

Mobile Bay National Estuary Program
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April 15, 2019

**REQUEST FOR STATEMENT OF QUALIFICATIONS
TO PROVIDE BASELINE ASSESSMENTS TO INCLUDE SEDIMENT AND WATER
QUALITY ANALYSES FOR THE FLY CREEK, BAYOU SARA AND COLD CREEK,
WHITEHOUSE CREEK AND BAY MINETTE CREEK, PALMETTO CREEK,
PERDIDO/GULF FRONTAL, MOBILE-TENSAW APALACHEE, LOWER CHASAW,
WESTERN SHORE (OF MOBILE BAY), AND DAUPHIN ISLAND WATERSHEDS.**

The Mobile Bay National Estuary Program is seeking to procure qualified engineers, land surveyors, geoscience, or other similar professionals through a competitive, qualification-based selection process to perform baseline assessments to include sediment and water quality analyses at the 12-digit hydrologic unit code scale for watersheds slated for development of comprehensive watershed plans. These assessments include determination of bed and suspended sediment loads and water quality sampling to establish baseline data and sedimentation rating curves to inform subsequent watershed management planning. A Request for Proposals (RFP) process will be used to select a Contractor who can successfully deliver:

- Stream discharge data over a range from high to low flow at selected sites across drainage areas,
- Field parameters (including pH, specific conductance, salinity, turbidity, temperature, and dissolved oxygen) at each site for monitored discharge events with multiple, depth integrated measurements to establish vertical profiles,
- Bed sediment regression models to determine bed sediment transport rates at each site,
- Regression with Centering digital models developed based upon collection of water samples to determine total suspended sediment (TSS) concentrations with stream discharge data and nitrate and total phosphorus concentrations at each site, evaluation of land use with acquired field data and sediment and nutrient loads to determine likely sources of sediment and other water quality impairments, and
- A final report including descriptive text and supporting charts, graphs, and maps.

Interested firms should respond with a letter of interest, statements of qualification, firm brochures, and photographs of previous projects, experience and other relevant information.

Submit one hard copy and one electronic copy of the responses to the address below, as follows:

Ms. Roberta Swann, Director
Mobile Bay National Estuary Program
118 N. Royal St., Suite 601
Mobile, AL 36602
rswann@mobilebaynep.com

Proposals should be received no later than 4:00 p.m. CDT on Monday, May 6, 2019.

Summary of Offering

The Mobile Bay National Estuary Program has secured funding from the Alabama Gulf Coast Recovery Council and the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States (RESTORE) Act to continue undertaking a watershed approach to coastal environmental resource management that prescribes watershed management plans (WMPs) at the 12-digit hydrologic unit code scale to ensure restoration efforts are based in science and fit into an overall management plan. This approach is directed to areas draining to specific bodies of water, independent of geopolitical boundaries that limit available actions. The protocol of performing sediment loading and water quality analyses to inform watershed management planning efforts has been adopted by the MBNEP's Project Implementation Committee and incorporated into its Comprehensive Conservation and Management Plan (CCMP) five-year Ecosystem Restoration and Protection Strategy. Sediment and water quality analyses identify sources of sediment and establish baseline data and sedimentation rating curves useful to watershed planners. Contractors have utilized modeling techniques to determine bed and suspended sediment loads and identify point sources of sediment, including man-made and natural drainage ways. Monitoring is based on precipitation and resulting stream discharge and includes basic field acquired physical and water quality parameters useful in determining impacts of land-use change and to focus resources in areas of greatest need for remedial actions.

SUSPENDED SEDIMENT

The basic concept of constituent loads in a river or stream is simple. However, the mathematics of determining a constituent load may be quite complex. A constituent load is the mass or weight of a constituent that passes a cross section of a stream in a specified interval of time. Loads are expressed in mass units (e.g., tons, kilograms) and are considered for time intervals that are relative to the type of pollutant and the watershed area for which the loads are calculated. Loads are calculated from concentrations of constituents obtained from analyses of water samples and stream discharge, which is the volume of water that passes a cross section of the stream in a specific amount of time.

Suspended sediment is defined as that portion of a water sample that is separated from the water by filtering. This solid material may be composed of organic and inorganic material that includes algae, industrial and municipal wastes, urban and agricultural runoff, and eroded material from geologic formations (for example, sand and silt). These materials are transported to stream channels by overland flow related to storm-water runoff and cause varying magnitudes of turbidity. Concentrations of total suspended solids (TSS) in mg/L are determined by laboratory analysis of periodic water grab samples. Annual suspended sediment loads are estimated using the computer regression model *Regr_Cntr.xls* (Regression with Centering). The program is an EXCEL adaptation of the U.S. Geological Survey seven-parameter regression model for load estimation (Cohn et al., 1992). The regression with centering program uses average daily discharge and TSS to estimate annual loads.

BED SEDIMENT

Transport of streambed material is controlled by a number of factors primarily related to stream discharge and flow velocity, erosion and sediment supply, stream base level, and physical properties of the streambed material. Most streambeds are in a state of constant flux in order to maintain a stable base level elevation. The energy of flowing water in a stream is constantly changing to supply the required force for erosion or deposition of bed load to maintain equilibrium with the local water table and regional or global sea level. Stream base level may be affected by regional or global events including fluctuations of sea level or tectonic movement. Local factors affecting base level include fluctuations in the water table elevation, changes in the supply of sediment to the stream caused by changing precipitation rates, and/or land use practices that promote excessive erosion in the floodplain or upland areas of the watershed.

Bed sediment is composed of particles that are too large or too dense to be carried in suspension by stream flow. These particles roll, tumble, or are periodically suspended as they move downstream. Traditionally, bed sediment has been difficult to quantify due to deficiencies in monitoring methodology or inaccuracies of estimating volumes of sediment being transported along the streambed. This is particularly true in streams that flow at high velocity or in streams with excessive sediment loads.

NUTRIENTS

Excessive nutrient enrichment is a major cause of water-quality impairment. Excessive concentrations of nutrients, primarily nitrogen and phosphorus, in the aquatic environment may lead to increased biological activity, increased algal growth, decreased dissolved oxygen concentrations at times, and decreased numbers of species.

NITRATE

The U.S. Environmental Protection Agency (USEPA) Maximum Contaminant Level (MCL) for nitrate in drinking water is 10 mg/L. Typical nitrate (NO₃ as N) concentrations in streams vary from 0.5 to 3.0 mg/L. Concentrations of nitrate in streams without significant nonpoint sources of pollution vary from 0.1 to 0.5 mg/L. Streams fed by shallow groundwater draining agricultural areas may approach 10 mg/L (Maidment, 1993). Nitrate concentrations in streams without significant nonpoint sources of pollution generally do not exceed 0.5 mg/L (Maidment, 1993). ADEM established a reference standard for nitrate+nitrite nitrogen for level IV ecoregion 65f (including the MTA) of 0.33 mg/L.

PHOSPHORUS

Phosphorus in streams originates from the mineralization of phosphates from soil and rocks or runoff and effluent containing fertilizer or other industrial products. The natural background concentration of total dissolved phosphorus is approximately 0.025 mg/L. Phosphorus concentrations as low as 0.005 to 0.01 mg/L may cause algae growth, but the critical level of phosphorus necessary for excessive algae is around 0.05 mg/L (Maidment, 1993). Although no official water-quality criterion for phosphorus has been established in the United States, total phosphorus should not exceed 0.05 mg/L in any stream or 0.025 mg/L within a lake or reservoir in order to prevent the development of biological nuisances (Maidment, 1993). ADEM established a reference standard for total phosphorus for level IV ecoregion 65f (including the MTA) of 0.04 mg/L.

Concentrations of nitrate and total phosphorus, in mg/L, are determined by laboratory analysis of periodic water grab samples. Total phosphorus loads are estimated using the computer regression model *Regr_Cntr.xls* (Regression with Centering). The program is an EXCEL adaptation of the U.S. Geological Survey seven-parameter regression model for load estimation (Cohn et al., 1992). The regression with centering program uses average daily discharge and constituent concentrations to estimate annual loads.

LAND USE

Land use is directly correlated with water quality, hydrologic function, ecosystem health, biodiversity, and the integrity of streams and wetlands. Land-use patterns, when evaluated with stream discharge and water-quality data, can be an essential part of an overall assessment strategy to determine sources of water-quality impacts, to support watershed management, and to develop remedial actions. Land use classification for this project area will be determined from the U.S. Department of Agriculture (USDA) National Agricultural Statistics Service 2013 Alabama Cropland Data Layer (NASS CDL) raster dataset (USDA, 2013).

Objectives

- The contractor will consider locations; proximity to wetlands, impoundment, and tidal influence; accessibility; and stream channel and flow characteristics to determine sampling sites in all accessible tributary locations in each watershed.
- The contractor will conduct sampling across the range of precipitation events to determine stream discharge rates, basic field parameters, and targeted constituent loads, including suspended sediment, bed sediment, nutrients (e.g., nitrate and phosphorus).
- The contractor will evaluate current land use with acquired field data and sediment and nutrient loads to determine likely sources of sediment and other water quality impacts in the watershed.

Scope of Work and Deliverables

Work elements and deliverables will include:

1. The contract will develop a sampling strategy and determine site locations designed to comprehensively determine general water quality, physical characteristics, volumes and sources of sediment, and nutrient loading.
2. The contractor will measure or estimate stream discharge over a range from low to high flow at each sampling site within the watershed.
3. The contractor will collect field parameters at all sampling sites for each monitored discharge event, including pH, specific conductance, salinity, turbidity, temperature, and dissolved oxygen. Multiple depth-integrated measurements will be made at determined sites to establish vertical profiles for field parameters.
4. The contractor will measure bed sediment transport rates at all applicable sites for each monitored discharge event. The contractor will use bed sediment transport rates and stream discharge to prepare a bed sediment load regression model to determine bed sediment loads at each monitored site.
5. The contractor will collect water samples at each sampling site for each monitored discharge event and submit samples to a certified geochemical laboratory for analysis of TSS concentrations. The contractor will use TSS concentrations and stream discharge with the Regression with Centering digital model to estimate suspended sediment loads at each monitored site.
6. The contractor will collect water samples for each monitored discharge event at each sampling site and submit samples to a certified geochemical laboratory for analysis of nitrate and total phosphorus concentrations. The contractor will use analytical results and stream discharge with the Regression with Centering digital model to estimate nitrate and phosphorus loads at each sampling sites.
7. The contractor will evaluate current land use with acquired field data and sediment and nutrient loads to determine likely sources of sediment and other water quality impacts in the watershed.
8. The contractor will prepare a final report including describing narrative and supporting charts, maps, and graphs, and provide a digital version of the report.

Proposal Submittal Instructions

The Proposal should be not more than **ten 8.5" X 11" single-sided pages, Times New Roman 11-point font (inclusive of the cover letter, conceptual approach, experience and background, and project team/level of participation)**, and should be divided by section, with Table of Contents (**cover pages and table of contents do not count against the 10-page limit**).

An original hard copy Statement shall be received by mail or hand-delivered to the **Mobile Bay National Estuary Program (Attn: Bethany Dickey), 118 North Royal Street Suite 601, Mobile, AL 36602**. An electronic copy in PDF format should be delivered on CD or jump drive or email to **bdickey@mobilebaynep.com**.

Submitted Proposals shall include a complete response to the requirements in the order presented below. Statements should provide a straight-forward delineation of the **Respondent's** capability to satisfy the intent and requirements of this RFP without redundancies or conflicting statements. An officer authorized to make a binding commitment for the **Respondent** submitting the Proposal shall sign the Cover Letter. Contents of the submitted Proposal must include the following to be deemed responsive for evaluation:

A. Cover Letter

The Proposal must include a cover letter acknowledging receipt of all issued amendments to the RFQ. The letter should be addressed to: **Roberta Swann, Director, Mobile Bay National Estuary Program, 118 North Royal St. Suite 601, Mobile, AL 36602**.

- The letter should indicate a primary contact for the **Respondent** and that person's name, title, address, phone number, and email address.
- The letter should introduce the **Respondent's** project team.
- The letter should include a general statement of approach distinguishing why the **Respondent** is the most suitable choice for this planning effort.
- The letter should include the statement that the Project Team is willing to complete the Project in a timely manner.
- The letter must include a statement that the firm is not in arrears in the payment of any obligation due and owing to the State of Alabama, including tax payments and employee benefits, and that it shall not become so during the term of the agreement if selected; a statement that the proposing **Respondent** will negotiate in good faith with the MBNEP, and a statement that the firm grants to the MBNEP a non-exclusive right to use, or cause others to use, the contents of its Statement, or any part thereof, for any purpose.

B. Conceptual Approach and Methodology

Respondents are requested to demonstrate their understanding of this process by submitting a conceptual approach and methodology for project implementation. This narrative should articulate the **Respondent's** methods and approach of:

- Determining appropriate and representative sampling sites.
- A strategy for data collection over the range of stream discharge from low to high.
- A strategy for collecting and quantifying bed and suspended sediment loads.
- Strategy for evaluating land use to determine sources of sediment and water quality impacts.

C. Experience and Background

Given the unique nature of the Project and its importance as a precedent for watershed management planning, it is essential to fully understand the experience and capabilities of all key members of the contractor’s team. Respondent should include the following information:

- Describe contractor’s experience in projects of similar scope.
- Provide the names and phone numbers of references for at least two completed projects for which the contractor acted as consultant and may be considered comparable to the project envisioned in this RFP. For each reference, indicate the contact person’s role in the completed project and the period of their involvement.

Proposal Evaluation and Contract Award Procedures

A. Project Selection Criteria

All proposals accepted by the MBNEP will be reviewed to determine whether they are responsive to the requisites of this RFP. Proposals that are determined by the MBNEP to be non-responsive will not be further considered. The MBNEP will evaluate proposals based on the project selection criteria below.

- a. Specialized expertise, capabilities, and technical competence, as demonstrated by the proposed approach and methodology to meet project requirements.
- b. Resources available to perform the work, including any specialized services within the specified time limits for the project.
- c. Record of past performance, quality of work, ability to meet schedules, cost control, and contract administration.
- d. Availability to and familiarity with the project locale.
- e. Proposed project management techniques.
- f. Ability and proven history in handling special project contracts.

B. Evaluation Criteria

Proposals will be evaluated based on the following criteria:

Demonstrated Quantity and Quality of Successful Relevant Experience	(50 points)
Demonstrated Level of Organizational Capability	(25 points)
Quality of Program Approach	(25 points)

C. Basis for Contract Award

A contract will be awarded to the responsible proposer whose proposal is determined to be the most advantageous to the MBNEP, taking into consideration the price and such other factors or criteria which are set forth in this RFP. Greater consideration will be given to proposers that propose a match or in-kind services with their price proposal. Contract award will be subject to the timely completion of contract negotiations between the MBNEP and the selected proposer.

MBNEP reserves the right to reject all proposals, negotiate further with any entity submitting proposals, or seek additional proposals. Selection is estimated to occur on or before May 30, 2019.

Non-Discrimination. The Mobile Bay National Estuary Program does not discriminate on the basis of race, color, religion, age, gender, pregnancy, national origin, genetic information, veteran status, or disability in its hiring or employment practices nor in admission to, access to, or operations of its programs, services, or activities.

Open Trade. By submitting a proposal, the Submitter represents that he/she and the business entity he/she represents is not currently engaged in the boycott of a person or entity based in or doing business with a jurisdiction with whom the State of Alabama can enjoy open trade, as defined in Act 2016-312.

Non-Commitment of Funds. Any contract related to this proposed project is subject to the availability of funds and/or the needs of the Mobile Bay National Estuary Program and therefore the MBNEP, at its discretion, may or may not issue a final contract as a result of this RFQ. Further, even in the event an initial selection is made by the MBNEP, no selection is final until full execution of a written agreement detailing an agreed upon scope of work. If the MBNEP deems, at its sole discretion, that a satisfactory agreement cannot be reached in accordance with an initial selection; the MBNEP reserves the right to proceed with efforts to make another selection based upon proposals submitted pursuant to this RFQ.

Open Records Act. All responses received will be subject to the Alabama Open Records Act, Ala. Code § 36-12-40, (1975), as amended, and may be subject to public disclosure upon request.