to Falls Lake. Further, the rules require (.0275 5(b)(i)) regular reporting of any studies evaluating in-stream loading changes resulting from implementation of the rules. The rules do not specify the best or most appropriate methods to calculate nutrient loading in the absence of continuous data. Given the cost to obtain continuous data, the UNRBA expects that a combination of monitoring data and mathematical tools will be the most appropriate method of estimating nutrient loads to Falls Lake in the absence of continuous monitoring data.

In order to support future calculations of delivered nutrient loads, the contractor shall provide a review of the readily available methods and software for determining in-stream nutrient loads to Falls Lake. The review should highlight methods that are more appropriate for ephemeral and intermittent streams versus perennial streams. At a minimum, this review should include the US Army Corps of Engineers BATHUB/FLUX tool and the USGS LOADEST tool. However, other combinations of statistical methods using commercially available statistics software may also be considered. Other process-based tools should also be reviewed, highlighting the methods of evaluating uncertainty associated with each. The contractor will list each of the methods reviewed, detail the benefits and drawbacks of each, recommend a method based on best professional judgment, and provide an explanation of the rationale for the recommendation of this method.

As a demonstration of the recommended method, the contractor shall calculate the annual nitrogen and phosphorus loads to Falls Lake for the 2006 baseline year for any monitored tributaries of Falls Lake. The estimated annual nitrogen and phosphorus loads shall include a quantitative description of the uncertainty of the load estimate. Since a potentially large portion of the loads may occur as a result of unusual climatic events, an additional analysis of loads that occur during unusually high intensity and/or extended duration precipitation should be performed and compared to the calendar year and seasonal loads.

The USGS is also completing a project to estimate nutrient loads from Piedmont streams. The selected contractor will summarize any nutrient load estimates available from this USGS study for locations in the Falls Lake watershed.

Using the tributary load estimates, or in conjunction with determining the tributary load estimates, the contractor shall review the available methods for determining annual nutrient loads to Falls Lake by governmental jurisdiction/entity regulated under the Falls Lake Rules, including counties, municipalities, the NC Department of Transportation, and other state and federal lands (hereafter referred to as jurisdictional loads). As a first step, the work of the state Nutrient Scientific Advisory Board created under the Jordan Lake Rules shall be reviewed for relevance and appropriateness to the Falls Lake watershed and stakeholders. Methods and procedures that are readily transferrable should be considered for the Falls Lake watershed. In addition, there may be other methods of determining jurisdictional loads that were not considered by the Nutrient Scientific Advisory Board. The UNRBA expects the most appropriate methods of

determining jurisdictional loads will involve a combination of additional monitoring and mathematical tools. Therefore, the selected contractor shall review available mathematical tools for applicability and relevance to determining jurisdictional loads. The review of mathematical tools shall include the existing process-based Watershed Risk Management Framework (WARMF) application to the Falls Lake watershed, the Spatially Referenced Regressions on Watershed (SPARROW) attributes model completed for the Albemarle-Pamlico watershed (which includes the Falls Lake watershed), and other process-based and stochastic methods. All reviews shall include descriptions of the how uncertainty will be quantified for the jurisdictional load calculations and ensure that jurisdictional loads are consistent with the subwatershed loads previously estimated by the NC DWQ. The review should include the pros and cons of each method of estimating jurisdictional loads, a qualitative description of the water quality monitoring data, a detailed description of any data deemed necessary that is not currently readily available, and a level of effort associated with the method and its data collection.

Ultimately, the NC DWQ will need to approve the methodology and calculation of the jurisdictional loads. While NC DWQ staff will be invited to presentations and provided an opportunity to review reports, additional discussions and follow-up may be required to obtain approval of the methodology and calculations. The selected contractor shall evaluate and provide an appropriate pathway to achieving acceptance of the methodology and calculation of jurisdictional loads. The contractor shall also support the UNRBA in discussions with the NC DWQ staff, including attending meetings and conference calls, and preparing written materials.

To effectively manage nutrients in the Falls Lake watershed, it is important to understand the nutrient contributions by source and not necessarily by land use. Sources of nutrients, including hobby farms, on-site wastewater, instream erosion, and atmospheric deposition, have not been well quantified for the Falls Lake watershed. Additional studies and/or models are needed to attempt to quantify nutrient loads by source. The selected contractor will qualitatively evaluate significant nutrient sources in the Falls Lake watershed and develop either study plans using monitoring or mathematical tools to quantify source contributions. This qualitative evaluation shall include a review of nationally available methods and studies regarding source accounting.

Deliverables:

- a. Draft Memorandum. A draft memorandum will be prepared that summarizes the reviews and results of this task, including methods, recommendations, and tributary load estimates. This draft memorandum will be the basis for discussions with the NC DWQ. The draft memorandum will be finalized in a final project report incorporating findings for Tasks 1, 3 and 4.
- b. Meeting with NC DWQ. The UNRBA anticipates one face-to-face meeting with NC DWQ to discuss the draft memorandum. Additional communication in the form of conference calls and webinars is also anticipated to discuss delivered and jurisdictional loads. The UNRBA anticipates two conference calls and one webinar.

Task 3 has two optional components, which would be contracted separately if undertaken with the selected contractor or otherwise. Submitting proposals on these subtasks is optional. If proposals are submitted on these subtasks, they should be costed and scoped separately.

- Optional Subtask 3A and Deliverable. As an optional task, the contractor would implement the methodology for determining the jurisdictional nitrogen and phosphorus

loads to Falls Lake for the 2006 baseline year. A separate technical memorandum describing the calendar year and seasonal jurisdictional loads would be prepared for the UNRBA. The technical memorandum would include an analysis of jurisdictional loads that occurred as a result of unusual climatic events.

- Optional Subtask 3B and Deliverable. As an optional task, the contractor would develop methods to quantify the Stage I jurisdiction load reductions needed for agricultural and developed land uses. (See 15A NCAC .02B .0278 (3)(a) for rule language on how load reductions for Stage I for existing development might be calculated.) To the extent possible, the method(s) should be compatible with existing efforts by the Cities of Durham and Raleigh to estimate jurisdictional load reductions required for Stage I. A separate technical memorandum describing the methods, with instructions for implementing the methods, would be prepared for the UNRBA.

#### **Task 4: Recommendations for Future Monitoring and Modeling**

In order to accomplish the goals and objectives described in Tasks 1 and 3, the UNRBA anticipates several years of field monitoring studies and modeling to collect information to inform the regulatory process. The contractor shall provide recommendations for future monitoring and modeling the UNRBA should undertake to support the goals in Tasks 1 and 3.

Mathematical tools or models will be needed to evaluate the monitoring data in terms of lake processes and water quality standards, as well as alternate conditions not explicitly monitored and forecasting of future conditions. The NC DWQ developed two models for the nutrient management strategy, the Falls Lake Nutrient Response Model and the Falls Lake Watershed Model (described in the Background section of this RFP). Local universities have developed deterministic models of the watershed and the USGS has a stochastic model of the entire Neuse River Basin. The contractor shall review each of these models for their applicability to Tasks 1 and 3 above. The number of numeric tools available to achieve the goals of Tasks 1 and 3 are numerous and varied. The UNRBA does not necessarily wish to confine itself to the existing watershed and lake models, but would also like to consider other models and methods that can address many of the issues raised by stakeholders. As such, the contractor shall review other process-based and stochastic models and methods that can be used to achieve the project goals. This review should include using structural equation models and multi-level models. The ultimate recommendation for future modeling should be closely related to the recommendations for monitoring.

In order to facilitate funding and scoping of monitoring efforts, the contractor shall describe future monitoring needs in terms of a) short- and long-term studies, b) inputs needed for watershed nutrient load and/or lake models, c) scheduling to meet implementation time frames consistent with the Falls Lake rules, d) evaluating long-term water quality trends, and e) costs. Due to the large number of groups currently monitoring Falls Lake, the contractor shall also highlight opportunities to work collaboratively to generate consistent and comparable monitoring data.

#### Deliverables:

- a. Draft technical memorandum. A draft memorandum will be prepared that describes the review of lake and watershed models, the suggested modeling approach, the recommended monitoring strategy, a timeline for implementation, and a cost estimate.

(A Quality Assurance Project Plan is not required as part of this task.) The memorandum will be finalized in a final project report describing the results of Tasks 1, 3 and 4.

- b. Meeting with NC DWQ. The UNRBA anticipates one face-to-face meeting with NC DWQ to discuss the draft memorandum, and suggesting for implementing the monitoring and modeling approaches.

## **Task 5: Compile Final Report**

A final project report will be compiled for UNRBA review before it is finalized. The draft final report shall include the revised/final technical memoranda produced for Tasks 1, 3, and 4 (any deliverables for optional subtasks 3A and 3B will not be included in the final report). This final report will also include any revisions supported by a UNRBA committee and/or Board of Directors.

## **Work Schedule**

The contract term and work schedule will be determined based on the schedule presented in the selected proposal. It is anticipated that all work will be completed within 10 months and that Tasks 2 and 3 will be completed independently of Task 1 and 4 (i.e., tasks may proceed in parallel).

Should the UNRBA elect to fund optional task(s), a separate schedule, contract, and budget will be adopted by the UNRBA and selected contractor.

## **PROPOSAL CONTENT AND FORMAT**

Proposals must confirm that the firm will comply with all of the provisions and conditions in this RFP. Proposals must be signed by a company officer empowered to bind the company. An Offeror's failure to include the following items in their proposals may cause their proposal to be determined non-responsive and removed from consideration.

### **Cover Letter**

The proposal should contain a cover letter, signed by a principal in the firm, indicating his or her title that he or she has authority to submit the proposal on behalf of the firm, including the cover letter. The cover letter should contain the following statement:

*“The undersigned has the authority to submit this proposal on behalf of the name of company in response to the Upper Neuse River Basin Association RFP for “Long-Term Planning and Regulatory Support for the Falls Lake Nutrient Management Strategy”.*

The members of the UNRBA are all local governments and are subject to state laws regarding issuing contracts. In that regard, the cover letter should also contain one of the following two paragraphs:

*“With respect to all Trade Secrets that the proposer may submit to the UNRBA in connection with this proposal or the contract, if the contract is awarded to the proposer, the proposer shall comply with the section of the RFP titled “Trade Secrets and Confidentiality,” (see Section 8.01) including but not limited to all of its subsections,*

*such as the subsection titled “Defense of UNRBA.” The proposer acknowledges that the UNRBA will rely on the preceding sentence. ”Offerors must provide a comprehensive narrative Statement that illustrates their understanding of the requirements of the project and the project schedule.*

OR

*“The proposer is not submitting and shall not submit any Trade Secrets to the UNRBA in connection with this proposal or the contract, if the contract is awarded to the proposer. The proposer acknowledges that the UNRBA will rely on the preceding sentence.”*

## **Project Team**

The proposal should provide a description of the project team structure and qualifications. Clearly identify the prime contractor and any subcontractors, and the general roles on the project.

## **Understanding and Approach**

The proposal should include a description of the issues associated with the recently adopted Falls Lake Nutrient Management Rules as they relate to local government compliance and maintenance of the reservoir as a water supply. The proposal should demonstrate the consultant’s knowledge of nutrient issues in the nation and southeast, the North Carolina water quality standards, and the Falls Lake rules. The consultant should apply this knowledge in a brief analysis of the current issues the UNRBA faces with regard to nutrients in Falls Lake.

## **Project Tasks**

The proposal should include a list of the tasks described in the Scope of Work and sub-tasks by which the contractor proposes to complete the project. Task and sub-task descriptions should be concise and directly relevant to achieving the UNRBA’s goals for each task. Project tasks and sub-tasks should be the basis of the cost proposal (see “Cost Proposal,” below).

A project schedule should be provided in this section. Dates for both draft and final deliverables should be specified on the project schedule.

Optional tasks 3A and 3B described in the Scope of Work (above) should be described in a separate, alternate schedule.

## **Qualifications**

The proposal should include the firm’s experience with a minimum of five similar nutrient management projects and/or projects involving evaluations of water quality standards. Each project description will include the cost of the project, duration of the project, a short project description, key project personnel, and the outcome of the project. Each project description should be no longer than one page; however, URLs may be provided for additional relevant project summaries. Relevant project experience of subcontractors shall also be included.

## **Project Team Résumés**

One-page resumes of all senior and key personnel should be provided. A quality assurance officer shall be included on the project team. The office locations of each team member should be specified on the résumés. The proposal should list any potential subcontractors by name,

location, and general role in the project. An organization chart describing senior and key members of the project team as well as any subcontractors should be included.

### **Non-Collusion Certification**

The Upper Neuse River Basin Association prohibits collusion, which is defined as a secret agreement for a deceitful or fraudulent purpose. Include and sign the following with your proposal:

The Upper Neuse River Basin Association prohibits collusion, which is defined as a secret agreement for a deceitful or fraudulent purpose.

*I, \_\_\_\_\_ affirm that I have not engaged in collusion with any UNRBA employee(s), other person, corporations or firms relating to this bid, proposals or quotations. I understand collusive bidding is a violation of state and federal law and can result in fines, prison sentences, and civil damage awards.*

*Signature: \_\_\_\_\_*

### **Contract**

It is the UNRBA's intention to use a form of the contract that is attached. If your firm objects to any of the contract's content, please state the objections. If your firm does not object to any of the contract's content, please indicate this in this section of the proposal.

### **Exceptions**

Any and all exceptions to the RFP must be listed on an item-by-item basis and cross-referenced with the RFP document. If there are no exceptions, Offerors must expressly state that no exceptions are taken.

### **Cost Proposal**

A separate cost proposal should be included on the CD. The cost proposal should not be contained within the same electronic file as the Technical Proposal and should be password protected. The cost proposal should be organized by project task described in the technical proposal and include task and total project costs. Costs for optional tasks should be included separately and not included in the total project cost. A cost breakdown that includes labor and all direct expenses (e.g., travel, equipment rentals or purchase, webinar hosting, etc.) should be provided. A schedule of hourly rates should accompany the cost proposal.

All equipment purchased for this project will become property of the Upper Neuse River Basin Association.

## AGREEMENT FOR CONSULTING SERVICES

THIS AGREEMENT FOR CONSULTING SERVICES (the "Agreement") is entered into this the \_\_\_\_ day of \_\_\_\_\_, 201\_, by and between the **Upper Neuse River Basin Association d/b/a Falls Lake Watershed Association**, a North Carolina nonprofit corporation (hereinafter referred to as "UNRBA") and \_\_\_\_\_, a \_\_\_\_\_ (hereinafter referred to as the "Consultant") and provides as follows:

### WITNESSETH:

WHEREAS, UNRBA issued a Request for Proposals titled "Request for Proposals: Support of Long-Term Planning and Regulatory Nutrient Activities in the Falls Lake Watershed" on or about July \_\_, 2011 (the "RFP");

WHEREAS, Consultant submitted a proposal and has been selected by the UNRBA Board of Directors to perform the work described in the RFP; and

WHEREAS, UNRBA and Consultant wish to enter this Agreement to specify the rights and obligations of the parties with respect to the services to be performed by the Consultant.

NOW, THEREFORE, the parties agree as follows:

1. THE WORK. UNRBA hereby contracts with Consultant to do the following work for the project described below (the "Work"):

[INSERT DESCRIPTION OF WORK HERE AFTER DISCUSSIONS WITH SELECTED CONSULTANT]

2. COMPLETION OF THE WORK. The Work contemplated by this Agreement shall be performed as set out in the Contract Documents consisting of the following which are attached hereto and incorporated herein by reference:

1. The Request for Proposal.
2. Consultant's Response to Request for Proposal.
3. [ADD ADDITIONAL DOCUMENTS HERE. CONTRACT MAY SPECIFY ORDER OF PRIORITY OF DOCUMENTS TO AVOID CONFLICTS.]

Consultant shall complete the Work in a good and workmanlike manner in accordance with general industry standards and with the level of care and skill ordinarily exercised by members of the same professions currently practicing under similar conditions.

3. PAYMENT. The Request for Proposal divides the Work into five tasks (the “Tasks” or individually, a “Task”). UNRBA shall pay the Consultant the following amounts not to exceed (based upon Consultant’s hourly rates and budgeted reimbursable costs) as described below for performing the Work associated with each Task: Task 1: \$\_\_\_\_\_ ; Task 2 \$\_\_\_\_\_ ; Task 3 \$\_\_\_\_\_ ; Task 4 \$\_\_\_\_\_ ; and Task 5 \$\_\_\_\_\_. Additional Tasks or sub-Tasks may be added to the Work by mutual written agreement of the parties. Consultant shall bill UNRBA monthly on or before the 20<sup>th</sup> day of the month for all Work completed pursuant to this Agreement during the previous calendar month at the hourly rates specified in its Schedule of Standard Rates attached hereto and incorporated herein by reference as Exhibit “\_”. Any additional services not included in the Work shall be billed at the rates set out in the Schedule of Standard Rates attached to the Proposal but only after receiving written authorization from UNRBA to proceed. Said amounts shall be payable as follows: within 30 days of receiving an invoice from Consultant requesting payment (unless any amount is in dispute). All invoices shall specify the amount billed to each Task (or optional sub-Task) and shall specify the amounts to be paid for labor, materials, and any applicable taxes including, but not limited to, sales taxes. Any sales taxes shall specify the entity (state or local) to whom taxes are paid and the amount of taxes paid to said entity. If any amount owed under the terms hereof is disputed, UNRBA shall pay Consultant the amount not in dispute and shall retain the disputed amount until such time as the dispute is settled or a judgment is entered in accordance with applicable law. No payments shall be made to Consultant until IRS form W-9 and other necessary forms required by applicable law have been completed.

4. TERMINATION. This Agreement may be terminated by either party upon seven (7) days written notice should the other party fail substantially to perform in accordance with its terms through no fault of the party initiating the termination. Upon such termination, the parties shall be entitled to such additional rights and remedies as may be allowed by relevant law. UNRBA shall have the right to terminate this Agreement at any time without cause so long as UNRBA is not in breach of any of its material obligations hereunder. Consultant shall be compensated in full for work completed.

5. INSURANCE. The Consultant and any subcontractors performing any of the Work hereunder shall purchase and maintain during the life of this Agreement, with an insurance company acceptable to UNRBA, authorized to do business in the State of North Carolina, the following insurance:

AUTOMOBILE LIABILITY - Bodily injury and property damage liability insurance covering all owned, non-owned, and hired automobiles for limits for bodily injury of not less than \$1,000,000 per person/\$2,000,000 per accident, and property damage limits of not less than \$1,000,000 per accident. The automobile liability insurance coverage amounts may be satisfied with a combination of primary and excess/umbrella coverage.

COMMERCIAL GENERAL LIABILITY - Bodily injury and property damage liability shall protect the Consultant, and any subcontractor performing work under this contract, from claims of bodily injury or property damage which arise from operation of this contract, whether such operations are performed by contractor, any subcontractor, or anyone directly or indirectly employed by either. The amounts of such insurance shall not

be less than \$1,000,000 bodily injury each occurrence/\$2,000,000 aggregate and \$1,000,000 property damage each occurrence/\$2,000,000 aggregate. This insurance shall include coverage for products/completed operations, personal and advertising injury liability and contractual liability in an amount not less than \$1,000,000 each occurrence/\$2,000,000 aggregate. The liability insurance coverage amounts may be satisfied with a combination of primary and excess/umbrella coverage.

**WORKERS' COMPENSATION** - Meeting the statutory requirements of the State of North Carolina, even if not required by law to maintain such insurance. Said Workers' Compensation insurance shall have at least the following limits: Employers Liability - \$100,000 per accident limit, \$500,000 disease per policy limit, \$100,000 disease each employee limit.

**PROFESSIONAL LIABILITY INSURANCE** – Having policy limits of not less than \$1 million per claim and \$2 million annual aggregate, with coverage extending to all professional services of Consultant within the scope of this agreement.

UNRBA shall be named an additional insured under all such policies (except workers' compensation and professional liability). Original certificates of such insurance will be furnished and shall contain the provision that UNRBA will be given thirty (30) days written notice of any intent to amend or terminate by either the Consultant or the insuring company.

6. **INDEMNIFICATION.** Consultant agrees to protect, defend, indemnify and hold UNRBA, its employees and elected and appointed officials harmless from any and all liability arising out of or in any way connected with the activities of the Consultant, Consultant's employees, agents, sub-contractors and anyone else working for or on behalf of Consultant arising out of or from the Work.

7. **PROJECT LEADER.** Consultant shall designate a Project Leader primarily responsible for overseeing the Work. UNRBA shall be able to address all concerns about the Work to the Project Leader. The Executive Director shall be Consultant's primary contact for the project and all questions about the Work shall be addressed to the Executive Director.

8. **INDEPENDENT CONTRACTOR.** The Consultant shall be an independent contractor working for UNRBA pursuant to the terms of this Agreement. Neither party shall be construed to be an agent, partner, employee, or joint venturer of the other. No party shall exercise control over the manner in which the other party performs its duties hereunder except to assure compliance with this Agreement.

9. **NOTICE.** Any notice or other communication required or permitted under this Agreement shall be in writing and shall be deemed given as of (a) the date it is delivered by hand to the parties listed below; (b) the date three days following the date it is deposited in the mail, postage prepaid, return receipt requested, addressed to the parties listed below; or (c) the date three days following the date it is sent, shipping prepaid, return receipt requested, by a national courier service, addressed to the parties listed below:

UPPER NEUSE RIVER BASIN ASSOCIATION  
Attn: Executive Director  
PO Box 12276  
Research Triangle Park, NC 27709

CONSULTANT:

\_\_\_\_\_  
Attn: \_\_\_\_\_  
Title: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. NO ASSIGNMENT. Neither party may assign, delegate or otherwise transfer any of its rights or obligations under this Agreement without the prior written consent of the other party.

11. SUBCONTRACTORS. Consultant may not use any subcontractors to perform any part of the Work unless any such subcontractor is listed in the Project Documents as part of the Project Team. Consultant shall pay any subcontractor directly and UNRBA shall have no obligation to pay any subcontractor.

12. OWNERSHIP OF WORK. All work and any documents prepared by the Consultant shall be owned by UNRBA, and UNRBA shall have all common law, statutory and other reserved rights, including the copyright.

13. NON-DISCRIMINATION. Consultant shall not discriminate against any employee, applicant for employment, or subcontractor because of age, sex, race, creed, national origin, or disability.

14. COMPLIANCE WITH LAWS. Consultant represents that it is in compliance with all Federal, State, and local laws, regulations or orders. The implementation of this Agreement will be carried out in strict compliance with all Federal, State, or local laws regarding discrimination in employment.

15. PUBLIC RECORDS LAWS. As set out in N.C. Gen. Stat. §77-120(e), UNRBA is subject to the requirements for public records pursuant to Chapter 132 of the North Carolina General Statutes. As such, Consultant understands that communications, reports and other documents provided to UNRBA are public records.

16. NO THIRD PARTY BENEFICIARIES. Except as herein specifically provided otherwise, this Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors. It is expressly understood and agreed that the enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to Consultant and UNRBA. Nothing contained in this

document shall give or allow any claim or right of action whatsoever by any other third person. It is the express intention of Consultant and UNRBA that any such person or entity, other than Consultant and UNRBA, receiving services or benefits under this Agreement shall be deemed an incidental beneficiary only.

17. ENTIRE AGREEMENT. This Agreement constitutes the entire agreement of the parties with respect to the subject matter hereof. This Agreement shall supersede, terminate and replace any prior agreements for these services entered into by the parties. This Agreement merges all prior discussions among the parties and no party shall be bound by conditions, definitions, warranties, understandings, or representations concerning such subject matter except as provided in this Agreement or as may be specified later in writing and signed by properly authorized representatives of the parties.

18. NO WAIVER. The failure of a party in any instance to insist upon the strict performance of the terms of this Agreement shall not be construed to be a waiver or relinquishment of any of the terms of this Agreement, either at the time of the party's failure to insist upon strict performance or at any time in the future, and such term or terms shall continue in full force and effect.

19. GOVERNING LAW: JURISDICTION; VENUE. The construction and performance of this Agreement shall be governed by and construed pursuant to the laws of the State of North Carolina. Venue for any legal actions initiated concerning this Agreement or arising in any way from and out of this Agreement shall be brought in the appropriate state court sitting in Wake County, North Carolina, having jurisdiction over said claim. The parties waive any right they may have to venue in any other jurisdiction.

20. SEVERABILITY. Each clause of this Agreement is a distinct and severable clause; and if any clause is deemed illegal, void or unenforceable, the validity, legality and/or enforceability of the remaining clauses or portion of this Agreement shall not be affected thereby.

21. FORCE MAJEURE. If any party shall be delayed or prevented from the performance of any act required by this Agreement by reason of acts of God; strikes, lockouts, labor troubles, inability to procure materials or other cause, without fault and beyond the reasonable control of the party obligated (financial inability excepted), performance of such act shall be excused for the period of the delay, and the period for the performance of any such act shall be extended for a period equivalent to the period of such delay.

22. MUTUAL AGREEMENT. Neither party shall be considered the drafter of this Agreement. No provision shall be interpreted for or against either party because that party or that party's legal representative drafted such provision.

23. AMENDMENT. Any amendment to this Agreement shall be in writing and duly executed by appropriate representatives of each of the parties.

24. VOLUNTARY EXECUTION. By signing below the parties hereto certify that they have read the entire contents of this Agreement; have individually been afforded sufficient opportunity to obtain independent legal advice prior to executing this Agreement; fully understand the

provisions set forth in this Agreement and acknowledge that each term, condition and provision is fair and reasonable; and, that each party has received a signed copy of this Agreement.

[Remainder of Page Intentionally Left Blank; Signature Page Follows]

IN WITNESS WHEREOF, the parties have entered into this Agreement the day and year first above written.

UPPER NEUSE RIVER BASIN ASSOCIATION

By \_\_\_\_\_  
Pam Hemminger, Chair

\_\_\_\_\_

By \_\_\_\_\_

\_\_\_\_\_  
Name and Title