

IV. APPENDICES

A. Expenditure of FY00 Travel Funds

<i>Date</i>	<i>Meeting-Related Expenses</i>	<i>Name</i>	<i>Amount</i>
3/7/00	ANEP Mtg. Hotel	Jonathan Rinde	\$ 211.83
3/7/00	ANEP Mtg. Train	Jonathan Rinde	\$ 189.00
3/7/00	ANEP Trip Expenses	Jonathan Rinde	\$ 53.21
3/17/00	Bridge Tolls	Joe Matassino	\$ 2.00
3/17/00	Mileage to Mtg. w/Minigrant Recip.	Joe Matassino	\$ 21.96
3/17/00	ANEP Mtg. Expenses	Forsyth Kineon	\$ 57.25
3/20/00	Train to/from Workgroup Mtg.	Kathy Klein	\$ 9.00
3/20/00	Mileage to/from Train Station	Kathy Klein	\$ 2.56
3/20/00	Mileage DE Sojourn Mtg.	Joe Matassino	\$ 64.96
3/20/00	Parking DE Sojourn Mtg.	Joe Matassino	\$ 5.00
3/20/00	Tolls to Sojourn Mtg.	Joe Matassino	\$ 2.90
3/21/00	Parking for FTTF Mtg.	Joe Matassino	\$ 15.00
4/7/00	Train from Phila. Steering Comm.	Kathy Klein	\$ 4.50
4/7/00	Mileage to/from train station “ “	Kathy Klein	\$ 2.56
4/7/00	Parking Steering Committee Mtg.	Jonathan Rinde	\$ 14.00
4/11/00	Mtg. at Stroud	Kathy Klein	\$ 20.47
4/11/00	Watershed Curric. Mtg. Tolls	Lisa Wool	\$ 1.00
4/11/00	Mileage Watershed Curric. Mtg.	Lisa Wool	\$ 36.80
4/14/00	Mileage to AstraXeneca Earth Day	Kathy Klein	\$ 3.90
4/18/00	Mileage to Phila. Earth Day Event	Kathy Klein	\$ 22.75
4/25/00	PEC Dinner Mileage	Lisa Wool	\$ 16.64
4/26/00	Mileage DE Sojourn Mtg.	Joe Matassino	\$ 64.96
4/26/00	Parking DE Sojourn Mtg.	Joe Matassino	\$ 5.00
4/26/00	Tolls to Sojourn Mtg.	Joe Matassino	\$ 2.90
4/29/00	Mileage to Minigrant Event	Joe Matassino	\$ 20.80
5/4/00	Mileage to Minigrant Event	Joe Matassino	\$ 22.40
5/8/00	Press Conf. Mileage	Joe Matassino	\$ 24.00
5/8/00	Press Conf. Tolls	Joe Matassino	\$ 3.00
5/9/00	EIC Mtg. Expenses	Joe Matassino	\$ 38.75
5/10/00	Mileage to Env. Career Day Mileage	Lisa Wool	\$ 21.12
5/18-20/00	NEP Finance Workshop Expenses	Joe Matassino	\$ 97.43
5/15/00	Parking PPIT Meeting	Kathy Klein	\$ 14.00
5/17/00	Horseshoe Crab Trip	Lisa Wool	\$ 48.52
5/19/00	NEP Finance Workshop	Joe Matassino	\$ 91.80
5/23/00	PADEP Workshop	Joe Matassino	\$ 55.38
5/26/00	NEP Workshop Expenses	Forsyth Kineon	\$ 260.60
5/26/00	“ “	Dave Pollison	\$ 120.00
5/31/00	Train to Indicators Mtg.	Kathy Klein	\$ 9.00
5/31/00	Mileage to/from train station	Kathy Klein	\$ 2.56
6/1/00	Mileage/Tolls to DE Water Fest	Kathy Klein	\$ 40.80

6/6/00	DE Sojourn Mtg.	Joe Matassino	\$ 37.12
6/8/00	WPNJ Mtg. Mileage	Joe Matassino	\$ 48.00
6/8/00	WPNJ Mtg. Tolls	Joe Matassino	\$ 3.00
6/9/00	PPIT Retreat Mileage	Joe Matassino	\$ 33.60
6/9/00	Tolls PPIT Retreat	Joe Matassino	\$ 1.20
6/9/00	PPIT Retreat Expenses	Kathy Klein	\$ 39.98
6/15/00	WREN Workshop	Joe Matassino	\$ 50.00
6/19/00	Train to Trenton DEP Mtg.	Kathy Klein	\$ 36.00
6/21/00	Tolls to Dover Invasive Meeting	Kathy Klein	\$ 3.00
6/29/00	DNREC Mtg., Mileage & Tolls	Lisa Wool	\$ 34.60
7/6/00	Train to EIC Mtg.	Kathy Klein	\$ 8.25
7/6/00	Mileage to train station	Kathy Klein	\$ 2.56
7/7/00	PSE&G Restoration Site Visit	Kathy Klein	\$ 26.04
7/13/00	Mileage Sojourn Mtg.	Joe Matassino	\$ 37.12
7/13/00	Tolls Sojourn Mtg.	Joe Matassino	\$ 2.90
7/13/00	Parking Sojourn Mtg.	Joe Matassino	\$ 12.00
7/17/00	Institute Mileage	Kathy Klein	\$ 31.36
7/17/00	Institute Tolls	Kathy Klein	\$ 3.00
7/18/00	Parking for Institute	Kathy Klein	\$ 6.00
7/19-20/00	Institute Mileage	Kathy Klein	\$ 117.00
7/19/00	Ferry for the Institute	Kathy Klein	\$ 107.00
7/21/00	Mileage & Tolls Institute	Lisa Wool	\$ 34.36
7/21/00	Mileage, Tolls, Parking for Institute	Joe Matassino	\$ 173.92
8/1/00	Parking Tourism Mtg.	Joe Matassino	\$ 9.00
8/1/00	Tolls " "	Joe Matassino	\$ 3.00
8/1/00	Mileage to " "	Joe Matassino	\$ 37.12
8/2/00	Mileage to Workgroup Mtg.	Joe Matassino	\$ 37.12
8/2/00	Tolls " "	Joe Matassino	\$ 3.00
8/29/00	Mileage Watershed Imp. Meeting	Joe Matassino	\$ 44.16
9/00	Mileage to Futures Mtg.	Joe Matassino	\$ 74.24
9/00	Tolls " "	Joe Matassino	\$ 3.00
9/10/00	Parking PPIT Mtg.	Lisa Wool	\$ 16.00
9/10/00	Mileage PPIT Mtg.	Lisa Wool	\$ 17.28
9/11/00	Sea Grant Mtg.	Forsyth P. Kineon	\$ 16.00
9/28/00	DRBC Meeting	Ed Santoro	\$ 3.90
9/28/00	Mileage to CZM Mtg.	Kathy Klein	\$ 20.16
9/28/00	Mileage to NLT Mtg.	Kathy Klein	\$ 10.56
10/00	Mileage to Work on DELEP \$	Kathy Klein	\$ 27.20
10/00	Tolls " "	Kathy Klein	\$ 3.00
10/00	Train to Work on DELEP Finances	Kathy Klein	\$ 9.00
10/00	Mileage to/from Train Station " "	Kathy Klein	\$ 2.56
10/00	Train from EIC Mtg.	Kathy Klein	\$ 6.50
10/99-8/00	PPIT Travel	Partnership Staff	\$ 123.70
10/99-8/00	Estuary News Travel	Partnership Staff	\$ 4.80
10/99- 8/00	Ed. & Outreach Travel	Partnership Staff	\$ 206.32

10/3-13/00	Land Use Build Out & EIC	Forsyth P. Kineon	\$ 18.80
10/4/00	Meals Coast Day	Joe Matassino	\$ 28.00
10/4/00	Accommodations “ “	Joe Matassino	\$ 85.32
10/4/00	Mileage for Coast Day	Joe Matassino	\$ 86.08
10/4/00	Tolls “ “	Joe Matassino	\$ 3.40
10/11/00	Meals NEP Conf.	DRBC	\$ 45.00
10/11/00	Hotel “ “	DRBC	\$ 756.00
10/11/00	Phone “ “	DRBC	\$ 2.00
10/11/00	Mileage “ “	DRBC	\$ 270.00
10/11/00	Tolls “ “	DRBC	\$ 23.10
10/11/00	MAIA Mtg.	Ed Santoro	\$ 27.30
11/1/00	PPIT	Karl Heinicke	\$ 18.75
10/30-11/2/00	Sampling, RTAG Mtg.	Ed Santoro	\$ 53.40
11/00	Hotel Growing Greener Conf.	Joe Matassino	\$ 203.30
11/00	Car Rental “ “	Joe Matassino	\$ 129.09
11/00	Gas “ “	Joe Matassino	\$ 31.61
11/00	Tolls “ “	Joe Matassino	\$ 1.75
11/00	Mileage Academy Mtg.	Joe Matassino	\$ 20.80
11/00	Parking “ “	Joe Matassino	\$ 16.00
11/00	Mileage PPIT Mtg.	Joe Matassino	\$ 20.80
11/00	Parking “ “	Joe Matassino	\$ 13.00
11/00	Mileage PPIT Mtg.	Lisa Wool	\$ 17.28
11/00	Mileage to Habitat Conf.	Jenn Porter	\$ 22.40
11/00	Mileage to NJ Press Event	Joe Matassino	\$ 38.40
11/00	Tolls “ “	Joe Matassino	\$ 3.00
11/1-9/00	PPIT, CAC, Part. Board Mtg.	Forsyth P. Kineon	\$ 223.43
11/3/00	Mileage to/from train station	Kathy Klein	\$ 2.56
11/3/00	Regis. Fee for Stormwater Workshop	Kathy Klein	\$ 60.00
11/6/00	Regis. Ecotourism Workshop	Joe Matassino	\$ 72.50
11/6/00	Meals “ “	Joe Matassino	\$ 58.33
11/6/00	Hotel “ “	Joe Matassino	\$ 441.30
11/6/00	Car Rental “ “	Joe Matassino	\$ 241.19
11/6/00	Gas “ “	Joe Matassino	\$ 68.06
11/12/00	Steering Committee Mtg.	Forsyth P. Kineon	\$ 15.70
11/28-12/6/00	EIC, CESP, Mon. Rpt.	Forsyth P. Kineon	\$ 28.85
11/28-12/6/00	EIC, MR	Ed Santoro	\$ 44.80
12/14-15/00	Mini-grant review	Forsyth P. Kineon	\$ 27.25
12/20/00	Del. Tourism Mtg.	Joe Matassino	\$ 21.12
12/20/00	Sojourn Mtg.	Joe Matassino	\$ 147.32
12/28/00	Partnership and DRBC Roles Mtg.	Kathy Klein	\$ 20.56
1/9-12/01	PPIT, EIC	Karl Heinicke	\$ 24.00
1/8-1/12/01	PPIT, EIC	Forsyth P. Kineon	\$ 22.00
1/13/01	EIC Mtg., (telephone)	Ed Santoro	\$ 15.00
1/17/01	Annual ANEP Mtg	Kathy Klein	\$ 175.00
1/25/01	PPIT Meeting	Kathy Klein	\$ 7.06

1/26/01	Bob Knecht Reception	Forsyth P. Kineon	\$ 4.00
1/30/01	EIC Meeting	Joe Matassino	\$ 40.80
1/30/01	DNEER Ceremony	Joe Matassino	\$ 41.60
1/30/01	Delaware Sojourn Mtg.	Joe Matassino	\$ 37.12
2/4-2/16/01	Oyster Meeting, EIC Work Grp	Forsyth P. Kineon	\$ 31.00
2/16/01	Partnership, USFWL Mtg.	Kathy Klein	\$ 2.00
2/16/01	Oyster Mtg.	Kathy Klein	\$ 42.68
2/16/01	Work Group Mtg.	Kathy Klein	\$ 11.56
2/23/01	Biodiversity Conference	Joe Matassino	\$ 33.92
2/23/01	Steering Committee Mtg.	Joe Matassino	\$ 37.12
2/23/01	Ecotourism Conference	Joe Matassino	\$ 6.95
2/23/01	Ecotourism Conference-tolls	Joe Matassino	\$ 6.60
2/20-3/2/01	Biodiversity, Habitat RFP, EIC Mtg	Forsyth P. Kineon	\$ 86.00
3/3/01	Schulkill Monitoring Congress	Ed Santoro	\$ 35.00
3/2-3/01	Ursinus College	Ed Santoro	\$ 148.35
3/8/01	Philadelphia Flower Show	Lisa Wool	\$ 25.25
3/10-16/01	Washington-NEP meeting	Forsyth P. Kineon	\$1,017.30
3/11-15/01	NEP Conference	Forsyth P. Kineon	\$ 175.00
3/12/01	Philadelphia Flower Show	Jennifer Porter	\$ 16.00
3/13/01	Philadelphia Flower Show	Joe Matassino	\$ 33.80
3/15/01	NYC Nutrient RTAG meeting	Ed Santoro	\$ 49.30
3/20/01	Phila-Work Group	Forsyth P. Kineon	\$ 18.00
3/26/01	ANEP Meeting	Kathy Klein	\$ 787.38
3/26/01	EIC Work Group Mtg.	Kathy Klein	\$ 4.50
3/26/01	PPIT Mtg.	Lisa Wool	\$ 37.80
3/30/01	Development Mtg.	Joe Matassino	\$ 40.32
3/30/01	PCB Workshop	Joe Matassino	\$ 20.80
3/30/01	Sojourn Research	Joe Matassino	\$ 43.20
3/30/01	PCB Workshop	Joe Matassino	\$ 7.00
3/30/01	Palmyra Cove Newsletter Research	Joe Matassino	\$ 2.00
4/24-27/01	EMAP Conference	Ed Santoro	\$ 100.00
5/23-24/01	GIS Conference	Karl Heinicke	\$ 140.00
7/16-19/01	Coastal Zone 01 Conf.	Forsyth P. Kineon	\$ 350.00

Total \$10,308.90

B. DELEP Minigrants:

1. Lower Makefield Township was awarded \$1,500 to support their Earth Day 2001 project that will involve the purchase of native tree seedlings and preparation and printing of educational brochures to be distributed at township-wide Earth Day activities and for promotional advertising of Earth Day activities.
2. Perkiomen Watershed Conservancy was awarded \$1,500 to support their 2001 Annual Stream Cleanup of 60 miles of streambank along the Swamp, East Branch Perkiomen, Towamencin, and Perkiomen Creeks through use of 250 volunteers. They will also be creating a written inventory of stream conditions and other point and nonpoint source pollutants.
3. Old Pine Farm Natural Lands Trust was awarded \$2,800 to support their Big Timber Creek Meadow and Creek Bank Restoration Project for the restoration of 400-feet of creek bank and two acres of meadow adjacent to that site. They will enhance "Watchable Wildlife" by improving habitat and food sources and removing invasive plants that are destroying much of the native habitat in the area.
4. Ecological Research & Development Group was awarded \$5,000 to create a Web-based Interactive Time-Line dating back to the formation of the Delaware Bay, focusing exclusively on the development of the horseshoe crab spawning habitat and shallow water nurseries.
5. The Peopling of Philadelphia Collaborative was awarded \$2,860 to fund two, three-day teacher workshops addressing the environmental consequences of population growth and technological advancement in the Delaware Estuary.
6. Schuylkill Riverkeeper was awarded \$1,832 to provide technical training and to raise citizens' awareness through the 4th Annual Schuylkill Watershed Conference. The event will foster cooperation and networking with over 150 participants including individual citizens, government officials, and the private sector representatives.
7. Philadelphia Department of Recreation was awarded \$3,055 to upgrade a recreational fishing program for urban children at the Philadelphia Department of Recreation's Fish Hatchery, located in Pleasant Park on the banks of the Delaware River in Northeast Philadelphia.
8. NetworkArts was awarded \$5,000 to create an education and mosaic-making project at Penn Treaty Middle School. NetworkArts will work with the entire seventh grade to study water quality and its effect on wildlife in the Delaware Estuary. They will then create a mosaic mural depicting what they learned.
9. Berkana Center for Media and Education was awarded \$1,875 to conduct three curriculum development workshops to develop a multi-disciplinary ecosystem-based curriculum to use with public middle school students that will focus on science, conservation, and public policy issues related to the horseshoe crabs and shorebirds on the Delaware Bay.

10. Building Environmental Education Solutions (BEES) was awarded \$1,500 to design and implement a workshop that will provide training and activities for using the Hamilton-Trenton Marsh as an outdoor classroom.
11. Stroud Water Research Center was awarded \$3,078 to create classroom programs, a stormwater activity guide, and a stenciling project that will address the issue of nonpoint source pollution in the Chester-Ridley-Crum Watershed. Volunteers and students will be made aware of the connection between the storm drain and the stream, and will share this information with the community.
12. Monmouth County Planning Board was awarded \$5,000 for the placement of stream and watershed identification signs at Monmouth County-owned bridges and publication of a companion "Eco-Tips" brochure to encourage homeowners to protect stream corridors and decrease nonpoint source pollution.

C. Delaware Estuary PCB Strategy

Problem Statement

Polychlorinated biphenyls (PCBs) are a class of man-made compounds that were manufactured and used extensively in electrical equipment such as transformers and capacitors, paints, printing inks, pesticides, hydraulic fluids and lubricants. Although their manufacture and use was generally banned by federal regulations in the late 1970s, existing uses in electrical equipment and certain exceptions to the ban were allowed. In addition, PCBs may also be created as a by-product in certain manufacturing processes such as dye production. PCBs are hydrophobic, sorbing to organic particles such as soils and sediments and concentrating in the tissues of aquatic biota either directly or indirectly through the food chain.

PCBs are classified as a probable human carcinogen by the U.S. Environmental Protection Agency, and have also been shown to have reproductive effects, suppress the immune system, and are a possible endocrine disruption in higher animals. Starting in the late 1980s, the States of Delaware, New Jersey and Pennsylvania began issuing consumption advisories for portions of the Delaware Estuary for PCBs due to the level of PCBs observed in the tissues of resident and anadromous fish species. Advisories are currently in effect for the entire estuary from the head of tide at Trenton, NJ to the mouth of Delaware Bay. The advisories range from a no consumption recommendation for all species taken between the C&D Canal and the DE-PA border to consumption of no more than one meal per month of striped bass or white perch in Zones 2 through 4.

Section 303(d) of the federal Clean Water Act requires states to identify waters that will not meet water quality standards following implementation of technology-based controls, rank these waters in priority order, and establish Total Maximum Daily Loads or TMDLs for these waters. Each of the states have listed the Delaware Estuary as impaired by PCBs and have agreed to develop TMDLs by specified dates. The earliest date for establishing TMDLs for the Delaware Estuary is September 2003.

Goal

The goal of this strategy is to achieve the water quality standards for PCBs for Zones 2, 3, 4 and 5 of the tidal Delaware River ("the Delaware Estuary") specified by the Delaware River Basin Commission (DRBC). These narrative and numerical standards are based upon the protection of human health, aquatic life or wildlife. Achieving the PCB standards will eliminate the necessity for advisories limiting consumption of fish and shellfish caught in the estuary, and protect the health of humans and the living resources using the estuary. In addition, other water quality targets such as less stringent fish consumption advisories, and sediment criteria for the beneficial use of dredged material may also be established by the Commission as interim or final targets.

Summary

This strategy includes nine major elements designed to establish Total Maximum Daily Loads or TMDLs for Total PCBs including allocations for point and non-point sources, and a margin of safety by September 30, 2003, and initiate a process to identify efficient and effective programs to reduce the loadings of PCBs to the estuary to achieve the TMDLs.

TMDLs will be established for individual or combinations of zones since the water quality standards vary in the different zones of the river. The Delaware River Basin Commission will be the lead agency in this effort with advice provided by the Commission's Toxic Advisory Committee. This committee consists of

13 members representing state and federal government, industry, academia, municipalities, agriculture, environmental/watershed, public health, and fish & wildlife resource interests. The TMDLs will be based upon a determination by the Commission under Article 4 of the DRBC Water Quality Regulations that allocations of the waste assimilative capacity of the river are necessary to achieve water quality standards for PCBs and to protect water uses. These allocations will then be referred to the appropriate state permitting agency for use in establishing effluent limitations, schedules and other requirements, as appropriate. The measures necessary to achieve water quality standards for PCBs in the estuary will depend on several factors including the degree of exceedence of the standards in each estuary zone, the sources and pathways of PCBs to the estuary, the reductions required for each source category, the time required to comply with assigned allocations, the degree of voluntary identification and reduction of PCB sources, and attenuation through degradation processes and transport.

The nine elements of the strategy are:

1. Determine the water quality targets for the TMDLs.
2. Characterize PCB concentrations in the estuary ecosystem.
3. Identify and quantify sources and pathways of PCBs.
4. Determine transport and fate of PCB loads within the Delaware Estuary.
5. Establish TMDLs & allocations for sources (i.e. point and non-point sources).
6. Develop an Implementation plan to reduce PCBs entering the Estuary.
7. Increase environmental awareness of toxicity issues in the Estuary.
8. Monitor long-term concentrations of PCBs in air, water and sediments of the Estuary.
9. Monitor long-term concentrations and impacts to living resources of the Estuary.

A description of each of these elements follows.

1. Determine the water quality targets for the TMDLs for PCBs.

The first step in establishing TMDLs for any pollutant that is impairing the designated uses of a water body is the identification of the target for the TMDLs. These are normally the applicable numerical water quality standards; however, in some cases narrative standards must be interpreted.

In the case of PCBs, numerical water quality standards (called stream quality objectives by the DRBC) for the protection of human health for Zones 2 through 5 of the tidal Delaware River were adopted by the DRBC in October 1996. These standards included one for total PCBs based upon a cancer potency factor of 7.7 mg/KG - day recommended by the U.S. Environmental Protection Agency in January 1990. The standards are different in the four zones due to differences in the designated uses of the river and in the consumption rates used to develop the standards. The standards are as follows:

	Fish & Water Consumption	Fish Consumption Only	
	Freshwater Criteria	Freshwater Criteria	Marine Criteria
Zone 2	0.0444 ng/l		
Zone 3	0.0444 ng/l		
Zone 4		0.0448 ng/l	
Zone 5		0.0448 ng/l	0.0079 ng/l

Note: Shading indicates that a criteria of this type does not apply based upon the designated uses of the zone. The more stringent of the freshwater or marine standard applies in Zone 5 of the river below the Delaware Memorial Bridges.

Each of the states also have water quality standards similar to DRBC's standard. It is these standards that were the basis for listing the Delaware Estuary as impaired, and establishing the September 2003 date.

The cancer potency factor was revised in June 1997 to include factors for both high risk and low risk exposures and persistence. High risk exposures include consumption of bioaccumulated PCBs and early life exposure. High persistence includes the bioaccumulation of PCB congeners that appear to be more toxic than the congeners found in commercial PCBs. This information along with more recent guidance regarding consumption rates, and approaches to incorporating the bioaccumulation potential of PCBs needs to be evaluated in revising the current water quality standards.

Unless the TMDLs are to be developed based upon the current water quality standards, the standards need to be reviewed and revised to incorporate new information on the toxicity of PCBs and other factors such as the consumption rate used in developing the standards. In addition, the NJDEP and U.S. EPA Region II will shortly be adopting wildlife criteria for PCBs to protect avian species including the bald eagle. The Commission currently has the protection of wildlife as a designated use in Zones 2 through 5 but has no numerical criteria. The recent interest in the impact of existing and proposed dredging activities in the estuary suggest that criteria for evaluating the use and disposal of dredged material should also be included as targets in establishing the TMDLs.

Outcomes

The water quality target(s) for the TMDLs for PCBs must be established as soon as possible since the extent and complexity of the water quality models needed to establish and allocate the TMDLs are driven by the most stringent water quality target. For example, achieving a water quality standard based upon the protection of human health requires model simulation periods of years while achieving a wildlife criteria requires simulation periods of several months. The selection of the model simulation period will have implications on the complexity of various model components.

Tasks

Tasks	Lead Agencies	Schedule
a. Determine targets for TMDLs	DRBC, TAC	October 2000 to

Tasks	Lead Agencies	Schedule
		March 2001
- Revise human health water quality criteria for PCBs.	DRBC, TAC	October 2000 to March 2001
- Determine the need for and establish wildlife criteria for PCBs.	DRBC, TAC	January to March 2001
- Determine the need for and establish, as appropriate, other targets such as narrative standards, sediment criteria, dredging criteria, or fish residue concentrations.	DRBC, TAC	January to March 2001

2. Characterize environmental concentrations of PCBs in ambient air and waters, sediments and fish tissue of the estuary.

Information on the concentrations of PCBs in the air, water, sediments, and biota of the estuary are needed to identify and prioritize problems, and direct the design of modeling efforts that will support the establishment of the TMDLs. The studies described below will be used to better quantify sources and sinks of PCBs to the estuary, evaluate relationships between inputs and variables such as tributary flow and sediment loadings, and to design the studies that will provide data to calibrate and validate the PCB water quality model.

Outcomes

This element will synthesize the available data into average annual budgets for use in developing the scope and complexity of the PCB model, and determine the concentrations of PCBs in the various compartments of the estuary ecosystem. The characterization information will be used to identify and prioritize problems, and assist in the design of studies to support development of the water quality model and the establishment of TMDLs for PCBs.

Tasks

Tasks	Lead Agencies	Schedule
a. Prepare average annual budgets for flow, total solids, organic carbon, PCB concentrations in water, sediment and fish tissue.	DRBC	May 2001
b. Establish a data base to contain all data collected to support the development of TMDLs.	DRBC, consultant.	July to June 2001
c. Conduct yearly monitoring of tributaries for PCB congeners during both base-flow and storm conditions (3 years).	DRBC, U.S. Geological Survey	May 2001 to September 2003

Tasks	Lead Agencies	Schedule
d. Conduct yearly monitoring of the ambient waters of the estuary for PCB congeners (3 years).	DRBC	September 2001 to September 2003
e. Conduct periodic surveys (every 3 to 5 years) of the sediments of the estuary.	DRBC	CY 2001
f. Determine wet and dry deposition of PCBs from the atmosphere at selected locations including Washington's Crossing, Camden	NJDEP, Rutgers University	CY 1999 - 2002
g. Perform special studies of the levels of PCBs in fish and shellfish species not monitored in yearly trend studies.	DRBC	September 2001 to September 2003

3. Identify and quantify sources of PCBs.

While manufacture and use of PCBs in new equipment was restricted in the late 1970's, PCBs continue to enter the environment from multiple sources. These sources include existing electrical equipment ranging from large transformers to smaller capacitors, heat transfer equipment, hydraulic equipment, equipment specifically exempted in the Toxic Substances Control Act (TSCA) for small quantities and specific uses, and sites contaminated by PCBs through either use or improper disposal. Some equipment can be designated as "non-PCB containing" even though it contains trace quantities of PCBs that have significant environmental consequences. For example, PCB transformers containing less than 50 parts per million (mg/KG) of PCBs are classified as non-PCB transformers. In June 1998, the U.S. EPA issued final rules authorizing certain uses of PCBs and the manufacture and distribution of PCBs for use in research and development activities, specifying alternatives for cleanup and disposal of PCBs, and clarifying the process for exceptions to disposal.

Outcomes

Establishing a TMDL requires the identification of specific sources of PCBs in several categories. Point and non-point sources have been shown to be contributors of PCBs to the estuary (Frithsen et al, 1995; DRBC, 1998). Point sources principally include discharges of wastewater, cooling water and stormwater from industrial and municipal facilities to the estuary, but may also include permitted discharges from landfills and hazardous waste (i.e., Superfund) sites, and combined sewer overflows (CSOs). Non-point sources consist of those sources not included in the point source category such as: loadings from tributaries (particularly the two largest tributaries, the Delaware and Schuylkill Rivers); atmospheric deposition; landfills, Superfund sites, and stormwater sources not covered under the point source category; and estuary sediments.

Allocations of the TMDL to each of these source categories are essential if water quality standards are to be achieved and maintained. Characterization studies conducted under Element 2 and model sensitivity runs will be used to identify those source categories and specific sources for which additional monitoring is necessary.

Tasks

Tasks	Lead Agencies	Schedule
a. Create an inventory and prepare GIS maps of major sources of PCBs.	U.S. EPA Region III	CY 2001
b. Request monitoring of wastewater, cooling water and stormwater discharges from point sources.	DRBC	February 2000 to May 2001
– Issue letters to dischargers.	DRBC	February & March 2000
– Hold informational meetings.	DRBC, U.S. EPA, States	March & April 2000
– Receive monitoring data.	DRBC	January 2001
– Complete data base entry.	DRBC	May 2001
– Additional monitoring of selected discharges.	DRBC	May 2001 to December 2003
c. Conduct source identification and control study in the Piedmont Basin in Delaware	DNREC	Late 2003 and 2004
d. Determine loading of PCBs from dry and wet atmospheric deposition.	Rutgers University	CY 1999 to 2001
e. Determine tributary loadings of PCBs.	U.S. Geological Survey, DRBC	April 2000 to April 2001
f. Determine loadings from landfills, Superfund sites and other sources.	U.S. EPA Regions II and III	CY 2000/2001

4. Determine the transport and fate of PCBs entering the Delaware Estuary

Mathematical models are an essential part of this strategy for several reasons. First, they allow the simulation of the important hydrodynamic forces that distribute substances within the estuary. In view of the complex hydrodynamic characteristics of the estuary including the significant tidal influence and regulated nature of the main tributaries to the estuary, a complex mathematical model is needed. Second, they permit the inclusion of significant fate processes for PCBs including volatilization, sorption, biodegradation and bioaccumulation. Third, they allow the sensitivity of the various transport and fate processes to be evaluated to both guide the collection of data during model calibration and validation, and the identification of significant sources of PCBs. Finally, they permit the evaluation of alternative source reduction strategies and the selection of the most efficient strategy to achieve the water quality standards.

Outcomes

A calibrated and validated model of the estuary for PCBs must be developed in order to establish numerical values for the TMDL in each of the four zones of the estuary, and determine wasteload

allocations for significant point sources and load allocations for significant non-point sources. The model will include at least two major components: a hydrodynamic model and a water quality model. A one dimensional and three-dimensional hydrodynamic model of the estuary have been established by the Commission to address oxygen-demanding, bacterial and toxic pollutants in the Delaware Estuary. A water quality model or models will need to be developed to accept the loadings from the various source categories, partition the PCBs between various phases (e.g., dissolved, particulate), and apply degradation processes. Other model components that will either be separate submodels or will be integrated into the water quality model include sediment and bioaccumulation models. An expert panel will be formed to define the scope of the models and guide the calibration/validation of the models, and evaluate the utility of the model for predicting instream concentrations and tissue levels of PCBs.

Tasks

Tasks	Lead Agencies	Schedule
a. Establish expert panel to guide model development and model calibration.	DRBC	Summer 2000
b. Define the scope of the models.	Expert panel, DRBC, States, U.S. EPA	Fall 2000
c. Develop mathematical model to simulate the transport and fate of PCBs in the Delaware Estuary.	DRBC	July 2000 to June 2001
d. Collect ambient water, sediment and significant source data for model calibration and validation.	DRBC	July to October 2001
- Monitor significant tributaries and seaward boundary.	DRBC	July to October 2001
- Collect samples at significant point and non-point sources.	DRBC	July to October 2001
- Collect sediment samples where needed based upon characterization studies.	DRBC	July to October 2001
- Collect ambient water samples for comparison to model predictions.	DRBC	July to October 2001
- Determine atmospheric deposition of PCBs to refine loading estimates for specific model segments during the calibration/validation of the water quality model.	Rutgers University	July 2001 to June 2002
e. Perform calibration and validation of the PCB model.	DRBC	January 2002 to June 2002

5. Establish TMDLs and associated components for PCBs.

Several policies and procedures, particularly for non-point sources, also need to be developed to guide the establishment of the TMDLs. These include allocations of the TMDL to a margin of safety and a reserve, identification of design conditions, the initial loading values to be assigned, and the allocation procedures to be followed.

Outcomes

Establishment and allocation of TMDLs for PCBs in each of the four zones of the estuary requires the utilization of existing policies and procedures for continuous point source discharges, and the development of policies and procedures for non-point sources and other types of point source discharges such as cooling water and stormwater discharges. The policies and procedures will then be utilized with the mathematical models to establish and allocated the TMDLs. Finally, public participation of the proposed TMDLs and allocations will be conducted through public hearings and the solicitation of public comment prior to consideration by the Commission. The TMDLs and allocations will be referred to the respective states for use in meeting the requirements of section 303(d) of the federal Clean Water Act and in developing effluent limitations, schedules of compliance and other NPDES permit requirements.

Tasks

Tasks	Lead Agencies	Schedule
a. Develop policies and procedures for developing TMDLs including load allocation procedures, design conditions, initial loading values, reserve and margin of safety.	DRBC, TAC	October 2000 to June 2002
b. Utilize the PCB model to establish TMDLs, wasteload allocations and load allocations.	DRBC	July 2002 to October 2002
c. Conduct public hearings and solicit comment on the proposed TMDLs and allocations.	DRBC	January to June 2003

6. Develop an Implementation Plan to Reduce PCBs in the Estuary System

Due to the many sources and pathways of PCB contamination it will require a significant level of cooperation and investment to reduce PCBs in the estuary. This section of the strategy sets up mechanisms to: 1) develop a GIS-based data base to facilitate analysis of implementation alternatives; 2) track down existing problem and develop cleanup plans; 3) educate owners and operators of facilities with potential PCB contamination of proper disposal methods; 3) establish a pollution prevention / incentives program, and 4) create a group of stakeholders to advise the DRBC Commissioners on implementation strategies.

Outcomes

The objective of the PCB strategy is to reduce the levels of PCBs in the Delaware Estuary in order to protect the health of humans, fish and wildlife. While the previous tasks centered on the science necessary to develop TMDLs and analyze sources and pathways, this element deals with implementation. Due to the

nature of PCBs, the clean up can be very far reaching and costly. The tasks described here are meant to assess multiple ways of reducing the contaminant and allowing input from many stakeholders. The end product will be a clean up plan that achieves the environmental goals in a way the region can implement.

Tasks

Tasks	Lead Agencies	Schedule
a. Create and update a GIS database to analyze, assess and prioritize sources of PCBs.	EPA with States and DRBC	July 2001 to September 2003
b. Establish TMDL Implementation Advisory Committee		
– Establish funding base	DRBC, EPA with others	January to September, 2001
– Hire facilitator with experience in interest-based negotiation	DRBC /EPA	January to June 2001
– Through interview process select members	Facilitator and Outreach Sub-Committee	February to June 2001
– Work with Implementation AC to recommend a cost effective control strategy to achieve water quality targets considering all sources of PCBs to the estuary.	All	June 2001 to September 2003
c. Initiate and conduct a PCB Trackdown Study in selected municipal sewage collection systems.	DRBC, states, EPA, Philadelphia, Camden & Wilmington	February 2000 to February 2002
– Develop scope of work for study	DRBC, EPA, States and municipalities	February 2000 to February 2001
– Issue contract to perform study	DRBC	March to June 2001
– Conduct pilot study and prepare report	Consultant	June to December 2001
– Develop a compliance and incentive program to reduce noted sources.	States	January 2002 to June 2002
d. Develop and commence implementation of a PCB Pollution Prevention and Clean-up Program (Philadelphia Pilot program)	Philadelphia, &DRBC	January 2002 – June 2003

- Establish partnerships with other federal agencies such as GSA, DOD to develop a self-inspection program to identify equipment containing PCBs and sites contaminated with PCBs	Philadelphia, DRBC, EPA	Late 2003 and 2004
- Establish criteria for setting priorities for removal or remediation of equipment containing PCBs	Philadelphia, DRBC, EPA	Late 2003 and 2004
- Prepare a summary report setting forth the strategy and prioritization criteria	Philadelphia, DRBC, EPA	Late 2003 and 2004
- Provide technical or financial incentives to owners and operators of sites potentially contaminated with PCBs to identify and remove contaminated equipment and parts prior to disposal.	Philadelphia, DRBC, EPA	2003 and 2004
- Provide print materials targeted at facility owners and operators, explaining the environmental benefits of and incentives available for removing PCB containing equipment	Philadelphia, DRBC, EPA	2003 and 2004
- Recommendations to EPA and Army Corps of Engineers on PCB contaminated sediment management and remediation prioritization.	Philadelphia, DRBC, EPA	2003 and 2004

7. Increase Environmental Awareness of Toxicity Issues in the Delaware Estuary

It is important to educate the affected parties and general public about PCBs and other toxic contaminants in order to help reduce existing levels of these substances and to thwart additional inputs to the system. A common misconception is that current PCB contamination is solely a result of practices that were banned in the late 1970s. Although PCBs are no longer being commercially manufactured, existing PCBs continue to enter the environment from a variety of pathways. In addition, safe levels of PCBs in the environment are extremely low (in parts per quadrillion) so that even small amounts of PCBs can impact living organisms, including humans.

It is important to include an education component in the strategy that addresses past and present sources and pathways, impacts to humans and wildlife, and the proper care and disposal of materials that contain or have been contaminated by PCBs. The educational materials and outreach sessions should also touch on other toxics in the estuary and their similarities and differences from PCBs.

Tasks

Tasks	Lead Agencies	Schedule
a. Work with agencies and stakeholders to develop an education and outreach program	DRBC, EPA	On-going, beginning October 2000 to September 2003
b. Produce pamphlets addressing common sources of PCBs and their impact on human health, aquatic life and wildlife.	U.S. EPA and Outreach Subcommittee	October 2001
c. Write articles for relevant newsletters including the Estuary News	Multiple authors	October 2000 to September 2003
d. Develop and update web site with educational information about PCBs in the estuary environment	DRBC with input from others	Beginning April 2001 – September 2003
e. Organize and run series of public educational meetings	DRBC, EPA, states, stakeholders	Feb./March 2001 Jan/Feb 2002 Jan./Feb 2003
f. Distribute information on PCB regulations, proper disposal procedures and proactive approaches.	U.S. EPA	July to October 2001

8. Monitor long-term concentrations of PCBs in air, water and sediments of the Estuary.

One required element of a TMDL is the reasonable assurance that the TMDLs are actually achieved. This is particularly important where non-point sources of a pollutant are a component of a TMDL since point sources may be assigned a less stringent wasteload allocation based upon the assumption that non-point source load reductions will occur as a result of the implementation of best management practices or other non-regulatory requirements. Monitoring of the concentrations of PCBs in the various compartments of the Delaware Estuary ecosystem will provide information on the success of the implementation plans and the achievement of the TMDL. The monitoring will also provide information on the distribution of PCBs within the ecosystem following the source reductions to ensure that problems are not created in another media.

Outcomes

Tracking the trend in the concentrations of PCBs in the various compartments of the Delaware Estuary ecosystem (i.e., air, water, sediments and biota) is necessary to determine if the components of the implementation plan have resulted in the achievement of the TMDLs.

Tasks

Tasks	Lead Agencies	Schedule
a. Monitor concentrations of PCBs in tissues of important fish species.	DRBC and States	CY 1990 to 2010

Tasks	Lead Agencies	Schedule
b. Conduct yearly monitoring of tributaries for PCB congeners during both base-flow and storm conditions.	DRBC, U.S. Geological Survey	CY 2004 to 2010
c. Conduct yearly monitoring of the ambient waters of the estuary for PCB congeners.	DRBC	CY 2004 to 2010
d. Conduct periodic surveys (every 3 to 5 years) of the sediments of the estuary.	DRBC	CY 2005 & 2010
e. Determine wet and dry deposition of PCBs from the atmosphere at selected locations in the estuary airshed.	NJDEP, PADEP, DE DNREC and U.S. EPA	CY 2004 to 2010

9. Monitor long-term concentrations and impacts to living resources of the Delaware Estuary.

Living organisms such as fish and birds are important components of the Delaware Estuary ecosystem that includes man. These organisms not only provide enjoyment to humans for sport and esthetic reasons, but are also key elements in the structure and function of the ecosystem. Fish species such as the American shad, striped bass and channel catfish provide sport and sustenance to the population of the Delaware Valley. Raptors such as bald eagles and ospreys are important sentinels of environmental contamination given their high trophic level position. Monitoring of tissues of both fish and raptors for PCBs and other contaminants will permit the evaluation of the contribution of these contaminants to observed reproductive and development effects in raptors, and the assessment of long-term trends in environmental concentrations.

Outcomes

The issuance of fish consumption advisories by states bordering the estuary, and the documented failures of nests of bald eagles and other raptors require continued monitoring of the levels of PCBs and other chlorinated organic chemicals in the tissues of resident fish and avian species (Clark et al, 1998). The tasks in this element will continue and expand the existing data base on contaminants levels and trends in the tissues of these species. These data will be essential to monitor the effectiveness of control strategies in reducing PCB contamination and the need for fish consumption advisories to protect human health.

Tasks

Tasks	Lead Agencies	Schedule
a. Monitor concentrations of PCBs in tissues of important fish species.	DRBC and States	1990 to present
b. Monitor concentrations of PCBs and other organochlorines in bald eagles and ospreys.	NJDEP	July 2000 to June 2002
— Collect and analyze sediment samples from bald eagle nesting areas.	NJDEP	July 2000 to June 2001

Tasks	Lead Agencies	Schedule
- Collect and analyze fish prey species of bald eagles.	NJDEP	July 2000 to June 2002
- Analyze eagle eggs, tissue and blood samples.	NJDEP, DE DNREC	July 2000 to June 2002
c. Monitor eagle foraging and nesting areas.	NJDEP	July 2000 to June 2001
d. Compile existing data on contaminants in osprey eggs and nestlings.	NJDEP	July 2000 to June 2002
e. Monitor concentrations of PCBs in tissues of bald eagles, ospreys and other important avian species.	NJDEP, DE DNREC & U.S. F&WS	CY 2004 to 2010

E.

MEMORANDUM OF AGREEMENT, Regarding Roles and Responsibilities of the Parties listed below in the Delaware Estuary Program

**THE STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
AND
THE STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
AND
THE COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
AND
THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AND
THE PARTNERSHIP FOR THE DELAWARE ESTUARY PROGRAM, INC.
AND
THE DELAWARE RIVER BASIN COMMISSION**

This Memorandum of Agreement entered into this _____ day of _____ 2001, by and among the states of Delaware, New Jersey, and the Commonwealth of Pennsylvania, along with the United States Environmental Protection Agency, the Partnership for the Delaware Estuary, Inc. and the Delaware River Basin Commission ("parties") shall outline the Roles and Responsibilities as part of the Delaware Estuary Program (DELEP).

The Establishment of clear Roles and Responsibilities is necessary due to the all encompassing nature of the Comprehensive Conservation Management Plan ("Plan") and the networked structure of DELEP.

The parties of this Memorandum of Agreement set forth the following as terms and conditions of their agreement:

All Parties

The Parties shall provide support toward the implementation of the Plan through participation and support of implementation efforts. These efforts shall include but not be limited to the following:

1. Serve as active members of the Steering Committee, the Estuary Implementation Committee (EIC) and the EIC Work Group.
2. Foster active partnerships among existing organizations to promote Plan implementation.
3. Coordinate responsibilities and seek resources to continue implementation and support efforts.
4. Streamline and identify priority action areas to achieve "on the ground" implementation to enhance the Estuary's resources.

5. Develop annual work plans to support Plan implementation.
6. Identify and provide resources to achieve CCMP implementation.

Roles and Responsibilities of the Steering Committee

The Steering Committee is composed of the Parties in this MOA. The Steering Committee shall provide the services listed in the 1996 Statement of Concurrence (items 1-3 below) as well as other roles listed below.

1. Serve in a guidance capacity for the identification of potential resources for CCMP action implementation;
2. Facilitate or resolve issues and potential conflicts that may arise during CCMP implementation;
3. Consider recommendation(s) for CCMP amendments that may arise.
4. Prioritize Program projects and actions.
5. Set overall policy and program direction.
6. Approve the annual work plan and the budget.
7. Meet at least twice a year.
8. Evaluate the Program Office on an annual basis.
9. Evaluate the Program effectiveness periodically.

Role and Responsibilities of the Estuary Implementation Committee

The Estuary Implementation Committee (EIC) will include as a minimum a core membership consisting of representatives of the program Steering Committee, as amended. This core group will focus on the management, coordination and implementation of activities related to the CCMP. In addition, Implementation Team designees shall also serve on the EIC as well as those agencies identified as implementing entities. Membership shall be open to all implementing bodies (i.e. federal, state, local and non-governmental) tasked with implementation of CCMP actions. Organizations seeking membership to the EIC shall be nominated by one of the members. Consensus by the EIC on the recommended organization constitutes membership.

Tasks of the EIC include:

1. Provide oversight for the development of annual and three-year programmatic priorities and work plans.
2. Seek funding sources for identified priority actions.
3. Develop programmatic changes for Steering Committee approval.
4. Provide oversight for the development of required documentation and reports.
5. Secure relevant expertise.
6. Strive to assure adequate staff time and participation on appropriate teams and advisory committees.

7. Ensure/facilitate coordination of individuals within agencies participating on DELEP activities and committees.

Role and Responsibilities of the Lead State

As stated in Chapter XI of the Plan, Implementing the CCMP, each State will serve as chair of the Steering Committee and the Estuary Implementation Committee (EIC) on an annual rotating basis.

Roles and Responsibilities of the Delaware Estuary Program Office

The Delaware Estuary Program Office ("Program Office"), headed by a Program Director, shall direct and manage all aspects of DELEP on a daily basis. The Program Office reports directly to the Executive Director of the Delaware River Basin Commission (DRBC). Specific roles of the Program Office include:

1. Directs and has responsibility for overall progress on CCMP implementation within the available budgetary resources and tracks progress.
2. Develops annual and three-year priorities, budget and work plan in consultation with Implementation Teams and other identified implementing partners and recommends identified team priorities to the EIC for its consideration and recommendation to the Steering Committee.
3. Develops, in conjunction with the EIC, an annual program schedule for the EIC and Implementation Teams.
4. Prepares and submits the triennial review, the annual budget, work plan and grant application to EPA Region III with the concurrence of the EIC and approved by the Steering Committee.
5. Serves as the point of contact for the Delaware Estuary Program.
6. Composes letters and correspondence on behalf of DELEP.
7. Provides all logistical support (i.e. location, agendas, minutes) for the Steering Committee, EIC and EIC Work Group meetings.
8. Chairs the EIC Work Group.
9. Maintains an archive of all Program Documents.
10. Maintains the DELEP calendar and schedule on delep.org.
11. Identifies and pursues resources to implement the CCMP.
12. Prepares other documents requested from EPA headquarters (such as Government Performance Results Act requirements).
13. Prepares monthly program updates for EIC and Steering Committee.

Roles and Responsibilities of the EIC Work Group

The EIC Work Group is composed of representatives from the signatory Parties. The roles of the EIC Work Group shall include but not be limited to the following:

1. Assists Program Office in preparing an annual budget, an annual work plan, a triennial review and a three year budget and plan.

2. Assists Program Office in preparing other documents requested from EPA headquarters (such as Government Performance Results Act requirements).
3. Provides staff support to coordinate implementation of action items in the CCMP.
4. Completes agreed upon assignments made by the EIC, Steering Committee or Program Director.

Roles and Responsibilities of the Partnership for the Delaware Estuary, Inc.

The Partnership for the Delaware Estuary, Inc. is a non-profit organization, with a separate board of directors, established to participate in the implementation of the Plan. The Partnership works to protect the environment, promote conservation of the natural resources, and contribute to the usefulness of the Delaware Estuary and its tributaries for recreational and commercial purposes that are compatible with the sustainable use of estuarine resources. The roles of the Partnership shall include but not be limited to:

1. Provide direction and oversight for activities related to education and outreach for DELEP.
2. Develop educational related tasks as part of the annual work plan.
3. Coordinate outreach to all interested stakeholders.
4. Serve as a central point of contact for the public regarding the Estuary and maintaining the Estuary 1-800 number to facilitate this role.
5. Serve as a clearinghouse of information regarding DELEP and the Estuary.
6. Assist in securing grants and other funds to implement the CCMP.
7. Foster active partnerships among existing organizations to promote Plan implementation.
8. Continue to expand its role in implementing the CCMP.

Roles and Responsibilities of the Delaware River Basin Commission

The Delaware River Basin Commission as the water resource management agency of the Basin will be an active partner and will support implementation of the Plan. DRBC is identified as the institution where the Delaware Estuary Program Office resides. The roles of DRBC shall include, but not be limited to:

1. Serve to facilitate cooperation among its members and foster consensus as to the identification and development of state and federal decisions related to the Estuary.
2. Manage and support the Delaware Estuary Program Office, the Office of Monitoring and Mapping, and the Regional Information Management Service.
3. Provide technical expertise and coordinate technical CCMP actions.
4. Establish and support advisory committees e.g. MAC, IMAC, TAC related to the Estuary.
5. Foster active partnerships among existing organizations to promote CCMP implementation.

6. Serve as a source for water resource information for the Basin.
7. Conduct an annual performance evaluation of the Program Director with input from the Steering Committee and the EIC.

The parties hereby acknowledge the foregoing as the terms and conditions of this agreement.

Nicholas A. DiPasquale
Secretary
Delaware Department of Natural
Resources and Environmental

Robert C. Shinn, Jr.
Commissioner
New Jersey Department of Environmental
Protection

Irene Brooks
Executive Director
Office for River Basin Cooperation
Commonwealth of Pennsylvania
Department of Environmental Protection

William J. Muszynski
Acting Regional Administrator
United States Environmental Protection
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Thomas C. Voltaggio
Acting Regional Administrator
United States Environmental Protection
Agency Region III

Jonathan E. Rinde, Esquire
Chairman of the Board
Partnership for the Delaware Estuary, Inc.

Carol R. Collier
Executive Director
Delaware River Basin Commission

**Prioritization
of
Unfunded Activities in the 3-Year Plan**
(1/24/2001)

Listed below are the top unfunded tasks for FY 2001 and 2002 associated with each Priority Element.

Overall Top Priority:
Oyster Blue Ribbon Panel
(see Habitat Restoration)

■ **Infrastructure (Monitoring)**

2001 Funding Priority Needs

1. Estrogenic pesticides occurrence in the Delaware Estuary \$27,680
2. Expansion of Boat Run \$60,000 (\$40,000 or \$20,000)

2002 Funding Priority Needs

1. Estrogenic pesticides occurrence in the Delaware Estuary \$27,680
2. Expansion of Boat Run \$60,000 (\$40,000 or \$20,000)

■ **Education/Outreach**

2001 Funding Priority Needs

1. Teacher Training Institute \$13,000
2. Watershed Ecotourism Brochures \$16,300
3. Bi-Annual Report \$20,000

2002 Funding Priority Needs

1. Teacher Training Institute \$32,000
2. Migrant Program \$30,000 (this is in addition to the anticipated \$35,000 from DELEP)
3. Storm Drain Stenciling \$50,000

■ **PCBs**

2001 Funding Priority Needs

1. Determine the Transport and Fate of PCBs in the Estuary (modeling) \$180,134
2. Characterize Concentrations of PCBs in Air, Water, Sediment and Fish Tissue \$113,942

2002 Funding Priority Needs

1. Determine the Transport and Fate of PCBs in the Estuary (modeling) \$361,925
2. Identify and Quantify Sources of PCBs \$150,000

■ **Horseshoe Crabs**

2001 Funding Priority Needs

1. Provide Reward Hats for Horseshoe Crab Returns \$5,000
2. Support Egg Count Surveys \$68,000
3. Quantify Amount of Horseshoe Crab Eggs Needed by Shorebirds \$53,000

2002 Funding Priority Needs

1. Fund Spawner Survey Volunteer Coordinator \$16,200
2. Support Egg Count Surveys \$68,000

■ **Habitat Restoration**

2001 Funding Priority Needs

1. Oyster Blue Ribbon Panel Two Day Workshop \$3,000 (funded with agreement) Proceedings and Begin to Write Report \$3,235

2002 Funding Priority Needs

1. Oyster Restoration (contingent upon decision of Blue Ribbon Panel) \$100,000
2. CESP \$65,000
3. Fish Ladders/ Dams \$200,000 (one fish ladder)

■ **Fish Consumption Advisories**

2002 Funding Priority Needs

1. Field and Lab Studies \$25,000

■ **Watersheds**

2001 Funding Priority Needs

1. Plan & Conduct a Technology Seminar Series \$10,000

2002 Funding Priority Needs

1. Plan & Conduct a Technology Seminar Series \$10,000

■ **Environmental Indicators**

2001 Funding Priority Needs

1. Reproduce Scientific Characterization for Workshops and Other \$5,000

2002 Funding Priority Needs

1. State of the Estuary Report \$80,000

DELEP

**3-Year Plan
Overview**

	2000			2001			2002			2003		
	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded
Elements												
Infrastructure	267,050	267,050	0	423,380	335,700	87,680	474,208	0	474,208	567,660	0	567,660
Education & Outreach	429,500	429,500	0	631,215	560,615	70,600	619,725	83,730	535,995	691,425	6,000	683,425
TOTAL	696,550	696,550	0	1,054,595	896,315	158,280	1,093,933	83,730	1,010,203	1,259,085	6,000	1,251,085
Priorities												
PCBs	224,000	74,000	150,000	1,531,389	493,813	1,037,576	1,063,267	259,576	803,691	140,942	27,000	113,942
Horseshoe Crabs	0	0	0	158,150	21,400	136,750	84,200	0	84,200	84,200	0	84,200
Habitat Restoration	0	40,000	0	384,802	381,802	3,000	434,000	44,000	390,000	390,000	0	390,000
Fish Consumption Advisories	-	-	-	-	-	-	25,000	0	25,000	-	-	-
Watersheds	na	-	-	10,000	-	10,000	10,000	-	10,000	10,000	-	10,000
Env. Indicators	5,000	5,000	0	37,500	37,500	0	101,000	21,000	80,000	39,000	39,000	0
TOTAL	229,000	119,000	150,000	2,121,841	934,515	1,187,326	1,717,467	324,576	1,392,891	664,142	66,000	598,142
TOTAL for Elements & Priorities	925,550	815,550	150,000	3,176,436	1,830,830	1,345,606	2,811,400	408,306	2,403,094	1,923,227	72,000	1,849,227

DELAWARE ESTUARY PROGRAM

DRAFT

3-YEAR PLAN

January 2001

DELAWARE ESTUARY PROGRAM

3-YEAR PLAN

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 - Watersheds
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DELAWARE ESTUARY PROGRAM

3-YEAR PLAN

Background

This 3-Year Plan was developed in response to a Steering Committee request that the Delaware Estuary Program (DELEP) create a 2-3-year budget to facilitate the funding of Program priorities. (April 7, 2000 SC meeting). This document is a 2-3 year plan with budget information.

Purpose of the DRAFT 3-Year Plan is to facilitate:

1. The integration, where feasible, of the Priorities into the annual budget and workplan.
2. Advance planning efforts which help DELEP garner future and longer-term funding for its activities.

How to use this Plan:

- The Program has budgeted out priority activities (Infrastructure, Education and Outreach, EIC Priorities) and their associated tasks.
- In fulfilling the Steering Committee's request, it was decided by the Program that in order for the document to be truly useful, it should be broad enough to include some "wish list" activities so as to take advantage of a larger pool of potential funding opportunities. As a result, this 3-Year Plan includes more projects than DELEP can reasonably be expected to accomplish. Therefore, further prioritization of activities have been provided which will assist the user in the determination of funding priorities. (See Prioritization List)
- Each Program priority has a funding chart and a background paper.
 - ▶ The funding chart is a quick glance by year of funds provided and funds needed.
 - ▶ The background paper provides more information on the activity and tasks and funding requirements.
 - ▶ This is not intended to be a project management chart.

The funding chart reflects only when the funds become available, not necessarily the initiation date or duration of an activity. You must refer to the background paper for that information.
 - ▶ Fiscal Year 2000 information has been retained on this chart to provide historical perspective.
 - ▶ Charts and background papers will be updated periodically.

Cost of Implementation of the Conservation and Management Plan (CCMP): approximately \$600 Million

Last year EPA Region 3, at the request of EPA Headquarters, developed a rough estimate of the projected total cost of implementation of the CCMP over a 10-year period. The calculation was based on 1999 dollars and resulted in an implementation cost of approximately \$600 Million.

DELEP
Infra-structure
3-Year Plan
Background Paper
January 2001

Purpose:

To support staff who provide coordination and act as central points of contact for the Delaware Estuary Program on the various issues.

Background:

There are 3 staff positions mostly dedicated to DELEP: Program Coordinator; Monitoring Coordinator & Information Services Specialist.

Status:

Infrastructure costs are covered on a year-to-year basis. There are ongoing discussions on how to provide resources for this infrastructure on a long-term basis

Deliverables: See specific items

CCMP Action Items:

Wetlands/Habitat Coordination

- H1 Assure Compliance with Existing Interstate Species Management Plans and Prepare Plans for Additional Appropriate Species
- H2 Establish a Procedure for Enhancing Compatibility among Species Management Plans
- H3 Develop a Natural Community Classification System to Assist in the Protection of these Communities
- H4 Coordinate and Enhance Wetlands Management within the Estuary
- H5 Target Habitat Enhancement Opportunities for Present and Future Action
- H6 Develop and Implement an Estuary-wide Policy to Evaluate Proposed Intentional Introductions of Exotic Species and Prevent Unintentional Ones
- H7 Develop Measures to Protect Shoreline and Littoral Habitats that are Threatened by Sea Level Change
- H8 Facilitate Coordination among the States to Update and Improve Environmental Sensitivity Index Mapping for Hazardous Spill Response Information
- H9 Consider Priority Species in Regulatory Reviews and Environmental Impact Statement
- H10 Protect Rare Species through a Landscape Approach

Program Coordination

ALL action items apply

Monitoring Coordination

- M1 Establish an Interim Monitoring Advisory Group
- M2 Establish a Permanent Monitoring Implementation Team
- M3 Establish the Office of Monitoring and Mapping Coordination

Activity 2: Program Coordination

Background: Approximately \$90,000 per year of NEP funds was provided during the planning phase for a Program Coordinator (Bob Tudor). For the first three years after completion of the management plan (96-99), DELEP did not have a Program Coordinator. During facilitated discussions in the Fall of 1997, all members of what is now the Workgroup identified lack of coordination as a significant program hurdle. Additionally, the 1997 Biennial Review recommended that DELEP consider a dedicated director for coordination purposes. A Program Coordinator was hired in February, 1999. Funding was provided through NEP funds, EPA Headquarters and matching funds from DRBC.

Status: This year (FY 2001), the cost for the Coordinator will be \$116,183. The Program Coordinator serves as the overall contact and coordinator for the Program. She also serves as a contact for the other National Estuary Programs. She works closely with the lead state and EIC chair. She will also work with implementation teams and advisory committees to ensure coordination.

Date: Ongoing

Lead: DRBC

Partners: EPA/States

Deliverables: Environmental Indicators
Budget/Workplan
Three Year Plan

Resource Need: This crucial position has been funded on a year-to-year basis solely with NEP funds and match from DRBC. A more stable, long-term source of funding is needed for a salary for this position, and, ideally, funds for assistance for the coordinator; \$123,810 is needed for the Coordinator for FY 2002, \$74,296 is needed for an assistant for FY 2002.

Activity 3: Monitoring Coordination and Related Activities

Background: DELEP recognizes that regional monitoring coordination and integration of ongoing monitoring and data management activities can reduce overlap and duplication. This

regarding these pesticides in the aquatic environment of the Delaware Estuary. The proposal is to provide for the initial collection and analysis of twelve water samples collected coincident with the current DRBC Chronic Toxicity Survey Program. These samples are to be collected consistent with previous toxicity testing performed by the Delaware River Basin Commission. Based upon a baseline survey of twelve samples, the project cost would be \$27,680.

Activity 4: Information Services Management

Background:

The purpose of the Information Services Specialist is to maintain the Delaware Estuary Program website through updating information and refining the design; adding information to relevant databases; interacting with DELEP implementation teams to add relevant data; assisting with data and information gathered by the Monitoring Coordinator; and assisting the Program Coordinator. A crucial item for which a data manager is necessary is an implementation tracking system.

Status:

This year, the information services needs, including equipment, training and tracking, are being paid for through a combination of NEP funds, DRBC funds and state funds. A priority for this year will be to finalize the database of projects in the estuary for the purpose of tracking CCMP implementation to make it searchable by users and able to print reports.

Date:

Ongoing

Lead:

DRBC

Partners:

States/EPA

Deliverables:

Maintained website including:

- Integrated database with online mapping
- newsletters online
- estuary publications online
- tracking database

Resource Need:

Longer-term funding for this position; \$106,108 is needed in FY 2002.

Activity 5: Conferences

DELEP Priority

Infra-Structure 3-Year Plan

Activity	Funding Required											
	2000			2001			2002			2003		
	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded
Element 1: Wetlands Coordination												
Coordinator										70,000		70,000
Element 2: Program Coordination	70,570	70,570	0	116,183	116,183	0	123,810		123,810	131,910		131,910
Element 3: Monitoring Coordination	98,695	98,695	0	113,975	113,975	0	121,610		121,610	129,610		129,610
Boat Run Extension				60,000		60,000	60,000		60,000	60,000		60,000
Special Monitoring (abbreviated boat run extension)				15,000	15,000							
Pesticide Survey				27,680		27,680	27,680		27,680	27,680		27,680
Element 4: Information Services Management	92,785	92,785	0	99,307	99,307	0	106,108		106,108	113,460		113,460
Tracking				6,000	6,000							
Training				2,479	2,479							
Equipment				3,000	3,000							
Element 5: Conferences	5,000	5,000	0	6,235	6,235	0	35,000		35,000	35,000		35,000
Yearly Totals	267,050	267,050	0	449,859	362,179	87,680	474,208	0	474,208	567,660	0	567,660
Priority Total	Total Cost	Funded	Unfunded	All figures are in Dollar amounts. All years are in Federal Fiscal Years (October 1 - September 30)								
	1,758,777	629,229	1,129,548	na not applicable, TBD = to be determined,								

DELEP

Education & Outreach

3-Year Plan

Activity	Funding Status											
	2000			2001			2002			2003		
	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded
Director of Development and Communications	55,000	55,000	0	66,125	66,125	0	68,125	0	68,125	71,125	0	71,125
Public Information Materials	na	na	na	11,000	11,000	0	TBD			TBD		
Bi-Annual Report	na	na	na	20,000	0	20,000	na	na	na	20,000	6,000	12,000
Teacher Training Institute	25,000	25,000	0	30,000	17,000	13,000	32,000	0	32,000	34,000	0	34,000
Advanced Teacher Training Institute	na	na	na	5,000	0	5,000	10,000	0	10,000	15,000	0	15,000
CESP (Corporate Environmental Stewardship Program)	70,000	70,000	0	100,000	100,000	0	125,000	60,000	65,000	130,000	0	130,000
Mascot Costume	na	na	na	2,000	0	2,000	na	na	na	2,400	0	2,400
Storm Drain Stenciling	175,000	175,000	0	175,000	175,000	0	50,000	0	50,000	50,000	0	50,000
Estuary Video	4,000	4,000	0	34,560	30,560	4,000	4,000	0	4,000	4,000	0	4,000
Teacher Resources Guide	4,500	4,500	0	5,000	5,000	0	na	na	na	9,000	0	9,000
School Assembly Program	na	na	na	na	na	na	125,000	0	125,000	125,000	0	125,000
School Habitat Program	na	na	na	25,000	25,000	0	27,000	0	27,000	30,000	0	30,000
Watershed Ecotourism brochure	10,000	10,000	0	20,000	3,700	16,300	20,000	0	20,000	20,000	0	20,000
DELEP Mailing List	6,000	6,000	0	6,300	6,000	300	6,600	0	6,600	6,900	0	6,900
Estuary News	40,000	40,000	0	45,000	40,000	5,000	47,000	0	47,000	49,000	0	49,000
Minigrants	35,000	35,000	0	70,230	70,230	0	85,000	23,730	61,270	100,000	0	100,000
Education and Outreach for DELEP Priorities	5,000	5,000	0	16,000	11,000	5,000	20,000	0	20,000	25,000	0	25,000
Yearly Totals	429,500	429,500	0	631,215	560,615	70,600	619,725	83,730	535,995	691,425	6,000	683,425
	Total Cost	Funded	Unfunded	All figures are in Dollar amounts, All years are in Federal Fiscal Years (October 1 - September 30)								
Priority Total	2,371,865	1,079,845	1,290,020	na = not applicable, TBD = to be determined								

DELEP
Education and Outreach in the Delaware Estuary
3-Year Plan
Background Paper
January 2001

PURPOSE

One of the DELEP goals is to promote greater public understanding of the Delaware Estuary and to realize greater participation in the decision-making process and implementation of programs affecting the Estuary. The CCMP states that public support is necessary to successfully implement the CCMP's recommendations. This kind of support cannot be obtained without confronting the lack of public appreciation for the Estuary, the lack of knowledge about the interdependence of human and estuarine health, and the lack of public involvement in addressing issues facing the Delaware Estuary.

STATUS OF PPIT

The Public Participation Implementation Team (PPIT) held a 1-day retreat in June, 2000 to re-focus and re-energize this group as well as to address various issues in order to make this team run more efficiently. As a result of the retreat, there is now a PPIT member assigned to each DELEP implementation team and advisory committees to ensure that the teams' needs in the areas of education and outreach are addressed. The PPIT members made a commitment to actively investigate current outreach and education activities within their own organizations and to communicate those activities back to the PPIT to avoid duplication of effort and to identify opportunities for coordination and leveraging. In addition, recently the program decided that the PPIT would be the entity responsible for the content of the DELEP web site. Members of the PPIT have agreed to check the web site regularly, make contributions to the site, and to provide recommendations for changes or improvements. Finally, a letter introducing the PPIT will be sent to various individuals in the outreach and education arena throughout the Estuary to invite their input and involvement on either a regular basis, or on an issue-specific basis if they so choose.

Action items related to outreach and education

- E1. Continue Existing Public Participation Program
- E2. Hold and Attend Public Meetings and Workshops
- E3. Continue holding Annual Events To Raise Public Awareness of the Estuary
- E4. Develop Educational Initiatives in Support of the Land Management Action Plan
- E5. Develop Educational Initiatives in Support of the Water Use Action Plan
- E6. Develop Educational Initiatives in Support of the Habitat and Living Resources Action Plan
- E7. Develop Educational Initiatives in Support of the Toxics Action Plan
- E8. Conduct and Publish Public Attitude Surveys
- E9. Determine Priority Educational Messages and Targeted Audiences
- E10. Promote Ecotourism in the Estuarine Region
- E11. Encourage Use of Citizen Monitoring Activities and Best Available Technology for Monitoring
- E12. Promote Hands-on Educational Activities and Volunteer Stewardship Opportunities
- E13. Support Floating Classrooms (in conjunction with Delaware Bay Schooner Project)
- E14. Develop and Publish Outreach Articles in Trade Magazines and Journals
- E15. Meet the Demand For Existing and New Publications That Will Increase Public Awareness
- E16. Utilize Electronic Bulletin Boards to Disseminate Information (DELEP.ORG)
- E17. Establish Estuarine Resource Sections Within Existing Libraries and Environmental Centers
- E18. Organize and Implement Storm Drain Stenciling Program
- E19. Urge School Administrators to Incorporate Estuary Education in Curricula and Establish Challenge Grants
- E20. Develop and Place Permanent Estuary Displays
- E21. Develop a Mascot for the Estuary
- E22. Establish Delaware Estuary Environmental Badge
- E23. Develop and Place Watershed Signs on Roadways and Promote Watershed Education

BACKGROUND/ STATUS OF 3 YEAR BUDGET ACTIVITIES

Director of Development and Communications

Background: In the spring of 1999, the Partnership for the Delaware Estuary identified the need to create a Director of Development/Communications position. The program agreed that there was a need to have a person focused on raising dollars to support implementation and to help promote the Estuary through outreach with media and other targeted constituencies.

Status: In January 2000, the Partnership hired Joe Matassino to fill this position. Over the past 11 months, the Partnership and the program have seen a marked increase in the amount of money raised to support implementation and the visibility of the Estuary. The Partnership is responsible for raising the funds to sustain this position into the future. In 2001, a portion of this position's salary is being funded by DELEP.

Deliverables

- 2000 Identifying potential funding sources for CCMP implementation
 - Preparing and submitting fundraising proposals
 - Helping to track funded projects and preparing grant reports
 - Establishment of relationships with media contacts
 - Issuing of press releases on DELEP and other Estuary-related events/programs/materials
 - Collecting Estuary media clips
 - Identification and participation at Estuary-related events
 - Developing an enhanced photo gallery of Estuary images
 - Establishment of relationships with new organizations from across the Estuary
 - Preparation and distribution of DELEP outreach materials
- 2001 See 2001
- 2002 " "
- 2003 " "

Funding Required	Total Cost	Funded	Unfunded
2000	\$55,000	\$55,000	0
2001	*\$66,125	\$66,125	0
2002	\$68,125	0	\$68,125
2003	\$71,125	0	\$71,125

*reflects increased overhead rate for the Partnership from 2000 to 2001

Public Information Materials

Background: There is a need to develop new educational and outreach tools to get people aware of the Delaware Estuary, its resources, and how we impact water quality.

Status: In 2001, four topical fact sheets will be developed and distributed. These fact sheets will also be used to promote the Estuary through the media and other communication outlets including the Internet. A general DELEP brochure is also needed and will be created in FY '01.

Deliverables

2000 Four topical fact sheets and a DELEP brochure
2001 Four new topical fact sheets and an updated DELEP brochure
2002 To be determined
2003 " "

Funding Required	Total Cost	Funded	Unfunded
2000	n/a	n/a	n/a
2001	\$11,000	\$11,000	0
2002	To be determined	To be determined	To be determined
2003	" "	" "	" "

Bi-annual Report*

Background: During the planning phase of DELEP, annual reports were prepared to provide stakeholders and the general public with a progress report for the program. Since the implementation phase began in 1996, annual reports have not been published.

Status: There is a need to issue a biannual report for DELEP to communicate the program's progress, to highlight activities across the region, and to share the scientific indicators.

Deliverables

2000 n/a
2001 design, print and distribute an annual report
2002 n/a
2003 design, print and distribute an annual report

Funding Required	Total Cost	Funded	Unfunded
2000	n/a	n/a	n/a
2001	\$20,000	0	\$20,000
2002	n/a	n/a	n/a
2003	\$20,000	\$6,000	\$12,000

*This report may also include the indicators and would therefore result in some of the budget projections under this and the indicator work elements.

Teacher Training Institute

Background. This past summer marked the 4th annual Delaware Estuary Teacher Institute. Over the past four years, 93 teachers have participated in the week-long program. For the first two years, the program was funded with DELEP dollars. For the past two years, the Partnership has raised the necessary funds to support the program through state, foundation, and corporate sources. Ideally, the three Estuary states should financially sponsor the teachers from their states.

Deliverables

2000 week-long Institute w/ 30 participants
2001 week-long Institute w/ 30 participants
2002 week-long Institute w/ 30 participants
2003 week-long Institute w/ 30 participants

Funding Required	Total Cost	Funded	Unfunded
2000	\$25,000	\$25,000	0
2001 (As of Jan. 2001)	\$30,000	\$17,000	\$13,000
2002	\$32,000	0	\$32,000
2003	\$34,000	0	\$34,000

Advanced Teacher Training Institute

Background: Past participants in the Institute described above have expressed interest in an Advanced Institute.

Status: Currently, the Partnership for the Delaware Estuary is exploring the idea of holding several one-day advanced workshops each year for past participants of the Institute. The teachers themselves would identify the topics for these workshops.

Deliverables

2000 n/a
2001 hold 1 one-day workshop
2002 hold two one-day workshops
2003 hold three one-day workshops

Funding Required	Total Cost	Funded	Unfunded
2000	n/a	n/a	n/a
2001	\$5,000	0	\$5,000
2002	\$10,000	0	\$10,000
2003	\$15,000	0	\$15,000

CESP

Background: EPA Region III provided \$152,288 in wetlands funding for a three-year period to establish the Corporate Environmental Stewardship Program (CESP). The CESP promotes corporate, business, and industry participation in the restoration, enhancement, and/or conservation of wetlands and associated wildlife and native plant habitats and corridors on their lands. By the end of 2001, this project will have provided demonstration grants to maximum of nine wetland and associated habitat restoration projects, totaling approximately 150 acres.

Status: To date, three demonstration projects have been identified and numerous presentations have been made to corporations across the region. A feasibility report is being prepared to determine the long-term potential for establishing a corporate habitat enhancement alliance in the Estuary that would enable the program to be self sustaining with one full-time staff person dedicated to the initiative.

In addition, the Partnership for the Delaware Estuary is working to raise other sources of funding to continue and to expand this program. The Partnership recently was awarded a Pennsylvania Growing Greener grant for \$95,431 that will be used over a two-year period to support CESP activities in the Commonwealth.

Deliverables

- 2000 Three demonstration projects on the ground
- 2001 Nine additional demonstration projects on the ground
- 2002 Nine additional demonstration projects on the ground
- 2003 Establishment of the Delaware Estuary Corporate Env. Stewardship Alliance

Funding Required	Total Cost	Funded	Unfunded
2000	\$70,000	\$70,000	0
2001	\$100,000	\$100,000	0
2002	\$125,000	\$60,000	\$65,000
2003	\$130,000	0	\$130,000

Mascot Costume

Background: In 1998, The Partnership and PPIT created the Estuary's mascot, "Horseshoe Harry". One of the goals of creating a mascot was to have a character that could participate in water-related events across the region.

Status: A designer has been identified to create the "Horseshoe Harry" costume.

Deliverables

2000 n/a
2001 Costume designed
2002 n/a
2003 New costume produced

Funding Required	Total Cost	Funded	Unfunded
2000	n/a	n/a	n/a
2001	\$2,000	0	\$2,000
2002	n/a	n/a	n/a
2003	\$2,400	0	\$2,400

Storm Drain Stenciling

Background: The Partnership for the Delaware Estuary coordinated the "Philadelphia Earth Day 2000 Storm Drain Stenciling Project". It was the largest Earth Day 2000 service project in the City of Philadelphia. It is anticipated that this type of stenciling effort will be expanded to include other cities in the Estuary over the next several years. This program addresses stormwater runoff pollution - one of the greatest threats to the quality of our region's rivers and creeks.

Status: Funding has already been raised to do stenciling in Philadelphia, PA and Camden, NJ in FY '01. A proposal has been submitted by the Partnership to DNREC for FY '01 support of stenciling activities in Wilmington, DE.

The Partnership is looking into packaging stenciling kits that would be available either free of charge or for a minimal cost to organizations interested in marking storm drains in their communities.

Deliverables

2000	Philadelphia & Camden, NJ Pilot Projects
2001	Philadelphia Earth Day 2000 and stenciling in Wilmington
2002	Development & distribution of stenciling kits
2003	Continued distribution of stenciling kits

Funding Required	Total Cost	Funded	Unfunded
2000	\$175,000	\$175,000	0
2001	\$175,000	\$175,000	0
2002	\$50,000	0	\$50,000
2003	\$50,000	0	\$50,000

Estuary Video

Background: During the planning phase of DELEP a video, comprised of slide images, was developed. This video is now outdated and there is a need to create a new educational video that explores the Estuary and its issues.

Status: A \$34,560 Pennsylvania Growing Greener Grant was awarded to the Partnership to develop a new video on the Delaware Estuary.

Funding needs to be raised to develop, print, and to distribute educational support materials to be used in conjunction with the video for schools, municipalities, watershed organizations, and other constituency groups.

Deliverables

2000 Begin to develop video
2001 Produce and begin distribution
2002 Continue distribution
2003 Continue distribution

Funding Required	Total Cost	Funded	Unfunded
2000	\$4,000	\$4,000	0
2001	\$34,560	\$30,560	\$4,000
2002	\$4,000	0	\$4,000
2003	\$4,000	0	\$4,000

Teacher Resources Guide

Background: The Partnership identified a need for a resource booklet that teachers and environmental educators could use to identify teaching resources.

Status: With funding from the Philadelphia Water Department, the Partnership has developed a draft Teacher Resource Guide with more than 100 organizations included.

Guide will be updated every other year.

Deliverables

- 2000 Write first copy
- 2001 Design, print and distribute first edition
- 2002 Continue distribution
- 2003 Update and design, print and distribute 2nd edition

Funding Required	Total Cost	Funded	Unfunded
2000	\$4,500	\$4,500	0
2001	\$5,000	\$5,000	0
2002	n/a	n/a	n/a
2003	\$9,000	0	\$9,000

School Assembly Program

Background: To reach large groups of school children, assembly programs provide an opportunity to get a "big bang for the buck".

Status: An idea to develop a Delaware Estuary Theater troupe is being discussed.

Ideally, a performance troupe would reach approximately 20,000 students the first year and approximately 35,000 students the second year.

Deliverables

2000 n/a
2001 n/a
2002 Develop and begin providing assembly presentations
2003 Continue providing assembly presentations

Funding Required	Total Cost	Funded	Unfunded
2000	n/a	n/a	n/a
2001	n/a	n/a	n/a
2002	\$125,000	0	\$125,000
2003	\$125,000	0	\$125,000

School Habitat Program

Background: Getting kids involved in on the ground habitat enhancement projects has proven to be effective in getting them interested in watersheds and the Delaware Estuary.

Status: One of the DELEP minigrant recipients is developing a handbook and video on school habitat programs that the Partnership would like to market Estuary wide.

Needs: \$25,000 - \$30,000/year to provide technical and financial assistance to school habitat programs in the region.

Deliverables

2000 Develop handbook and video working with Natural Lands Trust
2001 Begin to offer assistance to schools
2002 Continue offering assistance to schools
2003

Funding Required	Total Cost	Funded	Unfunded
2000	n/a	n/a	n/a
2001	\$25,000	\$25,000	0
2002	\$27,000	0	\$27,000
2003	\$30,000	0	\$30,000

Watershed Ecotourism Brochure

Background: In 1998, a survey of 3,342 households found that regardless of the destination of their vacation, respondents had an even chance (48.1%) of participating in nature-based activities during their trip (Bruskin Goldring 1998). Thirty percent of respondents planned trips that focused on some or a majority of time on nature-based activities. The Ecotourism Society estimates such travel will increase seven percent each year over the next decade. Many of the hundreds of participants in the Flowing Toward the Future activities in the Delaware River Basin concluded that addressing ecotourism should be a priority for environmental outreach and education professionals in the Basin.

Status: The Partnership developed a pilot brochure with NJ DEP for the Cohansey River Watershed. Funding has been raised to produce a brochure for the St. Jones River in Delaware in 2001.

Deliverables

- 2000 Design, print and distribute Cohansey Watershed brochure
- 2001 Design, print and distribute three new brochures
- 2002 Design, print and distribute three new brochures
- 2003 Design, print and distribute three new brochures

Funding Required	Total Cost	Funded	Unfunded
2000	\$10,000	\$10,000	0
2001	\$20,000	\$3,700	\$16,500
2002	\$20,000	0	\$20,000
2003	\$20,000	0	\$20,000

DELEP Mailing List

Background: The Delaware Estuary Program Mailing list was started by the Pennsylvania Environmental Council as a mailing list primarily for the distribution of *Estuary News*.

Status: The mailing list is currently at 23,300 names and is used for the mailing list as well as an events notification mailing list. This list is made available to other DELEP partners and other organizations in the Estuary. Currently this task is being funded by DELEP and managed by the Partnership.

Deliverables

2000	clean database for estuary education and outreach uses
2001	clean database for estuary education and outreach uses
2002	clean database for estuary education and outreach uses
2003	clean database for estuary education and outreach uses

Funding Required	Total Cost	Funded	Unfunded
2000	\$6,000	\$6,000	0
2001	\$6,300	\$6,000	\$300
2002	\$6,600	0	\$6,600
2003	\$6,900	0	\$6,900

Estuary News

Background: The *Estuary News* has been published by the Partnership for the Delaware Estuary Program since 1997. It is published and mailed quarterly to 25,000 people.

Status: Currently this task is being funded by DELEP and managed by the Partnership.

Deliverables

2000 4 12-page issues
2001 4 16-page issues
2002 4 16-page issues
2003 4 16-page issues

Funding Required	Total Cost	Funded	Unfunded
2000	\$40,000	\$40,000	0
2001	\$45,000	\$40,000	\$5,000
2002	\$47,000	0	\$47,000
2003	\$49,000	0	\$49,000

Minigrants

Background: Since 1991, EPA Region III has funded approximately 70 mini-grants totaling more than \$220,000. Since 1997, the minigrants have been managed by the Partnership for the Delaware Estuary.

Status: In February 2000, eight minigrants were awarded for a total of \$20,010. These minigrants support projects that will restore habitat in the estuary, and educate its residents about the resource.

The program would like to expand the pot of money that is available to support minigrants. The Partnership is working to identify and contact foundations that may be interested in funding this type of program.

Deliverables

2000	n/a
2001	12-15 projects funded
2002	15 - 20 projects funded
2003	20 - 25 projects funded

Funding Required	Total Cost	Funded	Unfunded
2000	\$35,000	\$35,000	0
2001	\$70,230	\$70,230	0
2002	\$85,000	\$23,730	\$61,270
2003	\$100,000	0	\$100,000

Education and Outreach for DELEP Priorities

Background: Now that DELEP has established six, 3-year priorities, funding is needed to help support education and outreach initiatives to support these priorities.

Status: For FY '01, DELEP has committed some funding toward this work plan element.

The budget for this item really depends on what specific outreach tools are selected to help promote the priorities.

Deliverables

2000	Update DELEP display and participate in estuary-related festivals and events.
2001	TBA
2002	TBA
2003	TBA

Funding Required	Total Cost	Funded	Unfunded
2000	\$5,000	\$5,000	0
2001	\$16,000	\$11,000	\$5,000
2002	\$20,000	0	\$20,000
2003	\$25,000	0	\$25,000

**DELEP Priority
PCBs
3-Year Plan
Background Paper
December 2000**

(DRAFT – Information for the development of this Background Paper was taken from the 7/11/00 DRAFT PCB Strategy which is soon to be updated)

Purpose:

Chlorinated organic compounds, such as PCBs, chlordane and DDT have been found in the tissue of fish and shellfish in the Delaware Estuary. This problem has resulted in fish consumption advisories for the entire Delaware Estuary. In addition to the human health risks posed to individuals who consume contaminated fish, PCBs also represent an ecological risk to wildlife and aquatic biota in the Estuary, particularly sediment-dwelling organisms. Elevated levels of PCBs, DDT and its metabolites, and chlordane have been detected in peregrine falcon eggs from the Delaware Estuary (Jarman *et al.*, 1993). Chlorinated pesticides appear to adversely affect populations of birds of prey (raptors) in the Delaware Estuary. Although more study is needed, there is evidence that eggshell thinning due to toxic substances is continuing to affect the stability of raptor populations.

Background on PCBs in the Estuary:

The lack of comprehensive and reliable information concerning the sources of PCBs to the estuary and the associated transport pathways has hampered mitigation of the problem. A study conducted by DRBC in 1996-1997 focused on two classes of potential sources to the Delaware Estuary; namely, wastewater treatment plants and tributaries. The results of separate dry weather and wet weather sampling events indicated that wastewater treatment plants and tributaries discharging to the tidal Delaware River are active and significant sources of PCBs to the system.

The study demonstrated that the current fish contamination problem cannot be attributed solely or predominately to "historic" sediment contamination already in the estuary, as many resource managers have believed. Indeed, the active loading entering the estuary from treatment plants, CSOs, and tributaries is sufficient, independent of the PCBs already in estuary sediments, to cause water quality criteria exceedences and associated fish contamination. Of course, treatment plants, CSOs, and tributaries are not original sources of PCBs. Rather, treatment plants and tributaries are merely acting as conduits for PCBs that have been inadvertently or deliberately introduced into sewage collection systems, eroded off of contaminated upland sites, and transported via overland flow into the collection systems and down through tributary watersheds. Actions to interrupt this cycle including the systematic identification of significant upland sources of PCBs, enhancement of the Commission's mathematical model of the estuary, and implementation of effective sediment and erosion control practices were recommended.

The PCB Strategy :

In order to address the issue of PCBs in the Estuary, the Delaware Estuary Program has drafted a PCB Strategy. The goal of this strategy is to ensure that the Delaware River Basin Commission (DRBC) water quality standards for Total PCBs for Zones 2, 3, 4 and 5 of the tidal Delaware River ("the Delaware Estuary") are achieved. Achieving these standards will ensure the health of humans and the living resources using the estuary are protected and eliminate the necessity for advisories limiting consumption of fish and shellfish caught in the estuary.

This strategy includes six major elements designed to establish Total Maximum Daily Loads or TMDLs for Total PCBs including allocations for point and non-point sources, and a margin of safety by September 30, 2003. The six elements of the strategy are:

1. Identify and quantify sources of PCBs.
2. Determine transport and fate of PCB loads within the Delaware Estuary.
3. Establish TMDLs & allocations for sources (i.e. point and non-point sources).
4. Reduce/eliminate direct and indirect sources to achieve water quality standards for PCBs in the Delaware Estuary.
5. Increase public & industry environmental awareness to foster better management and disposal of PCBs.
6. Monitor concentrations and impacts to living resources of the Delaware Estuary.

Related CCMP Action Items:

(sub-actions included where relevant)

- T3: Develop and Adopt Uniform Water Quality Criteria for Toxic Pollutants to Be Used by Regulatory Agencies to Regulate Point and Nonpoint Sources
- T4: Implement Phased Limits on Toxic Pollutants Using the TMDL Concept
- T5: Identify the Sources of Contaminated Sediments and Identify Control Strategies and Mitigation Alternatives
- T5.1: Identify and Rank Major Source Categories and Sinks of PCBs and DDT and its Metabolites
- T6: Fish/Shellfish Consumption Advisories (related to PCBs but explored more specifically in a follow up item on Fish Consumption Advisories)

STATUS OF PCB STRATEGY ACTIVITIES:

ELEMENT 1 IDENTIFY AND QUANTIFY SOURCES OF PCBs.

Task A Create an inventory and prepare GIS maps of potential major sources

Background:

The plan is to create an inventory of potential major sources of PCBs to the Estuary, and map them using Geographic Information Services (GIS). Potential sources include Superfund sites, RCRA regulated facilities, National Pollutant Discharge Elimination System (NPDES) discharges, Toxic Substances Control Act (TSCA) regulated electrical equipment users, scrap yards, used oil recyclers, etc.

Status:

In progress, not complete. Initial contact has been made with various internal EPA programs to begin compiling this information

Date: Calendar Year 2000

Lead: EPA Region III

Partners: States

Deliverables: List of potential major sources mapped with GIS

Resource Needs: To be determined. Possibly accomplished with in-kind services

Task B Request Monitoring of wastewater, cooling water and stormwater discharges from point sources

Background: DELEP members plan to quantify PCB loadings to the estuary from wastewater treatment plants, combined sewer overflows, Superfund sites, landfills, bottom river sediments, atmospheric deposition, fall line loadings, non-point sources, etc in order to develop a comprehensive load inventory.

Status: Letters have been issued to dischargers. Informational meetings have been held. Monitoring data will be received in January, 2001. Data base entry will be completed in May, 2001. Additional monitoring of selected discharges will be carried out from May, 2001 to December, 2003.

Date: February 2000 to May 2001

Lead: DRBC

Partners: EPA/States

Deliverables:

Resource Needs:

Task C Determine wet and dry deposition of PCBs from the atmosphere

Background: DELEP members plan to quantify PCB loadings to the estuary from wastewater treatment plants, combined sewer overflows, Superfund sites, landfills, bottom river sediments, atmospheric deposition, fall line loadings, non-point sources, etc in order to develop a comprehensive load inventory.

Status: New Jersey Atmospheric Deposition Network started in 1999 in Delaware Basin. Three monitoring stations have been established at Washington Crossing, Camden and Bivalve. Other data sets such as Chesapeake Bay will be evaluated to assess long range transport.

Date: Ongoing
Lead: NJDEP, Rutgers
Partners:
Deliverables:
Resource Needs:

Task D Determine tributary loadings of PCBs

Background:

Status: Monitoring of the Delaware and Schuylkill Rivers is being carried out at the head of tide during both low and high flow conditions. Monitoring of significant tributaries and seaward boundary will be carried out during model calibration and validation from August, 2001 to October, 2001.

Date: April 2000 to October 2001

Lead: USGS, DRBC

Partners:

Deliverables:

Resource Needs:

Task E Determine loadings from landfills, Superfund sites and other sources

Background: DELEP members plan to quantify PCB loadings to the estuary from wastewater treatment plants, combined sewer overflows, Superfund sites, landfills, bottom river sediments, atmospheric deposition, fall line loadings, non-point sources, etc in order to develop a comprehensive load inventory.

Status:

Date: Calendar years 2000 and 2001

Lead: USEPA Regions II and III

Partners:

Deliverables:

Resource Needs:

Task F Determine concentrations of PCBs in sediments for use during model calibration and validation

Background: DELEP members plan to quantify PCB loadings to the estuary from wastewater treatment plants, combined sewer overflows, Superfund sites, landfills, bottom river sediments, atmospheric deposition, fall line loadings, non-point sources, etc in order to develop a comprehensive load inventory.

Status: Letters have been issued to dischargers. Informational meetings have been held. Monitoring data will be received in January, 2001. Data base entry will be completed in May, 2001. Additional monitoring of selected discharges will be carried out from May, 2001 to December, 2003.

Date: August to October, 2001

Lead: DRBC

Partners: EPA/States

Deliverables:

Resource Needs:

ELEMENT 2 DETERMINE TRANSPORT AND FATE OF PCBs ENTERING THE DELAWARE ESTUARY

Task A Establish expert panel to guide model development and model calibration

Background: The Expert Panel will provide input and guidance and review on all technical areas of PCB activities such as the modeling (including data collection, analysis, etc).

Status: This panel has been formed and has had initial meetings. It will remain in place through completion of strategy.

Date: Summer 2000

Lead: DRBC with TAC

Resource Need: FY00 - 0
FY - 01 - Cost: \$32K; Available: \$6K; NEED: \$26K
FY - 02 - Cost: \$35K; NEED: \$35K
FY - 03 - Cost: \$35K; NEED: \$35K

Task B Develop the scope of the models

Background:

Status:

Date: Fall 2000

Lead: Expert panel, DRBC, States, EPA

Resource Need:

Task C Develop mathematical model to simulate the transport and fate of PCBs in the Delaware Estuary

Background:

Status:

Date: July 2000 to June 2001

Lead: DRBC

Resource Need: \$71,000 - Sediment Transport Model (\$50K funded \$21K unfunded)
\$85,000 - PCB model PCB component (\$60K funded; \$25K unfunded)

Task D Collect ambient water, sediment and significant source data for model calibration and validation

Background:

Status:

Date: July 2000 to October 2001

Lead: DRBC

Resource Need: \$350,000 - Collection of ambient data for model calibration (unfunded)

Task E Calibrate/Validate model

Background: An expert panel will work in conjunction with DRBC, the Toxics Advisory Committee and possibly a consultant on developing a

model for PCBs.

Status: Expert panel has been put together.
PCB Model Development -- \$120,000 (\$60K per year for 2 years)
of EPA "RARE" funds have been identified.

Date: January 2002 to June 2002

Lead: DRBC

Partners: States

Deliverables:

- Report containing ambient data and documenting model calibration
- Sediment Transport Module - FY 2001
- PCB Model - FY 2001

Resource Need: \$100,000 - Calibrate/validate model (\$60K funded; \$40K unfunded)

ELEMENT 3 ESTABLISH TMDLS AND ASSOCIATED COMPONENTS FOR PCBs

Task A Determine targets for TMDLs

Background:

Status: DRBC/TAC will revise water quality criteria for PCBs by December 2000. They will determine the appropriateness of using targets based upon dredging criteria from January to March, 2001

Date: October 2000 to March 2001

Lead: DRBC/TAC

Resource Need:

Task B Develop policies and procedures for developing TMDLs including load allocation procedures, design conditions, initial loading values, reserve and margin of safety

Background:

Status:

Date: October 2000 to June 2002

Lead: DRBC, TAC

Resource Need:

Task C Utilize the PCB model to establish TMDLs, wasteload allocations and load allocations

Background:

Status:

Date: July 2002 to October 2002

Lead: DRBC

Resource Need: \$75,000

Task D Conduct public hearings and solicit comment on the proposed TMDLs and allocations

Background:

Status:

Date: January to June 2003

Lead: DRBC

Resource Need:

ELEMENT 4 REDUCE/ELIMINATE DIRECT AND INDIRECT SOURCES OF PCBs TO THE DELAWARE ESTUARY

Task A - Initiate PCB trackdown pilot study in selected municipal sewage collection systems

Background:

Although much additional work is needed to identify and quantify all sources of PCBs to the Estuary, it is proposed that the Program immediately initiate efforts to reduce the PCB loadings from the major sewage treatment plants while the comprehensive loading information and a comprehensive PCB strategy is being finalized. The study will identify potential/actual sources of PCBs entering the sewer system and begin to implement load reduction measures using a variety of approaches including education/outreach, pollution prevention and regulation. The results and techniques developed in this pilot study will be shared with the other major STPs to assist in their load reduction activities.

Status :

Meetings were held with the POTWs to build a partnership to address this issue. No on the ground work has occurred to this date, although the municipalities of Camden, Philadelphia and Wilmington have agreed to work towards an agreement.

Date: February 2000 to June 2001

Lead: DRBC, States, selected sewage authorities

Partners: (see lead)

Deliverables: Report identifying sources of PCBs to sewer system and quantifying relative importance - FY 2001

Resource Need Phase I - \$57,000 (funded)

Phase II of this project - \$50,000 total. \$50,000 still needed

Task B **Revise and implement remediation policies at Superfund and RCRA sites that ensure that PCB pathways to the estuary are evaluated and controlled to meet water quality standards**

Background:

Status:

Date: July 2001 to December 2001

Lead: USEPA, States

Resource Need:

Task C **Utilize increased inspections and enforcement of existing regulations to control PCBs pathways to the estuary**

Background:

Status:

Date: October 2000 to September 2001

Lead: USEPA, States

Resource Need:

Task D **Establish effluent limitations for NPDES discharges where necessary to ensure the water quality standards are met**

Background:

Status:

Date: 2004

Lead: States

Resource Need:

Task E Develop and implement performance standards for non-point sources to ensure water quality standards are met

Background:

Status:

Date: 2002 (development phase)

Lead: USEPA, States

Resource Need:

ELEMENT 5 INCREASE PUBLIC AND INDUSTRY ENVIRONMENTAL AWARENESS OF PCB CONTAMINATION TO FOSTER BETTER MANAGEMENT AND DISPOSAL

Task A - Partner with other Federal agencies

Background: Partner with other Federal agencies to develop a self-inspection program include agencies such as GSA and DOD which have a large number of facilities located within the watershed.

Status: Not initiated

Date: October 2000 to September 2001

Lead: EPA

Partners: Other Federal agencies

Deliverables:

Resource Need: in-kind

Task B Work with local, state and interstate government agencies to develop an outreach and pollution prevention strategies

Background: Work with local and state government agencies to develop an outreach strategy to address potential everyday sources(e.g.

refrigerators, fluorescent lights, oiling of roads) of PCBs and the health and environmental impacts associated with their release to the environment. Work with local governments to support development of programs for the removal or separation of PCB containing parts from equipment prior to their disposal.

Status: Not initiated

Date: July 2001 to September 2001

Lead: EPA, State

Partners: local governments

Deliverables:

Resource Need: in-kind + costs to be determined

Task C Distribute information on PCB regulations, proper disposal procedures and environmental impact of PCBs released to the environment to sources identified in element 1

Background: Distribute information on PCB regulations, procedures for proper PCB disposal and the environmental impacts resulting from improper PCB management.

Status: Not initiated

Date: May 2001 to September 2001

Lead: EPA

Partners:

Deliverables:

Resource Need: in-kind + costs to be determined

ELEMENT 6 MONITOR CONCENTRATIONS AND IMPACTS TO LIVING RESOURCES OF THE DELAWARE ESTUARY

Task A Monitor concentrations of PCBs in the tissues of important fish species

Background: Conduct an annual survey of fish tissue conducted

Status:

Date: 1990 to present

Lead: DRBC, FDA

Partners:

Deliverables:

Resource Need: Funded in "base program"

Task B Monitor concentrations of PCBs and other organochlorines in bald eagles and ospreys

Background: Concentrations of PCBs and other organochlorines in bald eagles and ospreys will be monitored starting in July 2000. This will include collecting and analyzing sediment samples from bald eagle nesting areas, collecting and analyzing fish prey species of bald eagles and analyzing eagle eggs, tissues and blood samples. Eagle foraging and nesting areas will be monitored. Existing data on contaminants in osprey eggs and nestlings will be compiled.

Status:

Date: July 2000 to June 2002

Lead: NJ DEP

Partners:

Deliverables: A final report will be prepared within four months of receipt of all laboratory analyses regarding levels of organochlorine contaminants in upper-trophic level endangered and threatened species.

Resource Need: \$80 K (funded by NJ)

Task C Monitor Eagle Foraging and nesting areas

Background:

Status:

Date: July 2000 to June 2001

Lead: NJ DEP

Partners:

Deliverables:

Resource Need:

Task D Compile existing data on contaminants in osprey eggs and nestlings

Background:

Status:

Date: July 2000 to June 2002

Lead: NJ DEP

Partners:

Deliverables:

Resource Need:

DELEP Priority

PCBs DRAFT 3-Year Plan

Activity	Funding Status											
	2000			2001			2002			2003		
	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded
Objective 1: Determine water quality targets for TMDLs.												
Objective 2: Characterize and assess environmental concentrations of PCBs in ambient air and water, sediments and fish tissue.				113,942		113,942	168,544		168,544	113,942		113,942
Objective 3: Identify and quantify sources of PCBs.				25,000		25,000	175,000	25,000	150,000			
Objective 4: Determine the transport and fate of PCBs in the estuary.				340,447	160,313	180,134	451,633	89,708 +60 EPA	361,925			
Objective 5: Establish TMDLs and associated components for PCBs.							41,090	17,868	23,222	10,000	10,000	0
Objective 6: Develop an implementation plan to reduce PCBs in the estuary ecosystem.	207,000	57,000	150,000	818,500	150,000	668,500	50,000	50,000	0			
Objective 7: Increase environmental awareness of toxicity issues in the estuary.				50,000	0	50,000	100,000	0	100,000			
Objective 8: Monitor long term concentrations of PCBs in the air, ambient waters and sediments of the estuary.												
Objective 9: Monitor long term concentrations of PCBs in the living resources of the estuary.	17,000	17,000	0	183,500	183,500	0	77,000	77,000	0	17,000	17,000	0
Yearly TOTALS	224,000	74,000	150,000	1,531,389	493,813	1,037,576	1,063,267	259,576 +60 EPA	803,691	140,942	27,000	113,942
Priority Total	Total Cost	Funded	Unfunded	All figures are in Dollar amounts, All years are in Federal Fiscal Years (October 1 - September 30)								
	2,959,597	854,389	2,105,208	na = not applicable, TBD = to be determined, base = from base program funding								

DELEP Priority
**Horseshoe Crabs
3-Year Plan**

Activity	Funding Status											
	2000			2001			2002			2003		
	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded
Activity 1: Support Horseshoe Crab Monitoring												
Task A: Compile a horseshoe crab indicator to assess the status of the population and need for fisheries management options				na								
Task B: Provide longevity and accuracy to the Spawner Surveys with a volunteer coordinator				15,400	15,400	0	16,200	0	16,200	16,200	0	16,200
Task C: Develop a Spawner Survey Training Video				6,000	6,000	0						
Task D: Provide Reward hats for Horseshoe Crab Tag Returns				5,000	0	5,000						
Task E: Provide Tags for Horseshoe crabs				TBD	0		TBD					
Task F: Support egg count surveys				68,000	0	68,000	68,000	0	68,000	68,000	0	68,000
Task G: Assess Importance of horseshoe crab eggs to diet of shorebirds				10,750	0	10,750						
Task H: Quantify amount of horseshoe crab eggs needed by shorebirds				53,000	0	53,000						
Yearly Totals	0	0	0	158,150	21,400	136,750	84,200	0	84,200	84,200	0	84,200
Priority Total	Total Cost	Funded	Unfunded	All figures are in Dollar amounts, All years are in Federal Fiscal Years (October 1 - September 30)								
	326,550	21,400	305,150	na = not applicable, TBD = to be determined								

what need is there in each state

DELEP Priority Horseshoe Crab

3-Year Plan
Background Paper
January 2001

Purpose:

To protect and restore populations of horseshoe crabs that are dependent upon the Delaware Estuary, and to provide critically important resources for shore birds, the bait industry for conch and eels and biomedical uses.

Status:

DELEP's Habitat and Living Resources Implementation Team is working with partners (FWS, USGS, DE, NJ) to provide a horseshoe crab indicator to depict the status and trend in the population. So far, US Fish and Wildlife Service has agreed to fund a volunteer coordinator to count crabs. This long term monitoring data will provide critical information to help manage the resource and for a horseshoe crab indicator.

Background:

The horseshoe crab is an important species to the Delaware Estuary, as well as up and down the entire East Coast of the United States, due to the multiple roles it plays within the estuarine system. Delaware Bay hosts the largest concentration/ population of horseshoe crabs in the world. The spawning of horseshoe crabs in the Delaware Bay is an event of National significance. Related to this, the Delaware Bay supports up to 80% of the Western Hemisphere's shorebird population. From a hemispheric and ecosystem perspective the horseshoe crab spawning, and related shorebird migration are unique and dramatically important events. In addition, horseshoe crabs are important as bait for fisheries, as an eco-tourism draw, and their blood is extracted for biomedical purposes. Historically, horseshoe crabs were harvested for fertilizer and livestock feed. This practice ended in the 1960s. Horseshoe crabs are currently being harvested for use as bait for conch and eel pot fisheries. Landings for this purpose have significantly increased, according to the National Marine Fisheries Service, between 1990 and 1996. Another use of horseshoe crabs is for biomedical research and use. Blood is drawn from the crabs, and a clotting agent on the blood is used to detect human pathogens in medical equipment. (Atlantic States Marine Fisheries Commission Stock Assessment Report 98-01, 1999)

A number of user groups felt that the horseshoe crab resource, most abundant in its range in the Delaware Estuary, was being significantly diminished. However, the various data sets available (egg count, adult count, landings, and trawl data) did not provide for an adequate population count. The Atlantic States Marine Fisheries Commission conducted a stock assessment peer review regarding horseshoe crabs in 1998 and published a full report in 1999. The spring of 1999 was the first year of a new sampling technique that hopes to provide a reliable stock assessment for horseshoe crabs. Since this is the first year, it will provide a baseline for which to measure subsequent years, and gauge the increase, static state or decrease in the population.

Deliverables:

- Horseshoe crab indicator (Spring 2001)
- Funding for a permanent volunteer coordinator for horseshoe crab surveys (for an accurate long-term count of spawning horseshoe crabs). (March 2001)
- Training video for spawner survey's (Spring 2001)
- Reward Hats for tag returns (needed year round)
- Tags (from one/ consistent vendor - needed immediately, and year round)
- Consistent egg count survey (February 2002)
- A report on the importance of horseshoe crab eggs to shorebirds (2001)
- A report on the amount of horseshoe crab eggs needed by shorebirds (2001)

Activity 1: Support Horseshoe Crab Monitoring

Task A: Compile a horseshoe crab indicator to assess the status of the population and need for fisheries management options (Action M6, Action E4-E7)

Background: DELEP has been developing several indicators throughout the past year. A horseshoe crab indicator would be an indicator of habitat loss, over fishing, or simply availability of the resource. The status of the population would not be indicative of water quality or sediment quality.

Status: The indicator is currently in development. We are awaiting data from USGS.

Lead: US FWS/ Program Coordinator

Partners: DE/ NJ/ USGS/ Limuli Labs

Deliverables: Horseshoe crab indicator

Date: Completion date assumed to be Spring 2001.

Resource Need: NA

Task B: Provide longevity and accuracy to the Spawner Surveys with a volunteer coordinator

Background: A volunteer coordinator is needed to coordinate the volunteers who do horseshoe crab beach counts each April at the full moon.

Status: There is currently one coordinator in DE, and one in NJ. This is not an efficient system, and funds are scraped together at the last minute each year to pay these individuals. Having two individuals has not been the most efficient method of obtaining the data.

Lead: HLRIT

Partners: DE/ NJ/ Limuli Labs/ US FWS/ MD/ ASMFC

Deliverables: A volunteer coordinator funded annually

Date: March 2001 (and yearly after that)

Resource Need: \$16,200 per year starting in FY 2002.

Task C: Develop a Spawner Survey via Training Video

Background: A training video is needed to train volunteers who would be at various beaches around the Delaware Bay. With this video identical techniques would be taught to all volunteers, this providing for a more accurate count.

Status: A individual has ^{been}~~need~~ identified to produce the video. Funding has been obtained for filming in the spring of 2001.

Lead: ASMFC

Partners: US FWS/ MD/ DE/ NJ/ Limuli Labs

Deliverables: Spawner Survey via Training Video
Date: Early Spring 2001
Resource Need: \$6,000 (funded through \$5000 of EPA II grant funds plus \$1000 match)

Task D: Provide Reward hats for Horseshoe Crab Tag Returns

Background: Horseshoe crabs have been tagged for about four decades. As baymen or citizens find horseshoe crabs with tags, they are encouraged to return them, so scientists can determine how far individual horseshoe crabs are migrating. This information helps with questions relating to how the population is impacted, such as habitat, over fishing, and water quality.

Status: The design has been developed although a DELEP logo could be put on as well. An organization has been identified to produce the hats.

Lead: MD/ USFWS

Partners: HLRIT

Deliverables: Reward Hats

Date: When funds are available (targeting Spring 2001)

Resource Need: \$5000

Task E: Provide Tags for Horseshoe crabs

Background: Horseshoe crabs have been tagged for roughly four decades. As baymen or citizens find horseshoe crabs with tags, they are encouraged to return them, so scientists can determine how far individual horseshoe crabs are migrating. This information helps with questions relating to how the population is impacted, such as habitat, over fishing, and water quality.

Status: There is currently no funding for tags and the supply is running out.

Lead: MD/ USFWS

Partners: HLRIT

Deliverables: Tags

Date: (ongoing)

Resource Need: TBD

Task F: Support egg count surveys

Resource Need: \$68,000 per year (\$41,000 for the egg count)

Task G: Assess Importance of horseshoe Crab Eggs to Diet of Shorebirds

Lead: DELEP, HLRIT

Partners: DRFWMC, ROM, BRD and USFWS

Date: 2001

Resource Need: \$10,750

Task H: Quantify Amount of Horseshoe Crab Eggs Needed by Shorebirds

Lead: DELEP, HLRIT

Partners: DRFWMC, USFWS, NIOZ

Date: 2001

Resource Need: \$53,000

END

DELEP Priority
**Habitat Restoration
3-Year Plan**

Activity	Funding Status											
	2000			2001			2002			2003		
	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded
Activity 1: Oysters												
Blue Ribbon Panel				3,000	0	3,000	TBD			TBD		
Restoration of Populations				15,752	15,752	0	100,000	0	100,000	100,000	0	100,000
Development of Bay-wide Oyster Management Plan				TBD			TBD			TBD		
Activity 2: Partnering Efforts												
CESP				96,000	96,000	0	65,000	0	65,000	65,000	0	65,000
Non-corporate environmental stewardship efforts				26,050	26,050	0	25,000	0	25,000	25,000	0	25,000
Activity 3: Fish Passage & Dam Removal												
Mapping, restore/open stream corridors and native populations				200,000	200,000	0	200,000	0	200,000	200,000	0	200,000
Activity 4: Riparian Corridors/Wetlands												
Wetlands coordination project				44,000	44,000	0	44,000	44,000	0	TBD		
Activity 5: Pea Patch Island Heronry												
Determine Habitat		40,000		TBD			TBD			TBD		
Yearly Totals	0	40,000	0	384,802	381,802	3,000	434,000	44,000	390,000	390,000	0	390,000
Priority Total	Total Cost	Funded	Unfunded	All figures are in Dollar amounts, All years are in Federal Fiscal Years (October 1 - September 30)								
	1,208,802	465,802	783,000	na = not applicable, TBD = to be determined								

DELEP Priority Habitat Restoration

3-Year Plan
Background Paper
January 2001

Purpose:

Habitat loss and fragmentation, whether it is in the form of upland, wetland or marine impacts, has been an ongoing problem throughout the Northeastern United States, dating back through colonial times. Habitat restoration, preservation and enhancement have long been, and continue to be, a primary goal of Delaware, New Jersey and Pennsylvania (the 3 member States of the Delaware Estuary Program). The Habitat and Living Resources Implementation Team (HLRIT) of the Delaware Estuary Program (DELEP) was formed to strengthen and coordinate management, protection and restoration of natural habitats within the Estuary through federal, state, local and private coordinated holistic efforts.

Background:

Habitat restoration, protection and enhancement are of extreme importance within the Delaware Estuary, as well as the rest of the United States. Habitat restoration activities have been grouped under three (3) specific DELEP roles, Facilitation, Coordination and Implementation.

DELEP serves as a facilitator of estuarine restoration activities, through HLRIT and the Public Participation Implementation Team (PPIT). Currently, the Mini-grant program provides funds to existing organizations and agencies to do on the ground, action projects. These Mini-grants are the first steps in the fulfillment of the habitat restoration goals of DELEP and are managed by the Partnership for the Delaware Estuary (Partnership), the non-profit public education and outreach arm of DELEP. The Partnership, in coordination with HLRIT, provides existing organizations and agencies with insight into possible project ideas including funding and partnering opportunities.

DELEP serves as a coordinator of estuarine restoration activities, through HLRIT and the PPIT, by creating the forum for discussion of habitat restoration projects of local and regional interest. This effort is bolstered by the Partnership via their lead role in the Corporate Environmental Stewardship Program (CESP).

DELEP serves as an implementer of estuarine restoration activities through coordination with HLRIT, PPIT, the Partnership, other Implementation Teams and Advisory Committees within DELEP and local and regional organizations and agencies. This is accomplished via the development of specific activities and design methods aimed at accomplishing the goals and objectives of the CCMP under Habitat and Living Resources.

Status:

DELEP serves as a bridge to the future through the continuation of the Mini-grant program, by encouraging corporate interest in habitat restoration via CESP and through a more focused approach to implementation of habitat restoration needs via increased local and regional education and outreach efforts.

DELEP is currently developing indicators for the Estuary to provide a scientifically credible, user-friendly communication of the status and trends within the Estuary. Some of the currently developed indicators are Dissolved Oxygen, American Shad, Fish Consumption Advisories, Swimmability, Shellfish Beds, Agricultural Land, Park Land, Developed Land vs. Population, Water Conservation, Contaminated Sediments, Horseshoe Crabs and Fish Passage. Most, if not all of these indicators, have a direct correlation to impacts on habitat within the Estuary. DELEP has recognized that to make improvements to habitat within the Estuary, they must educate the public via these key indicators.

HLRIT as part of their coordinated effort, is in the process of prioritizing and identifying the most ecologically important habitats within the Estuary. These areas include, but are not limited to, Oyster Beds, Fish Passage, Wetlands, Riparian Corridors, the Pea Patch Island Heronry and Shorebird/Horseshoe Crab habitats. Once this process is complete, the development of specific recommendations for the conservation and management of these areas will be undertaken.

Deliverables: See Activities below.

Activity 1: Oysters

Background

HLRIT has developed a Priority Map that incorporates New Jersey oyster data and integrates the Landscape Data Layer.

Status

Starting in FY2001 convene a "Blue Ribbon Panel" to review present status of oyster stocks in Delaware Bay and identify methods for maximizing and enhancing the ecological benefits of viable oyster beds. The Panel will also examine current efforts to increase oyster production in both New Jersey and Delaware.

Panel membership would represent those parties or groups interested in the proper management of Delaware Bay's oyster stocks. Panel representation should include members of individual state's Fisheries Councils, oyster industry members, New Jersey Department of Environmental Protection, Delaware Division of Fish and Wildlife, Rutgers University's Haskin Shellfish Research Lab, New Jersey Department of Agriculture, fishermen, and environmental groups. Possible legislative membership from partner states.

Currently, \$15,752 procured through a minigrant program which is funded by EPA Region 2 and administered by the Partnership for the Delaware is being used to re-establish oyster stocks in Back Creek and Nantuxent Creek tributaries of the Delaware Bay in FY2001.

Date

Ongoing.

Lead

DRFWMC

Partners

States, NMFS, Rutgers, U of D, USFWS, HLRIT

Resource Need

\$3,000 + needed to convene blue ribbon panel for an anticipated 2 day conference in FY2001. No long term funding for coordinated restoration effort in place. Estimates are as high as \$1.5 to \$2.5 Million per year according to a 1999 Oyster Industry Revitalization Task Force (OTF) report to the Governor and Legislature of the State of New Jersey. Starting in FY2001 the formation of the blue ribbon panel envisioned in OTF report to develop a bay wide oyster management plan and to begin coordinated oyster restoration projects to restore oyster populations in all of Delaware Bay.

Action Items

H1, H3, H5, and H6

Activity 2: Partnering Efforts

<u>Background</u>	Partnering with Business and Industry through the CESP has begun under the leadership of the Partnership. Partnership continues to work with watershed partners on implementation of School Site/Backyard Habitat program and implementation of the BasinScapes program.
<u>Status</u>	The Partnership in cooperation with USFWS continues to develop publications, initiate and complete demonstration projects and hold workshops. Funding in the amount of \$96,000 received in FY2001 in Growing Greener Grants from Pennsylvania to do CESP related activities in the Estuary in Pennsylvania. Also, \$26,000 received from Pennsylvania Coastal Zone Management Program to do planning of Non-Corporate (Local Government, NGO's) environmental stewardship projects in the Estuary in Pennsylvania.
<u>Date</u>	Ongoing.
<u>Lead</u>	Partnership in cooperation with USFWS.
<u>Partners</u>	States, Local Government, NGO's, Business and Industry.
<u>Resource Need</u>	No long term funding for coordinated effort in place. Estimates as high as \$500,000 per year to develop publications, initiate and complete demonstration sites, challenge grants and to hold workshops.
<u>Action Items</u>	L12, L14, H5, E1 through E23

Activity 3: Fish Passage and Dam Removal

<u>Background</u>	HLRIT has developed a Priority Map that incorporates data from the three member States of DELEP and integrates the Landscape Data Layer. A list of contacts has been developed to provide technical support to determine sites. PSEG has undertaken a massive effort in this regard as part of their Estuary Enhancement Project (total project costs exceed \$120 million).
<u>Status</u>	The USFWS has been providing for coordination on this issue. Starting in FY2001, map and begin efforts to restore/open stream corridors and native populations.
<u>Date</u>	Ongoing.
<u>Lead</u>	DRFWMC, USFWS.
<u>Partners</u>	States, EPA, HLRIT, Business and Industry.

<u>Resource Need</u>	No long term funding for coordinated effort in place. Estimates as high as \$1.5 Million per year. Costs vary depending on project. For example, PSEG spent over \$1 million to install a fish ladder and make necessary improvements to the earthen Sunset Lake Dam in NJ and less than \$200,000 to install a fish ladder on a concrete dam in DE. NJ has funded a fish ladder on the Rancocas Creek to be attached to the Mill Dam in Mt. Holly with Corporate Business Tax (CBT) funds in the amount of \$200,000. Work will begin in FY2001 on the Mill Dam project with the CBT funds. Starting in FY2001, funds needed to map and to begin efforts to restore/open stream corridors and native populations.
<u>Action Items</u>	H2 and H4

Activity 4: Riparian Corridors/Wetlands

<u>Background</u>	HLRIT has developed a Priority Map that incorporates data from the three member States of DELEP and integrates the Landscape Data Layer. List of contacts has been developed to provide technical support to determine sites for preservation and restoration.
<u>Status</u>	The USFWS has been providing for coordination on this issue. Delaware has been awarded an EPA Grant to fund the accomplishment of wetland and riparian corridor coordination and restoration activities. This grant does not provide for a Coordinator or general staff time. Starting in FY2001, identification of sites for restoration and preservation and the development of a list of priority sites.
<u>Date</u>	Ongoing.
<u>Lead</u>	USFWS.
<u>Partners</u>	States, DRFWMC, HLRIT.
<u>Resource Need</u>	Funding in the amount of \$88,000 has been secured for the two-year project, additional funds necessary to provide for coordination and general staff time. Additional funding anticipated from DNREC and EPA. Future funding needs TBD hereafter for implementation activities.

Activity 5: Pea Patch Island Heronry

<u>Background</u>	State of Delaware has developed a Special Area Management Plan (SAMP). SAMP implementation team meets quarterly in a coordinated effort to implement strategies as outlined in the SAMP.
<u>Status</u>	\$40,000 grant in FY2000 was awarded from NJDEP Coastal Zone Management Program to determine habitat in NJ. Starting in FY2001 a coordinated interstate information sharing to determine

future of SAMP effort. SAMP workshops planned for FY2001 and FY2002 for NJ and DE.

<u>Date</u>	Ongoing.
<u>Lead</u>	DE, HLRIT
<u>Partners</u>	NJ, PPISAMPIT, USFWS
<u>Resource Need</u>	TBD
<u>Action Items</u>	H1, H9 and H10

Activity 6: Shorebird & Horseshoe Crab Habitats

<u>Background</u>	HLRIT has developed a Priority Map that incorporates New Jersey and Delaware data and integrates the Landscape Data Layer. New Jersey and Delaware utilize data from volunteers regarding shorebird activities and locations. Both New Jersey and Delaware have been working independently on Shorebird and Horseshoe Crab Habitats with numerous national and international partners.
<u>Status</u>	Starting in FY2001 Delaware will have a "statistically robust" long term monitoring program in place.
<u>Date</u>	Ongoing.
<u>Lead</u>	DE and NJ.
<u>Partners</u>	USFWS, HLRIT.
<u>Resource Need</u>	No long term funding for coordinated effort in place. \$40,000 in FY2001 for Delaware to do assessment, TBD thereafter.
<u>Action Items</u>	H1 and H2

DELEP Priority Fish Consumption Advisories

3-Year Plan
Background Paper
January 2001

Purpose:

There are several fish advisories in place in the Delaware Estuary. However, the States use different procedures for the detection and evaluation of fish tissue. The States, independently, issue fish advisories. The result has been incomplete and inconsistent advice to the public. Fish consumption advisories were selected as a priority issue for the purpose of establishing uniform or compatible fish collection and analysis procedures, and compatible fish assessment and reporting for the Estuary.

Background:

Fish contamination and associated health risks to the consuming public have been identified among the key management issues of the Delaware Estuary Program. Fish consumption advisories provide information to the public concerning the extent of contamination, the fish species affected, the maximum number of fish which should be consumed from the water body, and ways to reduce health risk through proper preparation and cooking techniques. Currently, there are several advisories in place for the Delaware Estuary and Bay. However, there are no uniform procedures among the States for detection and evaluation of fish tissue contamination, and no uniform program of informing the public of health risk. Consequently, duplication of sampling occurs, while critical information needs are not met. This results in incomplete and inconsistent advice to the public.

Status:

The Delaware River Basin Commission (DRBC) has agreed to facilitate the establishment of the Fish Consumption Advisory Consumption Team. The team was put in place as of December 2000. DRBC and the Delaware Department of Natural Resources and Environmental Control (DNREC) are completing a summarization of existing procedures for establishing fish consumption advisories for the States of Delaware, New Jersey, and Pennsylvania (March 1, 2001).

Deliverables:

Fish contaminants database. (March 1, 2001)
Summary of existing fish consumption advisory procedures. (March 1, 2001)
Procedures for uniform/compatible collection and analysis methods. (June, 2002)

Activity 1: Establishment of Implementation Team. (Action T.6.1)

Background: Currently, different collection/analysis methods and risk assessment procedures are used by the Estuary States in establishing fish consumption advisories. An implementation team is needed to resolve these differences.

Status: DRBC has solicited names from partners to facilitate establishment of the team.

Lead: To be determined.

Partners: DNREC, NJDEP, PADEP, NJDOH, PADOH, USEPA, USF&W, PAF&B, FDA, DRBC.

Resource Need: Staff time.

Date: Team in place by December 2000

Activity 2: Develop procedures for uniform or comparable collection and analysis method (Action T 6.2)

Background: The DRBC and DE DNREC have initiated a project to assemble chemical contamination data since 1990 for the Delaware Estuary and identify obstacles toward making fish advisory information more consistent for interstate waters. This project will be completed and a report issued by March 1, 2001.

Status: The implementation team is being formed while the report by DRBC/DNREC is being completed.

Deliverables: Draft Report - December 2001
Peer Review - June 2002

Resource Needs: When the committee begins to meet procedures will be developed for uniform and comparable collection and analysis methods to assure adequate analysis and quality control (QA/QC) as agreed upon by the Implementation Team. Procedures will be peer reviewed.

Staff time; \$25,000 - field and lab studies.

END

DELEP Priority

Fish Consumption Advisories

3-Year Plan

Activity	Funding Status											
	2000			2001			2002			2003		
	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded
Activity 1: Establishment of Implementation Team												
Activity 2: Develop procedures for uniform or comparable collection and analysis method												
Draft Report - December 2001												
Peer Review - June 2002												
Field and Lab studies							25,000		25,000			
Yearly Totals							25,000	0	25,000			
Priority Total	Total Cost	Funded	Unfunded	All figures are in Dollar amounts, All years are in Federal Fiscal Years (October 1 - September 30)								
	25,000	0	25,000	na = not applicable, TBD = to be determined								

Task 1: Lead Estuary State calls meeting of the state program to discuss the watershed implementation team and share information about watershed planning, implementation and funding strategies. Periodic meetings as necessary to share and collect information.

Date: January 2000 - October 2000

Lead: PADEP

Partners: DELEP participants

Deliverables: Watershed “link” on DELEP website with watershed information

Resource Needs: N/A

Task 2: WIT plans & conducts technology seminar series for 2001

Date: November 2000 - December 2001

Lead: Team Leader (Pamela V'Combe, DRBC for 2001)

Partners: Partnership for the Delaware Estuary, states, federal agencies, Philadelphia Water Department and other interested DELEP partners

Deliverables: 2-3 Technology Workshops, Reference Materials

Resource Needs: \$10,000

Task 3: WIT plans and conducts technology seminar series for 2002

Date: November 2001 - December 2002

Lead: Team Leader

Partners: Same as above

Deliverables: 2-3 Technology Workshops, Reference Materials

Resource Needs: \$10,000

Task 4: WIT plans and conducts technology seminar series for 2003

Date: November 2002 - December 2003

Lead: Team Leader

Partners: Same as above

Deliverables: 2-3 Technology Workshops, Reference Materials

Resource Needs: \$10,000

DELEP Priority

Watersheds

3-Year Plan

Background Paper

January 2001

Purpose:

Watersheds are recognized as the fundamental unit for environmental management and protection. The Delaware Estuary Program recognizes the need to address and solve problems on a watershed basis, working collaboratively with all partners in the basin.

Background:

The Watershed Implementation Team was created in response to the Delaware Estuary Program's desire to coordinate state and federal agency watershed planning efforts. The group's role is to increase the effectiveness of government agencies' outreach to local governments and watershed organizations. The goal is to facilitate the participating agencies' role in implementing elements of the CCMP with greater effectiveness and efficiency.

Status:

For the past year, the WIT has focused on information sharing and the exploration of opportunities for coordination of planning, implementation and funding programs. The information collected for the three states and other agencies involved will be posted on the DELEP web page under the Watershed Information link.

During the next year, the WIT will focus on providing a technology seminar series to the DELEP watershed communities. The seminars will be on specific topics of interest to local governments and watershed organizations. The Partnership for the Delaware Estuary will have a key role in advertising, organizing and promoting the technology workshops. In addition to presentations on the selected topics, seminar participants will receive fact sheets, guidance materials and other information necessary for them to immediately "take action." The results of interest surveys of seminar participants will determine future seminar topics.

CCMP Action Item:

L2 – Watershed Based Planning

L5 – Support the Implementation of Urban Best Management Practices

L9 – Expand State and/or Regional Planning and Technical Guidance to Local Governments

L12 – Conduct Training and Workshops

E2 – Hold and Attend Public Meetings and Workshops

E4 – Develop Educational Initiatives in Support of the Land Management Action Plan

E12 – Promote "Hands-On" Educational Activities and Volunteer Stewardship Opportunities

DELEP Priority

Watersheds DRAFT 3-Year Plan

Activity	Funding Status											
	2000			2001			2002			2003		
	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded
Task 1: Lead Estuary State organizes watershed implementation team and follow-up meetings to share information.	na											
Task 2: WIT plans and conducts technology seminar series.				10,000		10,000						
Task 3: WIT plans and conducts technology seminar series							10,000		10,000			
Task 4: WIT plans and conducts technology seminar series.										10,000		10,000
Yearly Totals				10,000	0	10,000	10,000	0	10,000	10,000	0	10,000
Priority Total	Total Cost	Funded	Unfunded	All figures are in Dollar amounts, All years are in Federal Fiscal Years (October 1 - September 30)								
	30,000	0	30,000	na = not applicable, TBD = to be determined								

DELEP Priority
**Environmental Indicators
3-Year Plan**

Activity	Funding Status											
	2000			2001			2002			2003		
	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded	Total Cost	Funded	Unfunded
Activity 1: Produce Environmental Indicators												
Suite of Environmental Indicators on web	in-kind			in-kind			in-kind			in-kind		
Fact Sheets	5,000	5,000										
Design				4,500	4,500					6,500	6,500	
Printing				4,000	4,000					6,000	6,000	
Indicator Report: Design				2,000	2,000					3,500	3,500	
Printing				7,000	7,000		6,000	6,000		8,000	8,000	
Advertising				15,000	15,000		15,000	15,000		15,000	15,000	
Activity 2: Hold a Monitoring/ Indicator Workshop												
Focus group workshops				5,000	5,000							
Activity 3: State of the Estuary Report							80,000		80,000			
Yearly Totals	5,000	5,000	0	37,500	37,500	0	101,000	21,000	80,000	39,000	39,000	0
Priority Total	Total Cost	Funded	Unfunded	All figures are in Dollar amounts, All years are in Federal Fiscal Years (October 1 - September 30)								
	182,500	102,500	80,000									

DELEP Priority Environmental Indicators

3-Year Plan
Background Paper
January 2001

Purpose: Indicators measure the progress toward achieving goals. Environmental indicators measure progress towards achieving environmental goals such as water that supports swimming, or the shad population being able to migrate up the river, and increasing in population. In terms of DELEP, environmental indicators can also measure the progress of the Estuary Program, if we participated in programs that contributed to the increased health of the estuary.

Background: The DELEP partners and specific implementation teams have discussed the need for environmental indicators for several years. In the past year, there was a stronger push to communicate the available DELEP information to the public. Indicators and a State of the Estuary Report are both good avenues for communicating this information.

Status: A preliminary suite of nine environmental indicators are up on the web as of September 29, 2000. The Partnership for the Delaware Estuary will publicize the indicators through fact sheets, the DELEP Newsletter and in a few months a report. Additionally, the program partners are discussing the next steps in developing and tracking environmental indicators, and conducting a workshop to develop future indicators.

Deliverables: Suite of nine environmental indicators on web
Fact sheets
State of the Estuary Report
Workshop to develop more indicators and update the monitoring plan
Focus group workshops

Activity 1: Produce Environmental Indicators (Action M6, Action E4-E7)

Initial set of Indicators (WEB, Design, Fact Sheets)

Background: The Monitoring Implementation Team, and the Monitoring Coordinator have been developing several water quality indicators in their Monitoring Report, which was produced in 1998, and 2000. The Steering Committee, in April of 1999 indicated a desire to have a more comprehensive set of indicators, and publish them in a form more adapted to public consumption.

Status: An initial set of nine indicators was displayed on a limited access web site on August 21, 2000. The indicators were up on the WEB in final form for the public by September 29, 2000. One more indicator is in development.

Lead: Program Coordinator

Partners: Partnership/ DRBC/ States/ EPA/ DVRPC/ PSE&G/
University of DE/ US FWS/ Lehigh University/ PWD

Deliverables: Suite of nine environmental indicators on web
Fact sheets

Date: First suite was finished September 29, 2000

Resource Need: None

Year Two (producing a report, advertising)

Background: Indicator Report B The indicator report will be the compilation of all the technical fact sheets packaged into a report with an introduction and supplementary information on what actions a citizen can do to help the estuary.

Advertising - Much of what needs to be done to protect the estuary depends upon the actions of the general public, and most of the public will not obtain a fact sheet or an indicator report. Therefore, there will be an advertising campaign based on the indicators. This campaign will include, but not be limited to, advertising on public transportation vehicles, strategically placed magazine and newspaper advertisements, in addition to features in *Estuary News* and displayed on delep.org.

Status: 2500 copies of the report are being printed by New Jersey, as an in-kind contribution to the program, for distribution around the estuary.

The PPIT will decide upon the advertising that needs to take place

Lead: PPIT/ Partnership/ New Jersey/ Program Coordinator

Partners: Partnership/ DRBC/ States/ EPA/ DVRPC/ PSE&G/ University of DE/ US FWS/ Lehigh University/ PWD

Deliverables: Indicators report

Date: Early 2001

Resource Need \$7,000 was provided from NJ for printing the indicators report in FY 2001. \$15,000 of advertising and \$2,000 of design work will be done through funds secured by the Partnership under a William Penn grant

Activity 2: Hold an Indicator Workshop (Actions M6, Action E4-E7)

Background: The method to develop the initial set of indicators was to use available data and measure environmental status surrounding the estuary connected to the five goals of the program. There is a need to develop further indicators through a more scientific method of setting more specific goals (possibly using the CCMP objectives). A group of scientists will develop more scientifically defensible indicators using set criteria and an agreed upon method. This workshop method has been used, and continues to be used by a number of other NEPs. This workshop would be similar to the workshop used to develop the monitoring plan, but would focus more on developing indicators.

Status: Discussions have taken place with EPA Head Quarters since March, 2000. As a result, an EPA contractor, Battelle is working with the Program Coordinator to scope out a workshop design.

This design will then be presented to the Monitoring Advisory Committee (MAC) for their comments/ approval as well as the EIC. Discussions have also been taking place since March with the Hudson River Foundation, who ran the Harbor Estuary Program=s workshop. The purpose of these discussion have been to get input as to the lessons learned, and recommendations on how to hold a similar DELEP workshop

- Lead:** Program Coordinator
- Partners:** Partnership/ DRBC/ States/ EPA/ DVRPC/ PSE&G/ other NEPs
University of DE/ US FWS/ Lehigh University/ PWD and the MAC.
- Deliverables:** Workshop to develop more indicators
- Date:** Workshop to be held spring 2001.
- Resource Need:** Funding is being provided by EPA Head Quarters for the workshop. An additional \$5,000 has been secured from William Penn Foundation from the Partnership for focus groups, and others costs not covered by EPA Head Quarters.

Activity 3: State of the Estuary Report

- Background:** In the CCMP it states that every three to five years a larger report including status and trends should be produced. The Scientific Characterization produced in 1996 served much of that purpose. A smaller more directed report is being considered as a result of the workshops and compilation of the indicators in addition to the 3-5 year recommendation.
- Status:** Discussions regarding such a report will begin November 28, 2000.
- Lead:** Program Coordinator/ Monitoring Coordinator
- Partners:** Partnership/ DRBC/ States/ EPA/ DVRPC/ PSE&G/ other NEPs
University of DE/ US FWS/ Lehigh University/ PWD and the MAC.
- Deliverables:** State of the Estuary Report
- Date:** Winter 2001
- Resource Need:** \$80,000, based upon the work of the Scientific Characterization

END

DELEP Program Office Final Report -FY 2001

Draft 9/25/2001

The Delaware Estuary Program Office ("Program Office") directs and manages DELEP on a daily basis. The Program Office is composed of a Program Director, an Assistant and supported by a part-time secretary. Recruitment of the Program Assistant and Secretary was initiated in April of 2001. These positions were filled in the 3rd quarter of FY 2001, making the Office fully functional. Specific products of the Program Office include:

Implementation

The Program Office is directing and coordinating implementation, technical assistance and funding among the Delaware Estuary Program partners. The Program Office serves as a contact for program implementation with the implementing partners and other organizations. The Program Office will identify, research and recommend program priorities to the Estuary Implementation Committee (EIC) for its consideration and recommendation to the Steering Committee. The Program Office also leads or plays a role in special projects as they materialize. Special projects often emerge unforeseen during the year.

Specific activities and projects that are already planned for FY 2002 include:

- Chair the EIC Work Group, to include assigning, evaluating, reviewing and completing projects as needed for program implementation.
- Oversee progress on CCMP implementation and tracking progress.
- Identify and pursue resources to implement the CCMP.
- Host the Indicators' Workshop (if held in FY 2001, then it would include follow-up from the workshop),
- Produce The State of the Estuary Report,
- Host the Oyster Blue Ribbon Panel and develop the subsequent management plan,
- Pursue NOAA Habitat Grants;
- Pursue other grants
- Manage the consultant creating the habitat prioritization, and project compilation;
- Develop a Habitat Management Plan with HLRIT, NOAA and Coastal Services Center once the scope has been determined; and
- Develop an Estuary Virtual Tour.

This project is estimated to consume _% of the Program Director's time, _% of the Assistant's time and _% of the secretary's time.

Administrative

The Program Office is working with the Work Group to compile the annual work plan, the annual budget, the three-year plan, and the NEP Streamline Review (a.k.a. Triennial Review). The Program Office continues to coordinate the implementation teams to identify projects for funding in accordance with the program priorities. Additionally the Program Office continues to coordinate with the Implementation Teams programmatic priorities, annual and long-term work plans, schedules and budget-type items for EIC review and Steering Committee approval. The Office will also begin to identify grant and funding opportunities with the DELEP partners.

Specific activities include:

- Provide logistical support (i.e. location, agendas, minutes) for the Steering Committee, EIC and EIC Work Group meetings.
- Develop, in conjunction with the EIC, an annual program schedule for the EIC and Implementation Teams.
- Prepare documents requested from EPA headquarters and ANEP on behalf of the Program, with input from the program partners.
- Respond to information requests from the public.
- Compose letters and correspondence on behalf of DELEP.
- Update and maintaining a tracking database of estuary activities.
- Maintain an archive of Program Documents.
- Maintain the DELEP calendar and schedule on delep.org.
- Prepare monthly program updates for EIC and Steering Committee
- Edit outside articles and entire newsletter and write articles for the newsletter four times a year.

This project is estimated to consume _% of the Program Director's time, _% of the Assistant's time and _% of the secretary's time.

Coordination

The Office along with Implementation Teams continues to identify issues and make recommendations regarding programmatic solutions or new initiatives. These issues are then presented to the EIC for ultimate approval by the Steering Committee.

The Program Office performs outreach activities including coordinating Estuary Program initiatives with various organizations; working with the RIMS Coordinator to ensure programmatic information is up to date, and participate in outreach events.

Other activities include:

- Serve as the point of contact for the Delaware Estuary Program.
- Develop, in conjunction with the EIC, an annual program schedule for the EIC and Implementation Teams.
- Coordinate with organizations that would be logical partners to DELEP.
- Respond to information requests from the public.
- Compose letters and correspondence on behalf of DELEP.
- Serve on various related boards.
- Update and maintain the tracking database of estuary activities.
- Identify and pursue resources to implement the CCMP.
- Develop newsletter articles for the *Estuary News* on a quarterly basis.

This project is estimated to consume _% of the Program Director's time, _% of the Assistant's time and _% of the secretary's time.

National Coordination

The Program Office serves an external as well as an internal leadership role. As such the Program Office coordinates with other national estuary programs for purposes of technology transfer and programmatic issues. As a program, DELEP is part of EPA's NEP network and the Association of National Estuary Programs (ANEP). All estuary program directors serve as members on ANEP's Board of Directors. In FY 2002, the Director also serves as the Southeast regional representative of ANEP.

Other specific activities include:

- Serve as the point of contact for the Delaware Estuary Program.
- Coordinate with Federal Partners at the National level
- Contact other estuary programs to determine solutions to similar situations

This project is estimated to consume _% of the Program Director's time, _% of the Assistant's time and _% of the secretary's time.

More Detailed Timeline

As previously stated, the Program Director serves as the overall contact, director and coordinator for the Program. In that role, The Program Director coordinates activities with program representatives from the Estuary Implementation Committee and the work group. This is done on a regular basis in an effort to plan and coordinate existing and new activities to ensure the overall success of the Program. By way of this dialog, through attending team meetings, and with help from workgroup representatives on the teams, the Program Director will facilitate, direct and coordinate between the implementation teams. Additionally, where there is a need, assistance will be provided to implementation teams or member organizations with issues as they develop.

The Program Office will work with all the implementation teams on their key issues as elaborated in the DELEP work plan. This issues included: Toxics – PCBs, dredging; Monitoring – Estuary wide monitoring plan, implementation and indicators; PPIT – outreach, funding for reports and other projects, delep.org; HLRIT - explore potential projects, assist team leaders, develop priority sites for restoration, protection, seek out grant opportunities; Fish Consumption Advisory Implementation Team – create and work with DEPs and Departments of Health to create basin-wide fish advisory system, Watershed Implementation Team –coordinate with state programs; IMAC – clearinghouse, work group, websites and tracking.

During the first half of FY2002, the Program Office will perform the following tasks:

- Work with the MAC, the PPIT and Battelle to put on an Indicators workshop.
- Work with HLRIT to organize and sponsor an Oyster Blue Ribbon Panel Meeting.
- In concert with the Work Group develop and complete the NEP Streamline Review by January 31, 2002 and the GPRA report by January 11, 2002.
- Assist the MAC on a forum to create new indicators that will show progress towards achieving CCMP goals. This could be developed hand in hand with a more specific estuary wide monitoring plan, should the MAC decide they want to pursue this course of action.
- Produce the draft work plan and budget.
- Developed from the three-year budget.

- The Program Director will attend the annual NEP meeting and follow-up on actions as a required.
- Manage the Habitat Prioritization Grant and Projects which is scheduled to be completed by June 2002.

During the second half, the Program Office will:

- Produce the final work plan and budget.
- If funding is obtained for an Oyster Management Plan, the Plan will be written during this period.
- If funding is obtained a State of the Estuary Report and accompanying indicators will be produced.
- With the help of the Implementation Teams, seek and apply for grants for projects through NOAA, and other agencies.
- Participate in the site visits as required under the Streamline Review Process.
- Prepare reports regarding supplemental EPA funds for this period.

As seen in the previously attached Terms of Reference, the Delaware Estuary Program Director has various responsibilities, including working with Program participants to identify priority projects and identify sources of funding. Given the seventy-seven (77) action items, numerous sub-actions, estimates of 10-year implementation needs of over \$568 million, and large geographic area covered by the Delaware Estuary Comprehensive Conservation and Management Plan, it is obvious that there is a tremendous need for partnering with a great number of stakeholders and coordination of their various resources.

Reporting

Reporting of these activities will be at Work Group Meetings, Implementation Team Meetings, Conference calls, and meetings of the EIC, and as appropriate, at Steering Committee Meetings. In addition, semi-annual progress reports will be filed.

Calendar (% of time spent and when)

July I=37.5 A=25 C=22.5 NC=20	15%	Continue Planning of Indicators Workshop (I)
	5%	Continue developing measurable goals (I)
	5%	Start planning of Oyster Blue Ribbon Panel (I)
	5%	Work with other NEPs, sit on the ANEP executive and legislative committee. (NC)
	15%	Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC (A)
	10%	Implementation teams – attend meetings and work with team leaders (I)
	15%	National Mtg CZ 01 (NC)
	15%	Update Tracking database through phone calls and inputting data (A/C)
	10%	Begin Work on Updating Three Year Plan (A/C)
	5%	Field work (C/I)
August I=60 A=20	15%	Continue Planning of Indicators Workshop (I)
	5%	Work with other NEPs, sit on the ANEP executive and legislative committee. (NC)
	10%	Work with consultant to habitat projects (starting this month) (I)
	10%	Implementation teams – attend meeting and work with team leaders. (I)

C=15 NC=5	15%	Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC (A)
	15%	Work with Partnership on habitat projects plan to Restore America's Estuaries (I)
	10%	Continue Planning of Oyster Blue Ribbon Panel (I)
	10%	Coordinate with Federal Partners/ Outreach for money, grants and partnering efforts (C)
	5%	Continue Work on Updating Three Year Plan (A/C)
September I=35 A=40 C=20 NC=5	5%	Work with other NEPs, sit on the ANEP executive and legislative committee. (NC)
	15%	Continue Planning of Oyster Blue Ribbon Panel (I)
	10%	Coordinate with Federal Partners (C)
	10%	Update Tracking database through phone calls and inputting data (A)
	10%	Implementation teams – attend meetings and work with team leaders. (I)
	15%	Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC (A)
	10%	Continue Planning of Indicators Workshop (I)
	21%	Finalize three year plan (A/C)
	5% 4%	Follow-up from indicators workshop/ consultant work on summary of meeting Newsletter articles (coordinate and write) (A/C)
October I=55 A=35 C=5 NC=5	15%	Continue Planning of Indicators Workshop (I)
	15%	Hold Oyster Blue Ribbon Panel (I)
	5%	Work with other NEPs, sit on the ANEP executive and legislative committees. (NC)
	15%	Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC (A)
	10%	Implementation teams – attend meetings and work with team leaders (I)
	10%	Update Tracking database through phone calls and inputting data (A/C)
	15% 15%	Begin Work on Triennial Review (A) Work with consultant, NOAA and Coastal Services Center on Habitat Plan (I)
November I=30 A=50 C=10 NC=10	15%	Hold Indicators Workshop (I)
	5%	Work with other NEPs, sit on the ANEP executive and legislative committee. (NC)
	5%	Attend NEP/ ANEP Mtg. in Florida (planning of meeting, meeting and follow-up) (NC)
	10%	Implementation teams – attend meeting and work with team leaders. (I)
	20%	Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC, semi-annual report (A)
	10%	Start GPRA report (A)
	20%	Continue Work on Triennial Review (A)
	10% 5%	Coordinate with Federal Partners/ Outreach for money, grants and partnering efforts (C) Continue work on a Habitat Plan (I)
December I=20 A=60 C=15 NC=5	5%	Work with other NEPs, sit on the ANEP executive and legislative committee. (NC)
	10%	Start annual budget and work plan process (A)
	8%	Coordinate with Federal Partners (C)
	10%	Update Tracking database through phone calls and inputting data (A/C)
	10%	Implementation teams – attend meetings and work with team leaders. (I)
	13%	Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC (A)
	15%	Continue GPRA Report (A)
	15%	Continue work on Triennial Review (A)
	5%	Follow-up from indicators workshop/ consultant work on summary of meeting (I)
	4% 5%	Newsletter articles (coordinate and write) (A/C) Continue work on a Habitat Plan (I)
January	5%	Work with other NEPs, sit on the ANEP executive and legislative committee. (NC)
	15%	Continue budget and work plan (A)

I=25 A=55 C=15 NC=5	10%	Implementation teams – attend meetings and work with team leaders. (I)
	15%	Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC (A)
	10%	Update Tracking database through phone calls and inputting data (A/C)
	10%	Finalize Triennial Review (Due 1/31/2002) (A)
	10%	Finalize GPRA Report (Due 1/11/2002) (A)
	10%	Coordinate with Federal Partners/ Outreach for money, grants and partnering efforts (C)
February	10%	Consultant complete summary of indicators workshop – review (I)
	5%	Continue work on a Habitat Plan (I)
	20%	Follow-up to indicators work shop (I)
	5%	Work with other NEPs, sit on the ANEP executive and legislative committee. (NC)
	20%	Continue work on budget, work plan. (A)
	20%	Final summary of Indicators workshop – review with EIC, MAC and potentially focus groups (I)
I=55 A=40 C=0 NC=5	10%	Implementation teams – attend meetings and work with team leaders. (I)
	25%	Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC. (A)
	5%	Continue work on a Habitat Plan (I)
March	5%	Work with other NEPs, sit on the ANEP executive and legislative committee. (NC)
	10%	Update Tracking database through phone calls and inputting data (A/C)
	20%	Begin coordination work on additional Indicators and State of the Estuary Report (I)
	25%	Continue work on budget and work plan. (A)
	10%	Implementation teams – attend meetings and work with team leaders. (I)
	15%	Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC. (A)
I=35 A=45 C=15 NC=5	5%	Organize Site Visit for Triennial Review. (A)
	10%	Coordinate with Federal Partners/ Outreach for money, grants and partnering efforts (C)
	5%	Continue work on a Habitat Plan (I)
April	15%	Update Tracking database through phone calls and inputting data (A)
	20%	Continue work on Indicators and State of the Estuary Report (I)
	15%	Continue work on budget and work plan. (A)
	5%	Work with other NEPs, sit on the ANEP executive and legislative committee. (NC)
	10%	Implementation teams – attend meeting and work with team leaders (I)
	15%	Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC (A)
I=35 A=45 C=15 NC=5	15%	Site Visit for Triennial Review (C)
	15%	Newsletter articles (coordinate and write) (A/C)
	5%	Finish Habitat Plan (I)
May	10%	Update Tracking database through phone calls and inputting data (A/C)
	20%	Continue work on state of the Estuary Report and Indicators (I)
	5%	Work with other NEPs, sit on the ANEP executive and legislative committee. (NC)
	15%	Coordinate with Federal Partners/ Outreach for money, grants and partnering efforts (C)
	10%	Implementation teams – attend meeting and work with team leaders. (I)
	25%	Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC, semi annual report (A)
I=30 A=45 C=20 NC=5	15%	Finalize budget and work plan with EIC (Due to EPA HQ by 6/30/2002) (A)
	30%	Continue working on indicators (plan meeting to develop additional list of indicators) (I)
	10%	Coordinate with Federal Partners/ Outreach for money, grants and partnering efforts (C)
	10%	Update Tracking database through phone calls and inputting data (A/C)
	10%	Implementation teams – attend meetings and work with team leaders. (I)
	10%	

I=50 A=25 C=20 NC=5	15% 5% 10%	Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC (A) Work with other NEPs, sit on the ANEP executive and legislative committee. (NC) Continue work on State of the Estuary Report and Indicators (I) Submit work plan to EPA (A)
July I=40 A=37.5 C=17.5 NC=5	15% 10% 15% 15% 15% 30%	Work with other NEPs, sit on the ANEP executive and legislative committee. (NC) Implementation teams – attend meetings and work with team leaders. (I) Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC (A) Start updating Three Year Plan (A) Update Tracking database through phone calls and inputting data. (A/C) Produce State of the Estuary Report and new Indicators up on Web (I) Newsletter articles (coordinate and write) (A/C)
August I=35 A=60 C=0 NC=5	25% 10% 5% 25% 10% 15% 10%	Look into grant Opportunities (I) Update Tracking database through phone calls and inputting data (A) Work with other NEPs, sit on the ANEP executive and legislative committee. (NC) Finish Updating Three Year Plan (A) Implementation teams – attend meetings and work with team leaders. (I) Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC (A) Request information on use of supplemental funds (A)
September I=30 A=37.5 C=27.5 NC=5	20% 5% 10% 15% 15% 10% 15%	Look into Grant Opportunities (I) Work with other NEPs, sit on the ANEP executive and legislative committee. (NC) Implementation teams – attend meetings and work with team leaders. (I) Administrative functions - Organize EIC Meeting, update calendar, program schedule, answer public requests, monthly report to EIC/ SC (A) Report to EPA on Use of Supplemental funds. (Due 9/30/2002) (A) Coordinate with Federal Partners/ Outreach for money, grants and partnering efforts (C) Update Tracking database through phone calls and inputting data (A/C) Newsletter articles (coordinate and write) (A/C)

Note: fringe, use of cars, gas, copies, postage, office supplies, phone, attorney and accountant costs are all covered under the indirect cost rate.

	A	B	C	D	E	F	G	H	I	J
1	Organization	CCMP Action	Project Name	Habitat Type	Description of Project	Action/Activity	Partners	Acreage	Date Completed	Cost
2	DELAWARE	H4	Pea Patch Island Heronry Region Special Area Management Plan	Tidal and Non-Tidal Wetlands and uplands	Coordinate and Enhance Wetlands Management in the Estuary	Collaborates with and provides a forum for organizations that do establishment, restoration, enhancement, protection, reestablishment and rehabilitation.	At least 54 Participating Organizations with the Delaware Coastal Management Program	N/A	Ongoing since 1997	N/A
3	DELAWARE	H4.6	Development of Mitigation Banks Create, Protect and Restore Upland Buffer Zones Adjacent to Non-Tidal Wetlands	Non-Tidal Wetland and Upland Buffer	SRI Construction in Delaware Estuary Drainage Area	Establishment	Delaware Department of Transportation	12	07/01/01	unknown
4	DELAWARE	H4.6	Development of Mitigation Banks Create, Protect and Restore Upland Buffer Zones Adjacent to Non-Tidal Wetlands	Non-Tidal Wetland and Upland Buffer	SR1 Construction in Delaware Estuary Drainage Area	Establishment	Delaware Department of Transportation	4	04/01/01	unknown
5	DELAWARE	H5.1	Phragmites Control and Vegetation Diversity Restoration	Tidal Wetland	50/50 Cost Share with Private Landowners	Restoration	Delaware FWL with private landowners	2420	Ongoing since 1997	\$ 62,800.00
6	DELAWARE	H5.1	Phragmites Control and Vegetation Diversity Restoration	Tidal Wetland	State Owned Wildlife Areas Phragmites Control	Restoration	Delaware Fish and Wildlife	2335	1/8/01 - 9/30/01	\$ 128,900.00
7	DELAWARE	H5.2	Open Marsh Water Management	Tidal Wetland	Reduce Salt Marsh Mosquitos and create waterfowl, waterbird, submerged aquatic vegetation, aquatic macroinvertebrate, and fisheries habitats through establishment of permanent non-tidal waterbodies in saltmarshes	Re-establishment and Enhancement	DNREC, Division of Fish and Wildlife, USFWS, The Nature Conservancy	570	04/30/01	\$ 188,600.00
8	DELAWARE	H5.3	Restore and Enhance Poorly Functioning Tidal Wetland Impoundments	Tidal Wetland	Northern Delaware Wetlands Rehabilitation Program at Governor Peterson Site	Site Remediation for Re-establishment and Enhancement	Development Corp. NCC Conservation District, State of Delaware, USFWL, DCMP, Penalty funds, Superfund	100	Ongoing since 1997	\$ 300,000.00

Delaware Estuary Program

Habitat Effort

GPRA - 2001
01/01/01 - 09/30/01

	A	B	C	D	E	F	G	H	I	J
1	Organization	CCMP Action	Project Name	Habitat Type	Description of Project	Action/Activity	Partners	Acres	Date Completed	Cost
9	DELAWARE	H5.3	Restore and Enhance Poorly Functioning Tidal Wetland Impoundments	Tidal Wetland	Northern Delaware Wetlands Rehabilitation Program at Governor Peterson Site	Preliminary Restoration and Surveying for Re-establishment and Enhancement	Connectiv, State of Delaware, USFWL, DCMP, Penalty funds, Superfund	40	Ongoing since 1997	\$ 50,000.00
10	DELAWARE	H5.4	Artificial Reefs	Subaqueous lands	Delaware Artificial Reef Program	Enhancement of 3 sites in the Delaware Bay with the deployment of 4800 tons of concrete. Funding and in kind services provided	DNREC, Div. Fish & Wild. Federal Aid in Fisheries Restoration, and PSE&G	2	09/01/01	\$ 300,000.00
11	DELAWARE	H5.7	Restore Fish Passage	Instream	Estuary Enhancement Project - Restore fish passage for anadromous fish at Garrisons Lake, Moores Lake, Silver Lake, McGinnis Pond, Coursey Pond & McColley Pond	Monitoring and Maintenance	PSE&G and Div. of Fish & Wild.		Ongoing	\$ 100,000.00
12	DELAWARE	L4	Riparian Corridor Protection Program	Non tidal Wetlands, Riparian Area and Uplands	Delaware Park Mill Creek Site Stream Restoration Using Rosgen System to Increase Flood Storage and Create Habitat along 1000 feet	Restoration	DNREC, Wetlands and 319 Programs and New Castle County Conservation District	2.5	07/01/01	\$ 230,000.00
13	DELAWARE	L6	Greenspace Programs	Uplands Riparian Area Tidal and Non tidal Wetland	Little Creek Wildlife Area	Acquisition	Delaware Fish and Wildlife	4.5	09/04/01	\$ 20,000.00
14	DELAWARE	L6	Greenspace Programs	Uplands	Blackbird Creek	Acquisition	Delaware Open Space Program, Forestry	97	03/30/01	\$ 674,000.00
15	DELAWARE	L6	Greenspace Programs	Uplands	Blackbird Creek	Acquisition	Delaware Open Space Program, Forestry	2	03/30/01	\$ 133,000.00

Delaware Estuary Program

Habitat Effort

GPRA - 2001
01/01/01 - 09/30/01

	A	B	C	D	E	F	G	H	I	J
1	Organization	CCMP Action	Project Name	Habitat Type	Description of Project	Action/Activity	Partners	Acreage	Date Completed	Cost
16	DELAWARE	L6	Greenspace Programs	Uplands Riparian Area Tidal and Nontidal Wetland	Brandywine Creek	Acquisition	Delaware Open Space Program	60	03/30/01	\$ 3,300,000.00
17	DELAWARE	L6	Greenspace Programs	Uplands Riparian Area Tidal Wetland & Nontidal Wetland	Lower Delaware River	Acquisition of Development Rights	Delaware Open Space Program	111	08/10/01	\$ 565,000.00
18	DELAWARE	L6	Greenspace Programs	Uplands Riparian Area Tidal Wetland & Nontidal Wetland	Upper Murderkill River	Acquisition	Delaware Open Space Program, USFWL, Private Donations, The Nature Conservancy,	193	06/13/01	\$ 1,051,000.00
19	DELAWARE	L6	Mortenson Property Donation - Delaware Nature Society	Uplands & Wetlands	Donation of private property that borders on the Middle Run Tributary to the White Clay Creek (Cost=Assessed Value)	Acquisition	Delaware Nature Society	6.5	04/20/01	\$ 300,000.00
20	Totals						TOTAL ACREAGE	5959.5		\$ 7,403,300.00
21										
22	New Jersey	L6	Woodbury Creek	Riparian	Purchase of wooded upland and tidal freshwater wetlands along Woodbury Creek	Preserve	NJDEP Office of Natural Resource Restoration	151	06/23/05	\$ 940,000.00
23	New Jersey	L6	Grande Sprute	Riparian	Purchase of wooded upland and tidal freshwater wetlands along tributary of Raccoon Creek	Preserve	NJDEP Office of Natural Resource Restoration; USFWS	100	06/23/05	\$ 550,000.00
24	New Jersey	L1, L6	Rancocas Wetland Mitigation Bank, Burlington Co.	Wetland	Private Wetland Mitigation Bank	Creation	Rancocas Investments, LLC	20		Unknown (Private Entity)

	A	B	C	D	E	F	G	H	I	J
1	Organization	CCMP Action	Project Name	Habitat Type	Description of Project	Action/Activity	Partners	Acreage	Date Completed	Cost
25	New Jersey	L1, L6	Rancocas Wetland Mitigation Bank, Burlington Co.	Wetland	Private Wetland Mitigation Bank	Preserve	Rancocas Investments, LLC	26	06/23/05	Unknown (Private Entity)
26	New Jersey	L1, L6	Rancocas Wetland Mitigation Bank, Burlington Co.	Wetland	Private Wetland Mitigation Bank	Restoration	Rancocas Investments, LLC	47	O	Unknown (Private Entity)
27	New Jersey	L1, L6	Eastampton Wetland Mitigation Bank, Burlington Co.	Wetland	Private Wetland Mitigation Bank	Preserve	Rancocas Investments, LLC	407	06/22/05	Unknown (Private Entity)
28	Totals							733		\$ 1,490,000.00
29										
30	PENNSYLVANIA Growing Greener	L6, H5	Ridley Creek Watershed Restoration	Instream	Installation of stream bank deflectors	Rehabilitation	DelCo Trout Unlimited, Boy Scouts	1/4 mi	02/09/01	\$ 7,449.00
31	PENNSYLVANIA Growing Greener	L6, H5	Buck Run Restoration at Sadsbury Woods	Instream, Upland, Freshwater wetlands	Installation of stream bank crossing & streamline fencing and 75 ft ripararian buffer planting	Rehabilitation & Restablishment	Natural Lands Trust	1/2 mi instream, 4.4 acres buffer and wetland	02/21/01	\$ 15,468.00
32	PENNSYLVANIA Growing Greener	L6, H5	French Creek Scenic Restoration Project	Upland	Streambank fencing and planting of ripararian buffers, land easement	Re-establishment and Protection	Green Valley Association of Southeastern, PA	400 ft streambank, 1 acre	05/16/01	\$ 30,000.00
33	PENNSYLVANIA Water Quality Com. Environmental Project	L4, H5	Bristol Township CEP	Instream	Streambank stabilization	Rehabilitation	Bristol Township	150 ft	05/01/01	\$ 14,000.00
34	Totals***							9		\$ 66,917.00
35	Grand Total							6,702		\$ 8,960,217.00

Delaware Estuary Program Habitat Efforts - GPRA - 1986-2000

Organization	CCMP Action	Project Name	Habitat Type	Description of Project	Action/Activity	Partners	Acreage	Date Completed	Cost
Partnership	L6	Schoolsite Wildsites	Upland	Planting beneficial native plant species	Enhancement	Downe Twp. E.S. Lakeside M.S. Myron Powell E.S. Natural LandsTrust	2	2000	\$12,694
Partnership	H5.8	Cohansey River Seed Bed Restoration	Estuarine	Transplanting oyster seed upbay	Re-establishment	Aquaculture Dev. Corp.	<1	2000	\$21,250
Partnership	L4	Rid Invasives Replant Natives	Wetland	Removal of Japanese Knotweed and replanting of native species	Restoration	Bala Cynwyd M.S. Lower Merion Twp.	<1	2000	\$990
Partnership	L4	Birch Run Meadow Restoration	Upland	Restoration of Birch Run Meadow	Restoration	Girl Scouts of the Chesapeake Bay	3	2000	\$31,781
Partnership	L4	BioBlitz 2000	Wetland	Habitat Restoration in the Wissahickon Watershed	Restoration	Fairmount Park Comm.	4	2000	\$6,620
Partnership	L4	DuPont Edge Moor Demonstration Site	Upland & Wetland	Removal of invasive exotic vegetation and planting of natives	Restoration	DuPont Company New Castle Cons. Dist. Partnership for Del Estuary	50	2000	\$15,555
Partnership	L4	Little Crum Creek Appreciation Days	Wetland	Streambank restoration and education programs	Restoration	Swarthmore Borough EAC Swarthmore League of Women Voters	<1	1999	\$2,750
Partnership	L4	Naamans Creek Restoration Program	Wetland	Restoration of woods, banks and habitat of South Branch Naamans	Restoration	Trustees of Ardentown	<1	1997	\$6,016
Partnership	L4	Brock Creek Streambank Stabilization	Wetland	Stabilization of Brock Creek Streambank	Restoration	Lower Makefield Twp.	<1	1997	\$8,320
Partnership	L4	Cooper River Erosion Control	Wetland	Installation of a variety of erosion control methods along Cooper River	Restoration	Camden Co. Soil Conservation District	5	1993	\$24,900
Totals***							64		\$130,876
DELAWARE	H4	Coordinate and Enhance Wetlands Management in the Estuary	Tidal and Non-tidal Wetland and Uplands	Pea Patch Island Heronry Region Special Are Management Plan	Collaborates with and provides a forum for organizations that do establishment, restoration enhancement, protection re-establishment, and rehabilitation	At least 54 Participating Organizations with the Delaware Coastal Management Program	N/A	Ongoing since 1997	N/A

Delaware Estuary Program Habitat Efforts - GPRA - 1986-2000

Organization	CCMP Action	Project Name	Habitat Type	Description of Project	Action/Activity	Partners	Acreage	Date Completed	Cost
DELAWARE	H4.5	Strategy to Encourage Landowners to create protect and restore upland buffer zones adjacent to tidal and non-tidal wetlands	Riparian Buffer	Streamway Stewardship Program-Conservation Easement	Protection	Lead Delaware Nature Society, William Penn Foundation	791 acres	Ongoing since about 1988	\$1,330,000
DELAWARE	H4.6	Development of Mitigation Banks Create, Protect and Restore Upland Buffer Zones Adjacent to Tidal and Non-Tidal Wetlands	Wetland and upland buffer	Wetland mitigation sites for highway construction in the Delaware Estuary drainage area	Establishment	Delaware Department of Transportation	300 acres	1996	\$450,000
DELAWARE	H5.1	Phragmites Control and Vegetation Diversity Restoration	Tidal Wetland	50/50 Cost Share with private landowners	Restoration	Delaware FWL, private landowners	2100 acres	Ongoing since 1986	\$55,000
DELAWARE	H5.1	Phragmites Control and Vegetation Diversity Restoration	Tidal Wetland	Gambles Gut Mash Habitat Restoration Project	Restoration	DELEP, Delaware Fish and Wildlife	77 acres	1997	\$12,859
DELAWARE	H5.2	Open Marsh Water Management	Tidal Wetland	Restore previously dewatered tidal wetlands natural non-tidal ponds to enhance aquatic vegetation macro-invertebrates, water bird populations, fish, aquatic furbearers and natural mosquito control	Re-establishment and Enhancement	DNREC, Division of Fish and Wildlife, USFWL, Delaware Nature Society, The Nature Conservancy	300 acres	Ongoing since 1979	\$500,000
DELAWARE	H5.3	Restore and Enhance Poorly Functioning Tidal Wetland Impoundments	Tidal Wetland	Northern Delaware Wetlands Rehabilitation Program at over 10,000 acres at over thirty sites along the Christina-Delaware Rivers corridor. Restore tidal exchange, invasive vegetation control, selective excavation for habitat diversity and mosquito control	Re-establishment and Enhancement	State of Delaware, USFWL, DCMP, Penalty funds, Superfund	1210 acres	*Ongoing since 1992	\$522,600
DELAWARE	H5.4	Artificial Reefs	Subaqueous lands	Delaware Artificial Reef Program	Establishment of Eight sites in the Delaware Bay	DNREC, Federal Aid in Fisheries Restoration, and PSE&G	33 acres	Ongoing since 1995	\$705,000

Delaware Estuary Program Habitat Efforts - GPRA - 1986-2000

Organization	CCMP Action	Project Name	Habitat Type	Description of Project	Action/Activity	Partners	Acreage	Date Completed	Cost
DELAWARE	H5.4	Artificial Reefs	Subaqueous lands	Delaware Artificial Reef Program	Enhancement through monitoring biological communities	DELEP DEREC 50%-50% matched	Representative samples of 8 bay sites	1996	\$12,300
DELAWARE	H5.5	Shorebird Ambassador		Stoney Run-Fox Point Restoration and Recovery Project.	Re-establishment and Enhancement. Each site selected will include a volunteer clean-up, removal of exotic plants, and routine monitoring of avian activity, along with periodic maintenance	DNREC, Partnership for the Delaware Estuary, Inc., Bellevue State park	Four Osprey Platforms	1997	\$6,000
DELAWARE	H5.7	Restore Fish Passage		Estuary Enhancement Project - Restore fish passage for anadromous fish	Re-establishment and Enhancement.	PSE&G	Fish ladders at Garrisons Lake, Silver lake, Moore's Lake, McGinn is Pond, Coursey pond & McColley Pond	Ongoing	\$1,500,000
DELAWARE	L4	Riparian Corridor Protection Program	Riparian Corridors	Riparian Corridor Outreach	Protection and Restoration	DNREC, and the Delaware Department of Public		1996-1997	\$17,000
DELAWARE	L4	Riparian Corridor Protection Program	Tidal and non tidal wetlands, riparian area and uplands	DNEERS-Blackbird Creek Site	Protection	DNREC and NOAA	1180 acres with 50 parcels, 46 are privately owned	1990	\$212,000
DELAWARE	L4	Riparian Corridor Protection Program	Tidal and non tidal wetlands, riparian area and uplands	DNEERS---Lower St. Jones River Site	Protection	DNREC and NOAA	3750 acres 37 parcels, 35 of which are privately owned	1991-1992	\$800,000
DELAWARE	L4	Riparian Corridor Protection Program	Stream bank	Mill Creek Stream Restoration at Delaware Park	Restoration	DNREC	1,000 foot section	1999	\$100,020
DELAWARE	L6	Greenspace Programs	Uplands riparian areas tidal wetland & nontidal wetland	Delaware Open Space Program--- Delaware Estuary Portion of State	Protection	Delaware Open Space Program, USFWL, Private Donations, The Nature Conservancy, Delaware Wildlands, Duck Stamp	12,552 acres	1988-2000	\$80,000,000
Totals						TOTAL ACREAGE	21,960	*TOTAL COST	\$86,222,779

Delaware Estuary Program Habitat Efforts - GPRA - 1986-2000

Organization	CCMP Action	Project Name	Habitat Type	Description of Project	Action/Activity	Partners	Acreage	Date Completed	Cost
New Jersey	H5, H7	Shorebirds	Tidal	Restore Shorebird Habitat on New Jersey's Delaware Bayshore	Restoration	NJDEP Endangered and Nongame Species Program	223,312*	2000	\$6,000
New Jersey	H5, H7	Higbee Beach	Tidal	Restore Shorebird and Horseshoe Crab Habitat on New Jersey's Delaware Bayshore	Restoration	NJDEP Endangered and Nongame Species Program	223,312*	2000	\$2,000
New Jersey	L6	GreenKeepers Plan	Upland	Reduce Non Point Source Pollution through a variety of initiatives	Rehab	NJDEP Division of Watershed Management, Salem Co.	N/A	Ongoing	\$101,000
New Jersey	L6	Backyard BMPs and Wildlife Habitat Project	Upland	Promote the planting of native species and the use of organic biological controls	Rehab	NJDEP Division of Watershed Management, Gloucester Co.	N/A	O	\$19,000
New Jersey	L4	Smithville Farm Environmental Restoration Project	Wetland	Restore vegetation and erosion control measures at Smithville Park	Restoration	NJDEP Division of Watershed Management, TBD	224,499*	O	\$150,000
New Jersey	L4	Mill Dam Park & Rancocas Creek Restoration Plan	Wetland	Restore vegetation in riparian areas and place fish ladder on Mill Dam	Restoration	NJDEP Division of Watershed Management, TBD	224,499*	O	\$250,000
New Jersey	L4	Riparian Buffers along Rancocas Creek	Wetland	Restore vegetation along Rancocas Creek	Restoration	NJDEP Division of Watershed Management, TBD	224,499*	O	\$110,000
New Jersey	H4	Woolman Lake Restoration	Wetland	Restore vegetation along Woolman Lake	Restoration	NJDEP Division of Watershed Management, Heritage Conservancy	224,499*	1999	\$83,000
New Jersey	L4, L5	NPS Control and Management for Strawbridge Lake	Wetland	Use of BMP's and organic biological controls along Strawbridge Lake	Protection	NJDEP Division of Watershed Management, Moorestown Twp.	N/A	1999	\$111,000
New Jersey	L2	Watershed Management Area (WMA) 17	All	Development of a regional watershed management plan	Protection	NJDEP Division of Watershed Management, Cumberland Co.	785,282*	O	\$300,000
New Jersey	L2	WMA 18	All	Development of a regional watershed management plan	Protection	NJDEP Division of Watershed Management, DVRPC	250,462*	O	\$300,000
New Jersey	L2	WMA 19	All	Development of a regional watershed management plan	Protection	NJDEP Division of Watershed Management, Burlington Co.	224,499*	O	\$250,000
New Jersey	L2	WMA 20	All	Development of a regional watershed management plan	Protection	NJDEP Division of Watershed Management, DVRPC	161,914*	O	\$300,000
New Jersey	W12, H5	Shad	Tidal	Management and restoration of anadromous fish populations	Protection	NJDEP Division of Fish and Wildlife (Approximate over last 10 years)	223,312*	O	\$1,070,000

Delaware Estuary Program Habitat Efforts - GPRA - 1986-2000

Organization	CCMP Action	Project Name	Habitat Type	Description of Project	Action/Activity	Partners	Acreage	Date Completed	Cost
New Jersey	W12, H5	Shellfish	Tidal	Management and restoration of shellfish populations	Rehab	NJDEP Division of Fish and Wildlife (Approximate over last 10 years)	223,312*	O	\$2,866,000
New Jersey	L1	Agriculture	All	Farmland Preservation	Preserve	NJDOA, Farmland Preservation Program (All time in Estuary)	20,959	O	\$156,000,000
New Jersey	L1	Public Land	All	Open Space Preservation	Preserve	NJDEP Green Acres Program (Approximate over last 10 years)	20,961	O	\$130,000,000
New Jersey	W12, H5	Anadromous Fish	Tidal	Management and restoration of anadromous fish populations	Protection	NJDEP Division of Fish and Wildlife, PSEG	223,312*	O	\$795,450
New Jersey	L1, L6	Woodbury Creek Wetland Mitigation Bank	Wetland	Private Wetland Mitigation Bank	Creation	US Wetland Services	129	O	Unknown (Private Entity)
New Jersey	L1, L6	Willow Grove Lake Wetland Mitigation Bank	Wetland	Private Wetland Mitigation Bank	Preserve	Nature Conservancy	1,073	O	Unknown (Private Entity)
New Jersey	L6	Lower Alloway Creek Township	Wetland	Preserved wetland and buffer areas	Preserve	NJDEP Office of Natural Resource Restoration	182	1998	\$109,000
New Jersey	L6	Stow Creek	Wetland	Preserved wetland and buffer areas	Preserve	NJDEP Office of Natural Resource Restoration	60	1997	\$625,000
New Jersey	L6, W10	Fort Mott	All	Preserved wetland and buffer areas, historic area preservation	Restoration	NJDEP Office of Natural Resource Restoration	0.5	1997	\$300,000
New Jersey	W9	8 Boom Anchor Projects, WMA's 17 & 18	Tidal	Oil spill boom attachments to Osprey platforms at mouth of Bay tributaries	Protection	NJDEP Office of Natural Resource Restoration	1,000	1999	\$100,000
New Jersey	L6	Pemberton Acquisition	Wetland	Preserved wetland and buffer areas	Protection	NJDEP Office of Natural Resource Restoration	17	1999	\$30,000
New Jersey	L1, L6	Swamp Pink (Helonius bullata) Protective Measures	Wetland	Remove stormwater discharges and protective measures at Swamp Pink habitat	Protection	NJDEP Office of Natural Resource Restoration	30	O	\$125,000
New Jersey	L6	Cinnaminson Acquisition	Wetland	Purchase of Eagle, Hawk and Heron habitat along Delaware River	Protection	NJDEP Office of Natural Resource Restoration	47	2000	\$1,500,000
New Jersey	L6	Westville Acquisition	Wetland	Preserved wetland and buffer areas	Protection	NJDEP Office of Natural Resource Restoration	57	2000	\$287,000
New Jersey	W2	Brook Trout, Big Timber Creek	Riverine	Genetic study of isolated population of native trout in Big Timber Creek	Rehab	NJDEP Office of Natural Resource Restoration	N/A	O	\$18,000
New Jersey	L6	Hudson's Branch, Maurice River	Wetland	Wetland and Riparian forest buffer restoration	Restoration	NJDEP Office of Natural Resource Restoration	17	O	\$100,000
New Jersey	L6	Pittsgrove Conservation Easement	Wetland	Purchase of Maurice River headwater aquifer recharge areas	Protection	NJDEP Office of Natural Resource Restoration	173	1998	\$272,000

Delaware Estuary Program Habitat Efforts - GPRA - 1986-2000

Organization	CCMP Action	Project Name	Habitat Type	Description of Project	Action/Activity	Partners	Acreage	Date Completed	Cost
New Jersey	L6	NJ Wetland Mitigation Council	Wetland	Private Land Donation	Protection	Nature Conservancy, Cape May Co.	207	1997	Land Donation
New Jersey	L6	NJ Wetland Mitigation Council	Wetland	Private Land Donation	Protection	Stavola Realty, Burlington Co.	52	1997	Land Donation
New Jersey	L6	NJ Wetland Mitigation Council	Wetland	Private Land Donation	Protection	Leisure Technology, Burlington Co.	563	1999	Land Donation
New Jersey	L6	NJ Wetland Mitigation Council	Wetland	Private Land Donation	Protection	Owens Corning, Camden Co.	8	1999	Land Donation
New Jersey	L6	NJ Wetland Mitigation Council	Wetland	Private Land Donation	Protection	Orleans Corporation, Burlington Co.	179	1998	Land Donation
New Jersey	L6	NJ Wetland Mitigation Council	Wetland	Private Land Donation	Protection	City of Millville, Cumberland Co.	17	2000	Land Donation
New Jersey	L1, L6	Eastampton Wetland Mitigation Bank, Burlington Co.	Wetland	Private Wetland Mitigation Bank	Preserve	Rancocas Investments, LLC	407	2000	Unknown (Private Entity)
Totals						TOTAL ACREAGE	46,139	TOTAL COST	\$296,179,450

PENNSYLVANIA	L6	Preserve	Wetland	enhancement with planting and	Creation/Enhancement	PA DEP, SERO	4	09/08/2000	\$36,400
PENNSYLVANIA	L1, L5, L6	Honeybrook Golf	Wetland	Creation of Wetlands and/or enhancement with planting and monitoring	Creation/Enhancement	PA DEP, SERO	2	07/01/1999	\$15,668
Totals**						TOTAL ACREAGE	6		\$52,068

PSE&G	H1, H2 and H4	Estuary Enhancement Program Wetland Restoration	Tidal Wetland; Freshwater Wetland; Wetland Buffer Uplands	Deed of conservation restriction for permanent protection of former potential energy generation facility site, in Greenwich, Cumberland County, NJ	Protection	PSEG NJDEP Greenwich Twp.	4,407	N/A	*\$
PSE&G	H1, H2 and H4	Estuary Enhancement Program Wetland Restoration	Tidal Wetland	Restoration of tidal inundation to former diked salt hay farm for improved fish nursery habitat.	Restoration	PSEG NJDEP ACOE	369	1996	*\$
PSE&G	H1, H2 and H4	Estuary Enhancement Program Wetland Restoration	Tidal wetland	Restoration of tidal inundation to former diked salt hay farm for improved fish nursery habitat.	Restoration	PSEG NJDEP ACOE Maurice River Twp.	1,135	1998	*\$

Delaware Estuary Program Habitat Efforts - GPRA - 1986-2000

Organization	CCMP Action	Project Name	Habitat Type	Description of Project	Action/Activity	Partners	Acreage	Date Completed	Cost
PSE&G	H1, H2 and H4	Estuary Enhancement Program Wetland Restoration	Tidal wetland	Restoration of tidal inundation to former diked salt hay farm for improved fish nursery habitat.	Restoration	PSEG NJDEP ACOE Commercial Twp.	2,894	1997	*\$
PSE&G	H1, H2 and H4	Estuary Enhancement Program Wetland Restoration	Tidal wetland	Control of Phragmites australis vegetation to encourage establishment of desirable vegetative species and restoration of improved fish nursery habitat.	Enhancement and Rehabilitation	PSEG NJDEP ACOE Elsinboro Rwp. Lower Alloways Creek Twp.	2,813	Ongoing	*\$
PSE&G	H1, H2 and H4	Estuary Enhancement Program Wetland Restoration	Tidal wetland	Control of Phragmites australis vegetation to encourage establishment of desirable vegetative species and restoration of improved fish nursery habitat.	Enhancement and Rehabilitation	PSEG NJDEP ACOE Fairfield Twp.	910	Ongoing	*\$
PSE&G	H1, H2 and H4	Estuary Enhancement Program Wetland Restoration	Tidal wetland	Control of Phragmites australis vegetation to encourage establishment of desirable vegetative species and restoration of improved fish nursery habitat.	Enhancement and Rehabilitation	PSEG DNREC	1,863	Ongoing	*\$
PSE&G	H1, H2 and H4	Estuary Enhancement Program Wetland Restoration	Tidal wetland	Control of Phragmites australis vegetation to encourage establishment of desirable vegetative species and restoration of improved fish nursery habitat.	Enhancement and Rehabilitation	PSEG DNREC	253	Ongoing	*\$
PSE&G	H1, H2 and H4	Estuary Enhancement Program Wetland Restoration	Tidal wetland	Control of Phragmites australis vegetation to encourage establishment of desirable vegetative species and restoration of improved fish nursery habitat.	Enhancement and Rehabilitation	PSEG DNREC	309	Ongoing	*\$

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Organization	CCMP Action	Project Name	Habitat Type	Description of Project	Action/Activity	Partners	Acreage	Date Completed	Cost
PSE&G	H1, H2 and H4	The Rocks Wetland Restoration Site	Tidal wetland	Control of Phragmites australis vegetation to encourage establishment of desirable vegetative species and restoration of improved fish nursery habitat.	Enhancement and Rehabilitation	PSEG DNREC	736	Ongoing	*\$
PSE&G	H1, H2 and H4	Woodland Beach Wetland Restoration Site	Tidal wetland	Control of Phragmites australis vegetation to encourage establishment of desirable vegetative species and restoration of improved fish nursery habitat.	Enhancement and Rehabilitation	PSEG DNREC	1,177	Ongoing	*\$
PSE&G	H1, H2 and H4	Fish Ladders	anadromous fish habitat (rivers)	Installation of 8 fish ladders in NJ and De, to restore historic migratory fish paths.	Restoration	PSEG NJDEP DNREC USFWS		1997-1999	*\$
Totals						TOTAL ACREAGE	16,866	TOTAL COST	\$100,000,000

Grand Totals	85,034	\$482,585,173
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* Projects with the same cost or acreage are all portions of a larger project which totals that number. The numbers have not been double counted.

** These PA totals do not include the total projects pursued and completed in PA, but only the projects for which complete information was available. Between 1990 and 1999 PA had a 293 net gain of wetland acres in the DE Estuary Region. Between 1999 and 2000 three million dollars was awarded by PA to do habitat restoration in the Delaware Estuary. PA does not have a tracking system for habitat at this time to be able to give complete information, but with the \$30K supplemental funding will be able to begin to track and provide to EPA some of this information. The 293 acre net gain, and the three million dollars are not included in the totals for the Delaware Estuary Program, since full information cannot be provided.