NATIONAL ESTUARY PROGRAM SUMMARY WORK PLAN

FOR

FEDERAL FISCAL YEAR 2020 FUNDING

FOR

COMPREHENSIVE CONSERVATION AND MANAGEMENT PLAN

IMPLEMENTATION ACTIVITIES

DURING THE PERIOD

October 1, 2020-September 30, 2021 or beyond
[FY2021]

WITH PRIOR YEAR GOALS/ACCOMPLISHMENTS/HIGHLIGHTS
FOR THE PERIOD

October 1, 2019- September 30, 2020
[FY2020]

July 2020

Prepared by:

EPA Long Island Sound National Program Office

in consultation with and on behalf of

the Long Island Sound Study Funded Management Conference Partners

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A. General Information Reporting Requirements

1. CCMP 2020 Goal Focus

The Long Island Sound Study (LISS) Comprehensive Conservation and Management Plan (CCMP) was first approved in 1994 by the States of New York (NY) and Connecticut (CT) and by the U.S. Environmental Protection Agency (EPA). From 2011 through 2015 the LISS partners and EPA met and revised the CCMP. The new CCMP, approved in 2015, identifies four primary themes:

1) Clean Waters & Healthy Watersheds,
2) Thriving Habitats & Abundant Wildlife,
3) Sustainable & Resilient Communities, and
4) Sound Science & Inclusive Management.

The need to continue the Management Conference was identified as an important, unifying component to support implementation. With the enactment of the Long Island Sound Improvement Act of 1990 (P.L. 101-596), the LISS Management Conference was made permanent – "The Administrator *shall* continue the Management Conference of the Long Island Sound Study…" In October 2018, the Congress passed, and the President signed into law, the *America's Water Infrastructure Act of 2018*. Among the many provisions of this far-ranging bill, Sec. 4104. *Amendments to Long Island Sound* revised the legislative underpinnings of the Long Island Sound Study and reauthorized funding through 2023. The bill's passage is important for several reasons. It codifies Congress's intent to authorize continued funding, it strengthens requirements for assessing program progress and financial integrity, and it lowers the non-federal share of grants from 50 percent to 40 percent. It also signals Congress's general support for the Long Island Sound restoration program.

Under the Management Conference structure, the CCMP established a broad-based and integrated approach to addressing the primary environmental and management problem areas identified. This approach required significant and sustained Management Conference coordination, involvement and funding – at all levels. Further, the CCMP identified many existing and ongoing environmental management programs of the Management Conference partners that would serve as the foundation for addressing the Sound's priority problems. New or separate programs or efforts to implement the CCMP were only to be created to fill gaps or better integrate efforts, such as the LIS Futures Fund (LISFF), LIS Research Fund, and CCMP Enhancements program. This FY2020 Work Plan, prepared under EPA's National Estuary Program (NEP) guidance, directly supports these goal areas with National Estuary Program (NEP) and LISS funding as described herein.

Ongoing core environmental programs that contribute to or support CCMP implementation include other Federal programs and funds directed to land use and watershed management, water quality, living resource conservation, management and regulation, as well as state and local programs aimed at regulating human and environmental impacts on the Sound. Many of these programs are delegated to the states, which have the responsibility, authority and accountability for implementing them.

The CCMP anticipates many funding streams and a variety of funding sources for successful implementation of its recommendations -- over time, by the LISS partners. The CCMP also envisions an educated public and informed constituency for the sustained effort to restore, enhance, and preserve the Sound as a national treasure and a 'green' engine of economic activity. Designated as an Estuary of National Significance in 1987, Long Island Sound is an inherent part of EPA's NEP and is a key

geographic program of the national water program that includes Chesapeake Bay, Puget Sound, the Great Lakes, and the Gulf of Mexico. Because of its economic, social and environmental importance to the Northeast region, Long Island Sound is included as a separate line item and has received funding under EPA's President's Budget request since FY1999.

a. NEP Implementation Review. The EPA Office of Water conducted a CCMP Implementation Review during June 5-6, 2019. The review focused on primary CCMP implementation areas and on determining whether sufficient progress was being made and funding was being directed to highest priority areas. The EPA Office of Water provided a final findings letter to the LISS on September 24, 2019. The review found sufficient progress in implementing CCMP goals and targets and recommended Long Island Sound for further funding under the NEP Program.

2. FY2020 LISS Budget Breakdown

This work plan summarizes tasks and deliverables contained in EPA FY2020 assistance awards to Management Conference partners that account for the FY2020-21 EPA Environmental Programs and Management (EPM) appropriation for the LISS NEP, and for EPM funding provided by EPA for the Long Island Sound Geographic Program. These funds include $662,500 in NEP allocations under Clean Water Act (CWA) §320, and $21,000,000 under CWA §119 as enacted. Grants are awarded by EPA Region 1 and 2 as delegated under EPA Delegations of Authority 2-42 and 2-94 under the authority of §119 per NEP funding guidance. The required aggregate match for this funding cycle is $13,029,835 as shown in Attachment 3.

The work activities and the budget amounts contained in this NEP Summary Work Plan were approved by EPA and the LISS Management Committee at its April 16, 2020 meeting. The record of the Management Committee meeting is documented in the April 16, 2020 Long Island Sound Study Management Committee Meeting Notes.

The LISS budget is organized into the four Program Elements outlined below; the FY2020 LISS budget breakdown by Program Element is:

Program Element	Amount
Coordination and Reporting of Environmental Actions/Results	*$1,038,702*
Public Outreach, Information and Education	*$1,360,280*
Monitoring, Modeling and Research	*$7,014,092*
CCMP Implementation, Technical Assistance/Regulatory Support	*$12,249,426*

To implement this summary Work Plan, as of this writing, EPA will issue five new assistance awards and amend nine current assistance awards to include the FY2020 funding. In addition, EPA will fund four interagency agreement and two contracts to support work tasks. **Attachment 1** is a detailed breakdown of the FY2020 approved budget by LISS Program Element, Products and/or Services, Implementing Agency, and Environmental Outcome(s). The Environmental Outcomes are derived from the individual partner grant work plans based on EPA Order 5120.

3. LISS Staff and Their Official Responsibilities

The LISS provides funding to certain partners to support staff resources to carry out key elements of implementing the CCMP. **Attachment 2** lists the FY2020 LISS-funded staff by name, title and

description of their major roles and responsibilities. Each LISS partner's federal assistance award work plan provides details on the deliverables, outputs and expected environmental outcomes for LISS-funded staff functions as required by EPA Order 5120. In addition to the staff listed in Attachment 2, the CTDEEP employs seasonal staff to assist with conducting the LIS summer water quality monitoring program as necessary; these, and overtime costs for water quality monitoring staff, are included in that award, but are not shown in Attachment 2 because of the seasonal nature of the positions that may be filled by different incumbents during the period of employment. Each EPA grantee is responsible for managing its personnel under its own organization's human resource management policies and procedures.

The EPA provides three full-time equivalent (FTEs) federal employees that staff the EPA Long Island Sound National Program Office (LISNPO). A director, appointed by the Administrator under §119, and a program coordinator to plan, organize, coordinate and manage program operations to assist the Management Conference partners in CCMP implementation. EPA Region 1 provides approximately 75 percent of an FTE to support EPA efforts for Long Island Sound in Region 1. On October 27, 2019, EPA Region 1 hired another full-time position that will dedicate 50 percent of their time to Long Island Sound work. These FTEs are not funded from the LISS, but from other EPA EPM resources.

Because of the workload associated with administering the increased program funding, EPA decided to increase staffing. An additional program coordinator was hired by Region 2 and began work on June 22, 2020. LISS funds will be used to cover the payroll costs associated with that position. Additional staff in Region 1 and Region 2 are assisting with project officer duties relating to LIS awards. Region 1 also supports a US Government vehicle for LISNPO use via the General Services Administration (GSA). EPA supports, from its Working Capital Fund appropriation, leasing office space for the LISNPO through the GSA. EPA Region 2 provides technical and management support to the program through the Water Division and EPA Region 1 provides staff and technical support through the Water Division. By agreement between the Regions, Region 2 provides other administrative support for official business, such as procurements, funds control and management, information technology and telecommunications support, grants management, travel, training and other policy and program management requirements. Region 1 provides grants management, contract oversight and funds control for the awards processed through Region 1. This support is essential to operating and maintaining the EPA LISNPO, the national program office for the Long Island Sound Geographic Program.

4. Grant awards

Attachment 3 lists the FY2020 LISS budget by recipient organization; the total funding for each recipient may consist of one or more EPA grant awards or amendments to existing grants, **Attachment 4** lists the FY2020 budget by individual EPA assistance award number by grantee. The actual EPA assistance award number is provided for reference where known now. However, the award process is dynamic and final grant award numbers and dollar amounts actually awarded by EPA may differ from Attachment 4 since this NEP summary Work Plan is completed in advance of the grant award process, which must be completed by September 30, 2020. Details of the award purpose, project deliverables, and project completion dates are provided in Section B of this Work Plan below. Attachments 3 and 4 also show the required non-federal matching funds and the overall actual aggregate match requirement for the LISS for FY2020.

For FY2020 Federal assistance awards, the Connecticut Department of Energy and Environmental Protection (CTDEEP) and the New York State Department of Environmental Conservation (NYSDEC) are providing an annual 'overmatch' in its EPA assistance awards to enable the LISS to meet the overall aggregate match for the NEP as required under CWA §320 [see Attachment 3]. The CTDEEP overmatch

is from a conveyance and storage tunnel in Connecticut. The NYSDEC overmatch is from land acquisition and habitat restoration tasks. This also allows other recipients and sub-awardees that are not able to meet matching funds requirements to apply for LISS grant programs, ensuring broader participation in the work of the LISS Management Conference from academic researchers and institutions, local environmental organizations, interest groups and associations, as well as other qualified regional or watershed organizations. **[NB: Final assistance award amounts and number designations are issued by EPA pending final EPA action on individual awards, and each award is subject to the special terms and conditions contained therein.]**

Using FY2020 funding for work that will take place in FY2021, the EPA is providing funding to ten LISS partners through new or amended awards: CTDEEP; the Connecticut Sea Grant (CTSEA); the Interstate Environmental Commission (IEC); the National Fish and Wildlife Foundation (NFWF), the New England Interstate Water Pollution Control Commission (NEIWPCC); Save the Sound; NYSDEC; the New York Sea Grant College Program (NYSEA); the State University of New York Research Foundation (SUNY) and the University of Connecticut Marine Sciences Department (UCONN). EPA is also establishing four interagency agreements with the United States Geological Survey (USGS). These partners assist in implementing the CCMP and conduct activities to support the LISS program. These awards are managed by staff of the EPA LISNPO, EPA Region 1, and EPA Region 2, who are trained and assigned as EPA Project Officers. Because of multi-year awards and varying federal appropriation levels, not all partners receive LISS funding in every annual budget/work plan cycle. The EPA Project Officers work with their grantees to ensure that any unliquidated obligation (ULO) balances are considered in awarding new year funding, and as necessary, award amounts are adjusted to compensate for ULO balances. It should also be noted that these partners also bring their own non-matching resources to restore and protect the Sound, which are not accounted for in this work plan.

B. Proposed New and Ongoing (FY2020) Projects

This work plan provides information as required under EPA's *FY2017-2019 Clean Water Act §320 National Estuary Program Funding Guidance*. The format for Section B is the same as used by the LISS since FY2008, when the LISS adopted a combination of the FY2008 NEP Work Plan Guidance and the September 2008 NEP Program Evaluation Guidance Logic Model format (until updated). To adjust to this reporting format, to the extent feasible, the LISS Program Element activities have been 'broken up' under the following logic model Core Elements and Sub-elements contained in the NEP Program Evaluation Guidance:

Logic Model Core Element: **1. Program Implementation & Reporting**: a) Financial Management; b) Tracking/Reporting; c) Program Planning & Administration; d) Outreach & Public Involvement;

Logic Model Core Element: **2. Ecosystem Status & Trends**: a) Research; b) Assessment & Monitoring; c) Reporting;

Logic Model Core Element: **3. Ecosystem Protection & Restoration Projects:** a) Habitat; b) Water Quality; c) Living Resources; d) Healthy Communities; and

Logic Model Core Element: **4. Technical Assistance and Capacity Building:** a) Tools; b) Training; c) Direct Assistance.

Following is the crosswalk between the Logic Model elements and the LISS Program Elements:

Logic Model Element	LISS Program Element
CCMP/Work Plan Goal	[LISS CCMP Area]
Project/Activity Name:	[Program Element/Sub-category description]
Project/Activity Purpose and Description (indicate as New, Continuing, On-Going)	New: first year of project for LISS Continuing: prior year funded project On-Going: multi-year or base program project
Responsible Partners and Their Role(s)	[LISS Grantee Name]
Outputs/Products:	same
Milestones	(project start and completion dates) [EPA Grant/IAG Date(s)]
Budget:	[FY2019 to the extent separately identifiable]
Outcomes:	(anticipated and/or completed accomplishments) [Environmental Outcomes]
-Short term; Intermediate; Long Term	
-Changes (+/-) in Pressure Targets:	[N/A]
Identify the CWA core program the project would support	[Checklist of 7 Core Elements]

1. Program Implementation and Reporting. Under CWA §119 (33 USC 1269), the EPA LISNPO is responsible for the overall coordination of the LISS Management Conference convened under CWA §320 and is to *assist* and *support* implementation of the CCMP developed under that Section, *coordinate* the grant, research and planning programs and *provide administrative* and *technical support* to the Conference.

a. Financial Management. The EPA LISNPO has overall responsibility for managing EPA LISS appropriated funds, ensuring that these funds are awarded and expended in a timely and efficient manner using the methods and management controls established by the Agency. Since the LISS NEP does not utilize the single assistance agreement process for implementation, but rather is a federally-administered program (as specified under CWA §119) that uses multiple EPA assistance awards to conduct the program, financial management responsibilities are distributed, not centralized. Each EPA grantee is responsible for financial management under EPA assistance regulations, and must comply with those regulations, under the new Part 200 rule as applicable to the organization.

The EPA LISNPO, EPA Region 1, and EPA Region 2 manage the individual EPA assistance awards and IAs for each Federal fiscal year cycle of LISS funding. Each LISS grantee is responsible under EPA regulations for fiscal management and accountability for Federal funds it acquires by advance payment or reimbursement. EPA LISNPO requires semiannual grant progress reports from grantees and periodic Federal Financial Status Reports (SF260s) are to be submitted to EPA's Las Vegas Financial Center from the grantees' fiscal offices. EPA LIS grant awards use the identifier prefix, "LI;" NEP awards use the identifier "CE." Funds accounting by assistance award number is available online at EPA's Compass Data Warehouse. The LISNPO monitors drawdown of funds regularly and provides each grantee with the data on unliquidated obligation (ULO) status and works with grantees to ensure timely and appropriate liquidation of grant balances or adjustments to work plans and/or grants.

LISS grants are made under the Catalog of Federal Domestic Assistance (CFDA) number 66.437, Long Island Sound Program or CFDA number 66.456, the National Estuary Program. EPA LISNPO semi-annually updates the LIS CFDA description as necessary through EPA's internal process as required by OMB. Grantees are responsible for tracking and accounting of expenditures according to their approved

assistance award budgets and must abide by EPA grant regulations and terms and conditions to modify

CCMP/Work Plan Goal:	**Continuing the Management Conference**
Project/Activity Name:	EPA LISNPO Support to the Management Conference
ONGOING Project/Activity Purpose & Description:	Provides support to the Management Conference in implementing the CCMP; overall program coordination, management and direction.
Responsible Partner(s) Role(s):	EPA Long Island Sound Office
Outputs/Products:	Assistance and coordination of the LISS Management Conference. Development of annual NEP work plan; development and execution of EPA Strategic Plan elements for LIS; development, execution and management of financial assistance agreements; development and submission of GPRA-required reports; tracking and reporting of implementation of CCMP actions; tracking and reporting of ecosystem targets; technical assistance to partners in program operations. The office is focusing on the 2020 CCMP Implementation Action update.
Milestones *(project start/end dates)*	Project period October 1, 2020-September 30, 2021 and continuing.
2020 Budget:	Total $42,500. ($4,000 EPA HQ administrative support; $10,500 communications, postage, and supplies), EPA staff $28,000 [See Attachment 1, lines 1, 2 & 3.]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Coordinated federal, state, and local government actions to implement the CCMP; clear annual goals and objectives framed within available funding; public, political, and financial support for restoration and protection of Long Island Sound; organized and effective LISS public participation; informed and educated public and citizenry as measured by numbers of publications distributed to target populations and number of website visits; improved management and coordination of implementation actions as measured by reported program indicator outputs and outcomes.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards §304(a) x 2) Improving WQ Monitoring §303(d) 305(b) x 3) Developing TMDLs §304(b) x 4) Controlling NPS Pollution on a Watershed Basis §319 x 5) Strengthening NPDES Permits §402 x 6) Supporting Sustainable Wastewater Infrastructure x 7) Wetlands Program Support/Implementation §404 x

budgets or change program direction.

b. Tracking and Reporting. As the only Federally led NEP, EPA's authority to require and collect information is limited to that contained in enabling statutes and regulations. CWA §320 and §119 indicate

specific reporting requirements and EPA regulations under 40 CFR Parts 30 and 31 provide further reporting requirements for grantees. Finally, EPA grant regulations provide several reporting requirements e.g., quarterly or semi-annual reporting on grant progress. EPA LISNPO is responsible for the overall LISS tracking and reporting systems for the NEP.

In 2011 the LISS Management Conference partners agreed to a process to revise and update the 1994 CCMP. CCMP revision was completed in Spring 2015 and a new CCMP was issued (see http://longislandsoundstudy.net/about/the-comprehensive-conservation-and-management-plan/).

The 2015 CCMP also sets 20 ambitious, but achievable, long-term targets for the ecosystem. These ecosystem targets are intended to drive progress toward attaining CCMP goals. Measuring, tracking, and reporting environmental indicators of each ecosystem target will provide information to assess progress and refine and adapt management as needed (see http://longislandsoundstudy.net/research-monitoring/liss-ecosystem-targets-and-supporting-indicators/.) Some of the targets include intermediate goals. For example, the ecosystem target to reduce effective impervious cover by ten percent in twenty years would assume a pace of 0.5 percent per year. Progress at any point in time would be assessed against the rate needed to attain the long-term target. In July 2018, the Government Accountability Office (GAO) completed a review of the LISS, *Long Island Sound Restoration: Improved Reporting and Cost Estimates Could Help Guide Future Efforts* (GAO-18-410). The GAO recommended that the EPA work with the LISS to ensure that it fully incorporates leading practices into performance reporting efforts.

The LISS supported contractor work to enhance performance tracking and reporting of implementation actions and progress, most likely through web-based platforms. This new system will replace the annual *eSound CCMP Implementation Tracking Report*, which was organized around the 1994 CCMP.

CCMP/Work Plan Goal:	**Continuing the Management Conference**
Project/Activity Name:	Improved Reporting
ONGOING Project/Activity Purpose & Description:	Provides support to the Management Conference in tracking and reporting on CCMP implementation.
Responsible Partner(s)/Role(s):	EPA Long Island Sound Office
Outputs/Products:	Development of an online tracking system using contractor report and web developer support from EPA Region 2. Development of the 2015 CCMP Progress Report, which will be sent to Congress by end of calendar year 2020.
Milestones *(project start/end dates)*	Project period October 1, 2019-September 30, 2021.
2020 Budget:	$0
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Improved management and coordination of implementation actions as measured by reported program indicator outputs and outcomes.
-Changes (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: x 2) Improving WQ Monitoring: x 3) Developing TMDLs: x

CCMP/Work Plan Goal:	Continuing the Management Conference	
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	x
	7) Wetlands Program Support/Implementation	x

c. Program Planning and Administration. As indicated above, the EPA LISNPO has overall responsibility for coordinating the LISS Management Conference, which is a multi-grantee, multi-state distributed partnership NEP. LISS federal, state, local, and academia partners have inherent responsibilities in these areas and are provided funding for administrative staff positions to carry out these overarching functions. LISS grantees have a negotiated Indirect Cost Rate with EPA or their federal Cognizant Agency to cover the overall expenses of their institution in managing federal assistance awards under Office of Management and Budget Circulars. The following charts include information in the required NEP Work Plan format relative to this Logic Model category:

CCMP/Work Plan Goal:	Continuing the Management Conference
Project/Activity Name:	State Coordination and Technical Assistance
ONGOING Project/Activity Purpose & Description:	Provides support to the Management Conference in implementing the CCMP; overall program planning, coordination, administration, management and direction in the State of Connecticut and coordination with other state/local agencies in Connecticut.
Responsible Partner(s)/Role(s):	Connecticut Department of Energy and Environmental Protection
Outputs/Products:	Involvement of relevant technical staff and programs in LISS activities to protect and restore Long Island Sound, its resources and its habitats, and to protect public health and meet commitments to the LISS partnership. Development of work group products and activities essential to implementation of the CCMP. Nitrogen management incorporated into watershed planning. Steady progress of point source nitrogen reductions as per the TMDL and nitrogen general permit. Update of progress towards implementing CCMP recommendations. Reports on progress to ensure commitments to protect and restore LIS, and implementation plans are on track. LIS Research and Implementation grants are consistent with and complementary to LISS goals and objectives and productive in restoring and managing Long Island Sound. Two-year grant period.
Milestones *(project start/end dates)*	Project period 10/1/20-9/30/22 and continuing. Grant period 10/1/20-9/30/22 and continuing.
2020 Budget:	$495,104 [See Attachment 1, lines 4.a.]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Improved management and implementation of CCMP goals and objectives; improved environmental data quality and reporting of environmental results.

CCMP/Work Plan Goal:	**Continuing the Management Conference**	
-Changes (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	x
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**Continuing the Management Conference**
Project/Activity Name:	State Program Coordination and Management
ONGOING Project/Activity Purpose & Description:	Provides support to the Management Conference in implementing the CCMP; overall program planning, coordination, administration, management and direction in the State of New York and coordination with New York State Department of State and other state/local agencies in New York.
Responsible Partner(s) Role(s):	New York State Department of Environmental Conservation
Outputs/Products:	Coordination and development of activities and products to implement the CCMP. Track progress of programs and projects designed to protect and restore LIS. Electronic and paper reports of the status of resources, water quality and implementation. Coordinate and implement CCMP actions, protect public health, preserve and protect LIS resources and water quality by soliciting and involving expertise from various state programs. Ensure that projects are consistent with NYS regulations and the CCMP. Grant proposals are reviewed for relevance and benefits to LIS. Develop and implement CCMP actions as directly related to NPS pollution reduction, protect public health, preserve and protect LIS water quality and resources by soliciting and involving expertise from various state programs.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2021 and continuing
2020 Budget:	$339,797 [See Attachment 1, lines 4.b.]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Coordinated management and implementation of CCMP goals and objectives. Progress towards implementing the CCMP management actions. Better enables DEC to act as a partner to get restoration projects initiated. Improved public awareness, stewardship, WQ, protection of public health, and implementation of CCMP and LIS Agreement goals and objectives.
-Changes (+/-) in Pressure Targets	**N/A**

CCMP/Work Plan Goal:	**Continuing the Management Conference**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	x
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**Continuing the Management Conference**	
Project/Activity Name:	Management Conference Administrative Support	
ONGOING Project/Activity Purpose & Description:	Provides support to the Management Conference in implementing the CCMP through committee meetings support; local and national travel support and other planning and reporting support	
Responsible Partner(s) Role(s):	New England Interstate Water Pollution Control Commission	
Outputs/Products:	Citizen involvement and participation; state and local meeting support; national conference and travel support.	
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022	
2020 Budget:	Total: $111,801 [See Attachment 1, line 5]	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Ongoing coordination of federal, state, and local governments with user groups, the academic community, and stakeholders. Attendance at national conference and meetings; travel to CAC and other LISS meetings and events support.	
-Changes (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	
	2) Improving WQ Monitoring	
	3) Developing TMDLs	
	4) Controlling NPS Pollution on a Watershed Basis	
	5) Strengthening NPDES Permits	
	6) Supporting Sustainable Wastewater Infrastructure	
	7) Wetlands Program Support/Implementation	

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
Project/Activity Name:	Sustainable and Resilient Workgroup
NEW Project/Activity Purpose & Description:	This project will support a year-long process to develop a focused and strategic five-year work plan for the Sustainable and Resilient Communities Working Group.
Responsible Partner(s) Role(s):	CT and NY Sea Grant
Outputs/Products:	LISS Sustainable and Resilient Communities Working Group five-year work plan and implementation strategy, with budget request; two-day meeting to inventory existing efforts; one-day facilitated meeting to select work plan priorities.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2021
2020 Budget:	$50,000 [see Attachment 1, line 6]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short; Intermediate; & Long Term**	Improved and effective implementation of CCMP goals related to the Sustainable and Resilient Communities theme.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: 2) Improving WQ Monitoring: 3) Developing TMDLs: 4) Controlling NPS Pollution on a Watershed Basis: x 5) Strengthening NPDES Permits: 6) Supporting Sustainable Wastewater Infrastructure: x 7) Wetlands Program Support/Implementation:

d. Outreach and Public Involvement. The LISS provides grants to several of its partners to support their public outreach, information and education (PI&E) program activities, a key Program Element of the LISS. NEIWPCC, NYSEA and CTSEA are primarily responsible under their LISS grant awards for public outreach assistance. The LISS communications team consists of staff of these partners and other interested parties, including members of the LISS Citizens Advisory Committee (CAC). The communications team meets periodically to develop and carry out work as reflected in each grant award. In addition, NFWF conducts the Small Grants program, which is focused on PI&E activities, and may also make awards for approved PI&E projects under the Large Grants program. The prior year LISFF Large and Small Grant projects are posted on the NFWF website, http://www.nfwf.org/lisff/Pages/lisff-projects.aspx.

The LISNPO and LISS partners provide significant support to the CAC, which is co-chaired by an elected member each from New York and Connecticut. Coordinated by the NY/CTSEAs, the CAC meets quarterly at alternating locations in Connecticut and New York in the LIS watershed and provides advice to the Management Conference partners in implementation of the CCMP. The CAC operates under its Bylaws and is composed of up to 60 members who represent organizations with a demonstrated interest in Long Island Sound. Financial support for CAC meetings is provided through

NEIWPCC's PI&E line item in its LISS assistance award. CAC members are reimbursed for their travel expenses directly related to attending CAC meetings **[see Attachment 5].**

In addition, the CAC meets as needed with the STAC to jointly review program priorities from a scientific perspective and to update each other on issues of scientific and public concern. The CAC co-chairs are members of the Management Committee and provide a public perspective at Management Committee meetings. The CAC also appoints two liaisons to the STAC, one each from New York and Connecticut to represent the CAC at STAC meetings. CAC members participate on LISS teams and work groups and attend those meetings as appropriate.

The **Outreach and Public Involvement** program area of the required NEP Work Plan format is summarized below:

CCMP/Work Plan Goal:	**Public Outreach, Information and Education**
Project/Activity Name:	PI&E, Small Grants and PI&E Project Support
ONGOING Project/Activity Purpose & Description:	Supports the Management Conference in conducting the LISS public outreach, information and education program through staff resources and products, services and supplies.
Responsible Partner(s) Role(s):	NEIWPCC, NYSG, CTSG; NFWF, direct implementation of PI&E activities.
Outputs/Products:	Production of annual year in review issue of *Sound Update* for distribution throughout the LIS region. Three to five issuances of *Sound Bytes*, an electronic mail update of current LIS issues; Update of progress towards implementing CCMP recommendations. Award small and medium sized grants to public, private and government entities to implement LIS restoration and education projects. Communication of LIS issues and successes to a wide variety of interested citizens, educational entities, and professional societies. Provide LISS and agency information about LIS to the public and assist other agency staff in reporting efforts meeting CCMP goals. Communication of LIS issues and resource value to state citizens and LIS awareness to the public in the watershed.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2021 (or as specified in individual assistance awards)
2020 Budget:	Total: $715,271 [NEIWPCC: $315,662; NYSG: $227,875; CTSG: $121,734; NFWF: $50,000. See Attachment 1, lines 7-9, 11, 13]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Informing public and increasing citizen stewardship and action beneficial to a healthy LIS. Informing and increasing public knowledge and citizen activism on LIS issues. Increasing awareness of the state of LIS health and promoting changes in lifestyle that might benefit the Sound. Assessment of progress and key report to citizens involved in the LISS leading to adjustments in management direction. Publicity to support LIS management activity and to inform public about trends in LIS health to create public support. Improved habitat and water quality and increased public awareness and participation in LIS affairs. Fulfill public request for knowledge about LIS and educational needs; promote better stewardship of the Sound; increase awareness for the protection and restoration of LIS to the public and improve management decisions for the LISS partner agencies. Increased awareness for the

CCMP/Work Plan Goal:	**Public Outreach, Information and Education**	
	protection and restoration of LIS to the public and promote better stewardship of the Sound.	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	x
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**Public Outreach, Information and Education**	
Project/Activity Name:	Sentinel Monitoring Workshop	
NEW **Project/Activity Purpose & Description:**	Supports the Management Conference in conducting the LISS public outreach, information and education program through staff resources and products, services and supplies.	
Responsible Partner(s) Role(s):	NEIWPCC	
Outputs/Products:	2-day Sentinel Monitoring workshop to engage LIS stakeholders to help identify monitoring data sources and develop a LISS sentinel monitoring network	
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022	
2020 Budget:	Total: $44,446 [See Attachment 1, line 12]	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Establish LIS Sentinel Monitoring Network; Sentinel based priority list of monitoring gaps; Increased collaboration and data sharing among monitoring groups	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	
	4) Controlling NPS Pollution on a Watershed Basis	
	5) Strengthening NPDES Permits	
	6) Supporting Sustainable Wastewater Infrastructure	

CCMP/Work Plan Goal:	Public Outreach, Information and Education	
	7) Wetlands Program Support/Implementation	x

2. Ecosystem Status and Trends. The LISS federal, state, local and academia partners monitor ecosystem status and trends for a suite of environmental indicators. These indicators are posted on the LISS website, http://longislandsoundstudy.net/research-monitoring/liss-ecosystem-targets-and-supporting-indicators/. The indicators are linked back to CCMP ecosystem targets and provide information on the abundance, diversity, distribution, viability, and/or quality and trends of the resource being monitored. As noted previously, the 2015 CCMP sets 20 ecosystem targets. Measuring, tracking, and reporting the ecosystem targets and indicators provides information to assess progress and refine and adapt management as needed. Reporting on targets and indicators on a periodic basis is a complex process, because the LISS does not directly pay for or support the data collection efforts for many of them. These are the province of other entities that are either directly responsible for that data collection by law, statute, regulation or by history or organizational preference. Instead, LISS works to use existing data when available, and collect new data as needed.

a. Research. The LISS Research program is a cooperative effort between EPA and the New York Research Foundation of the State University of New York (SUNY RF) and Connecticut Sea Grant College program, to which each have contributed funds and expertise in review of proposals and identification of peer reviewers. Generally, the LISS has held competitions biennially, combining funds from two fiscal years. Research projects funded from prior cycles of the Research Program are ongoing.

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**
Project/Activity Name:	Long Island Sound Research Grant Program
ONGOING Project/Activity Purpose & Description:	To administer the LISS Research Grant program by identifying scientific research needs and priorities for LIS, solicit and review project proposals and ensure the selection and management of the highest priority projects with available funds.
Responsible Partner(s) Role(s):	SUNY RF/CTSG, jointly administer and manage the LIS research program.
Outputs/Products:	Develop Request for Preliminary and Final Proposals; List of research selected for funding; manage research projects; request, review and process progress reports and final report per research project.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2023
2020 Budget:	$1,975,674 [$1,085,000 SUNY RF, $890,674 CTSG]. [See Attachment 1, line 27].
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Identify, fund and conduct highest priority research relevant to the Long Island Sound Agreement or its successors as established by the STAC; research topics are defined, openly solicited, and selected for funding using a well-developed, respected process that is fair and technically-based; new science-based information will be provided to inform decision-making and actions towards reaching the vision and goals for Long Island Sound. Plan, organize and conduct biennial LIS research conference in 2021.
Δ (+/-) in Pressure Targets	**N/A**

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	x
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
Project/Activity Name:	Nutrient Bioextraction Pilot using Sugar Kelp and Ribbed Mussels	
NEW **Project/Activity Purpose & Description:**	Conduct a sugar kelp pilot study of the nitrogen reduction potential and ecosystem benefits of seaweed aquaculture in three near-shore sites. Conduct a pilot project to evaluate the value of ribbed mussels for the purposes of nutrient bioextraction to improve coastal water quality.	
Responsible Partner(s) Role(s):	NYSDEC/NEIWPCC	
Outputs/Products:	Final project report	
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022	
2020 Budget:	$381,051 [see Attachment 1, line 28];	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Supported growth of the seaweed and shellfish aquaculture industry; improved water quality, habitat and resiliency of LIS and surrounding communities.	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	
	6) Supporting Sustainable Wastewater Infrastructure	
	7) Wetlands Program Support/Implementation	x

b. Assessment and Monitoring. In FY2020 the Management Committee once again approved funding for the LIS ambient water quality (WQ) monitoring program conducted by CTDEEP, USGS, IEC, and UCONN. The program provides the basis for the determination of hypoxic, and other ambient conditions in LIS and to determine state compliance with water quality standards for dissolved oxygen (DO). This information is reported by CTDEEP and is used by the LISS to report annual progress in meeting CCMP goals. CTDEEP uses some of the funds to supplement CT River nutrient monitoring by the USGS. The IEC monitors water quality in the open waters and embayments of the Narrows portion of LIS. UCONN supports a network of buoys with sensors that monitor water quality every 15 minutes. This effort complements the more spatially dense ship-based sampling by CTDEEP and IEC. Since 2018, LISS has provided funding to Save the Sound to support the Unified Waters Study, which will collect data in embayments and nearshore sites through community organizations. This will fill gaps in data not collected by the main stem monitoring programs. This year CTDEEP is working with EPA HQ contractors to conduct NCCA probabilistic sampling in Long Island Sound Embayments. The following charts describe the WQ monitoring program conducted by CTDEEP and other partners' monitoring and assessment projects approved in the FY2020 budget.

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**
Project/Activity Name:	LIS Water Quality Monitoring Program
ONGOING Project/Activity Purpose & Description:	To monitor and assess the ambient conditions of water quality in LIS and provide management with information for decision-making.
Responsible Partner(s) Role(s):	CTDEEP, conduct WQ monitoring, field sampling, and analysis of LIS open waters.
Outputs/Products:	Nutrient and ancillary data to evaluate benefits of nutrient management programs and health of LIS. Dissolved oxygen data and maps of areal extent and duration of hypoxia in LIS. Tissue data is required to update the health consumption advisories in CT and NY. Organized and available database (to researchers and the public); interpretive graphics and fact sheets for public consumption on web site. Plankton community data to evaluate biological condition and response to changing water quality.
Milestones *(project start/end dates)*	October 1, 2020- September 30, 2022
2020 Budget:	Total $1,340,842. [$1,295,842 LIS Water Quality Monitoring Program. See Attachment 1, line 14. $45,000 CT River monitoring USGS. See Attachment 1, line 16]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Improved water quality assessment to guide management activities. Improved planktonic community assessment to guide management activities. Improved dissolved oxygen assessment to protect living resources and to determine criteria compliance in CT and NY. Greater safety of CT and NY residents who consume LIS seafood. Better public involvement and management of LIS nutrient and oxygen conditions. Improved stewardship. Data for researchers to complement their projects. Improved water quality assessment to guide management activities. Improved stream and tributary monitoring results. In 2017 the maximum area of hypoxia in the Sound was 70 square miles lasting for 26 days. The pre-TMDL averages of 205 square miles and 56 days are compared with the post-TMDL averages of 164 square miles and 56 days.

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	x
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
Project/Activity Name:	Embayment and Watershed Data Collection for Modeling Input	
CONTINUING Project/Activity Purpose & Description:	As Connecticut continues progress on its Second Generation Nitrogen Strategy, which involved prioritization of embayments for further study and the preparation of protection or restoration plans. This project will collect data and develop water quality and hydrodynamic models in priority embayments.	
Responsible Partner(s) Role(s):	CTDEEP via contractor	
Outputs/Products:	Monitoring and data collection; embayment models; summary report on Year 1 data collected; results of modeling efforts; recommendations for management actions	
Milestones *(project start/end dates)*	October 1, 2019- September 30, 2022	
2020 Budget:	Total $500,000 [see Attachment 1, line 15]	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Data available for researchers or stakeholders to complement their projects; improved understanding of dilution, productivity, and other processes in embayments under different scenarios; improved understanding of problems in embayments; support for future restoration plans; improvement management of priority embayments.	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	x

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
	7) Wetlands Program Support/Implementation	

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
Project/Activity Name:	LIS Real-Time Water Quality Monitoring	
ONGOING Project/Activity Purpose & Description:	To increase accuracy of data collection of the onset of low dissolved oxygen levels in the Sound to eliminate adverse impacts of hypoxia and provide an early warning mechanism to protect human health and the LIS ecosystem.	
Responsible Partner(s) Role(s):	University of Connecticut	
Outputs/Products:	Project will support the LIS water quality monitoring program through a network of fixed stations (buoys) and telemetered data.	
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2021	
2020 Budget:	$182,954 [see Attachment 1, line 17]	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Assessment of water quality management program impact; interpretation of stream flow variability on salinity in critical coastal habitats; better assessment of trends in managed nutrients; improved assessment of water quality models; maintained and working fixed monitoring stations; maintain, evaluate and distribute remote sensing data for PCO2 and PH with instruments purchased in 2017.	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	x
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**
Project/Activity Name:	IEC LIS Water Quality Monitoring
ONGOING Project/Activity Purpose & Description:	To monitor and assess the ambient conditions of water quality in western LIS and provide management with information for decision-making.
Responsible Partner(s) Role(s):	Interstate Environmental Commission (IEC)
Outputs/Products:	Project supports the LIS water quality monitoring program in western Long Island Sound.

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
Milestones *(project start/end dates)*	October 1, 2020-December 31, 2022	
2020 Budget:	$192,797 [see Attachment 1, line 18];	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Improved resolution of water quality data; increase in number of stations covered; additional data points obtained; consistency of data collected and reported.	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	x
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
Project/Activity Name:	Unified Waters Study	
CONTINUING Project/Activity Purpose & Description:	To monitor and assess the ambient conditions of water quality nearshore harbors and embayments throughout LIS	
Responsible Partner(s) Role(s):	Save the Sound, Inc. with cooperating community groups	
Outputs/Products:	Data on water quality in nearshore harbors and embayments.	
Milestones *(project start/end dates)*	October 1, 2020-December 31, 2022	
2020 Budget:	$766,674 [see Attachment 1, line 19];	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Increased community engagement and understanding of local water quality issues; improved resolution of water quality data; increase in number of stations covered; additional data points obtained; consistency of data collected and reported.	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	x
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
Project/Activity Name:	Long Island Sound Tributary Sampling	
CONTINUING Project/Activity Purpose & Description:	This project would be the second year of a three-year pilot project to establish water quality sampling in the three major tributaries to the Long Island Sound (Thames, Connecticut and Housatonic Rivers). Goal is to characterize each of the tributaries to develop a longer-term monitoring plan for each tributary. Samples will be collected for whole water and filtered forms of nitrogen, phosphorus, organic carbon and chlorophyll a analysis. Continuous water quality monitors will be installed near the mouth of the Housatonic and Thames Rivers to monitor water temperature, specific conductance, salinity, dissolved oxygen, pH, turbidity and chlorophyll a.	
Responsible Partner(s) Role(s):	USGS Interagency Agreement with assistance from the LIS nitrogen strategy workgroup	
Outputs/Products:	Monitoring and data collection; dataset of existing and project specific data; summary data report on Year 1 data collected; final project report.	
Milestones *(project start/end dates)*	October 1, 2020-December 31, 2021	
2020 Budget:	$160,000 [see Attachment 1, line 20];	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Data available for researchers or stakeholders to complement their projects; improved understanding of water quality of large river embayments; improved management of priority embayments	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	
	7) Wetlands Program Support/Implementation	

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**
Project/Activity Name:	Method Development for Drone Assessments
NEW **Project/Activity Purpose & Description:**	Upgrade drone, sensors, computers, and pilot certifications/training so CTDEEP can run a habitat mapping mission in one coastal embayment.
Responsible Partner(s) Role(s):	CTDEEP
Outputs/Products:	A report on the results from the pilot mission and a summary of the equipment and staffing needed for embayment studies using drones.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022
2020 Budget:	$50,400 [see Attachment 1, line 21];
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Map tidal wetlands, eelgrass habitat and locate pollution sources and spills using drones.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: x 2) Improving WQ Monitoring: x 3) Developing TMDLs: x 4) Controlling NPS Pollution on a Watershed Basis: x 5) Strengthening NPDES Permits: x 6) Supporting Sustainable Wastewater Infrastructure: 7) Wetlands Program Support/Implementation:

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**
Project/Activity Name:	Streamflow and water quality monitoring of Nissequogue River
NEW **Project/Activity Purpose & Description:**	Provide streamflow and water-quality information from the largest river on Long Island, New York entering Long Island Sound (LIS). Collected data would provide the information needed to assess loading of contaminates to support the LIS Comprehensive Conservation and Management Plan (CCMP).
Responsible Partner(s) Role(s):	USGS
Outputs/Products:	Water quality data
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**
2020 Budget:	$103,700 [see Attachment 1, line 21];
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Understanding of long-term trends in streamflow and water quality entering southern portions of the Sound; understanding of impairments.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: x 2) Improving WQ Monitoring: x 3) Developing TMDLs: x 4) Controlling NPS Pollution on a Watershed Basis: x 5) Strengthening NPDES Permits: x 6) Supporting Sustainable Wastewater Infrastructure: 7) Wetlands Program Support/Implementation:

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**
Project/Activity Name:	Groundwater N Loading to Rivers and Embayments
NEW **Project/Activity Purpose & Description:**	USGS, in cooperation with CTDEEP, is proposing to estimate the groundwater nitrogen loading to freshwater receptors (mainly rivers) and coastal embayments across the northern shore of Long Island Sound by using a regional groundwater flow model of coastal CT and adjacent areas of NY and RI.
Responsible Partner(s) Role(s):	CTDEEP
Outputs/Products:	Extend nitrogen model currently being developed as a pilot study for the Niantic River watershed to the remainder of the Connecticut coast.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022
2020 Budget:	$260,000 [see Attachment 1, line 23];
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Better understanding of locally important source of nutrients to coastal embayments; residence-time context for coastal groundwater flow systems and related effects on management scenarios that have an impact on nitrogen in LIS.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: x 2) Improving WQ Monitoring: x

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	
	6) Supporting Sustainable Wastewater Infrastructure	
	7) Wetlands Program Support/Implementation	

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
Project/Activity Name:	NCCA Probabilistic Sampling of LI Embayments	
NEW Project/Activity Purpose & Description:	Utilize NCCA protocols to characterize the nutrients, sediments, and benthic macroinvertebrate community in Long Island Sound embayments.	
Responsible Partner(s) Role(s):	EPA	
Outputs/Products:	Collection of high quality, statistically valid data which can be used to document the quality, quantity and distribution of priority habitats and species, protect and restore biological and ecological diversity, and identify water quality conditions necessary to support priority habitats.	
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2021	
2020 Budget:	$500,000 [see Attachment 1, line 35];	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Improved management and understanding of LIS embayments through characterization of nutrients, sediments, and benthic macroinvertebrate community in up to 60 stations in embayments following NCCA protocol.	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	
	7) Wetlands Program Support/Implementation	

c. Reporting. Costs for producing Long Island Sound publications are budgeted for in the NEIWPCC assistance award as necessary and approved by the Management Committee for the appropriate budget year. These activities are usually funded in the year preceding the publication of the

appropriate report to allow for establishment of financial commitments necessary to produce the documents. Copies of these reports are available upon request or electronic versions are posted on the LISS website.

Grant Reports. Under 40 CFR Parts 30 and 31, semi-annual reporting is required for each EPA grant award according to an established format that follows the LISS work plan form with outputs/outcomes reported. These reports are posted in EPA's Integrated Grants Management System (IGMS) and final grant progress reports are due within 90 days of the expiration date of an award.

NEPORT Reports. CTDEEP, NFWF and NYSDEC annually report information into EPA's NEPORT data system for leveraged funds, and habitat acres restored/protected/enhanced, including river miles reopened to fish passage. These latter data are used to report accomplishments to EPA's ACS system for the LIS Strategic Plan and budget measures as appropriate. Grant awards are conditioned to require these reporting elements.

3. Ecosystem Protection and Restoration Projects. The LISS Futures Fund Grant program is the primary LISS vehicle for funding implementation projects to address CCMP and other program priorities. The LISS Futures Fund, consists of High Impact Projects (up to $500,000); Large Implementation Grants ($20,000-$300,000); Planning and Design Grants ($20,000-$200,000); Citizen Science and Water Quality Monitoring Grants ($20,000-$75,000); and Education and Public Participation Grants ($5,000-$75,000) projects. The LISFF is administered by NFWF. In FY2020, the LIS Futures Fund is funded at $3,600,000 and the Small Grants component is funded at $50,000. These projects are responsive to the new *Long Island Sound CCMP* and other LISS priorities and the major outcome metrics are described in brief in Attachment 1, lines 11 and 29.

As noted, the below Logic Model subcategories are eligible funding categories under the LISFF. FY2020 LISFF-funded projects cannot be characterized under this Logic Model format as projects are not selected until September 2019.

a. Habitat; b. Water Quality; c. Living Resources; d. Healthy Communities.

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
Project/Activity Name:	LISS Futures Fund
ONGOING Project/Activity Purpose & Description:	To provide resources for priority CCMP implementation projects at the state and local level to qualified applicants.
Responsible Partner(s) Role(s):	NFWF, plans, coordinates, conducts and administers the LISS Futures Fund Grant Program
Outputs/Products:	Issue RFP to solicit a diverse range of project proposals that address problems identified in the LISS *CCMP*; develop content and format for two to four eblasts (flyers and email text), Twitter and Facebook postings to encourage applicants to develop a technically sound and diverse range of project proposals that address problems identified in the LISS *CCMP.* Provide technical assistance to potential applicants to help them develop the most useful projects to address the problems identified in the LISS *CCMP.* Develop and distribute one press release in CT and NY to announce RFP and awards. Develop and implement one grant award event in either NY or CT. Meet with potential public, nonfederal and private funders. Support LISS and EPA/LISNPO to develop accomplishments brochures and other materials. Outreach to three or more Congressional offices to respond to inquiries and

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
	raise profile of implementation elements of the LISS Futures Fund in terms of federal investment around the Sound.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2025
2020 Budget:	Total: $3,600,000 [$3,203,501 Large Grants. See Attachment 1, line 29. $50,000 Small Grants. $92,000 Contracts. $304,499 Program Support. See Attachment 1, line 11.]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Increase in participation of 'communities of practice,' including environmental justice, urban waters/distressed communities, youth and young adult and underserved communities. Increase in acres of key coastal habitat restored. Increase in measurable nonpoint source controls addressing water quality problems in LIS and its embayment's. Increase in riparian corridor development and protection. Increase in diadromous fish passage restoration. Increase public understanding of accomplishments and challenges faced in LIS and addressed by various LISS initiatives.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: x 2) Improving WQ Monitoring: x 3) Developing TMDLs: x 4) Controlling NPS Pollution on a Watershed Basis: x 5) Strengthening NPDES Permits: x 6) Supporting Sustainable Wastewater Infrastructure: x 7) Wetlands Program Support/Implementation: x

The LISS also provides direct assistance to the states for habitat restoration and protection projects. The FY20 work plan includes support for state-led habitat restoration projects in addition to those funded through the LIS Futures Fund.

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
Project/Activity Name:	LISS Stewardship Acquisitions
Continuing Project/Activity Purpose & Description:	To provide resources for priority CCMP LIS Stewardship Initiative acquisitions at the state and local level.
Responsible Partner(s) Role(s):	NYSDEC
Outputs/Products:	Acquisition of properties identified by the LISS Stewardship Initiative workgroup for protection of water quality, habitat and living resources.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022
2020 Budget:	$1,000,000 [See Attachment 1, line 38]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Protection of habitats of ecological, recreational, and public access value; protection of endangered, threatened, and rare species of plant and animal habitats; demonstration of effective public and private partnerships in habitat conservation.

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	
	3) Developing TMDLs,	
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	
	6) Supporting Sustainable Wastewater Infrastructure.	
	7) Wetlands Program Support/Implementation	X

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**	
Project/Activity Name:	Restoration Final Design for Leetes Island Tidal Marsh, Guilford, CT	
CONTINUING Project/Activity Purpose & Description:	Complete final restoration design of Leetes Island Marsh, a 35-acre tidal wetland. Project would remove the existing structures that have been altered from Hurricane Sandy and prevent the marsh from proper ecosystem function and replace them with a concrete box culvert and new tide gate chamber. Activities include hydrology studies to prevent unintended impacts and flooding; engineering services; state permitting; and federal permitting.	
Responsible Partner(s) Role(s):	CTDEEP	
Outputs/Products:	Data to inform CTDEEP and engineers of needs for project and final design plan sheets that are permit- and construction-ready	
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022	
2020 Budget:	$1,250,000 [See Attachment 1, line 39]	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Ability for Leetes Island Marsh to support emergent vegetation after constant flooding is removed; restoration of the tidal marsh	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	
	3) Developing TMDLs,	
	4) Controlling NPS Pollution on a Watershed Basis,	X
	5) Strengthening NPDES Permits,	
	6) Supporting Sustainable Wastewater Infrastructure.	
	7) Wetlands Program Support/Implementation	X

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
Project/Activity Name:	Merwin Meadows Dam Removal and Sediment Remediation Project

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
CONTINUING Project/Activity Purpose & Description:	Dam removal and remediation of Merwin Meadows, which will open up three miles of river to anadromous fish passage and benefit valuable cold water fisheries by restoring habitat and water quality below the dam.
Responsible Partner(s) Role(s):	CTDEEP
Outputs/Products:	Advanced design for dam removal, field studies, dam removal, and proper disposal of accumulated sediment behind the dam.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022
2020 Budget:	$2,200,000 [See Attachment 1, line 40]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Enhanced protection of important diadromous fisheries and wildlife habitat; enhanced riverine riparian habitat; improved water quality; expanded public access; fish passage; and reduced flood risk.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards, 2) Improving WQ Monitoring, 3) Developing TMDLs, 4) Controlling NPS Pollution on a Watershed Basis, 5) Strengthening NPDES Permits, 6) Supporting Sustainable Wastewater Infrastructure. 7) Wetlands Program Support/Implementation X

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
Project/Activity Name:	Restoration of Sluice Creek Tidal Marsh, Guilford CT
CONTINUING Project/Activity Purpose & Description:	Sluice Creek marsh is a 125-acre tidal wetland whose primary connection to Guilford Harbor and LIS is through a tide-gated box culvert. Restoration involves diverting the lower 875 feet of Sluice Creek away from Guilford Harbor so that the primary tidal connection is the East River.
Responsible Partner(s) Role(s):	CTDEEP
Outputs/Products:	Combination of easements, deeds or similar legal documents to access full project area; final report with data to inform DEEP of project needs; final design plan sheets of restoration project with licensed engineer's signature; permits for construction.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022
2020 Budget:	$400,000 [See Attachment 1, line 41]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Open connection between Sluice Creek marsh and the East River, which is an extension of the 600+ acre East River Marsh Complex and CT DEEP's East River Marsh Wildlife Management Area

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	
	3) Developing TMDLs,	
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	
	6) Supporting Sustainable Wastewater Infrastructure.	
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**	
Project/Activity Name:	Construction of Rainbow Dam Fishlift	
NEW Project/Activity Purpose & Description:	Replace ineffective fishway in extreme despair with a design known to effectively pass American Shad, Alewife, and Blueback Herring, which are the main targets for restoration to the Farmington River.	
Responsible Partner(s) Role(s):	CTDEEP	
Outputs/Products:	Fishlift with trap-and-truck feature and state-of-the-art eel pass.	
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022	
2020 Budget:	$500,000 [See Attachment 1, line 42]	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Enhanced protection of important diadromous fish; improved passage of American Shad over the Rainbow Dam Fishway. The facility would also include an eel pass.	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	
	3) Developing TMDLs,	
	4) Controlling NPS Pollution on a Watershed Basis,	
	5) Strengthening NPDES Permits,	
	6) Supporting Sustainable Wastewater Infrastructure.	
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
Project/Activity Name:	Acoustic Data Acquisition for Seafloor Mapping
CONTINUING Project/Activity Purpose & Description:	Benthic mapping of LIS has long been identified a s apriority need and is essential to improving science-based environmental management and mitigation decisions. Sea floor landscape maps depicting habitat structure and the ecological characteristics associated with those habitats are critical pieces of information. This project will perform an acoustic survey of a 99.5 square-

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
	mile area, where the depth is at least 8 meters, using a multibeam track spacing that is consistent with NOAA hydrographic mapping standards.
Responsible Partner(s) Role(s):	CTDEEP
Outputs/Products:	Acquisition of acoustic data within the portion of the LIS central basin where no current bathymetric data is available
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022
2020 Budget:	$414,500 [See Attachment 1, line 43]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Improved science-based environmental management and mitigation decisions; depict habitat structure and ecological characteristics associated with those habitats.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards, 2) Improving WQ Monitoring, 3) Developing TMDLs, 4) Controlling NPS Pollution on a Watershed Basis, x 5) Strengthening NPDES Permits, 6) Supporting Sustainable Wastewater Infrastructure. 7) Wetlands Program Support/Implementation x

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
Project/Activity Name:	Options for Beneficial Use of Dredged Material
NEW Project/Activity Purpose & Description:	Contractor will operate in two phases: 1) Conceptual framework to generate answers or pathways to numerous fundamental questions and 2) case study and supporting data delivery mechanisms.
Responsible Partner(s) Role(s):	CTDEEP
Outputs/Products:	Inventory of potential beneficial reuse sites in CT; screening criteria to link potential projects to appropriate sites focusing on potential coastal resource restoration approaches; case-study examination of at least one site; project website to deliver outputs to the public and LIS dredged material regulators.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022
2020 Budget:	$150,000 [See Attachment 1, line 44]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Reduce or eliminate open water disposal; identify sites for restoration activities.
Δ (+/-) in Pressure Targets	**N/A**

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	
	3) Developing TMDLs,	
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	
	6) Supporting Sustainable Wastewater Infrastructure.	
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**	
Project/Activity Name:	Flax Pond Habitat Restoration Project	
NEW Project/Activity Purpose & Description:	Re-establish the inlet channel to its 1960s and 1970s dimensions to restore the health of the pond.	
Responsible Partner(s) Role(s):	NYSDEC	
Outputs/Products:	Inlet improvement project to restore Flax Pond	
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022	
2020 Budget:	$950,000 [See Attachment 1, line 45]	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Protect shellfish from hypoxic conditions; increase tidal flushing; and improve tidal wetland health.	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	
	3) Developing TMDLs,	
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	
	6) Supporting Sustainable Wastewater Infrastructure.	
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
Project/Activity Name:	2021LIS Eelgrass Mapping and Change Analysis
NEW Project/Activity Purpose & Description:	Conduct an aerial survey to assess the current status of eelgrass beds and a change analysis of eelgrass beds over time in LIS. Partner with Peconic Estuary Partnership to execute the survey.
Responsible Partner(s) Role(s):	NEIWPCC
Outputs/Products:	Aerial survey of eelgrass beds
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
2020 Budget:	$128,407 [See Attachment 1, line 46]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Obtain critical information on the status and trends of eelgrass beds. Improved management and protection of eelgrass beds, which provides habitat for marine fish and invertebrates, improve water quality, and protect coastal areas from erosion.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards, 2) Improving WQ Monitoring, 3) Developing TMDLs, 4) Controlling NPS Pollution on a Watershed Basis, x 5) Strengthening NPDES Permits, 6) Supporting Sustainable Wastewater Infrastructure. 7) Wetlands Program Support/Implementation x

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
Project/Activity Name:	Evaluating Tidal Marsh Trends
NEW **Project/Activity Purpose & Description:**	Recent publications have described new methodologies that have been developed and tested to provide reliable assessment of marsh health and resiliency along the Atlantic and Pacific coasts of the United States. One aspect of this is calculating the ratio of unvegetated surface to vegetated surface within marsh units, which is referred to as the Unvegetated to Vegetated Marsh Ratio (UVVR). The assessment also includes detailed elevation mapping and other Geographic Information Systems (GIS) assessments which are less field intensive but have been shown to have a high level of predictability. USGS will establish the equivalent baseline dataset for the entire Long Island Sound Study area.
Responsible Partner(s) Role(s):	USGS
Outputs/Products:	Data layers mapped and available online as web-mapping services and GIS-tools, including the UVVR, elevation and elevation distributions, tidal range, Sediment-bound Containment Resiliency and Response Index, and wave attack.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2023
2020 Budget:	$212,859 [See Attachment 1, line 47]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Data layers to serve as an index to marsh resiliency and to utilize for planning purposes.
Δ (+/-) in Pressure Targets	**N/A**

CCMP/Work Plan Goal:	CCMP Implementation Support and Technical Assistance	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	
	3) Developing TMDLs,	
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	
	6) Supporting Sustainable Wastewater Infrastructure.	
	7) Wetlands Program Support/Implementation	x

4. Technical Assistance/Capacity Building. The LISS provides technical assistance and capacity building thorough a variety of means. The LIS Futures Fund can provide direct financial support to partners to in this area. NFWF will provide technical assistance to communities of practice in developing project proposals for their communities, including environmental justice, urban waters, youth and underserved communities and areas designated as distressed communities in Connecticut.

a. Tools. This Work Plan provides funding for development of several programmatic tools.

CCMP/Work Plan Goal:	CCMP Implementation Support and Technical Assistance
Project/Activity Name:	Phase II of the Application of Technical Approach for Establishing Nitrogen Endpoints and Allowable Loads for Three LIS Watershed Groupings
CONTINUING Project/Activity Purpose & Description:	This project will (1) refine and complete 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 and which is ongoing under this Phase II; (2) continue to respond to technical comments from a formal Technical Review process and from the public during a public comment period; (3) continue to collaborate and communicate 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) continue to identify gaps in the LIS water quality monitoring body of data; (5) continue to suggest reduction levels to develop nitrogen allocations for 23 priority LIS embayments based on the technical approach.
Responsible Partner(s) Role(s):	EPA with contractor support
Outputs/Products:	1. Final report that analyzes and responds to comments and questions from EPA, the external technical review, Technical Stakeholder Group, and the public; presentation to the EPA Project Team for review. 2. Modified Phase I Subtask Memos. 3. Public presentations of work products.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2021
2020 Budget:	$250,000 [see Attachment 1, line 33];
Outcomes: *(anticipated and/or completed accomplishments)*	Improved nitrogen management based on sound technical analysis of water quality monitoring data; improved understanding of eutrophication

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
-Short, Intermediate, Long Term	conditions and stressor-response relationships; improved understanding of controls necessary to reduce nitrogen inputs in the watershed.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: x 2) Improving WQ Monitoring: x 3) Developing TMDLs: x 4) Controlling NPS Pollution on a Watershed Basis: x 5) Strengthening NPDES Permits: x 6) Supporting Sustainable Wastewater Infrastructure: x 7) Wetlands Program Support/Implementation: x

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**
Project/Activity Name:	Solute Transport Model
NEW Project/Activity Purpose & Description:	The solute transport modeling for entire LIS watershed would complete a solute transport model for the LIS section of the LIS ground watershed. This proposal is for the second solute transport model for LIS and is proposed for the western portion of LI. NYSDEC, Peconic Estuary Program and USGS are building a solute-transport model for eastern portion of LI.
Responsible Partner(s) Role(s):	NYSDEC
Outputs/Products:	Solute transport model to assess the time-varying discharge of nitrogen into fresh and coastal waters within the LIS watershed. Model will simulate nitrogen reduction activities and estimate the resulting nitrogen loading rates over time.
Milestones *(project start/end dates)*	August 1, 2020-September 30, 2021
2020 Budget:	$300,000 [see Attachment 1, line 24];
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Informed decisions on local, state and regional level through insight into how nitrogen discharge will likely change in response to nitrogen mitigation efforts within the watershed.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: 2) Improving WQ Monitoring: x 3) Developing TMDLs: x

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**	
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	
	6) Supporting Sustainable Wastewater Infrastructure	
	7) Wetlands Program Support/Implementation	

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**
Project/Activity Name:	Watershed Nitrogen Modeling Integration
NEW Project/Activity Purpose & Description:	Update the Connecticut Watershed Model that CTDEEP developed with contractor support in 2002. The model was used to help quantify important sources of nutrients to LIS.
Responsible Partner(s) Role(s):	CTDEEP
Outputs/Products:	Revised Connecticut Watershed Model
Milestones *(project start/end dates)*	October 1, 2020-December 31, 2022
2020 Budget:	$700,000 [see Attachment 1, line 26];
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Support future development of watershed scale actions plans such as TMDLs, TMDL alternatives, or Watershed Based Plans to address nutrient-related impacts on coastal embayments in Connecticut as well as providing a means to improvement implementation of the existing LIS TMDL.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: x 2) Improving WQ Monitoring: x 3) Developing TMDLs: x 4) Controlling NPS Pollution on a Watershed Basis: x 5) Strengthening NPDES Permits: x 6) Supporting Sustainable Wastewater Infrastructure: 7) Wetlands Program Support/Implementation:

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**
Project/Activity Name:	EPA Nutrient Management through Modeling
NEW Project/Activity Purpose & Description:	The project will address the water quality and ecosystem effects of excess nutrients in Suffolk County, NY through a "Triple Value" Sustainability and Systems Model that integrates human-based drivers of water quality

CCMP/Work Plan Goal:	**Monitoring, Modeling and Research**
	impairment, ecologic factors, and social and economic feed-back loops, and a suite of management practice options for decision-makers.
Responsible Partner(s) Role(s):	EPA
Outputs/Products:	The work will deliver a completed, ready-to-use, 3V quantitative model along with user support products provided to local decision-makers and stakeholders.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2021
2020 Budget:	$100,000 [see Attachment 1, line 25];
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Support and inform local decision-making and public participation in addressing water quality and ecosystem effects of excess nutrients in Suffolk County. The model will provide a suite of management practice options.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: x 2) Improving WQ Monitoring: x 3) Developing TMDLs: x 4) Controlling NPS Pollution on a Watershed Basis: x 5) Strengthening NPDES Permits: x 6) Supporting Sustainable Wastewater Infrastructure: 7) Wetlands Program Support/Implementation:

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
Project/Activity Name:	LISS Fall-line Tributary Nitrogen Load Web page
NEW **Project/Activity Purpose & Description:**	USGS has developed long-term nitrogen load estimates. The WRTDS model outputs estimated annual concentrations and loads. The N information has been useful in evaluating the effects of nutrient management on nitrogen to the Sound. USGS will develop an interactive web page that can graphically display the nitrogen load estimates. Development of this web page would be a first step in regularly reporting of nitrogen loads, by providing infrastructure where these results can be easily viewed and understood by managers and stakeholders in the LIS watershed.
Responsible Partner(s) Role(s):	USGS
Outputs/Products:	Interactive web page that can graphically display nitrogen load estimates
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2021

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
2020 Budget:	$30,000 [see Attachment 1, line 31];
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Effective nutrient management on nitrogen loading to the Sound through graphical display of nitrogen load estimates on an interactive web page.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: x 2) Improving WQ Monitoring: x 3) Developing TMDLs: x 4) Controlling NPS Pollution on a Watershed Basis: x 5) Strengthening NPDES Permits: x 6) Supporting Sustainable Wastewater Infrastructure: x 7) Wetlands Program Support/Implementation: x

CCMP/Work Plan Goal:	**CCMP Implementation Support and Technical Assistance**
Project/Activity Name:	Stormwater Guidance
NEW **Project/Activity Purpose & Description:**	Update Connecticut manuals for stormwater management and erosion and sediment controls with new climate information and current best management practices.
Responsible Partner(s) Role(s):	CTDEEP
Outputs/Products:	Revised stormwater management and erosion and sediment controls manuals
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022
2020 Budget:	$130,000 [see Attachment 1, line 34];
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Revised documents will support better local ordinances, local code enforcement actions and more effective stormwater control implementation to reduce nonpoint source pollution.
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: 2) Improving WQ Monitoring: 3) Developing TMDLs:

CCMP/Work Plan Goal:	CCMP Implementation Support and Technical Assistance	
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	x
	7) Wetlands Program Support/Implementation	x

b. Training. The LISS will continue to fund the CT and NY Sea Grant LIS Mentor Teacher program, which trains a cadre of K-12 educators to train-the-trainers in the use of LIS as a teaching tool and resource for NY and CT teachers. The Long Island Sound Mentor Teacher (LISMT) program has consistently recruited high quality, creative, and respected teachers to assist their peers in incorporating LIS content into curricula within the scope of the CT Science Frameworks.

CCMP/Work Plan Goal:	CCMP Implementation Support and Technical Assistance	
Project/Activity Name:	LISS Mentor Teacher Training Program	
ONGOING Project/Activity Purpose & Description:	Increase awareness and understanding of the importance of Long Island Sound and its watershed by training a cadre of teachers to mentor the student population.	
Responsible Partner(s) Role(s):	CT Sea Grant/NY Sea Grant; direct implementation	
Outputs/Products:	Recruit four mentor teachers and facilitate planning sessions for workshop development (grade level cohorts K-2, 3-5, 6-8); conduct two LIS Mentor Teacher workshops for K-12 formal and informal educators; support LIS Educators Conference	
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2021	
2020 Budget:	$32,257 CT [See Attachment 1, line 10]	
Outcomes: *(anticipated and/or completed accomplishments)* **Short, Intermediate & Long Term**	Development of grade appropriate, multidisciplinary workshops utilizing LIS curricular resources; provision of LIS resources and appropriate pedagogy to result in increased educator and student understanding of LIS and issues facing LIS; educated teacher ranks in K-12 grades in New York and Connecticut portions of the Long Island Sound watershed.	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	
	2) Improving WQ Monitoring	
	3) Developing TMDLs	
	4) Controlling NPS Pollution on a Watershed Basis	
	5) Strengthening NPDES Permits	
	6) Supporting Sustainable Wastewater Infrastructure	

CCMP/Work Plan Goal:	CCMP Implementation Support and Technical Assistance	
	7) Wetlands Program Support/Implementation	x

c. Direct Assistance. The LISS is one of the oldest of the NEPs, and it has technically capable support staff in diverse fields of expertise, from scientists to managers to field personnel. The combined resources of the Management Conference, which include the states of New York and Connecticut's environmental management agencies, New York City, and other Federal and state institutional partners, are sufficient to carry out CCMP implementation, and dwarf the amount of NEP and EPA LIS funding provided for this purpose. The partners provide such technical assistance and build such implementation capacity for local environmental and other groups as may be necessary and appropriate to their ongoing missions. The LISS does fund staff in partner agencies to support direct implementation. Staff include the LISS habitat restoration coordinators in both states.

CCMP/Work Plan Goal:	**CCMP Implementation Support & Technical Assistance**	
Project/Activity Name:	Long Island Sound Nitrogen Management Initiatives Coordination	
CONTINUING Project/Activity Purpose & Description:	Facilitate the LIS Nitrogen Reduction Coordination Workgroup including developing a membership roster, mission/goals, and securing approval of the mission/goals from the LISS Management Committee and state partners. Expected participants will be from county, state, and federal agencies.	
Responsible Partner(s) Role(s):	NEIWPCC with support of a LIS Nitrogen Reduction Coordination Workgroup	
Outputs/Products:	At least two meetings or conference call. Develop written summaries of nitrogen-related activities/recommendations. Support a greater level of communication between agencies and all levels of agency staff. Work group goals/expected outcomes in conjunction with membership. Memorandum or other written summary of the workgroup activities, actions, and recommendations.	
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022	
2020 Budget:	Total: $46,270 [See Attachment 1, line 36]	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate, Long Term**	Improved communication and planning across the watershed with state and federal agencies. Committed consensus and greater levels of communication on regional planning for nitrogen removal activities in a synergistic way between local, state, and federal agencies. Continued and enhanced implementation of the TMDL and nutrient removal. Reduced nitrogen loads delivered to LIS, reduced hypoxia, improved attainment of state water quality standards.	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	x
	2) Improving WQ Monitoring	X
	3) Developing TMDLs	X

CCMP/Work Plan Goal:	**CCMP Implementation Support & Technical Assistance**	
	4) Controlling NPS Pollution on a Watershed Basis	X
	5) Strengthening NPDES Permits	X
	6) Supporting Sustainable Wastewater Infrastructure	X
	7) Wetlands Program Support/Implementation	

CCMP/Work Plan Goal:	**CCMP Implementation Support & Technical Assistance**
Project/Activity Name:	LISS Habitat Restoration/Coordination
ONGOING **Project/Activity Purpose & Description:**	Preparing, assisting municipalities, and evaluating project applications for habitat restoration, assessment, monitoring and research funding. Develop partnerships to restore LIS habitats. Work with regional staff to help partners prepare project work plans that are compatible with state regulations. Coordinate NYSDEC and CTDEEP activities associated with the LISS Habitat Restoration Initiative.
Responsible Partner(s) Role(s):	NYSDEC (via NEIWPCC); CTDEEP
Outputs/Products:	Engage new and existing LISS partners in LISS habitat restoration activities; increase project proposals for habitat restoration activities in the LIS watershed; plan, coordinate and implement restoration of the twelve priority habitat types as outlined in the LISS Habitat Restoration Strategy adopted by the Policy Committee in 1998; work with LISS communications team to issue press releases, promotional materials, and other communication items addressing habitat restoration in the LIS watershed; report at mid-year and end-of-year on progress is achieving restoration/protection/reopening targets for EPA's Strategic Plan and budget; develop and publish coastal forest and shellfish chapters of the Habitat Restoration Manual.
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022
2020 Budget:	Total: $441,719 [$209,798 CTDEEP and $231,921 NYSDEC Via NEIWPCC. See Attachment 1, line 37]
Outcomes: *(anticipated and/or completed accomplishments)* **-Short, Intermediate & Long Term**	Improved water quality, habitat, sustainability and resiliency of LIS and the surround communities. Supported growth of the seaweed aquaculture industry; and improved water quality, habitat, and resiliency of LIS and the surrounding communities.
Δ (+/-) in Pressure Targets	**N/A**

CCMP/Work Plan Goal:	**CCMP Implementation Support & Technical Assistance**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	
	2) Improving WQ Monitoring	
	3) Developing TMDLs	
	4) Controlling NPS Pollution on a Watershed Basis	
	5) Strengthening NPDES Permits	
	6) Supporting Sustainable Wastewater Infrastructure	
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**CCMP Implementation Support & Technical Assistance**	
Project/Activity Name:	Long Island Sound Senior Scientist/Coordinator Position	
ONGOING Project/Activity Purpose & Description:	Support to coordinate the science and research programs in the LISS.	
Responsible Partner(s) Role(s):	NEIWPCC	
Outputs/Products:	Coordinate with LISS partners to ensure an effective and efficient scientific research program for LIS.	
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2022	
2020 Budget:	$ 242,435 (see Attachment 1, line 30)	
Outcomes: *(anticipated and/or completed accomplishments)* **-Short; Intermediate; & Long Term**	Coordinated science and research program; increased understanding of management issues and scientific basis for actions developed in response; increased application of knowledge gained from scientific research project to management actions.	
Δ (+/-) in Pressure Targets	**N/A**	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards	x
	2) Improving WQ Monitoring	x
	3) Developing TMDLs	x
	4) Controlling NPS Pollution on a Watershed Basis	x
	5) Strengthening NPDES Permits	x
	6) Supporting Sustainable Wastewater Infrastructure	
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	**CCMP Implementation Support & Technical Assistance**
Project/Activity Name:	Technical Support Modeling Staff
NEW **Project/Activity Purpose & Description:**	USGS will provide support in the form of technical modeling expertise to consult and assist with LIS modeling initiatives
Responsible Partner(s) Role(s):	USGS
Outputs/Products:	Technical modeling staff expertise
Milestones *(project start/end dates)*	October 1, 2020-September 30, 2021
2020 Budget:	$ 279,235 (see Attachment 1, line 32)
Outcomes: *(anticipated and/or completed accomplishments)* **-Short; Intermediate; & Long Term**	Technical support among LIS modeling initiatives
Δ (+/-) in Pressure Targets	**N/A**
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards: x 2) Improving WQ Monitoring: x 3) Developing TMDLs: x 4) Controlling NPS Pollution on a Watershed Basis: x 5) Strengthening NPDES Permits: x 6) Supporting Sustainable Wastewater Infrastructure: 7) Wetlands Program Support/Implementation: x

C. Previous Year's (FY2019) Projects/Activities Highlights

1. GOALS AND ACCOMPLISHMENTS. ***Describe goals that the program met and highlight programmatic accomplishments as well as project/activity short-term and intermediate outcomes. Highlight long-term environmental results achieved wherever possible. Include outcome and/or environmental results information about projects that required substantial NEP staff time but which were sponsored/funded by others, e.g., foundations, Federal or state partners.***

a. CCMP Goal Area: Clean Waters/Healthy Watersheds

1. Point Source Load Reduction. The LISS partners continued the point source nitrogen reduction program in Long Island Sound in 2019. The total Trade-Equalized (TE) point source nitrogen load for 2019 was 22,222 TE lbs/day. This is below the wasteload allocation set in the 2000 Nitrogen TMDL. In

total, the 106 New York and Connecticut wastewater treatment plants (WWTPs) discharging to Long Island Sound have reduced nitrogen by more than 42 million pounds annually compared to baseline levels established in the 2000 TMDL. In both 2018 and 2019, the annual total nitrogen discharged from wastewater treatment plants (WWTP) in CT and NY increased for the first time since 2011 but remained below the Total Maximum Daily Load (TMDL) allocation and permit limits. The observed increase was likely caused by a greater than normal amount of precipitation in both years. Rainfall entering a wastewater treatment plant, either through the sewage pipe system or by depositing directly onto sewage storage tanks, can reduce the efficiency of the plant's ability to treat and remove nitrogen before discharging into Long Island Sound

While the LISS does not directly fund this goal area and important CCMP activity, funds for STP nitrogen upgrades result from a combination of EPA State Revolving Funds, Connecticut's state Clean Water Fund and Bond Acts, and New York State's Clean Water/Clean Air Bond Act funds and other sources, including NYC bonds and funding for NYC STP upgrades. **Attachment 6** depicts the reductions in Trade-equalized point source loadings from 1995-2019.

2. Area/Duration of Hypoxia. The maximum area of hypoxia (less than 3 milliliters (ml) of dissolved oxygen (DO) per liter of bottom water in 2019 was 89 square miles. The 2019 5-year rolling average for the maximum summertime area of low dissolved oxygen (hypoxia) in Long Island Sound was estimated at 89 square miles. This represents a 57 percent decline in the five-year rolling average compared to the pre-2000 average of 205 square miles (i.e., before the Total Maximum Daily Load was put in place by EPA and the states). The hypoxia areas in 2015, 2018, and 2017 are the second, third and fourth smallest recorded in the past 32 years of monitoring. The severity of hypoxia has also declined, with no area in the open waters below 1 mg/l dissolved oxygen in eight of the past nine years. The LISS provides funding to CTDEEP to conduct the LIS WQ monitoring program year-round, with additional monitoring runs during the summer months [Attachment 1, line 15]. Other ambient factors affect the formation of the hypoxic zone in the Sound, including water and air temperature, rainfall, solar radiation, wind direction and velocity, currents, storm events and any resulting biological effects such as algae formation. The 2019 hypoxic event was estimated to have begun on July 12 and lasted an estimated 48 days, ending on August 28. This is also evident in the continuous data collected by the LISICOS Execution Rocks Buoy, which estimated a hypoxia duration of 45 days. **Attachment 7** depicts the area/duration of the maximum hypoxia event in Long Island Sound since 1987 as measured by CTDEEP.

3. NPS Load Reductions/On-Site Treatment. The CCMP calls for actions to address NPS (NPS) pollution to the Sound, including actions to address on-site waste treatment systems (OWTS), or septic systems. The LIS TMDL addresses NPS pollution, requiring a 10 percent reduction through direct projects or best management practices and other methodologies.

Nitrogen Reduction Strategies: EPA is implementing a strategy to aggressively continue progress on nitrogen reductions, in parallel with the States' continued implementation of the 2000 Total Maximum Daily Load (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. The nitrogen reduction strategy complements the 2000 TMDL in important ways. Foremost, while the 2000 TMDL is premised on achieving water quality standards for DO in the open waters of LIS, the EPA strategy expands the focus 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. Information on the effort is available at http://longislandsoundstudy.net/issues-actions/water-quality/nitrogen-strategy/.

NYSDEC, in cooperation with Suffolk and Nassau Counties, the Long Island Regional Planning Council, local municipalities, environmental and business groups, and many other stakeholders, has been engaged in the development of the comprehensive Long Island Nitrogen Action Plan (LINAP), http://www.dec.ny.gov/lands/103654.html. As part this program, the LINAP collaborative is developing technically robust "sub-watershed plans" to fully address nitrogen pollution in the waters of Long Island, include Long Island Sound embayments. The sub-watershed plans will prioritize embayment areas for actions for nitrogen loading reductions.

CTDEEP also is engaged in the Second-Generation Nitrogen Strategy, which endeavors to complement the sound wide TMDL by assessing local impairments and local nitrogen sources contributing to them.

Bioextraction: Through a partnership with NEIWPCC and the NYSDEC, an initiative has been developed that aims to improve water quality in NY coastal waters and the Long Island Sound by removing excess nitrogen through the cultivation and harvest of seaweed and shellfish. The Bioextraction Initiative is engaged in assessing the efficacy of and potential challenges involved in advancing seaweed and shellfish aquaculture to remove excess nitrogen loads from NY and CT surface waters. The Initiative is actively involved in reviewing and reporting on literature and policies; and providing recommendations to streamline the regulatory process. Additionally, the Initiative is working with industry professionals to develop markets for and assess cultivation costs of potential bioextraction species and evaluate overall economic viability of seaweed and shellfish bioextraction operations. As part of this program, a publicly available GIS-based siting tool to identify most suitable site for bioextraction is being developed by incorporating environmental and conflict use data.

b. CCMP Goal Area: Management & Conservation of Living Marine Resources and Their Habitats

1. Habitat Restoration and Protection. As reported in EPA's NEPORT reporting system, LISS partners restored 54.1 acres and protected 477.8 acres of coastal habitat in 2019. The LISS only provides funding for individual habitat restoration projects as they may be eligible for competitive funding under the LISS Futures Fund Large Grant program, described below in Section D. Because of the complexity of planning, organizing and carrying out restoration projects in both states, the LISS funds two habitat coordinators, one each in NYSDEC (via NEIWPCC) and CTDEEP, who develop priority LIS projects, including fish passage projects, in their state. These staff positions are included in the description of LISS-funded staff in this Work Plan in Attachment 2. It should be noted that the acres restored/protected and river miles reopened were not all funded by the LISS; the CCMP called for many and varied funding sources to implement its actions. LISFF projects do help contribute to the total acres restored/protected, to the extent that eligible projects are qualified, apply, and are approved for funding.

2. Fish Passage Restoration. As reported in EPA's NEPORT reporting system, LISS partners reopened zero river miles to fish passage in 2019, but several projects are in progress. The LISS-funded CTDEEP and NYSDEC habitat restoration coordinators develop projects to reopen fish passage in each state. Because Connecticut's river and stream network along the LIS shoreline is much more extensive than New York's, the bulk of the fish passage projects are in Connecticut rivers and streams. Historically there were approximately 562 miles of river in Connecticut that supported diadromous fish runs; currently there are approximately 490 miles of river reaches open to fish passage. This is not meant as a management target for restoration. It should be noted that the river miles reopened were not all funded by the LISS; the CCMP called for many and varied funding sources to implement its actions.

3. Blue Plan: As stated on CTDEEP's website, the purpose of the Blue Plan is to protect traditional uses, minimize conflicts, and maximize compatibility, now and in the future. This includes preserving Long Island Sound's ecosystem and resources, and facilitating a transparent, science-based decision-making

process. After three years, three public hearings, six regional public meetings, and countless webinars, calls, and meetings with interested stakeholders, organizations, and commissions, a draft of the Long Island Sound blue plan was released in March 2019. There was a formal 90-day public comment period from March 20, 2019 to June 21, 2019. The legislation [Connecticut General Statutes Section 25-157t] requires CTDEEP to adopt a final draft of the long Island Sound Resource and Use Inventory and Long Island Sound Blue Plan not later than 90 days after the end of the public comment Period. The final draft was submitted to the Connecticut General Assembly on February 5, 2020. The legislature's Environment Committee will hold its own public hearing on the final draft plan, and that Committee will make recommendations to the full legislature as to whether the plan meets the intent of the CGS Section 25-157t and should be approved.

c. CCMP Goal Area: Monitoring, Modeling & Research

1. LIS Scientific Research Program. The LISS, through the CT and NY Sea Grant programs, continued to monitor the four new projects selected for funding in 2019. The abstracts of these projects may be found on the LISS website at http://longislandsoundstudy.net/research-monitoring/lis-research-grant-program/. These projects will continue to be reported on in subsequent NEP work plans as the projects are completed.

The CT and NY Sea Grant College Programs initiated the RFP cycle for FY2020 by releasing the call for pre-proposals on March 16, 2020. Thirty-six pre-proposals were submitted by the June 8, 2020 deadline and will be evaluated by an expert panel. A small subset of proposals will be invited to submit full proposals by Fall 2020. Full proposals selected for funding in late 2020 will take place from 2021-2023. More information about the current and past projects can be found on the LISS website, http://longislandsoundstudy.net/research-monitoring/lis-research-grant-program/2019-research-project-descriptions/.

The LISS STAC met in three times in 2019, with primary investigators of funded projects and others making presentations to report on progress. The three meetings focused on New York City storm surge barriers, climate change and coastal resiliency, and Long Island Sound water quality monitoring, respectively. STAC meeting minutes are posted on the LISS website, http://longislandsoundstudy.net/about/committees/science-technical-advisory-committee/.

2. LIS Sentinel Monitoring Program. The LISS Sentinel Monitoring strategy is posted at http://longislandsoundstudy.net/research-monitoring/sentinel-monitoring/. Three pilot projects were funded with FY 17 prior year funding and have now been completed. For more information on the pilot projects, visit: http://longislandsoundstudy.net/research-monitoring/sentinel-monitoring/sentinel-monitoring-for-climate-change-research-projects/. In 2017 the Sentinel Monitoring work team focused on updating the Sentinel Monitoring Strategy. The report, *Sentinel Monitoring for Climate Change in the Long Island Sound Estuarine and Coastal Ecosystems of New York and Connecticut (Vol 2),* was completed and posted on the LISS website in 2018. The work team also reviewed drafts of the LIS Climate Vulnerability Assessment conducted by Dr. Juliana Barrett of Connecticut Sea Grant. Dr. Juliana Barrett presented the completed LIS Climate Vulnerability Assessment at the July 18, 2019 Management Committee Meeting.

3. Climate Ready Estuaries Under an agreement, UCONN acquired, deployed and tested the pH and total CO2 sensors for monitoring acidification in LIS. These systems require additional development to reduce operations and maintenance effort and to improve data quality. In addition, remote sensing

reflectance and derived products from several sensors and methodologies were tested. Algorithms to retrieve chlorophyll concentrations were tested. The evaluation of data suggests that data from new sensors, such as Sentinel, may allow the distribution of near real-time CHL products for LIS in the future. This work allowed for a more thorough application of a local algorithm, leading to interesting observations of the relationships between optical patterns and environmental forcing that may drive their variability over time and space. Lastly, work continued by CT Sea Grant to conduct a vulnerability analysis of the LISS CCMP implementation actions to climate change. The Sentinel Monitoring for Climate Change Work Group provided assistance to the assessment and reviewed a draft plan in April 2018. The completed assessment was presented to the Management Committee on July 18, 2019.

d. CCMP Goal Area: Implementation Support and Technical Assistance

1. Long Island Sound Futures Fund (LISFF) Projects, FY2019. The LISFF announced 35 grants totaling $2.6 million to local government and community groups to improve the health and ecosystem of Long Island Sound. The LISFF 2019 projects will reach more than 200,000 residents through environmental and conservation education programs. Water quality improvement projects will treat at least 8.2 million gallons of water runoff reducing more than 17,000 pounds of nitrogen. The funds will be matched by $3.8 million from the recipients, resulting in $6.4 million in funding for on-the-ground conservation projects. The LISS initiated the Long Island Sound Futures Fund in 2005 through the U.S. EPA's Long Island Sound Office and NFWF. To date the Futures Fund has invested $22 million in 451 projects. With grantee match of $39 million, the program generated $62 million for locally based conservation. The projects have opened 176 river miles for fish passage, restored 1,114 acres of critical fish and wildlife habitat and open space; treated 212 million gallons of pollution, and educated and engaged 4.9 million people from communities surrounding the sound.

2. LIS Stewardship Initiative. The LISS website contains an updated online Stewardship Atlas, http://longislandsoundstudy.net/issues-actions/stewardship/stewardship-areas-atlas/. The LISFF supported several Stewardship Initiative projects and public involvement efforts centered around trails days at stewardship sites.

3. CCMP Non-Base Program Projects. In FY2019 funds were provided to enhance CCMP implementation support for the Nitrogen Reduction Strategy. Details on progress and products relating to the first project are available at http://longislandsoundstudy.net/issues-actions/water-quality/nitrogen-strategy/. The work is being conducted with the support of an EPA contract with Tetra Tech.

e. CCMP Goal Area: Public Outreach, Information & Education.

1. LISS Communications. The LISS partners produce their own materials and press releases to communicate their accomplishments and plans to their public or special audiences. The LISS, via a grant to NEIWPCC, maintains its website for public information and access, and produces *SoundBytes*, an electronic email product to keep constituents informed in topical and timely areas. *Sound Update and Outlook* are also produced several times a year, but paper copy distribution has been phased down to conserve resources and be more 'green.' LISS-produced materials emphasize the bi-state nature of public information on the Sound, its ecology or status, while individual partners' public information programs may focus on single state or communities of interests' priorities or needs. Examples of these publications are on the LISS website.

2. COMPLETED PROJECTS. ***For completed projects that were funded by a CWA §320 sub-award, indicate: project purpose; entity that led project implementation; final grant amount – if project***

came in under budget, describe how remaining funds will be reallocated to ensure expenditure during the project period; project deliverable(s) and project completion date.

The LISS is an ongoing partnership of Federal, state and local organizations implementing the cleanup and restoration plan for Long Island Sound. The LISS is not organized by 'project' and its program functions are distributed across its partners. Therefore, unless there are specific and discrete sub-grant projects that have been completed, this reporting category does not adequately represent the LISS organizational and reporting structure. However, in FY2018, several partners' assistance awards funded in prior fiscal years have been completed and their EPA awards closed out:

- LI-00A00155, $2,214,940 to CTDEEP for CCMP Implementation
- LI-96185001, $344,201 to UCONN for the Connecticut Public Outreach and Education 2016;
- LI-96161101, $752,982 to UCONN for the Water Quality Enhancement to Support Hypoxia Management.
- LI-96267817, $685,000 to NYSDEC for LIS Stewardship Land Acquisition in East Setauket, NY.

3. SUCCESS STORIES/TRANSFERABLE ACTIVITIES, TOOLS. The LISS is willing to discuss any of its ongoing programs and activities with NEP staff that were felt to be worthy of technology transfer to other NEPs; this can be done in conjunction with this Work Plan. The LISS website, the nitrogen TMDL, the bioextraction projects funded in prior years, the LISS environmental indicators, *Sound Health* and *Protection & Progress* are all examples of successful and transferable products and activities from which the other NEPs may benefit**.**

4. SUPPORT OF CWA CORE PROGRAM IMPLEMENTATION. ***Information about the anticipated role the NEP will play in the use of CWA tools; use role definitions in the September 28, 2007 Program Evaluation Funding Guidance: Primary; Significant; Support.***

Based in CWA Sections 119 and 320, this FY2020 NEP Summary Work Plan supports, directly or indirectly, many CWA core programs as indicated in the Office of Water's National Program Guidance. In turn, these core EPA regulatory programs support CCMP implementation through permits that establish nutrient levels, or programs that reduce NPS pollution to the Sound. Because of the LISS nitrogen TMDL, over the last several years, both the states of Connecticut and New York revised their ambient water quality standards (**CWA §304**) for DO pursuant to EPA's 2000 national guidance for DO in marine waters. Connecticut conducts the LISS ambient water quality monitoring (WQM) program under **CWA §106**. The data compiled by the LISS WQM program is one of the most robust and extensive datasets on ambient conditions available to scientists, researchers and managers. The LISS nitrogen TMDL (**CWA §303(d)**) set firm reduction targets and encouraged trading at point sources, and NPDES/SPDES permits (**CWA §402**) have been modified to incorporate TMDL nitrogen limits on a 15-year schedule.

The states of New York and Connecticut recognize the significant investments required to support wastewater infrastructure and have passed state bond act funding to sustain efforts to upgrade facilities to reduce nitrogen loads to the Sound as established in the nitrogen TMDL The State of Connecticut designated LIS waters in 2007 as a No Discharge Zone under the **CWA §312** and the State of New York has accomplished a similar designation in NY LIS waters in 2011. The states use authorities and funding under **CWA §319** to address priority problem areas of the Sound that originate in the watershed on land. These actions are primary support of CWA core programs and are ongoing and integral to LISS CCMP implementation to restore and protect Long Island Sound and its watershed.

5. SUPPORT FOR NEP REGIONAL PRIORITIES. ***NEP regional priorities include urban waters, fertilizers/lawn care, nutrients, climate change, NDZs, public access, environmental justice, citizen science and fish advisories.***

The LISS supports many of the NEP regional priorities, either directly through funded projects, or indirectly through previously-funded work or from support to partners who are charged with implementing a priority area. For example, the LISFF supported 35 sub awards totaling $2.6 million to local government and community groups to improve the health and ecosystem of Long Island Sound in 2019. The LISFF 2019 projects reached more than 200,000 residents through environmental and conservation education programs. Water quality improvement projects treated 8.2 million gallons of storm water, reduce more than 17,000 pounds of nitrogen and collect 46,000 pounds of floating trash. The funds were matched by $3.8 million from the recipients, resulting in $6.4 million in funding for on-the-ground conservation projects. See: http://longislandsoundstudy.net/about/grants/lis-futures-fund/2018-large-grants/.

The LISFF FY2019 supported EPA's Environmental Justice initiatives by providing funding for projects in communities in which inner-city and disadvantaged youth are given the opportunity to visit and explore Long Island Sound -- some for the first time -- and to accomplish meaningful conservation work on public lands and waters.

6. EXTERNAL FACTORS. ***Description of external factors that had an impact on: overall work plan implementation, attainment of specific goals; achievement of project milestones and/or output completion; and description of adaptive management strategies the program used to deal with those factors.***

In FY2019, funding available to the LISS increased again, to approximately three and a half times what it was from the FY2016 Enacted level. This increase necessitates increased emphasis on fiscal management and project oversight. The LISS also needs to further implement program implementation tracking, as was highlighted by the Government Accountability Report 18-410, which was released in July 2018. The LISS worked with GAO throughout 2017 as it conducted its assessment of the program. The LISS lost an EPA program analyst in 2017 due to retirement and brought in a new program analyst at the end of April 2019. Despite back filling the program analyst position, tight staffing, implementation of ambitious initiatives such as the Nitrogen Strategy, and increased program evaluation and tracking, strains existing staff. Finally, the statutory funding authorization for CWA §119 and §320 expired in 2010. In 2011 the statutory funding authorization for the Long Island Sound Stewardship Act [P.L. 109-359] expired. The final legislative results of any future reauthorization bills may impact future LISS program implementation and direction.

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LONG ISLAND SOUND STUDY **ATTACHMENT 1**
SUMMARY OF FY2020 LISS FUNDING UNDER CWA §119 AND §320
BY PROGRAM ELEMENT

LISS PROGRAM ELEMENT	ACTIVITY/TASK	2020 OUTPUTS/PRODUCTS/SERVICES/TASKS [PRIOR YEAR REFERENCES]	LISS GRANTEE OR FEDERAL IA	2020 BUDGET AMOUNT	ENVIRONMENTAL OUTCOMES
Coordination and Reporting of Environmental Actions and Results	**EPA Long Island Sound Program Office Support**	1) Telecommunications; internet; copier; postage; supplies, materials; EPA travel account.	EPA LISO	$10,000	Coordinated federal, state, and local government actions to implement the CCMP; clear annual goals and objectives framed within available funding; public and financial support for restoration and protection of Long Island Sound
		2) EPA HQ administration	EPA LISO	$4,000	
		3) LIS Program support	EPA LISO	$28,000	Addition of two program staff and one part-time SEEP to allow proper management of increased fiduciary oversight and management of §119 funds. EPA has increased investments in action with the enacted FY20 funding at $21.6 million from $4.6 million in FY16.
	State Coordination & Technical Assistance	4a) Assist in all aspects of LISS program development, reporting and support.	CTDEEP	$495,104	Involvement of relevant technical staff and programs in LISS activities to protect and restore Long Island Sound, its resources and its habitats, and to protect public health and meet commitments to the LISS partnership. NYSDEC positions is state supported.
		4b) Assist in all aspects of LISS program development, reporting and coordination support.	NYSDEC	$339,797	
	Management Conference Administrative Support	5) National NEP travel; Management Conference meetings; CAC meeting support; state travel support for local and national meetings and conferences; other planning and reporting support.	NEIWPCC	$111,801	Increased citizen involvement and participation at local and national meetings; increased understanding of issues and ability to inform and advise management conference partners on program direction and policy.
		6) Sustainable and Resilient workgroup	CT/NY Sea Grant	$50,000	Improved implementation progress on CCMP Sustainable and Resilient Communities goals through development of a five-year work plan and implementation strategy.
	COORDINATION SUBTOTAL:			**$1,038,702**	**= 4.8%**
Public Outreach, Information, Participation and Education	**Public Information & Education Program**	7) LISS communications coordination; project management & support.	NEIWPCC	$315,842	Increased citizen involvement in CCMP implementation and program direction; informed and increasing public knowledge and citizen participation in LIS issues; increasing understanding of the state of LIS health; better public assessment of progress and production of key reports to citizens involved in the LISS leading to changes in management direction or CCMP implementation.
		8) LISS NY communications coordination, UPDATE, presentations, press releases.	NY Sea Grant	$227,875	
		9) LISS CT communications coordination, presentations, press releases.	CT Sea Grant	$121,734	
		10) K-12 Mentor Teacher Program in New York and Connecticut	CT Sea Grant	$32,257	Development of grade appropriate, multidisciplinary workshops utilizing LIS curricular resources; provision of LIS resources and appropriate pedagogy to result in increased educator and student understanding of LIS and issues facing LIS; educated teacher ranks in K-12 grades in New York and Connecticut portions of the Long Island Sound watershed.

	Small Grants Program			$50,000	Informed public and increased citizen participation to improve stewardship and individuals' actions beneficial to a healthy LIS; increasing awareness of the state of LIS health and promoting changes in lifestyle that might benefit the Sound; improved habitat and water quality and increased public awareness and participation in LIS affairs; fulfilled public expectations for knowledge about LIS and educational needs.
		11) LISS Futures Fund Small Grants Program for public information, education, outreach, <$10K projects. Plus contracts and program support	NFWF	$396,499	
	Public Engagement	12) Sentinel Monitoring Workshop	NEIWPCC	$44,446	Defined goals and effective development of the Sentinel Monitoring Network; engagement from LIS stakeholders to identify monitoring data sources and centralize available monitoring data.
		13) LISS Strategic Communications Plan	NEIWPCC	$171,627	Coordinated communications plan that will engage and motivate multiple audiences, through increased awareness, knowledge, and behavior change, to improve the health and resilience of Long Island Sound, thereby implementing multiple goals and actions of the CCMP.
	PI&E SUBTOTAL:			**$1,360,280**	**= 6.3%**

Water Quality Monitoring, Modeling and Scientific Research	**Water Quality Monitoring**	14) LIS Water Quality Field Surveys	CTDEEP	$1,295,842	Improved water quality assessment to guide management activities; improved planktonic community assessment to guide management activities; improved dissolved oxygen assessment to protect living resources and to determine criteria compliance in CT/NY; greater safety of CT/NY residents who consume LIS seafood; better public involvement and management of LIS nutrient and dissolved oxygen conditions affecting living marine resources.
		15) Embayment and Watershed Data Collection for Modeling	CTDEEP	$500,000	Data available for researchers or stakeholders to complement their projects; improved understanding of dilution, productivity, and other processes in embayments under different scenarios; improved understanding of problems in embayments; support for future restoration plans; improvement management of priority embayments.
		16) CT River WQ Monitoring	USGS-CTDEEP	$45,000	Improved continuous water quality data for simulations or analyses in support of nitrogen management conditions.
		17) LIS Real-Time Water Quality Monitoring	UConn	$182,954	Assessment of management program impact; interpretation of stream flow variability on salinity in critical coastal habitats; better assessment of trends in managed nutrients; improved assessment of water quality models.
		18) IEC LIS Water Quality monitoring	IEC	$192,797	Improved resolution of water quality data; increase in number of stations covered; additional data points obtained.

		19) Unified Waters Study	Save the Sound, Inc.	$766,674	Increased community engagement and understanding of local water quality issues; improved resolution of water quality data; increase in number of stations covered; additional data points obtained; consistency of data collected and reported.
		20) Long Island Sound Tributary Sampling	USGS	$160,000	Data available for researchers or stakeholders to complement their projects; improved understanding of water quality of large river embayments; improved management of priority embayments
		21) Method Development for Drone Assessments	CTDEEP	$50,400	Upgrade drone, sensors, computers, and pilot certifications/training so CTDEEP can run a habitat mapping mission in one coastal embayment.
		22) Streamflow and water quality monitoring of Nissequogue River in Suffolk County, NY	USGS	$103,700	Improved data to assess loading contaminates to support CCMP.
	Modeling	23) Groundwater N Loading to Rivers and Embayments	CTDEEP	$260,000	Better understanding of locally important source of nutrients to coastal embayments; residence-time context for coastal groundwater flow systems and related effects on management scenarios that have an impact on nitrogen in LIS.
		24) Solute Transport Model	NYSDEC	$300,000	Informed decisions on local, state and regional level through insight into how nitrogen discharge will likely change in response to nitrogen mitigation efforts within the watershed.
		25) EPA Nutrient Management through Modeling	EPA	$100,000	Support and inform local decision-making and public participation in addressing water quality and ecosystem effects of excess nutrients in Suffolk County. The model will provide a suite of management practice options.
		26) Watershed Nitrogen Modeling Integration	CTDEEP	$700,000	Support future development of watershed scale actions plans such as TMDLs, TMDL alternatives, or Watershed Based Plans to address nutrient-related impacts on coastal embayments in Connecticut as well as providing a means to improvement implementation of the existing LIS TMDL.
	Research	27) LIS Research Program, FY 20 RFP for scientific research; STAC meeting support; LIS Research Conference	CT Sea Grant	$890,674	Conduct o highest priority research relevant to the LISS CCMP is defined, openly solicited, and selected for funding using a well-developed process that is fair and technically based. New science-based information is p provided to inform decision making and actions toward reaching the vision and goals of the CCMP.
			SUNY Research Foundation	$1,085,000	
		28) Nutrient Bioextraction Pilot using Sugar Kelp and Ribbed Mussels	NYSDEC	$381,051	Inform regulators and nutrient resource managers on uptake rates of nutrients, metals, pathogens and contaminants; measure the value of harvested sugar kelp as a growth supplement. Inform regulators and nutrient resource managers of the value of ribbed mussels at removing excess nitrogen and other nutrients, heavy

					metals, pathogens, and organic contaminants.
	MONITORING, MODELING & RESEARCH SUBTOTAL:			**$ 7,014,092**	**= 32.4%**
CCMP Implementation Support, and Technical Assistance	**LIS Futures Fund Large Grant Program**	29) LIS Futures Fund Large Grants	NFWF	$3,153,501	Increase in participation of 'communities of practice,' including environmental justice, urban waters/distressed communities. Increase in acres of key coastal habitat restored. Increase in measurable nonpoint source controls addressing water quality problems in LIS and its embayments. Increase in riparian corridor development and protection. Increase in diadromous fish passage restoration. Increased public understanding of accomplishments and challenges faced in LIS and addressed by various LISS initiatives.
	Science and Modeling Synthesis	30) Long Island Sound Senior Scientist/ Coordinator	NEIWPCC	$242,435	Coordinated science and research program; increased understanding of management issues and scientific basis for actions developed in response; increased application of knowledge gained from scientific research project to management actions.
		31) LISS Fall-line Tributary Nitrogen Load web page	USGS	$30,000	Effective nutrient management on nitrogen loading to the Sound through graphical display of nitrogen load estimates on an interactive web page.
		32) Technical Support Modeling Staff	USGS	$279,235	Coordinator will facilitate development of models which will help attain ecosystem target for nitrogen loading and have all practices and measures installed to attain the allocations for stormwater and nonpoint source inputs from the entire watershed by 2025
	Regulatory and Compliance Assistance	33) EPA Nitrogen Contract Phase II	EPA	$250,000	Improved nitrogen management based on sound technical analysis of water quality monitoring data; improved understanding of eutrophication conditions and stressor-response relationships; improved understanding of controls necessary to reduce nitrogen inputs in the watershed.
		34) Stormwater Guidance	CTDEEP	$130,000	Update Connecticut and New York manuals for stormwater management and erosion and sediment controls with new climate information and current best management practices. Revised documents will support better local ordinances, local code enforcement actions and more effective stormwater control implementation to reduce nonpoint source pollution.
CCMP Implementation Support, and Technical		35) NCCA Probabilistic Sampling of LI Embayments	EPA	$500,000	Improved management and understanding of LIS embayments through characterization of nutrients, sediments, and benthic macroinvertebrate community in up to 60 stations in embayments following NCCA protocol.

Assistance		36) Nitrogen Management Initiatives Coordination	NEIWPCC	$46,270	Continued and enhanced implementation of the TMDL and nutrient removal. Reduced nitrogen loads delivered to LIS, reduced hypoxia, improved attainment of state water quality standards.
	Habitat Restoration & Protection		CTDEEP	$209,798	Restored and protected critical coastal habitat in the LIS watershed; increased public awareness about current or planned habitat restoration and restoration activities in the LIS watershed; progress towards LISS Habitat Restoration Initiative (HRI) goals for restoring habitat and river corridors that improve health of living resources in the LIS environment; additional and leveraged funding brought to restoration activities and increased acreage/miles improved to benefit LIS water quality and biological health; public outreach about HRI and accomplishments; implementation of habitat restoration projects and effective communication to the public.
		37) Habitat Restoration and Stewardship Coordination and Implementation.	NYSDEC/NEIWPCC	$231,921	
		38) LIS Stewardship Acquisitions	NYSDEC	$1,000,000	Acquisition of properties identified by the LISS Stewardship Initiative workgroup for protection of water quality, habitat and living resources.
		39) Restoration Final Design for Leetes Island Tidal Marsh, Guilford, CT	CTDEEP	$1,250,000	Ability for Leetes Island Marsh to support emergent vegetation after constant flooding is removed; restoration of the tidal marsh.
		40) Merwin Meadows Dana Dam Removal and Sediment Remediation Project	CTDEEP	$2,200,000	Enhanced protection of important diadromous fisheries and wildlife habitat; enhanced riverine riparian habitat; improved water quality; expanded public access; fish passage; and reduced flood risk.
		41) Restoration of Sluice Creek Tidal Marsh, Guilford CT	CTDEEP	$400,000	Open connection between Sluice Creek marsh and the East River, which is an extension of the 600+ acre East River Marsh Complex and CT DEEP's East River Marsh Wildlife Management Area
		42) Construction of Rainbow Dam Fishlift	CTDEEP	$500,000	Enhanced protection of important diadromous fish; improved passage of American Shad over the Rainbow Dam Fishway. The facility would also include an eel pass.
		43) Acoustic Data Acquisition for Seafloor Mapping	CTDEEP	$414,500	Improved science-based environmental management and mitigation decisions; depict habitat structure and ecological characteristics associated with those habitats
		44) Options for Beneficial Use of Dredged Material	CTDEEP	$150,000	Reduce or eliminate open water disposal; identify sites for restoration activities.
		45) Flax Pond Habitat Restoration Project	NYSDEC	$950,000	Protect shellfish from hypoxic conditions; increase tidal flushing; and improve tidal wetland health.
		46) 2021 LIS Eelgrass Mapping and Change Analysis	NEIWPCC	$128,407	Obtain critical information on the status and trends of eelgrass beds. Improved management and protection of eelgrass beds, which provides habitat for marine fish and invertebrates, improve water quality, and protect coastal areas from erosion.

		47) Evaluating Tidal Marsh Trends	USGS	$212,859	Data layers to serve as an index to marsh resiliency and to utilize for planning purposes.
	CCMP IMPLEMENTATION SUPPORT SUBTOTAL:			$ 12,249,426	**= 56.6%**
			Subtotal, all Elements =	**$21,662,500**	
			TOTAL FUNDING REQUEST =	**$21,662,500**	

ATTACHMENT 2

LONG ISLAND SOUND STUDY
NATIONAL ESTUARY PROGRAM WORK PLAN
LIST OF FY2020 LISS-FUNDED STAFF

ORGANIZATION/NAME	LISS TITLE	DESCRIPTION OF RESPONSIBILITIES/ACTIVITIES
CTDEEP		
Mark Parker	Environmental Analyst 3	Coordinates overall LIS program in CT.
Kelly Streich	Environmental Analyst 3	Provides technical support. (50%)
Katie Clayton-O'Brien	Environmental Analyst 2	Water quality sampling/analysis.
Matthew Lyman	Environmental Analyst 2	Water quality sampling/analysis.
Tommy Seda	Boat Captain	RV John Dempsey CTDEEP WQ Monitoring.
Christine Olsen	Environmental Analyst 2	Water quality sampling/analysis. (80%)
Harry Yamalis	Environmental Analyst 2	Coordinates habitat restoration plans/projects in CT.
NYSDEC		
Casey Personius*	LIS Coordinator	Coordinates overall LIS program in New York
NY Sea Grant		
Jimena Beatriz-Perez Viscasillas	NY Outreach Coordinator	Develops and implements communications plans and public information/education program in NY.
Karen Palmeri	Administrative Support	Supports Extension Specialist. (33%)
NEIWPCC		
Robert Burg	LISS Outreach Coordinator	Coordinates the overall LISS communications program .
James Ammerman	Science Coordinator	Coordinates LISS science and research program.
Audra Martin	Environmental Analyst I	Overall LIS coordination within NEIWPCC and TMDL support.
Victoria O'Neill	NYSDEC Habitat Restoration Coordinator	Coordinates habitat restoration plans/projects in the New York portions of the LIS watershed.
CTSEA		
Judy Preston	CT Outreach Coordinator	Provides PI&E support and coordination in CT. (70%)

* funded from state match funds

Attachment 3
Current draft as of 7/7/20

Organization & Base Program Activity	2020 Base Request	2020 Required Match	2020 Actual Match
1. EPA Long Island Sound Office	**$42,500**	**$0**	**$0**
a. Office operating expenses	$10,500	$0	NA
b. EPA HQ administration	$4,000	$0	NA
c. LIS Program support	$28,000	$0	NA
2. Connecticut Dept. of Energy & Environmental Protection	**$8,600,000**	**$5,733,763**	**$6,983,762**
a. CT State Coordination and Technical Support	$495,104	$330,069	$330,069
Modeling Coordinator	$0	$0	$0
b. LIS Water Quality Monitoring Program	$1,295,842	$863,895	$863,895
c. CT Habitat Restoration Coordination	$209,798	$139,865	$139,865
d. CT Overmatch	State Overmatch	State Overmatch	$1,250,000
e. CT Watershed Model year 2 of 3	$700,000	$466,667	$466,667
f. Embayment and Watershed Data Collection for Modeling	$500,000	$333,333	$333,333
g. Method Development for Drone Assessments	$50,400	$33,600	$33,600
h. Stormwater Guidance	$130,000	$86,667	$86,667
i. CT River Monitoring (USGS)	$45,000	$30,000	$30,000
j. Restoration of Leetes Island Tidal Marsh	$1,250,000	$833,333	$833,333
k. Restoration of Sluice Creek Tidal Marsh	$400,000	$266,667	$266,667
l. Construction of Rainbow Dam Fishlift	$500,000	$333,333	$333,333
m. Dana Dam Removal - Norwalk River	$2,200,000	$1,466,667	$1,466,667
n. Acoustic Data Acquisition for Seafloor Mapping	$414,500	$233,333	$233,333
o. Exploring Options for Beneficial Use of Dredged Material	$150,000	$100,000	$100,000
p. Groundwater N Loading to Rivers and Embayments	$260,000	$173,333	$173,333
3. NY State Dept. of Environmental Conservation (Land)	**$1,950,000**	**$1,520,833**	**$2,001,398**
a. NY Habitat Coordination [via NEIWPCC]	Requested under row 7.c., this column	Required match under row 7.c., this column	$154,614
b. Support for Stewardship Land Acquisition (CWA 320)	$662,500	$662,500	$662,500
c. Support for Stewardship Land Acquisition (CWA 119)	$337,500	$225,000	$225,000
d. Flax Pond Habitat Restoration Project	$950,000	$633,333	$633,333
e. NY State Match & Overmatch: Stewardship Acquisition	State Overmatch	State Overmatch	TBD
4. NY State Dept. of Environmental Conservation (Water)	**$1,020,848**	**$672,615**	**$672,615**
a. LISS New York State DOW Coordinator	$339,797	$226,531	$226,531
b. Nutrient Bioextraction Pilot Using Sugar Kelp c. Nutrient Bioextraction Pilot Using Ribbed Mussels	$381,051	$254,034	$254,034
d. Solute Transport Model Western portion of LI	$300,000	$200,000	$200,000
5. Univ. of Connecticut/ CT Sea Grant	**$203,991**	**$41,438**	**$42,011**
a. CT PI&E Coordination & STAC support	$121,734	$6,407	$6,449
b. K-12 Mentor Teacher Program	$32,257	$1,698	$2,149
c. Sustainable & Resilient workgroup	$50,000	$33,333	$33,413
6. NY Sea Grant Cornell U.	**$227,875**	**$11,993**	**$11,993**
a. NY Public Outreach Program	$227,875	$11,993	$11,993
7. NE Interstate Water Pollution Control Commission	**$1,292,749**	**$640,594**	**$0**
a. Task 1 Outreach/Education Support	$315,842	$16,614	$8,582
b. Task 2 Meeting/Travel Coordination Support	$111,801	$74,534	$0
c. Task 3 Habitat Coordination [NYSDEC staff]	$231,921	$154,614	Provided match under 3.a., this column
d. Task 4 LIS Nitrogen Reduction Support	$46,270	$30,847	$0
e. Task 5 Science Coordinator	$242,435	$161,623	$0
f. Sentinel Monitoring Workshop	$44,446	$2,339	$0
g. LISS Strategic Communications Plan	$171,627	$114,418	$0
h. 2021 LIS Eelgrass Mapping and Change Analysis	$128,407	$85,605	$0
8. Interstate Environmental Commission	**$192,797**	**$128,531**	**$128,531**
9. Univ. of Connecticut Water Quality monitoring	**$182,954**	**$121,969**	**$121,969**
10. EPA Nitrogen Contract	**$250,000**	**$0**	**$0**
11. National Fish & Wildlife Foundation	**$3,600,000**	**$2,400,000**	**$2,333,333**
12. Save the Sound- Unified Water Study	**$766,674**	**$511,116**	**$511,116**

13. Univ. of Connecticut/ CT Sea Grant Research Program	**$890,674**	**$593,783**	**$449,026**
a. Forward Funding for FY20 ($609,326)	$0	$0	NA
b. New FY20 funds	$890,674	$593,783	$449,026
14. Research Foundation of SUNY/ NY Sea Grant Research Program	**$1,085,000**	**$723,333**	**$543,209**
a. Forward Funding for FY20 ($485,000)	$0	$0	NA
b. New FY20 funds	$1,085,000	$723,333	$543,209
15. USGS CT Interagency Agreement	**$682,094**	**$0**	**$0**
a. Major LIS Tributary sampling	$160,000	$0	NA
b. LIS Fall-line Tributary Nitrogen Load web page	$30,000	$0	NA
c. LIS Technical support (Split with EPA LIS Program support)	$279,235	$0	NA
d. Evaluating Tidal Marsh Trends (WH coastal & marine science center)	$212,859	$0	NA
16. USGS NY Interagency Agreement	**$103,700**	**$0**	**NA**
17. EPA Nutrient Management Through Modeling	**$100,000**	**$0**	**NA**
18. NCCA Probabilistic Sampling of LI Embayments	**$500,000**	**$0**	**NA**
FY 2020 Total Request:	**$21,662,500**	**$13,029,835**	**$13,273,066**
FY2020 Allocation	**$21,662,500**		
Unallocated:	**$0**		
***Section 119 funds = $21,000,000 LIS and Section 320 funds = $662,500 NEP**		**Excess Match:**	**$243,231**

Attachment 4
Current draft as of 7/7/20

Program Code/Grant #	Funding Opportunity # (grants.gov)	Project Officer	Region	Grants Specialist	Recipient	Description	Fed Award Amount (000B67)	Fed Award Amount (000B89)
LI-New	EPA-CEP-01 CFDA 66.437	Chris Dere/ Cayla Sullivan	2	Janeime Castro	NY State DEC	This project grant supports activities to acquire and preserve stewardship property along LIS.	$1,287,500	$662,500
LI-96257219-0	EPA-CEP-01 CFDA 66.437	Cayla Sullivan	2	Janeime Castro	NY State DEC	NY state Division of Water projects	$300,000	$0
LI-96261417	EPA-CEP-01 CFDA 66.437	Mark Tedesco	2	Janeime Castro	Cornell University Office of Sponsored Programs	This agreement provides assistance to the Cornell University Office of Sponsored Programs to implement its project to support the Long Island Sound Comprehensive Conservation and Management Plan to protect and restore Long Island Sound. Specifically, under this cooperative agreement the recipient conducts the planning, organization and implementation of public environmental education programs for the Long Island Sound in the State of New York by working with the Long Island Sound Study Management Conference partners in assessing needs and developing priorities. This project will promote citizen involvement and citizen education to protect New York coastal resources in the Long Island Sound watershed.	$227,875	$0
LI-96256619	EPA-CEP-01 CFDA 66.437	Nikki Tachiki	2	Janeime Castro	SUNY Research Foundation (Sea Grant)	This agreement provides assistance to the State University of New York - Research Foundation (SUNY Research Foundation) to implement its project to support the Long Island Sound Comprehensive Conservation and Management Plan to protect and restore Long Island Sound. Specifically, under this grant agreement the recipient will administer the Long Island Sound Research Grant program to identify scientific research needs and priorities, solicit and manage scientific peer review of proposals, and manage the selection and completion of the highest priority proposals. The project will result in at least one sub-award for research to improve understanding of Long Island Sound critical to improving water and habitat quality.	$1,085,000	$0
LI-96259818	EPA-CEP-01 CFDA 66.437	Chris Dere/Cayla Sullivan	2	Janeime Castro	Save The Sound	This agreement provides assistance to the Connecticut Fund for the Environment to implement its project to support the Long Island Sound Comprehensive Conservation and Management Plan to protect and restore Long Island Sound. Specifically, under this agreement the recipient will coordinate and implement the Unified Water Study, which establishes a comparable bay-to-bay dataset describing the eutrophic conditions and environmental health of bays and harbors around the Long Island Sound.	$766,674	$0
LI-00A00372	EPA-CEP-01 CFDA 66.437	Aimee Boucher/Leah O'Neill	1	Brian Tocci	Interstate Environmental Commission	This agreement provides assistance to the Interstate Environmental Commission to implement its project to support the Long Island Sound Comprehensive Conservation and Management Plan to protect and restore Long Island Sound. Specifically, under this grant the recipient will 1) conduct water quality monitoring of summer hypoxic conditions in western Long Island Sound and its embayments; 2) continue coordinated monthly, weekly and bi-weekly long-term monitoring of a suite of in-situ parameters at a network of 22 historical monitoring stations; and 3) coordinate with the Connecticut Department of Energy and Environmental Protection and other Long Island Sound Study partners involved in monitoring Long Island Sound.	$192,797	$0

LI-00A00284	EPA-CEP-01 CFDA 66.437	Nikki/Tachiki/ Leah O'Neill	1	Brian Tocci	CT Sea Grant Research	This agreement provides assistance to the University of Connecticut to implement its project to support the Long Island Sound Comprehensive Conservation and Management Plan to protect and restore Long Island Sound. These funds will cover the 2018 selected projects. Specifically, under this grant agreement the recipient will administer the Long Island Sound Research Grant program to identify scientific research needs and priorities, solicit and manage scientific peer review of proposals, and manage the selection and completion of the highest priority proposals. The project will result in at least one sub-award for research to improve understanding of Long Island Sound critical to improving water and habitat quality.	$890,674	$0
LI-00A00156-3	EPA-CEP-01 CFDA 66.437	Nikki Tachiki/ Leah O'Neill	1	Julie Ross	CT Sea Grant	This project will 1) plan, organize, coordinate and implement public environmental education programs for the Long Island Sound program in the State of Connecticut by working with the Long Island Sound Study Management Conference partners in assessing needs and developing priorities, and 2) promote citizen involvement and citizen education to protect Long Island Sound coastal resources in the Long Island Sound watershed.	$0	$0
LI-00A00578-0	EPA-CEP-01 CFDA 66.437	Nikki Tachiki/ Leah O'Neill	1	Julie Ross	CT Sea Grant	This project will 1) plan, organize, coordinate and implement public environmental education programs for the Long Island Sound program in the State of Connecticut by working with the Long Island Sound Study Management Conference partners in assessing needs and developing priorities, and 2) promote citizen involvement and citizen education to protect Long Island Sound coastal resources in the Long Island Sound watershed.	$203,991	$0
LI-New	EPA-CEP-01 CFDA 66.437	Bessie Wright	1	Brian Tocci	National Fish & Wildlife Foundation	NFWF LIS Futures Fund 2019----As directed by Sections 119(d) and 320 of the Clean Water Act, this project implements recommendations of the Long Island Sound Study (LISS) Comprehensive Conservation and Management Plan (CCMP). The grant supports activities to support community-based efforts to restore Long Island Sound by providing sub-grants, through the National Fish and Wildlife Foundation (NFWF), on a competitive basis through the Long Island Sound Futures Fund. Funded projects will educate and involve the public, protect and restore habitat, and reduce polluted runoff. This program will promote direct citizen involvement and individual and community actions to protect and restore LIS.	$3,600,000	$0
LI-00A00157	EPA-CEP-01 CFDA 66.437	Ian Dombroski	1	Monique Lloyd	Univ. of Connecticut	UCONN Dept Marine Services WQ Monitoring---- As directed by Sections 119(d) and 320 of the Clean Water Act, this project implements recommendations of the Long Island Sound Study (LISS) Comprehensive Conservation and Management Plan (CCMP). The grant agreement supports activities to assess the accuracy of water quality monitoring data used to measure the area and extent of hypoxia, or lack of dissolved oxygen, in Long Island Sound, and enhance those data by acquisition and deployment of new equipment and the application of new or enhanced water quality monitoring and assessment methodologies and techniques, including remote sensing.	$182,954	$0
LI-New	EPA-CEP-01 CFDA 66.437	Leah O'Neill	1	Diane Culhane	CTDEEP	This agreement provides assistance to the Connecticut Department of Energy and Environmental Protection to implement its project to support the Long Island Sound Study Comprehensive Conservation and Management Plan to protect and restore the chemical, physical and biological integrity of Long Island Sound.	$8,536,144	$0
	EPA-CEP-01 CFDA 66.437	Leah O'Neill	1	Diane Culhane	CTDEEP	This agreement provides assistance to the Connecticut Department of Energy and Environmental Protection to implement its project to support the Long Island Sound Study Comprehensive Conservation and Management Plan to protect and restore the chemical, physical and biological integrity of Long Island Sound.	$0	$0

LI-New	EPA-CEP-01 CFDA 66.437	Bessie Wright	1	Brian Tocci	NEIWPCC	This agreement provides assistance to the New England Interstate Water Pollution Control Commission to implement its project to support the Long Island Sound Comprehensive Conservation and Management Plan to protect and restore the chemical, physical and biological integrity of Long Island Sound and to assist the states of Connecticut and New York, and other public or nonprofit entities in conducting research, experiments, investigations, training, demonstration, surveys, or studies related to reducing pollution and improving the quality of the environment to sustain living resources in the Long Island Sound. Specifically, under this cooperative agreement the recipient will: 1) support Long Island Sound Study outreach and education programs, 2) provide project management oversight to New England Interstate Water Pollution Control Commission staff and travel support to program partners, 3) support New York State habitat restoration and stewardship coordinator position, 4) support Long Island Sound Study office and national program evaluation 5) support Long Island Sound Study science coordinator position, and 6) work to develop a nonpoint source and stormwater tracking tool for the watershed, and 7) support coordination of nitrogen reduction strategies and nitrogen reduction workgroup.	$2,013,597	$0
Contract		Leah O'Neill	1	Ray Cody	Phase 2 N Strategy	EPA contract for Nitrogen Strategy through Tetra Tech, Phase 2 - Option Period	$250,000	
Contract		Mark Tedesco	2		EPA R2	EPA Nutrient Management Through Modelling	$100,000	
Contract		Hugh Sullivan	1		EPA HQ	EPA HQ for coastal condition assessment	$500,000	
Interagency Agreement		Nikki Tachiki	2		USGS NY	Nissequogue River monitoring	$103,700	
Interagency Agreement		Leah O'Neill	1	Ian Dombroski	USGS WH	Tidal Marsh	$212,859	
Interagency Agreement		Leah O'Neill	1	Ian Dombroski	USGS CT	Technical Support and web updates ($249,235 modeling staff support, $30,000 web updates)	$279,235	
Interagency Agreement		Leah O'Neill	1	Ian Dombroski	USGS CT	CT River water quality monitoring and tributary pilot	$160,000	$0
FTE		Mark Tedesco	2		EPA	R2 Staff support	$28,000	
						Budget Total:	$20,921,000	$662,500
						Final Budget total:	**$21,583,500**	

Long Island Sound Study

Travel Documentation for LIS NEP Work Plan

July 1, 2019 - June 1, 2020

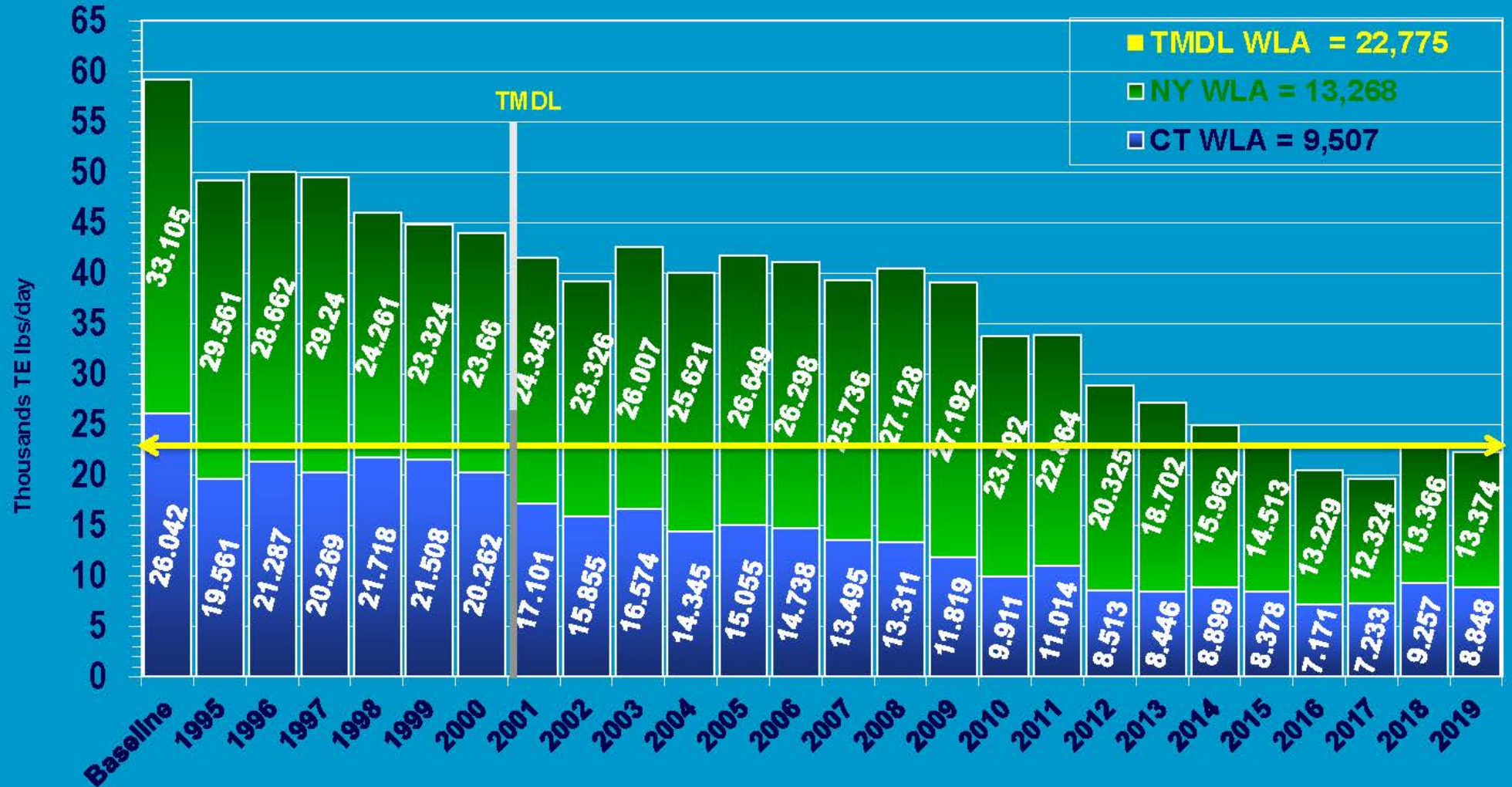
LISS PARTNER TRAVEL SUPPORT					
Meeting Date	**Meeting Title**	**Meeting Location**	**Affiliation**	**Expense ($)**	**Grant Number**
7/31/2019	LIS Systemwide Modeling Mgmt Advisory Group	Manhattan, NY	CT DEEP	$116.01	LI-00A00384
7/31/2019	LIS Systemwide Modeling Mgmt Advisory Group	New York, NY	CT DEEP	$62.82	LI-00A00384
8/2/2019	LIS Futures Fund Review	Bridgeport, CT	CT DEEP	$51.54	LI-00A00384
8/6/2019	CT Tidal Wetlands Restoration team mtg	Franklin, CT	CT DEEP	$40.02	LI-00A00384
8/2/2019	LISS Futures Fund Mtg	Bridgeport, CT	NYSDEC	$53.00	LI-00A00384
8/14/2019	Training/ Managing Multiple Priorities	New York City, NY	NYSDEC	$33.50	LI-00A00384
9/12/2019	LISS Citizens Advisory Committee	Roslyn Harbor, NY	CAC Member	$408.66	LI-96187401
9/12/2019	LISS Citizens Advisory Committee	Roslyn Harbor, NY	CAC Member	$44.60	LI-96187401
9/12/2019	Citizens Advisory Committee	Roslyn Harbor, NY	CAC Member	$31.32	LI-96187401
9/25/2019	LISS WEWG & CCSM combined workgroup meetings	Mamaroneck, NY	NYSDEC	$49.86	LI-00A00384
10/1/2019-10/4/2019	ANEP 2019	Dewey Beach, DE	NYSDEC	$587.92	LI-96187401
10/8-9/2019	Restore America's Estuaries Living Shorelines Workshop	Beaufort, NC	CT DEEP	$1,022.92	LI-96187401
10/15/2019	Mid-Atlantic Ocean Data Portal (MARCO) Training	NYC, NY	NYSDEC	$33.50	LI-00A00384
10/17/2019	CT/NY Pre-Management Comm. Planning Meeting	Albany, NY	CT DEEP	$7.50	LI-96187401
10/23-10/24/19	Management Committee Meeting	Port Jefferson, NY	CT DEEP	$213.33	LI-96187401
10/23-10/24/19	Management Committee Meeting	Port Jefferson, NY	CT DEEP	$280.44	LI-96187401
10/23-10/24/19	2-day Management Committee Meeting	Port Jefferson, NY	CT DEEP	$150.88	LI-96187401

10/23-10/24/19	2-day Management Committee Meeting	Port Jefferson, NY	CT DEEP	$385.42	LI-96187401
10/23-10/24/19	2-day Management Committee Meeting	Port Jefferson, NY	NYSDEC	$13.00	LI-96187401
10/23-10/24/19	2-day Management Committee Meeting	Port Jefferson, NY	CT DEEP	$246.28	LI-96187401
10/23-10/24/19	2-day Management Committee Meeting	Port Jefferson, NY	CT DEEP	$345.00	LI-96187401
10/23-10/24/19	2-day Management Committee Meeting	Port Jefferson, NY	NYC DEP	$340.00	LI-96187401
10/23-10/24/19	2-day Management Committee Meeting	Port Jefferson, NY	CAC Co-Chair	$303.00	LI-96187401
11/4/2019	LIS Futures Fund Press Event	Bridgeport, CT	NYSDEC	$33.00	LI-00A00384
11/15/2019	STAC Mtg	Stony Brook Univ, Setauket, NY	CT DEEP	$24.00	LI-00A00384
11/21/2019	LISS Habitat Restoration & Stewardship WG	Old Field, Long Island, NY	CT DEEP	$162.66	LI-00A00384
11/21/2019	LIS Systemwide Modeling Management Advisory Group	New York, NY	CT DEEP	$124.01	LI-00A00384
11/21/2019	LIS Systemwide Modeling Management Advisory Group	New York, NY	CT DEEP	$61.25	LI-00A00384
12/12/2019	Citizens Advisory Committee	Bridgeport, CT	CAC Member	$183.28	LI-96187401
12/12/2019	Citizens Advisory Committee	Bridgeport, CT	CAC Member	$22.62	LI-96187401
12/12/2019	Citizens Advisory Committee	Bridgeport, CT	CAC Member	$72.02	LI-96187401
12/12/2019	Citizens Advisory Committee	Bridgeport, CT	CAC Member	$40.60	LI-96187401
12/12/2019	Citizens Advisory Committee	Bridgeport, CT	CAC Member	$43.56	LI-96187401
2/3/2020	Shellfish Restoration Steering Committee Mtg	CT DEEP Marine HQ, Old Lyme, CT	CT DEEP	$33.93	LI-00A00384
2/16/2020	Management Committee Meeting	Bridgeport, CT	CT DEEP	$36.80	LI-96187401
3/4/2020	LIS Habitat Restoration & Stewardship Workgroup Meeting	Portland, CT	CT DEEP	$21.85	LI-00A00384
		TOTAL TRAVEL SUPPORT		**$5,680.10**	

LONG ISLAND SOUND STUDY

A PARTNERSHIP TO RESTORE AND PROTECT THE SOUND

Point Source Nitrogen Trade-Equalized Loads vs. Total Maximum Daily Load Waste Load Allocations 1995-2019 NY/CT STPs



LONG ISLAND SOUND STUDY

A PARTNERSHIP TO RESTORE AND PROTECT THE SOUND

Maximum Area of Hypoxia

1987-2018 (June-September)