# ORDER FOR SUPPLIES OR SERVICES



IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER: 10/05/2018

2. CONTRACT NO. (If any): EP-C-17-046

3. ORDER NO.: 68HE0C18F0908

4. REQUISITION/REFERENCE NO.: PR-R1-18-00351

5. ISSUING OFFICE (Address correspondence to):
CPOD
US Environmental Protection Agency
26 West Martin Luther King Drive
Mail Code: W136
Cincinnati OH 45268-0001

6. SHIP TO:
a. NAME OF CONSIGNEE: Region 1
b. STREET ADDRESS: US Environmental Protection Agency
5 Post Office Square
c. CITY: Boston
d. STATE: MA
e. ZIP CODE: 02109-3912
f. SHIP VIA

7. TO: George Townsend
a. NAME OF CONTRACTOR: TETRA TECH, INC.
b. COMPANY NAME
c. STREET ADDRESS: 10306 EATON PL STE 340
d. CITY: FAIRFAX
e. STATE: VA
f. ZIP CODE: 22030

8. TYPE OF ORDER
☐ a. PURCHASE
REFERENCE YOUR:
Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.
☒ b. DELIVERY
Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.

9. ACCOUNTING AND APPROPRIATION DATA

10. REQUISITIONING OFFICE: R1 Lab

11. BUSINESS CLASSIFICATION (Check appropriate box(es))
☐ a. SMALL ☒ b. OTHER THAN SMALL ☐ c. DISADVANTAGED ☐ d. WOMEN-OWNED ☐ e. HUBZone
☐ f. SERVICE-DISABLED VETERAN-OWNED ☐ g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM ☐ h. EDWOSB

12. F.O.B. POINT: origin-

13. PLACE OF
a. INSPECTION: Destination
b. ACCEPTANCE: Destination

14. GOVERNMENT B/L NO.

15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date): 1 Days After Award

16. DISCOUNT TERMS

17. SCHEDULE (See reverse for Rejections)

| ITEM NO. (a) | SUPPLIES OR SERVICES (b) | QUANTITY ORDERED (c) | UNIT (d) | UNIT PRICE (e) | AMOUNT (f) | QUANTITY ACCEPTED (g) |
|---|---|---|---|---|---|---|
| | DUNS Number: 198549560<br>AWARD NUMBER: EP-C-17-046<br>Technical Support for TMDL - Application of Technical Approach for Establishing Nitrogen Thresholds and Allowable Loads for Three LIS Watershed Groupings<br>Continued ... | | | | | |

18. SHIPPING POINT

19. GROSS SHIPPING WEIGHT

20. INVOICE NO.

17(h) TOTAL (Cont. pages): $0.00

21. MAIL INVOICE TO:
a. NAME: RTP Finance Center
b. STREET ADDRESS (or P.O. Box): US Environmental Protection Agency
RTP-Finance Center (AA216-01)
109 TW Alexander Drive
www2.epa.gov/financial/contracts
c. CITY: Durham
d. STATE: NC
e. ZIP CODE: 27711

SEE BILLING INSTRUCTIONS ON REVERSE

17(i) GRAND TOTAL: $0.00

22. UNITED STATES OF AMERICA BY (Signature)

23. NAME (Typed): Sandra Stargardt-Licis
TITLE: CONTRACTING/ORDERING OFFICER

# ORDER FOR SUPPLIES OR SERVICES
## SCHEDULE - CONTINUATION



IMPORTANT: Mark all packages and papers with contract and/or order numbers.

| DATE OF ORDER | CONTRACT NO. | ORDER NO. |
|---|---|---|
| 10/05/2018 | EP-C-17-046 | 68HE0C18F0908 |

| ITEM NO. (a) | SUPPLIES/SERVICES (b) | QUANTITY ORDERED (c) | UNIT (d) | UNIT PRICE (e) | AMOUNT (f) | QUANTITY ACCEPTED (g) |
|---|---|---|---|---|---|---|
| | TOCOR: Ray Cody Max Expire Date: 10/31/2020<br>InvoiceApprover: Ray Cody Alt Invoice App:<br>Karen Simpson<br>Admin Office:<br>CPOD<br>US Environmental Protection Agency<br>26 West Martin Luther King Drive<br>Mail Code: NWD<br>Cincinnati OH 45268<br>Period of Performance: 10/05/2018 to<br>10/31/2019 | | | | | |
| 9999 | REQUEST FOR ZERO DOLLAR ACTION<br><br>Accounting Info:<br>00-ZERO-DOLLAR-ADMIN-REQ BFY: 00<br>Fund: ZERO Budget Org: DOLLAR Program<br>(PRC): ADMIN Budget (BOC): REQ<br>Funding Flag: Partial<br>Funded: $0.00 | | | | 0.00 | |

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) $0.00

**EPA-B-16-102 ESTIMATED COST AND FIXED FEE**

(a) The estimated cost of this contract is $(b)(4)

(b) The fixed fee is (b)(4)

(c) The total estimated cost and fixed fee is **$219,413**

**EPA-B-32-101 LIMITATION OF FUNDS NOTICE**

a) Pursuant to the Limitation of Funds clause, incremental funding in the amount of is (b)(4) allotted to cover estimated cost. Funding in the amount of (b)(4) is provided to cover the corresponding increment of fixed fee. The amount allotted for costs is estimated to cover the contractor's performance through **10/31/2019**.

(b) When the contract is fully funded as specified in the Estimated Cost and Fixed Fee Clause (EPA-B-16-102), the Limitation of Cost clause shall become applicable.

(c) Recapitulation of Funds

| Base Period (11/1/2018 - 10/31/2019) | | | |
|---|---|---|---|
| | | | |
| | **Estimated Cost** | **Fixed Fee** | **Cost Plus Fixed Fee** |
| Task Order Award (Base Period) | (b)(4) | | $219,413.00 |
| | | | |
| | | | |
| Total Funded | | | $219,413.00 |
| Total Task Order | | | $219,413.00 |
| Balance Unfunded | | | $0.00 |

**EPA-F-12-101 PERIOD OF PERFORMANCE**

The period of performance of this contract shall be from **11/01/2018** through **10/31/2019** exclusive of all required reports.

**EPA-G-42-101 CONTRACT ADMINISTRATION REPRESENTATIVES**

Task Order Contracting Officers Representatives (CORs)/Project Officers for this contract are as follows:

Task Order COR (TOCOR): Ray Cody; cody.ray@epa.gov; 617-918-1366

Alternate Task Order COR (Alt TOCOR): Karen Simpson; simpson.karen@epa.gov; 617-918-1672

Contracting Officials responsible for administering this contract are as follows:

Contracting Officer: Angela Lower; lower.angela@epa.gov; 513-487-2036

Contract Specialist: Lisa Mitchell-Flinn; mitchell-flinn.lisa@epa.gov; 513-487-2852

# Performance Work Statement (PWS)

for

# Phase II of the Application of Technical Approach for Establishing Nitrogen Endpoints and Allowable Loads for Three LIS Watershed Groupings

U.S EPA, TSAWP II Multiple Award Contract
Contract EP-C-17-046
TO RFP PR-R1-18-00351
TASK ORDER 68HE0C18F0908

September 28, 2018

## I. Objective

The objectives of this Performance Work Statement (PWS) are to assist EPA with: (1) refining and completing the technical approach to recommend nitrogen endpoints and load reductions necessary to protect water quality in embayments and tributaries of the Long Island Sound (LIS) as begun under Phase I; (2) responding to technical comments from a formal Technical Review process and from the public during a public comment period; (3) collaborating and communicating with other LIS nitrogen reduction efforts such as those from the Long Island Sound Nitrogen Action Plan (LINAP), Suffolk County, and the Connecticut Department of Energy and Environmental Protection (CTDEEP); (4) identifying gaps in the LIS water quality monitoring body of data; & (5) using suggested reduction levels to develop nitrogen allocations for 23 priority LIS embayments based on the technical approach;

## II. Background

Hypoxia, defined as dissolved oxygen (DO) levels of less than 3 mg/L, is a common occurrence in Long Island Sound (LIS) bottom waters during the summer, affecting up to half of its area in some years (Figure 1). In LIS, nitrogen is the primary limiting nutrient for algal growth. Impairments linked to excess discharges of nitrogen (N) include harmful algal blooms, low DO, poor water clarity, loss of submerged aquatic vegetation and tidal wetlands, and coastal acidification.

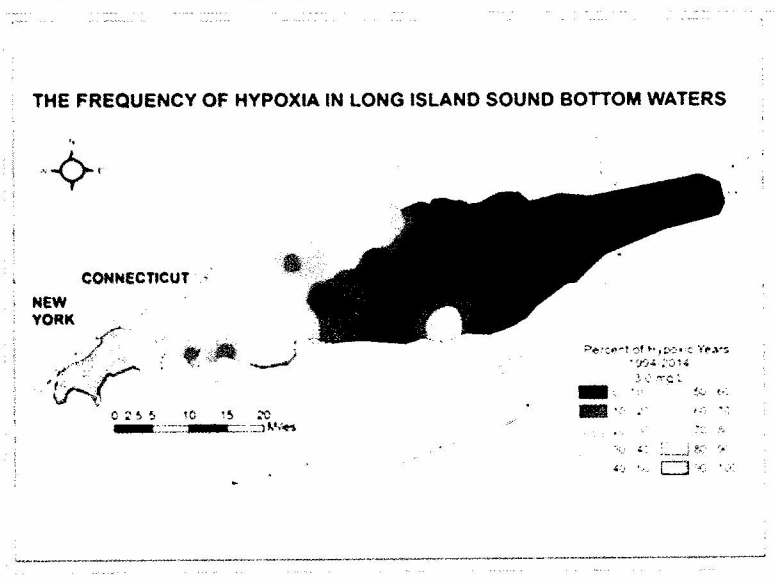


*Figure 1 Hypoxia can affect as much as half of LIS*

The Long Island Sound Study (LISS) has focused on understanding the drivers of hypoxia and developing tools to support N management. The LISS developed and, in 1998, adopted *Phase III Actions for*

*Hypoxia Management* that identified the sources and loads of N to LIS and recommended N reduction targets.

In 2000, Connecticut and New York incorporated these targets into a Total Maximum Daily Load to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound (LIS TMDL). The LIS TMDL allocated a 58.5 percent N reduction to in-basin sources of enriched N (with a 10 percent reduction allocated to nonpoint sources and the remainder assigned to point sources). In addition, the LIS TMDL identified actions and schedules to reduce N from tributary sources (25 percent reduction to point sources, 10 percent reduction to nonpoint sources) and atmospheric sources (an 18 percent reduction), and to implement non-treatment alternatives (e.g. bioextraction, aeration, etc.) necessary to fully attain DO water quality standards.

Based on monitoring and modeling efforts to this day, current and planned actions by the States are expected to fall short of fully implementing the 2000 TMDL and will be insufficient to address other adverse impacts to water quality in Long Island Sound, and its embayments and near shore coastal waters.

EPA has developed a Nitrogen Reduction Strategy (Strategy) to aggressively continue progress on nitrogen reductions - in parallel with the States' continued implementation of the 2000 TMDL - and achieve water quality standards throughout Long Island Sound and its embayments and near shore coastal waters. The strategy recognizes that more work must be done to reduce nitrogen levels, further improve DO conditions, and address other nutrient-related impacts in Long Island Sound. EPA's Strategy expands the focus of the 2000 TMDL to include other nutrient-related adverse impacts to water quality, such as loss of eelgrass, that affect many of LIS's embayments and near shore coastal waters. Expanding the focus in this way will help restore and protect these important habitats from a range of nutrient-caused impairments, ensuring that water quality standards are achieved in near shore waters as well as supporting the attainment of water quality standards in the open water portion of the Sound.

The Strategy is organized by three priority watershed groupings: 23 priority embayments, 3 large riverine systems (Connecticut, Thames and Housatonic), and Western LIS. To advance the goals of the Strategy, EPA retained contractor support from Sept 2016 thru March 2018 (Phase I) to develop a technical approach to recommend nitrogen endpoints necessary to protect water quality in embayments and tributaries of the Long Island Sound (LIS). The Contractor then applied this technical approach to calculate suggested nitrogen reduction levels in 23 priority embayments, the Eastern and Western Narrows, and three major tributaries to the LIS. All deliverables from this contract can be found at: http://longislandsoundstudy.net/issues-actions/water-quality/nitrogen-strategy/.

The purpose of this Performance Work Statement is to continue the work that was completed in Phase I by:

- responding to technical questions and comments on said deliverables that arise from public and technical stakeholder's reviews, as well as a formal technical review;

- enhancing communication and coordination between the Strategy and similar LIS nitrogen management efforts such as those from LINAP, Suffolk County and CTDEEP;
- evaluating gaps in the body of available water quality data for LIS; and
- enhancing and completing technical deliverables that have already been started under the first phase of the Strategy.

## III. Performance Work Statement

### Task 1. Modification of Phase I Quality Assurance Project Plan (QAPP)

A QAPP was developed under Phase I of this Project (Phase I QAPP). Refer to http://longislandsoundstudy.net/wp-content/uploads/2016/02/January-11-2017_TO-23-QAPP_LIS-N-Thresholds-and-Allowable-Loads-1.pdf

Because a second phase was not contemplated in the Phase I QAPP, the Phase I QAPP will need to be amended with a description of the second phase of work and a new schedule. The QAPP will also need to incorporate the inclusion of additional waters (e.g., Subtask 3A: Little Narragansett River) and the collection of additional data (if any) (e.g., Task 6: Connecticut River).

Modification (if any) of the Phase I QAPP for Phase II purposes will require submittal to the TOCOR and Project Team Leader, and eventually to EPA's Regional Quality Assurance Unit (QAU) for approval.

QAPPs ordinarily require approval prior to, or as near to initiation of project activities as possible. The Contractor shall begin consideration and development of a QAPP for Phase II upon initiation of the project or as soon thereafter as possible but before QA/QC work- related actions. This QAPP shall be provided to EPA in draft within one (1) month of the Project Kickoff Meeting.

Quality assurance requirements and guidance provisions are set forth generally under Section 2.6 of Attachment 1 (PWS) to the *Technical Support for Assessment and Watershed Protection* (TSAWP II) Multiple Award Contract (MAC), and more specifically under Section 2.6.3 of TSAWP II MAC. Refer also to EPA Region-specific QAPP guidance and models (i.e., templates) including:

- General: EPA Guidance for Quality Assurance Project Plans (EPA QA/G-5), December 2002, EPA/240/R-02/009,
- Modeling (e.g., TMDL): EPA New England Draft Generic Modeling Quality Assurance Project Plan and Quality Assurance Checklist
- Use of Secondary Data: EPA New England QAPP Guidance for Projects Using Secondary Data
- Data Review:
    - EPA New England Environmental Data Review Program Guidance (2013)
    - EPA New England Environmental Data Review Supplement

For modeling, refer also to: https://www.epa.gov/quality/design-and-implementation-new-tools- quality-assurance-modeling

Task 1 Deliverables

- Amended Phase I QAPP for submittal to EPA Region 1 QAU (1 month after Kickoff Mtg)
- Incorporation of modifications to QAPP to support approval of QAPP by QAU

## Task 2. Project Management and Administration

This task includes subtasks related to administration, management and coordination of the project.

EPA's Project Team will consist of:

- **Leah O'Neill:** EPA Region 1, Project Team Leader (oneill.leah@epa.gov; 617.918.1633)
- **Mark Tedesco:** EPA LIS Office, Project Technical Lead (tedesco.mark@epa.gov; 203.977.1542)
- **Bob Nyman:** Project Technical Advisor, (nyman.robert@epa.gov; 212.637.3809)
- **Dan Arsenault:** Project Technical Advisor, (Arsenault.dan@epa.gov; 617.918.1562)

The Project Team will be coordinating with multiple stakeholders, including, but not limited to, the Connecticut Department of Energy and Environmental Protection (CTDEEP), New York State Department of Environmental Conservation (NYSDEC), Massachusetts Department of Environmental Protection (MassDEP), New Hampshire Department of Environmental Services (NHDES), Vermont Department of Environmental Conservation (VTDEC), Rhode Island Department of Environmental Management (RIDEM), New England Interstate Water Pollution Control Commission (NEIWPCC), Connecticut River Conservancy (CRC), other local watershed groups, and additional partners where appropriate as determined by Project Team Leader.

All correspondence (emails, reports, etc.) shall be addressed to the members of the Project Team, butdirected to the attention of the Project Team Leader; the Project Team Leader will be responsible for forwarding all correspondence to the Project Team. **Ray Cody** will serve as the Task Order Contracting Officer Representative (TOCOR; formerly, Task Order Project Officer (TOPO)). Except as provided, the Contractor shall copy (i.e., cc) the TOCOR on all correspondence. The TOCOR is the only authorized individual to provide technical direction to the contractor. In his absence the Alternate TOCOR, Karen Simpson or the CL-COR or Contracting Officer can provide Technical Direction. Please see the contract clause **EPAAR 1552.237-71**, Technical Direction for further information.

Provisions for Deliverables are generally set forth under Section 4.0 of the *Technical Support for Assessment and Watershed Protection* (TSAWP II) PWS. To the extent the following is not inconsistent with Section 4.0, EPA intends to provide all formal reports produced under this contract for public dissemination, in whole or in derivative documents, as appropriate. The Contractor shall always provide draft versions of any spreadsheets, calculations or reports. EPA and its stakeholders may review and comment on draft deliverables / submittals. If so, then the Contractor shall incorporate any such comments into a final version(s). For communiques and reports, the Contractor shall use standard computer software (e.g., Adobe Acrobat, MS Word, MS Excel, MS PowerPoint). All other software (e.g., computer models) must utilize publicly-available non-proprietary code. In addition, software application

files, if delivered to the Government, must conform with Section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794(d)). [1] Refer to http://www.section508.gov/, Section (c) under C-1 of the TSAWP Multiple Awardee Contract and Sections 2.6.3.4 and 4.5 of the TSAWP PWS.

Provisions for invoicing are generally set forth under Section G of the TSAWP Multiple Award Contract, entitled LOCAL CLAUSES 1552.232-70 SUBMISSION OF INVOICES (JUN 1996) DEVIATION. To the extent the following is not inconsistent with Section G, then to ensure timely administration, invoices shall be submitted promptly within the first week of each calendar month. Invoices shall be directed to the TOCOR. The TOCOR will distribute as appropriate to the Project Team Leader and/or the Project Team for review and consideration, as appropriate. Invoices shall, among other things, summarize the Contractor's work for the billing month, project anticipated work for the next billing period(s), identify and anticipate any problems that may impact the project or its schedule, and specify and identify the billable hours and other direct costs on a Task and Subtask basis. In its response to this PWS, the Contractor may add one or more specific Subtasks or line items under this Task for its general administration of the project.

### Subtask 2A. Kickoff Teleconference

The Contractor shall initiate a project kick-off teleconference with the project team. For this meeting, EPA will make available any additional technical references or other supplemental data, information, or memorandums that may assist the Contractor.

Subtask 2A Deliverables

- Kickoff teleconference within two (2) weeks of Task Order issuance.
- Kickoff teleconference summary (including action items, scheduling adjustments, etc.) within one (1) week of kickoff call.

### Subtask 2B. Conference Calls, Meetings, Webinars; Project Team Support and Stakeholder Involvement

Following the Kickoff Teleconference, the Contractor shall provide for monthly conference calls (as needed) to keep the project team updated as to the status of the project. These calls may utilize EPA's teleconferencing facilities and EPA can provide teleconferencing details to the Project Team in advance of each call.

The Contractor shall briefly summarize its understanding of each conference call (e.g., action items; scheduling adjustments) and/or meeting and transmit these by email to the Project

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[1] In 1998, Congress amended the Rehabilitation Act of 1973 to require Federal agencies to make their electronic and information technology (EIT) accessible to people with disabilities. The law applies to all Federal agencies when they develop, procure, maintain, or use electronic and information technology. Under Section 508, agencies must give disabled employees and members of the public access to information that is comparable to access available to others.

Team Leader for distribution to the Project Team and Technical Advisory Group.

It is possible that project activity could generate a need to respond to, or otherwise address, comments from the Project Team and/or the Technical Advisory Group. It is presumed that some if not all comments would provide technical direction but it may be necessary for the Project Team Leader to respond in a formal manner.

During Phase I activities, the extent of Stakeholder involvement was much greater than EPA had anticipated. Anticipating similar Stakeholder involvement, the Contractor will provision to provide a reasonable but conservative LOE to assist the Project Team Leader and the Project Team to develop formal responses to comments that may be received from the Technical Stakeholder Group and other partners. In addition, the Contractor shall provision to provide presentation materials and present routine summarizes by webinar, hosted by EPA, for the Technical Advisory Group and more generally, Stakeholder outreach and engagement.

Subtask 2B Deliverables

- Monthly Conference Calls
- Monthly Conference Call Summaries
- Project Team support for Stakeholder outreach via webinar and/or other (as appropriate)

### Subtask 2C. In-person meetings

The Contractor shall include under this Subtask provisions for one full day in-person meeting in Stamford, CT at the Long Island Sound Office, including travel, lodging, logistics and coordination for managerial and technical personnel.

Subtask 2C Deliverable

- One in-person meeting and meeting summary

## Task 3. Application and Refinement of Phase I Technical Approach

The Phase I PWS and the current version of all other deliverables developed under Phase I of this project are available at: http://longislandsoundstudy.net/our-vision-and-plan/clean-waters-and-healthy-watersheds/nitrogen-strategy/

Using the methodology and data from Phase I, the Contractor shall complete the Subtask F & G Summary Memo requiring incorporation of the Option Period embayments and data (including one additional water body: Little Narragansett Bay (Subtask 3A)), the Response to External Technical Review (3B) and the Response to Public Review (3D) as well as any Technical Stakeholder Group input (3C). The current version of the Subtask F & G Summary Memo, which is not currently available on the LIS webpage above, is attached as Appendix A.

### Subtask 3A. Addition of Little Narragansett Bay

Add an additional embayment to the analysis, expanding the geographic scope and details on all previous deliverables to include Little Narragansett Bay (including Wequetequock Cove).

Subtask 3A Deliverables

- Include Little Narragansett Bay in the analysis
- Revised Phase 1 deliverable package

**Subtask 3B. Response to External Technical Review**

A Technical Stakeholder Group (TSG) composed of representatives from states, federal and non-governmental partners had the opportunity to comment on draft Subtask memos over the course of Phase I.

To further validate the methods employed in the Strategy, EPA plans to conduct an external technical review (**ETR**) of the Phase I work. The review will be completed by independent third party technical experts (**TEs**) who have had no direct involvement with LIS nitrogen management issues or the Phase I work. The purview of such TEs will be the technical and scientific merit of the methods employed in Phase I as well as the clarity of the memos themselves (Phase I Subtask E-G Memos). This review will necessarily be completed using a separate contract vehicle with another Contractor. The questions to be addressed in the ETR can be found in Appendix B.

For this Subtask, the Contractor shall respond to the technical comments and questions raised by the ETR. The Contractor shall also make necessary changes as appropriate to the Phase I - Subtask Memos to resolve comments or questions from the review, if deemed necessary by the EPA Project Team.

EPA presumes that the Contractor's Phase II work (described herein) could proceed simultaneously with the separate ETR Project, except for this Subtask 3B (which necessarily presumes completion of the ETR well enough in advance of the expiration of this Task Order for the Contractor to be able to respond as outlined above). EPA believes there should be adequate time provided by the TO (one year), even if there is some lag time between completion of all Tasks above and the ability of the Contractor to work on Subtask 3B.

The Contractor is not responsible for delays caused by Technical Reviewers, issues of policy, differences in opinion, or lack of responses by Technical Reviewers.

Under the assumption that results from the ETR Project are available and sufficient time is available to address the ETR results, the Contractor is responsible for:

- collecting, categorizing, and analyzing comments and questions from the ETR;
- preparing draft responses to the questions and comments and presenting them to the EPA Project Team for review;
- preparing a final draft of responses to ETR comments and questions;
- making modifications to the Phase I Subtask Memos to reflect the ETR, if deemed necessary by the EPA Project Team; and

- attending and facilitating teleconferences of the EPA Project Team as a rapporteur, in particular on deliberations concerning important decisions that are made by the Team, and to keep a log of these deliberations.

Subtask 3b Deliverables

- Final responses to ETR comment document
- Modified versions of the original subtask memos, that reflect questions and comments brought up during the review, as deemed necessary by EPA.

### Subtask 3C. Response to Technical Stakeholder Group Review

During Phase I, EPA formed a Technical Stakeholder Group to review and provide technical comment on draft deliverables. For this Subtask the Contractor will respond to comments and questions raised by the Technical Stakeholder Group on the April 13, 2018 version of the Subtask F & G memo and Response to Technical Comments document.

The Contractor is not responsible for delays caused by the public, issues of policy, differences in opinion, or a lack of response by the public.

The Contractor shall be responsible for:

- Collecting, categorizing, and analyzing comments and questions from the TSG;
- Preparing draft responses to the questions and comments and presenting them to the EPA Project Team for review;
- Preparing final draft of responses to comments and questions;
- Making modifications to the Phase I and II Subtask Memos to reflect the TSG's comments, if deemed necessary by the EPA Project Team; and
- Attending and facilitating all teleconferences of the EPA Project Team as a rapporteur, in particular on deliberations concerning important decisions that are made by the Team, and to keep a log of these deliberations.

Subtask 3C Deliverables

- Final responses to TSG comment document
- Modified versions of the Phase I and II Subtask memos combined (as appropriate or deemed necessary by EPA).

### Subtask 3D. Response to Public Review

During Phase I, EPA welcomed public comments. As each Phase I draft memo was completed it would be posted to the Long Island Sound Strategy (LISS) webpage where anyone could provide a comment through a comment box. To further promote transparency and increase public participation in the process, EPA would like to conduct a [45-60] day informal public review period. EPA will provide the notice for this comment period.

For this Subtask the Contractor will assist in compiling email addresses for distribution, and compile and respond to comments and questions raised by the public during the comment period. Any questions or comments received after this period will not be considered. The Contractor will make changes to the Subtask Phase I and II Memos to resolve comments or questions from the public, if deemed necessary by the EPA Technical Team.

EPA will be using the Subtask F & G memo, revised under Phase II Subtask 3A, 3B & 3C for this task and the deliverable timeline will be adjusted accordingly.

The Contractor is not responsible for delays caused by the public, issues of policy, differences in opinion, or a lack of response by the public.

The Contractor shall be responsible for:

- Compiling email contact information for municipalities and interested parties in the Long Island Sound watershed;
- Collecting, categorizing, and analyzing comments and questions from the Public during the comment period;
- Preparing slides, presenting information and answering questions during public webinar;
- Preparing draft responses to the questions and comments and presenting them to the EPA Project Team for review;
- Preparing final draft of responses to comments and questions;
- Making modifications to the Phase I and II Subtask Memos to reflect the public's comments, if deemed necessary by the EPA Project Team; and
- Attending and facilitating all teleconferences of the EPA Project Team as a rapporteur, in particular on deliberations concerning important decisions that are made by the Team, and to keep a log of these deliberations.

<u>Subtask 3D Deliverables</u>

- Email contact list
- Public webinar
- Final responses to public comment document
- Modified versions of the Phase I and II Subtask memos (as appropriate or deemed necessary by EPA).

## Task 4. Collaboration with Other Groups Conducting Similar Nitrogen Reduction Modeling Work

There are other groups working on developing nitrogen reduction goals and strategies in the Long Island Sound watershed. Some examples include NYSDEC (Long Island Sound Nitrogen Action Plan), Suffolk County's Nitrogen Reduction Strategy, and CTDEEP (Niantic River Nitrogen Effect and Modeling Study). Formal coordination and collaboration between these groups would lead to an enhanced exchange of ideas, project evaluation from individuals with different skillsets and backgrounds, potential data sharing, more aligned and higher quality end result for all groups

involved, as well as more stakeholder buy-in for the EPA LIS Nitrogen Strategy. EPA will provide the Contractor with a list of contacts upon TO initiation, and will likely participate in calls at the outset of Task 4 to assist the Contractor. In sum, the specific work to be completed is to participate in coordination / collaboration meetings and then draft and finalize a gap analysis from assessing the work among the different groups.

For this Task, the Contractor shall:

- collaborate with other groups in the Long Island Sound watershed that are working on similar water quality monitoring and modeling efforts;
- participate in conference calls and webinars where groups can share their work, thoughts and findings;
- coordinate with other groups to share information, data, and approaches; including
    - evaluation of varying approaches for developing nitrogen endpoints considering both total nitrogen concentration versus nitrogen loading;
    - comparison of nitrogen endpoints derived using the Phase 1 approach (literature based, stressor-response, and distribution) to those derived using the embayment process (water quality) model used with CTDEEP in Niantic River Estuary (NRE) called EcoGEM;
    - following the comparison of the three methods and NRE approaches, evaluate additional method development for nitrogen (and phosphorus) endpoints using other models (approaches). Evaluation and selection of hydrodynamic and water quality models for embayment processes for further comparison to the three methods and NRE would result in a feasible approach for proceeding with evaluation of ecological endpoints in other priority embayments. At a minimum the EFDC model should be evaluated as an applicable hydrodynamic model and Aquatox as a water quality model. The evaluation should include the utility of both these models to describe estuarine processes as well as to predict necessary nitrogen (and phosphorus) endpoints as compared to those resulting from the EcoGEM model and the EPA three method approach.
- provide advice and technical expertise to other groups during calls and meetings or when requested; and
- provide EPA with a draft technical gap analysis and recommendations comparing the inputs, endpoints, assumptions, analysis and methodology of similar nitrogen reduction analysis in NY & CT.

<u>Task 4 Deliverables</u>

- Six to eight conference calls and webinars with groups conducting similar efforts
- Draft and Final Summary Memorandum of Technical Gap Analysis, Method evaluation and Recommendations

### Task 5: Data Gap Identification and Summarization

Phase I work activities identified gaps in the available empirical data for LIS. If filled, these gaps would further contribute to the understanding of the effect of nitrogen on LIS. The purpose of

this task is to identify where these gaps exist, and evaluate and summarize the extent of those missing data.

For this Task, the Contractor shall:

- Examine the current body of data for the years 2006-2015, for the 23 priority embayments (also including Little Narragansett Bay from Subtask 3A), 3 major river systems and the eastern and Western Sound to determine where data gaps exist;
- Asses the overall data availability for the priority waterbodies;
- Identify areas where there are little or no available water quality monitoring data or has not been any monitoring for many years;
- Identify areas where there might be monitoring, but not at adequate frequency, quality, or with adequate monitoring parameters;
- Identify areas where paired corrected chlorophyll-a and TN, and paired corrected chlorophyll-a and DO data are limited or unavailable (including both surface and bottom samples); and
- Identify and prioritize areas where new monitoring efforts would provide the most utility.

Task 5 Deliverables

- Draft and Final Summary Memorandum of Data Gap Assessment and Analysis

### Task 6: Inclusion of EPA Water Quality Monitoring Data for the Connecticut River

As mentioned in the previous Task, a few waterbodies with limited or no data were identified during the first phase of the strategy. One such waterbody with limited data was the Connecticut River. To fill in this gap, EPA conducted water quality sampling during the Summer and Fall of 2017 and plans to conduct a similar effort in 2018. Under this Task the Contractor shall revise the Phase I and II Subtask Memos for Subtasks D, and F through I, to include data gathered by EPA for the Connecticut River in 2017 and 2018.

The addition of these data points will alter, although likely not in substantial manner, the global hierarchical model. As such the Contractor shall update Phase I and II Subtasks F through I for all waterbodies to include the consequences of the addition of these data points.

Subtask 6 Deliverables

- Revised versions of Phase I and II Summary Memos for Subtasks D and F through G

## Option Period (OP)

### OP Task 1. Conference Calls, Meetings, Webinars; Project Team Support and Stakeholder Involvement

Similar to Base Period Subtasks 2b and 2c, the Contractor shall provide for monthly conference calls (as needed) to keep the project team updated as to the status of the project. These calls may utilize EPA's teleconferencing facilities and EPA can provide teleconferencing details to the

Project Team in advance of each call.

The Contractor shall briefly summarize its understanding of each conference call (e.g., action items; scheduling adjustments) and/or meeting and transmit these by email to the Project Team Leader for distribution to the Project Team and Technical Advisory Group.

It is possible that project activity could generate a need to respond to, or otherwise address, comments from the Project Team and/or the Technical Advisory Group. It is presumed that some if not all comments would provide technical direction but it may be necessary for the Project Team Leader to respond in a formal manner.

During Phase I activities, the extent of Stakeholder involvement was much greater than EPA had anticipated. Anticipating similar Stakeholder involvement, the Contractor will provision to provide a reasonable but conservative LOE to assist the Project Team Leader and the Project Team to develop formal responses to comments that may be received from the Technical Stakeholder Group and other partners. In addition, the Contractor shall provision to provide presentation materials and present routine summarizes by webinar, hosted by EPA, for the Technical Advisory Group and more generally, Stakeholder outreach and engagement.

The Contractor shall also include under this Task provisions for one full day in-person meeting in Stamford, CT at the Long Island Sound Office, including travel, lodging, logistics and coordination for managerial and technical personnel. An additional assumption is the anticipated need for a webinar.

<u>OP Task 1 Deliverables</u>

- Monthly Conference Calls
- Monthly Conference Call Summaries
- Project Team support for Stakeholder outreach via webinar and/or other (as appropriate)
- One in-person meeting and meeting summary
- One webinar

### OP Task 2. Completion of Subtask H for all Phase I and II Waters

Using the methodology and data from Phase I (and II), the Contractor shall refine and complete the Subtask H Summary Memo for all Phase I and II waters.

During Phase I, EPA's Contractor, Tetra Tech, developed estimated nitrogen reduction levels for prioritized watersheds necessary to meet Long Island Sound specific endpoints which were developed under Subtask G. Subtask H was drafted but never finalized under Phase I. The Contractor shall continue development of the existing Subtask H draft using comments from EPA and the Technical Stakeholder Group to develop a final draft. The Contractor will be expected to respond to comments from multiple stakeholders and provide revised draft deliverables as needed.

The specific directives for this Task are as follows:

i. Refine the technical approach to Subtask H, as necessary, considering modifications determined during Phase II Tasks 3-6;
ii. If endpoint N loads are identified as a need in response to Task 3 External Technical Review and a gap to be filled in the Task 4 Collaboration with Other Groups, compare current N loads to endpoint N loads in priority watersheds, and identify necessary reductions;
iii. Compare current N concentrations to endpoint N concentrations in priority watersheds, and identify necessary N load reductions to attain N endpoint concentrations;
iv. For the Connecticut River, determine the total existing load and the necessary total reduction needed to achieve the target TN endpoint. Additionally, the Contractor shall provide the loading from each State broken out by point and non-point sources; and
v. The Contractor shall ensure embayment mixing and boundary conditions are taken into account for all priority watersheds.

OP Task 2 Deliverable

- Draft Final Subtask H Summary Memo for all Phase I and II Waters: Proposed Reductions for Priority Watersheds

### OP Task 3. Completion of Subtask I for all Phase I and II Waters

Using the methodology and data from Phase I (and II), the Contractor shall propose draft allocations among categories of nitrogen sources for the 24 selected waters (embayments), making sure to distinguish between regulated and non-regulated sources. The Contractor is expected to respond to comments from multiple stakeholders and provide revised draft deliverables as needed.

OP Task 3 Deliverable

- Subtask I Summary Memo: Proposed draft Allocations for the 24 Phase I and II Embayments

## IV. Schedule and Deliverables: Base and Option Periods

The schedule outlined below in Table 1A is based on the presumption that the work will occur over a period of approximately one year, with deliverables keyed to completion of Subtask 2A Kickoff Teleconference and Contractor receipt of external comments (Subtask 3B, 3C & 3D).

| Task | Deliverable | Date Due to EPA |
|---|---|---|

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|---|---|---|
| **Task 0: Work plan and Budget Development** | Work plan and budget | Work plan within 30 days of receipt of Task Order (TO) |
| | Progress and financial reports | Monthly. |
| **Task 1. Modification of Phase I Quality Assurance Project Plan (QAPP)** | Amended Phase I QAPP for submittal to EPA Region 1 QAU | Within one (1) month of Kickoff Teleconference |
| **Task 2: Project Management and Administration –**<br><br>**Subtask 2A: Kickoff Teleconference** | Kick-off meeting between EPA and Contractor, Meeting Summary | Within 1 month of TO issuance.<br><br>Meeting Notes within 1 week of Kickoff Teleconference |
| **Subtask 2B: Conference Calls, Meetings and Project Team Support and Stakeholder outreach**<br><br>**Subtask 2C: In-person meetings** | Conference Calls<br><br>Project Team Support & Stakeholder Outreach<br><br>Meetings | Monthly<br><br>As Needed Provision<br><br>One (1) in-person meeting including presentations by the contractor |
| **Task 3. Application and Refinement of Phase I Technical Approach**<br><br>**Subtask 3A. Addition of Little Narragansett Bay** | Phase 1 deliverables revised to include Little Narragansett Bay | Within one (1) month of Kickoff Teleconference |
| **Subtask 3B. Response to External Technical Review** | Draft response to Technical Comments document<br><br>Phase 1 deliverables revised to include recommended edits combined from Tech review & TSG | Within one (1) month of receiving External Tech Review comments<br><br>Within two (2) months of receiving External Tech Review comments |
| **Subtask 3C. Response to Technical Stakeholder Group Review** | Draft response to Technical Comments document<br><br>Phase 1 deliverables revised to include recommended edits combined from Tech review & TSG | Within one (1) month of receiving Tech Stakeholder Group comments<br><br>Within two (2) months of receiving Tech Stakeholder Group comments |
| **Subtask 3D. Response to Public Review** | LIS watershed municipalities email list<br>Draft response to Public Comments document<br>Phase 1 deliverables revised to include recommended edits | Within one (1) month of QAPP approval<br>Within one (1) month of receiving Public comments<br>Within two (2) months of receiving Public comments |
| **Task 4. Collaboration with Other Groups Conducting Similar** | Conference calls and webinars with groups conducting similar efforts | As needed |

| | | |
|---|---|---|
| **Nitrogen Reduction Modeling Work** | Draft and Final Summary Memorandum of Technical Gap Analysis and Recommendations | Within six (6) months of Kickoff Teleconference |
| **Task 5: Data Gap Identification and Summarization** | Draft and Final Summary Memorandum of Data Gap Assessment and Analysis | Within six (6) months of Kickoff Teleconference |
| **Task 6: Inclusion of EPA Water Quality Monitoring Data for the Connecticut River** | Revised versions of Phase I and II Summary Memos for Subtasks D and F through G | Summary memos up until Phase 1 Subtask D within three (3) months of Kickoff Teleconference |
| **OP Task 1. Conference Calls, Meetings, Webinars; Project Team Support and Stakeholder Involvement** | Kick-off meeting between EPA and Contractor, Meeting Summary | Within 1 month of OP agreement.<br><br>Meeting Notes within 1 week of Kickoff Teleconference |
| | Conference Calls<br><br>Project Team Support & Stakeholder Outreach<br><br>Meetings | Monthly<br><br>As Needed Provision<br><br>One (1) in-person meeting including presentations by the contractor |
| **OP Task 2. Completion of Subtask H for all Phase I and II Waters** | Draft Final Subtask H Summary Memo for all Phase I and II Waters: Proposed Reductions for Priority Watersheds | Within two (3) months of OP start date |
| **OP Task 3. Completion of Subtask I for all Phase I and II Waters** | Subtask I Summary Memo: Proposed draft Allocations for the 24 Phase I and II Embayments | Within three (3) months of OP start date |

## V. Technical Contacts

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- **Bob Nyman:** Project Technical Advisor, (nyman.robert@epa.gov; 212.637.3809)
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## VI. References

## APPENDIX A: Subtask F & G Summary Memo (Current Version)