

longislandsoundstudy

NATIONAL ESTUARY PROGRAM WORK PLAN

FOR

FEDERAL FISCAL YEAR 2011 FUNDING

FOR

COMPREHENSIVE CONSERVATION AND MANAGEMENT PLAN

IMPLEMENTATION ACTIVITIES

DURING THE PERIOD

October 1, 2011-September 30, 2012 or beyond
[FY2012]

**WITH PRIOR YEAR GOALS/ACCOMPLISHMENT HIGHLIGHTS
FOR THE PERIOD**

October 1, 2009- September 30, 2010
[FY2010]

June 3, 2011

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A. GENERAL INFORMATION REPORTING REQUIREMENTS

1. CCMP 2011 GOAL FOCUS

The Long Island Sound Study (LISS) Comprehensive Conservation and Management Plan (CCMP), approved in 1994 by the States of New York (NY) and Connecticut (CT) 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 FY2011 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 were only to be created to fill gaps or better integrate efforts, such as the LIS Futures Fund (LISFF), LIS Research Fund, and CCMP Enhancements program.

Ongoing core environmental programs that contribute to or support CCMP implementation include other Federal programs and funds directed to land use and watershed management, water quality, living resource conservation, management and regulation, as well as state and local programs aimed at regulating human and environmental impacts on the Sound. Many of these programs are delegated to the states, which have the responsibility, authority and accountability for implementing them. The CCMP anticipated many funding streams and a variety of funding sources for successful implementation of its recommendations over time by the LISS partners. The CCMP also envisioned an educated public and informed constituency for the sustained effort to restore, enhance, and preserve the Sound as a national treasure and a ‘green’ engine of economic activity. Designated as an Estuary of National Significance in 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, Long Island Sound was included as a goal area in EPA's then newly developed Strategic Plan. Most recently LIS has been recognized as, and included in EPA's new Large Aquatic Ecosystems (LAE) program. The Long Island Sound program is included in EPA's Strategic Plan for FY2011-2015 under Goal 2, *Protecting America's Waters*, Objective 2.2, *Protect and Restore Watersheds and Aquatic Ecosystems*, Subobjective 2.2.7, *Restore and Protect Long Island Sound*. One of the LISS's four major environmental goals has been included with a goal target in the Strategic Plan -- reducing the area of the maximum hypoxic event occurring in the summer months by 15 percent from baseline by 2015.

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. A final findings letter was provided to the LISS by EPA NEP HQ on December 29, 2009. A number of strengths were cited and two challenges were identified by the review team – development of nonpoint source Total Maximum Daily Loads (TMDLs) and use of ecosystem-based management (EBM). The LISS will continue to address EBM will report any progress in subsequent annual LISS NEP work plans; however, the LISS is a non-regulatory program and TMDL development is delegated to the states for implementation.

2. FY2011 LISS BUDGET BREAKDOWN

This document summarizes tasks and deliverables contained in EPA FY2011 assistance awards to Management Conference partners that account for the FY2011 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 \$598,800 in NEP allocations under Clean Water Act (CWA) Section 320, and \$5,333,000 as finally allocated by EPA under CWA Section 119 for President's FY2011 Budget for LIS. Grants are awarded by EPA Region 1 and 2 as delegated under EPA Delegations of Authority 2-42 and 2-94.

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 21, 2011 meeting. The record of that meeting is documented in Mark Tedesco's April 25, 2011 memorandum entitled, *Interim FY2011 LISS Base Program Work Plan and Grant Application Guidance*. To implement this work plan, EPA will issue six new assistance awards to partners and amend four current assistance awards to include the FY2011 funding under this work plan. In addition EPA will continue work under two Interagency Agreements (IAs) executed in FY2010 for implementation efforts with its Federal partners, the US Fish & Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS). LISS partners receiving FY2011 funds have been directed to submit their formal Federal assistance award applications (SF424s) to EPA Regional grants management offices on or before Friday, June 10, 2011.

The LISS budget is organized into the four Program Elements outlined below; the FY2011 LISS budget breakdown by Program Element is:

Program Element	Amount
<i>Coordination and Reporting of Environmental Actions/Results</i>	\$359,131 (6%)
<i>Public Outreach, Information and Education</i>	\$543,324 (9%)
<i>Monitoring, Modeling and Research</i>	\$1,402,149 (24%)
<i>CCMP Implementation Support and Technical Assistance</i>	\$3,576,238 (60%)

There is a modest fiduciary reserve of \$50,958 to cover fiscal or program contingencies in FY2011, such as increases to negotiated agency/institution indirect cost agreements or adjustments for grantee contractual agreements for personnel compensation or benefits cost increases; 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 FY2011 approved budget by LISS Program Element, Products/Services, Implementing Agency, and Environmental Outcomes.

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 FY2011 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, coordinate and manage program operations in order to assist the Management Conference partners in CCMP implementation. 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 through the General Services Administration. 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 FY2011 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 FY2011 budget by individual EPA assistance award number 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, since this Work Plan is due by June 3, 2011 and the grant award process does not complete until September 30, 2011. 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 FY2011 Federal assistance awards, the National Fish and Wildlife Foundation (NFWF), and/or the CTDEP 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’ or their Delegates’ action on individual awards, and each award is subject to the special terms and conditions contained therein.]

In FY2011, the LISS is providing funding to seven LISS partners through ten 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 that received FY2010 funding through IAs for continuing work in FY2011 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 located 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 staff of the EPA LISO and EPA Regions 1 and 2, who are trained and assigned as EPA 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:

Logic Model Element	LISS Program Element
<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, OnGoing, New, Continuing)	New: first year of project for LISS Continuing: prior year funded project On-Going: multi-year or base program project Proposed: first year project proposed for funds
<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]
<i>-Short term; Intermediate; Long Term</i>	
<i>-Changes (+/-) in Pressure Targets:</i>	[N/A]
<i>Identify the CWA core program the project would support</i>	[Checklist of 7 Core Elements]

1. Program Implementation and Reporting. Under CWA Section 119 (33USC1269), 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 offices. EPA LIS grant awards use the identifier prefix, "LI;" NEP awards use the identifier "CE." Funds accounting by assistance award number is available online at EPA's Financial Data Warehouse, <http://iasint.rtpnc.epa.gov/neis/adw.welcome>.

Grants are made under the Catalog of Federal Domestic Assistance (CFDA) number 66.437, Long Island Sound Program or CFDA number 66.456, the National Estuary Program. EPA LISO semi-annually updates the LISS 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 [discontinued in 2010], 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 2010; the latter publication was last issued in Summer 2009 covering the preceding years of 2007 and

2008. The next version of *Protection and Progress* will be issued in November 2011 covering years 2009 and 2010.

The LISO also tracks and reports the four LIS goal area measures 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 in this Work Plan.

The LISS tracks CCMP implementation actions through its annual *CCMP Implementation Tracking Report*. The 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; that system is currently being built, and 2010 information will be used to demonstrate this system. *Sound Health and Protection and Progress* will continue to track progress of ecosystem indicators and management actions respectively. A successor to the *LIS 2003 Agreement* is planned, but not finalized as of this writing.

CCMP/Work Plan Goal:	Continuing the Management Conference														
Project/Activity Name:	LISS CCMP Implementation Tracking System														
<u>Continuing Project/Activity Purpose & Description:</u>	Review, assess and establish a data reporting system for tracking CCMP implementation activities														
Responsible Partner(s) Role(s):	EPA Long Island Sound Office														
Outputs/Products:	Assessment of need; development of beta system; demonstration of beta system; implementation of system for 2010 report.														
Milestones (project start/end dates)	10/1/10-9/30/11 and continuing.														
2011 Budget:	\$0 [See Attachment 1, line 2]														
Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate & Long Term	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.														
Δ (+/-) in Pressure Targets	N/A														
CWA Core Program Project Support Core programs are:	<table border="1"> <tr> <td>1) Strengthening WQ Standards,</td> <td></td> </tr> <tr> <td>2) Improving WQ Monitoring,</td> <td></td> </tr> <tr> <td>3) Developing TMDLs,</td> <td></td> </tr> <tr> <td>4) Controlling NPS Pollution on a Watershed Basis,</td> <td></td> </tr> <tr> <td>5) Strengthening NPDES Permits,</td> <td></td> </tr> <tr> <td>6) Supporting Sustainable Wastewater Infrastructure.</td> <td></td> </tr> <tr> <td>7) Wetlands Program Support/Implementation</td> <td></td> </tr> </table>	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	
1) Strengthening WQ Standards,															
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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:

CCMP/Work Plan Goal:	Continuing the Management Conference	
Project/Activity Name:	EPA LISO Support to the Management Conference	
ONGOING Project/Activity Purpose & Description:	Provides support to the Management Conference in implementing the CCMP; overall program coordination, management and direction.	
Responsible Partner(s) Role(s):	EPA Long Island Sound Office	
Outputs/Products:	Assistance and coordination of the LISS Management Conference. Development of annual NEP work plan; development and execution of EPA Strategic Plan elements for LIS; development, execution and management of financial assistance agreements; development and submission of GPRA-required reports; tracking and reporting of implementation of CCMP actions; technical assistance to partners in program operations.	
Milestones (project start/end dates)	10/1/11-9/30/12 and continuing.	
2011 Budget:	\$70,100 (administrative support and office overhead only, EPA staff N/A) [See Attachment 1, lines 1& 2.]	
Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate & Long Term	Coordinated federal, state, and local government actions to implement the CCMP; clear annual goals and objectives framed within available funding; public, political, and financial support for restoration and protection of Long Island Sound; organized and effective LISS public participation; 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.	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards § 304(a)	x
	2) Improving WQ Monitoring §303(d) 305(b)	x
	3) Developing TMDLs §304(b)	x
	4) Controlling Nonpoint Source Pollution on a Watershed Basis §319	x
	5) Strengthening NPDES Permits §402	x
	6) Supporting Sustainable Wastewater Infrastructure	x

CCMP/Work Plan Goal:	Continuing the Management Conference	
	7) Wetlands Program Support/Implementation §404	x

CCMP/Work Plan Goal:	Continuing the Management Conference	
Project/Activity Name:	State Coordination and Technical Assistance	
ONGOING Project/Activity Purpose & Description:	Assist in all aspects of LISS Management Conference program development and support for CCMP implementation in the State of Connecticut.	
Responsible Partner(s)/Role(s):	Connecticut Department of Environmental Protection	
Outputs/Products:	Involvement of relevant technical staff and programs in LISS activities to protect and restore Long Island Sound, its resources and its habitats, and to protect public health and meet commitments to the LISS partnership. Development of work group products and activities essential to implementation of the CCMP. 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. LIS Research and Implementation grants are consistent with and complementary to LISS goals and objectives and productive in restoring and managing Long Island Sound.	
Milestones (project start/end dates)	10/1/11-9/30/12	
2011 Budget:	\$143,060 [See Attachment 1, line 4]	
Outcomes: (anticipated and/or completed accomplishments) -Short , Intermediate & Long Term	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.	
-Changes (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	x
	2) Improving WQ Monitoring,	x
	3) Developing TMDLs,	x
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	x
	6) Supporting Sustainable Wastewater Infrastructure.	x
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	Continuing the Management Conference	
Project/Activity Name:	State Program Coordination and Management	
ONGOING Project/Activity Purpose & Description:	Provides support to the Management Conference in implementing the CCMP; overall program planning, coordination, administration, management	

CCMP/Work Plan Goal:	Continuing the Management Conference	
	and direction in the State of New York and coordination with New York State Department of State and other state/local agencies in New York.	
Responsible Partner(s) Role(s):	New York State Department of Environmental Conservation	
Outputs/Products:	Coordination and development of activities and products to implement the CCMP. Track progress of programs and projects designed to protect and restore LIS. Electronic and paper reports of the status of resources, water quality and implementation. Coordinate and implement CCMP actions, protect public health, preserve and protect LIS resources and water quality by soliciting and involving expertise from various state programs. Ensure that projects are consistent with NYS regulations and the CCMP. Grant proposals are reviewed for relevance and benefits to LIS. Information sharing, development of recommendations, strategies and identification of data gaps regarding wetlands loss in LIS. 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.	
Milestones (project start/end dates)	10/1/11-9/30/13	
2011 Budget:	\$89,795 [See Attachment 1, line 4]	
Outcomes: (anticipated and/or completed accomplishments) -Short , Intermediate & Long Term	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.	
-Changes (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	x
	2) Improving WQ Monitoring,	x
	3) Developing TMDLs,	x
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	x
	6) Supporting Sustainable Wastewater Infrastructure.	x
	7) Wetlands Program Support/Implementation	x

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 of the LISS. 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 LISFF 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 LISFF Large Grants program. **Attachment 5** lists the FY2010 LISFF Large and Small projects, which are also posted on the LISS website and NFWF website, <http://www.nfwf.org>.

The LISO provides significant support to the CAC, which is co-chaired by an elected member each from New York and Connecticut. Coordinated by the 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:

CCMP/Work Plan Goal:	Public Outreach, Information and Education
Project/Activity Name:	PI&E, Small Grants and PI&E Project Support
ONGOING Project/Activity Purpose & Description:	Supports the Management Conference in conducting the LISS public outreach, information and education program through staff resources and products, services and supplies.
Responsible Partner(s) Role(s):	NEIWPC, NYSEA, CTSEA; NFWF, direct implementation of LISS PI&E program.
Outputs/Products:	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

CCMP/Work Plan Goal:	Public Outreach, Information and Education	
	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.	
Milestones (<i>project start/end dates</i>)	October 1, 2011-September 30, 2012 (or as specified in individual assistance awards)	
2011 Budget:	NEIWPC: \$198,424; NYSEA: \$153,333; CTSEA: \$106,576; NFWF: \$85,000; [see Attachment 1, lines 6-11]	
Outcomes: (<i>anticipated and/or completed accomplishments</i>) -Short, Intermediate & Long Term	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	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	x
	2) Improving WQ Monitoring,	x
	3) Developing TMDLs,	x
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	x
	6) Supporting Sustainable Wastewater Infrastructure.	x
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	Public Outreach, Information and Education	
Project/Activity Name:	Upper Basin TMDL Outreach and Education	
Continuing Project/Activity Purpose & Description:	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.	
Responsible Partner(s)	NEIWPC	

CCMP/Work Plan Goal:	Public Outreach, Information and Education	
Role(s):		
Outputs/Products:	Plan, organize, and conduct public meetings in upland states; record public comments and report on results.	
Milestones (<i>project start/end dates</i>)	October 1, 2011-September 30, 2012	
2011 Budget:	\$38,520 [see Attachment 1, line 25]	
Outcomes: (<i>anticipated and/or completed accomplishments</i>) -Short, Intermediate & Long Term	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.	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	x
	2) Improving WQ Monitoring,	x
	3) Developing TMDLs,	x
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	x
	6) Supporting Sustainable Wastewater Infrastructure.	x
	7) Wetlands Program Support/Implementation	x
	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* [latest issue, 2010]. 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 helps to support this area.

a. Research. The LISS Research Grant program is a cooperative effort between EPA 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 FY2011 the Management Committee approved a scientific research budget of \$400,000. These funds will be awarded to the Sea Grant programs for a future RFP in FY2012 when funds will be combined with any available FY2012 allocations. Six two-year projects were selected for funding from the FY2010 RFP; abstracts of these projects are included in **Attachment 6** and are also posted on the LISS website.

CCMP/Work Plan Goal:	Monitoring, Modeling and Research	
Project/Activity Name:	Long Island Sound Research Grant Program	
ONGOING Project/Activity Purpose & Description:	To administer the LISS Research Grant program by identifying scientific research needs and priorities for LIS, solicit and review project proposals and ensure the selection and management of the highest priority projects with available funds.	
Responsible Partner(s) Role(s):	NYSEA/CTSEA, jointly administer and manage the LIS research program.	
Outputs/Products:	Develop Request for Preliminary and Final Proposals; List of research selected for funding; manage research projects; request, review and process progress reports and final report per research project.	
Milestones (project start/end dates)	October 1, 2011-September 30, 2012	
2011 Budget:	\$500,000 [\$250,000 NYSEA, \$250,000 CTSEA] See Attachment 1, line 17.	
Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate, Long Term	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.	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	x
	2) Improving WQ Monitoring,	x
	3) Developing TMDLs,	x
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	x
	6) Supporting Sustainable Wastewater Infrastructure.	x
	7) Wetlands Program Support/Implementation	x

b. Assessment and Monitoring. In FY2011 the Management Committee once again approved funding for the LIS ambient water quality (WQ) monitoring program conducted by CTDEP. 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 FY2011 budget. In addition, the Management Committee approved FY2011 funding for initiation of a program to monitor water quality in LIS embayments as described below under Tools.

CCMP/Work Plan Goal:	Monitoring, Modeling and Research	
Project/Activity Name:	LIS Water Quality Field Surveys	
ONGOING Project/Activity	To monitor and assess the ambient conditions of water quality in LIS and	

CCMP/Work Plan Goal:	Monitoring, Modeling and Research	
Purpose & Description:	provide management with information for decision-making.	
Responsible Partner(s) Role(s):	CTDEP, conduct of WQ monitoring and analysis of LIS open waters.	
Outputs/Products:	Nutrient and ancillary data to evaluate benefits of nutrient management programs and health of LIS. Dissolved oxygen data and maps of areal extent and duration of hypoxia in LIS. Tissue data is required to update the health consumption advisories in CT and NY. Organized and available database (to researchers and the public); interpretive graphics and fact sheets for public consumption on web site. 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.	
Milestones (project start/end dates)	October 1, 2011-September 30, 2012	
2011 Budget:	\$776,368 [see Attachment 1, line 12]	
Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate, Long Term	Improved water quality assessment to guide management activities. Improved planktonic community assessment to guide management activities. Improved dissolved oxygen assessment to protect living resources and to determine criteria compliance in CT and NY. Greater safety of CT and NY residents who consume LIS seafood. Better public involvement and management of LIS nutrient and oxygen conditions. Improved stewardship. Data for researchers to complement their projects. Improved water quality assessment to guide management activities. In 2010 the area of hypoxia in the Sound was 141 square miles lasting for 40 days compared to pre-TMDL averages of 208 square miles and 58 days.	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	x
	2) Improving WQ Monitoring,	x
	3) Developing TMDLs,	x
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NP ES Permits,	x
	6) Supporting Sustainable Wastewater Infrastructure.	x
	7) Wetlands Program Support/Implementation	x

Project/Activity Name:	Monitoring, Modeling and Research	
ONGOING Project/Activity Purpose & Description:	LIS Remote Sensing Update of land-cover data for LIS watershed.	
Responsible Partner(s) Role(s):	University of Connecticut Center for Land Use Education and Research	
Outputs/Products:	Update NY portions of the LIS watershed land cover metrics and create seamless region-wide land cover and land cover change dataset 1985 - 2006.	
Milestones (project start/end dates)	October 1, 2011- September 30, 2012	
2011 Budget:	\$108,956 [see Attachment 1, line 15]	
Outcomes: (anticipated and/or completed)	Identification of key land cover metrics, e.g., forest fragmentation; updated and	

<i>accomplishments)</i> -Short, Intermediate & Long Term	targeted impervious cover metrics for management purposes; updating of LIS land cover metrics to 2010; accessible regional website with maps, charts and data available at the watershed, local, and regional levels.	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	x
	2) Improving WQ Monitoring,	x
	3) Developing TMDLs,	x
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	x
	6) Supporting Sustainable Wastewater Infrastructure.	x
	7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	Monitoring, Modeling and Research	
Project/Activity Name:	TMDL development support through a NYS LIS Watershed Municipal Separate Storm Sewer (MS4) Engineer	
<u>CONTINUING</u> Project/Activity Purpose & Description:	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.	
Responsible Partner(s) Role(s):	New York State Department of Environmental Conservation	
Outputs/Products:	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 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	
Milestones (project start/end dates)	10/1/10-9/30/12	
2011 Budget:	\$0 [see Attachment 1, Line 24, FY2010 funds shown in brackets]	
Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate, Long Term	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	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	
	3) Developing TMDLs,	x
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	x
	6) Supporting Sustainable Wastewater Infrastructure.	x

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

CCMP/Work Plan Goal:	Monitoring, Modeling and Research	
Project/Activity Name:	Long Island Sound LiDAR Data Analysis & Conversion	
NEW Project/Activity Purpose & Description:	Review and convert existing LiDAR (Light Detection And Ranging) data collected by USGS in the LIS NY watershed to determine feasibility in converting data to one foot contours.	
Responsible Partner(s) Role(s):	NYSDEC	
Outputs/Products:	Conversion of LiDAR data to one foot contours in coastal areas of NY in the LIS watershed.	
Milestones (project start/end dates)	October 1, 2011-September 30, 2012	
2011 Budget:	\$10,000 [See Attachment 1, line 16.]	
Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate, Long Term	Analysis and review of currently collected LiDAR data from USGS, FEMA and NOAA surveys to determine interpretive capability for use in managing coastal hazards, wetland protection, and climate adaptation.	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	
	3) Developing TMDLs,	
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	
	6) Supporting Sustainable Wastewater Infrastructure.	
	7) Wetlands Program Support/Implementation	x

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 FY2011, funds are requested for production of *Protection and Progress* in 2012.

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 Long Island Sound Study Public Participation, Information and Education Grants Program Small Grants (\$1,000-\$10,000) projects, is

administered by NFWF. In FY2011, the LIS Futures Fund is funded at \$1,500,000 and the Small Grants component is funded at \$85,000.

The CCMP Enhancements program is administered by NEIWPCC and is funded at \$608,000 in FY2011 for three separate RFPs to 1) develop and implement a program to assist localities in monitoring LIS embayments; 2) for a Sound-wide assessment of GIS needs of the LISS partners; and 3) to develop and run computer model scenarios to support the TMDL and SWEM applications. 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 LISFF. FY2010 LISFF projects are listed in Attachment 5.

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

CCMP/Work Plan Goal:	CCMP Implementation Support and Technical Assistance
Project/Activity Name:	LISS Futures Fund
ONGOING Project/Activity Purpose & Description:	To provide resources for priority CCMP implementation projects at the state and local level to qualified applicants.
Responsible Partner(s) Role(s):	NFWF, plans, coordinates, conducts and administers the LISS Futures Fund Grant Program
Outputs/Products:	Issue RFP to solicit a diverse range of project proposals (45-60 proposals) that address problems identified in the LISS <i>CCMP</i> ; conduct two webcast workshops to encourage applicants to develop a technically sound and 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 one press release in CT and NY to announce RFP and awards. Develop and implement one grant award event in either NY or CT. Meet with potential public, nonfederal and private funders. Support LISS and EPA/LISO to develop accomplishments brochures and other materials. Outreach to three or more Congressional offices to respond to inquiries and raise profile of implementation elements of the LISS Futures Fund in terms of federal investment around the Sound.
Milestones (project start/end dates)	October 1, 2011-September 30, 2014* Actual dates under negotiation with EPA.
2011 Budget:	\$1,500,000 [See Attachment 1, line 22]
Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate, Long Term	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.
Δ (+/-) in Pressure Targets	N/A

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

CCMP Work Plan Goal:	CCMP Implementation Support and Technical Assistance	
Project/Activity Name:	LISS Stewardship Land Acquisitions	
Continuing Project/Activity Purpose & Description:	To provide resources for priority CCMP LIS Stewardship Initiative acquisitions at the state and local level.	
Responsible Partner(s) Role(s):	CTDEP/NYSDEC	
Outputs/Products:	Acquisition of properties identified by the LISS Stewardship Initiative work group for protection.	
Milestones (project start/end dates)	October 1, 2011-September 30, 2014* *end dates under negotiation with EPA	
2011 Budget:	\$675,000 CTDEP; \$675,000 NYSDEC [See Attachment 1, line 23]	
Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate & Long Term	Protection of habitats of ecological, recreational, and public access value; protection of endangered, threatened, and rare species of plant and animal habitats; demonstration of effective public and private partnerships in habitat conservation.	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	
	3) Developing TMDLs,	
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	
	6) Supporting Sustainable Wastewater Infrastructure.	
	7) Wetlands Program Support/Implementation	x

4. Technical Assistance/Capacity Building. The LISS provides technical assistance and capacity building through a variety of means. Several LIS Futures Fund 2010 projects provide support in this area. For example, a 2010 funding cycle Futures Fund project included the *Low Impact Development for Long Island Sound* by the Housatonic Valley Association. In this project the Association will use GIS modeling, organize forums, produce LID toolkits and work with boards and commissions to incorporate LIS into land use regulations, ordinances and local management in five targeted communities.

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 in FY2011:

CCMP/Work Plan Goal:	CCMP Implementation Support & Technical Assistance	
Project/Activity Name:	USFWS Wildlife Biologist/LISS Liaison Support	
ONGOING Project/Activity Purpose & Description:	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 technical support to coordinate, manage, and report on LISS programs and manage grants and contracts as assigned	
Responsible Partner(s) Role(s):	US Fish & Wildlife Service, Southern New England-New York Bight Coastal Ecosystems Program, Charlestown, RI	
Outputs/Products:	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.	
Milestones (project start/end dates)	10/1/10-9/30/12 [2-year renewable Interagency Agreement]	
2011 Budget:	\$0 [see Attachment 1, line 20, 2 year budget]	
Outcomes: (anticipated and/or completed accomplishments) -Short, Intermediate & Long Term	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	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards, 2) Improving WQ Monitoring, 3) Developing TMDLs, 4) Controlling NPS Pollution on a Watershed Basis, 5) Strengthening NPDES Permits, 6) Supporting Sustainable Wastewater Infrastructure. 7) Wetlands Program Support/Implementation	x

CCMP/Work Plan Goal:	CCMP Implementation Support & Technical Assistance	
Project/Activity Name:	NOAA/NMFS LISS Liaison Support	
ONGOING Project/Activity Purpose & Description:	The NOAA Liaison provides technical support to the LISS Management	

CCMP/Work Plan Goal:	CCMP Implementation Support & Technical Assistance	
	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.	
Responsible Partner(s) Role(s):	NOAA/NMFS Northeast Fisheries Science Center, Milford, CT	
Outputs/Products:	Technical reports to 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 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.	
Milestones (<i>project start/end dates</i>)	10/1/10-9/30/12 [2-year Interagency Agreement]	
2011 Budget:	\$0 [see Attachment 1, line 19; 2 year budget]	
Outcomes: (<i>anticipated and/or completed accomplishments</i>) -Short, Intermediate & -Long Term	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.	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	x
	2) Improving WQ Monitoring,	x
	3) Developing TMDLs,	
	4) Controlling NPS Pollution on a Watershed Basis,	
	5) Strengthening NPDES Permits,	
	6) Supporting Sustainable Wastewater Infrastructure.	
	7) Wetlands Program Support/Implementation	

a. Tools. This Work Plan provides funding for development of several programmatic tools. As an example, the LISS Stewardship work group brought on-line its web-based data tool for prioritizing sites for stewardship and management. The web-based application enables users to access data and information on each site and conduct a virtual visit to the site through images and video.

CCMP/Work Plan Goal:	CCMP Implementation Support and Technical Assistance
Project/Activity Name:	LISS CCMP Enhancements Program
ONGOING Project/Activity Purpose & Description:	To provide resources for priority CCMP implementation projects at the state and local level to qualified applicants.

CCMP/Work Plan Goal:	CCMP Implementation Support and Technical Assistance	
Responsible Partner(s) Role(s):	NEIWPCC, plans, coordinates, conducts and administers the LISS CCMP Enhancements Program	
Outputs/Products:	Development of RFPs for embayment monitoring support and GIS needs assessment.	
Milestones (project start/end dates)	October 1, 2011-September 30, 2012* *end date under negotiation with EPA	
2011 Budget:	\$74,000 embayments; \$59,000 GIS needs; \$375,000 SWEM/TMDL modeling & embayments phase II [see Attachment 1, line 21. a. b. & c.]	
Outcomes: (anticipated and/or completed accomplishments) Short, Intermediate & Long Term	1) Improved local embayment water quality assessment to guide management activities; improved assessment of water quality to protect living resources and to determine criteria compliance in CT and NY; better management of Long Island Sound nutrient and oxygen conditions; 2) improved coordination and effective use of GIS data; 3) effective models and updated parameters to support TMDL refinements.	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	x
	3) Developing TMDLs,	x
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	x
	6) Supporting Sustainable Wastewater Infrastructure.	x
	7) Wetlands Program Support/Implementation	x

b. Training. The LISS will continue to fund the CT 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. 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. In 2010 the program expanded to the New York portions of the LIS watershed, with initial mentor teacher workshops being held. The NY Sea Grant via Cornell Cooperative Extension program assisted in conducting the first mentor teacher workshops in New York in 2010.

CCMP/Work Plan Goal:	CCMP Implementation Support and Technical Assistance	
Project/Activity Name:	LISS Mentor Teacher Training Program	
ONGOING Project/Activity Purpose & Description:	Increase awareness and understanding of the importance of Long Island Sound and its watershed by training a cadre of teachers to mentor the student population.	
Responsible Partner(s) Role(s):	CT Sea Grant/NY Sea Grant	
Outputs/Products:	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.	

CCMP/Work Plan Goal:	CCMP Implementation Support and Technical Assistance	
Milestones (<i>project start/end dates</i>)	October 1, 2011-September 30, 2012	
2011 Budget:	\$33,961 CT and \$6,940 NY [See Attachment 1, line 9]	
Outcomes: (<i>anticipated and/or completed accomplishments</i>) Short, Intermediate & Long Term	Development of grade appropriate, multidisciplinary workshops utilizing LIS curricular resources; provision of LIS resources and appropriate pedagogy to result in increased educator and student understanding of LIS and issues facing LIS; educated teacher ranks in K-12 grades in New York and Connecticut portions of the Long Island Sound watershed.	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	
	2) Improving WQ Monitoring,	
	3) Developing TMDLs,	
	4) Controlling NPS Pollution on a Watershed Basis,	
	5) Strengthening NPDES Permits,	
	6) Supporting Sustainable Wastewater Infrastructure.	
	7) Wetlands Program Support/Implementation	x

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

CCMP/Work Plan Goal:	CCMP Implementation Support & Technical Assistance
Project/Activity Name:	LISS Habitat Restoration/Coordination
ONGOING Project/Activity Purpose & Description:	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.
Responsible Partner(s) Role(s):	NYSDEC; CTDEP
Outputs/Products:	Engage new and existing LISS partners in LISS habitat restoration activities; increase project proposals for habitat restoration activities in the LIS watershed; plan, coordinate and implement restoration of the twelve priority habitat types as outlined in the LISS Habitat Restoration Strategy adopted by the Policy Committee in 1998; work with LISS communications team to

CCMP/Work Plan Goal:	CCMP Implementation Support & Technical Assistance	
	issue press releases, promotional materials, and other communication items addressing habitat restoration in the LIS watershed.	
Milestones (<i>project start/end dates</i>)	10/1/11-9/30/12	
2011 Budget:	\$81,911, CTDEP; \$97,807 NYSDEC via NEIWPC [See Attachment 1, line 18]	
Outcomes: (<i>anticipated and/or completed accomplishments</i>) -Short, Intermediate, Long Term	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.	
Δ (+/-) in Pressure Targets	N/A	
CWA Core Program Project Support Core programs are:	1) Strengthening WQ Standards,	x
	2) Improving WQ Monitoring,	x
	3) Developing TMDLs,	x
	4) Controlling NPS Pollution on a Watershed Basis,	x
	5) Strengthening NPDES Permits,	x
	6) Supporting Sustainable Wastewater Infrastructure.	x
	7) Wetlands Program Support/Implementation	x

C. PREVIOUS YEAR’S (FY2010) 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 2006-2011 Strategic Plan (SP-41) and Office of Water 2010 Water Program Guidance reporting system, ACS, the LISS partners continued the point source nitrogen reduction program in Long Island Sound in 2010, the latest report available. The total Trade-Equalized (TE) point source nitrogen load for 2010 was 33,703 TE lbs/day, with the 2014 goal at 22,774 TE lbs/day. The EPA Strategic Plan target for 2010 was 55 percent. Overall, the program exceeded the annualized percentage to goal target, with 70 percent of the 2014 target having been achieved as of December 2010. It is important to keep in mind that New York City, as part of a Consent Agreement with the state of New York, had taken significant STP processing capacity off-line during construction upgrades for biological nitrogen control at affected STPs. There is a continuing ‘bulge’ in discharge of nitrogen, which is being

eliminated as construction is completed and plants come back on line over the next several years. For example, the Ward’s Island STP in New York City completed its upgrades in September 2009, with a full year of operating at its new reduction potential, this facility reduced nitrogen discharges from 7,172 TE/lbs/day in 2009 to 6,053 TE/lbs/day in 2010, an improvement of 16 percent.

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 upper basin public outreach and education program to be conducted by NEIWPC that began in 2010. **Figure 1** depicts the point source loadings from 2000-2010.

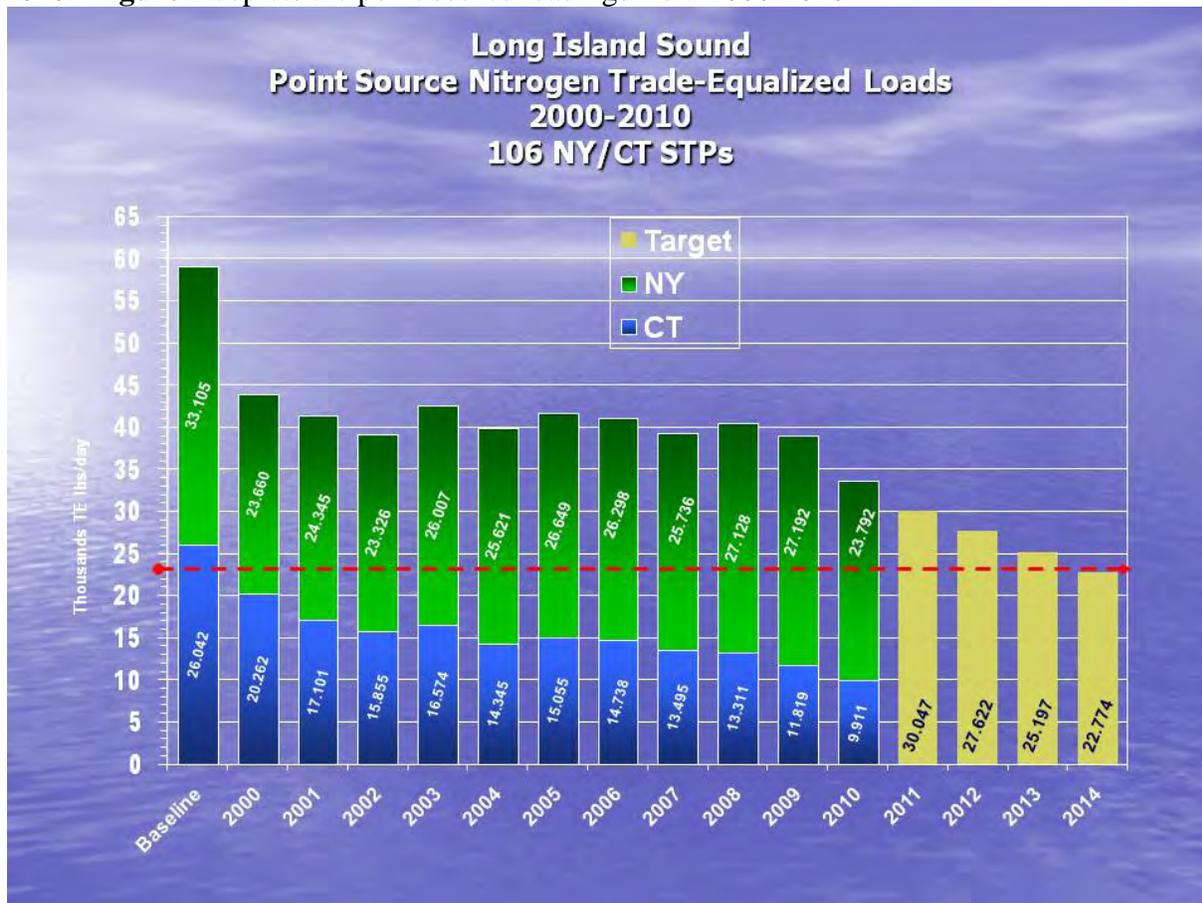


Figure 1

Area/Duration of Hypoxia. As reported under EPA’s 2006-2011 Strategic Plan (SP-42) the area (square miles) and duration (days) of the maximum hypoxic event in Summer 2010 with less than 3 milliliters (ml) of dissolved oxygen (DO) per liter of bottom (~<1m) water (<3ml/DO) was calculated to be 101 square miles, which lasted for a period of 40 days. This compares very well with the 13-year pre-TMDL averages of 208 square miles and 56.2 days. The 11-year post-TMDL averages are 179 square miles and 56.9 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.

The strategic measure for this in EPA’s Strategic Plan for 2011-2015 (LI-SP-42) is to reduce the area of hypoxia by 15 percent from the pre-TMDL average of 208 square miles, as measured annually by a 5 year rolling average. **Figure 2** depicts the area/duration of the maximum area of hypoxia in Long Island Sound since 1987 as measured by CTDEP.

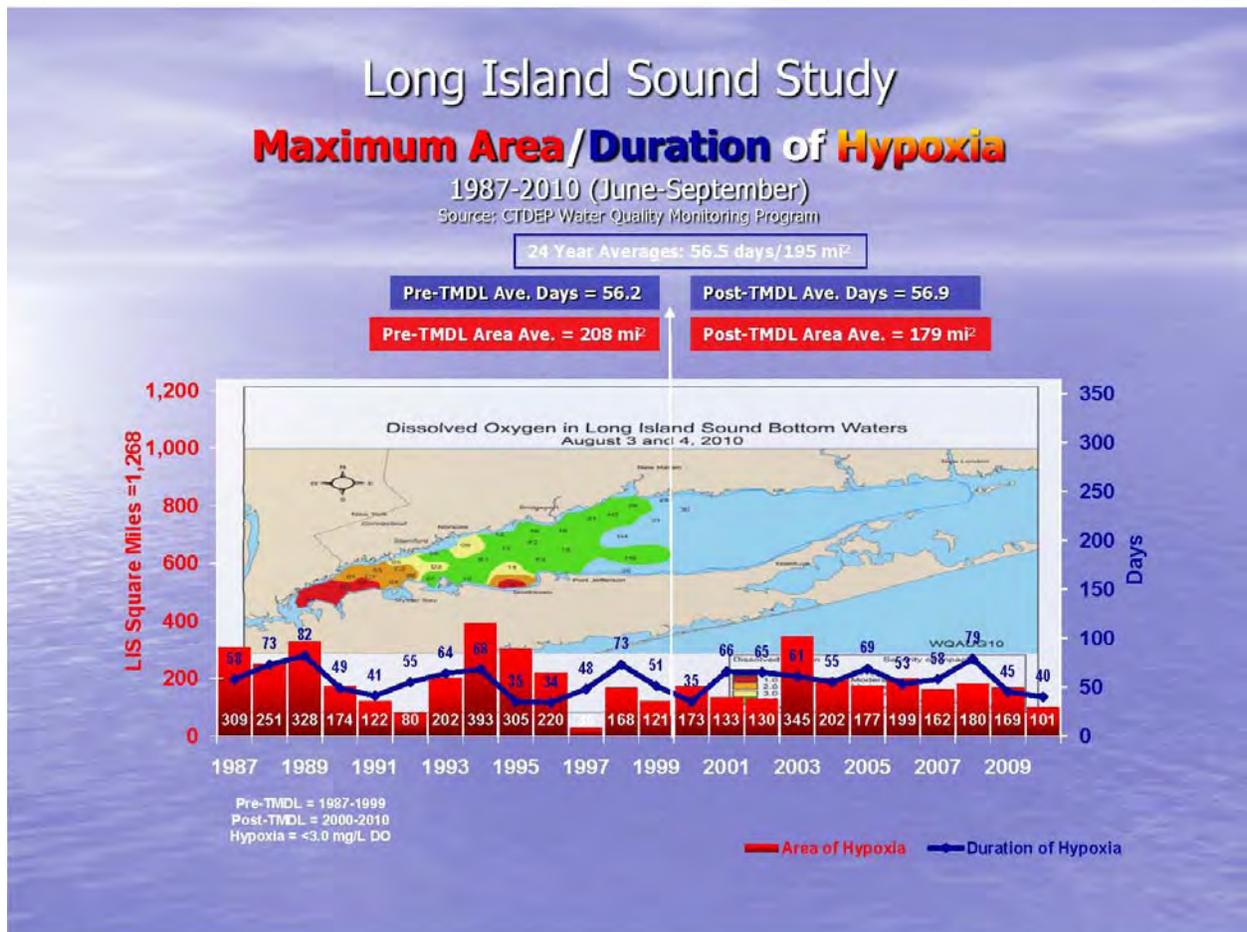


Figure 2

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

Habitat Restoration. As reported in EPA's 2006-2011 Strategic Plan (SP-43) and the NEP's NEPORT reporting systems, the LISS restored or protected a total of 1,361 acres of habitat in 2010. The LISS has an overall goal of restoring 2000 acres of habitat by 2020. An additional 300 acres of habitat were restored from 2008 to 2011 inclusive. The LISS provides funding for individual habitat restoration projects as eligible for competitive funding under the LISS Futures Fund Large Grant program. Seven habitat restoration projects were funded under that grant program totaling \$1,017,037 (includes fish passage and eelgrass restoration projects mentioned in other sections of this report). Because of the complexity of implementing restoration projects, the LISS funds two habitat restoration coordinators, one each in NYSDEC (via NEIWPC) 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. It should be noted that the acres restored/protected were not all funded by the LISS; the CCMP called for many and varied funding sources to implement its actions. LISFF projects do help contribute to the total acres restored/protected, to the extent that eligible projects are qualified, apply, and are approved for funding.

Fish Passage Restoration. As reported in EPA's 2006-2011 Strategic Plan (SP-44) and NEPORT, the LISS reopened 13.1 river miles in 2010. 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. Four fish passage projects are planned on the 2010 Futures Fund list that will potentially reopen more than 20 miles of river corridor when completed. 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. It should be noted that the river miles reopened were not all funded by the LISS; the CCMP called for many and varied funding sources to implement its actions.

Eelgrass Project. (\$125,000, FY2009 LISS Enhancements Project). The Management Committee approved this project to create a GIS-based eelgrass habitat suitability model and to produce maps of current and potential eelgrass habitats. Cornell Cooperative Extension of Suffolk County is leading this project with field work support from the University of Connecticut. Development of the Quality Assurance Project Plan (QAPP) is currently underway. The LISS Long Island Sound Futures Fund supported one eelgrass restoration project restore 1.5 acres of historic eelgrass beds at seven sites in New York and Connecticut including: Clinton Harbor, Griswold/Hatchett Point, Two Tree Island/Bartlett Reef, Avery Point/Pine Island, Noank Harbor/Esquer Point, and Mystic Harbor/Lobster Cove, Connecticut; and Old Field Point, Duck Pond Point, Goldsmith's Inlet, and St. Thomas Point, New York total grant award was \$139,566.

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

LIS Research Program. The LISS, through the CT and NY Sea Grant programs, continued to monitor the five scientific research projects that were selected for funding in FY2008 for the FY2009-20012 project period. One project was completed by FY2010:

- *The Distribution, Causes, and Impacts of Alexandrium Fundyense Blooms in Coves, Near Shore, and Open Water Regions of Long Island Sound*, Investigator: Gobler, Christopher J., School of Marine and Atmospheric Sciences, Stony Brook University

In addition, one related project was completed that was funded with LISS base program funding in FY2006 and FY2007:

- *Chemical Residues in Fish and Lobster in Long Island Sound: A Bi-state Update*, Investigator: Skinner, Lawrence C., New York State Department of Environmental Conservation.

The purpose of this project was to investigate PCB, mercury and other toxic contaminants in striped bass, bluefish and lobster in the Sound. As a result of this cooperative project among CTDEP, NYSDEC and the Connecticut and New York State Departments of Health, both state fish consumption advisories were adjusted to accommodate the new data findings in 2009.

The four remaining FY2008-funded LISS scientific research projects will continue to be reported on in subsequent NEP work plans as the projects are completed. The CT and NY Sea Grant programs completed the RFP cycle for 2009-2010 by selecting six projects for funding from that cycle. As indicated above, abstracts of these projects are posted on the LISS website and included in Attachment 6. The LISS STAC met in April, June and November 2010 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.

LIS Eelgrass Monitoring Surveys. A report on the status and trends in eelgrass was released in May 2010. Preliminary assessment from the 2009 field work appears to indicate the abundance of eelgrass has held steady in most places since 2006. USFWS will use carryover funding from 2009 to conduct additional flyovers in summer 2011 to enrich the data.

LIS Sentinel Monitoring Program. Work continued in 2010 on the \$150,000 FY2008 LISS-funded project to develop a Sentinel Monitoring strategy. The project will provide data on ecosystems, and flora and fauna in LIS that can be influenced by climate change. In 2010 six key sentinels have been selected for more detailed monitoring. Each state has formed a work group to guide the development of the strategy, which is being integrated by a bi-state team. The teams have met regularly in 2010 and the final strategy is under development. An RFP will be issued in 2011 to gather data among the six key sentinel areas as a basis for future monitoring and assessment for management purposes.

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

LISS Long Island Sound Futures Fund Projects, FY2010. The LISS LISFF provided 38 grants totaling \$2,483,770 to state and local government and community groups [see Attachment 5]. When leveraged by \$4,992,932 contributed by the recipients themselves towards the projects, a total of \$7,476,702 will support on-the-ground conservation in Connecticut and New York. The grant program pools funds from the Environmental Protection Agency (\$1,751,766), National Fish and Wildlife Foundation (\$210,841), U.S. Fish and Wildlife Service (\$200,000), Carolyn Conklin Trust (\$101,500) and FedEx (\$50,000) for projects to restore the health and living resources of Long Island Sound.

The 2010 program funded 19 grants in Connecticut, 16 grants in New York and 3 grants that covered projects in both states. The Futures Fund supported 29 large grants (grants greater than \$10,000 to \$500,000) totaling \$2,408,518 and 9 small grants totaling \$75,252 (grants of \$1,000 to \$10,000). Seven grants were awarded for water quality; seven for habitat restoration; one for acquisition; seven for planning of all types; and seven for education projects. Nine small grants were awarded for educational activities to increase understanding and appreciation of Long Island Sound through community events and activities.

With the funding announced in 2010, grant recipients will restore nearly 100 acres of submerged aquatic grass, as well as stream corridors and coastal forest, acquire 17.4 acres of tidal wetlands, grasslands and coastal forest benefiting fish and wildlife, and open up 28 miles of fish passage for native fisheries. Some other examples of the types of projects funded by the grants included:

- Four fish passage projects along Connecticut Rivers that will restore historic access for native fish such as river herring and American eel;
- Eelgrass bed restoration projects in New York and Connecticut;
- Restoration of nearly 100 acres of rare coastal forest in New York and Connecticut;
- Green infrastructure practices to reduce stormwater runoff into Conscience Bay, NY;
- Catch basins that will remove pollution from targeted storm drains with the greatest impact on the Sound in Mamaroneck, NY;
- A half-acre rain garden to capture highway, boat ramp and parking lot runoff on the Housatonic River in Connecticut; and
- Purchase of 17.4 acres of tidal wetlands, grasslands, and coastal forest at the 42-acre former Griswold Airport in Connecticut.

LIS Stewardship Initiative. The LISS project to develop a methodology to systematically prioritize lands for acquisition and protection that was funded by the LISS in FY2008 was completed in 2010. Additional stewardship priority land acquisitions using \$1.5 million in 2010 funds awarded to CT and NY are being planned by the states of Connecticut and New York. As of this writing, final parcels have not been selected.

LIS Scientific Data Synthesis Report. In FY2010 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 2010. The LISS, through the Communications Team supported under the NEIWPC grant produced its biennial report, *Sound Health*. *Sound Health* was distributed in LIS communities through Sunday newspaper inserts 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 NEIWPC grant.

Annual Long Island Sound Citizens Summit. The 20th 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 NEIWPC, 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 Region1 Administrator Curt Spalding was the keynote speaker. Planning is underway for the annual Citizens Summit in Fall 2011.

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 FY2010, several partners’ assistance awards funded in prior fiscal years have been completed and their EPA awards closed out:

- NYSDEC: LI-97295400, LIS Water Quality Infrastructure, \$2,000,000; stormwater runoff control in the Village of Laurel Hollow, NY (Complete; \$49,000 expended); upgrades to the Blind Brook wastewater treatment plant (WWTP) in Westchester County, NY (\$550,220 expended); and upgrades to the Hunts Point WWTP in New York City (Complete; \$1,189,080).
- CT Sea Grant: LI-97147501, LIS Mentor Teacher Program, \$291,055; Plan, organize and conduct LIS Mentor Teacher program from 2006-2010; support LIS Fellows program, 2006-2010; develop, publish and distribute LIS seaweed and salt marsh guides; conduct LIS Educators conference, 2009-2010; conduct LIS curricula gap analysis.

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. **Appendix I** describes two successful and transferable Best Practices of the LISS – the LIS Environmental Sentinels project and the LIS Stewardship Initiative.

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 FY2011 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. The State of Connecticut designated all of its LIS waters in 2007 as a No Discharge Zone under the **CWA Section 312** and the State of New York has accomplished a similar designation in NY LIS waters in 2011. The states use authorities and funding under **CWA 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 FY2011, funding available to the LISS was decreased by approximately \$1.8 million from FY2010 Enacted levels. As a result the LISS was not able to fund to the same amount its LIS Stewardship acquisitions and was not able to fund a number of additional environmental projects under the LISFF due to the reduction in funding. Using 2010 average project costs, approximate 7 fewer LISFF projects will be funded in FY2011 because of the reduction. Likewise, the states of New York and Connecticut have felt the impact of state budget constraints with hiring freezes and staff furlough days; staff have been limited in their travel authorizations for LISS and other national, regional or local conference and meetings; teleconferencing, webinars and video conferencing have been used for LISS work group and other meetings to compensate for staff travel restrictions.

In 2010 the statutory funding authorization for Sections 119 and 320 expired. Legislative efforts to reauthorize Section 119 under the Great Waters initiative were not successful in the 111th Congress. In 2011 the statutory authorization for the Long Island Sound Stewardship Act [P.L. 109-359] expires. The final legislative results of any future reauthorization bills may impact future program implementation and direction.

**LONG ISLAND SOUND STUDY
SUMMARY OF FY2011 LISS FUNDING UNDER CWA §119 AND §320
BY PROGRAM ELEMENT**

LISS PROGRAM ELEMENT	ACTIVITY/TASK	2011 PRODUCTS/SERVICES	LISS GRANTEE OR FEDERAL IA	2011 BUDGET	ENVIRONMENTAL OUTCOMES
Coordination and Reporting of Environmental Actions and Results: Grants, GPRA, EPA Strategic Plan	EPA Long Island Sound Office Support	1) Telecommunications; printing; copier; postage; supplies, materials.	EPA LISO	\$17,100	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	\$53,000	
		3) CCMP Tracking System Development [2010]	EPA CNT	\$0	
	NY/CT State Coordination & Technical Assistance	4) Assist in all aspects of LISS program development, reporting and support.	CTDEP	\$143,060	Involvement of relevant technical staff and programs in LISS activities to protect and restore Long Island Sound, its resources and its habitats, and to protect public health and meet commitments to the LISS partnership.
			NYSDEC	\$89,795	
	LISS Travel Support	5) National Travel; Management Conference Quarterly Meetings; CAC Meeting Support; NY/CT state travel support for local and national meetings and conferences.	NEIWPC	\$56,176	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.
	COORDINATION SUBTOTAL:				\$359,131
Public Outreach, Information, Participation and Education	Public Information & Education Program	6) LISS Public Outreach Coordination; project management & support	NEIWPC	\$134,424	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.
		7) LISS NY coordination, UPDATE, fact sheets, presentations, press releases.	NY Sea Grant	\$146,393	
		8) LISS CT coordination (80%), presentations, press releases.	CT Sea Grant	\$72,606	
		9) K-12 Mentor Teacher Program in New York and Connecticut; LIS Educators Conference Support	CT Sea Grant	\$33,961	
	NY Sea Grant		\$6,940		
	Small Grants Program	10) LISS Small Grants Program RFP for public information, education, outreach, and <\$6K projects, e.g., beach cleanups,	NFWF	\$85,000	Informed public and increased citizen participation to improve stewardship and individuals' actions beneficial to a healthy LIS; increasing awareness of the state of LIS health and promoting changes in lifestyle that might benefit the Sound; improved habitat and water quality and increased public awareness and participation in LIS affairs; fulfilled public expectations for knowledge about LIS and educational needs.
	PI&E Program Support	11) Development and distribution of LISS Biennial Reports: <i>Sound Health or Protection & Progress</i> publications.	NEIWPC	\$64,000	
PI&E SUBTOTAL:				\$543,324	9%

Water Quality Monitoring, Modeling and Scientific Research	Water Quality Monitoring & Modeling	12) 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	\$776,368	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.	
		13) LIS Water Quality Sampling Support for IEC regulatory areas in embayments not sampled by CTDEP. [2010]	IEC	\$0		
		14) LIS Sentinel Monitoring Program to identify sentinels, obtain baseline data and measure against climate impacts for early warning indicators of environmental change. [2010]	CTDEP	\$0		
			NYSDEC	\$0		
		15) LIS Remote Sensing Update of land cover data for LIS watershed.	UConn CLEAR	\$108,956		
	Data Quality	16) LIS LiDAR Data Analysis & Interpretation	NYSDEC	\$10,000	Analysis and review of currently collected LiDAR data from USGS and NOAA surveys to determine interpretive capability for use in managing coastal hazards, wetland protection, and climate adaptation.	
	Scientific Research					NY Sea Grant
		17) LIS Research Grant RFP for scientific topic areas. STAC meeting support.	CT Sea Grant	\$253,825	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.	
	MONITORING, MODELING & RESEARCH SUBTOTAL:				\$1,402,149	24%
	CCMP Implementation Support, Regulatory and Compliance Assistance, and Technical Assistance	Habitat Restoration Initiative	18) Habitat coordination; priority list of habitat restoration sites; habitat team support for implementation of restoration and protection goals.	CTDEP	\$81,911	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-NEIWPPC				\$97,807		
19) NOAA National Marine Fisheries Service Ecologist Liaison (x2 years) [2010 continuing]			NOAA	[\$117,426]	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.	
20) USFWS Wildlife Biologist Liaison support to the LISS. (x2 years) [2010 continuing]			USFWS	[\$120,000]	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.	

CCMP Technical Support	21) 2011 CCMP Enhancements Program: a) Embayment monitoring support phase I;	NEIWPC	\$74,000	a) Improved local embayment water quality assessment to guide management activities; improved assessment of water quality to protect living resources and to determine criteria compliance in CT and NY; better management of Long Island Sound nutrient and oxygen conditions; b) improved coordination and effective use of GIS data for management purposes; c) 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 GIS Needs Assessment		\$59,000	
	c) LIS TMDL/SWEM technical support & embayment support phase II		\$375,000	
LIS Futures Fund	22) LIS Futures Fund Large Grants RFP	NFWF	\$1,500,000	Increase in the number and type of project proposals to address problems identified by the LISS <i>CCMP</i> . Increase community support for and interest in the projects as a means to encourage public engagement to solve the problems identified in the LISS <i>CCMP</i> . Increase public support for 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 understanding of accomplishments and challenges faced in LIS and addressed by various LISS initiatives.
Stewardship Initiative Support	23) LIS Stewardship Area acquisition/management to support 33 stewardship areas in New York and Connecticut, climate change priority for marsh migration potential. [2010]	NYSDEC	\$675,000	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	\$675,000	
Regulatory and Compliance Assistance	24) NY TMDL Implementation Support [2010 continuing]	NYSDEC	\$0	Review, assess and revise nitrogen TMDL using the latest data and information available; improve water quality; protected marine resources; enhanced fishery; more abundant and variety of species.
	25) TMDL/Upper Basin Support for Massachusetts, New Hampshire and Vermont participation in the LIS TMDL for nitrogen control.	NEIWPC	\$38,520	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.
IMPLEMENTATION SUPPORT SUBTOTAL:			\$3,576,238	60%
			TOTAL:	\$5,880,842
				Fiduciary Reserve: \$50,958

**LONG ISLAND SOUND STUDY
NATIONAL ESTUARY PROGRAM WORK PLAN
LIST OF FY2011 LISS-FUNDED STAFF**

ORGANIZATION/NAME	LISS TITLE	DESCRIPTION OF RESPONSIBILITIES/ACTIVITIES
<u>EPA LISO</u>		
Edna Nolfi	Administrative Assistant	Provides overall office administrative support.
<u>CTDEP</u>		
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.
<u>NYSDEC</u>		
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.
<u>NY Sea Grant</u>		
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%)
<u>NEIWPC</u>		
Clair Ryan	Environmental Analyst II	Overall coordination of LIS program within NEIWPC. (25%)
Robert Burg	LISS Outreach Coordinator	Coordinates the overall LIS communications program for the LISS.
Susy King	Watershed Program Manager	Coordinates TMDL support with upper basin states. (15%)
<u>CTSEA</u>		
Judy Preston	CT Outreach Coordinator	Provides PI&E support and coordination in CT (70%)
<u>NOAA [FY10-11 Funded]</u>		
Vacant	Fisheries Biologist	Supports LIS water quality and fisheries data.
<u>USFWS [FY10-11 Funded]</u>		
Vacant	Wildlife Biologist	Supports LIS habitat restoration program.

**Long Island Sound Study
2011 Budget Summary
May 26, 2011**

Organization & Base Program Activity	2011	2011
	Final	Required Match
1. EPA Long Island Sound Office	\$70,100	\$0
a. Office administration and operating expense	\$17,100	\$0
b. CCMP Implementation Tracking [new 2010]	\$0	\$0
c. Administrative Support (NCOA)	\$53,000	\$0
2. CT Dept. of Environmental Protection	\$1,676,339	\$1,676,339
a. CT State Coordination	\$143,060	\$143,060
b. CT LISS Habitat restoration coordination	\$81,911	\$81,911
c. LIS Water Quality Monitoring Program	\$776,368	\$776,368
d. LIS Stewardship	\$675,000	\$675,000
3. NYS Dept. of Environmental Conservation	\$772,600	\$772,600
a. NYS LIS Coordination & Reporting (-\$2,195 travel)	\$87,600	\$87,600
b. NY LiDAR Data	\$10,000	\$10,000
c. LIS Stewardship	\$675,000	\$675,000
4. CT Sea Grant	\$106,567	\$5,609
a. LIS PI&E Coordination	\$72,606	\$3,821
b. K-12 Mentor Teacher Program Support	\$33,961	\$1,787
5. NY Sea Grant Cornell U.	\$153,333	\$8,070
a. Public Outreach Coordination	\$146,393	\$7,705
b. NY Mentor Teacher Program	\$6,940	\$365
6. NEIWPC	\$393,122	\$168,649
a. Task 1 Outreach/Education Support	\$198,424	\$10,443
b. Task 2 Meeting/Travel Coordination Support (+\$2,195 NY travel)	\$58,371	\$58,371
c. Task 3 NYSDEC Habitat Coordinator	\$97,807	\$97,807
d. Task 4 LIS TMDL/Upper Basin Outreach Support	\$38,520	\$2,027
8. CT Sea Grant College Program	\$253,825	\$253,825
a. Connecticut Sea Grant Research Support	\$250,000	\$250,000
b. STAC Support (1 year)	\$3,825	\$3,825
9. New York SUNY Research Foundati	\$253,000	\$253,000
a. New York Sea Grant Research Support	\$250,000	\$250,000
b. STAC Support (1 year)	\$3,000	\$3,000
10. Enhancement Grants Program (NEIWPC	\$508,000	\$508,000
a. GIS Data Needs	\$59,000	\$59,000
b. Embayment Support Phase I	\$74,000	\$74,000
c. LIS TMDL/SWEM Modeling/Scenarios & Embayments Phase II	\$375,000	\$375,000
11. National Fish & Wildlife Foundatio	\$1,585,000	\$1,220,263
a. LIS Futures Fund Large Grants	\$1,500,000	\$1,215,789
b. LIS Futures Fund Small Grants	\$85,000	\$4,474
12. UConn CLEAR	\$108,956	\$108,956
a. Remote Sensing Phase II	\$108,956	\$108,956
Total:	\$5,880,842	\$5,026,269
Funds Available	\$5,931,800	
Fiduciary Reserve:	\$50,958	

LONG ISLAND SOUND STUDY

FY2011 Budget Summary by Organization		
ORGANIZATION	EPA Assistance Award #	Final 2011 Budget
Final LIS Allocation		\$5,931,800
BASE IMPLEMENTATION PROGRAM:		
2. EPA LISO Operations/Expenses		\$17,100
3. NCOA/EPA Administrative Support [MT]	CQ8343510	\$53,000
7. NYSDEC Base & Stewardship [JS]	LI97241508	\$772,600
10. NY Sea Grant PI&E [JS]	LI97241608-2	\$153,333
11. NY Sea Grant Research 2011-2012 [JS]	LI-New	\$253,000
14. NFWF 2011 [MT]	LI-New	\$1,585,000
18. CTDEP 2011 CCMP Implementation [JH]	LI-New	\$1,001,339
19. CTDEP Stewardship	LI-New	\$675,000
22. NEIWPC Implementation 2011	LI-New	\$393,122
24. NEIWPC Enhancements 2011	LI-New	\$508,000
26. CTSEA PI&E & Mentor Teachers [JS]	LI96113801-1	\$106,567
27. UCONN CLEAR [JS]	LI96128401	\$108,956
28. CTSEA Research 2011-12	LI-New	\$253,825
	Fiduciary Reserve	\$50,958
2010 BALANCE SUBTOTALS:		\$5,931,800

Region 1, Green; Region 2 Blue; IAs, HQ Yellow

Long Island Sound 2010 Futures Fund: Large Grants

ORGANIZATION & TYPE OF PROJECT	TITLE	AWARD
HABITAT RESTORATION		
Town of Woodbridge, CT	Pond Lily Dam Removal Planning and Design Project	\$60,000
The Connecticut Fund for the Environment, CT	Wallace Dam Fishway Project	\$95,700
City of Bridgeport, CT	Pequonnock River Apron Fish Passage Project	\$60,245
Avalonia Land Conservancy, CT	Anguilla Brook Fish Passage Restoration Project	\$122,700
Cornell Cooperative Extension of Suffolk County, NY	The NY/CT Long Island Sound Eelgrass Restoration Project	\$149,567
New York City Dept of Parks and Recreation, NY	Rodman's Neck Coastal Forest Restoration	\$150,000
The CT Agricultural Experiment Station, CT	Lord Cove Coastal Forest and Stream Restoration	\$60,091
University of Connecticut, Connecticut Sea Grant	Habitat Management Planning for 3 LISS Stewardship Areas	\$32,902
Audubon New York	Beach-nesting Bird Stewardship at Long Island Sound Stewardship Initiative sites on eastern LI.	\$25,833
WATER QUALITY		
Village of Old Field, NY	Conscience Bay Stormwater Control and Buffer Enhancement	\$60,000
Group for the East End, NY	Goldsmith WATERWASH Stormwater Remediation and Outreach	\$60,000
The POINT Community Development Corp., NY	The POINT's South Bronx Community Green Roof	\$131,250
Town of Mamaroneck, NY	Town of Mamaroneck Stormwater Quality Control	\$63,000
City of Stamford, CT	Mill River Stormwater Retention and Treatment Infrastructure	\$500,000
University of Connecticut, Dept. of Ecology and Evolution, Biology and Marine Sciences, CT	Seaweed Aquaculture for Bioextraction of Nutrients from the Long Island Sound	\$124,000
Valley Council of Governments, CT	Not a Bridge over Troubled Waters – A Superswale for Derby	\$39,074
Housatonic Valley Association, CT	Low Impact Development for Long Island Sound – Lower Housatonic River Valley	\$34,863
Town of Oyster Bay, NY	Oyster Bay/Cold Spring Harbor Protection Committee Creation	\$60,000
Friends of the Hockanum River, Linear Park of Vernon, Inc., CT	Tankerhoosen Watershed III – Land Use Regulatory Management and Control	\$26,000
Eastern Connecticut Resource Conservation and Development Area, Inc., CT	Stormwater Management Priorities: Roadmap for Rural Towns	\$37,926
Research Foundation of The City University of New York, NY	Planning/Design of Stormwater Management Practices at Queensborough Community College	\$34,150

Long Island Sound Futures Fund: Large Grants
(cont'd)

ORGANIZATION & TYPE OF PROJECT	TITLE	AWARD
EDUCATION		
Rocking the Boat	Water Quality Monitoring	\$35,000
Solar Youth	Neighborhood Steward Teams Program	\$35,000
University of Connecticut, Connecticut Sea Grant, CT	Curbing Invasion Pathways through AIS Awareness	\$33,123
New York City Parks and Recreation, Urban Park Rangers, NY	Long Island Sound Urban Waterfront Education Program	\$33,673
Sea Research Foundation, Inc. (Mystic Aquarium), CT	Long Island Sound Curricula Outreach to CT's Inner Cities, CT	\$28,949
Town of North Hempstead, NY	Manhasset Bay Boater Pollution Prevention	\$21,350
Earthplace – The Nature Discovery Center, CT	Environmental Education and Scientific Internship Program	\$34,123
The Trust for Public Land	Acquisition of Former Griswold airport in Madison, CT	\$260,000
TOTAL LARGE GRANTS		\$2,408,519

Long Island Sound 2010 Futures Fund: Small Grants

ORGANIZATION & TYPE OF PROJECT	TITLE	AWARD
University of Connecticut, Connecticut Sea Grant, CT	Guide to the Phytoplankton of Long Island Sound	\$6,982
Save the Sound, Inc., CT	Save the Sound Coastal Cleanup Program	\$10,000
Sea Research Foundation, Inc., (Mystic Aquarium), CT	Estuary Celebration Weekend	\$9,911
Hutchison River Restoration Project, NY	Hutchison River/Thomas Pell Wildlife Refuge Cleanup	\$2,884
Audubon New York, NY	Long Island Sound Day	\$9,995
City Parks Foundation, NY	Coastal Classroom	\$10,000
American Littoral Society, NY	Long Island Sound Component - 2010 NY Beach Cleanup, NY	\$6,000
Solar Youth, CT	Leaders in Training Program	\$10,000
City of Norwich Harbor Mgmt. Commission	Norwich Harbor-Thames River Interpretive Signage Project	\$9,480
TOTAL SMALL GRANTS		\$75,252

**Long Island Sound Study
FY 2011 NEP Work Plan
FY2010 Funded LIS Research Projects**

Systematic Evaluation of Nitrogen Removal by BMPs in the Long Island Sound Watershed
Investigators: Shimon C. Anisfeld and Gaboury Benoit, School of Forestry and Environmental Studies, Yale University

Abstract: Constructed wetlands and retention basins (known as “wet ponds”) are Best Management Practice (BMP) measures used to manage stormwater runoff in order to improve water quality in the Long Island Sound watershed. The hope is that physical and biological processes within these manmade structures help to remove nitrogen and thus reduce the nitrogen load entering the Sound. However, evidence is needed to show whether (and under what conditions) these BMPs actually work effectively to remove nitrogen, and how they might be improved. This project will construct water and nitrogen budgets for a number of representative ponds and wetlands to evaluate their success in nitrogen removal. Nitrogen concentrations and uptake will be measured, along with parameters that might affect BMP efficiency, such as water temperature, water residence time, soil characteristics, and vegetative cover. The results will help in future BMP design to best remove nitrogen and improve water quality and estuarine health.

Phase Shifts Among Primary Producers within Long Island Sound: Will Anthropogenic Stressors Continue to Expand the Niche of PSP- and DSP-producing Dinoflagellate Blooms? Investigator: Christopher J. Gobler. School of Marine and Atmospheric Sciences, Stony Brook University

Abstract: Harmful algal blooms (HABs) have increased globally, with growing negative impacts on human health, fisheries, and economies. In Long Island Sound (LIS), the composition of its primary producers has undergone a fundamental change during the past decade as intense toxin-producing dinoflagellate blooms of *Alexandrium fundyense* and *Dinophysis acuminata* have become annual events within nearshore regions. This two-year project is based on the hypothesis that this phase shift has been initiated by a series of anthropogenic alterations to LIS ecosystems including nitrogen loading, organic matter loading, and factors related to climate change including increasing temperatures and increasing CO₂ concentrations. Determining the primary causes of dinoflagellate blooms that produce PSP and DSP (two shellfish poisons) in LIS will be the first step toward developing plans to control and mitigate these events. This project will generate near-real time reports for the NYSDEC and the CT Dept. of Aquaculture regarding densities of the bloom organisms across NY and CT, serving as an early warning system for bloom events within the LIS ecosystem. Data will be made accessible to the public and information will be provided to regulatory and management agencies to protect human health and minimize the future impacts of toxic dinoflagellates on LIS.

Sources and Fate of Nitrogen in the North Shore Embayments. Investigators: Gilbert N. Hanson and Teng-Fong Wong, Geosciences Department, Stony Brook University

Abstract: This two-year study will investigate the sources and fate of nitrogen in two diverse harbors on Long Island's north shore. Stony Brook Harbor exhibits ecosystem diversity with minimal anthropogenic impact while Port Jefferson Harbor, a hub of ferry transport and recreation, has high anthropogenic impact with nitrogen inputs from two sewage treatment plants and non-point sources due to lawn fertilizer and on-site septic systems. Characterization of submarine groundwater discharge will be accomplished by incorporating temperature and conductivity sensors, electrical resistivity, and seepage meter measurements. This study will focus on nitrogen transformations as groundwater exits the area's shallow aquifer and travels through the subterranean estuary into the embayment. The researchers will use monitoring well samples, transects, and embayment water samples to determine *in situ* denitrification in the subterranean estuary. Study results will include submarine groundwater discharge maps for the two harbors and reports of the amount and type of nitrogen entering and traversing the subterranean estuary— information crucial to municipalities considering switching from on-site wastewater disposal systems to sewage treatment plants. This study will provide information to predict future loads of nitrogen to embayments due to population growth, equipping town planning boards with valuable decision-making tools. Results will also allow Long Island Sound Study planners to propose data-driven nitrogen load reduction legislation.

The Influence of Gelatinous Zooplankton on Nutrient Cycles, Hypoxia, and Food Webs Across Long Island Sound. Investigators: Darcy J. Lonsdale and Christopher J. Gobler, School of Marine and Atmospheric Sciences, Stony Brook University

Abstract: In this two-year study, researchers will look at the impacts of gelatinous zooplankton, primarily ctenophores (comb jellies) and to a lesser extent cnidarians (jellyfish), on nutrient cycles, hypoxia, and food webs across Long Island Sound (LIS). None of the current models used to describe the LIS ecosystem considers the role of gelatinous zooplankton within food webs although these organisms play a significant trophic role in the planktonic community. They undergo seasonal large population blooms and crashes and are often effective top predators feeding on copepods, mysids, and larvae of bivalves, crustaceans and fish. In some ecosystems, the abundance of gelatinous zooplankton appears to be increasing and their seasonal range shifting or expanding as has been shown in some Long Island embayments. By determining the nutrient-release rates and oxygen consumption rates of gelatinous zooplankton, the researchers will expand food web models of LIS. In addition, they will study the timing of the peak abundance of gelatinous zooplankton to determine overlap with the spawning period of commercially important LIS species. Such data will help resource managers assess the impact of gelatinous zooplankton grazing on larval lobsters and hard clams.

Comparative Analysis of Eutrophic Condition and Habitat Status in Connecticut and New York Embayments of Long Island Sound. Investigators: Jamie Vaudrey and Charles Yarish, Department of Marine Sciences, University of Connecticut

Abstract: While nitrogen loading and eutrophication and resulting negative impacts on estuarine life have been extensively studied in Long Island Sound, little is known about the impacts on more than 60 small embayments that surround Long Island Sound. This study will survey habitat characteristics of 8 representative embayments in Connecticut and New York, looking at estuarine status and the susceptibility of these embayments to hypoxia. Estuarine health, as indicated by eutrophication symptoms, habitat type, and dominant marine plants, will be linked to contributing stressors such as nitrogen, temperature, and flushing time. Baseline data will be developed, and compared to historic data to provide insights and establish a framework for future research related to eutrophication and climate change. The ability of the habitats to support economically and ecologically important eelgrass will also be assessed using a GIS model.

Nitrogen Removal Capacity of Connecticut Estuaries: Assessing Distribution and Controls
Investigators: Tobias, Craig R., University of Connecticut Dept. of Marine Sciences and Song, Bongkuen, University of North Carolina at Wilmington

Abstract: In a small-scale one-year pilot project, researchers will quantify seasonal removal rates of nitrogen in tidal reaches of a Connecticut estuary. They will examine the two key processes by which nitrogen is removed from wastewater. These processes are denitrification, a microbial process which ultimately results in nitrogen gas, and a recently discovered bacterial nitrogen removal process that occurs in underwater sediments. Nitrogen removal will then be mapped and provide clues to whether hot spots for these processes persist over time and space or are transient. This information will help inform future management choices.

Long Island Sound Study
Travel Documentation for FY2010 NEP Work Plan
 April 2010-March 2011

Meeting Date	Meeting Title	Meeting Location	Person or Committee	Cost	Total Cost Per Meeting
4/26/2010	Sound Vision Meeting	Greenwich, CT	CAC	\$29.14	
4/26/2010	Sound Vision Meeting	Greenwich, CT	CAC	\$139.00	\$168.14
6/10/2010	CAC	Stamford, CT	CAC	\$358.36	
6/10/2010	CAC	Stamford, CT	CAC	\$38.00	
6/10/2010	CAC	Stamford, CT	CAC	\$69.75	
6/10/2010	CAC	Stamford, CT	CAC	\$56.00	
6/10/2010	CAC	Stamford, CT	CAC	\$76.00	
6/10/2010	CAC	Stamford, CT	CAC	\$178.10	
6/10/2010	CAC	Stamford, CT	CAC	\$97.50	\$873.71
9/16/2010	CAC	New York, NY	CAC	\$37.00	
9/16/2010	CAC	New York, NY	CAC	\$81.50	
9/16/2010	CAC	New York, NY	CAC	\$57.50	
9/16/2010	CAC	New York, NY	CAC	\$30.00	
9/16/2010	CAC	New York, NY	CAC	\$274.00	
9/16/2010	CAC	New York, NY	CAC	\$38.50	
9/16/2010	CAC	New York, NY	CAC	\$21.50	
9/16/2010	CAC	New York, NY	CAC	\$39.57	\$579.57
10/5/2010	Region II CACs	New York, NY	CAC	\$18.50	
10/5/2010	Region II CACs	New York, NY	CAC	\$21.00	
10/5/2010	Region II CACs	New York, NY	CAC	\$10.50	
10/5/2010	Region II CACs	New York, NY	CAC	\$49.50	\$99.50
10/6/2010	CAC Policy Committee	Plum Island, NY	CAC	\$88.00	\$88.00
10/19/2010	CAC Policy Committee	Port Jefferson, NY	CAC	\$44.00	\$44.00
10/21 - 10/22	MC	Port Jefferson, NY	MC	\$77.64	
10/21 - 10/22	MC	Port Jefferson, NY	CAC/MC	\$220.00	
10/21 - 10/22	MC	Port Jefferson, NY	CAC/MC	\$163.00	
10/21 - 10/22	MC	Port Jefferson, NY	MC	\$114.00	
10/21 - 10/22	MC	Port Jefferson, NY	MC	\$114.00	
10/21 - 10/22	MC	Port Jefferson, NY	STAC/MC	\$114.00	
10/21 - 10/22	MC	Port Jefferson, NY	Evening Speaker	\$114.00	
10/21 - 10/22	MC	Port Jefferson, NY	MC	\$188.00	
10/21 - 10/22	MC	Port Jefferson, NY	MC	\$453.64	\$1,558.28
11/8 - 11/10	ANEP Fall Meeting	Punta Gorda, FL	MC	\$551.00	
11/8 - 11/10	ANEP Fall Meeting	Punta Gorda, FL	CAC	\$757.06	\$1,308.06
12/9/2010	CAC	Stamford, CT	CAC	\$376.88	
12/9/2010	CAC	Stamford, CT	CAC	\$12.75	
12/9/2010	CAC	Stamford, CT	CAC	\$77.00	
12/9/2010	CAC	Stamford, CT	CAC	\$89.00	
12/9/2010	CAC	Stamford, CT	CAC	\$70.25	
12/9/2010	CAC	Stamford, CT	CAC	\$24.25	\$650.13
12/15/2010	I-Team	Stamford, CT	CAC	\$24.25	\$24.25
3/10/2011	CAC	New York, NY	CAC	\$20.50	
3/10/2011	CAC	New York, NY	CAC	\$81.24	
3/10/2011	CAC	New York, NY	CAC	\$407.52	
3/10/2011	CAC	New York, NY	CAC	\$25.50	
3/10/2011	CAC	New York, NY	CAC	\$28.40	
3/10/2011	CAC	New York, NY	CAC	\$30.34	
3/10/2011	CAC	New York, NY	CAC	\$21.75	\$615.25

\$6,008.89

Appendix I

1 Sentinel Monitoring for Climate Change in Long Island Sound

Highlights:

- What: The Long Island Sound Sentinel Monitoring Strategy is a multidisciplinary scientific approach to provide early warning of climate change impacts to Long Island Sound and to guide management decisions and adaptation responses.
- Who: The Long Island Sound Study Bi-state Sentinel Monitoring Work Group
- Why: The goal of this program is to establish time series to be used to prioritize responses to climate change impacts and determine appropriate adaptation strategies.

Brief Description:

Provide a brief description of your Best Practice addressing the following questions:

- 1) What are the key elements of the Best Practice?

The Sentinel Monitoring Program is a multifaceted effort to assess the effects of climate change on Long Island Sound and its watershed to support efforts to adapt to those changes.

The strategic plan summarizes the state of knowledge on observed and potential climate change impacts on LIS habitats, biota, and processes. The strategic plan also makes recommendations to develop an adaptive monitoring program to measure and evaluate sentinel indicators that will signal the magnitudes and rates of change in LIS caused by climate change. The strategic plan features pilot-scale monitoring as a precursor for launching full scale climate-change monitoring programs. Another essential component to the strategy plan is a data citation clearinghouse to store and provide access to the various types of data collected through these new monitoring programs as well as other scientific efforts throughout the Sound. Future efforts include regular assessments of indicators to determine if changes should be made in parameters measured and providing data and model predictions to managers such that management decisions and adaptation strategies may be developed and implemented.

- 2) How is your Best Practice innovative and/or successful

The strategic plan is a flexible document that outlines several levels of future monitoring programs and is designed to be adapted as new information becomes available. The data citation clearinghouse is intended to facilitate communication among local researchers and support data synthesis that may be used for all types of research, even beyond climate change.

- 3) If your Best Practice features a partnership, what are the terms of the agreement and who are your partners?

The Bi-State Sentinel Monitoring Work Group is a partnership that includes EPA Long Island Sound Office, New York Department of Environmental Conservation, Connecticut Department of Environmental Protection, New York Sea Grant and Connecticut Sea Grant. There are formal cooperative agreements/contracts pertaining to funding between these agencies. The two state technical advisory groups include over 60 federal, state, NGO, and university partners who have contributed to all stages of the strategic plan development.

Current Status:

The bi-state work group is preparing the strategic plan that makes recommendations for pilot- and full-scale climate change monitoring programs. Seven indicators have been given highest priority by the state technical advisory groups. Funding has been secured for pilot-scale monitoring and the data citation clearinghouse development. The data citation clearinghouse, as well as a request for pilot-scale monitoring proposals, is in development.

Outcomes:

This program will be used to inform management and determine appropriate adaptation strategies. It is already being used as a model for climate change indicator development by the EPA Climate Ready

Estuary Program. The strategic approach that was developed for this monitoring program can be used elsewhere to build similar local or regional-scale climate change programs.

Lessons Learned/Recommendations:

Others taking on a similar program must determine clear goals of the monitoring program from the beginning. A diverse technical advisory committee is needed to provide guidance on the establishment and prioritization of potential indicators. However, a small coordinating group also helps to make decisions and keep the program moving forward. An ongoing glossary of terms and definitions helps to avoid misunderstandings and facilitates communication. Locating recent and historical data sets that could potentially be assessed for climate change signals is a cost-effective way to identify current climate change impacts.

Contact Information: Mark Tedesco, 203-977-1541

<http://longislandsoundstudy.net/about/committees/sentinel-monitoring-for-climate-change-work-group/>

Long Island Sound Study Stewardship Initiative Acquisition and Protection of Open Space

Highlights:

- What: Acquisition and protection of high-valued natural habitats protects water quality in Long Island Sound by preventing development that would increase stormwater runoff and groundwater contamination.
- Who: The Long Island Sound Office is implementing this Best Practice under the Long Island Sound Study Stewardship Initiative.
- Why: The Long Island Sound Study Stewardship Initiative involves numerous state, local, and not-for-profit partners in land protection because of the multiple benefits accrued by preventing preserving natural landscapes in the Long Island Sound watershed. Open space provides and maintains numerous ecological services in addition to maintaining clean surface and groundwater supplies. Some open space purchases also enhance recreation and visual and physical access to Long Island Sound.

Brief Description:

The Long Island Sound Study Stewardship Initiative has five specific goals for Long Island Sound:

- Preserve native plant and animal communities and unique habitat types
- Improve recreation and public access opportunities
- Protect threatened and endangered species in their natural habitats
- Preserve sites that are important for long-term scientific research and education
- Promote efforts to plan for multiple uses

The Long Island Sound Study uses the Best Practice of *Acquisition and Protection of Open Space* to achieve these goals as well as to provide natural areas for coastal climate change adaptation. Protected lands also become models to inspire interest in and education about future stewardship activities benefiting the resources of Long Island Sound.

Parcels for acquisition are selected by a Stewardship Initiative work group, which makes recommendations to the Long Island Sound Study (LISS) Management Committee. The Management Committee decides the annual budgetary priorities of the LISS and allocates funds for the Stewardship Initiative acquisitions to the appropriate partners.

This Best Practice followed the establishment in 2006 of 33 "inaugural stewardship areas," which were selected and prioritized by the Stewardship Initiative work group and organized in the Long Island Sound Stewardship Initiative's *2006 Stewardship Atlas*, prepared by the Regional Plan Association. The LISS Management Committee then provided the states of New York and Connecticut with \$1.6 million in FY08 and FY09 funds for the purposes of acquisition and protection of open space. These funds were allocated on the strength of the suggestions of the Stewardship Initiative work group, which is made up of individuals from the U.S. Fish and Wildlife Service's Coastal Program, the NYSDEC, the CT DEP, The NYS Department of State, the NYS Office of Parks, Recreation, and Historic Preservation, Audubon New York, Audubon Connecticut, The Long Island Sound Assemblies, the Regional Plan Association, The Nature Conservancy, The Trust for Public Land, Connecticut Fund for the Environment, New York Sea Grant, representatives of the LISS Citizens Advisory Committee, local governments, and local not-for-profits.

The sites were selected by subjecting suggestions from the work group to a rating system that combined NOAA's Coastal and Estuarine Land Conservation Program, as implemented in New York and Connecticut, with the 33 "inaugural stewardship sites" around Long Island Sound. Each of the three stewardship acquisitions achieved by the end of 2009 was located near one of the inaugural stewardship areas; one of the three, the 48.7-acre "Crowley 1" parcel, was contiguous with an actual

stewardship area, Connecticut's Barn Island Wildlife Management Area (WMA). Both the Crowley 1 parcel and another, the "Crowley 2" parcel, will provide areas for inland salt marsh migration attributable to projected sea level rise.

The smallest acquisition to date, a 1-acre parcel in Rye, New York, known as the Bird Homestead property, is considered integral to the creation of a blueway trail from Blind Brook through Milton Harbor and out into Long Island Sound, ultimately connecting public sites in Westchester with others in Greenwich Connecticut. The site itself contains historic elements and it connects with another adjacent historic site. Remaining structures on the site will be used for interpretation of natural and cultural history. The property now is owned by the City of Rye.

The third acquisition, the 28.3-acre woodland "Diocese" property in Setauket, New York, became possible only through \$450,000 in LISS stewardship funding, leveraged by \$5 million in New York State Natural Resources Damages funds. The land is the last large parcel in the surface watershed of Conscience Bay, a restricted estuarine embayment whose high natural resource value depends on continued inputs of clean, fresh water from surface and groundwater sources. The property is to be owned by the NYSDEC.

Each of the Stewardship Initiative acquisitions was enabled through highly leveraged partner funding.

The LISS will further strengthen the scientific basis, fairness, and repeatability of the process for identifying priorities for protection. Through a \$251,000 grant to the New England Interstate Water Pollution Control Commission, a contractor was selected in 2009 to develop a GIS-based stewardship site selection strategy. The work group will work closely with the contractor, Fountain Spatial, to develop a tool for selecting sites around Long Island Sound in years to come.

In the interim, the LISS Management Committee will be expanding the availability of funds for acquisition to additional entities beyond the state governments, by allowing for competition of acquisition proposals through the annual Long Island Sound Futures Fund RFP process.

Current Status:

By the end of calendar year 2009, the Long Island Sound Study Stewardship Initiative has helped preserve 78 acres of land in or around three inaugural stewardship sites in two states. In New York, one site is on Long Island and one is on the mainland. The Connecticut site is at the eastern end of the state in Stonington. The Crowley 2 parcel, to be acquired in the near future with the 2009 funds, also will be situated in Stonington.

In a 2006 agreement between New York, Connecticut, and EPA's Regions 1 and 2, the parties agreed to a goal of restoring or protecting an additional 300 acres of coastal habitat between January 1, 2006, and December 31, 2011. Through its partnerships, the LISS already has protected over 687 acres, 78 acres of which were protected directly with the additional infusion of federal dollars through the Stewardship Initiative practice of acquiring and protecting open space.

Outcomes:

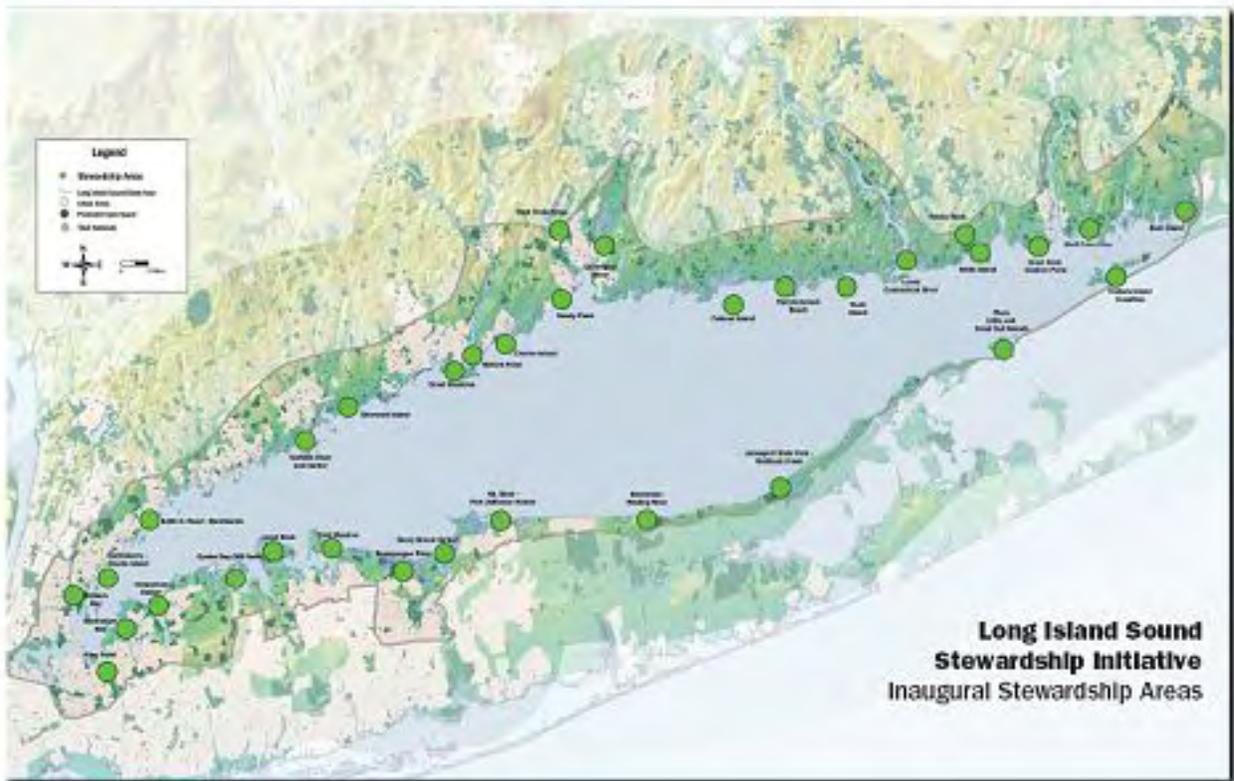
The LISS Stewardship Initiative Best Practice of Acquisition and Protection of Open Space has resulted in the permanent protection of 78 acres of open space in the Long Island Sound coastal area in the last two years, affording the region benefits in water quality, habitat protection, climate change adaptability, carbon sequestration, recreational access to navigable waters, environmental education, and prevention of new nonpoint-source pollution. Intangible benefits resulting from these acquisitions may include fostering interest in and future stewardship of Long Island Sound's fragile resources, which the LISS partnership hopes will continue a feedback loop, ultimately improving the ecological condition of the estuary.

The LISS has proven that by carefully assessing resources and identifying priorities for land acquisition, even small purchases may have large benefits, particularly in urban and suburban coastal

environments. The GIS-based site selection strategy tool now under development by the Stewardship Initiative work group and its consultant will be designed so it can be scaled down to serve localities within the Long Island Sound Study coastal area and also is likely to be a product that can be replicated in other regions.

Lessons Learned/Recommendations:

The LISS has the ability to identify worthwhile acquisition projects because of its commitment to working closely with partners on the local and state-wide levels, in both government and the not-for-profit sectors. The ability to carry out the actual acquisitions came through the partners represented in the Stewardship Initiative work group, supported by active participation by individuals and organizations in the LISS Citizens Advisory Committee and the estuary program partners in the Management Committee. Without the advantages that come from working with partners already keenly invested in environmental protection efforts related to the Long Island Sound region, the relatively small financial investment made by the LISS in actual land acquisitions to date could not have been leveraged to achieve such prodigious results. We were fortunate to work with individuals and organizations that have an ability to undertake short-term, rapid decision-making while keeping an eye on long-term planning and future protection (as well as program) needs. Our GIS tool may serve as a model or even a template for other estuary programs wishing to identify land protection priorities.



Contact Information: Mark Tedesco, Director, Long Island Sound Office, 203-977-1542
<http://www.longislandsoundstudy.net>