



*A Partnership to Restore and Protect the Sound*

**LONG ISLAND SOUND STUDY  
NATIONAL ESTUARY PROGRAM  
WORK PLAN**

FOR

FEDERAL FISCAL YEAR 2010 FUNDING

FOR

**COMPREHENSIVE CONSERVATION AND MANAGEMENT PLAN**

**IMPLEMENTATION ACTIVITIES**

**DURING THE PERIOD**

October 1, 2010-September 30, 2011

**WITH PRIOR YEAR GOALS/ACCOMPLISHMENT HIGHLIGHTS**

**FOR THE PERIOD**

October 1, 2009- September 30, 2010

**June 1, 2010**

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## A. GENERAL INFORMATION REPORTING REQUIREMENTS

### 1. CCMP 2010 GOAL FOCUS

The Long Island Sound Study (LISS) Comprehensive Conservation and Management Plan (CCMP), approved in 1994 by the States of New York and Connecticut and by the U.S. Environmental Protection Agency (EPA), identified the following primary problem areas that continue to require coordinated and sustained action by the Management Conference:

- 1) hypoxia, or the lack of dissolved oxygen in the water column;
- 2) toxic substances pollution;
- 3) pathogen contamination;
- 4) floatable debris pollution;
- 5) management and conservation of living resources and their habitats;
- 6) land use and development; and
- 7) public involvement and education.

In addition, 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...”. This FY2010 Work Plan, prepared under EPA’s National Estuary Program (NEP) guidance, directly supports these goal areas with NEP and LISS funding as described herein.

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 a number of existing and ongoing environmental management programs of the Management Conference that would serve as the foundation for addressing the Sound’s priority problems. New or separate programs or efforts to implement the CCMP have been created only to fill gaps or better integrate efforts, such as the LIS Futures Fund, LIS Research Fund, and CCMP Enhancements program.

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. The CCMP anticipated many funding streams and a variety of funding sources to successfully implement its recommendations over time. The CCMP also envisioned an educated public and 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 1985, the LISS is an inherent part of EPA’s NEP program.

Because of its importance to the region, Long Island Sound had been included as a separate line item and has received funding under EPA's President's Budget request since FY1999. In 2005, efforts were initiated to include Long Island Sound in EPA's then newly developed Strategic Plan. Most recently LIS has been recognized as, and included in EPA's new Large Aquatic Ecosystems program. The Long Island Sound program is included in EPA's Strategic Plan for FY2006-2011 under Goal 4, *Healthy Communities and Ecosystems*, Objective 4, *Restore and Protect Critical Ecosystems*, Sub-objective 4.3.6. – *Restore and Protect Long Island Sound*. The LIS program is also included in the working draft Strategic Plan, 2010-2015, which should be available for public comment in mid-June 2010. Four of the LISS's major environmental goals have been included as goal targets in the Strategic Plan under SP-41 to SP-44. These include addressing hypoxia by reducing nitrogen loads through the 15-year schedule of the LIS nitrogen Total Maximum Daily Load (TMDL) via improvements to infrastructures of sewage treatment plants (STPs) discharging to LIS; reductions to the area and duration of the maximum hypoxic event occurring in the summer months in LIS; restoration and protection of critical coastal land and aquatic habitats and reopening of rivers and streams to diadromous fish passage.

**a. NEP Implementation Review.** In FY2009, the LISS underwent its triennial (FY2006-2008) CCMP Implementation Review by a team of EPA Headquarters and Regional staff. The review focused on primary CCMP implementation areas to determine if sufficient progress is being made and funding directed to highest priority areas. The review was conducted from June 1-3, 2009. The review team met with a number of LISS partners, including NYSDEC, CTDEP, city of Stamford, Connecticut, and others. The team saw the results of STP upgrades for nitrogen control at the Stamford plant; toured a fishway in the Mianus River to see a fish ladder and counting tool demonstration. LISS partner IEC used its monitoring vessel the Natale Colosi to take reviewers on the Sound to demonstrate water quality monitoring techniques used to measure ambient conditions in the Sound. The team traveled to Long Island to tour the Nissequog River stewardship area and habitat restoration sites and had the opportunity to meet staff and participants. A final findings letter was provided to the LISS by EPA NEP HQ on December 29, 2009. A number of strengths and challenges were identified by the team, and are being addressed by this, and subsequent LISS NEP work plans.

## 2. FY2010 LISS BUDGET BREAKDOWN

This FY2010 NEP Work Plan is written to account for the FY2010 EPA Environmental Programs and Management (EPM) appropriation for the LISS National Estuary Program (NEP), and for EPM funding provided by EPA for LIS under the annual President's Budget Request. These funds include \$800,000 in NEP allocations under Clean Water Act (CWA) Section 320, and \$7,000,000 as finally allocated by EPA under CWA Section 119 for President's FY2010 Budget for LIS.

The work activities and the budget amounts contained in this NEP Work Plan were approved by EPA and the LISS Management Committee at its Thursday, April 15, 2010 meeting. The record of that meeting is documented in Mark Tedesco's April 22, 2010 memorandum entitled, *Final FY2010 LISS Base Program Work Plan and Grant Application Guidance*. To implement this work plan, EPA will issue four new assistance awards to partners and amend six current assistance awards to include the FY2010 funding. In addition EPA will either amend or issue two

new Interagency Agreements (IAs) to continue implementation efforts with its Federal partners, the US Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS). LISS partners receiving FY2010 funds have been directed to submit their formal Federal assistance award applications (SF424s) or IAs as appropriate to either the EPA LISO or EPA Regional grants management office on or before Tuesday, June 1, 2010.

The LISS budget is organized into the four Program Elements outlined below. The FY2010 LISS budget breakdown of \$7,800,000 by Program Element is:

<i>Coordination and Reporting of Environmental Actions/Results .....</i>	<i>\$345,244</i>
<i>Public Outreach, Information and Education .....</i>	<i>\$658,126</i>
<i>Monitoring, Modeling and Research .....</i>	<i>\$2,122,558</i>
<i>CCMP Implementation Support and Technical Assistance .....</i>	<i>\$4,616,270</i>

There is a small fiduciary reserve of \$60,402 to cover fiscal or program contingencies in FY2010, such as increases in approved institutional indirect costs, adjustments for personnel compensation or benefits; any unused funds will be applied to current or out-year program needs as determined by the LISS. **Attachment 1** is a detailed breakdown of the FY2010 approved budget by LISS Program Element, Products/Services, Implementing Agency, and Environmental Outcome.

**3. LISS STAFF AND THEIR OFFICIAL RESPONSIBILITIES**

The LISS provides funding to certain of its partners to support staff resources to carry out key elements of implementing the CCMP. **Attachment 2** lists the FY2010 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 Connecticut Department of Environmental Protection (CTDEP) hires 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 and temporary 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 employs two full-time equivalent (FTEs) federal employees that staff the EPA Long Island Sound Office (LISO). A director, appointed by the Administrator, and a senior program analyst plan, organize, direct and manage program operations in order to assist the Management Conference partners. These FTEs are not funded from the LISS, but from other EPA resources. EPA provides, from its Working Capital Fund appropriation, support for leasing office space for the LISO. EPA Region 2 provides technical and management support to the program through the Division of Environmental Planning and Protection and EPA Region 1 provides staff and technical support through the Office of Ecosystems Protection. Region 1 also provides a US Government vehicle for LISO use. Region 2 provides other administrative support for official

business, such as procurements, funds control and management, information technology and telecommunications support, grants management, and other policy and program management requirements. This support is essential to operating and maintaining the EPA LISO, and is provided from other EPA appropriations.

#### 4. SUB-AWARDS

**Attachment 3** lists the FY2010 LISS budget by recipient organization; as the total funding for each recipient may consist of one or more EPA grant awards or amendments to existing grants, **Attachment 4** lists the FY2010 budget by individual EPA assistance award amount by grantee; where known at this time, the actual EPA assistance award number is provided for reference; however the award process is dynamic and final award numbers and amounts may differ from Attachment 4 as actually awarded by EPA, as this Work Plan is due by June 1 and the grant award process does not complete until September 30. Details of the sub-award purpose, project deliverables, and project completion dates are provided in Section B of this Work Plan. Attachments 3 and 4 also show the required non-federal matching funds and the overall actual aggregate match requirement for the LISS.

For FY2010 Federal assistance awards, the National Fish and Wildlife Foundation (NFWF), the CTDEP, and the New York State Department of Environmental Conservation (NYSDEC) are providing an annual 'overmatch' in their EPA assistance awards in order for the LISS to meet the overall aggregate match for the NEP as required under CWA Section 320. This also allows other recipients and sub-awardees that are not in a position 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 grant numbers are issued by EPA pending final EPA Regional Administrators' action on individual awards, and each award is subject to the special terms and conditions contained therein.]

In FY2010, the LISS is providing funding to thirteen LISS partners through fourteen new or amended awards: NFWF, NYSDEC, CTDEP; the New England Interstate Water Pollution Control Commission (NEIWPC); the Connecticut Sea Grant College Program (CTSEA); the New York Sea Grant Program (NYSEA) through Cornell University's Office of Sponsored Programs (OSP), and NYSEA through the Research Foundation of the State University of New York at Stony Brook and the University of Connecticut (UConn) Center for Land Use Education and Research (CLEAR) through the UConn OSP. Federal partners receiving FY2010 funding through IAs include the USFWS through its Southern New England Estuary Project office located in Charlestown, Rhode Island, and the NOAA NMFS through its Northeast Regional Science Center in Milford, Connecticut.

These and other partners implement the CCMP and conduct the LISS base program, which includes the LIS Futures Fund Grant program (NFWF), the CCMP Enhancements program (NEIWPC), the LIS Research Grant program (NY/CT SEA), the LIS public outreach and education program (NEIWPC/CT/NYSEA), the habitat restoration program (CTDEP/NYSDEC/USFWS), and LIS stewardship initiative (USFWS). As indicated above, each



of these partners is funded through one or more annual or multi-year EPA assistance awards or IAs as appropriate. These awards are managed by the EPA LISO and EPA Region 1 and other Federal agency staff trained and assigned as EPA grant Project Officers. Because of multi-year awards and varying federal appropriation levels, all partners may not receive LISS funding in every annual budget/work plan cycle.

**B. PROPOSED NEW AND ONGOING PROJECTS**

Beginning with the FY2008 NEP Work Plan, the LISS adopted the following reporting format in this, Section B, *Proposed New and Ongoing Projects*. This Section B format utilizes 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 the LISS Program Elements:

<b>Logic Model Element</b>	<b>LISS Program Element</b>
<i>CCMP/Work Plan Goal</i>	[LISS CCMP Problem Area, Hypoxia, Pathogens, Toxics, etc.]
<i>Project/Activity Name:</i>	[Program Element/Sub-category description]
<i>Project/Activity Purpose and Description</i> (indicate as Proposed or OnGoing)	same
<i>Responsible Partners and Their Role(s)</i>	[LISS Grantee Name]
<i>Outputs/Products:</i>	same
<i>Milestones</i>	(project start and completion dates) [EPA Grant/IAG Date(s)]
<i>Budget:</i>	[FY2010 to the extent separately identifiable]
<i>Outcomes:</i>	(anticipated and/or completed accomplishments) [Environmental Outputs/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 Section 119 (33 U.S.C. 1269), the EPA LISO is responsible for the overall management and coordination of the LISS Management Conference convened under CWA Section 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 LISO has overall responsibility for managing EPA LISS appropriated funds, ensuring that these funds are awarded 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 Section 119) that utilizes a number of separate 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, either 40CFR Part 30 or 40CFR Part 31 as applicable to the organization.

The EPA LISO manages 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 LISO 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 officers. Funds accounting by assistance award number is available online at EPA’s Financial Data Warehouse, <http://iasint.rtpnc.epa.gov/neis/adw.welcome>. EPA LISS grant awards use the identifier prefix, “LI.”

Grants are made under the Catalog of Federal Domestic Assistance (CFDA) number 66.437, Long Island Sound Program. EPA LISO updates the 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 budgets or change program direction. One-time No Cost Time Extensions (NCTE) are available without prior approval from EPA to 40CFR Part 30 awardees (educational institutions), and with EPA approval to 40CFR Part 31 awardees (states). The LISO negotiates and approves any requests for NCTEs with the appropriate EPA Region 1 or Region 2 grants management office.

**b. Tracking and Reporting.** The EPA LISO is responsible for the overall LISS tracking and reporting systems for the NEP. Each EPA assistance award contains Terms and Conditions with reporting requirements mandated for the NEP’s Government Performance and Results Act (GPRA) performance measures for: 1) CCMP implementation actions, 2) habitat restoration, and 3) leveraged funds. Under LISO guidance, the LISS produces two biennial

reports that provide public information on CCMP implementation progress both from the ecological and program management viewpoints: *Sound Health* and *Protection and Progress*. The latest version of the former was produced in Spring 2008; the latter publication was issued in Summer 2009 covering the preceding years of 2007 and 2008. The next version of *Sound Health* will be issued in November 2010.

The LISO also tracks and reports the four LIS goal area measures in EPA’s Strategic Plan through the Agency’s Annual Commitment System (ACS) reporting system. This reports progress to EPA in reducing point source nitrogen discharges to the Sound from the 106 NY and CT STPs discharging in the LIS watershed (SP-41); the area and duration of the maximum hypoxic event in the Sound (SP-42); the acres of coastal habitat restored or protected (SP-43); and river miles reopened to diadromous fish passage (SP-44). These data are compiled by LISS Management Conference partners through the LIS water quality monitoring program, and the habitat restoration program, both of which receive LISS funding.

The LISS tracks CCMP implementation actions through its annual *CCMP Implementation Tracking Report*. The 2008 and future CCMP Implementation Tracking Reports provide detailed tracking by CCMP problem area and 37 sub-areas. FY2010 funding was approved for development of a successor system to report CCMP implementation progress, but until that system is built and running, the current information collection process will continue to be used for 2009 and beyond. *Sound Health* and *Protection and Progress* will continue to track progress of ecosystem indicators and management actions respectively. The *LIS 2003 Agreement* is included as **Attachment 5** to this Work Plan. A successor Agreement is planned, but not available as of this writing.

<b>CCMP/Work Plan Goal:</b>	<b>Continuing the Management Conference</b>	
<b>Project/Activity Name:</b>	LISS CCMP Implementation Tracking System	
<b>NEW Project/Activity Purpose &amp; Description:</b>	Review, assess and establish a data reporting system for tracking CCMP implementation activities	
<b>Responsible Partner(s) Role(s):</b>	EPA Long Island Sound Office	
<b>Outputs/Products:</b>	Assessment of need; development of beta system; demonstration of beta system; implementation of system for 2010 report.	
<b>Milestones (project start/end dates)</b>	10/1/10-9/30/11 and continuing.	
<b>2010 Budget:</b>	\$40,000 [See Attachment 1, line 3]	
<b>Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate &amp; Long Term</b>	Coordinated reporting of federal, state, and local government actions to implement the CCMP; accounting for clear annual goals and objectives framed within available funding; access to public, environmental, and financial data for restoration and protection of Long Island Sound.	
<b>Δ (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	

<b>CCMP/Work Plan Goal:</b>	<b>Continuing the Management Conference</b>	
	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	

**c. Program Planning and Administration.** As indicated above, the EPA LISO has overall responsibility for administering the LISS Management Conference, which is a multi-grantee, multi-state distributed partnership NEP. LISS partners also have inherent responsibilities in these areas, and are provided funding for administrative staff positions to carry out these overarching functions. Most LISS grantees have a negotiated Indirect Cost Rate with EPA to cover the overall expenses of their institution in managing federal assistance awards under Office of Management and Budget Circulars A-102, A-87 and A-89. The following charts include information in the required NEP Work Plan format relative to this Logic Model category:

<b>CCMP/Work Plan Goal:</b>	<b>Continuing the Management Conference</b>
<b>Project/Activity Name:</b>	EPA LISO Support to the Management Conference
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	Provides support to the Management Conference in implementing the CCMP; overall program coordination, management and direction.
<b>Responsible Partner(s) Role(s):</b>	EPA Long Island Sound Office
<b>Outputs/Products:</b>	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; technical assistance to partners in program operations.
<b>Milestones (project start/end dates)</b>	10/1/10-9/30/11 and continuing.
<b>2010 Budget:</b>	\$80,000 (administrative support and office overhead only, EPA staff N/A) [See Attachment 1, lines 1 & 2.]
<b>Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate &amp; Long Term</b>	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; improved water quality as measured annually by reduced anthropogenic nitrogen deposition and increased dissolved oxygen concentrations; increased habitat restoration and preservation as measured by number of acres of coastal habitat restored/preserved annually; increased species diversity as measured by river miles reopened to diadromous fish passage annually; 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.
<b>Δ (+/-) in Pressure Targets</b>	N/A

<b>CCMP/Work Plan Goal:</b>	<b>Continuing the Management Conference</b>	
<b>CWA Core Program Project Support</b> 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 Nonpoint Source 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

<b>CCMP/Work Plan Goal:</b>	<b>Continuing the Management Conference</b>	
<b>Project/Activity Name:</b>	State Coordination and Technical Assistance	
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	Assist in all aspects of LISS Management Conference program development and support for CCMP implementation in the State of Connecticut.	
<b>Responsible Partner(s)/Role(s):</b>	Connecticut Department of Environmental Protection	
<b>Outputs/Products:</b>	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. Due consideration of nitrogen control in watershed planning and management efforts. Steady progress of point source nitrogen reductions as per the TMDL and nitrogen general permit. Update of progress towards implementing CCMP recommendations in the areas of hypoxia, toxic contamination, pathogens, living marine resources and land use. Reports on progress to ensure commitments to protect and restore LIS, and implementation plans are on track. Research and implementation grants are consistent with and complementary to LISS goals and objectives and productive in restoring and managing Long Island Sound.	
<b>Milestones (project start/end dates)</b>	10/1/10-9/30/11	
<b>2010 Budget:</b>	\$113,028 [See Attachment 1, line 3]	
<b>Outcomes: (anticipated and/or completed accomplishments)</b> <b>-Short , Intermediate &amp; Long Term</b>	Improved marine water quality, improved living resources habitat, and public safety. Improved management and implementation of CCMP goals and objectives. Reduction of storm water and NPS nitrogen loads to Long Island Sound. Reduced nitrogen loads to Long Island Sound consistent with the TMDL WLA.	
<b>-Changes (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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

<b>CCMP/Work Plan Goal:</b>	<b>Continuing the Management Conference</b>	
	7) Wetlands Program Support/Implementation	x
<b>CCMP/Work Plan Goal:</b>	<b>Continuing the Management Conference</b>	
<b>Project/Activity Name:</b>	State Program Coordination and Management	
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	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.	
<b>Responsible Partner(s) Role(s):</b>	New York State Department of Environmental Conservation	
<b>Outputs/Products:</b>	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. Information sharing, development of recommendations, strategies and identification of data gaps regarding wetlands loss in LIS. Work to get LIS harbors and open waters designated as NDZs. Increased knowledge of existing site conditions (e.g. WQ information at tidally restricted sites); will also be used to collect additional data at the 4 wetland loss research sites. DEC will be able to more effectively partner in restorations, by being able to assist in gathering essential information. Develop and implement CCMP actions as directly related to NPS pollution reduction, protect public health, preserve and protect LIS resources and WQ by soliciting and involving expertise from various state programs.	
<b>Milestones (project start/end dates)</b>	10/1/10-9/30/11	
<b>2010 Budget:</b>	\$71,443 [See Attachment 1, line 3]	
<b>Outcomes: (anticipated and/or completed accomplishments)</b> <b>-Short , Intermediate &amp; Long Term</b>	Coordinated management and implementation of CCMP and LIS Agreement goals and objectives. Progress towards implementing the CCMP management actions. Improved water quality, habitat, resources and stewardship. Increased public awareness of progress of LIS management activities. Protection and preservation of water quality, habitat and public health. Improved understanding and coordination of wetlands loss issues. Increased public awareness and stewardship of the estuary. Improved ability to determine restoration suitability; 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.	
<b>-Changes (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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

<b>CCMP/Work Plan Goal:</b>	<b>Continuing the Management Conference</b>	
	5) Strengthening NPDES Permits,	x
	6) Supporting Sustainable Wastewater Infrastructure.	x
	7) Wetlands Program Support/Implementation	x

**d. Outreach and Public Involvement.** The LISS provides grants to several of its partners to conduct the Public Outreach, Information and Education (PI&E) program, which is a Program Element in the LISS budget. NEIWPC and NY/CT SEA are primarily responsible under their LISS grant awards to carry out the public outreach program. The LISS has created a Communications Team consisting of staff of these partners and other interested parties, including members of the LISS Citizens Advisory Committee (CAC). The Team meets periodically to develop and carry out its annual work plan. In addition, NFWF conducts the Small Grants program as part of the LISS Futures Fund Grant program, and at the recommendation of a review team that includes LISS Communications Team members, may also make awards for approved PI&E projects under the LIS Futures Fund Large Grants program. **Attachment 6** lists the FY2009 Futures Fund Large and Small projects.

While it is not a separately-funded line item in the LISS budget, the LISS partners, and the LISO provide significant resources to support the CAC, which is co-chaired by an elected member each from New York and Connecticut. With the support of the EPA LISO and NY/CT SEAs, the CAC meets quarterly at alternating locations in Connecticut and New York and provides advice to the Management Conference partners in implementing 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 NEIWPC'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 7**). 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. The CAC's operating subcommittees work with LISS work groups and teams in developing program priorities, projects, and in accomplishing implementation actions. These subcommittees are Policy, Legislative & Advocacy, Accountability & Reporting, and Local Government. 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:

<b>CCMP/Work Plan Goal:</b>	<b>Public Outreach, Information and Education</b>
<b>Project/Activity Name:</b>	PI&E, Small Grants and PI&E Project Support
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	Supports the Management Conference in conducting the LISS public outreach, information and education program through staff resources and products, services and supplies.

<b>CCMP/Work Plan Goal:</b>	<b>Public Outreach, Information and Education</b>	
<b>Responsible Partner(s) Role(s):</b>	NEIWPCC, NYSEA, CTSEA; NFWF, direct implementation of LISS PI&E program.	
<b>Outputs/Products:</b>	Production of three issues of <i>Update</i> for distribution throughout the LIS region. Production of six issues of <i>Sound Outlook</i> for distribution throughout the LIS region. Bi-monthly issuance of <i>Sound Bytes</i> , an electronic mail update of current LIS issues; Reporting of up to 80 indicators using LIS monitoring data and other resources. Update of progress towards implementing CCMP recommendations in the areas of hypoxia, toxic contamination, pathogens, living marine resources and land use. Fact sheets that summarize timely topics on LIS issues that can be widely distributed in paper or web site formats. 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 general public in the watershed.	
<b>Milestones (project start/end dates)</b>	October 1, 2010-September 30, 2011 (or as specified in individual assistance awards)	
<b>2010 Budget:</b>	NEIWPCC: \$120,168; NYSEA: \$164,830; CTSEA: \$85,652; NFWF: \$85,000; NEIWPCC: \$163,007 [see Attachment 1, lines 7,8,9,11,12]	
<b>Outcomes: (anticipated and/or completed accomplishments)</b> <b>-Short, Intermediate &amp; Long Term</b>	Informing public and increasing citizen activism to improve stewardship and individual actions 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 that will lead to necessary adjustments in management direction. Publicity to support LIS management activity and to inform public about trends in LIS health to create public activism 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 Increased awareness for the protection and restoration of LIS to the general public and improved management decisions for the LISS partner agencies. Increased awareness for the protection and restoration of LIS to the general public and promote better stewardship of the Sound	
<b>Δ (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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



<b>CCMP/Work Plan Goal:</b>	<b>Public Outreach, Information and Education</b>	
<b>Project/Activity Name:</b>	Upper Basin TMDL Outreach and Education	
<b>NEW Project/Activity Purpose &amp; Description:</b>	To inform and educate the public and managers in the upper LIS basin states of New Hampshire, Vermont and Massachusetts of the requirements and impacts of the nitrogen TMDL.	
<b>Responsible Partner(s) Role(s):</b>	NEIWPC	
<b>Outputs/Products:</b>	Plan, organize, and conduct public meetings in upland states; record public comments and report on results.	
<b>Milestones (project start/end dates)</b>	October 1, 2010-September 30, 2011	
<b>2010 Budget:</b>	\$90,000 [see Attachment 1, line 25]	
<b>Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate &amp; Long Term</b>	A more cooperative and publicly understood process in the upland LIS watershed states for achieving reduced nitrogen loads delivered to the Sound, reduced hypoxia, and attainment of state water quality standards through TMDL adoption in upland states.	
<b>Δ (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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
	8) Other: Public Involvement and Education	x

**2. Ecosystem Status and Trends.** The LISS monitors ecosystem status and trends for a suite of 80+ environmental indicators. These indicators are posted on the LISS website, <http://www.longislandsoundstudy.net> and a subset of selected indicators of interest to the public is published biennially in the LISS publication, *Sound Health*. The indicators are linked back to CCMP problem areas and provide information on the abundance, diversity, distribution, viability, and/or quality and trends of the resource being monitored. Updating these indicators on a periodic basis is a complex process. The LISS does not directly pay for or support the data collection efforts for the vast majority of the diverse suite of environmental indicators; 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. The below-described (#4) LISS funded NOAA liaison position supports this area.

**a. Research.** The LISS Research Grant program is a cooperative effort between the EPA LISO and the New York and Connecticut Sea Grant College programs, to which each have contributed funds and expertise in review of proposals and identification of peer reviewers. In FY2009 the Management Committee approved a scientific research budget of \$300,000 for a future RFP. In 2010 the Committee approved a research budget of \$900,000, which,

combined with FY2009 funding, will be available for projects to be solicited in a Spring 2010 RFP. The NY and CT Sea Grant programs jointly administer the LIS Research Fund for the LISS Management Conference:

<b>CCMP/Work Plan Goal:</b>	<b>Monitoring, Modeling and Research</b>	
<b>Project/Activity Name:</b>	Long Island Sound Research Grant Program	
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	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.	
<b>Responsible Partner(s) Role(s):</b>	NYSEA/CTSEA, jointly administer and manage the LIS research program.	
<b>Outputs/Products:</b>	Develop Request for Proposals; List of research selected for funding; manage research project; request, review and process progress reports and final report per research project.	
<b>Milestones</b> ( <i>project start/end dates</i> )	October 1, 2010-September 30, 2013	
<b>2010 Budget:</b>	FY2009: \$300,000 [\$150k each, NY & CT Sea Grant programs.] FY2010: \$905,500 [\$453,000 NYSEA, \$452,500 CTSEA] See Attachment 1, line 17.	
<b>Outcomes:</b> ( <i>anticipated and/or completed accomplishments</i> ) <b>-Short, Intermediate, Long Term</b>	Identify, fund and conduct highest priority research relevant to the Long Island Sound 2003 Agreement or its successor and the LISS CCMP; 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.	
<b>Δ (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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

**b. Assessment and Monitoring.** In FY2010 the Management Committee once again approved the LIS water quality (WQ) monitoring program conducted by CTDEP with LISS funding. 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 CTDEP and is used by the LISS to report annual progress in meeting both NEP and EPA Strategic Plan goals and targets for the area and duration of hypoxia. The following charts describe the WQ monitoring program conducted by CTDEP and other partners’ monitoring and assessment projects approved in the FY2010 budget. New for FY2010 is funding to support the Interstate Environmental Commission’s water quality monitoring of Long Island Sound. IEC’s regulatory area includes portions of the Sound as far east as New Haven, and its monitoring is supported by a

CWA Section 106 grant from EPA. The LISS is providing resources for monitoring equipment to assist IEC’s mission of monitoring waters for compliance with pollution permit limits.

<b>CCMP/Work Plan Goal:</b>	<b>Monitoring, Modeling and Research</b>	
<b>Project/Activity Name:</b>	LIS Water Quality Field Surveys	
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	To monitor and assess the ambient conditions of water quality in LIS and provide management with information for decision-making.	
<b>Responsible Partner(s) Role(s):</b>	CTDEP, conduct of WQ monitoring and analysis of LIS open waters.	
<b>Outputs/Products:</b>	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. A report which analyses nutrient monitoring results for the 1999-2009 period. Plankton community data to evaluate biological condition and response to changing water quality.	
<b>Milestones (project start/end dates)</b>	October 1, 2010-September 30, 2011	
<b>2010 Budget:</b>	\$920,949 [see Attachment 1, line 13]	
<b>Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate, Long Term</b>	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. In 2009 the area of hypoxia in the Sound was 161 square miles lasting for 45 days compared to pre-TMDL averages of 208 square miles and 58 days.	
<b>Δ (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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

<b>CCMP/Work Plan Goal:</b>	<b>Monitoring, Modeling and Research</b>	
<b>Project/Activity Name:</b>	LIS Surveys and Assessments	
<b>NEW Project/Activity Purpose &amp; Description:</b>	To conduct surveys of ambient conditions in LIS waters in the jurisdiction of the Interstate Environmental Commission.	
<b>Responsible Partner(s)</b>	Interstate Environmental Commission (IEC)	

<b>CCMP/Work Plan Goal:</b>	<b>Monitoring, Modeling and Research</b>	
<b>Role(s):</b>		
<b>Outputs/Products:</b>	Conduct ambient water quality monitoring at fixed stations in the IEC regulatory zone of western LIS in NY and CT waters.	
<b>Milestones</b> ( <i>project start/end dates</i> )	October 1, 2010-September 30, 2011	
<b>2010 Budget:</b>	\$17,620 for monitoring equipment [see Attachment 1, line 14]	
<b>Outcomes:</b> ( <i>anticipated and/or completed accomplishments</i> ) <b>-Short, Intermediate &amp; Long Term</b>	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 dissolved oxygen conditions affecting living marine resources.	
<b>Δ (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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

<b>Project/Activity Name:</b>	<b>Monitoring, Modeling and Research</b>	
<b>NEW Project/Activity Purpose &amp; Description:</b>	LIS Remote Sensing Update of data for New York LIS watershed.	
<b>Responsible Partner(s) Role(s):</b>	University of Connecticut Center for Land Use Education and Research	
<b>Outputs/Products:</b>	Update NY portions of the LIS watershed land cover metrics and create seamless region-wide land cover and land cover change dataset 1985 - 2006.	
<b>Milestones</b> ( <i>project start/end dates</i> )	October 1, 2010- September 30, 2011	
<b>2010 Budget:</b>	\$93,000 [see Attachment 1, line 16]	
<b>Outcomes:</b> ( <i>anticipated and/or completed accomplishments</i> ) <b>-Short, Intermediate &amp; Long Term</b>	Identification of key land cover metrics, e.g., forest fragmentation; updated and targeted impervious cover metrics for management purposes; updating of NY land cover metrics; accessible regional website with maps, charts and data available at the watershed, local, and regional levels.	
<b>Δ (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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

<b>CCMP/Work Plan Goal:</b>	<b>Monitoring, Modeling and Research</b>	
<b>Project/Activity Name:</b>	LIS Sentinel Monitoring	
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	To identify sentinels, obtain baseline data and measure against climate impacts for early warning indicators of environmental change.	
<b>Responsible Partner(s) Role(s):</b>	Sentinel Monitoring Work Group; CTDEP/NYSDEC	
<b>Outputs/Products:</b>	Identify climate change drivers and potential indicators to assist in identifying responses in LIS and its coastal eco-regions; develop bi-state sentinel monitoring strategy for climate change; oversee implementation of a dynamic pilot monitoring program from a broader strategy; enhance public outreach, education, awareness and participation in climate change adaptation issues and inform management decisions on adaptation planning; and pursue additional funding to expand monitoring program and data synthesis	
<b>Milestones (project start/end dates)</b>	October 1, 2009-September 30, 2011	
<b>2010 Budget:</b>	\$185,496 [see Attachment 1, line 15]	
<b>Outcomes: (anticipated and/or completed accomplishments) -Short; Intermediate;&amp; Long Term</b>	Early identification of environmental change through sentinel indicator flora/fauna; development of adaptive management implementation or mitigation strategies to address changes.	
<b>Δ (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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

<b>CCMP/Work Plan Goal:</b>	<b>Monitoring, Modeling and Research</b>	
<b>Project/Activity Name:</b>	TMDL development support through a NYS LIS Watershed Municipal Separate Storm Sewer (MS4) Engineer	
<b>NEW Project/Activity Purpose &amp; Description:</b>	The TMDL reassessment; evaluation of applicable storm water BMPs to optimize reductions from MS4s; developing a retrofit plan; the BMP evaluation and implementation plan development could be used as a template for controlling storm water from urban areas throughout the watershed.	
<b>Responsible Partner(s) Role(s):</b>	New York State Department of Environmental Conservation	
<b>Outputs/Products:</b>	The development of an MS4 baseline load; analysis of the feasibility of the currently required 10% reduction from these sources; analysis of the feasibility to increase the level of reduction that could be achieved from an	

<b>CCMP/Work Plan Goal:</b>	<b>Monitoring, Modeling and Research</b>	
	MS4 through storm water management practices; evaluate the potential for trading between MS4 loads and Sewage Treatment Plant (STP) loads; recommendations for storm water BMPs to optimize nitrogen reductions from MS4 (BMP Implementation Plan Development); completion of TMDL Reassessment	
<b>Milestones</b> ( <i>project start/end dates</i> )	10/1/10-9/30/12	
<b>2010 Budget:</b>	\$225,000 [see Attachment 1, Line 24]	
<b>Outcomes:</b> ( <i>anticipated and/or completed accomplishments</i> ) <b>-Short, Intermediate, Long Term</b>	Improved scientific basis for management decisions; reduced nitrogen loads from storm water; improvement in local water body in addition to reduced nitrogen to LIS; better, smarter growth; improved water quality; greater understanding of the storm water loads coming from the NY portion of LIS watershed	
<b>Δ (+/-) in Pressure Targets</b>	<b>N/A</b>	
<b>CWA Core Program Project Support</b> Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	
	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	

**c. Reporting.** Costs for producing *Sound Health* and *Protection and Progress* are budgeted for in the NEIWPCC assistance award as necessary and as 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 for reference. A full suite of LIS ecosystem indicators is also posted on the LISS website, cited above. For FY2010, funds are requested for production of *Protection and Progress* in 2011.

**3. Ecosystem Protection and Restoration Projects.** The LISS Futures Fund Grant program and the LISS CCMP Enhancements program are the primary LISS vehicles for funding implementation projects to address CCMP and other program priorities. The LISS Futures Fund, consisting of Large Implementation Grants (\$20,000-\$500,000); Planning, Innovation and Education Grants (\$20,000-\$150,000); and Small Grants (\$3,000-\$10,000) projects, is administered by NFWF. In FY2010, the LIS Futures Fund is funded at \$2,013,500 and the Small Grants component is funded at \$85,000.

The CCMP Enhancements program is administered by NEIWPCC and is funded at \$100,000 in FY2010 for an RFP to assist in TMDL development and implementation by running a variety of scenarios of the System-wide Eutrophication Model (SWEM). As indicated above, the Management Committee approved a total of \$1.5 million for priority land acquisition projects under the LISS Stewardship Initiative. At this time, this work plan cannot categorize projects

under the Logic Model format because these projects have not yet been selected. As noted, the below Logic Model subcategories are eligible funding categories under the LIS Futures Fund. FY2009 LIS Futures Fund projects are listed in **Attachment 6 [or will be provided when final projects are selected and approved, Fall 2010.]**.

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

<b>CCMP/Work Plan Goal:</b>	<b>CCMP Implementation Support and Technical Assistance</b>	
<b>Project/Activity Name:</b>	LISS Futures Fund	
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	To provide resources for priority CCMP implementation projects at the state and local level to qualified applicants.	
<b>Responsible Partner(s) Role(s):</b>	NFWF, plans, coordinates, conducts and administers the LISS Futures Fund Grant Program	
<b>Outputs/Products:</b>	Issue RFP to solicit a diverse range of project proposals (45-60 proposals) that address problems identified in the LISS <i>CCMP</i> . Webcast workshops to encourage applicants to develop a diverse range of project proposals (45-60 proposals) that address problems identified in the LISS <i>CCMP</i> . Provide technical assistance to 40-50 potential applicants to help them develop the most useful projects to address the problems identified in the LISS <i>CCMP</i> . Develop and distribute two press releases to announce RFP and awards. Notify NY & CT Congressional representatives of awards in districts. Develop and implement one grant award event in either NY or CT. Meet with potential public, nonfederal and private funders. Develop accomplishments brochure. Develop three Congressional educational events.	
<b>Milestones (project start/end dates)</b>	October 1, 2009-September 30, 2011* Actual dates under negotiation with EPA.	
<b>2010 Budget:</b>	\$2,013,500 [See Attachment 1, line 22]	
<b>Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate, Long Term</b>	Increase the number and type of project proposals to the grant programs to address the problems identified by the LISS <i>CCMP</i> . Increase community support for the grant programs and interest in the projects as a means to encourage public engagement to solve the problems identified in the LISS <i>CCMP</i> . Increase agency and Congressional support for the grant programs to provide additional resources to address the problems identified in the LISS <i>CCMP</i> . Support both a greater number of projects and larger, more complex projects that address the problems identified in LISS <i>CCMP</i> . Increase public and Congressional understanding of accomplishments and challenges faced in LIS and addressed by various LISS initiatives.	
<b>Δ (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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

<b>CCMP Work Plan Goal:</b>	<b>CCMP Implementation Support and Technical Assistance</b>	
<b>Project/Activity Name:</b>	LISS Stewardship Land Acquisitions	
<b>NEW Project/Activity Purpose &amp; Description:</b>	To provide resources for priority CCMP LIS Stewardship Initiative acquisitions at the state and local level.	
<b>Responsible Partner(s) Role(s):</b>	CTDEP/NYSDEC	
<b>Outputs/Products:</b>	Acquisition of properties identified by the LISS Stewardship Initiative work group for protection.	
<b>Milestones (project start/end dates)</b>	October 1, 2009-September 30, 2011* *end date under negotiation with EPA	
<b>2010 Budget:</b>	\$1,500,000 [See Attachment 1, line 23]	
<b>Outcomes: (anticipated and/or completed accomplishments)</b> <b>-Short, Intermediate &amp; Long Term</b>	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.	
<b>Δ (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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 through a variety of means. Several of the specific projects that will be supported under the LIS Futures Fund 2010 funding cycle provide support in this area. For example, a 2007 funding cycle Futures Fund project included the *Land Use Leadership Alliance for Connecticut Land Use Decision Makers*. In this project the Eastern Connecticut Resource Conservation & Development District implemented community-based land use leadership workshops in 19 municipalities to train 35 public officials about land use law and natural resources protection in Eastern Connecticut coastal watershed towns.

While funded in the 2010 budget cycle for a two-year period, the following LISS-funded Federal staff positions will provide ongoing significant technical assistance for the LISS:

<b>CCMP/Work Plan Goal:</b>	<b>CCMP Implementation Support &amp; Technical Assistance</b>	
<b>Project/Activity Name:</b>	USFWS Wildlife Biologist/LISS Liaison Support	
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	The USFWS Liaison provides technical support to the LISS Management Conference to address wildlife/habitat-related issues including but not limited to essential habitat classification, mapping and management, invasive species, environmental indicators, integrated monitoring of water and biota. The Liaison will provide	



<b>CCMP/Work Plan Goal:</b>	<b>CCMP Implementation Support &amp; Technical Assistance</b>	
	technical support to coordinate, manage, and report on LISS programs and manage grants and contracts as assigned	
<b>Responsible Partner(s) Role(s):</b>	US Fish & Wildlife Service, Southern New England-New York Bight Coastal Ecosystems Program, Charlestown, RI	
<b>Outputs/Products:</b>	Annual GPRA habitat reports for EPA; Habitat restoration information for the LISS website; Annual HRI work plans that detail priorities, highlight accomplishments, and identify funding needs; Technical reviews and recommendations regarding project funding; accurate and up-to-date grant files; documents and forms required for grant awards, extensions, and close-outs; approved project reports from grantees; the management plan focuses on feasible, cost-effective practices that can be undertaken to prevent and control invasive species; technical and grant assistance to stewardship area stakeholders; SI information for the LISS website; presentations to the public; annual SI work plans that detail priorities, highlight accomplishments, and identify funding needs; proposal reviews and recommendations regarding project funding.	
<b>Milestones (project start/end dates)</b>	10/1/10-9/30/12 [2-year renewable Interagency Agreement]	
<b>2010 Budget:</b>	\$234,853 [see Attachment 1, line 20, 2 year budget]	
<b>Outcomes: (anticipated and/or completed accomplishments)</b> <b>-Short, Intermediate &amp; Long Term</b>	Restoration of the Sound's coastal habitat to maintain healthy and viable populations of fish & wildlife in LIS; implementation of the LISS CCMP to protect and restore LIS; prevention and control of aquatic invasive species in LIS; protection and enhancement of the Sound's ecological and recreational resources	
<b>Δ (+/-) in Pressure Targets</b>	<b>N/A</b>	
<b>CWA Core Program Project Support</b> 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

<b>CCMP/Work Plan Goal:</b>	<b>CCMP Implementation Support &amp; Technical Assistance</b>	
<b>Project/Activity Name:</b>	NOAA/NMFS LISS Liaison Support	
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	The NOAA Liaison provides technical support to the LISS Management Conference to address fisheries ecology and aquatic habitat-related issues including but not limited to essential habitat classification, mapping and management, invasive species, environmental indicators, integrated monitoring of water and biota. The Liaison provides technical support to coordinate, manage, and report on LISS programs and manage grants and contracts as assigned.	
<b>Responsible Partner(s) Role(s):</b>	NOAA/NMFS Northeast Fisheries Science Center, Milford, CT	
<b>Outputs/Products:</b>	Technical reports to highlight accomplishments, and identify funding needs;	

<b>CCMP/Work Plan Goal:</b>	<b>CCMP Implementation Support &amp; Technical Assistance</b>	
	Technical reviews and recommendations regarding project funding; accurate and up-to-date grant files; documents and forms required for grant awards, extensions, and close-outs; approved project reports from grantees; the management plan focuses on feasible, cost-effective practices that can be undertaken to prevent and control invasive species; technical and grant assistance to stakeholders; fisheries/indicators information for the LISS website; presentations to the public; annual work plans that detail priorities, highlight accomplishments, and identify funding needs; proposal reviews and recommendations regarding project funding.	
<b>Milestones</b> ( <i>project start/end dates</i> )	10/1/10-9/30/12 [2-year Interagency Agreement]	
<b>2010 Budget:</b>	\$240,000 [see Attachment 1, line 19; 2 year budget]	
<b>Outcomes:</b> ( <i>anticipated and/or completed accomplishments</i> ) <b>-Short, Intermediate &amp; -Long Term</b>	Restoration of the Sound’s fisheries habitat to maintain healthy and viable populations of fish in LIS; implementation of the LISS CCMP to protect and restore LIS; prevention and control of aquatic invasive species in LIS; protection and enhancement of the Sound’s ecological and fisheries resources.	
<b>Δ (+/-) in Pressure Targets</b>	<b>N/A</b>	
<b>CWA Core Program Project Support</b> 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.	
	7) Wetlands Program Support/Implementation	

**a. Tools.** This Work Plan provides funding for development of several programmatic tools. As an example, the LISS habitat restoration team brought on-line its web-based data tool for restoration projects. The web-based application enables users to access data and information on each LIS habitat restoration site and conduct a virtual visit to the site through images and video.

<b>CCMP/Work Plan Goal:</b>	<b>CCMP Implementation Support and Technical Assistance</b>	
<b>Project/Activity Name:</b>	LISS CCMP Enhancements Program	
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	To provide resources for priority CCMP implementation projects at the state and local level to qualified applicants.	
<b>Responsible Partner(s) Role(s):</b>	NEIWPC, plans, coordinates, conducts and administers the LISS CCMP Enhancements Program	
<b>Outputs/Products:</b>	Development of water quality model scenarios under the System-wide Eutrophication Model to support LISS water quality programs.	
<b>Milestones</b> ( <i>project start/end dates</i> )	October 1, 2009-September 30, 2010* *end date under negotiation with EPA	
<b>2010 Budget:</b>	\$100,000, SWEM Modeling [see Attachment 1, line 21]	
<b>Outcomes:</b> ( <i>anticipated</i> )	Selection of scenario parameters; input and run model using data inputs;	

<b>CCMP/Work Plan Goal:</b>	<b>CCMP Implementation Support and Technical Assistance</b>	
<i>and/or completed accomplishments)</i> <b>Short, Intermediate &amp; Long Term</b>	conduct appropriate runs of model; produce a report on results of model by parameter. Information obtained may be used to inform management for decisions on nitrogen mitigation programs.	
<b>Δ (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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	

**b. Training.** The LISS will continue to fund the CT Sea Grant’s 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. Between 2002 and 2008, one planning and 14 LIS mentor teacher workshops were held in Connecticut, involving 20 different LIS mentor teachers working in teams. One hundred sixty (160) formal and informal educators from 49 towns (29% of Connecticut towns) representing 45 school districts participated in the workshops. Through these educators, it was documented that ~12,135 K-12 students benefited from the training, activities, and resources. This is approximately 2.2% of the total number of K-12 students enrolled in public schools in Connecticut between 2006 and 2008. 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. A new aspect of the program in 2010 is planned expansion to the New York portions of the LIS watershed. The NY Sea Grant via Cornell Cooperative Extension program will assist in conducting the first mentor teacher workshops in New York.

<b>CCMP/Work Plan Goal:</b>	<b>CCMP Implementation Support and Technical Assistance</b>
<b>Project/Activity Name:</b>	LISS Mentor Teacher Training Program
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	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.
<b>Responsible Partner(s) Role(s):</b>	CT Sea Grant/NY Sea Grant
<b>Outputs/Products:</b>	Recruit six (6) mentor teachers and facilitate planning sessions for workshop development (grade level cohorts K-2, 3-5, 6-8); conduct three (3) LIS Mentor Teacher workshops for K-12 formal and informal educators; support LIS Educators Conference; conduct 3 NY mentor teacher workshops.
<b>Milestones</b> ( <i>project start/end dates</i> )	October 1, 2010-September 30, 2011
<b>2010 Budget:</b>	\$32,529 CT and \$6,940 NY [See Attachment 1, line 10]
<b>Outcomes:</b> ( <i>anticipated</i> )	Development of grade appropriate, multidisciplinary workshops utilizing LIS

<b>CCMP/Work Plan Goal:</b>	<b>CCMP Implementation Support and Technical Assistance</b>	
<i>and/or completed accomplishments)</i> <b>Short, Intermediate &amp; Long Term</b>	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.	
<b>Δ (+/-) in Pressure Targets</b>	N/A	
<b>CWA Core Program Project Support</b> 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

**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. These staff include the LISS habitat restoration coordinators in both states.

<b>CCMP/Work Plan Goal:</b>	<b>CCMP Implementation Support &amp; Technical Assistance</b>
<b>Project/Activity Name:</b>	LISS Habitat Restoration/Coordination
<b>ONGOING Project/Activity Purpose &amp; Description:</b>	The purpose of this position is to conduct activities associated with LISS including: 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 CTDEP activities associated with the LISS Habitat Restoration Initiative.
<b>Responsible Partner(s) Role(s):</b>	NYSDEC; CTDEP
<b>Outputs/Products:</b>	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.
<b>Milestones (project start/end dates)</b>	10/1/10-9/30/11

<b>CCMP/Work Plan Goal:</b>	<b>CCMP Implementation Support &amp; Technical Assistance</b>	
<b>2010 Budget:</b>	\$109,278 CTDEP; \$99,040 NYSDEC via NEIWPC [See Attachment 1, line 18]	
<b>Outcomes:</b> <i>(anticipated and/or completed accomplishments)</i> <b>-Short, Intermediate, Long Term</b>	Restored and protected 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.	
<b>Δ (+/-) in Pressure Targets</b>	<b>N/A</b>	
<b>CWA Core Program Project Support</b> 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

**C. PREVIOUS YEAR’S (FY2009) 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: HYPOXIA/NUTRIENT MANAGEMENT.**

**Point Source Load Reduction.** As reported under EPA’s Strategic Plan (SP-41) and Office of Water 2009 Water Program Guidance reporting system, ACS, the LISS partners continued the point source nitrogen reduction program in Long Island Sound in 2009, the latest report available. The total Trade-Equalized (TE) point source nitrogen load for 2009 was 39,011 TE lbs/day, with the 2014 goal at 22,774 TE lbs/day. The straight-lined 15 year TMDL annualized target for 2009 was 34,898 TE lbs/day. Overall, the program met the annualized percentage to goal target, which was established by EPA at 52 percent, with 55 percent of the 2014 target having been achieved. It is important to keep in mind that New York City, as part of a Consent Agreement with the state of New York, has taken significant STP biological processing capacity off-line during construction upgrades for nitrogen control at affected STPs. There is a resulting ‘bulge’ in discharge of nitrogen, which will be eliminated when construction is completed and plants come back on line over several years.

While the LISS does not directly fund this goal area and important CCMP activity, funds for STP nitrogen upgrades come from a combination of other EPA State Revolving Funds, Connecticut's state Clean Water Fund and New York state's Clean Water/Clean Air Bond Act funds and other sources, including New York City (NYC) bonds and funding for NYC STP upgrades. The LISS does include these resources in its Leveraged Funds report to NEP HQ, as it was the LISS that precipitated the 1998 bi-state nitrogen reduction agreement of 58.5 percent over a 15 year period that began with TMDL approval by EPA in 2000. Significant EPA LISO and Region 1 staff time is spent following up on TMDL implementation and LISS funding has been used to conduct various studies and projects to ensure that the upland states of Massachusetts, New Hampshire and Vermont's contributions to the total nitrogen load to the Sound are included in the scheduled revision to the TMDL. The LISS is funding 50 percent of a CTDEP technical position to support TMDL revision work in 2010 and as discussed above, a new Upper Basin public outreach and education program to be conducted by NEIWPC.

**Area/Duration of Hypoxia.** As reported under EPA's Strategic Plan (SP-42) the area (square miles) and duration (days) of the maximum hypoxic event in Summer 2009 with less than 3 milliliters (ml) of dissolved oxygen (DO) per liter of bottom (~<1m) water (<3ml/DO) was calculated to be 161 square miles, which lasted for a period of 45 days. This compares with the 13-year pre-TMDL averages of 208 square miles and 57 days. The 10-year post-TMDL averages are 187 square miles and 58 days. The LISS provides funding to CTDEP to conduct the LIS WQ monitoring program year-round, with additional monitoring runs during the summer months. Other ambient factors affect the formation of the hypoxic zone in the Sound, including temperature, rainfall, solar radiation, wind, currents and any resulting biological effects such as algae formation.

## **B. CCMP GOAL AREA: MANAGEMENT & CONSERVATION OF LIVING MARINE RESOURCES AND THEIR HABITATS.**

**Habitat Restoration.** As reported in EPA's Strategic Plan (SP-43) and the NEP's NEPORT reporting systems, the LISS restored or protected a total of 1,614 acres of habitat in 2009. The LISS has an overall goal of restoring 2000 acres of habitat by 2020, with an additional 300 acres of habitat to be protected or restored from 2008 to 2011 inclusive – this latter goal has been achieved. The LISS provides funding for individual habitat restoration projects as eligible for competitive funding under the LISS Futures Fund Large Grant program. Because of the complexity of implementing restoration projects, the LISS funds two habitat restoration coordinators, one each in NYSDEC and CTDEP, who develop priority LIS restoration projects, including fish passage projects, in their state. These staff positions are included in the description of LISS-funded staff in this Work Plan.

**Fish Passage Restoration.** As reported in EPA's Strategic Plan (SP-44) and NEPORT, the LISS reopened a total of 147 river miles as of September 2009. The LISS goal is to reopen 50 river miles from 2009 to 2014 inclusive, or an average of 8.3 miles per year. The LISS funds individual fish passage projects as eligible for competitive funding under the LISS Futures Fund Large Grant program. The LISS-funded CTDEP and NYSDEC habitat restoration coordinators develop projects to reopen fish passage in each state. Because of 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 located in Connecticut rivers and streams.

#### **C. CCMP GOAL AREA: MONITORING, MODELING & RESEARCH.**

**LIS Research Program, FY2009.** The LISS, through the CT and NY Sea Grant programs, continued to monitor the six scientific research projects that were selected for funding in FY2008 for the FY2009-2012 project period. The list of 2008-funded LISS scientific research projects is included as **Attachment 8**, and will continue to be reported on in subsequent NEP work plans as the projects are completed. In FY2009 the CT and NY Sea Grant programs recruited and selected two LIS Fellows to support the STAC in its scientific mission. The Fellows initiated two new projects: 1) to study zooplankton abundance and diversity in Long Island Sound; and 2) to investigate effects of seasonal variations on potential mercury methylation in the Sound. The LISS STAC met in April, June and November 2009 and continued work on the LIS ecosystem data synthesis project to summarize scientific work across several disciplines to produce a printed volume dedicated to LIS scientific research.

**Eelgrass Project.** (\$125,000, FY2009 LISS budget). The Management Committee approved this project to conduct follow-up work on eelgrass based on prior LISS-funded work (Vaudry, J. PI) to establish restoration criteria for eelgrass, including parameters for light, depth, nutrients, etc. An RFP was issued in 2009 via the CCMP Enhancements program. Six proposals are currently under evaluation.

**LIS Eelgrass Monitoring Surveys.** Through an IA established in FY2008, the USFWS arranged for aircraft photographic over-flights in eastern LIS that were performed in mid-July 2009 to identify coastal areas of extant eelgrass. Areas identified as de-nitrified via air were inspected by boat field surveys conducted in the fall of 2009 and data were passed back to the assessment team working with the photographs. A report on the status and trends in eelgrass is expected to be released in May 2010. This complements USFWS eelgrass surveys performed in 2003 and 2006 with funding support from the LISS. The 2006 survey found a slight increase in eelgrass abundance over the 2003 survey. Preliminary assessment from the 2009 field work appears to indicate the abundance of eelgrass has held steady in most places since 2006.

**LIS Sentinel Monitoring Program.** The \$150,000 in FY2008 LISS funding awarded to CT and NY was used to support the development of a new Sentinel Monitoring strategy that will provide data on ecosystems, and flora and fauna in LIS that can be influenced by climate change. Key sentinels will be selected for monitoring. Each state has formed work groups to guide the development of the strategy, which will be integrated by a bi-state team. The teams have met regularly in 2009 and a final strategy is under development.

#### **D. CCMP GOAL AREA: IMPLEMENTATION SUPPORT AND TECHNICAL ASSISTANCE.**

**LISS Futures Fund Projects, FY2009.** The LISSFF provided 33 grants to state and local government and community groups under the Long Island Sound Futures Fund (Sound Futures Fund). The \$535,000 in LISS funding is supplemented by \$318,750 from the Shell Marine Habitat Program, \$50,000 from FedEx, and \$200,000 from the United States Fish and Wildlife

Service and National Fish and Wildlife Foundation. The \$1,011,878 awarded will be leveraged by \$1.92 million contributed by the recipients themselves, providing a total of nearly \$2.94 million for on-the-ground conservation in Connecticut and New York.

The 2009 program funded 19 grants in Connecticut and 14 grants in New York. The Futures Fund supported 21 large grants (grants greater than \$10,000) totaling \$943,755. Five grants were awarded for water quality; four for habitat restoration; one for watershed planning, one for invasive species control; seven for education; and three for stewardship projects. Twelve small grants totaling \$68,123 were awarded for educational activities to increase understanding and appreciation of Long Island Sound through community events and activities.

With the funding announced in 2009, grant recipients will restore 103 acres of tidal marsh, freshwater marsh and dune and barrier beach thereby benefitting fish and wildlife. Projects will contribute to improved water quality. The Hempstead Harbor Protection Committee will continue water quality monitoring to help target water quality improvement initiatives. Going Coastal will operate a pumpout boat to remove a projected 28,800 gallons of sewage that would have been discharged in to the Sound in New York waters. GreenApple Corps will construct a greenroof to capture 250,000 gallons of polluted stormwater annually in New York. The Northeast Organic Farming Association of Connecticut will engage 150 homeowners and landscaping professionals in workshops focused on practices to reduce pesticide and nitrogen pollution from lawns and gardens to the Long Island Sound. Seventy communities will develop a range of tools to deal with water quality problems. Public engagement in projects is high. More than 181,180 citizens will be exposed to education and stewardship projects. Examples of public engagement include: 5,200 volunteers involved in cleanup of 198-miles of beaches lead by Save the Sound in Connecticut and the American Littoral Society in New York. The Friends of Flax Pond in New York will reach 300 volunteers and community members of all ages through its summer and winter lectures and field studies to create greater public awareness of estuary ecology through study and hands-on projects. Cornell Cooperative Extension of Suffolk County, New York will promote a greater understanding of Long Island Sound by educating 575 students (grades 4-8) from schools in underserved communities in Suffolk and Nassau County on Long Island. The Mystic Aquarium in Connecticut will reach 750 elementary and middle school students with an aim of increasing their knowledge of Long Island Sound and interest in protecting it.

**LIS Stewardship Initiative.** The LISS project to systematically prioritize lands for acquisition and protection funded by the LISS in FY2008 was awarded by NEIWPCC in 2009 and work will continue in developing a stewardship site prioritization protocol. The LISS supported acquisition of a key parcel of land in New York – the Diocese property, a 28.6 acre parcel on Conscience Bay, Setauket, New York, which was acquired with \$450,000 in LIS funding and \$5.0 million in natural resource damage funds from New York State. Additional acquisitions using the remaining funds awarded to CT and NY are being planned for FY2010 or beyond.

**LIS Scientific Data Synthesis Report.** In FY2009 work continued on the production of a book synthesizing research on Long Island Sound, which is being prepared under the review of the LISS Science and Technical Advisory Committee. The book outline and contributing authors are



continuing to write book chapters. A publisher has been selected to produce the volume upon completion of the data collection and analysis.

#### **E. CCMP GOAL AREA: PUBLIC OUTREACH, INFORMATION & EDUCATION.**

**Sound Health 2008.** The LISS, through the Communications Team supported under the NEIWPCC grant produced its biennial report, *Sound Health*. *Sound Health* was distributed in LIS communities through Sunday newspaper inserts in 450,000 papers in Connecticut and New York. In addition, *Sound Health* is distributed to schools and community groups and organizations and is in use by LIS Mentor Teachers to educate K-12 students about Long Island Sound. The report is carried on the LISS website, which is also operated and maintained by the LISS communications staff with support from the NEIWPCC grant.

**New LISS Website Configuration.** The communications team, led by NEIWPCC staff, completed an update to the LISS website at: <http://www.longislandsoundstudy.net>. This is the first complete overhaul of the website since the LISS moved it to an independent website manager. It is envisioned that the new website will provide easy access to LIS information and improve public participation in the LISS.

**Annual Long Island Sound Citizens Summit.** Using FY2009 funding, the 20<sup>th</sup> annual Long Island Sound Citizens Summit entitled *Green Cities, Blue Waters: Connecting Urban Communities to Ecosystems* was held on May 7, 2010 at Housatonic Community College in Bridgeport, Connecticut. The LISS, through NEIWPCC, provided support to Save the Sound, a program of Connecticut Fund for the Environment, to plan, organize, and conduct the event. The summit discussed urban needs, green infrastructures, and identified the actions and partnerships necessary to meet the needs. EPA Regional Administrator Curt Spalding was the keynote speaker.

**Salt Marsh Guide.** Connecticut Sea Grant, with FY2009 funding, developed and published the clear, concise and scientifically-accurate field booklet, *Salt Marsh Plants of Long Island Sound*, in collaboration with Scott Warren, Professor Emeritus of Connecticut College. Teachers of biology, ecology, and marine science classes in both Connecticut and New York have reacted positively to the easy-to-use format and writing style, with color photos, printed on water-resistant paper. This booklet complements other popular educational resources supported by the LISS and produced by Connecticut Sea Grant that help “*increase awareness, appreciation, and stewardship*” and “*promote a greater understanding of the Sound*”.

**LIS Curricular Resources Gap Analysis.** The LISS provided \$11,215 to the CT Sea Grant program in FY2008 to study LIS and water curricula in Connecticut K-12 schools and develop recommendations on closing gaps in educational information and materials and programs for students. Educational resources in the gap analysis included published lesson plans, booklets, posters, CDs, DVDs. Textbooks and unpublished lesson plans and curricula (i.e., those not readily available to educators) were not included in the analysis. An effort was made to concentrate on content relevant and/or specific to Long Island Sound and its watershed. The majority of the resources compiled address topics regarding living marine resources and habitat. Major gaps occur in areas relating to pathogens and toxic substances. Hypoxia, floatable debris,

and land use resources are available, although some are outdated and/or not easily used in a formal or informal classroom setting.

**2. Completed Projects.** *For completed projects that were funded by a CWA Section 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 FY2008, several projects funded in prior fiscal years have been completed and their EPA assistance awards closed out:

- **Development of a Long Island Sound-Specific Water Quality Index Using Cluster Analysis and Discriminant Analysis** (City College of New York; PI: Zhang; LI-97263606; LIS 2006 Research Funding; \$119,217; Completed: 8/31/09): The objective of this project was to develop a Long Island Sound-specific water quality index. The water quality index was computed using multivariate cluster analysis and discriminant analysis of a set of individual water quality indicators. A numerical water quality index (around -1 to 1) will result, with a value close to 1 indicating good water quality (oligotrophic), a value close to -1 indicating poor water quality (eutrophic), and a slight negative value representing mesotrophic conditions (intermediate water quality). The new method will be applied to the Long Island Sound water quality data (past 15 years at ~20 stations) collected by CTDEP. Monthly water quality indices will be computed for every station, and seasonal and annual trends in the water quality indices will be examined. The outputs of this project include a new LIS-specific water quality index and an automated procedure for computing the index. The numerical water quality index will give clear indications of the trophic status of LIS waters for routine water quality assessments.
- **Simulation of Long Island Sound with the System-wide Eutrophication Model (SWEM): Inter-annual Variability and Sensitivity** (UConn/DMS; PI: Dam/O’Donnell; LI-97127101; LIS 2005 Enhancement Fund; \$251,164; Completed: 3/30/09): The objectives of this project were to evaluate the effectiveness of SWEM and to identify additional studies that will improve our ability to predict the impact of management strategies on the water quality of Long Island Sound. The researchers established the sensitivity of SWEM to model parameters, model formulation, and inter-annual variations in weather and river discharge and provided an independent, quantitative evaluation of the model and its utility as a management tool.
- **Chemical Residues in Long Island Sound Indicator Fish and Lobster: A Bi-state Update** (NYSDEC and CTDEP/DOHs: LIS base funding in 2006-2007; PI: Skinner; LI-97267505-1: \$150,967 & LI-98246501: \$168,800; Completed: 8/31/09): The goal of this project was to determine the current status of chemical residues in selected indicator fish species. The project was proposed in two parts, and the LISS provided funding for the Tier 1 efforts in

FY2006. Tier 1 encompassed a study of striped bass and bluefish, which are recreationally and commercially important species that have historically had excessive chemical residue concentrations. These data were then used by the CT and NY Departments of Health to evaluate the current health advisories regarding PCBs, mercury, cadmium, and dioxins/furans in lobster, weakfish, and eels. Human fish consumption advisories were subsequently modified by the state departments of health.

**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 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.*

This FY2010 NEP Work Plan supports, directly or indirectly, many CWA core programs. As indicated in the Office of Water's 2011 National Program Guidance, "*The Long Island Sound Study (LISS) supports, and is supported by EPA core environmental management and regulatory control programs. The CCMP, established under CWA Section 320, envisioned a partnership of Federal, State and local governments, private industry, academia and the public, to cleanup and restore the Sound. This cooperative environmental partnership relies on existing Federal, State and local regulatory frameworks – and funding-- to achieve targets for restoration and protection and apply limited resources to highest priority areas. For example, EPA and the States use authorities under CWA Section 319 to manage watersheds that are critical to the health of Long Island Sound. Under Section 303(d), state and local TMDLs for harmful substances support the work of the Management Conference in ensuring a clean and safe Long Island 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 Section 304**) for DO to be consistent with EPA's national guidance for DO in marine waters. Connecticut conducts the LISS ambient water quality monitoring (WQM) program, and has participated with the state of New York in EPA's NCA monitoring. National funding for the NCA has been discontinued, and EPA's support under the LISS has likewise been terminated. 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 Section 303(d)**) was the first of its kind in the Nation, setting firm reduction targets and encouraging trading at point sources, and NPDES/SPDES permits (**CWA Section 402**) have been modified to incorporate TMDL nitrogen limits on a 15 year enforceable 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. For example, Westchester County New York passed a local bond act totaling \$234,000,000 in 2009 for nitrogen upgrades for two of its

four STPs discharging to the Sound. The State of Connecticut designated all of its LIS waters as a No Discharge Zone under the **CWA Section 312** and the State of New York has committed to similar designations in NY LIS waters. The states use authorities and funding under **CWA Section 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. 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 FY2009, Congress and EPA decreased funding available to the LISS by approximately \$2.0 million from FY2008 levels. As a result in FY2009, the LISS was not able to fund LIS Stewardship acquisitions to the extent it provided in 2008 due to the reduction in funding. Likewise the states of New York and Connecticut have felt the impact of state budget constraints and staff have been limited in their travel authorizations for LISS meetings; teleconferencing and video conferencing are being considered and applied to meetings to compensate for staff travel restrictions.

In FY2010 the statutory authorization for Section 119 expires. There are efforts underway to develop a reauthorization bill for Section 119, with several versions in circulation as of this writing. The final version of any reauthorization legislation may impact future program implementation and direction.

**D. Travel Funds Documentation.** *Documentation of CWA Section 320 funds used for travel should identify: personnel who traveled; travel date(s); trip purpose; location of site(s) visited; and cost.*

The LISS provides funding to support NEP/national travel to NEP biannual meetings and other important meetings, seminars, training sessions or conferences for its partners. LISS funding for this purpose is allocated to NEIWPC, which administers the LISS travel account and provides reimbursements for authorized travel. The LISO approves all requests for travel from this source in advance of the travel. **Attachment 7** lists the LISS travel for the period March 2009-April 2010 by LISS member category, travel date(s), trip purpose, location and cost. Total travel reimbursed during this period was \$6,150.17. Other LISS funding to NEIWPC supports room rental and support costs for quarterly CAC and Management Committee meetings.

Because the LISS NEP Director and the senior EPA staff in the LISO are Federal employees, they are not eligible to use allocated NEP funding for travel. The Director's and senior EPA staff's travel is supported from other EPA funding and is subject to Agency travel ceilings, authorizations and regulations. In FY2009 and FY2010, the EPA LISO requested and obtained approval to use \$2,000 of LISS funding for LISS-related travel, relieving the pressure on the Region's travel account to pay for this, and other EPA and LAE travel for the director and staff. Since the LISS is a Federal-lead NEP, there is no single assistance award in which to include the special grant condition contained in the NEP Work Plan Guidance requiring the NEP Director's travel to NEP meetings; as an EPA employee, the LISO director travels to NEP meetings as

required, authorized and approved. The USFWS and NOAA/NMFS staff are Federal employees who are not eligible to use NEP travel funds; their NEP-related travel is supported by the IA with their host agency as determined by IA rules.

NYSDEC and CTDEP are provided limited LISS travel funds in their awards to address state travel guidelines that may periodically preclude or restrict state employees from travel with limited state travel funds, or for being reimbursed for out-of-state travel from third parties. In this way the LISS ensures that its partners' staff have resources available to support travel to key NEP meetings and training sessions, as well as other important regional meetings or events.

STAC travel is supported from small travel allocations in the EPA assistance awards to NY and CT Sea Grant programs for meeting room rental and support costs and travel reimbursements to STAC members. In addition, invitational travel may be paid to bring in scientists or researchers working on areas that may be of interest or support to the STAC.

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**LONG ISLAND SOUND STUDY**  
**SUMMARY OF FY2010 LISS FUNDING UNDER CWA §119 AND §320**  
**BY PROGRAM ELEMENT**

LISS PROGRAM ELEMENT	ACTIVITY/TASK	2010 PRODUCTS/SERVICES	LISS GRANTEE OR FEDERAL IA	2010 BUDGET	ENVIRONMENTAL OUTCOMES
<b>Coordination and Reporting of Environmental Actions and Results: Grants, GPRA, EPA Strategic Plan</b>	<b>EPA Long Island Sound Office Support</b>	1) Telecommunications; printing; copier; postage; supplies, materials.	EPA LISO	\$28,300	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
		2) Office Administrative Support	NCOA	\$52,000	
		3) CCMP Tracking System Development	TBD	\$40,000	
	<b>NY/CT State Coordination &amp; Technical Assistance</b>	4) Assist in all aspects of LISS program development, reporting and support.	CTDEP	\$113,028	Comprehensive cross-program accounting and documentation of environmental results, benefits and costs.
			NYSDEC	\$71,443	
	<b>LISS Travel Support</b>	6) National Travel; Management Conference Quarterly Meetings; Citizens Advisory Committee Meeting Support; NY/CT state travel support for local and national meetings and conferences.	NEIWPC	\$40,473	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.
<b>COORDINATION SUBTOTAL:</b>			<b>4.5%</b>	<b>\$345,244</b>	
<b>Public Outreach, Information, Participation and Education</b>	<b>Public Information &amp; Education Program</b>	7) LISS Public Outreach Coordination; project management & support	NEIWPC	\$120,168	Increasing citizen involvement in CCMP implementation and program direction; informing 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 coordination, UPDATE, fact sheets, presentations, press releases.	NY Sea Grant	\$164,830	
		9) LISS CT coordination (80%), presentations, press releases.	CT Sea Grant	\$85,652	
		10) K-12 Mentor Teacher Program in New York and Connecticut; LIS Educators Conference Support	CT Sea Grant	\$32,529	
	NY Sea Grant		\$6,940		
	<b>Small Grants Program</b>	11) LISS Small Grants Program RFP for public information, education, outreach, and <\$6K projects, e.g., beach cleanups.	NFWF	\$85,000	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.
	<b>PI&amp;E Program Support</b>	12) Development and distribution of LISS Biennial Reports: <i>Sound Health or Protection &amp; Progress</i> publications.	NEIWPC	\$163,007	
<b>PI&amp;E SUBTOTAL:</b>			<b>8.5%</b>	<b>\$658,126</b>	

**LONG ISLAND SOUND STUDY**  
**SUMMARY OF FY2010 LISS FUNDING UNDER CWA §119 AND §320**  
**BY PROGRAM ELEMENT**

LISS PROGRAM ELEMENT	ACTIVITY/TASK	2010 PRODUCTS/SERVICES	LISS GRANTEE OR FEDERAL IA	2010 BUDGET	ENVIRONMENTAL OUTCOMES
<b>Water Quality Monitoring, Modeling and Scientific Research</b>	<b>Water Quality Monitoring &amp; Modeling</b>	13) LIS Water Quality Field Surveys conducted year-round by CTDEP using RV Dempsey; includes captain, crew, sampling and analyses at 48 stations in NY and CT LIS waters to support TMDL attainment.	CTDEP	\$920,949	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 dissolved oxygen conditions affecting living marine resources.
		14) LIS Water Quality Sampling Support for IEC regulatory areas in embayments not sampled by CTDEP.	IEC	\$17,613	
		15) LIS Sentinel Monitoring Program to identify sentinels, obtain baseline data and measure against climate impacts for early warning indicators of environmental change.	SMWG	\$185,496	
		16) LIS Remote Sensing Update of data for New York LIS watershed.	UConn CLEAR	\$93,000	
	<b>Scientific Research</b>	17) LIS Research Grant RFP: Food Web Dynamics; Habitat Restoration & Protection; and Climate Change/Anthropogenic Influences as Drivers for other topic areas	NY Sea Grant	\$453,000	Highest priority research relevant to the Long Island Sound 2003 Agreement or its successor and the LISS CCMP is 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.
			CT Sea Grant	\$452,500	
	<b>MONITORING, MODELING &amp; RESEARCH SUBTOTAL:</b>			<b>27%</b>	<b>\$2,122,558</b>
<b>CCMP Implementation Support, Regulatory and Compliance Assistance, and Technical Assistance</b>	<b>Habitat Restoration Initiative</b>	18) Habitat coordination; priority list of habitat restoration sites; habitat team support for implementation of restoration and protection goals.	CTDEP	\$109,278	Restored and protected 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.
			NYSDEC	\$99,040	
		19) NOAA National Marine Fisheries Service Ecologist Liaison (x2 years)	NOAA	\$240,000	Restoration of the Sound's fisheries habitat to maintain healthy and viable populations of fish in LIS; implementation of the LISS CCMP to protect and restore LIS; prevention and control of aquatic invasive species in LIS; protection and enhancement of the Sound's ecological and fisheries resources; improved understanding of food webs and implications for fisheries management programs.

**LONG ISLAND SOUND STUDY**  
**SUMMARY OF FY2010 LISS FUNDING UNDER CWA §119 AND §320**  
**BY PROGRAM ELEMENT**

LISS PROGRAM ELEMENT	ACTIVITY/TASK	2010 PRODUCTS/SERVICES	LISS GRANTEE OR FEDERAL IA	2010 BUDGET	ENVIRONMENTAL OUTCOMES	
		20) USFWS Wildlife Biologist Liaison support to the LISS. (x2 years)	USFWS	\$234,852	Restoration of the Sound's coastal habitat to maintain healthy and viable populations of fish and wildlife in LIS; implementation of the LISS CCMP to protect and restore LIS; prevention and control of aquatic invasive species in LIS; protection and enhancement of the Sound's ecological and recreational resources.	
	<b>CCMP Technical Support</b>	21) CCMP Enhancements Program: SWEM Modeling Support RFP	NEIWPC	\$100,000	Selection of scenario parameters; inputs to and model runs using new data; conduct appropriate runs of model; produce a report on results of model by parameter; results used to inform management for decisions on nitrogen mitigation programs and TMDL compliance.	
	<b>LIS Futures Fund</b>	22) LIS Futures Fund Large Grants RFP	NFWF	\$2,013,500	Increase in the number and type of project proposals to address problems identified by the LISS CCMP. Increase community support for and interest in the projects as a means to encourage public engagement to solve the problems identified in the LISS CCMP. Increase public support for additional resources to address the problems identified in the LISS CCMP. Support both a greater number of projects and larger, more complex projects that address the problems identified in LISS CCMP. Increase public understanding of accomplishments and challenges faced in LIS and addressed by various LISS initiatives.	
	<b>Stewardship Initiative Support</b>	23) LIS Stewardship Area Acquisition to support management of 33 stewardship areas in New York and Connecticut, climate change priority for marsh migration potential.	NYSDEC	\$750,000	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.	
			CTDEP	\$750,000		
	<b>Regulatory and Compliance Assistance</b>	24) NY TMDL Implementation Support	NYSDEC	\$225,000	TBD on submission by NYSDEC of detailed work plan.	
		25) TMDL/Upper Basin Support for Massachusetts, New Hampshire and Vermont participation in the LIS TMDL for nitrogen control.	NEIWPC	\$90,000	A more cooperative and publicly understood process in the upland LIS watershed states for achieving reduced nitrogen loads delivered to the Sound, reduced hypoxia, and attainment of state water quality standards through TMDL adoption in upland states.	
<b>IMPLEMENTATION SUPPORT SUBTOTAL:</b>			<b>60%</b>	<b>\$4,616,670</b>		
				<b>TOTAL:</b>	<b>\$7,737,598</b>	<b>Fiduciary Reserve: \$62,402</b>

**LISS Leveraged Funding, 2006-2009: for every \$1.00 of LISS funding spent, \$79.04 was leveraged by LISS partners, or more than \$1 billion leveraged with \$13.6 million in § 119 and 320 funding.**



**LONG ISLAND SOUND STUDY  
NATIONAL ESTUARY PROGRAM WORK PLAN  
LIST OF FY2010 LISS-FUNDED STAFF**

<b>ORGANIZATION/NAME</b>	<b><u>LISS TITLE</u></b>	<b><u>DESCRIPTION OF RESPONSIBILITIES/ACTIVITIES</u></b>
<b><u>EPA LISO</u></b>		
Edna Nolfi	Administrative Assistant	Provides overall office administrative support.
<b><u>CTDEP</u></b>		
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.
Peter Simpson	Boat Captain	RV John Dempsey CTDEP WQ Monitoring
Christine Olsen	Environmental Analyst 2	Water quality sampling/analysis. (80%)
Harry Yamalis	Environmental Analyst 2	Develops/implements habitat restoration plans/projects in CT.
<b><u>NYSDEC</u></b>		
Sarah Deonarine	LIS Coordinator	Coordinates overall LIS program in New York
Heather Young	NY Habitat Restoration Coordinator	Coordinates development/implementation of habitat restoration plans and projects in the LIS watershed.
<b><u>NY Sea Grant</u></b>		
Larissa Graham	NY Outreach Coordinator	Develops and implements communications plans and public information/education program in NY.
Karen Palmeri	Administrative Support	Assists in supporting the Extension Specialist in conducting the NY PI&E program. (33%)
<b><u>NEIWPC</u></b>		
Clair Whittet	Environmental Analyst II	Overall coordination of LIS program within NEIWPC.
Robert Burg	LISS Outreach Coordinator	Coordinates the overall LIS communications program for the LISS.
<b><u>CTSEA</u></b>		
Judy Preston	CT Outreach Coordinator	Provides PI&E support and coordination in CT (70%)

**Long Island Sound Study  
2010 Budget Summary  
April 15, 2010**

Organization & Base Program Activity	2010	2010	2010
	Request	Final	Required Match
<b>1. EPA Long Island Sound Office</b>	<b>\$130,300</b>	<b>\$120,300</b>	<b>\$0</b>
a. Office administration and operating expenses	\$28,300	\$28,300	
b. CCMP Implementation Tracking [new 2010]	\$50,000	\$40,000	
c. Administrative Support (NCOA)	\$52,000	\$52,000	
<b>2. CT Dept. of Environmental Protection</b>	<b>\$2,245,308</b>	<b>\$2,078,751</b>	<b>\$2,078,751</b>
a. CT State Coordination	\$196,553	\$113,028	\$113,028
b. CT LISS Habitat restoration coordination	\$132,310	\$109,278	\$109,278
c. LIS Water Quality Monitoring Program	\$920,949	\$920,949	\$920,949
d. LIS Sentinel Monitoring Program	\$245,496	\$185,496	\$184,496
e. LIS Stewardship Acquisitions	\$750,000	\$750,000	\$750,000
<b>3. NYS Dept. of Environmental Conservation</b>	<b>\$915,304</b>	<b>\$1,145,483</b>	<b>\$1,145,483</b>
a. NYS LIS Coordination & Reporting	\$71,443	\$71,443	\$71,443
b. NY Habitat Restoration Coordination	\$93,861	\$99,040	\$99,040
c. Stewardship Property Acquisition	\$750,000	\$750,000	\$750,000
d. TMDL Support (pending approval)	n/a	\$225,000	\$225,000
<b>4. CT Sea Grant</b>	<b>\$118,181</b>	<b>\$118,181</b>	<b>\$6,220</b>
a. LIS PI&E Coordination	\$85,652	\$85,652	\$4,508
b. K-12 Mentor Teacher Program Support	\$32,529	\$32,529	\$1,712
<b>5. NY Sea Grant</b>	<b>\$171,770</b>	<b>\$171,770</b>	<b>\$9,041</b>
a. Public Outreach Coordination (Cornell)	\$164,830	\$164,830	\$8,675
b. NY Mentor Teacher Program [new 2010]	\$6,940	\$6,940	\$365
<b>6. NEIWPPC</b>	<b>\$352,639</b>	<b>\$413,648</b>	<b>\$74,672</b>
a. Task 1 Outreach/Education Support	\$271,808	\$267,808	\$14,095
b. Task 2 Meeting/Travel Coordination Support	\$55,840	\$55,840	\$55,840
c. Task 3 LIS TMDL/Upper Basin Outreach Support	\$24,991	\$90,000	\$4,737
<b>7. USFWS</b>	<b>\$235,832</b>	<b>\$234,852</b>	<b>\$0</b>
a. Biologist Support (2 years)	\$235,832	\$234,852	
<b>8. CT Sea Grant College Program</b>	<b>\$525,109</b>	<b>\$452,500</b>	<b>\$452,500</b>
a. Connecticut Sea Grant Research Support	\$450,000	\$450,000	\$450,000
b. STAC Support (1 year)	\$75,109	\$2,500	\$2,500
<b>9. New York Sea Grant College Program</b>	<b>\$526,868</b>	<b>\$453,000</b>	<b>\$453,000</b>
a. New York Sea Grant Research Support	\$450,000	\$450,000	\$450,000
b. STAC Support (1 year)	\$76,868	\$3,000	\$3,000
<b>10. LIS Enhancement Grants Program (NEIWPPC)</b>	<b>\$500,000</b>	<b>\$100,000</b>	<b>\$100,000</b>
a. LIS SWEM Modeling Support: bioextraction	\$0	\$100,000	\$100,000
<b>11. National Fish &amp; Wildlife Foundatio</b>	<b>\$3,600,000</b>	<b>\$2,098,500</b>	<b>\$1,620,572</b>
a. LIS Futures Fund Large Grants	\$3,515,000	\$2,013,500	\$1,616,099
b. LIS Futures Fund Small Grants	\$85,000	\$85,000	\$4,474
<b>12. NOAA</b>	<b>\$250,000</b>	<b>\$240,000</b>	<b>\$0</b>
a. Ecologist Support (2 years)	\$250,000	\$240,000	
<b>13. Interstate Environmental Commissio</b>	<b>\$71,613</b>	<b>\$17,613</b>	<b>\$17,613</b>
a. IEC Sampling Support	\$17,613	\$17,613	\$17,613
<b>14. UConn Center for Landuse Education And Research</b>	<b>\$93,000</b>	<b>\$93,000</b>	<b>\$93,000</b>
a. Remote Sensing Phase 1	\$93,000	\$93,000	\$93,000
<b>Total:</b>	<b>\$9,116,056</b>	<b>\$7,737,598</b>	
<b>Funds Available:</b>	<b>\$7,800,000</b>	\$7,800,000	<b>\$6,113,254</b>
<b>Fiduciary Reserve:</b>		<b>\$62,402</b>	

	A	B	L	O	P	Q	R
1	<b>LONG ISLAND SOUND STUDY</b>						
2	<b>Summary of FY2010 Funding by Organization</b>						
3	<b>ORGANIZATION</b>	<b>EPA Assistance Award #</b>	<b>2010 Budget Projected</b>	<b>2010 Required Match</b>	<b>Region 1 01L 403B67 LIS PB</b>	<b>Region 2 02T 403B89 LIS NEP</b>	<b>Region 2 02T 403B67 LIS PB</b>
4	Final LIS Allocation		\$7,800,000		\$3,350,000	\$800,000	\$3,650,000
5	<b>BASE IMPLEMENTATION PROGRAM:</b>						
6	<b>1. EPA LISO Office Operations (36)</b>		\$40,000	\$0		\$40,000	
7	<b>a. Operations/Expenses</b>		\$28,300	\$0			\$28,300
8	<b>b. NCOA/EPA Administrative Support [MT]</b>	CQ-832970	\$52,000	\$0		\$52,000	
9	<b>2. NYSDEC Base 2010 [JS]</b>	LI-NEW	\$817,271	\$817,271			\$817,271
10	<b>2.a. NYSDEC TMDL Support</b>	LI-NEW	\$225,000	\$225,000			\$225,000
11	<b>3. NY Sea Grant PI&amp;E [JS]</b>	LI97241608-1	\$171,770	\$9,041		\$171,770	
12	<b>4. Interstate Environmental Commission [JS]</b>	CWA106	\$17,613	\$17,613		\$17,613	
13	<b>5. NY Sea Grant Research 2009-2010 [MT]</b>	LI97230909	\$453,000	\$453,000		\$453,000	
14	<b>6. National Fish &amp; Wildlife Foundation 2010 [MT]</b>	LI-NEW	\$2,098,500	\$1,564,937			\$2,098,500
15	<b>7. CTDEP 2010 CCMP Implementation [JH]</b>	LI-NEW	\$2,064,851	\$2,064,851	\$2,064,851		
16	<b>8. NEIWPC 2010 Implementation [JH]</b>	LI97188201	\$530,760	\$277,048	\$530,760		
19	<b>9. NEIWPC Enhancements 2009-2010 [JH]</b>	LI97188101	\$100,000	\$100,000	\$100,000		
20	<b>10. CTSEA PI&amp;E &amp; Mentor Teachers [JS]</b>	LI96113801	\$118,181	\$6,220	\$118,181		
21	<b>11. UCONN CLEAR [JS]</b>	LI-NEW	\$93,000	\$93,000	\$93,000		
22	<b>12. CTSEA Research 2009-2010[JS]</b>	LI96113701	\$452,500	\$452,500	\$452,500		
23	<b>13. USFWS/EPA IA Technical Support [MT]</b>	DW-94031501	\$234,852	\$0			\$234,352
24	<b>14. NOAA/EPA IA Technical Support [MT]</b>	DW-13-94033701	\$240,000	\$0			\$240,000
25	<b>TOTALS:</b>				\$3,359,292	\$734,383	\$3,643,423
26	<b>2010 BALANCE SUBTOTALS:</b>		\$7,737,598	\$6,142,883	\$(9,292)	\$65,617	\$6,577
27	<b>Fiduciary Reserve:</b>		\$62,402	\$1,680,563			
28	Region 1, Green; Region 2 Blue; IAs, HQ Yellow						
29							
30							



*A Partnership to Restore and Protect the Sound*

# Long Island Sound 2003 Agreement

***Our Vision - To Restore the Health of Long Island Sound by 2014,  
the 400<sup>th</sup> Anniversary of Adriaen Block's Exploration of Long Island Sound***

Whereas, in 1994 the states of Connecticut and New York and the U.S. Environmental Protection Agency, approved a *Comprehensive Conservation and Management Plan* (CCMP) for Long Island Sound, and

Whereas, support for implementing the CCMP was affirmed in the *1996 Long Island Sound Agreement* and much progress has been made in protecting and restoring Long Island Sound through a bi-state, cooperative Management Conference, and

Whereas, using the CCMP as a blueprint for protection and restoration, the Long Island Sound Study (LISS) has continued to refine and add specificity to commitments and priorities, and

Whereas, the LISS has continued this dynamic process by developing this *Long Island Sound 2003 Agreement* to reaffirm our commitment and further identify and prioritize targets and time frames for implementation, and

Whereas, our vision is of a Long Island Sound restored to health by 2014, the 400<sup>th</sup> Anniversary of Adriaen Block's Exploration of Long Island Sound, and

Whereas, to make progress toward that vision, this *Long Island Sound 2003 Agreement* sets clear goals and targets, the achievement of which will be a challenge requiring the engagement of everyone -- federal, state, interstate, and local governments, businesses, schools and universities, and citizens -- around the Sound.

Therefore, by this Agreement, we recommit ourselves and challenge others to work to attain the goals of the CCMP and to make Long Island Sound's waters cleaner and healthier, its living resources more abundant and diverse, and its economic and recreational worth to the region even more valuable.

Wherefore now we hereby affix our signatures to the Agreement on this fourth day of December 2002:

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Arthur J. Rocque, Commissioner  
CTDEP

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Erin M. Crotty, Commissioner  
NYSDEC

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Robert W. Varney, Regional Administrator  
EPA New England

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Jane M. Kenny, Regional Administrator  
EPA Region 2

**Long Island Sound Study****2003 Long Island Sound Agreement*****I. HYPOXIA - Eliminate the adverse impacts of hypoxia resulting from human activities.***

1. By 2014, achieve a 58.5 percent reduction in the total enriched load of nitrogen to Long Island Sound from point and nonpoint sources within the New York and Connecticut portions of the watershed, as defined by the December 2000 document - *A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound*.
2. By 2003, establish Phase IV nitrogen reduction agreements to address atmospheric deposition and watershed management for portions of the Long Island Sound watershed outside of New York and Connecticut.

***II. PATHOGENS - Increase the area for shellfish harvesting and eliminate bathing beach closures while maintaining protection of human health.***

1. By 2003, nominate vessel no-discharge areas for the Pawcatuck and Mystic Rivers in Connecticut and for all the Long Island Sound embayments in New York. By 2005, nominate vessel no-discharge areas in two additional areas in Connecticut.
2. By 2010, decrease the acreage closed year-round to shellfishing due to pathogen indicators by 10 percent compared to 2000 levels.
3. By 2010, minimize chronic bathing beach closures in Long Island Sound due to pathogen indicators, with a goal of eliminating all chronic closures (closed for at least three days per year for at least three of the last five years).

***III. TOXIC SUBSTANCES - Eliminate toxicity or bioaccumulation impacts on living resources by reducing contaminant inputs and cleaning up contaminated sites, and manage risk to humans from seafood consumption.***

1. By 2004, EPA, in conjunction with the Army Corps of Engineers, will complete the Environmental Impact Statement for the designation of dredged material disposal sites in central and western Long Island Sound and, by 2008, will complete the EIS for designation of dredged material disposal sites in eastern Long Island Sound.
2. By 2003, update the Long Island Sound *Contaminants of Concern* list after considering National Coastal Assessment monitoring results and other sources of data. By 2005, evaluate current contaminant monitoring and control programs and identify strategies to address priority issues.
3. By 2003, New York and Connecticut will meet to jointly review their approaches for Long Island Sound fish consumption advisories and to discuss a process to achieve the goal of consistent fish consumption advisories for Long Island Sound.

Long Island Sound Study2003 Long Island Sound Agreement

**IV. LIVING RESOURCES AND THEIR HABITATS - *Assure a healthy ecosystem with balanced and diverse populations of indigenous plants and animals, maintain or increase the abundance and distribution of harvestable species, and restore the ecological functions of degraded and lost habitats.***

1. By 2003, complete the mapping of eelgrass in the Long Island Sound area to determine trends. Continue to promote investigations and research into determining the impacts of nitrogen upon the degradation of aquatic habitats (i.e., loss of eelgrass, increases in macroalgae and benthic algae) in shallow embayments and bays in Long Island Sound.
2. By 2005, characterize the scope and rate of tidal wetland losses in the Sound and promote research that will determine to what degree accelerated sea level rise, sediment supply disruptions, or other factors are responsible for the loss of habitat that is critical to the Sound's birds, finfish, and overall productivity.
3. By 2004, complete research and monitoring studies into the causes of the lobster mortality event in Long Island Sound and identify any management measures that could be implemented to prevent future mortality.
4. By 2003, identify critical issues (in addition to those in actions IV. 1-3) related to the management and conservation of living resources (such as fish and birds) and their habitats, and develop strategies to improve conditions, as appropriate.
5. By 2003, produce a list of the invasive species of concern in Long Island Sound.
6. Restore at least 2000 acres of habitat and 100 river miles for fish passage during the ten-year period from 1998 to 2008 and monitor these sites to confirm restoration progress over time.
7. By 2004, identify sites of outstanding and exemplary scientific, educational, or biological value.

**V. OPEN SPACE AND PUBLIC ACCESS - *Assure continued public access to Long Island Sound for aesthetic, recreational, cultural, and historical purposes and continue to identify and acquire open spaces that are essential for the ecological health and balance of the Sound.***

1. Continue state land protection initiatives to acquire ecologically and recreationally significant properties along the coast and increase public access opportunities to shoreline locations.

**Long Island Sound Study****2003 Long Island Sound Agreement**

2. By 2003, identify a coordinated strategy for developing a Long Island Sound Stewardship System that:
  - a. promotes conservation of open space, landscapes, and ecosystems;
  - b. improves access to the Sound;
  - c. establishes a listing of existing open space properties and prioritizes property types for natural resource conservation and natural resource-based outdoor recreation;
  - d. incorporates the sites of outstanding and exemplary scientific, educational, or biological value identified by Action IV. 7; and
  - e. promotes federal, state, local, and private funding for open space projects.

**VI. WATERSHED MANAGEMENT - *Assure a viable Long Island Sound watershed that supports vibrant and healthy aquatic life, and minimizes the negative effects of erosion, sedimentation, and flooding on the Sound and its tributaries and embayments.***

1. By 2010, Connecticut and New York will work toward a goal of having 50 percent of their respective areas in the watershed developing or implementing watershed restoration strategies.
2. By 2003, Connecticut and New York will identify the amount of impervious surface in their respective portions of the watershed, based on available land use/land cover data. Through watershed planning efforts the states will encourage municipalities to adopt limitations on impervious surfaces, with an overall goal of minimizing increases in impervious cover to a rate consistent with population change.
3. By 2004, Connecticut and New York will assess the amount of riparian forest buffer in their portions of the watershed using available land use/land cover data. Through watershed planning efforts, the states will encourage the establishment of targets to expand the percentage of riverine miles with forested buffers.

**VII. PUBLIC EDUCATION AND COMMUNITY INVOLVEMENT - *Promote an informed and educated constituency involved in community decisions affecting the ecological health of Long Island Sound and its living resources.***

1. Continue to report every two years on the health of Long Island Sound through ecological indicators, including measures of living resources, water quality, landscape changes, and community involvement.
2. Continue to support efforts to develop and establish Long Island Sound curricula for primary and secondary schools through grant programs such as the LISS Small Grants Program.

**Long Island Sound Study****2003 Long Island Sound Agreement**

3. Through the use of initiatives such as Project WET, Project SEARCH, the Long Island Sound License Plate Program, and the LISS Small Grants Program, offer Long Island Sound field and learning experiences to as many school children as possible, with a goal of reaching 50 percent of the school children within the Connecticut and New York portions of the watershed by 2010.
4. By 2004, develop a public awareness campaign to help control the introduction, spread, and impact of invasive species.
5. Expand the Citizen Advisory Committee to involve more constituencies and continue its role in evaluating CCMP implementation and supporting public awareness of Long Island Sound.

***VIII. PARTNERSHIPS - Support the LISS Management Conference partnership in communicating and coordinating action to restore and protect the Sound among federal, state, interstate, and local governments, educational institutions, private nonprofit organizations, the regulated community, and the public.***

1. Continue federal and state support and continue to build partnerships at all levels to implement the CCMP for Long Island Sound and to effect the specific elements in this Agreement.
2. In 2002, provide support to the Scientific and Technical Advisory Committee and Citizen Advisory Committee to enhance their role in building and expanding partnerships.
3. Continue support for the EPA Long Island Sound Office at a level necessary to coordinate and achieve the goals in this Agreement.
4. By 2005, reconvene to assess progress toward meeting the CCMP goals and the targets in this Agreement and consider any additional actions necessary.

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## **The Long Island Sound Futures Fund 2009**

The *Long Island Sound Futures Fund* was initiated in 2005 by the National Fish and Wildlife Foundation and the Long Island Sound Study through EPA's Long Island Sound Office. Now in its fifth year, the program has provided \$4.5 million to 138 projects in communities surrounding the Sound. With grantee match of almost \$12 million, over \$16 million in locally-based conservation has been, in part, galvanized by the grant program. The projects will open up 40 river miles for fish passage, and restore 290-acres of critical fish and wildlife habitat including lakes, underwater grasses, woodlands, meadows, wetlands, beaches, dunes and park frontage.

### **LARGE GRANTS – NEW YORK**

#### **PROJECT ABSTRACT**

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Project Title: Hempstead Harbor 2009 Expanded Water Monitoring Program

Recipient: Hempstead Harbor Protection Committee Village of Sea Cliff

Federal Funds (EPA):	\$35,000
NFWF Non-Federal Funds:	\$10,000
<u>Matching Funds:</u>	<u>\$77,304</u>
Total Project Costs:	\$122,304

Project Area: Hempstead Harbor, New York

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The Hempstead Harbor Protection Committee will expand and continue its current water monitoring program to collect data required to open additional portions of the harbor to shellfish harvesting and to monitor impacts of planned projects.

2009 is projected to be a historic year for Hempstead Harbor with the opening of parts of the harbor to shellfish harvesting for the first time in 70 years. This grant will expand this successful water monitoring program to include 18 additional locations in the inner and mid-harbor. This information may allow the nine municipalities of the Hempstead Harbor Protection Committee to open more shellfish beds. The funding will support new sampling as well as weekly monitoring of 13 existing locations, production and distribution of an annual report, posting results on a website, and maintenance of monitoring equipment. The expanded program for 2009 will be used to not only gauge progress but also to pinpoint deteriorating water quality trends where additional water quality improvement efforts are needed. The New York State Department of Environmental Conservation is a key partner associated with this effort. The agency will provide additional lab work and analysis of water quality samples.

## PROJECT ABSTRACT

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Project Title: Western Long Island Pumpout Boat

Recipient: Going Coastal, Inc.

Federal Funds (EPA):	\$25,350
NFWF Non-Federal Funds:	\$10,000
<u>Matching Funds:</u>	<u>\$72,500</u>
Total Project Costs:	\$106,850

Project Area: Eastchester Bay

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Going Coastal will improve water quality in the Western Long Island Sound by providing pumpout services and education materials to recreational boaters.

Going Coastal, Inc. will operate a pumpout boat from May to October five days a week. It will pump 80 boats and remove a projected 1,200 gallons of waste each week with 28,800 gallons removed by the end of the season. The pumpout boat operator will maintain a daily log of use and distribute Pumpout Guides and wallet cards informing boaters about the importance of regular pumpout to water quality in Long Island Sound.

## PROJECT ABSTRACT

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Project Title: Parks Citywide Greenroof Pilot Project: Phase II

Recipient: New York City, Department of Parks and Recreation - Green Apple Corps

Federal Funds (EPA):	\$30,000
NFWF Non-Federal Funds:	\$20,000
<u>Matching Funds:</u>	<u>\$70,222</u>
Total Project Costs:	\$120,222

Project Area: Five Borough New York City Parks and Recreation Department Facility, Randall's Island

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GreenApple Corps will construct a 5,700 ft<sup>2</sup> greenroof to capture 250,000 gallons of stormwater annually from entering overtaxed Combined Sewer Overflows (CSOs) to reduce non-point source pollution into Long Island Sound and New York Harbor.

The Five Borough Parks Facility on Randall's Island is adjacent to the Triborough Bridge and the entrance to two different expressways. The building collects air pollution from passing vehicles and that pollution washes off during rain storms and then flows untreated into CSOs and eventually into Long Island Sound and New York Harbor. A

greenroof is being created at Five Borough to address this problem.

Highly-urbanized environments like New York City are comprised of hard, impervious materials covering more than 60 percent of the landscape. Impervious surface coverage of 15 to 20% or greater of the total land in a watershed is linked to dramatic changes in shape of streams, water quality, water temperature, and the health of the insects, amphibians and fish that live in these streams. Green roofs can help ease this problem because they absorb, filter and recycle rainwater containing common pollutants including heavy metals from car exhaust fumes. Greenroofs can retain upwards of 70% of rain water. When a green roof reaches full saturation from rain, excess water slowly percolates through the vegetation layer to a drainage outlet. The soil layer traps sediments, leaves and other particles, treating runoff before it reaches sewer outlets. Only about 25% of water becomes runoff, but because this runoff occurs several hours after the peak flow of rainwater it is less polluted. The U.S. Environmental Protection Agency report *Reducing Stormwater Costs through Low Impact Development Strategies and Practices* recommends green roofs be used to help protect and restore water quality.

GreenApple Corps is a job training and public service initiative focused on green-collar job training for 18-24 year old economically-disadvantaged youth in a variety of work and learning experiences associated with the environment.

## **PROJECT ABSTRACT**

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Project Title: Harrison Pond Park Wetland Restoration and Dam Removal (NY)

Recipient: Town of Smithtown

Federal Funds (EPA, FWS):	\$48,243
NFWF Non-Federal Funds:	\$46,750
<u>Matching Funds:</u>	<u>\$94,993</u>
Total Project Costs:	\$143,236

Project Area: Kings Park, Town of Smithtown, Suffolk County, New York

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The Town of Smithtown will restore 0.35 acre of a freshwater wetland and facilitate stream flow to a tributary of the Nissequogue River.

Harrison Pond was a man-made pond constructed over 200 years ago. The pond was fed by groundwater springs and overflow traveled over a small dam and into a tributary of the Nissequogue River. The pond existed until September 2004, when significant rainfall from a major storm caused the dam to collapse. Prior to the dam collapse, a two-phase project had already begun in an effort to reduce sedimentation to the pond and restore water depth. Phase I of the project involved the installation of weirs to trap sediment upland and prevent it from reaching the pond during rainfall. This phase was successfully completed in 2006. Phase II, for which this grant in part provides support,

will involve a wetland restoration project including project planning and design; removal of concrete dam pieces and rubble; removal of existing fencing; clearing for regrading; and removal of sediment in the culvert. Improvements also include: installing gabions and Reno mattresses for bank stabilization; construction of a 40-foot long wooden pedestrian bridge, gravel walkways and viewing areas around the pond; native plantings; and installing interpretative signs. The project will restore the freshwater wetland that feeds directly into the Nissequogue River and help maintain flow to the river.

## **PROJECT ABSTRACT**

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Project Title: Implementing the Nissequogue River Stewardship Action Plan

Recipient: Regional Plan Association

Federal Funds (FWS):	\$26,000
NFWF Non-Federal Funds:	\$28,000
<u>Matching Funds:</u>	<u>\$22,600</u>
Total Project Costs:	\$76,600

Project Area: The Nissequogue River Watershed covers over 40 square miles largely in the Town of Smithtown, Suffolk County, Long Island, New York

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The Regional Plan Association (RPA) will prioritize and implement the actions of the *2008 Nissequogue River Stewardship Action Plan*. It will raise the visibility of the watershed and work with partners to develop conservation projects.

The *2008 Nissequogue River Stewardship Action Plan* introduced over 100 actions for Habitat, Water Quality, Land Use and Open Space and Education and Outreach to preserve and enhance ecological function and provide access opportunities within the Nissequogue River watershed, a Long Island Sound Study-designated Stewardship Area. The RPA will convene an Implementation Committee comprised of partners from government, civic, business and environmental organizations to implement priority actions. To achieve implementation, RPA will rely upon the partnerships developed through the creation of the Stewardship Action Plan including the Long Island Sound Study, New York Sea Grant, US Fish and Wildlife Service, New York State Parks and Recreation, New York State Department of Environmental Conservation, Suffolk County, Town of Smithtown, and the variety of civic groups, businesses and individual citizens that each contributed to developing the initial plan. The project is projected to engage 150 residents in public meetings. RPA will work with the Committee to prioritize the plan's actions, develop detailed implementation strategies and begin the steps of implementation for those actions prioritized. These implementation steps will include identifying and pursuing funding opportunities to start projects and facilitating action by students, volunteers and government agencies. RPA will also work to raise the profile of the Nissequogue Watershed and the Action Plan through an improved, interactive website; developing a Public Access television program; through participation in

speaking engagements, events and conferences; and through meetings with public officials and agencies.

### **PROJECT ABSTRACT**

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Project Title: Perennial Pepperweed Removal-West Meadow Beach

Recipient: Town of Brookhaven

Federal Funds (EPA, FWS):	\$18,538
NFWF Non-Federal Funds:	\$20,000
<u>Matching Funds:</u>	<u>\$38,538</u>
Total Project Costs:	\$77,076

Project Area: West Meadow Beach, Town of Brookhaven, New York

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The Town of Brookhaven will implement a plant removal project that will eradicate pepperweed, a noxious invasive species at West Meadow Beach a 7,000 foot long peninsula located on Smithtown Bay.

West Meadow Beach is a New York State Significant Coastal Fish & Wildlife Habitat, on the National Register and a Long Island Sound Study Stewardship Area. In 2006, the *West Meadow Beach Restoration Master Plan* was initiated to begin the ecological restoration of West Meadow, to maximize public access and to improve educational opportunities. One-acre of the highly invasive pepperweed was identified along the beach during an ecological resources survey associated with that planning. In response to this rare occurrence on Long Island, the Town of Brookhaven prepared a pepperweed removal plan to eliminate this ecological threat and to protect native species. Removal of the plant will involve mechanical removal, hand pulling and grubbing/mowing/cutting. Both pre-and post monitoring efforts will be done by Town to measure and maintain removal success and to prevent the return of the pepperweed.

### **PROJECT ABSTRACT**

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Project Title: Sound Experiences: From Ship to Shore III

Recipient: Cornell Cooperative Extension of Suffolk County

Federal Funds (EPA):	\$20,000
NFWF Non-Federal Funds:	\$15,000
<u>Matching Funds:</u>	<u>\$15,478</u>
Total Project Costs:	\$50,478

Project Area: Oyster Bay, New York

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The Cornell Cooperative Extension of Suffolk County will provide direct educational experiences with Long Island Sound for students from underserved areas through land and shipboard-based activities about Long Island’s marine ecosystem.

Cornell Cooperative Extension of Suffolk County, in partnership with The Waterfront Center of Oyster Bay, will promote a greater understanding of Long Island Sound by educating 24 groups of students (grades 4-8) from schools in underserved communities in Suffolk and Nassau County. Up to 575 children will be reached through fully funded learning experiences in the field. Topics to be covered include: the living resources of the Sound, water-quality issues, the interrelationship between the health of the Sound and the condition of the local watershed, and stewardship of the Sound.

### **PROJECT ABSTRACT**

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Project Title: Social Marketing Campaign: Beach-Nesting Birds, Long Island North Shore (3087)

Recipient: National Audubon Society, Inc. (NY Audubon)

Federal Funds (EPA, FWS):	\$13,750
NFWF Non-Federal Funds:	\$13,000
<u>Matching Funds:</u>	<u>\$15,329</u>
Total Project Costs:	\$42,079

Project Area: Coastal areas on the North Shore of Long Island, New York

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Audubon New York will conduct a social marketing campaign to change public perceptions and behaviors that contribute to identified threats to beach-nesting birds around Long Island’s North Shore.

Many of the threats to beach-nesting birds on Long Island are directly related to human activities on beaches. While management activities are in place to address some of these threats, public cooperation is still a challenge. This project will address this challenge by moving beyond traditional education and outreach to use social marketing – a creative approach to catalyzing social change. The social marketing campaign aims to change public perceptions and behaviors that contribute to identified threats on and around Long Island’s North Shore. Successful project action/outcomes will include increased support among target audiences for beach-nesting bird conservation actions, target audience(s) taking desired steps and actions, and increased beach-nesting bird productivity and/or survival.

Social marketing is a goal-oriented approach to change that should not be confused with traditional education and outreach. Social marketing does not place priority on the dissemination of information—rather, it involves targeting a specific sector of the population with the goal of changing a particular behavioral pattern in that community.

Methods for changing behavior may include actions such as identifying influential members of the community and giving them incentives to model a new behavior, an ad campaign eliciting a positive or negative emotional response to a behavior, or providing easily available technical support that facilitates a desired behavior.

## **PROJECT ABSTRACT**

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Project Title: Habitat Monitoring in Flax Pond (NY)-II

Recipient: Friends of Flax Pond, Inc.

Federal Funds (EPA):	\$15,000
NFWF Non-Federal Funds:	\$10,000
<u>Matching Funds:</u>	<u>\$75,000</u>
Total Project Costs:	\$100,000

Project Area: Old Field, New York

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The Friends of Flax Pond will conduct education and outreach activities through its Summer Institute, Winter Lecture Series and field surveys.

The Flax Pond Summer Institute creates greater public awareness about the delicate balance of estuarine ecology, scientific research techniques and the field of environmental science through the study of mussels and juvenile horseshoe crabs and by conducting vegetation mapping. The Flax Pond Winter Lecture Series provides free public education on Flax Pond and environmental issues of great importance to the health of Long Island Sound natural resources. Scientist-led and citizen/ student scientist assisted field surveys will be implemented to track horseshoe crab spawning and diamondback terrapin nesting as a means to create public awareness and an understanding of the characteristics and environmental stresses affecting these marine resources. The various initiatives will engage 300 volunteer and community members of all ages.

The Flax Pond complex is 146 acres of wetlands behind a barrier beach stretching from Crane Neck Point to Old Field Point. It is a Long Island Study Stewardship Initiative site with significant ecological and scientific value. It provides habitat and nursery grounds for a rich variety of marine species, including finfish, shellfish, crabs, birds, turtles and a variety of marsh grasses and plants. It has been designated by the New York State Department of Conservation as a Significant Coastal Fish and Wildlife Habitat.

## **PROJECT ABSTRACT**

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Project Title: Coastal Resilience on Suffolk County Long Island Sound Shore

Recipient: The Nature Conservancy

Federal Funds (EPA, FWS):	\$50,000
Foundation Non-Federal Funds:	\$0
<u>Matching Funds:</u>	<u>\$78,792</u>
Total Project Costs:	\$128,792

Project Area: Long Island, New York

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The Nature Conservancy will create a centralized geospatial database and web mapping tool to support decision-making associated with biodiversity and hazard mitigation objectives in the context of sea level rise.

Long Island's north shore communities need a tool for visualizing the impacts of sea level rise and coastal hazards, and for weighing these impacts in the context of options for community planning and natural resources protection. This project will combine local projections of sea level rise and storm surge with state-of-the-art LiDAR data to develop interactive inundation maps that permit visualization of sea level rise and storm surge under a variety of emissions scenarios and timeframes. The project will also use natural resource and land use data layers and develop prioritization frameworks to inform planning and management decisions relating to development and natural resource protection. A product of the project will be to develop a suite of existing and novel management tools that can be used by communities to enhance their resilience in the face of these changes. Seven towns and 60 participants will be engaged in the effort.

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## **LARGE GRANTS – CONNECTICUT**

### **PROJECT ABSTRACT**

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Project Title: Clean Up Stonington Harbors, Inc (CUSH)

Recipient: Water-testing Utilized to Implement Pollution Solutions

Federal Funds (EPA):	\$11,906.84
NFWF Non-Federal Funds:	\$0
<u>Matching Funds:</u>	<u>\$17,085.00</u>
Total Project Costs:	\$28,991.84

Project Area: The coastal waters of Stonington, CT from the Mystic River to the Pawcatuck River contiguous with Long Island Sound

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CUSH will expand the use of a scientifically-based water-testing database along the coastline of Stonington, Connecticut using test sites on the Mystic and Pawcatuck Rivers.



With this funding, the multi-organizational CUSH Water-Testing Advisory Committee will expand the number of test sites to ten in order to better cover potential pollution problem areas. The data collected provides the means to identify pollution sources from businesses, non-point sources, storm drains, and sewage treatment facilities, among other sources. When pollution issues are observed, CUSH works with businesses, governmental agencies, and nongovernmental and community-based organizations to implement solutions to the problems and uses action plans as a means to educate the public about how to change behaviors. They partner with the University of Rhode Island's Watershed Watch program, the Wood-Pawcatuck River Watershed Association, and Stonington High School engaging 20 community volunteers from these groups. CUSH's data will be integrated with data from a consortium of other regional organizations and provided to the public in an interactive, on-line database for the Wood-Pawcatuck River Watershed.

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### PROJECT ABSTRACT

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Project Title: Organic Landscaping for Non-point Source Pollution Control

Recipient: Northeast Organic Farming Association of Connecticut

Federal Funds (EPA):	\$17,251
NFWF Non-Federal Funds:	\$0
<u>Matching Funds:</u>	<u>\$28,000</u>
Total Project Costs:	\$45,251

Project Area: State of Connecticut

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The Northeast Organic Farming Association of Connecticut will help homeowners transition from chemical to organic landscaping in order to reduce pesticide and nitrogen pollution from lawns and gardens into Long Island Sound.

The funding will present organic land care training workshops to 150 homeowners and landscaping professionals and businesses. The workshops will educate participants about the wide variety of best-management practices focused on gardening without the use of synthetic pesticides and fertilizers. Workshops will teach the use of on-site and locally sourced compost and compost tea as a preferred source of nitrogen for all lawns and plantings, as well as planting and irrigation techniques that reduce water use and runoff. The workshops will also promote the use of plants native to the local region. A website will maintain contact with participating homeowners to track the number of acres that are converted to organic management as a result of the project. The project goal is to shift 100 acres to organic management. Workshops will be advertised throughout Connecticut, Rhode Island and lower New York, but held in south/centrally located Connecticut venues. Website will be globally accessible but target the growing conditions of the northeast. The projected use of the website is 1,000 people.

## PROJECT ABSTRACT

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Project Title: Saugatuck River Watershed Diadromous Fish Passage

Recipient: The Nature Conservancy

Federal Funds (EPA, FWS):	\$47,976
NFWF Non-Federal Funds:	\$40,000
<u>Matching Funds:</u>	<u>\$44,800</u>
Total Project Costs:	\$132,776

Project Area: Weston, Connecticut on the Saugatuck River and Easton, Connecticut on the Aspetuck River

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The Nature Conservancy supports development of two fully-engineered fishway plans to eventually restore access to the Saugatuck's entire historic river herring habitat; and downstream eel passage on the Aspetuck.

Hasen Pond dam, four miles upstream from the head of the tide, is the last dam preventing access to the entire historic range (the final three miles) of Saugatuck River spawning habitat. Juvenile American eels are found upstream of the Aspetuck and Saugatuck Reservoir dams and, in fact, comprise a significant proportion of the fish communities there. Because of the interconnected reservoir system an estimated 200 or more migrating adult American eels are killed annually when they become entrapped in the Hemlock Reservoir water supply system. After design, the Nature Conservancy and the Aquarion Water Company will install an experimental underwater lighting system that should deter migrating adult eels from entering the Hemlock bypass and direct them to an alternate, retrofitted conduit to ensure their safe downstream passage.

## PROJECT ABSTRACT

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Project Title: Removal of Cottages and Restoration of Dunes on Long Beach

Recipient: Trust for Public Land

Federal Funds (EPA, FWS):	\$50,000
NFWF Non-Federal Funds:	\$50,000
<u>Matching Funds:</u>	<u>\$601,531</u>
Total Project Costs:	\$701,531

Project Area: Long Beach West, Stratford, Connecticut

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The Trust for Public Land will remove 41 dilapidated cottages on Long Beach to facilitate restoration of dune and barrier beach habitat and public access to the site.

Removal of the cottages will restore one of most important natural sites along Connecticut's coast and improve public access to the beach for passive recreational opportunities. The 35-acre Long Beach West contains sand dunes, tidal wetlands and sand flats. Long Beach and the adjacent Pleasure Beach shelter a 700-acre estuarine system that provides one of the most critical areas for birds in Connecticut including nesting habitat for federally threatened Piping plover and state threatened Least tern. The cottage removal will eliminate a point source of effluent and pollution into Long Island Sound and Lewis Gut.

### **PROJECT ABSTRACT**

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Project Title: Little River Tidal Restoration, New Haven County, CT

Recipient: Ducks Unlimited, Inc.

Federal Funds (FWS):	\$24,620
NFWF Non-Federal Funds:	\$25,000
<u>Matching Funds:</u>	<u>\$42,000</u>
Total Project Costs:	\$91,620

Project Area: The Little River on the border between New Haven and North Haven, Connecticut

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Ducks Unlimited will restore hydrology to approximately 100-acres of tidal marsh by removing restrictions to tidal flow and restoring a meandering tidal creek system.

The Little River marsh is approximately 100-acres of tidal brackish wetland at the edge of a capped, former solid waste landfill. Prior to 1965 a road and dike was constructed across the Little River and fitted with undersized culverts which restricted tidal flow and allowed the non-native plant phragmites to flourish. The original natural channel meander was also changed and a series of low berms were constructed on portions of the marsh to create landfill space further restricting tidal flow. The project will remove sections of the berms, restore portions of the original channel to allow more natural tidal flow, conduct herbicide control of phragmites – all with a goal of restoring native marsh habitat. The marsh is owned by several private landowners all whom support restoration.

### **PROJECT ABSTRACT**

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Project Title: Outer Island Marine Environmental Education/Research Center

Recipient: Friends of Outer Island

Federal Funds (EPA, FWS):	\$24,976
NFWF Non-Federal Funds:	\$10,000

<u>Matching Funds:</u>	\$94,000
Total Project Costs:	\$128,976

Project Area: Outer Island, the furthest offshore of the Thimble Island chain, Branford, Connecticut, a unit of the Stewart B. McKinney National Wildlife Refuge

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The Friends of Outer Island will build a revitalized educational center on Outer Island including a marine lab, learning stations and a classroom pavilion to provide hands-on learning and research opportunities about Long Island Sound.

Outer Island, an offshore unit of the Stewart B. McKinney National Wildlife Refuge, is a unique location for educating the public about Long Island Sound. The island, which was donated to the US Fish and Wildlife Service with the mission of research and education, lacks the infrastructure for a sustained educational program. The project will create an eco-friendly center for Long Island Sound environmental studies by refurbishing a neglected summer cottage into a hands-on marine lab and an open classroom pavilion. The new center will be available to groups for environmental education and research. The lab, the classroom and the learning stations will allow visitors to measure water quality and observe marine species with a goal of increasing environmental awareness through hands-on activities. In the first year of this revitalized educational center ten teachers will be trained and 100 stewards will be engaged in a range of programs and activities.

### **PROJECT ABSTRACT**

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Project Title: Long Island Sound Curricula Outreach to Connecticut's Inner Cities

Recipient: Sea Research Foundation

Federal Funds (EPA):	\$28,835
NFWF Non-Federal Funds:	\$0
<u>Matching Funds:</u>	\$27,790
Total Project Costs:	\$56,625

Project Area: Norwich and New Haven, Connecticut

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The Sea Research Foundation will reach 750 elementary and middle school students with an aim of increasing their knowledge of Long Island Sound and interest in protecting it.

The overarching goal of the project is to provide direct, hands-on experiences with the Long Island Sound environment and its inhabitants with the goal of inspiring a cadre of young people to become environmentally responsible citizens who will act to protect and conserve the Sound and its watershed. The project is a year-long conservation science curriculum based on state and national science standards that turns Long Island Sound into a living laboratory for learning.

## PROJECT ABSTRACT

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Project Title: Yale Peabody Museum Outreach in Long Island Sound

Recipient: Yale University

Federal Funds (EPA):	\$23,000
NFWF Non-Federal Funds:	\$12,000
<u>Matching Funds:</u>	<u>\$101,638</u>
Total Project Costs:	\$136,638

Project Area: New Haven, Connecticut

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The Yale Peabody Museum will engage youth from urban schools in a Long Island Sound research project focused on creating a museum exhibit to educate the public about this research and local water quality issues.

The proposed project will support a Yale Peabody Museum after school program serving New Haven high school students. Students enrolled in the program will receive in-depth experiences conducting scientific research and paid internships. Yale researchers will present their work and discuss it with the students, introduce students to careers in marine sciences and to Long Island Sound environmental issues. Students will design and build a museum exhibit that integrates oceanographic and meteorological data collected by Yale researchers from the Monitoring Your Sound Central Buoy (e.g., carbon and nitrogen isotopes, trace metals, microbial genomics, zooplankton, and benthos). High school students will also work with researchers and a computer programmer to develop computer-based games and tutorials that will also utilize information from the Central Buoy time-series study. One-hundred students from low-income, unrepresented groups will participate from New Haven schools. The composition of students participating in the projects is: 64% young women, 60% from ethnic groups historically underrepresented in the sciences and 55% who qualify for free or reduced priced school lunches. Students receive academic credit at their schools for participating in this free, year-long program. Yale University's Peabody Museum of Natural History has approximately 160,000 visitors annually.

## PROJECT ABSTRACT

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Project Title: Creature Encounters Large (3178)

Recipient: The Maritime Aquarium at Norwalk, Inc.

Federal Funds (EPA, FWS):	\$45,870
Foundation Non-Federal Funds (Shell)	\$9,000
<u>Matching Funds:</u>	<u>\$133,640</u>

Total Project Costs: \$188,510

Project Area: The Maritime Aquarium, Norwalk, Connecticut

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The Maritime Aquarium will educate the public about non-point source pollution in their communities through live animal encounters and presenting simple behavioral changes that can improve the environment.

The project will launch a new live animal series entitled Creature Encounters. Incorporating creative set, props and live animals as subjects, trained Aquarium staff will present several different 15-minute presentations, each with a focus on the natural history of focal animals and how people can protect habitat, especially from non-point source pollution. The goal is to present 573 performances to 11,460 people during peak visitation periods over an entire year. Content would focus on what animals need to survive and how people can protect habitat. The take home message – there are simple behaviors people can adopt to help control non-point source pollution. An evaluation would provide qualitative and quantitative data as to the success of the program.

### **PROJECT ABSTRACT**

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Project Title: Riparian Buffers in the Niantic River Watershed, CT

Recipient: The University of Connecticut (Connecticut Sea Grant)

Federal Funds (EPA, FWS):	\$39,602
NFWF Non-Federal Funds:	\$0
<u>Matching Funds:</u>	<u>\$0</u>
Total Project Costs:	\$39,602

Project Area: Niantic River Watershed, Connecticut

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The University of Connecticut will create an updated coastal riparian area land cover dataset and develop workshops focused on the value of protecting and restoring these areas for town commissions and homeowners in the Niantic River watershed.

Connecticut Sea Grant, the University of Connecticut NEMO Program, the Niantic River Watershed Coordinator, and the Environmental Planner for the Town of Waterford will partner to promote riparian buffer protection and restoration within the Niantic River Watershed. A riparian buffer is a corridor of natural vegetation that serves as a transition zone between the water or wetland and upland development. The project will promote the use of riparian buffers to: protect fragile coastal habitats within the Niantic River watershed; protect the integrity and water quality of inland wetland and watercourse tributaries that flow into the Sound; and mitigate negative land use impacts to both the estuary and Long Island Sound.

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## PROJECT ABSTRACT

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Project Title: Implementing Stormwater Solutions for the Salmon River (CT)

Recipient: The Nature Conservancy

Federal Funds (EPA):	\$57,899.25
NFWF Non-Federal Funds:	\$0
<u>Matching Funds:</u>	<u>\$35,312</u>
Total Project Costs:	\$93,211

Project Area: Salmon River Watershed (Middlesex/New London/Hartford/Tolland Counties), Connecticut

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The Nature Conservancy (TNC) aims to foster adoption of recommendations from an evaluation of nine towns' policies and practices associated with stormwater management to protect the Salmon River Watershed.

The Nature Conservancy and the Salmon River Watershed Partnership (SRWP) will promote and work to implement municipal regulations and practices that most directly affect water quality, flows, and overall health of this significant river system. The project builds on practical, specific recommendations from the Land Use Policy Evaluation for the Salmon River 2008 conducted by TNC under a prior Long Island Sound Futures Fund grant. The evaluation emphasizes tools known to best leverage river protection (e.g., stormwater management/low-impact development (LID) riparian zone protection, municipal good housekeeping) and will address regulatory barriers. Under the second phase of the project, TNC seeks to remove institutional and information barriers. TNC and SRWP will partner with towns, NEMO, and consulting engineers to hold a series of workshops with target stakeholder groups critical to reviewing and implementing stormwater management/LID and municipal good housekeeping and work in depth with two pilot towns to guide implementation of recommendations. Outcomes will be: engagement of key implementers throughout the watershed, improved regulations and practices in pilot towns to strengthen conservation of the river system, a transferable implementation model and lessons learned for towns in and beyond the watershed, a clear and common understanding among land use staff and decision makers of how to plan for and review LID projects, and a growing regional pool of design engineers/developers with enhanced ability to incorporate LID.

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### SMALL GRANTS – NEW YORK

## PROJECT ABSTRACT

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Project Title: Development of Bronx River Watershed Education Exhibit

Recipient: Nunataks Ltd. d/b/a Greenburgh Nature Center

Federal Funds (EPA):	\$ 5,704
<u>Matching Funds:</u>	<u>\$3,200</u>
Total Project Costs:	\$8,904

Project Area: Scarsdale, New York

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The Greenburgh Nature Center will establish an indoor permanent aquarium exhibit to display a live fish community representative of the Bronx River watershed. Educational signage will reflect ecology of Bronx River Watershed and its relationship to the Long Island Sound.

The Greenburgh Nature Center is a 33-acre woodland preserve consisting of a nature museum, live animal collection, botanical greenhouse and environmental related exhibits. The exhibit and signage will feature River herring. The Nature Center will use the aquarium exhibit as a site to conduct watershed education programs for visiting school groups.

### **PROJECT ABSTRACT**

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Project Title: Long Island Sound Component - 2009 NY Beach Cleanup

Recipient: American Littoral Society

Federal Funds (EPA):	\$6,000
<u>Matching Funds:</u>	<u>\$150,000</u>
Total Project Costs:	\$156,000

Project Area: Queens, Bronx, Westchester, Nassau, Suffolk and New York Counties

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The American Littoral Society will coordinate the 2009 International Coastal Cleanup along 130 miles of beaches on the Long Island Sound involving 2,570 volunteers with data compiled for 70 sites to develop strategies for combating marine pollution and to educate the public about floatable pollution and prevention.

A site captain is responsible at a cleanup and is usually from a local group, school, or civic association. The beach cleanup gets people to see first-hand what litter is doing to the marine and coastal environment. Participants learn what they can do on a daily basis to solve the problem of floatable debris: recycling, advocating for less packaging, adopting a beach, stenciling messages next to storm drains, etc. The cleanup itself improves the habitat by removing debris and, in the case of wetlands, of restoring



productivity. Beaches are cleaner, safer, and more aesthetically pleasing to the general public. The annual beach cleanup is not about debris; it is about people: enhancing their knowledge and appreciation of the environment and helping them find ways to protect and improve it. The event puts a face on issues such as “non-point source pollution,” storm drains, sewage, etc. Children learn that cities have an “environment” and “habitat” worth protecting.

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### PROJECT ABSTRACT

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Project Title: Festival of Little Neck Bay and Long Island Sound

Recipient: Alley Pond Environmental Center

Federal Funds (EPA):	\$5,000.03
<u>Matching Funds:</u>	<u>\$5,000</u>
Total Project Costs:	\$10,000.03

Project Area: Douglaston, New York

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The Alley Pond Environmental Center will present a National Estuaries Day event focused on the Long Island Sound involving 36 plus community organizations and attracting 550 participants.

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### PROJECT ABSTRACT

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Project Title: Coastal Classroom (3317)

Recipient: City Parks Foundation

Federal Funds (EPA):	\$6,000
<u>Matching Funds:</u>	<u>\$40,000</u>
Total Project Costs:	\$46,000

Project Area: The East River, in Astoria and Long Island City, Queens, situated within the Long Island Sound watershed.

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Coastal Classroom will offer hands-on lessons to schools and local residents along the Queens waterfront, introducing concepts of river ecology, water quality, and waterfront restoration and preservation.

Coastal Classroom provides educational experiences on the East River waterfront, in Astoria and Long Island City, Queens, to 1,000 children and community members. It educates residents about river ecology, environmental challenges, and how human actions affect water health. The program offers hands-on lessons to public school classes and

community groups, and also holds community events and public workshops. It provides 20 in-classroom lessons and 80 outdoor lessons at waterfront parks in Queens (each class/community group receives a series of four lessons). Participants test water quality variables; enter the water, using waders, to observe wildlife; and collect flora and fauna for biodiversity sampling and identification. Additionally, Coastal Classroom will also hold a National Estuaries Day community-wide event with lessons tailored to focus on the importance of estuaries.

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### **SMALL GRANTS - CONNECTICUT**

#### **PROJECT ABSTRACT**

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Project Title: Save the Sound Coastal Cleanup Program (CT)

Recipient: Save the Sound

Federal Funds (EPA):	\$6,000
<u>Matching Funds:</u>	<u>\$6,000</u>
Total Project Costs:	\$12,000

Project Area: State of Connecticut

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Save the Sound's Coastal Cleanup program will recruit a diverse group of volunteers and engage with a variety of partners, including community leaders and residents, organizations and corporate/business groups to clean up Connecticut's inland and coastal shores. Over the last three years, the program brought together 4,243 volunteers, who picked up 35,072 pounds of trash at 144 clean up events covering more than 68 miles of Connecticut shoreline. In 2008, the program achieved its best results ever – 1,700 volunteers collected over 15,000 pounds of trash along 68 miles of Connecticut shoreline.

The project will: 1) recruit 70 volunteer Cleanup Captains for cleanups along Connecticut's shoreline; 2) schedule and coordinate 70 cleanup events along the coastal and inland shores of Connecticut; 3) engage 1,750 volunteers; 4) hold 50 events on or around International Coastal Cleanup (September 19, 2009) and National Estuaries Day (September 26, 2009); and 5) clean 70 miles of Connecticut shoreline, including beaches and riverfronts.

#### **PROJECT ABSTRACT**

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Project Title: Estuary Celebration Weekend (2679)

Recipient: Sea Research Foundation, Inc.

Federal Funds (EPA):	\$5,420
<u>Matching Funds:</u>	<u>\$5,500</u>
Total Project Costs:	\$10,920

Project Area: Mystic, Connecticut

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The Sea Research Foundation will host National Estuary Day events over a weekend attracting 2,700 visitors focusing on increasing public awareness about the threats facing Long Island Sound and the abundance of its natural resources with a goal of increasing community connections with the Sound.

### **PROJECT ABSTRACT**

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Project Title: Town of Stratford, CT Storm Sewer Stenciling Project

Recipient: Town of Stratford, Connecticut

Federal Funds (EPA):	\$6,000
<u>Matching Funds:</u>	<u>\$6,771</u>
Total Project Costs:	\$10,620

Project Area: Stratford, Connecticut

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The Town of Stratford will stencil at least 25% of the Town's storm sewers leading to the Housatonic River and Long Island Sound to reduce runoff and nonpoint source pollution.

Located at the mouth of the Housatonic River basin, Stratford's Municipal Separate Storm Sewer System is a primary pathway for surface run-off and non-point source pollution in Long Island Sound and the Housatonic River basin. Through a partnership between the Town, the Stratford Conservation Commission, and youth service groups, this project will stencil a minimum of 25% of the Town's MS4 basins to discourage dumping and polluting. The Town will conduct an inventory and prioritization of basins for stenciling and will conduct half of the markings through its existing mosquito control program. Youth volunteers will conduct the other half, as well as educate residents living in the areas stenciled about the project and the impact of dumping in the sewers on water quality of the Housatonic River and Long Island Sound. A broader public awareness campaign will accompany the stenciling. Newspaper ads and brochures will be produced and made available at Town buildings and meetings. The desired outcomes of the project are to impact human behavior and reduce polluting in the MS4 system, and ultimately reduce the amount of floating debris in the sewer system and in Long Island Sound.

### **PROJECT ABSTRACT**

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Project Title: Save The River-Save The Hills, Inc.

Recipient: Sound Decisions - Radio, Podcast, Print, Social Marketing

Federal Funds (EPA):	\$6,000
<u>Matching Funds:</u>	<u>\$7,250</u>
Total Project Costs:	\$13,250

Project Area: London County, Connecticut

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Save The River-Save the Hills will conduct a multi-media program to raise public awareness of four southeastern Connecticut outreach efforts to prevent pollution, reduce stormwater, preserve habitat/control invasive species and build appreciation of the Sound.

Over a 12 month-period, a series of 10, 30-minute radio programs, called “Sound Decisions,” will air on two AM radio stations covering central and southeastern Connecticut communities. To reach more audiences, especially youth, companion podcasts will be broadcasted on Mitchell College’s new Internet radio station. Companion news articles will be written for community print and online newspapers. All will be promoted through timely messages sent via Facebook and other social networking media.

Specific programming includes: 1) the Town of East Lyme and Children’s Museum of southeast Connecticut will present a program to reduce runoff, recapture and reuse storm and rainwater; 2) Mitchell College will develop a program focused on protecting and restoring fragile beach habitats and controlling invasive species; and 3) A Living Museum will present a program that seeks to build an appreciation and public support for protecting the Sound’s unique ecosystem.

### **PROJECT ABSTRACT**

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Project Title: Indicator Bacteria and Nutrients Levels in the Norwalk River

Recipient: Earthplace-The Nature Discovery Center

Federal Funds (EPA):	\$6,000
<u>Matching Funds:</u>	<u>\$12,500</u>
Total Project Costs:	\$18,500

Project Area: Norwalk River Basin, Connecticut

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Earthplace-The Nature Discover Center will implement a summer-time monitoring program to access the concentrations of indicator bacteria and nutrients at 14 sites in the Norwalk River Watershed.

## PROJECT ABSTRACT

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Project Title: Sheffield Island, Norwalk Habitat Restoration (CT)

Recipient: Norwalk Seaport Association, Inc.

Federal Funds (EPA):	\$6,000
<u>Matching Funds:</u>	<u>\$6,000</u>
Total Project Costs:	\$12,000

Project Area: Sheffield Island, Norwalk, Fairfield County, Connecticut

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The Norwalk Seaport Association will restore seven acres of upland habitat on Sheffield Island. Volunteers will learn to identify and remove invasive plants and perform beach and garbage clean up at the Stewart B. McKinney National Wildlife Refuge and on lands owned by the Norwalk Seaport.

Non-native, invasive plants threaten the habitats of waterbirds, songbirds and other wildlife. The project will target and remove highly aggressive plant species that are new to the region, such as mile-a-minute vine, common reed, garlic mustard, Japanese Barberry and Asiatic bittersweet. Other activities will include beach clean ups and restoration of a nature trail. Volunteers will remove weeds from the trail and “pave” the trail using slipper shells found along the shores of Sheffield Island. The US Fish & Wildlife Service will provide a landing craft to remove garbage from the island. One-hundred twenty volunteers will be involved in the project.

## PROJECT ABSTRACT

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Project Title: Connecticut Department of Environmental Protection

Recipient: Signage at Silver Sands State Park for Habitat Conservation

Federal Funds (EPA):	\$3,999.75
<u>Matching Funds:</u>	<u>\$1,000</u>
Total Project Costs:	\$4,999.75

Project Area: Milford, Connecticut

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The Connecticut Department of Environmental Protection, Parks Department will manufacture and post signage for Silver Sands State Park to provide warnings and educational information to visitors to protect Piping plover.

Silver Sands State Park has been identified as having potential Piping plover nesting

sites. With this funding, signs will be created and posted to help minimize disturbance to breeding plovers by informing the public about the birds. The Piping plover is a small sand-colored, sparrow-sized shorebird that nests and feeds along coastal sand and gravel beaches in North America. Piping plovers arrive in Connecticut to nest in late March. The first eggs are laid by late April in a shallow depression often lined with shells and placed near vegetation. It is both state and federally listed as a threatened species meriting enhanced protection of its nesting areas.

## **PROJECT ABSTRACT**

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Project Title: Septic System Management Education Campaign

Recipient: Town of Westport-Septic Maintenance Committee-Conservation Department

Federal Funds (EPA):	\$6,000
<u>Matching Funds:</u>	<u>\$0</u>
Total Project Costs:	\$6,000

Project Area: Westport, Connecticut

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The Town of Westport will conduct a community-wide educational campaign to change homeowner behavior regarding responsible septic system maintenance and management.

The project will implement a multi-media educational campaign designed to motivate consumer behavior change resulting in regular system pumping, more responsible use and better water quality. The campaign will involve such tools as: an educational brochure, public service announcements, articles in local media, and a website. Seeking a lighter touch to motivate changes in consumer behavior, a number of more novel communication vehicles will be pursued. Local high school students will create a scale model of the septic system/groundwater “cycle of life” to illustrate the impact of system management, from “toilet flush to groundwater flow.” A much larger version of this model system will be created as a float to appear in the annual Memorial Day Parade. Creation of a “Mock-U-Drama” video of septic systems and their environmental impact will also be an objective, again using local students to star and produce.

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**Long Island Sound Study**  
**Travel Documentation for FY2009 NEP Work Plan**  
 April 2009-March 2010

Meeting Date	Meeting Title	Meeting Location	Person or Committee	Cost	Total Cost Per Meeting
5/13/2009	NPS and Watershed	New York	CAC	\$12.25	\$12.25
6/11/2009	CAC Meeting	Stamford, CT	CAC	\$79.20	
6/11/2009	CAC Meeting	Stamford, CT	CAC	\$80.94	
6/11/2009	CAC Meeting	Stamford, CT	CAC	\$97.30	
6/11/2009	CAC Meeting	Stamford, CT	CAC	\$51.76	
6/11/2009	CAC Meeting	Stamford, CT	CAC	\$11.75	
6/11/2009	CAC Meeting	Stamford, CT	CAC	\$55.00	\$375.95
6/23/2009	EPA Climate Ready Estuaries	Washington, D.C.	NYS DEC	\$175.35	\$175.35
7/23/2009	Policy Committee Meeting	Albany, NY	CAC	\$213.27	\$213.27
7/29/2009	CAC/STAC Chairper	Bridgeport, CT	CAC	\$56.00	\$56.00
9/10/2009	CAC Meeting	New York, NY	CAC	\$25.75	
9/10/2009	CAC Meeting	New York, NY	CAC	\$162.50	
9/10/2009	CAC Meeting	New York, NY	CAC	\$470.15	
9/10/2009	CAC Meeting	New York, NY	CAC	\$185.50	
9/10/2009	CAC Meeting	New York, NY	CAC	\$18.00	
9/10/2009	CAC Meeting	New York, NY	CAC	\$34.00	\$895.90
10/9/2009	STAC Meeting	Bridgeport, CT	CAC, STAC	\$54.50	\$54.50
10/21 - 10/22/2009	MC Meeting	Port Jefferson, NY	CAC	\$255.00	
10/21 - 10/22/2009	MC Meeting	Port Jefferson, NY	STAC, MC	\$291.00	
10/21 - 10/22/2009	MC Meeting	Port Jefferson, NY	CT DEP	\$184.50	
10/21 - 10/22/2009	MC Meeting	Port Jefferson, NY	CT DEP	\$177.28	
10/21 - 10/22/2009	MC Meeting	Port Jefferson, NY	CT DEP	\$255.28	
10/21 - 10/22/2009	MC Meeting	Port Jefferson, NY	CT DEP	\$177.28	
10/21 - 10/22/2009	MC Meeting	Port Jefferson, NY	NYS DEC	\$137.00	
10/21 - 10/22/2009	MC Meeting	Port Jefferson, NY	NYS DEC	\$594.37	
10/21 - 10/22/2009	MC Meeting	Port Jefferson, NY	MA DEP	\$285.34	\$2,357.05
10/21 - 10/22/2009	CAC Meeting	Stamford, CT	CAC	\$86.25	
10/21 - 10/22/2009	CAC Meeting	Stamford, CT	CAC	\$10.80	
10/21 - 10/22/2009	CAC Meeting	Stamford, CT	CAC	\$52.60	\$149.65
2/23/2010	ANEP Meeting	Arlington, VA	CT DEP	\$1,124.63	\$1,124.63
3/11/2010	CAC Meeting	New York, NY	CAC	\$106.60	
3/11/2010	CAC Meeting	New York, NY	CAC	\$26.00	
3/11/2010	CAC Meeting	New York, NY	CAC	\$406.52	
3/11/2010	CAC Meeting	New York, NY	CAC	\$89.00	
3/11/2010	CAC Meeting	New York, NY	CAC	\$18.50	
3/11/2010	CAC Meeting	New York, NY	CAC	\$27.00	
3/12/2010	CAC Meeting	New York, NY	CAC	\$62.00	\$735.62

**TOTAL: \$6,150.17**

**LONG ISLAND SOUND STUDY  
2008 SCIENTIFIC RESEARCH PROJECTS**

**Grants Awarded in 2008 via the New York and Connecticut Sea Grant Programs for the Long Island Sound Study Research Grant Program**

**Geochemical Budgeting of Dissolved Gases for Understanding Long Island Sound Hypoxia;** Principal Investigator: Altabet, Mark A., Department of Estuarine and Ocean Science, School of Marine and Technology, University of Massachusetts, Dartmouth

This project will investigate some of the factors implicated in triggering summertime hypoxia events in LIS. The research team will examine the physical and biological processes that play a role in oxygen dynamics in the Sound. This will be accomplished using advanced geochemical methods, including stable isotope analysis, which 'tags' oxygen molecules to track their movement within different physical and biological processes, in addition to the monitoring of oxygen levels at appropriate temporal/spatial scales. Elucidating the roles that processes such as air-water gas exchange, vertical mixing, photosynthesis, and respiration play in LIS hypoxia will improve LIS water quality models and allow managers to make better predictions regarding the timing and duration of these events. This in turn will improve understanding of how hypoxia is influenced by various physical and biological factors in the Sound, allow for improvements in management and, ultimately, water quality in LIS.

**The Distribution, Causes, And Impacts Of *Alexandrium fundyense* Blooms In Coves, Near Shore, And Open Water Regions Of Long Island Sound;** Principal Investigator: Gobler, Christopher J., School of Marine and Atmospheric Sciences, Stony Brook University

This research will provide insights into the development and dynamics of red tides, a serious, emerging human health threat in Long Island Sound. Paralytic shellfish poisoning is caused by the ingestion by shellfish of certain strains of algae which produce saxitoxin. Shellfish accumulate this toxin which can, when consumed by humans or another predator, cause sickness or even death. *Alexandrium fundyense* is the saxitoxin-producing plankton in the coastal waters of Long Island Sound. In recent years there have been widespread commercial and recreational closures of shellfisheries resulting from outbreaks of this organism. The research, a combination of both field-based pelagic sampling and experimental protocols, seeks to establish spatial and temporal patterns for the distribution of this organism and its cysts in relation to temperature, nutrients, and other components of the planktonic community. Lab experiments will assess factors that enhance or impede the growth of these toxin-producing cells. This research will provide fisheries managers and local health departments with the essential information necessary to protect human health and sustain healthy ecosystems and local economies.



**Impacts of Climate Change on the Export of the Spring Bloom in Long Island Sound;** Principal Investigator: Lonsdale, Darcy J., School of Marine and Atmospheric Sciences, Stony Brook University.

This research will examine the relationship between winter temperature and the abundance and composition of phytoplankton in the spring and explores potential impacts of changing winter water temperatures on local food webs. The research, a combination of field collection and experimental lab work, will provide important insights into the potential impacts of climate change on marine systems in Long Island Sound. Water temperatures in Long Island Sound are increasing and warmer winter waters are associated with more zooplankton grazing. Grazing lowers phytoplankton growth, thus allowing the levels of nutrients, such as nitrogen, to remain high. These dynamic changes in production caused by a changing climate have serious implications for the development of hypoxic events, feeding relationships, and ultimately fisheries production in Long Island Sound. This research constitutes a critical step in elucidating these relationships.

**Interaction of Biological and Physical Factors Controlling Bottom Dissolved Oxygen;** Principal Investigator: Lwiza, Kamazima, M., School of Marine and Atmospheric Sciences, Stony Brook University.

The investigators plan to identify drivers of hypoxia and discover relationships among them. Chemical and biological data will be collected from pre-existing sampling stations, including samplers placed on the Bridgeport-Port Jefferson ferry boats and buoys outfitted with sampling devices. Additional data will be collected during sampling cruises. These diverse sampling regimes will produce a set of spatially and temporally scaled data, including both fine-grained hourly data and longer time-series encompassing years. On the basis of these observations, a biogeochemical model will be developed to provide managers with a better understanding of the triggers of hypoxia and therefore a better means of predicting hypoxic events in Long Island Sound.

**Summer Synoptic Weather Variability as the Control of the Seasonal Evolution of Hypoxia;** Principal Investigator: Wilson, Robert, E., School of Marine and Atmospheric Sciences, Stony Brook University.

This project will study the effect of weather patterns on LIS hypoxia, specifically to assess the effects of changes in frequency and track position of extra-tropical summertime storms on both inter-annual and long term variations in the severity of hypoxia. Previous observations by the research team indicate that the common weather pattern seen over LIS is the passage of a low-pressure center to the north of Long Island Sound with an associated cold front passage. The investigators hypothesize that these systems with their associated heat and momentum fluxes are a primary agent responsible for mixing bottom waters and determining the oxygen levels in these waters. Analyzing existing data collections, the investigators will test this hypothesis and provide more detailed information about vertical mixing and bottom oxygen levels. This information should be useful for the development of management plans to reduce low oxygen events.