

FUNDING STRATEGIES

The CCMP recommends an ambitious agenda to invest in the health of the Long Island Sound ecosystem and its watershed. These investments can produce real value, not just from improved environmental quality, but also to the region's economic vitality and quality of life. Long Island Sound is an asset with real value, worth investing in to protect and enhance that value.

The needed investments will not come from a single program or level of government. Funding will be needed across jurisdictions, including federal, state, and local governments in partnership with the private sector, with each contributing its fair share. Organizations will need to dedicate resources and commit staff. Funding is needed to continue cooperative efforts under the Long Island Sound Study to coordinate implementation of the plan through ecosystem-based management. Ongoing federal and state environmental programs need to be maintained and enhanced, particularly for sustainability and resiliency, and to support project implementation, most significantly upgrading wastewater and stormwater infrastructure.

ONGOING FEDERAL AND STATE PROGRAM FUNDING

There are numerous environmental programs that provide the foundation upon which ecosystem-based management of Long Island Sound is built. Implementation of the CCMP's strategies and actions relies on the continued support for core, ongoing environmental programs conducted by CTDEEP, NYSDEC, the EPA, and other federal, state, and local agencies. As presented in Table 2, the total estimated annual statewide funding in New York State for water quality, natural resource, and coastal zone management is \$126.59 million. Federal grants to New York State for these activities provide an additional \$48.41 million statewide. As shown in Table 3, the total statewide annual funding in Connecticut for water quality, natural resource, and coastal zone management is \$10.43

TABLE 2. Existing Annual Program Funding Statewide¹ in New York (in millions of dollars)

Program Element	State	Federal
Water Quality Management	13.70	19.00
Natural Resources Management ²	110.60	26.90
Coastal Zone Management	2.29	2.51
Total	126.59	48.41

1. These funds are for programs statewide. LIS is one of 17 drainage basins in NY State encompassing less than one percent of the area and approximately 23 percent of the population of the state.

2. These numbers represent funds spent by the NY State Department of Environmental Conservation on the Fish, Wildlife, and Marine Program.

TABLE 3. Existing Annual Program Funding Statewide¹ in Connecticut (in millions of dollars)

Program Element	State	Federal
Water Quality Management		
Permitting and Enforcement	3.17	2.13
Water quality planning, standards, monitoring, and nonpoint source management	1.88	4.14
LIS monitoring	0.15 ²	1.00
Natural Resources Management³		
Coastal structures, dredging permits	0.50	0.00
Aquaculture	0.93	0.00
Coastal zone management	1.00	1.00
Coastal fish and wildlife management	1.50	3.30
LIS research	0.00	0.30
Tidal wetlands restoration	0.75	0.80
Coves and embayments restoration	0.50	0.00
LIS education and outreach	0.05	0.15
Total	10.43	12.82

1. Almost all of the state is included in the Long Island Sound drainage basin.

2. Does not include \$500,000 capital investment in research vessel and depreciation

3. CT OPM Biennial Budget 2014-2015 and FY2014-FY2015 Biennium Governor's Budget

TABLE 4. Recommended Enhanced Ecosystem-based Management Funding Support (in dollars/year averaged over five years)

Program Element	Annual
Monitoring	
Open Sound Water Quality	1,500,000
Embayment Water Quality	500,000
Tributary Water Quality	150,000
Sentinel Climate Change	150,000
Subtotal	2,300,000
Modeling	
	350,000
Assessment	
Seafloor mapping and spatial planning	150,000
Pathogen track down surveys	150,000
Nitrogen Pollution Tracking	200,000
Coastal resiliency	200,000
Subtotal	700,000
Research	
	500,000
Living Resources and Habitat	
Habitat restoration	1,000,000
Habitat protection	1,000,000
Monitoring	300,000
Subtotal	2,300,000
Coordination	
Coordination of Management Conference	250,000
State coordination of implementation	400,000
Public involvement and education	250,000
Subtotal	900,000
Data Management and Reporting	
	250,000
Community Implementation Support	
	2,700,000
Total	10,000,000

million. Federal grants to Connecticut for these activities provide an additional \$12.82 million statewide. Support for these core programs should continue, at a minimum at these levels. Project funding through state revolving fund loan programs are not included in these totals, but are discussed under Project Implementation Funding.

ENHANCED PROGRAM FUNDING

While some of the CCMP's strategies and actions proposed to be carried out over the next five years would be accomplished through ongoing support of existing programs, many actions will require new, Long Island Sound-specific funding to be accomplished. As presented in the Sound Science and Inclusive Management theme, coordination of all stakeholders is key to the efficient use of scarce resources to attain desired results. Congress, through provisions in the Clean Water Act, has charged EPA with providing overall coordination of, and support for, the regional effort. The legislation supporting these efforts includes Section 320 and Section 119 of the Clean Water Act. The federal fiscal year 2015 budget provided approximately \$4.5 million.

As summarized in Table 4, this plan recommends annual funding of \$10 million for Long Island Sound priority enhancements to ongoing federal/state management programs. A portion of these funds would be used to continue the Long Island Sound Futures Fund, a grant program administered by the National Fish and Wildlife Foundation (NFWF) to fund on-the-ground projects in communities (Community Implementation Support). Since 2005, the Futures Fund has invested \$11.7 million in 285 projects in communities surrounding the Sound. With grantee match of \$24 million, Long Island Sound Futures Fund projects have totaled almost \$36 million.

PROJECT IMPLEMENTATION FUNDING

The project implementation costs associated with the plan are large and are dominated by the potential cost of upgrading sewage treatment plants to remove nitrogen, the cost of remediating combined sewer overflows, and the cost of property acquisition (Table 5). The capital costs of implementing the nitrogen reduction to date are \$2 billion in New York State and \$330 million in Connecticut. Additional investments are needed to continue nitrogen reduction in New York and Connecticut. Over the next 20 years, these costs would

be in addition to the \$4.4 billion in Connecticut and \$8 billion in New York State needed to implement ongoing combined sewer overflow and separate sanitary system overflow abatement programs critical to reducing pathogens and floatable debris in the Sound. Because of the inclusion of upstream nitrogen sources in the Dissolved Oxygen TMDL, the LISS has involved the upstream states of Massachusetts, New Hampshire, and Vermont in regulatory and non-regulatory programs for nitrogen management. Based on a LISS-funded study, the application of biological nutrient removal retrofits at select WWTFs in the upstream states could be a cost-effective means of enhancing nitrogen reduction. The estimated cost of implementing those retrofits is included as a subcategory of the WWTFs element.

The two states have concluded that the existing State Revolving Funds are the preferred vehicles for funding major capital projects for wastewater programs; substantial funds have already been obligated to the programs for project implementation (Table 6). The total capital need for the wastewater program in Connecticut for the next 20 years has been estimated to be \$8 billion, almost all of which is for needs within the Long Island Sound drainage basin. The Connecticut State Revolving Fund needs an infusion of \$40 million per year in federal funds and \$300 million per year in state funds over 20 years to continue to meet statewide needs, including Long Island Sound nutrient control needs, into the future. The 2008 Clean Watersheds Needs Survey for New York identified a total of \$29.7 billion in needs over 20 years. Of these needs, \$15.8 billion is within the Long Island Sound basin. The New York State Revolving Fund needs an infusion of \$1.2 billion per year in combined federal and state funds to meet statewide needs, including those for Long Island Sound.

Cost estimates for the necessary level of control for nonpoint sources of nitrogen have not been developed but are expected to be substantial.

Significant project implementation costs are also associated with the habitat-related commitments and recommendations. The total project costs for the priority habitat and riverine migratory corridor restoration projects targeted for completion over the next five years is \$63 million. The estimated needs in Connecticut between 2015–2019 for protection of open space and improving species management are \$37.5 million and \$30 million, respectively.

TABLE 5. Total Project Implementation Funding Estimates (in millions of dollars)

Program Element	New York	Connecticut ¹	Total
Waters and Watersheds			
WWTFs	2,000 ²	3,000	5,000
WWTFs retrofits in upstream states	–	–	5
Urban stormwater	NA ³	700 ⁴	NA ³
Combined sewer overflows	NA ³	3,000	NA ³
Habitats and Wildlife			
Habitat restoration (five years) ⁵	–	–	45
Riverine migratory corridors (five years) ⁵	3	15	18
Species management	NA ³	120	NA ³
Open space protection	500	140	640
Sound Communities			
Education	4	4	8
Climate preparedness, resiliency and sustainability (five years)	NA ³	20	NA ³

1. Based on anticipated annual funding required to meet the five- and 20-year Implementation Action goals.
2. Funding estimates for CSOs are included with the WWTFs row since most of the CSO program funds are used to get more stormwater flow to WWTFs.
3. Not available
4. Urban stormwater capital improvement costs were estimated from two sources, the 2004 USEPA Clean Watersheds Needs Survey and the 2009 Interim Stormwater Pilot Program Reports. Estimates include the cost of implementing BMPs related to nitrogen, pathogens, and floatable debris controls as well as some overall local stormwater drainage infrastructure improvement cost.
5. See Appendix D for priority project descriptions.

TABLE 6. Average Annual Obligations to the State Revolving Fund Program for Wastewater Treatment Statewide in New York and Connecticut (in millions of dollars)

Program Element	New York ¹	Connecticut ²	
	State/Federal	State	Federal
Wastewater Treatment	880.2	57.5	13.7
Combined Sewer Overflows	359.9	11.8	2.2
Total	1,240.1	69.3	15.9

1. NYS CWSRF financing varies year to year; these values represent the FFY 2014 Annual Report to EPA.
2. CT SRF wastewater treatment cost exclude CSO costs (Federal Categories I-X except V (CSO)).

EXISTING FUNDING SOURCES

Funding through the EPA LISS's budget was never intended to be the primary means of supporting implementation of the CCMP's strategies and actions. Other federal and state programs will be essential sources of funding. Some of these programs are described below.

Clean Water State Revolving Funds

The existing State Revolving Funds are the preferred vehicles for funding major capital projects for wastewater programs, such as upgrading wastewater treatment facilities to remove nitrogen, remediating combined sewer overflows, and maintaining sanitary and stormwater sewer systems. Funds are awarded as low-

interest rate loans, or with partial principal forgiveness, typically to municipalities conducting the work. Substantial federal, state, and local funds have been obligated for Long Island Sound-related projects over the past twenty years.

Other Funding Programs

Depending on the project focus, a variety of funding and technical support may be available. A partial list of programs are listed in Table 7.

TABLE 7. Funding and Technical Support Programs

Federal Programs
EPA Smart-Growth grants and other EPA funding opportunities
USFWS Clean Vessel Act Grant Program and other USFWS funding opportunities
NOAA Habitat Conservation grants and other NOAA funding opportunities
NRCS Regional Conservation Partnership Program and other NRCS funding opportunities
New York Programs
Environmental Protection Fund (EPF)
Environmental Facilities Corporation
Cleaner, Greener Communities Program
Environmental Finance Center, Syracuse University
Connecticut Programs
Connecticut Long Island Sound License Plate Fund
Landowner Incentive Program
Connecticut's Clean Water Fund
Small Town Economic Assistance Program
Open Space and Watershed Land Acquisition Grant Program
Recreation and Natural Heritage Trust Program
Connecticut's Clean Vessel Act Program
Connecticut Nitrogen Credit Exchange Program
Connecticut Farmland Preservation Program

FUTURE SUPPORT FOR LONG ISLAND SOUND'S PROTECTION AND RESTORATION

The historical support for the LISS from federal and state sources has led to the end of the decline of the ecosystem and, in some areas, marked improvements. However, the next generation of ecosystem level protection and restoration will require new and enhanced support to address smaller, more diffuse pollutant sources, continued land development, and the effects of climate change.

Wise investment in the natural assets of Long Island Sound and its watershed can secure more resilient and sustainable returns in property values, water quality, storm protection, recreation and tourism, and other goods and services, particularly during a changing climate. Rising productivity, lowered risk, and greater resiliency are ingredients for providing job growth, rising real wages, and a more prosperous economy.

Implementation of the 1994 CCMP was immensely aided by environmental bond acts passed by Connecticut and New York. For example, the Connecticut Bond Commission has approved extensive state overmatch to capitalize the state's Clean Water Fund to provide grants and loans for local and regional wastewater improvement projects. Under this program, grants range from 20 percent to 50 percent of costs depending upon the nature of the project, and loans are repaid at just two percent interest over 20 years. Even before the CCMP was completed, Connecticut provided \$15 million in state funds to municipalities to implement low-cost biological nutrient removal at 11 WWTFs. New York's 1996 Clean Water/Clean Air Bond Act devoted \$1.75 billion to protect and restore the state's environment. Of that amount, \$790 million in funding was devoted to clean water projects to help carry out existing management plans for major water

resources, including \$200 million for Long Island Sound. The state made funds available for municipal wastewater treatment improvement, pollution prevention, agricultural and nonagricultural nonpoint source abatement and control, and aquatic habitat restoration.

One of the priority actions in the Sound Science and Inclusive Management theme (SM-28) is to evaluate creative funding mechanisms to meet the financial needs for protecting and managing the natural, environmental assets of Long Island Sound. This includes market mechanisms designed to obtain a desired value from Long Island Sound's natural assets by providing incentives and disincentives for practices that protect or degrade them while also creating a revenue base to invest in their management. The establishment of creative funding mechanisms will be aided in coming years by new market opportunities for habitat protection and restoration, climate change mitigation and resiliency, and water quality. Current funding mechanisms are limited. Those benefiting from many aspects of the Long Island Sound Basin (property values, storm protection, and drinking water) might be willing to further contribute to investments that improve those assets. Those harming

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natural assets (e.g., through pollution) would benefit from a system that internalizes those costs and more efficiently allocates funds to mitigate damages or repair natural assets. Researching the full range of locally appropriate funding mechanisms could provide a sustained, reliable source of investment capital to restore and protect ecosystem services.