



**Addendum #1
January 17, 2024**

**Town + Gown Request for Proposals
Regional-Scale Nutrient Assessment for the NYC Water Supply Watersheds**

This Addendum #1 amends the RFP for the Regional-Scale Nutrient Assessment for the NYC Water Supply Watersheds project under the Consortium Contract that was released on December 5, 2023 (the DEP T+G RFP).

The Consortium Contract requires that this Addendum #1 become part of the requirements for the DEP T+G RFP and sent to all Consultants to which the DEP T+G RFP was issued. In addition, the Consortium Contract requires each Consultant submitting a Proposal in Response to acknowledge receipt of this Addendum #1 to the DOT T+G RFP, by attaching an original signed copy of this Addendum #1 to its Proposal in Response.

1. This Addendum #1 amends Article 1, B of the DEP T+G RFP to change the date for Proposal submission as follows:

B. Due Date for Receipt of Proposals in Response. Consultants shall submit their Proposals in Response ONLY via email, no later than 5:00 P.M., February 20, 2024, to Maria Ohringer, Deputy ACCO, at MOhringer@dep.nyc.gov. Please note that there is a 5 MB file size limit. If a Consultant chooses not to submit a Proposal in Response, such Consultant shall submit a No Bid Response form (which is attached to this document as Attachment A for the purpose of convenience and is downloadable from the Town+Gown website at (<http://www1.nyc.gov/site/ddc/about/town-gown-advisory-council.page>) no later than 5:00 P.M., February 20, 2024, to Maria Ohringer, Deputy ACCO, at MOhringer@dep.nyc.gov

2. This Addendum #1 amends, in its entirety, the Scope of Work and Project Plan and Estimated Duration of Project, including Schedule in Article 2, B of the DEP T+G RFP as follows:

Scope of Work

Task 1: MODEL SELECTION and PILOT APPLICATION - To pilot the use of watershed models with tools that describe changes in nutrient inputs (sources and source types) to the watershed to identify nutrient sources and delivery to sub-basins and individual reaches in subbasins and create a path forward in nutrient (phosphorus and nitrogen) mass balance and trend analyses for the NYC watershed based on recommendations and preliminary analyses provided by the National Academy of Science, Medicine and Engineering (NASEM, 2020).

Task 1 Objectives:

- Screen and select tools to use for mass balance (input and output) calculations (such as SPARROW) and trend analysis (such as WRTDS) and determine which statistical models are appropriate for this region.
- Run models and analyses for pilot test sites based on selected tools for total and dissolved forms of phosphorus and nitrogen. Where possible, use models to evaluate changes in carbon and suspended sediment.
- Account for water quality trends using a mass balance and WRTDS approach.

Task 1 Details:

- Evaluate analysis tools mentioned above and propose options to DEP for optimizing data and tools to meet the goals of the project in a workshop format.

Deliverable: Workshop with DEP with PowerPoint presentation

Proposed Schedule: months 1-2

- Identify and gather historical data sources available. Assess the type, quantity and quality of data available to determine if data sources are sufficient to inform models and desired analysis.

Deliverable: Data catalog with metadata to DEP

Proposed Schedule: months 3-4

- Test of pilot watersheds for the model application

Deliverable: Test

Proposed Schedule: months 3-8

- Prepare a status report summarizing analysis tools and workshop results (in collaboration with DEP) as a justification for applying the selected tools and examples from pilot test.

Deliverable: Draft status report for DEP review/feedback

Proposed Schedule: month 9

Deliverable: Completed status report

Proposed Schedule: month 10

Task 2: REGIONAL APPLICATION - Apply the selected approach to all basins in the NYC watershed, as practicable (based on data availability and budget). Specifically, account for the impacts that NYC reservoirs and watershed source water protection efforts in the Delaware River watersheds have had on the water quality of the Delaware System reservoirs (Pepacton, Neversink, Cannonsville), Delaware River tailwaters and, if possible, main stem to the Delaware Bay.

Task 2 Objectives:

- Determine how trends in nutrient inputs identified in Task 1 have impacted the outflows (tailwaters) of Neversink, Pepacton, and Cannonsville Reservoirs, and the Delaware River main stem downstream.
- Determine how trends in nutrient inputs for selected sub-basins compare throughout the watershed identify reflect watershed protection benefits.
- Identify areas of concern for watershed protection.

Task 2 Details:

- Use DEP (and other) monitoring (meteorological and hydrological) data collected under Task 1 to understand trends in the NYC watershed using the selected statistical tools. The DEP water quality monitoring program and others have generated a very robust set of water quality data for streams and reservoirs in the NYC watershed and have an ongoing need for the most accurate trend analysis.
- In conjunction with selected models and tools, evaluate trends using weighted regressions on time, discharge and season (WRTDS) at sites with sufficient data.

- Use the selected model approaches to analyze flux of certain pollutants and account for interannual variation in precipitation over longer periods of time.
- Focusing first on the Delaware River basins (Pepacton, Cannonsville, and Neversink), and expanding to other parts of the NYC water supply watersheds as practicable, the Consultant, as Academic Partner, will:
 - Use the selected statistical approach (e.g., the SPARROW model) and/or any of the dynamic applications that have become available using and building on any regional statistical models (e.g., SPARROW) to identify the largest contributing areas for phosphorus and nitrogen and get a picture of the overall spatial patterns of nutrient sources.
 - Alternatively, create accounting for nutrient sources to inform changes in the sources, reservoir pollutant loads, and outflow.
 - Use WRTDS to compare sub-basin empirical trend results first in Delaware basin watersheds, and in other portions of the NYC watersheds.
- Graphically depict and summarize any changes/trends associated with NYC watershed protection investments and water quality trends in the Delaware basins and describe those changes that may affect the river main stem and outflow from the reservoirs using the tools mentioned above.

Proposed Schedule: months 11-21

- Prepare and submit a final report.

Deliverable: Table of Contents to DEP for review/feedback in preparation for final report

Proposed Schedule: month 22

Deliverable: Draft final report to DEP for review/feedback

Proposed Schedule: month 23

Deliverable: Submit final report that incorporates DEP reviewer's comments

Proposed Schedule: month 24

Project Plan and Estimated Duration of Project, including Schedule. The Project is expected to cover a full 24-month period. DEP estimates the timeframe for Tasks 1 and 2, as described above as follows:

Months 1-2:

- a. Make contacts with DEP staff to initiate project.
- b. Identify statistical models and data requirements.
- c. Convene a meeting of stakeholders (various DEP staff and watershed stakeholders identified by DEP) to get input on how the results can be applied. (Deliverable)

Months 3-10:

- a. Gather data, harmonize data, create a data catalog with metadata.
- b. Test analysis approach(es) and apply to a subset of the watershed.
- c. Prepare status report on findings. (Deliverable)
- d. Provide to stakeholders and acquire feedback for next steps.

Months 11-21:

- a. Expand application to wider watershed area.
- b. Evaluate water quality trends.
- c. Identify/characterize nutrient contributing areas.
- d. Summarize results.

Months 22-24:

- a. Prepare a final report (begin with an approved Table of Contents - Deliverable).
- b. Submit for review and respond to DEP reviewer comments.
- c. Finalize report incorporating feedback from reviewers. (Deliverable)

All other terms and conditions in the DEP T+G RFP remain unchanged.

Institution Name: _____

Acknowledged by: _____

Title: _____

Date: _____

[NOTE: to be attached to Proposal in Response]