

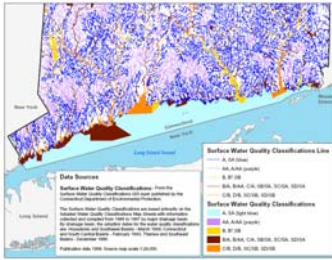
Connecticut Appropriations Committee RBA Template Part I, Quality of Life (Population) Result Summary

Population: All Connecticut Residents

Quality of Life Result: A healthy and productive Long Island Sound for Connecticut residents.

Indicator 1: Overall Water Quality

% LIS that is swimmable and fishable

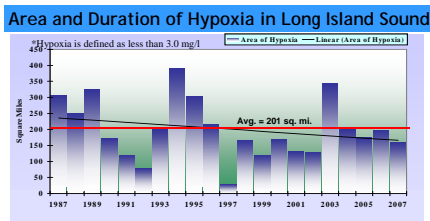


Story Behind the Baseline

Overall water quality is affected by many factors, including many not controlled by the State of Connecticut. Water quality particularly in Western LIS continues to be problematic. Water quality can be improved by sustaining and enhancing current CT DEP efforts and through an array of partnerships with EPA, environmental protection agencies in other states (especially New York, but also throughout the watershed), and other environmental groups.

Indicator 2: Water Quality

Square Miles of LIS with Unacceptable Hypoxia Levels



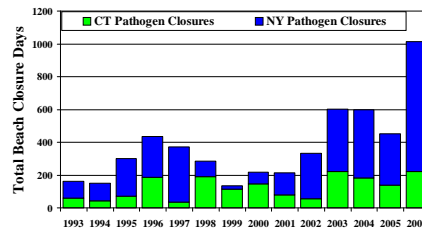
Story Behind the Baseline

Hypoxia is low dissolved oxygen content. Of primary concern is the reduction in nitrogen load, which comes from sewage treatment plants,

non-point, storm water runoff, and atmospheric sources. While the trend shows steady improvement, the speed and extent of reduction in hypoxia could be improved. Turning the curve requires reducing all of these sources through the upgrade of treatment plants, point sources, raising public awareness, and working to identify and reduce other contributing sources of nitrogen.

Indicator 3: Water Quality

Number of Beach Closings

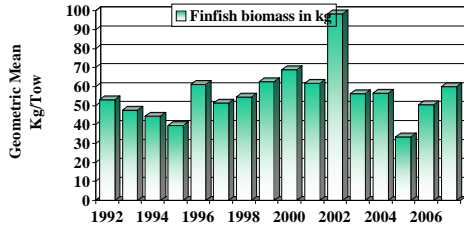


Story Behind the Baseline

Bathing beaches are closed when either 1) the results of water quality monitoring exceed an established safe level; or 2) an administrative closure shuts down a beach after significant rainfall events because of combined sewer overflows. The trendline has shown recent spikes in the number of beach closures although this is heavily impacted by weather from year to year. Turning the curve necessarily involves reduction in bacterial contamination through the application of technology and the elimination of combined sewer overflow systems.

Indicator 4: Living Resources

Finfish Biomass

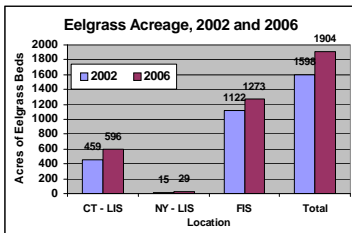


Story Behind the Baseline

Finfish biomass is one good indicator of the health of living resources in the sound. The trendline, which can be impacted by migratory fish patterns, has been steady.

Indicator 5: Habitat Restoration

Acres of Eel grass beds



Story Behind the Baseline

Increases in eelgrass acreage is one good indicator of habitat restoration. While eelgrass acreage has increased in some areas, other areas have shown little progress. Further reducing nitrogen load will have a positive impact on this indicator. Newer data for 2006 will help establish a trend for eelgrass.

Turning the Curves: What do you propose to do over the next two years and why?

- Revise the CT-NY Long Island Sound Total Maximum Daily Load Analysis to

- update nitrogen reduction targets, including out-of-state sources
- Continue to separate combine sewer overflows (CSOs)
- Reduce NPS bacteria inputs through improved management practices for stormwater and septic systems
- Manage coastal development in a sustainable manner
- Address global warming and prepare for impacts associated with potential sea level rise and adaptation
- Continue to increase public awareness of non-point sources of nitrogen
- Provide incentives and a predictable funding stream through the CT Clean Water Fund to upgrade sewage treatment plants to reduce nitrogen loading.
- Improve management practices to minimize nitrogen input from runoff of fertilizers and consider improved regulatory controls on their use.
- Work with municipalities in urban areas to fully implement the Small Municipal Separate Storm Sewer System (MS4) permitting program to reduce bacteria.
- Implement the Regional Greenhouse Gas Initiative (RGGI) and other measures to help curb global warming.
- Continued participation in the Long Island Sound Study and Long Island Sound Stewardship Initiative

Key Funding Information	
Total Current Funding*	\$123,083,050
Funding Distribution	
Total Federal Funds**	8,102,100
Total State Funds	753,800
Capital Projects Subtotal	113,000,000
Other Funding	1,227,150
* Does not reflect all funding sources; see budget detail	
** Only funds managed by DEP are identified	

Connecticut Appropriations Committee RBA¹ Template

Part I, Quality of Life (Population) Result

Long Island Sound

Quality of Life Result:

A healthy and productive Long Island Sound for Connecticut residents.

Why Is This Result Important?

It would be difficult to overstate the importance of Long Island Sound to Connecticut's environment, economy and quality of life. Over 20 million people live within 50 miles of the Sound, they benefit from the more than \$5.5 billion it contributes to the regional economy from fishing, boating, recreation, seafood, transportation, and, less quantifiable in dollars, geographical and cultural identity. Few other estuaries on this continent rival Long Island Sound's combination of natural resources, environmental significance, recreational and commercial value, and proximity to a vast and diverse population of users.

Sound Facts & Figures

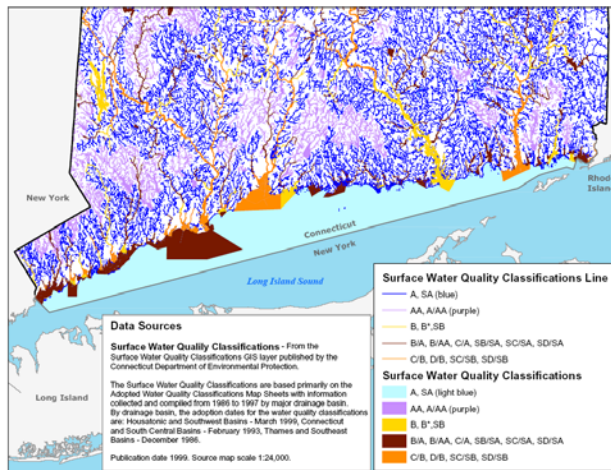
- Area of LIS: 1320 square miles
- Drainage Basin or Watershed: 16,820 square miles
- Average Water Depth: 63 feet (60-120 feet)
- Volume: 18 trillion gallons
- Coastline: 600 miles
- Salinity Ranges: 23 parts per thousand in the western end to 35 parts per thousand at the eastern end
- Source of Fresh Water: 90% of the freshwater comes from three major rivers - the Thames, Housatonic, and Connecticut
- Water Temperature: 32°F in winter and 73°F in summer
- Tides: two high and two low each day with the greatest tides in the west
- Population Living within 50 miles: 20 million people
- Estimated Value to the Local Economy: \$5.5 billion per year
- Fish Populations: more than 120 species of finfish, including 21 tropical species that appear seasonally; at least 50 species spawn in the Sound

^{1 1} Results Based Accountability

Key Funding Information:

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Indicator 1. Overall Water Quality



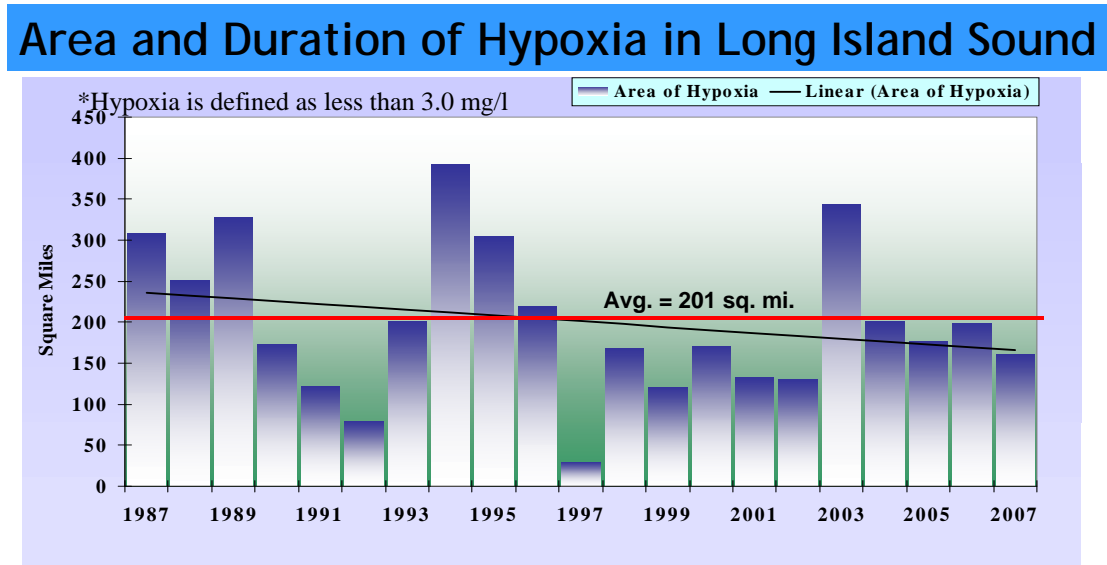
Story Behind the Baseline:

Through a legally defined public process, the State establishes water quality classifications for all the State’s waters. Classifications for Long Island Sound may range from SA (excellent) to SD (severely impaired). The water quality classification is based on designated uses that include the protection and propagation of fish, shellfish and wildlife and recreational use in and on the water. When designated uses are not met, e.g., shellfish harvesting for direct human consumption is not supported, a lower classification may be assigned with a goal of meeting all designated uses. On

the map, current LIS classifications range from SA to SC/SB (currently classified SC with a goal of supporting SB uses). For all waters, the current classification or goal is SA or SB.

On a biennial basis, DEP assesses all waters and reports to EPA on whether designated uses are being met based on defined numeric criteria. The next evaluation will be completed in 2008. While a water may be classified as SA, for example, it may still have identified impairments, which are not shown on the map. Assessments of Marine Aquatic Life Use and Recreation are among the use categories used to generally quantify condition of Long Island Sound relative to meeting designated uses. Because evaluation procedures and segmentation are often revised or adjusted, and procedural changes were made between 2004 and 2006, trend analysis is not straightforward and not necessarily representative of a trend. Marine Aquatic Life Use support, based on water quality condition such as dissolved oxygen concentration, was not attained in 39% of the 613 mi² of waters and rose to 47% in 2006, primarily because of adjustments in segmentation of the Sound. Recreational Use non-support was 4% in 2004 and 3% in 2006 for 613 mi² of waters, although only 154 mi² of waters are assessed for recreational use (swimming), i.e., beach areas. Because this evaluation is done biennially, there is no update for 2007.

Indicator 2. Water Quality: Square Miles of LIS with Unacceptable Hypoxia Levels

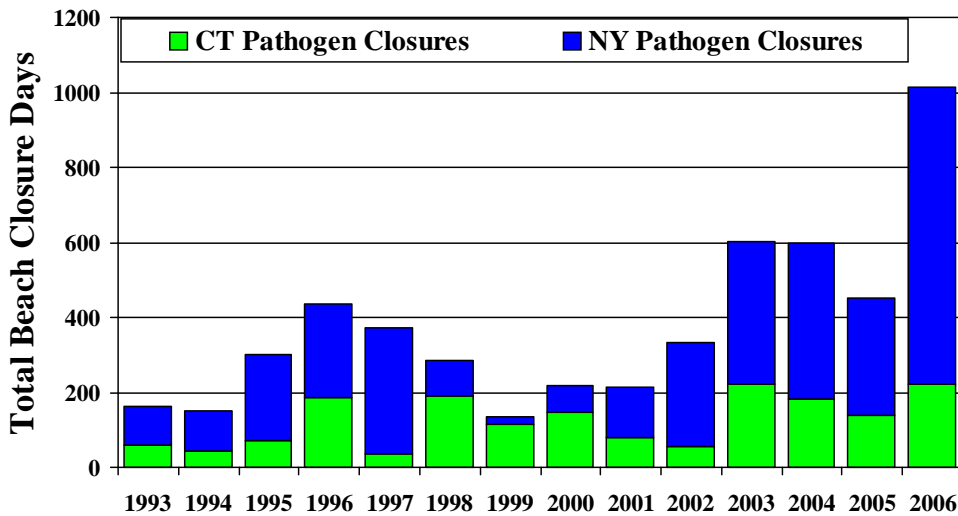


Story Behind the Baseline: Hypoxia, the condition of low levels of dissolved oxygen, impacts up to half of the Sound’s bottom waters each summer. The primary cause is

excess nitrogen, which enters the sound through a variety of sources. Primary sources include sewage treatment plants, nonpoint sources (e.g., from lawns, septic systems and farms), atmospheric deposition (e.g., from Midwestern power plant emissions of nitrogen oxides) and stormwater runoff (e.g., urban area runoff). Both the categorical and geographic boundaries among these sources may be blurred, as they integrate in rivers that deliver the nitrogen to Long Island Sound from throughout the watershed. Nitrogen is also found as a natural component of the Sound’s physical environment, but human sources have greatly enriched the load of nitrogen to the Sound.

The nitrogen stimulates the growth of phytoplankton, microscopic plants that grow in the Sound. Eventually, the phytoplankton ends up as organic enrichment of the Sound’s bottom waters, where it decays and consumes enough dissolved oxygen to create unhealthy low dissolved oxygen, or hypoxia. Of special concern are the 105 sewage treatment plants (STPs) in CT and NY that discharge the largest amount of nitrogen into the Sound or its tributaries, although other nonpoint, stormwater and atmospheric sources will need to be reduced to completely remedy the problem. Biological nutrient removal (BNR), which uses a biological process to remove nitrogen, is being implemented at many STPs. in both states. Since 1990, among the 79 facilities that “trade” nitrogen, 43 projects have been completed that include BNR at varying levels (retrofit, interim and full denitrification projects are implemented), affecting 37 municipalities. The trend towards decreasing nitrogen discharges from both point and nonpoint sources is evident.

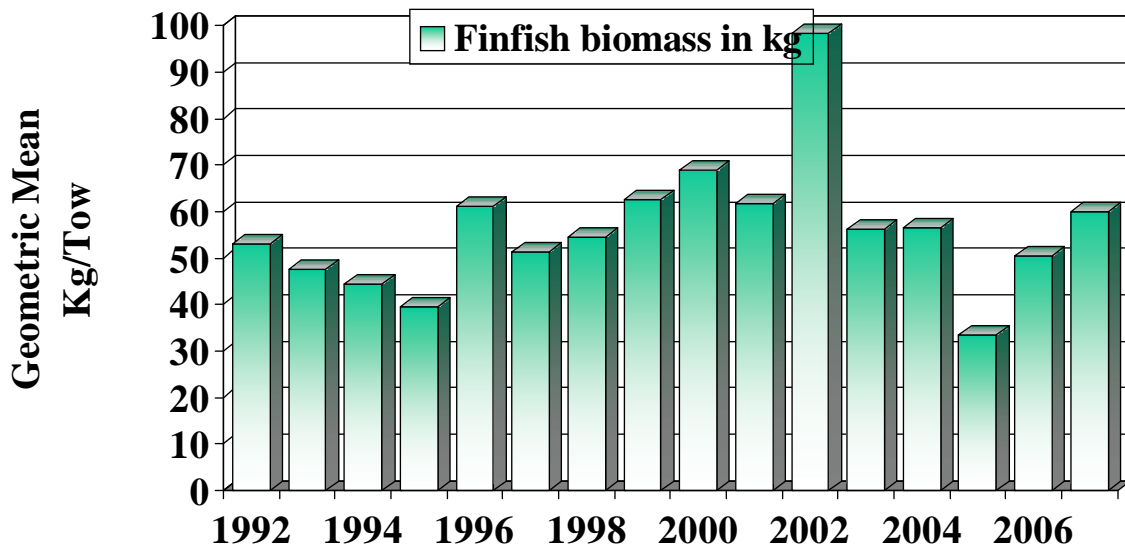
Indicator 3. Water Quality: Number of Beach Closings



Story Behind the Baseline: There are 240 monitored bathing beaches along Long Island Sound, 131 in Connecticut and 109 in New York, that provide valued recreational opportunities. Bathing beaches are closed when either 1) the results of water quality monitoring exceed an established safe level; or 2) an administrative closure shuts down a beach after significant rainfall events

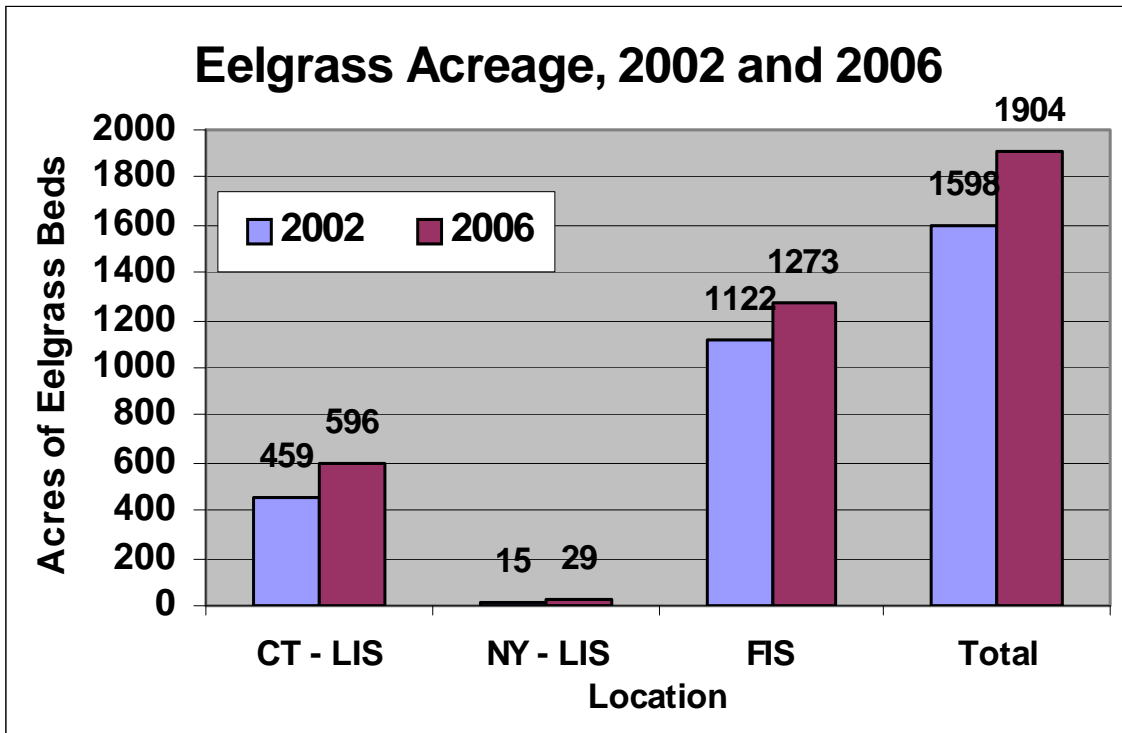
because of combined sewer overflows and/or stormwater runoff. Yearly variations in closures are a product of rainfall patterns and incidents such as sewer-line ruptures. In 2006 CT experienced 222 closure days, equaling the high for the period of record observed in 2003. This represents less than 2 % of the total available user days in CT (14,400 user days are available for CT’s 131 public beaches). Closure data for 2007 should be available in the next month.

Indicator 4: Living Resources: Fish Biomass Index



Story Behind the Baseline: Each year CT DEP conducts spring and fall trawl surveys throughout Long Island Sound. These surveys count the number of species and number of fish collected in by a 46-foot otter trawl. The finfish biomass index is the average overall weight of fish caught in a trawl. CT DEP’s trawl survey has collected data over the last ten years showing an overall biomass increase in recent years largely due to numbers of scup. Several reasons factor into the mix that certainly includes the role of managed species increasing in abundance in response to fisheries management measures. These include black seabass, scup, summer flounder, striped bass, and weakfish. Reasons behind the increase in some of the other species become more speculative, but most are warm temperatures that may be expanding their range northward. They include hickory shad, menhaden, moonfish, northern searobin, smallmouth flounder, spotted hake, and striped searobin. The 50 kg/tow observed in 2006 is slightly below the long-term average, but well above the 30 kg/tow observed in 2005. In 2007, 60 kg/tow were collected, the highest level since 2002, indicating a fairly steady level for this index over the last many years in the Sound for this indicator.

Indicator 5: Habitat Restoration



Story Behind the Baseline: Eelgrass is submerged aquatic vegetation that provides nursery habitat for shellfish and finfish and is an indicator of good water quality. The indicator has been revised this year because the earlier, 1993/94 mapping, was done via boat and divers sampling at points (but not systematically mapping the full extent of all eelgrass beds). So, direct comparisons to the 2002 and 2006 data are not possible. Comparing the three broad geographic areas surveyed in 2002 and 2006, i.e., CT portions of LIS, NY portions of LIS (North Shore of Long Island), and Fisher’s Island Sound (FIS), there appears to be a slight trend upward in all three areas. About one-third of the increase is related to an increase in eelgrass area in Niantic Bay. Favorable weather conditions over the past few years may have contributed to the increase, but it is not yet clear that this trend in the Niantic beds will continue. While beds were not mapped in the 1980’s, it is readily apparent that significant declines occurred in embayments between the 1980’s and today’s condition. Examples of embayments with significant long-term declines include Clinton Harbor, Niantic River, Poquonnock River, Mystic Harbor, Stonington Harbor and Little Narragansett Bay. For Fisher’s Island Sound embayments with discharges from sewage treatment plants, i.e., Mystic Harbor, Stonington Harbor and Little Narragansett Bay, eelgrass beds are virtually absent.

What would it take to succeed?

What are your strategies to improve performance in the next two years and why?

Protecting, restoring, and enhancing the environmental quality of Long Island Sound involves many partners, including the Connecticut Department of Environmental Protection, the New York State Department of Environmental Conservation, US EPA including the Long Island Sound Study and its partners, US Fish and Wildlife, coastal municipalities, other states in the Connecticut River drainage basin (MA, NH, VT), citizens of the watershed and environmental advocates.

Some of the efforts needed to continue improvements to LIS include:

- Continue to reduce nitrogen loading to the Sound from both point and nonpoint source (NPS) discharges
- Revise the CT-NY Long Island Sound Total Maximum Daily Load Analysis to update nitrogen reduction targets, including out-of-state sources
- Continue to separate combine sewer overflows (CSOs)
- Reduce NPS bacteria inputs through improved management practices for stormwater and septic systems
- Manage coastal development in a sustainable manner
- Address global warming and prepare for impacts associated with potential sea level rise and adaptation
- Continue to increase public awareness of non-point sources of nitrogen

What is the role of state government?

- Provide incentives and a predictable funding stream through the CT Clean Water Fund to upgrade sewage treatment plants to reduce nitrogen loading.
- Improve management practices to minimize nitrogen input from runoff of fertilizers and consider improved regulatory controls on their use.
- Work with municipalities in urban areas to fully implement the Small Municipal Separate Storm Sewer System (MS4) permitting program to reduce bacteria and other pollutants.
- Implement the Regional Greenhouse Gas Initiative (RGGI) and other measures to help curb global warming.
- Continued participation in the Long Island Sound Study and Long Island Sound Stewardship Initiative

Connecticut Appropriations Committee RBA Template
Part I, Quality of Life (Population) Result

Appendix A, Data Development Agenda: Priorities for new or better indicator data

- Enhance monitoring for nitrogen from all sources, including out-of-state riverine sources, nonpoint source and stormwater runoff, and atmospheric deposition
- Regular mapping of eelgrass beds

Connecticut Appropriations Committee RBA Template

Part I, Quality of Life (Population) Result

Appendix B, Funding Details

Summary Table - Based on 2007 Actual Expenditures			
Key Funding Information - Population - Healthy Long Island Sound			
Total Current Funding*			unknown
Funding Distribution			
- Total Federal Funds**			8,102,100
- Total State Funds**			753,800
- Capital Projects Subtotal**			113,000,000
- Other Funds (Not Federal or State) for DEP = Special Revenue Funds**			1,227,150
*Notes: Total funding from all sources is currently not available to the department.			
**Notes: Funds represent only those funds managed by DEP			
Projected Changes in Federal and Non-Governmental Funds for Next Fiscal Year:			
- Federal Clean Water Grants have decreased each year; FY07 award was \$13M, FY08 award is \$8M.			
Examples - funding from federal government agencies that benefit Long Island Sound, which may include -			
- federal funds supplied to other states (example - New York)			
- federal funds to municipalities			
- federal funds to private industry			
- federal funds spent directly by federal agencies (EPA, Commerce, Interior) related to Long Island Sound			
Other sources of funding that may benefit Long Island Sound include -			
- direct municipal funding			
- direct industrial funding to reduce discharges that impact the Sound			
- various private and academic research projects			

FY'06 Actuals			
Key Funding Information - Population - Healthy Long Island Sound			
Total Current Funding*			unknown
Funding Distribution			
- Total Federal Funds**			8,041,200
- Total State Funds**			1,085,000
- Capital Projects Subtotal**			90,530,000
- Other Funds (Not Federal or State) for DEP = Special Revenue Funds**			1,007,000
Projected Changes in Federal and Non-Governmental Funds for Next Fiscal Year:			
- Federal Clean Water Funds to support wastewater construction are being reduced significantly; estimated EPA CWF reduction for FY'07 = 25% reduction; CT reduction est @ \$4.0M			
*Notes: Total funding from all sources is currently not available to the department.			
Examples - funding from federal government agencies that benefit Long Island Sound, which may include -			
- federal funds supplied to other states (example - New York)			
- federal funds to municipalities			
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- direct municipal funding			
- direct industrial funding to reduce discharges that impact the Sound			
- various private and academic research projects			
**Notes: Funds represent only those funds managed by DEP			

Connecticut Appropriations Committee RBA Template

Part I, Quality of Life (Population) Result

Details - Based on 2007 Actual Expenditures			
Key Funding Information - Population - Healthy Long Island Sound			
Total Federal Funds			
- Coastal Management (Commerce/NOAA)		\$	1,947,200
- Coastal Monitoring (EPA)			119,900
- LIS Study (EPA), includes LIS Restoration grant			2,396,200
- Lobster Assessment/Monitor/Study (Commerce/Fisheries)			176,500
- LIS Habitat Restoration (EPA)			0
- Water 106 Program (EPA @ 50%)			1,113,200
- Non-Point Source Implementation (EPA)			1,139,100
- Federal Clean Water Fund (EPA), recent annual grant level		in bond funds	
- Marine Fisheries (Interior)			498,000
- Boat Pumpout Stations/Waste Facilities (Interior)			712,000
Total Federal Funds		\$	8,102,100
Total State Funds			
- General Fund Personal Services (GF staff coding to LIS)			679,300
- General Fund Other Expenses (coded to LIS)			74,500
Total General Funds		\$	753,800
Special Revenue Funds			
- EQ Fee Funds (to LIS)			486,800
- EC Fee Funds (to LIS)			409,450
- LIS Plate Account			330,900
Total Special Revenue Funds		\$	1,227,150
Bond Funds*			
- Clean Water Bonds (grants, loans, prog admin)*			100,000,000
- Federal Clean Water Fund Grant 2007			13,000,000
Total Bond Funds		\$	113,000,000
- Total Non-Governmental Funds			unkown
Grand Total of Identified Funding		\$	123,083,050
*Notes: Clean Water Bonds represents the August 2006 lump-sum allocation of \$20M General Obligation bonds and \$80M of Revenue Bonds. This amount includes grants, loans, program admin, nitrogen credits and LIS related grants.			
All funding sources represent only those funds managed by DEP.			

Connecticut Appropriations Committee RBA Template

Part I, Quality of Life (Population) Result

Details - FY'06 Actuals			
Key Funding Information - Population - Healthy Long Island Sound			
Total Federal Funds			
- Coastal Management (Commerce/NOAA)		\$ 2,225,300	
- Coastal Monitoring (EPA)		125,000	
- Beach Monitoring (EPA)		17,000	
- LIS Study (EPA), includes LIS Restoration grant		1,620,000	
- Lobster Assessment/Monitor/Study (Commerce/Fisheries)		136,000	
- LIS Habitat Restoration (EPA)		7,000	
- Water 106 Program (EPA @ 50%)		1,584,300	
- Non-Point Source Implementation (EPA)		1,083,200	
- Federal Clean Water Fund (EPA), recent annual grant level		see bond funds	
- Marine Fisheries (Interior)		389,000	
- Boat Pumpout Stations/Waste Facilities (Interior)		854,400	
Total Federal Funds		\$ 8,041,200	
Total State Funds			
- General Fund Personal Services (GF staff coding to LIS)		1,035,000	
- General Fund Other Expenses (coded to LIS)		50,000	
Total General Funds		\$ 1,085,000	
Special Revenue Funds			
- EQ Fee Funds (to LIS)		220,000	
- EC Fee Funds (to LIS)		292,000	
- LIS Plate Account		495,000	
Total Special Revenue Funds		\$ 1,007,000	
Bond Funds*			
- Clean Water Bonds (grants, loans, prog admin)*		87,000,000	
- Clean Water Bonds (LIS grants/nitro credits)		3,530,000	
Total Bond Funds**		\$ 90,530,000	
- Total Non-Governmental Funds		unkown	
Grand Total of Identified Funding		\$ 100,663,200	
*Notes: Clean Water Bonds represents the January 2006 lump-sum bond allocation.			
Federal CWF annual grants have recently averaged between \$13M - \$16M, but the Presidents FY'07			
Federal Budget calls for a reduction of approximately 25% or about a \$4.0M reduction to \$9.0M.			
Total annual CWF bond fund expenditures between 1989 and 2005 ranged between \$49.9M and \$112.2M.			
All funding sources represent only those funds managed by DEP.			

Connecticut Appropriations Committee RBA Template

Part I, Quality of Life (Population) Result

Appendix C, Information and Research Agenda

- Research on factors affecting health and distribution of eelgrass beds
- Develop baseline and trend analysis for capturing the effects of temperature increase and sea level rise
- Research on new methods for nitrogen source reductions affecting the Sound.