APPENDIX D

Demonstration and Implementation Projects

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PECONIC ESTUARY PROGRAM

FEDERALLY AND STATE-FUNDED

DEMONSTRATION AND IMPLEMENTATION

PROJECTS

PEP Program Office
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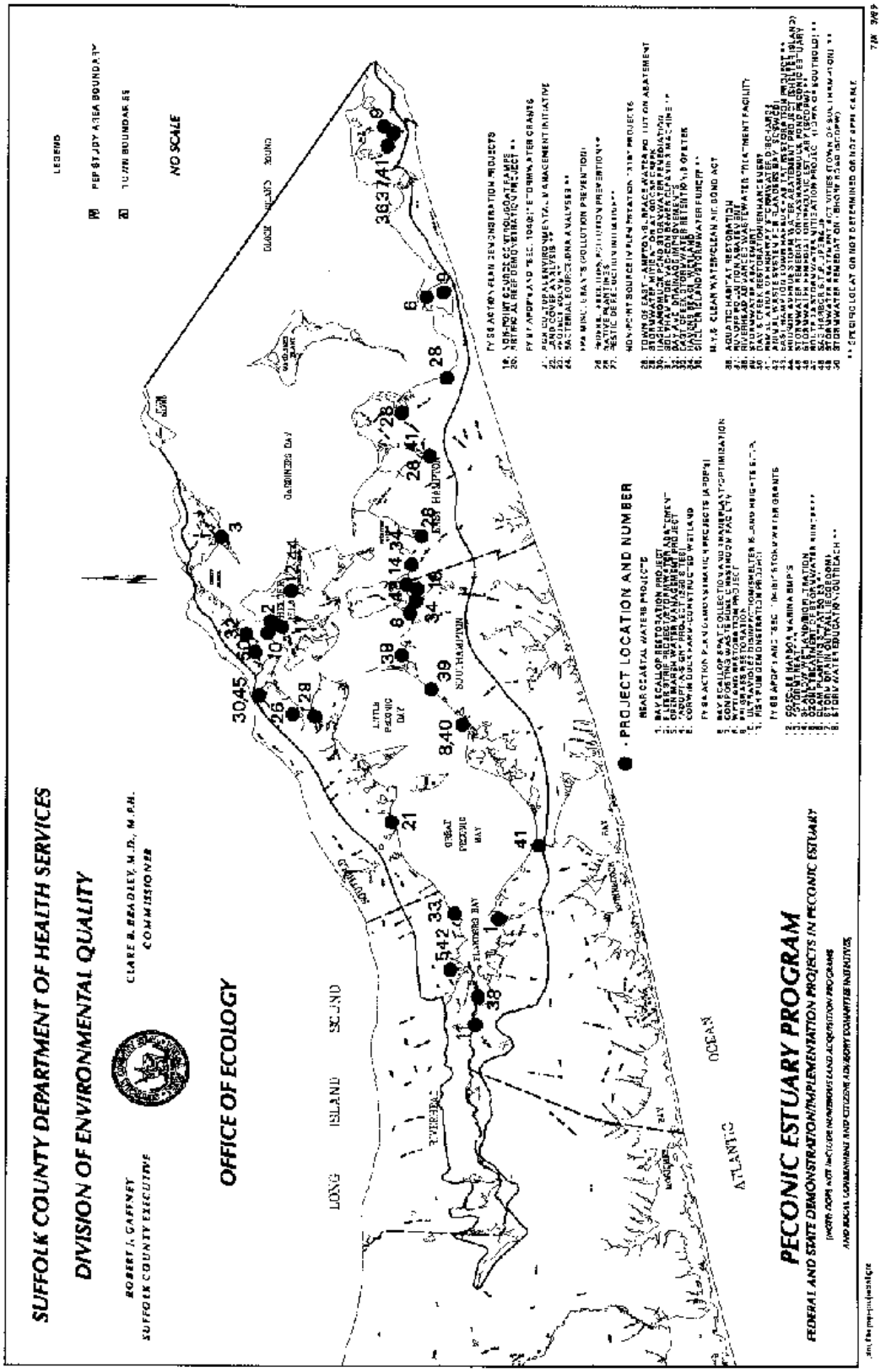
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DIVISION OF ENVIRONMENTAL QUALITY
OFFICE OF ECOLOGY
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LEGEND
PEP STUDY AREA BOUNDARY
TOWN BOUNDARIES
NO SCALE
LONG ISLAND SOUND
ATLANTIC OCEAN
GARDINERS BAY
GREAT PECONIC BAY
SOUTHAMPTON
EAST HAMPTON
RIVERHEAD
FLANDERS BAY
PROJECT LOCATION AND NUMBER
NEAR COASTAL WATERS PROJECTS
PEP ACTION PLAN DEMONSTRATION PROJECTS (ADOPTED)
FY 88 ADOPTED - SEC. 104(b)(3) STORMWATER GRANTS
FY 88 ACTION PLAN DEMONSTRATION PROJECTS
FY 88 ADOPTED - SEC. 104(b)(3) STORMWATER GRANTS
PECONIC ESTUARY PROGRAM
FEDERAL AND STATE DEMONSTRATION/IMPLEMENTATION PROJECTS IN PECONIC ESTUARY
AND LOCAL GOVERNMENT AND CITIZENS ADVISORY COMMITTEE INITIATIVES

PECONIC ESTUARY PROGRAM (PEP)
RELATED DEMONSTRATION AND IMPLEMENTATION PROJECTS

The following is a brief description of demonstration and implementation projects for the Peconic Estuary which have been funded since the inception of the PEP. To date, funding commitments to 92 projects have totaled over $13.5 million. In most cases, local match results in significantly greater project resources. A funding list and a map of the project locations are attached. A separate listing of State assisted projects that benefit the Peconic Estuary is included as Table 1; the New York State Clean Water/Clean Air Bond Act and Environmental Protection Fund projects are included on both lists. Not all projects in Table 1 are included on the map.

A) NEAR COASTAL WATERS GRANTS

The PEP was the only Tier IV National Estuary Program (NEP) to qualify for this funding, due to outstanding performance and high-quality proposed projects. All projects are underway or completed.

1) Bay Scallop Restoration Project (Cornell Coop. Ext.)

The objective of this project was to continue to enhance and restore populations of bay scallops in the Peconic Estuary by purchasing and planting seed scallops. Over 100,000 seed scallops were planted in the estuary over several weeks. This project was conducted in Flanders Bay; a draft report indicates that the spring, 1994 seeding was successful. The project was significantly expanded, using a National Marine Fisheries Service grant.

Aside from the immediate benefits of increasing local scallop populations, this project also provided information on the overwintering survival of various size scallop seed, and the survival rate of hatchery raised vs. natural set scallops. This information allowed the development of optimal planting strategies for the future.

2) Filter Strip Project/Stormwater Abatement (Cornell Coop. Ext. & Natural Resources Conservation Service)

Ideally, this project will lower coliform levels enough so that the creek can remain opened to shellfishing at least on a seasonal basis. Marine waters of Long Island are plagued with numerous points of stormwater runoff. This runoff causes declines in marine water quality, deterioration of benthic habitats, and closure of shellfish grounds due to coliform bacteria.

Presently communities are restricted in their ability to mitigate this impact. This is largely due to the cost of installation of the traditionally used leaching rings which cost about $50,000 to install per project.

This project has constructed a grassed filter strip at the headwaters of Gardiners Creek in Shelter Island where State Road 114 contributes stormwater runoff. This project utilized manual labor to install the filter strip so that stormwater runoff would be distributed to a larger infiltration area that would prevent it from point sourcing via a natural swale to the creek. Data documenting the effectiveness of the filter strip system is being collected. If this simple technology is proven effective, it may be implemented at additional selected sites within the estuary.

3) Open Marsh Water Management (Cornell Cooperative Extension)

By filling, and occasionally diverting, mosquito control ditches, this approach will restore wetlands and allow these habitats to act as a more efficient filter of both nutrients and coliform bacteria. Through this project, a portion of the approximately 300 acres of State-owned tidal wetlands at Long Beach Bay in Orient will be restored by using Open Marsh Water Management (OMWM).

Under OMWM, most ditches in the tidal marshes would be plugged, restoring the water table to pre-ditching levels. As a result, conditions in the marsh will favor desirable, native vegetation. Marsh pools and ponds would no longer be drained, improving habitat for waterfowl and other wildlife. In addition, recent studies suggest that OMWM can reduce the export of wildlife-source coliform bacteria from the marsh. This could help improve water quality in the area, where certain shellfish beds have been recently closed as a result of fecal coliform contamination. Additional benefits may include a reduction in coliform inputs to adjacent shellfishing areas.

The original PEP project proposal has been significantly expanded, as NYSDEC has been awarded $235,000 from the U.S. Fish & Wildlife Service for the project. This funding has also been contracted to Cornell Cooperative Extension.

4) Adopt-a-Sign Program (PEP Citizens Advisory Committee)

This project consists of posting signs to alert people to the fact that they are in the Peconic Estuary watershed. The signs include posters in plexi-glass, with an educational brochure integrated into the design. They have been distributed at over 250 locations.

5) Corwin Duck Farm — Constructed Wetland Treatment System (Natural Resources Conservation Service and Suffolk County Soil and Water Conservation District)

On the Corwin Duck Farm, a wetland was constructed to decrease the amount of nitrogen and possibly pathogens entering the bay from Meetinghouse Creek. Historic duck farm pollution to Meetinghouse Creek has resulted in local and regional adverse impacts. This treatment system is expected to significantly improve the quality of duck farm wastewater and may serve as a model for other animal waste treatment systems. Construction for the program has been completed, and the wetland is operating.

B) FEDERAL FY94 ACTION PLAN DEMONSTRATION PROJECTS

Again, the PEP was the only Tier IV NEP to receive this funding due to the progress of the program. Projects have been selected, and contracts have been issued. These projects are underway or completed.

6) Bay Scallop Spat Collection and Transplant/Optimization (East Hampton)

This project is designed to accelerate scallop reproduction at Napeague Harbor in East Hampton. This project will demonstrate and assess certain criteria for the establishment of a Bay Scallop (*Argopecten irradians*) spat collection field adjacent to historically productive eelgrass (*Zostera marina*) beds in Napeague Harbor. This field will be located in such a way as to entrap scallop spat entrained in a tidal flow which would ordinarily be swept out of the harbor to areas less desirable for survival. The spat collection system will be assessed for optimal deployment timing and position in the tidal stream and water column.

A technologically enhanced spat collector design, to replace the common onion bag, will be used to improve mechanical harvesting. Animals will be retrieved from the collectors for artificial rearing and subsequently reintroduced to prime natural nursery sites when their increased size justifies a greater change of survival. The project attempts to demonstrate the effectiveness of collection, rearing, and reintroduction of otherwise lost juvenile scallops as a management approach to the problem of reestablishment of viable reproductive populations following catastrophic events.

7) Composting Waste Public Restroom (East Hampton)

This project will mitigate potential nutrient and pathogen pollution from a public restroom at South Lake Montauk Bathing Beach. The Town of East Hampton proposed to construct a composting waste restroom facility for the South Lake Montauk Bathing Beach. The proposal is to design, construct, maintain, and monitor a public beach comfort station utilizing a compostable waste reduction system. The facility will replace the existing comfort station and will be designed to comply with the Americans with Disabilities Act, the New York State Building Code, the Suffolk County Department of Health Services Standards, Town planning and design standards, and all other applicable regulations.

8) Wetland Restoration Initiative (Southampton Town and Cornell Cooperative Extension)

This project will restore critical habitat and pollution buffer areas at a site in Southampton. Wetland restoration is a newly-emerging field that promises to recapture significant wetland area that has been lost to dredge and fill activities or other destructive activities. In order to successfully restore a wetland, there must be a basic understanding of the physical and biological processes that control the formation and stability of that wetland system. Successful projects require site assessment data collection before construction, preparation of a practicable restoration plan, active management during construction, and intensive monitoring after completion of restorative activities. This project will demonstrate ways in which human-induced impacts can be mitigated. Also, the restoration project provides the perfect framework for educating students and concerned citizens alike in general wetlands ecology and demonstrating the feasibility of such a project in other areas of the estuary system. This proposal is being augmented with a U.S. Fish & Wildlife Service grant to conduct the efforts at Paynes' Creek.

9) Eelgrass Restoration (East Hampton Town and Cornell Cooperative Extension)

This project will restore critical habitat at a site in East Hampton. The project will carry out an intensive eelgrass planting program as well as an eelgrass bed survey in East Hampton. Bottomland in East Hampton harbors will be surveyed to determine suitability for planting, then an actual planting program will be carried out whereby eelgrass shoots will be planted on the bottom. The planting technique, density, and suitability of donor plants will be based on the results of a pilot-scale demonstration eelgrass program presently taking place in East Hampton. Additionally, eelgrass seeds will be collected in order to establish an eelgrass seed bank and for use in planting additional bottomland in this project. This project is being carried out and coordinated by the Marine Program of Cornell Cooperative Extension and the East Hampton Natural Resources Department, and is being conducted in conjunction with the PEP Eelgrass Habitat Criteria Study (EEA, Inc.).

10) Ultraviolet Disinfection Pilot Project (Shelter Island and Cornell Cooperative Extension)

This project has demonstrated the elimination of potentially harmful chlorine disinfection at the Shelter Island Heights sewage treatment plant. There are presently ten sewage treatment plants located in the watershed of the Peconic Estuary, four of which discharge directly to surface waters. While sources of nitrogen from these sewage treatment plants have had much discussion recently, control of coliform bacteria (and the pathogenic organisms they indicate) is another important aspect of these sewage treatment plants. While chlorination provides for disinfection to protect public health, there is a potential negative environmental impact from chlorine and chlorinated compounds entering marine surface waters.

An alternate method of disinfection of sewage treatment plant effluent is through the use of ultraviolet (UV) light. UV light adds nothing to the water column and is effective as a germicide because of photochemical damage to RNA and DNA within the cells of an organism. Disinfection of sewage treatment plant effluent by UV has the potential to not only protect public health, but to also improve water quality and habitat in the Peconic Estuary by eliminating the harmful environmental side effects of chlorination.

11) Fish Run Demonstration Project (NYSDEC)

This project tested feasibility of restoring alewife runs over dammed areas of the Peconic River. Alewives and rainbow smelt are an important food source for many commercially and recreationally important species. The Peconic River, the site of this demonstration project, has been identified as a stream which historically provided runs for these fish. A pilot project for restoration has been implemented. Re-establishment of this run would provide prey items in freshwater and marine environments, as well as added recreational and possible commercial opportunities. While the initial pilot was unsuccessful, NYSDEC hopes to re-test the project.

C) FEDERAL FY95 DEMONSTRATION/IMPLEMENTATION PROJECTS (ACTION PLAN DEMONSTRATION PROJECTS AND CLEAN WATER ACT, SECTIONS 104(b)(3) AND 319 FUNDING)

While other Tier IV NEP's qualified for $65,000 in funding, the PEP received almost $150,000 when EPA and NYSDEC identified additional funding sources. The additional funding was, again, due to outstanding program performance and high-quality proposals. The projects have been selected, and contracts have been issued.

12) "Stormtreat" Stormwater Quality Management (Contractor)

The "Storm-Treat" technology will be tested at a site to be selected within the Peconic Estuary. This technology, which captures and treats pollution (*e.g.*, sediments, nutrients, bacteria) in the first flush of rainfall through several physical and chemical processes, involves installation of a sedimentation chamber with an overflow into a created wetland.

13) Shallow Wetland/Biofiltration (Cashin Associates)

A shallow wetlands system is being constructed and planted at Havens Beach at Sag Harbor. The system, which will consist of a sediment sump and emergent wetlands area, will act as a "biofilter," creating wetlands habitat while preventing sediments, nutrients, and bacteria from entering the bay.

14) Ozone Treatment of Stormwater Runoff (Cornell Cooperative Extension)

The use of ozone treatment technology to disinfect stormwater runoff will be tested. The project will include site selection, engineering, installation, and testing.

15) Storm Drain Outfall (Eco-Boom Marine Control)

Eco-Boom has installed its "boom" containment device to trap pollution which discharges from a storm drain at Gardiners Creek, Shelter Island. A durable, fine-mesh netting will be suspended from a boom at the water surface and anchored to the bay bottom. The boom will prevent suspended solids, bacteria, and debris from being washed out of the containment area. Preliminary test results show excellent performance in reducing coliform levels.

16) Stormwater Education/Outreach (Cornell Cooperative Extension)

Cornell Cooperative Extension will perform outreach sessions for local governments, conveying the utility of stormwater management efforts tested under 104(b)(3) and other PEP demonstration initiatives.

17) Coecles Harbor Marina — Best Management Practices (New York Sea Grant/Coecles Harbor Marina

A series of best management practices will be implemented at Coecles Harbor Marina. These include stormwater runoff mitigation and implementation of various procedures, including dustless sanding and improvements in waste oil and washdown water processing. Sea Grant will implement the educational and demonstration aspects of the project.

18) Clam Planting Strategies (Cornell Cooperative Extension)

Cornell Cooperative Extension will perform an analysis of machine-planted hard clams vs. hand-planted clams. The project will result in a resource restoration benefit in terms of clam stocks and will provide invaluable information for future seeding efforts.

D) FEDERAL FY96 ACTION PLAN DEMONSTRATION PROJECTS

$75,000 in Federal fiscal year 1996 funds have been provided to the PEP. The funding is being used to conduct the following demonstration projects.

19) Nonpoint Source Pollution Control at Boat Ramps (Cashin Associates)

Nonpoint source best management practices are being demonstrated at two public boat ramp sites in the Sag Harbor Cove area (Amherst Road and John Street), mitigating direct stormwater runoff at those sites. This highly visible project will result in water quality benefits, public education and outreach, and model site plans which will be developed and disseminated to Towns.

20) Artificial Reef Demonstration Project (Cornell Cooperative Extension)

Artificial reefs, using removable "reefballs," have been proposed for two sites to be determined in the Peconic Estuary. The reefballs are intended primarily to create additional habitat, while also providing recreational opportunities (diving, fishing, etc.).

E) FY97 ACTION PLAN DEMONSTRATION PROJECT AND "SEC. 104(B)" GRANTS ($207,519)

21) Agricultural Environmental Management (A.E.M.) Initiative (Suffolk County Soil & Water Conservation District)

Using the A.E.M. approach, a comprehensive inventory and analysis is being conducted for all farms within the watershed to assess the impact and potential impact the farms may have on the Peconic Bay Estuary and shallow aquifer. Plans will be developed for high priority farms and best management practices implemented based upon future funding. A total of 13 farms within the watershed will implement high priority best management practices. $163,920 in Environmental Protection Fund monies have been awarded to the Suffolk County Soil and Water Conservation District to augment the existing PEP grant of $30,000 for this project.

22) Land Cover Analysis (NYS Department of State)

Land cover analysis using state-of-the-art remote sensing and satellite interpretation techniques, coupled with field verification of land cover types, will be analyzed for critical areas of the PEP watershed. This information will be used in refining stormwater modelling efforts and in developing land cover trends analyses based on historic satellite imagery. These status and trends analyses will also be useful for several habitat and living resources initiatives.

23) Project SOLVE (Save the Peconic Bays, Inc.)

The goal of Project SOLVE (Promoting Sustainability-Ownership-Leadership Values in Environmental Education) is to build the capacity of regional schools (elementary through high school) to deliver environmental education that fosters sustained student critical thinking, decision-making, and hands-on problem solving around real-life issues in student homes/schools. The project uses the PEP Children's Conference format and student home/school environmental audits over a two-year period as catalysts for community learning and community change. Objectives of Project SOLVE are using the 1998/1999 PEP Children's Conferences and preconference activities to: 1) partner with EPA staff and other local agency officials in teaching educators applied environmental audit techniques; 2) support teaching of these skills in the classroom; 3) assist teachers/students during an audit research phase, and the change-oriented decision making, planning, and action period; 4) empower networking via a Save the Peconic Bays-hosted Internet chat group; and 5) structure the conferences to teach/model teamwork and regional collaboration. Year 1 targets audit projects in student homes/schools. Year 2 fosters more advanced analysis and local/regional problem solving. Media outreach will promote intergenerational public dialogue over key issues raised by student data.

24) Bacterial Source/DNA Analyses (Cornell Cooperative Extension)

As a means to identify coliform sources, a DNA library, specific to eastern Long Island, will be developed based on *Escherichia coli* isolated from the scat of animals (including human fecal material). The DNA library will consist of "genetic fingerprints" determined by contour-clamped homogenous electric field (CHEF) pulsed field gel electrophoresis (PFGE) for each strain of *E. coli* isolated. Once the DNA library has been established, it will be used to catalogue and identify sources of fecal pollution. Key among these will be the identification of coliform source(s) in water samples from closed shellfish areas in order to determine the most appropriate mitigation strategy to permit the reopening of these areas. The new *E. coli* DNA library for species from Long Island will be compared to the

E. coli DNA library that has been established from animals located in Virginia. Comparisons will be made for differences and similarities of like species based on geographical origin. Once the source of contamination is known, then the information can be used by managers to more effectively develop nonpoint source pollution mitigation strategies that are tailored to the specific causative animal or animals, including humans.

F) MISCELLANEOUS GRANTS (POLLUTION PREVENTION) ($57,500)

25) Federal Facilities/Pollution Prevention (EPA)

EPA has received funding to develop an inventory of Federal facilities and environmental practices (excluding Brookhaven National Laboratory). This information will be used to assess impacts and to develop management strategies and best management practices.

26) Peconic Estuary Native Plantings Initiative (Cornell Cooperative Extension)

With the funding provided, native plantings were established at two public spaces (Southampton and Southold Town Halls) in the watershed in areas highly visible to year-round and seasonal residents, business owners, municipal officials, students, and visitors. These plantings were established as living workshops where both adults and youth can learn about the diversity of native plants and their beauty, hardiness, and suitability for landscaping purposes. These plantings will also serve as reference sites where watering, maintenance, and pesticide and fertilizer inputs vs. traditional landscaping practices will be measured. Information on the plants and where to buy them would be available at each location. The public will be encouraged/challenged to establish native plantings at their homes, businesses, and in public spaces. The number and areal extent of such plantings at homes/businesses/public spaces will be counted through surveys and other appropriate means (such as having interested participants register their native plantings) and estimates of reduced water, maintenance, and fertilizer inputs will be measured directly or estimated based on the reference sites and surveys.

27) Peconic Estuary Pesticide Reduction Initiative (Cornell Cooperative Extension)

Training workshops are being conducted to directly assist farm managers in acquiring "scouting" expertise to identify pests, determine if threshold populations of pests are present, and make appropriate decisions/recommendations of when to apply pesticides. When no other control strategies are available, growers will consider environmental characteristics such as persistence, toxicity, leaching potential, and runoff potential when selecting pesticides. In addition, growers will learn specific pest biology, cultural practices, and sanitation and forecasting systems to improve pest management. Direct technical assistance in the field will be provided. Pre-training and post-growing season surveys will be conducted of all participating farms to determine changes in pest management practices. An in-depth evaluation of pesticide use and other pest management practices will be conducted with several participating growers to compare IPM practices to standard scheduled applications. Measurements of pesticide usage including number of applications and rates will be quantified.

G) NONPOINT SOURCE IMPLEMENTATION PROJECTS (CLEAN WATER ACT, SECTION "319")

The "319" projects are funded by NYSDEC, using Federal money awarded under section 319 of the Clean Water Act (nonpoint source implementation). Suffolk County was historically unsuccessful in obtaining 319 funding. However, due to prioritization in the NEP, the PEP has now received several 319 grants; additional 319 funding is anticipated in the future.

28) Surface Water Pollution Abatement (Town of East Hampton)

The system of dams in Accabonac Harbor and Northwest Creek are being expanded, and two new dams are being installed in the watersheds of Fresh Pond and Three Mile Harbor to reduce runoff into these tidal embayments. Funds will also be used to improve monitoring of water quality in these areas and test effectiveness of the Open Marsh Water Management.

29) Stormwater Mitigation (Goose Creek, Southold)

Stormwater runoff mitigation systems will be constructed at five locations in Goose Creek, a tributary of Southold Harbor. The project will improve water quality, potentially enough to allow shellfishing in the creek on a year-round conditional basis.

30) Stormwater Remediation (Hashamomuck Pond, Southold)

Stormwater runoff mitigation systems will be constructed in three areas of Hashamomuck Pond, a 170-acre tributary to the Peconic Estuary. The project will be monitored for effectiveness, and is expected to improve shellfishing conditions in the area.

31) Vac-Con Sewer Cleaning Machine (Southampton Town)

As a result of Southampton Town's two million dollar Clean Water Bond Act, approximately 330 leaching basins will be installed to mitigate stormwater runoff. The grant award will be used to purchase catch basin maintenance equipment, which will be critical to the long-term success of the treatment systems. The maintenance equipment will extend the life expectancy of the systems beyond the normal expectancy of fifty to seventy-five years.

32) Drainage Improvements (Bay Avenue, Greenport, Southold)

The project will provide treatment via slow sand filtration to stormwater runoff entering Stirling Basin from the existing Bay Avenue drainage system. The watershed consists of 65 acres in the village of Greenport, draining to Stirling Basin, a 55-acre bay.

33) Stormwater Retention/Biofilter (East Creek, Riverhead)

This project will construct a stormwater collection, storage, filtration, and treatment system for the mitigation of water pollution due to highway runoff. A 1.5-acre grading and drainage easement will be obtained, and eight catch basins, a 2,000 cubic yard retention basin, and an 1,800 square yard reed bed will be constructed. Aquatic plants will absorb nutrients from upstream nonpoint sources, suspended solids will settle, and bacteria will die off.

34) Construction of a Wetland (Village of Sag Harbor)

This will reduce stormwater discharges into Sag Harbor Bay, which is part of the Peconic Estuary System.

35) Redirect Stormwater Runoff (Shelter Island)

Stormwater runoff which now flows from many of the Town's roads directly into surface waters will be redirected. Infiltration basins with associated curb inlets, catch basins, and piping will be installed on 17 streets and roads.

H) N.Y.S. CLEAN WATER/CLEAN AIR BOND ACT*

36) Aquatic Habitat Restoration in Lake Montauk (Town of East Hampton)

This project will reestablish eelgrass beds in the southern half of Lake Montauk, a tidal lake, and cut and remove the common reed along the shoreline to reestablish a high quality fringing marsh. The project will include the initiation of a phragmites control program.

Lake Montauk is a State Significant Coastal Fish and Wildlife Habitat and a nursery for winter flounder and other valuable finfish species. It is also a wintering and feeding ground for waterfowl and home to the bay scallop. Increases in eelgrass beds should improve the depressed populations of scallops. The control of the reeds should enable reestablishment of high quality and diverse marsh species along the shoreline of the Lake.

37) Lake Montauk Runoff Pollution Abatement (Town of East Hampton)

This project will install eighty leaching catchment devices, ten infiltrators, and five adjustable weirs at twenty collection points to control pathogens and other pollutants from stormwater runoff that are resulting in shellfish bed closures and reductions in eelgrass beds in the Lake Montauk portion of the proposed project area.

These waters support significant shellfish beds. Pathogens and other pollutants from stormwater runoff have caused closure of these beds and precluded the harvesting of shellfish. This project, together with two other projects also selected for funding under the Clean Water/Clean Air Bond Act, will improve the condition of this system which may allow the reopening of some of the beds.

38) Advanced Wastewater Treatment Facility (Town of Riverhead)

This project will build a 1.4 million gallons per day advanced wastewater treatment facility utilizing Sequencing Batch Reactor technology and ultraviolet disinfection. The project will enable the Town of Riverhead to comply with the conditions of its most recent wastewater discharge permit and reduce the total load of nitrogen to the Peconic Estuary. Funding will be provided in future years for the remainder of the project.

The Peconic River Estuary is a significant recreational and commercial resource. Excessive levels of nitrogen from sewage treatment plants and runoff have increased eutrophication in the estuary, depressed dissolved oxygen and, possibly, contributed to the decline of eelgrass beds. This project addresses the primary point source of nitrogen to the estuary and will improve the condition of the waterbody.

* Project narratives provided by NYSDEC.

39) Stormwater Abatement Activities to Reduce Runoff to Peconic and South Shore Estuaries (Town of Southampton)

This project will install underground stormwater retention and infiltration structures to control pathogens from stormwater runoff that are resulting in shellfish bed closures in Noyac Bay and Wooley Pond. The project was reduced in scope to focus on important shellfish beds in Noyac Bay and Wooley Pond.

These waters support significant shellfish beds. Pathogens from stormwater runoff have caused closure of these beds and precluded the harvesting of shellfish. This project will improve the condition of this system, which may allow the seasonal use of some of the beds.

40) Davis Creek Restoration/Enhancement (Town of Southampton)

This project will create ten acres of restored and new tidal wetlands on four contiguous parcels by removing dredged materials and sand to restore water flow within a Town-owned site located adjacent to the Little Peconic Bay and Davis Creek.

This tidal wetland has historically been home to threatened and endangered species. Past disposal of dredged material has precluded the tidal wetland from functioning as a habitat. This project will fully restore the function of this wetland and all its benefits to the creek. The Davis Creek ecosystem is a significant nesting and feeding area for the State endangered piping plover and least tern, as well as for the threatened osprey, common tern, and diamond backed terrapin, a species of special concern. The creek is also noteworthy as an important commercial shellfish area with hard clams, oysters, and scallops.

41) Remediation of Highway Stormwater Discharge to Peconic Estuary (Suffolk County Department of Public Works)

This project will install recharge basins and in-line leaching basins to control pathogens and other pollutants from stormwater runoff that are resulting in the closures of shellfish growing waters. The scope of the project has been reduced to concentrate on the Lake Montauk, Three Mile Harbor, and Shinnecock Canal portions of the proposed project area.

These waters support significant shellfish beds. Pathogens and other pollutants from stormwater runoff have caused closure of these beds and precluded the harvesting of shellfish. This project, together with two other projects also selected for funding under the Clean Water/Clean Air Bond Act, will improve the condition of this system which may allow the reopening of some of the beds.

42) Animal Waste Treatment System for Flanders Bay (Suffolk County Soil and Water Conservation District)

This project will construct two sealed aeration lagoons and one denitrification tank which will supplement an existing waste treatment system at the Corwin Duck Farm. It will reduce nutrients and pathogens entering Flanders Bay, when excess nitrogen loading has caused stresses (low dissolved oxygen), and where shellfishing is reduced.

43) East Hampton Town Harbor Habitat Restoration (Town of East Hampton)

Aquatic habitat restoration is a priority of the Peconic Estuary Program. Restoring eelgrass beds to improve habitat for scallops is extremely important in the Peconic Estuary because of the devastating effect of Brown Tide blooms to both of these resources over the past ten years. Also, wetlands serve numerous habitat and pollution control functions. This project

will rehabilitate wetland and bottom habitats in East Hampton tidal embayments, particularly: Three Mile, Accabonac, and Napeague Harbors and Northwest Creek. The goals are to restore eelgrass beds in the three harbors and combat *Phragmites* proliferation in 20 acres of tidal wetlands by manual planting and removal, respectively, and by applying open marsh water management techniques to vector control ditches.

44) Hudson Avenue Stormwater Abatement for Coecles Harbor (Town of Shelter Island)

Freshwater wetlands are rare on Shelter Island and this project will increase the wetland acreage. This habitat will be beneficial to various avian species for nesting and feeding such as the red-winged blackbird, common yellowthroat, and marsh wren. Small forage fish will be introduced to control mosquitoes and provide food for wading birds. Nearby shellfish beds will benefit from the improved water quality.

This is a four-phase project to create a freshwater wetlands system to hold stormwater emanating from thirteen up-gradient catchment basins, to improve water quality in Coecles Harbor, and to create a one-acre emergent, forested freshwater wetlands detention basin as a preserve to enhance wildlife habitat and biodiversity. The area will be graded to planting specifications and water control structures will be installed. Plants, interpretative signs, a viewing platform and bird/bat boxes will then be installed.

45) Hashamomuck Pond Stormwater Remediation

This project will acquire approximately 4 acres of land to construct a biological filtration pond to control pathogens and other pollutants from stormwater runoff that are causing shellfish bed closures in Hashamomuck Pond. There is a significant shellfish resource in the Pond, and this effort will mitigate a major coliform source, improving the condition of the system which may allow the reopening of some of the beds.

46) Peconic Estuary Stormwater Remediation

Pathogens and other pollutants from stormwater runoff have caused closure of shellfish beds and precluded the harvesting of shellfish. This project will improve the condition of the system which may allow the reopening of some of the beds. This project will install leaching and retention basins to control pathogens and other pollutants from stormwater runoff that are causing the closures of shellfish growing waters. The scope of the project has been reduced to focus on the Sag Harbor and Coves portion of the project.

47) Route 25 Stormwater Mitigation for Southold Bay

This project will install stormwater mitigation structures at three locations to control pathogens and other pollutants from stormwater runoff that are causing the closures of shellfish growing waters in Southold Bay during part of the year.

48) Sag Harbor Sewage Treatment Plant Upgrade

The Peconic Estuary Program has identified the need to reduce pollutants discharged to the estuary as a priority in order to prevent degradation of water quality. This project will reduce the biochemical oxygen demand and reduce nitrogen discharged to Sag Harbor.

This project will upgrade the existing Sag Harbor sewage treatment plant (STP) by replacing the aeration tanks with sequencing batch reactors. Existing clarifiers will be converted to aerated sludge holding tanks. The upgrading will increase the capacity of the Sag Harbor STP, enhance nitrogen removal, and reduce biochemical oxygen demand in

Sag Harbor Bay. Sag Harbor has been identified as stressed with respect to nitrogen and dissolved oxygen, and the project should assist in alleviating these stresses.

49) Flanders Bay Stormwater Abatement

Southampton Town has launched an aggressive $2 million stormwater mitigation project to minimize coliform, toxics, nutrients, and other pollutants to the estuary. This project will install underground stormwater catch basins to control pathogens and other pollutants from stormwater runoff that are causing the conditional certification of shellfish water in Flanders Bay, augmenting Town funding and remediation efforts in these areas.

50) Southold Bay Stormwater Remediation — Shore Road

Pathogens and other pollutants from stormwater runoff have caused closure of these beds during part of the year and impaired the harvesting of shellfish. This project will improve the condition of this system which may allow the use of the beds year-round.

This project will replace existing catch basins along Shore Road to control pathogens and other pollutants from stormwater runoff that are causing the closures of shellfish beds during part of the year in Southold Bay.

Feb. 2001

Peconic Estuary Program
Related Demonstration/Implementation Projects

PROJECT TITLE	FEDERAL/STATE FUNDING ($)
Near Coastal Waters Grants ($144,385)	
1) Bay Scallop Restoration Project	125,950[1]
2) Filter Strip Project/Stormwater Abatement	10,000
3) Open Marsh Water Management Project	246,385[2]
4) "Saving the Bay" Poster/Pamphlet Project	5,000
5) Corwin Duck Farm — Constructed Wetland	68,000
Action Plan Demonstration Project (APDPs) (FY94) ($75,000)	
6) Bay Scallop Spat Collection and Transplant/Optimization	10,000
7) Composting Waste Public Restroom Facelift	18,730
8) Wetland Restoration Project	36,970[3]
9) Eelgrass Restoration Project (uses $700 in FY95 APDP funds)	20,200
10) Ultraviolet Disinfection/Shelter Island Heights STP	6,800
11) Fish Run Demonstration Project	10,000
FY95 APDP & "Sec. 104(b)" Stormwater Management Grants ($135,000)	
12) Nonpoint Source Pollution Prevention (Coecles Harbor Marina)	47,359[4]
13) Stormwater Quality Management ("Stormtreat")	11,950
14) Shallow Wetland/Biofiltration	19,500
15) Ozone Treatment of Stormwater Runoff	18,850
16) Clam Planting Strategies	29,050
17) Storm Drain Outfall (EcoBoom)	20,000
18) Stormwater Education/Outreach	4,000
FY96 Action Plan Demonstration Projects ($75,000)	
19) Nonpoint Source/Boat Ramps	17,000
20) Artificial Reef Demonstration Project	58,000
FY97 APDP and "Sec. 104(b)" Stormwater Management Grants ($207,519)	
21) Agricultural Environmental Management Initiative[6]	34,500
22) Land Cover Analysis	67,819
23) Project SOLVE	20,200
24) Bacterial Source/DNA Analyses	85,000
EPA Miscellaneous Grants (Pollution Prevention) ($57,500)	
25) Federal Facilities/Pollution Prevention	20,000
26) Native Plantings	20,000
27) Pesticide Reduction Initiative	17,500

PROJECT TITLE	FEDERAL/STATE FUNDING ($)
"Section 319" Nonpoint Source Implementation Grants[5] ($578,700)	
28) Town of East Hampton - Surface Water Pollution Abatement	34,500
29) Stormwater Mitigation at Goose Creek	15,000
30) Hashamomuck Pond Stormwater Remediation	39,000
31) Southampton Vac-Con Sewer Cleaning Machine	180,000
32) Bay Avenue Drainage Improvement	50,000
33) East Creek Stormwater Retention/Biofilter	62,000
34) Village of Sag Harbor - Construction of a Wetland at Havens Beach	157,500
35) Town of Shelter Island - Redirect Stormwater Runoff	40,700
New York State Clean Water/Clean Air Bond Act ($9,647,150)	
36) Lake Montauk and Fort Pond Restoration (Town of East Hampton)	15,000
37) Lake Montauk and Fort Pond Runoff Pollution Abatement (Town of East Hampton)	100,000
38) Wastewater Treatment Facility Construction (1997 and 1998) (Town of Riverhead)	2,922,500
39) Stormwater Abatement Activities (Town of Southampton)	140,000
40) Davis Creek Restoration/Enhancement (Town of Southampton)	25,000
41) Remediation of Highway Stormwater Discharge to Peconic Estuary (Suffolk County Dept. of Public Works)	100,000
42) Animal Waste System for Flanders Bay (SCSWCD)	200,000
43) East Hampton Town Harbor Habitat Restoration (Town of East Hampton)	75,000
44) Hudson Avenue Stormwater Abatement Project (Town of Shelter Island)	196,200
45) Highway Stormwater Remediation to Hashamomuck Pond (Peconic Estuary) (Suffolk County Dept. of Public Works)	600,000
46) Remediation of Highway Stormwater Discharge to Peconic Estuary (SCDPW)	75,000
47) Route 25 Stormwater Mitigation Project (Town of Southold)	45,000
48) Sag Harbor Sewage Treatment Plant Upgrade (1998) (Town of Sag Harbor)	500,000
49) Stormwater Abatement Activities (Town of Southampton)	165,000
50) Stormwater Remediation along Shore Road (Suffolk County DPW)	50,000
51) Wastewater Treatment Facility Construction (1999) (Town of Riverhead)	3,027,500
52) Stormwater Remediation to Peconic Estuary from Mitchell Park (Village of Greenport)	61,450
53) Riverhead Foundation for Marine Research and Preservation Wastewater Treatment (Town of Riverhead)	40,000
54) Sag Harbor Sewage Treatment Plant Upgrade (1999) (Village of Sag Harbor)	1,172,000
55) Sammis Beach Restoration (Town of East Hampton)	137,500
FY00 "Sec. 104(b)" Stormwater Management Grants ($150,000)	
56) Open Marsh Water Management Stormwater Strategy	75,000
57) Downtown Riverhead Stormwater Management	75,000
New York State Environmental Protection Fund ($2,189,450)	
58) East Hampton Town LWRP/LEMP (Town of East Hampton)	60,000
59) Street End Access and Stormwater Mitigation (Town of East Hampton)	25,000
60) Public Outreach and Education (Town of East Hampton)	20,000
61) East Hampton Town Marine and Environmental Science Center (Town of East Hampton)	20,000
62) Coastal Public Education Program (Town of East Hampton)	47,000
63) Scenic Resource Inventory and Analysis (Town of East Hampton)	40,000
64) Landing Lane Road End Refurbishment (Town of East Hampton)	10,000
65) GIS Development (Town of East Hampton)	50,000

PROJECT TITLE	FEDERAL/STATE FUNDING ($)
New York State Environmental Protection Fund ($2,189,450) (continued)	
66) East Hampton Sand Management Program (Town of East Hampton)	30,000
67) Harbor Management Plan (Village of Greenport)	35,000
68) Mitchell Property Design (Village of Greenport)	75,000
69) Design of a Waterfront Park and Harbor Walk (Village of Greenport)	25,000
70) Mitchell Property Redevelopment and Marine Design (Village of Greenport)	75,000
71) Mitchell Dock Westerly Pier Completion (Village of Greenport)	255,000
72) Mitchell Park and Marina Transient Docking Basin (Village of Greenport)	320,000
73) Mitchell Park and Marina - Phase Two (Village of Greenport)	450,000
74) Grangebel Park Revitalization (Town of Riverhead)	14,250
75) Town of Riverhead LWRP (Town of Riverhead)	20,000
76) LWRP Amendment/ Harbor Management Plan (Village of Sag Harbor)	37,500
77) Rysam Street Drainage (Village of Sag Harbor)	100,000
78) Wetlands Restoration Plan (Town of Southampton)	28,900
79) Shinnecock Canal Maritime Development (Town of Southampton)	25,200
80) LWRP/Intermunicipal Waterbody Management Plan/ Harbor Management Plan (Town of Southampton)	70,000
81) Shinnecock Canal Public Access Improvements Design and Engineering (Town of Southampton)	25,000
82) Erosion Management Plan (Town of Southold)	25,000
83) Harbor Management Plan (Town of Southold)	25,000
84) Street End Access and Stormwater Mitigation (Town of Southold)	15,000
85) Street End Access Improvements (Town of Southold)	42,000
86) Seed Clam Growout Program (Town of Southold)	4,800
87) Ferry Impact Workshop (Town of Southold)	3,500
88) Establish GIS Database for Growth Management (Town of Southold)	60,000
89) Road Ends Public Access and Stormwater Control Improvements (Town of Southold)	35,000
90) GIS Implementation (Town of Southold)	18,300
91) Eelgrass Culture Facility for the Peconic Estuary (Town of Southold)	53,000
92) Implementation of Priority LWRP Projects (Town of Southold)	50,000
TOTAL	**$ 13,605,063**

[1] $50,000 Near Coastal Waters grant; project expanded with $75,950 National Marine Fisheries Services grant.
[2] $11,385 Near Coastal Water grant; project expanded with $235,000 U.S. Fish & Wildlife Service grant to NYSDEC.
[3] $9,970 FY94 APDP grant; project expanded with $27,000 U.S. Fish & Wildlife Service grant.
[4] Funded, in part, with Section 319 Nonpoint Source Management grant ($16,409).
[5] Clean Water Act, Section 319 Nonpoint Source Implementation grants are passed through NYSDEC. The Peconic Estuary has been a priority by virtue of its inclusion in the National Estuary Program.
[6] Uses $163,920 in NYS Environmental Protection Fund grant to supplement $30,000 PEP APDP award.

NOTE: Non-federal match & commitments have resulted in project funding levels that are significantly larger. Also, this list does not include citizens' action projects, eelgrass restoration habitat criteria trials, and other action projects funded under "baseline" National Estuary Program management planning grants.

Table 1

State Assisted Projects to Benefit the Peconic Estuary

PROJECT TITLE	STATE FUNDING ($)
New York State Clean Water/Clean Air Bond Act ($9,647,150)	
1) Lake Montauk and Fort Pond Restoration (Town of East Hampton)	15,000
2) Lake Montauk and Fort Pond Runoff Pollution Abatement (Town of East Hampton)	100,000
3) Wastewater Treatment Facility Construction (1997) (Town of Riverhead)	922,500
4) Stormwater Abatement Activities to Peconic and South Shore Estuaries (Town of Southampton)	140,000
5) Davis Creek Restoration/Enhancement (Town of Southampton)	25,000
6) Remediation of Highway Stormwater Discharge to Lake Montauk, Three Mile Harbor, and Shinnecock Canal (Suffolk County Dept. of Public Works)	100,000
7) Wastewater Treatment Facility Construction (1998)	2,000,000
8) Animal Waste System for Flanders Bay (SCSWCD)	200,000
9) East Hampton Town Harbor Habitat Restoration (Town of East Hampton)	75,000
10) Hudson Avenue Stormwater Abatement Project (Town of Shelter Island)	196,200
11) Highway Stormwater Remediation to Hashamomuck Pond (Peconic Estuary) (Suffolk County Dept. of Public Works)	600,000
12) Remediation of Highway Stormwater Discharge to Peconic Estuary (SCDPW)	75,000
13) Route 25 Stormwater Mitigation Project (Town of Southold)	45,000
14) Sag Harbor Sewage Treatment Plant Upgrade (1998) (Town of Sag Harbor)	500,000
15) Stormwater Abatement Activities (Town of Southampton)	165,000
16) Stormwater Remediation along Shore Road (Suffolk County DPW)	50,000
17) Wastewater Treatment Facility Construction (1999) (Town of Riverhead)	3,027,500
18) Stormwater Remediation to Peconic Estuary from Mitchell Park (Village of Greenport)	61,450
19) Riverhead Foundation for Marine Research and Preservation Wastewater Treatment (Town of Riverhead)	40,000
20) Sag Harbor Sewage Treatment Plant Upgrade (1999) (Village of Sag Harbor)	1,172,000
21) Sammis Beach Restoration (Town of East Hampton)	137,500
New York State Environmental Protection Fund ($2,189,450)	
22) East Hampton Town LWRP/LEMP (Town of East Hampton)	60,000
23) Street End Access and Stormwater Mitigation (Town of East Hampton)	25,000
24) Public Outreach and Education (Town of East Hampton)	20,000
25) East Hampton Town Marine and Environmental Science Center (Town of East Hampton)	20,000
26) Coastal Public Education Program (Town of East Hampton)	47,000
27) Scenic Resource Inventory and Analysis (Town of East Hampton)	40,000
28) Landing Lane Road End Refurbishment (Town of East Hampton)	10,000
29) GIS Development (Town of East Hampton)	50,000
30) East Hampton Sand Management Program (Town of East Hampton)	30,000
31) Harbor Management Plan (Village of Greenport)	35,000
32) Mitchell Property Design (Village of Greenport)	75,000
33) Design of a Waterfront Park and Harbor Walk (Village of Greenport)	25,000
34) Mitchell Property Redevelopment and Marine Design (Village of Greenport)	75,000
35) Mitchell Dock Westerly Pier Completion (Village of Greenport)	255,000
36) Mitchell Park and Marina Transient Docking Basin (Village of Greenport)	320,000
37) Mitchell Park and Marina - Phase Two (Village of Greenport)	450,000

PROJECT TITLE	STATE FUNDING ($)
New York State Environmental Protection Fund ($2,189,450) (continued)	
38) Grangebel Park Revitalization (Town of Riverhead)	14,250
39) Town of Riverhead LWRP (Town of Riverhead)	20,000
40) LWRP Amendment/ Harbor Management Plan (Village of Sag Harbor)	37,500
41) Rysam Street Drainage (Village of Sag Harbor)	100,000
42) Wetlands Restoration Plan (Town of Southampton)	28,900
43) Shinnecock Canal Maritime Development (Town of Southampton)	25,200
44) LWRP/ Intermunicipal Waterbody Management Plan/ Harbor Management Plan (Town of Southampton)	70,000
45) Shinnecock Canal Public Access Improvements Design and Engineering (Town of Southampton)	25,000
46) Erosion Management Plan (Town of Southold)	25,000
47) Harbor Management Plan (Town of Southold)	25,000
48) Street End Access and Stormwater Mitigation (Town of Southold)	15,000
49) Street End Access Improvements (Town of Southold)	42,000
50) Seed Clam Growout Program (Town of Southold)	4,800
51) Ferry Impact Workshop (Town of Southold)	3,500
52) Establish GIS Database for Growth Management (Town of Southold)	60,000
53) Road Ends Public Access and Stormwater Control Improvements (Town of Southold)	35,000
54) GIS Implementation (Town of Southold)	18,300
55) Eelgrass Culture Facility for the Peconic Estuary (Town of Southold)	53,000
56) Implementation of priority LWRP Projects (Town of Southold)	50,000
New York State Revolving Fund ($149,480,707)	
57) Land Fill Cap (Town of East Hampton)	4,127,822
58) Non-point Source Drinking Water Protection (Town of East Hampton)	20,000,000
59) Sewage Treatment Plant Modification (Town of East Hampton)	200,000
60) Sewage Treatment Plant Upgrade (Town of Riverhead)	8,046,310
61) Interceptor, Collector, Pump Station, and Force Main (Town of Riverhead)	4,148,000
62) Non-point Source Drinking Water Protection (Town of Southampton)	30,000,000
63) Non-point Source Stormwater Runoff Treatment (Town of Southampton)	1,308,149
64) Non-point Source Stormwater Runoff Treatment (Town of Southampton)	651,400
65) Stormwater Runoff Treatment (Town of Southampton)	691,851
66) Landfill Cap (Town of Southold)	5,641,175
67) Non-point Source Drinking Water Protection (Suffolk County)	74,666,000
TOTAL	**$161,317,307**

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