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Chesapeake Bay Restoration and Protection Plan

Appendices

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Appendices

July 1985

CHESAPEAKE BAY RESTORATION AND PROTECTION PLAN

EXECUTIVE SUMMARY

> Improve and protect the water quality and living resources of the Chesapeake Bay estuarine system to restore and maintain the Bay's ecological integrity, productivity, and beneficial uses and to protect public health.

This is the consummate purpose of the Chesapeake Bay restoration and protection program. Achieving it will take time and the commitment of the federal, state and local governments, public and private entities, and citizens.

For several decades as population has been increasing, the water quality and living resources of the Bay have been declining. The evident degradation has led to a number of research and monitoring efforts by various governmental and private institutions to discover the causes.

The largest and most comprehensive of these was the five year study of the Chesapeake Bay conducted by the U.S. Environmental Protection Agency (EPA) in cooperation with other federal, state and private entities. The study findings and recommendations prompted action.

In 1983, the Environmental Protection Agency and the states in the basin formalized their commitment to restore and protect the living resources and environmental quality of the Chesapeake Bay in the Chesapeake Bay Agreement, which states:

> "We recognize that the findings of the Chesapeake Bay Program have shown a historical decline in the living resources of the Chesapeake Bay and that a cooperative approach is needed among the Environmental Protection Agency, the State of Maryland, the Commonwealths of Pennsylvania and Virginia, and the District of Columbia (the states) to fully address the extent, complexity and sources of pollutants entering the Bay. We further recognize that EPA and the states share the responsibility for management decisions and resources regarding the high priority issues of the Chesapeake Bay."

The parties to the Agreement called for the preparation and implementation of coordinated plans to improve and protect the water quality and living resources of the Chesapeake Bay. This Chesapeake Bay Restoration and Protection Plan is the first iteration in response to that charge. It documents the collective implementation activities of the federal and state agencies, party to the Agreement. The plan acknowledges the contributions of local governments, private and public sector groups and citizens and encourages consideration of the Baywide goals and objectives in conducting their programs.

The Plan is structured to address the goals and objectives of the Chesapeake Bay restoration and protection effort, formulated on present understandings about the causes of the decline in the Bay's health and productivity. Each implementation program addresses one, and often more than one, objective.

The Chesapeake Bay Study found that a combination of point and nonpoint sources of nutrients and toxics has degraded the quality of water in the Bay and its tributaries and has contributed largely to the decline in their living resources. Point sources are those which discharge through a pipe or ditch, such as municipal sewage treatment or industrial plants and animal feedlots. Nonpoint pollution is runoff from urbanized areas, construction, hydrologic modification, silviculture, abandoned mines, agriculture, irrigation return flows, waste disposal, and individual sewage disposal. The loss of submerged aquatic vegetation, mostly due to turbid waters and decreased sunlight, and the decline of oysters, freshwater spawning finfish, and benthic organisms are of major concern. The Plan describes the goals, objectives and strategies which focus on those concerns.

Because the Bay is a complex interactive ecosystem, actions taken in any part of the watershed may affect a downstream environment. It is, therefore, crucial to have a cooperative effort among the governing agencies of the area. Each state, party to the Chesapeake Bay Agreement, is implementing programs to meet the requirements of its own statutes and regulations and also is working with its neighboring states, the federal government, local governments and private entities to attain mutual benefits for the Bay. The state/federal institutional base prescribed in the Agreement is designed to forge cooperative efforts on the Bay. A Chesapeake Executive Council, composed of leaders of EPA and the key state cabinets, oversees the implementation of coordinated restoration and protection plans. The Citizens Advisory Committee provides independent advice to the Executive Council. An Implementation Committee guides and reports to the Council on state and federal program efforts. Advising the Implementation Committee is a Scientific and Technical Advisory Committee.

This institutional structure is a flexible, non-binding one; yet, it reflects the commitments of the parties to the Agreement to restore and protect the Bay. These federal and state parties have provided the political support and considerable financial backing for both site-specific, discrete state efforts and Baywide undertakings. A significant accomplishment of the participants in the Agreement has been to agree on an overall purpose for the restoration and protection plan, as well as goals and objectives for controlling nutrients and toxics, protecting and restoring the Bay's living resources, addressing other related matters, and supporting a cooperative approach in managing the Bay.

Nutrients

Goal: Reduce point and nonpoint source nutrient loadings to attain nutrient and dissolved oxygen concentrations necessary to support the living resources of the Bay.

Scientific studies have shown that excessive nutrient loadings produce high nutrient concentrations in the water column, resulting in an increase in the microscopic floating plants called algae. The increase of the algae prevents light from reaching the submerged grasses; and, as the algae decompose, they contribute to low oxygen conditions which, in turn, can be harmful to both finfish and shellfish. It appears that phosphorus controls the process in tidal-fresh areas such as the upper sections of the Bay and its tributaries, while nitrogen may be limiting in the more saline areas. It has been concluded

that reducing nutrient loadings to the Bay from point and nonpoint sources will reverse the Baywide trend toward nutrient enrichment and begin to restore the environmental quality of the Bay.

The Baywide objectives designed to reduce nutrient loadings are to:

Provide timely construction of public and private sewerage facilities to assure control of nutrient discharges;
Reduce the discharge of untreated or inadequately treated sewage into Bay waters from such sources as combined sewer overflows and leaking sewage systems;
Provide for adequate maintenance, operation and replacement of equipment at sewage treatment facilities;
Establish and enforce nutrient and conventional pollutant limitations to ensure compliance with water quality laws;
Reduce the levels of nutrients and other conventional pollutants in runoff from agricultural and forested lands;
Reduce the levels of nutrients and other conventional pollutants in urban runoff; and
Reduce pollutant discharges from recreational boats in shellfish growing areas and beach areas used for swimming.

Directed toward meeting these objectives are implementation programs that have existed for a number of years, such as sewage treatment plants, and relatively new programs, such as agricultural best management practices (BMPs.). EPA has provided considerable funding to state and local governments for construction, maintenance and improvements to sewage treatment facilities. This year approximately $84 million is being directed to the Bay area; the states also provide sizable contributions. New sewage treatment techniques for the removal of nutrients (phosphorus and nitrogen) are being tested and on-site sewage treatments and sewerage lines are being improved. States are stepping up their enforcement efforts to control point sources. As part of an agreement with EPA, the Department of Defense is enhancing its comprehensive National Pollution Abatement Program.

The states have accelerated and expanded their efforts to control nonpoint sources as a priority for solving the problem of nutrient enrichment in the Bay and its tributaries. Aided by agencies of the U.S. Department of Agriculture and approximately $10 million, state efforts to apply best management practices on farms in selected areas have increased dramatically. Stormwater management programs in urban and suburban areas are also being implemented to reduce nutrients associated with sediment from construction sites and streets and roads. State legislatures are appropriating about $14 million this year to control nonpoint source pollution.

The implementation programs address specific locations with their specific problems since the problems and their remedies vary from place to place. Collectively, these remedies will ameliorate the nutrient over-enrichment of the Bay and its tributaries.

TOXICS

Goal: Reduce or control point and nonpoint sources of toxic materials to attain or maintain levels of toxicants not harmful to humans or living resources of the Bay.

Research has shown a relationship between elevated levels of toxic compounds in the sediments and the survival and diversity of individual organisms necessary to have a balanced Bay ecology. In certain areas of the Bay, living resources are threatened by high levels of toxic substances. The major sources of the toxics are industrial facilities and sewage treatment plants. There are over 5,000 permitted dischargers in the Bay basin. For contaminants such as lead, zinc, and many of the organic compounds, urban runoff and atmospheric deposition are also important sources. Runoff containing pesticides from agricultural areas may also contribute to this degradation in some areas of the Bay. Future forecasts indicate that, unless the trend is halted, the sources of toxic substances will continue to grow in number and change in nature.

To achieve improvement, point and nonpoint sources of toxic materials which have been contaminating areas of the Bay need to be reduced, and care should be taken not to resuspend toxicants currently in the sediments. At the same time, degradation to uncontaminated areas must be prevented. The Chesapeake Executive Council, to control toxics, adopted six objectives. They are to:

Identify and control toxic discharges to the Bay system through implementation and enforcement of the states NPDES permit programs and other programs;
Reduce the discharge of metals and organics from sewage treatment plants resulting from industrial sources;
Reduce the discharge of metals and organics from industrial sources;
Reduce chlorine discharges to critical finfish and shellfish areas;
Reduce the levels of metals and organics in urban and agricultural runoff; and
Minimize water pollution incidents and provide adequate response to pollutant spills.

As part of the effort to attain the goal and objectives for reducing toxics, the states are implementing the National Pollutant Discharge Elimination System (NPDES) program by issuing permits for municipal and industrial point sources, monitoring for compliance, and taking enforcement action, as needed. States are, or will be, requiring toxics limitations and are, or will be, enforcing best available technology (BAT) and water quality-based effluent limitations, where needed. Efforts are underway to encourage pretreatment of effluents from industrial sources and to reduce chlorine discharged from municipal sewage treatment plants. To reduce toxics from runoff, stormwater management programs are aimed at developing areas, with some demonstration projects being initiated; pesticide education programs are being established as part of the nonpoint source control effort on agricultural and suburban lands. While the federal and state governments collaborate on all of these endeavors, this cooperative effort is heightened during emergencies, such as oil spills.

Because of the many uncertainties involved in identifying the toxic substances, their sources and effects, considerable monitoring and research efforts are being conducted by several federal agencies and the states to better characterize these substances and their fate. Results of these efforts will guide development of future programs.

Living Resources

Goal: Provide for the restoration and protection of the living resources, their habitats and ecological relationships.

The decline in the living resources of the Bay can be attributed to several factors including pollution, physical loss of habitats, overfishing and major climatic events. The observed relationships among nutrients and toxicants and living resources provide compelling evidence that water and sediment pollution threatens important living resources.

To attain the goal for living resources, the following objectives were established:

Develop or enhance state fisheries management programs to protect the finfish and shellfish stocks of the Bay;
Provide for the restoration of finfish stocks in the Bay, especially the abundance and diversity of freshwater and estuarine spawners;
Provide for the restoration of shellfish stocks in the Bay, especially the abundance of commercially important species;
Restore, enhance and protect waterfowl and wildlife;
Restore, enhance and protect desirable species of submerged aquatic vegetation;
Protect and enhance, and restore where possible wetlands, coastal sand dunes, and other important shoreline and riverine systems;
Conserve soil resources and reduce erosion and sedimentation to protect Bay habitats; and
Maintain freshwater flow regimes necessary to sustain estuarine habitats.

The National Oceanic and Atmospheric Administration (NOAA), Fish and Wildlife Service (FWS), Department of Defense (DOD), Corps of Engineers (COE), Soil Conservation Service (SCS), Environmental Protection Agency (EPA), and U.S. Geological Survey (USGS) are working cooperatively with states and local entities, performing data management, monitoring and research projects around the Bay. At least $1.5 million is spent annually to regulate the fisheries industry, assess and enhance fish stock, and ensure that habitats, such as wetlands, are protected.

In addition to developing comprehensive fisheries management programs, states are replenishing fin and shellfish stocks, building hatcheries and fishways, and "planting" shellfish. In FY 86 alone, the states will spend about $14 million on these efforts. Furthermore, a number of state programs are controlling shoreline erosion, protecting wetlands, and re-establishing submerged aquatic grasses. Approximately $12 million to restore and protect habitats will be expended by states in FY 86.

These efforts, combined with accelerated and expanded programs to reduce nutrients and toxics entering the Bay system, are expected to produce significant improvements.

RELATED MATTERS

Goal: Develop and manage related environmental programs with a concern for their impact on the Bay.

It has become increasingly apparent that "cross-media" environmental pollution is a serious problem. Air deposition, leachate from waste dumps, residuals from industries and sewage treatment plants, and contaminated spoil from dredged areas are now recognized contributors to Bay pollution. An integrated approach to environmental problem solving has been acknowledged in the formulation of the following objectives:

Manage sewage sludge, dredged spoil and hazardous wastes to protect the Bay system;
Manage groundwater to protect the water quality of the Bay;
Consider and address the impacts of atmospheric deposition on the Bay system;
Improve and maintain public access to the Bay including public beaches, parks and forested lands; and
Improve opportunities for recreational and commercial fishing.

To address these concerns EPA and other federal agencies are administering major environmental laws. The states are routinely managing their environmental problems, implementing federal programs and their own laws and regulations.

Further, the states are actively improving access for people to enjoy the benefits of the Bay and its tributaries---swimming, boating and fishing.

INSTITUTIONAL/MANAGEMENT

Goal: Support and enhance a cooperative approach toward Bay management at all levels of government.

The Chesapeake Executive Council and many federal, state, regional, and local public and private entities are already working in support of this goal. Voluntary as well as mandatory programs are being expanded to meet the following Baywide objectives:

Adequately coordinate Bay management activities and develop and maintain good mechanisms for accountability;
Assure a continuing process of public input and participation;
Enhance Bay-oriented education opportunities to increase public awareness and understanding of the Bay system;
Track and evaluate all activities which may impact estuarine water quality and resources;
Develop a coordinated Chesapeake Bay data management system;
Implement a coordinated Baywide monitoring program; and
Implement a coordinated Baywide research program.

Each state and federal agency is working within its own requirements and is cooperating in the Baywide effort, as well. States are evaluating their initiatives on an annual or biennial basis. The agencies are committed to expanding public participation and education programs. Major new educational efforts are involving farmers in the application of best management practices to reduce soil erosion, with its accompanying nutrients and toxicants.

To support efforts to plan for, manage, track and evaluate these programs, approximately $18.5 million is provided by EPA alone. Federal and state agencies continually are collecting and analyzing data to measure results so they can determine if remedial programs are meeting their own objectives and those established Baywide.

Measuring progress in the longer-term are comprehensive monitoring, research, modeling, and data management strategies. To help tie pollutant loadings to effects on water quality and living resources, about $5 million is being spent by federal and state governments annually on monitoring. Another $5 million is supporting research each year to better define present problems and avoid new ones.

As these activities reveal more information and current initiatives are evaluated, we will be better able to predict results and therefore better manage the restoration and protection of the Bay. Then, more streamlined, numerical objectives will be crafted and implementation programs will be reviewed and modified, as needed.

The Chesapeake Bay Restoration and Protection Plan demonstrates that action to clean up the Bay has begun. The states and federal government are using the Plan as a tool for defining and shaping both short-term and long-term commitments. These commitments are crucial if we are to renew and restore this national treasure---the Chesapeake Bay.

APPENDIX A - NUTRIENT IMPLEMENTATION PROGRAMS

NUTRIENTS

Goal: Reduce point and nonpoint source nutrient loadings to attain nutrient and dissolved oxygen concentrations necessary to support the living resources of the Bay.

Summary of Programs

To support the states efforts in planning and managing general water program activities and specific point and nonpoint source control programs, the Environmental Protection Agency (EPA) provides grants and other assistance under the Clean Water Act. Approximately $84 million is projected for FY 86 to fund construction projects. Monitoring, permitting, enforcement, assessment, and planning and management activities are also supported by EPA and cover nutrient, as well as toxics, reduction programs. The Chesapeake Bay Program receives an annual appropriation of $10 million for 5 years; about 75% of this supports state grants to implement nonpoint source, as well as some point source, control projects. Department of Agriculture (USDA) is expected to support state agricultural management practices with approximately $10 million for FY 86. The Department of Defense (DOD)/EPA joint resolution commits DOD to reducing runoff, reissuing permits and ensuring environmental improvements at its installations which affect the Bay. Support is also provided by U.S. Geological Survey (USGS), Fish and Wildlife Service (FWS) and the Corps of Engineers (COE). It should be noted that exact federal agency appropriations for future programs have not yet been determined; all figures are projections.

While the above programs play a major role in reducing nutrients from point and nonpoint sources, they also lead to the reduction of toxic discharges from point sources and toxic runoff from urban, suburban and rural areas. The federal support programs appear here and in Appendix E, Objective 4; the toxics control programs are in Appendix B.

The nutrient control objectives are primarily addressed by the states through their point (POTW and sewerage) and nonpoint (agricultural, suburban, urban runoff and septic system) source implementation programs. Many of these programs control toxics as well, especially the National Pollutant Discharge Elimination System (NPDES) and urban runoff programs. The states have accelerated and expanded their efforts to control nonpoint sources as a priority for solving the problem of nutrient enrichment in the Bay and its tributaries. Because nutrient problems vary from basin to basin, each basin strategy will target specific needs. (See Chapter III, Basin Strategies.)

Each program listing in Appendix A and the other appendices includes a program title, a budget projection (if available), a purpose, brief description and the anticipated results. Most of the implementation programs are continuing efforts which are expected to reduce point and nonpoint source nutrient loadings in all of the Bay's tributaries; however, many represent expanded programs and new initiatives.

APPENDIX A: NUTRIENTS

Listing of Program Titles	Page Number
EPA Construction Grants	3
EPA Demonstration Sites for Innovative and Alternative Nutrient Removal	4
PA Implementation of Revised Water Quality Standards	5
PA Federal Construction Grants for POTWs	6
PA Comprehensive Water Quality Management Plans	7
PA Municipal Wasteload Management	8
MD Construction Grants: Federal Eligible Projects	9
MD Upgrade State Sewage Treatment Plants	10
MD Construction Grants: Nitrogen Removal	11
VA Pilot Projects for Phosphorus Removal	12
VA Grants for Construction of POTWs	13-14
VA Construction: Water and Sewer Funding Assistance	15
DC Potomac Strategy	16
DC Blue Plains WWTP Expansion and Improvements	17
Pennsylvania's Sewage Facilities Act (Act 537)	19
PA Innovative/Alternative Technology	20
MD Construction Loans	21
MD Construction Grants: Innovative/Alternative Projects	22
MD Innovative and Alternative Sewage Systems Program	23
MD Construction Grants: Existing Special Water Quality Needs or Public Health	24
VA Improvement of Sewer Line Inflow and Infiltration	25
DC Combined Sewage Overflow Abatement	26
DC Construct Separate Storm Sewers as a Part of New Development Projects	27
EPA Operation and Maintenance of POTWs	29
PA Outreach Operator Training	30
PA Sewage Treatment Plant Operator Training	31
PA Sewage Treatment Plant and Water Works Operators Certification Act (Act 322)	32
PA State Grants for Operation of Sewage Treatment Plants (Act 339)	33
MD Training of Sewage Treatment Plant Operators	34
VA Technical Training For POTW Personnel	35
VA O & M Technical Assistance for POTW Managers	36
DC Operation and Maintenance at the Blue Plains Wastewater Treatment Plant	37
PA NPDES Program	39
PA Computer Systems for NPDES and State Data	40
PA State Water Quality Management Program	41
MD NPDES: Municipal Compliance	42
VA Enforcement Of Water Quality Laws and Regulations	43
VA No-Discharge Certificates	44
DC Water Pollution Control Act	45

APPENDIX A: NUTRIENTS

Listing of Program Titles	Page Number
SCS Watershed Targeting	47
SCS Training Assistance	48
USDA Agricultural Stabilization and Conservation Service	49
USDA Experimental Rural Clean Water Program	50
EPA Chesapeake Bay Liaison Office Implementation Grants	51-52
FWS Chesapeake Bay Implementation Assistance	53
USGS Technical Assistance	54
SCS Rural Abandoned Mine Program (RAMP)	55
PA Watershed Assessments - Agricultural Nutrient Control	56
PA Basin and Watershed Monitoring - Agricultural Runoff	57-58
PA Education - Agricultural Runoff	59
PA Demonstration Projects - Agricultural Runoff	60-61
PA Conservation Districts - Technical Assistance	62
PA State Technical Assistance - Agricultural Runoff	63
PA State Water Quality Coordination - Agricultural Runoff	64
PA Agricultural BMP Cost-Share Program	65
PA Mason-Dixon Project - Agricultural Runoff	66
PA Rural Clean Water Program - Conestoga River Project	67
PA Silviculture Runoff	68
PA Department of Agriculture's IPA Assignment Agreement	69
MD Agricultural Technical Assistance Program	70
MD Agricultural Cost-Sharing	71
MD Agricultural Research	72
MD Education Demonstration Projects	73
MD Agricultural Drainage	74-75
MD Agricultural Runoff Control: Enforcement of Agricultural Nonpoint Source Pollution	76
VA Cost-Sharing for Agricultural Best Management Practices	77-78
VA Pollution Source Identification: Agricultural BMPs	79
VA Research/Demonstration: Agricultural BMPs	80
VA Technical/Administrative Assistance: Agricultural BMPs	81
VA Education: Agricultural BMPs	82
VA NPS Best Management Practices Handbook Update	83
VA Soil Research And Mapping	84
PA Storm Water Management Program	86
MD Sediment And Erosion Control	87-88
VA Urban BMP Technical Assistance and Demonstration Projects	89
VA State Erosion And Sediment Control Program	90
DC Catch Basin Cleaning	91
DC Stream Cleaning	92

NUTRIENTS

Objective 1: Provide timely construction of public and private sewage facilities to assure control of nutrient discharges.

PROGRAM - EPA Construction Grants

BUDGET PROJECTION

	86	87	88
Federal	83,900,000		

*Based on maintenance of FY 85 level of funding.

PURPOSE

Assist communities to plan, design and construct municipal sewage treatment systems that provide federally mandated levels of treatment prior to discharge.

DESCRIPTION

Prior to October 1, 1984 the federal share of grant eligible costs was 75 percent; subsequent grants are 55 percent. Between 1972 and 1983, approximately 2.5 billion dollars were spent by the federal government to improve the level of wastewater treatment in the Bay region. A key element in this program is the priority system/list development process each state employs to determine the priorities for construction grants funding.

ANTICIPATED RESULTS

Over 1,000 projects to improve sewage treatment have been funded. Phosphorus loadings in the Potomac and BOD^5 loadings in the James and Potomac have been significantly reduced despite increases in volume of wastewater discharged. Many Bay POTWs have the design capacity to handle projected year 2000 flows.

PROGRAM - EPA Demonstration Sites for Innovative and Alternative Nutrient Removal

BUDGET PROJECTION

	86	87	88
Federal	300,000*	0	0

*An additional $200,000 is available in FY 85.

PURPOSE

Address Bay states' questions regarding nutrient (phosphorus) removal at POTWs.

DESCRIPTION

The Wastewater Engineering Research Laboratory (WERL) in Cincinnati is defining a project to evaluate selected biological nutrient removal processes and their application in the Bay area ($500,000). In addition, WERL is considering the preparation of a state-of-the-art report summarizing biological and chemical phosphorus control technology. Input from the Bay states regarding their needs and objectives will be considered in preparing final project scope of work.

ANTICIPATED RESULTS

An evaluation of selected biological nutrient removal processes tailored to answering specific questions raised by the Bay states and/or a report summarizing what is known about phosphorus removal as it pertains to specific state interests.

PROGRAM - PA Implementation of Revised Water Quality Standards

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Regulate phosphorus discharges within the Susquehanna River Basin, particularly within the Lower Basin.

DESCRIPTION

The Chesapeake Bay Management Report states that Pennsylvania should continue to implement its regulation requiring 80% phosphorus removal at all new or modified point source discharges in the Lower Susquehanna River Basin. The 80% removal is equivalent to 2 mg/l and has been in effect since 1970. It specifically relates to all discharges to the main stem and all tributaries of the Susquehanna River in a zone extending from the mouth of the Juniata River to the Pennsylvania - Maryland Line.

Pennsylvania completed Phase I of its triennial Water Quality Standards review process following a public hearing on November 8, 1984. On December 18, 1984, the State's Environmental Quality Board approved various revisions to its standards - including statewide phosphorus control regulations for discharges to streams like the Lower Susquehanna River and its tributaries.

These revisions went into effect on February 16, 1985. Phosphorus controls will be based on a determination by the Pennsylvania Department of Environmental Resources (DER) of the specific level of control needed. Final implementation guidance for the Lower Susquehanna River Basin will be developed by July, 1985. In the interim, (1) existing dischargers with phosphorus controls in place will be required to continue to operate their facilities in accordance with their present permit requirements, and (2) new dischargers or existing dischargers proposing modifications will be required to meet a 2 mg/l effluent limitation.

ANTICIPATED RESULTS

Improved phosphorus controls for the Susquehanna River Basin.

PROGRAM - PA Federal Construction Grants for POTWs

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal	20,600,000	33,700,000	32,700,000
Other	16,800,000	27,600,000	26,700,000

PURPOSE

Obligate all available federal construction grant funds to ensure timely construction of POTWs.

DESCRIPTION

Pennsylvania has been carrying out a federally-delegated Construction Management Assistance Grants Program since June, 1979. From federal FY 1979-84, Pennsylvania has approved $229,000,000 in federal funds for the construction of 61 municipal sewerage projects within the Chesapeake Bay Drainage Basin. We anticipate certifying 5 more projects for grant funds totaling $5,100,000 in FY 85, 3 projects totaling $20,600,000 in FY 86, 5 projects totaling $33,700,000 in FY 87, and 8 projects totaling $32,700,000 in FY 88 - all within the Chesapeake Bay Drainage Basin.

ANTICIPATED RESULTS

Improved water quality as a result of new and upgraded municipal sewerage facilities.

PROGRAM - PA Comprehensive Water Quality Management Plans

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Develop water quality management plans to meet requirements of the State Clean Streams Law and the Federal Clean Water Act to the year 2000.

DESCRIPTION

In 1974, Pennsylvania initiated the development of comprehensive and implementable plans to meet requirements of the State Clean Streams Law and the Federal Clean Water Act to the year 2000. The State was divided into nine study areas, and plans were developed for each. All nine plans have been submitted to the U.S. Environmental Protection Agency (EPA) for approval. The following plans relating to the Chesapeake Bay Drainage Basin were submitted to EPA on the dates indicated:

Study Area 3 (Lower Susquehanna Basin Area) - January 3, 1984
(still under review by EPA)

Study Area 4 (Upper Susquehanna Basin Area) - November 13, 1984
(still under review by EPA)

Study Area 5 (Southern Alleghenies Basin Area) - September 6, 1983
(approved by EPA on March 22, 1984)

Study Area 6 (Central Susquehanna Basin Area) - September 6, 1983
(approved by EPA on March 22, 1984)

ANTICIPATED RESULTS

The plans are being used by State, federal, and local governments as the basis for making water quality management decisions and actions.

PROGRAM - PA Municipal Wasteload Management

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Prevent POTWs from becoming overloaded (hydraulic and/or organic) and correct existing overloaded conditions.

DESCRIPTION

DER administers a Municipal Wasteload Management Regulatory Program. These regulations require municipal sewage treatment plant dischargers to submit annual reports on how they are managing their sewage facilities (a) to prevent them from becoming overloaded, and (b) to limit or ban additional connections or sewer extensions to an overloaded facility. If the annual report shows an existing overloaded condition or a potential overload within five years, the municipal discharger must prepare a plan of action to eliminate or prevent this condition. If the discharger fails to prepare or implement the plan, DER initiates appropriate enforcement action.

ANTICIPATED RESULTS

Improved water quality through better municipal management of POTWs.

PROGRAM - MD Construction Grants: Federally Eligible Projects

BUDGET PROJECTION

	86	87	88
Maryland	11,200,000		
Federal	60,000,000		
Other			

PURPOSE

Strengthen the State's commitment to pollution control projects by increasing the State share of waste treatment plant construction by local governments. This will offset decreases in federal grant assistance.

DESCRIPTION

The State FY 86 capital budget contains $19.7 million for continued implementation of water pollution control projects; $11.2 million of these funds will support construction of federally eligible treatment works projects.

ANTICIPATED RESULTS

Grants will enable phosphorus removal facilities to be constructed and operational by July 1, 1988 (except for Back River which will take longer), will enable numerous projects on State's priority list to be built, and will fund sewage facilities such as interceptor lines, pumping stations and water quality related capital projects.

PROGRAM - MD Upgrade State Sewage Treatment Plants

BUDGET PROJECTION

	86	87	88
Maryland	8,268,000*		

*General Construction Loan of 1985.

PURPOSE

Upgrade wastewater treatment plants discharging to the Bay or its tributaries by bringing all State-owned treatment works into compliance with discharge standards and providing nutrient removal, where applicable, and land treatment, where possible. Replace the existing interim wastewater treatment plant at the House of Correction with an advanced treatment plant to serve the entire Jessup complex.

DESCRIPTION

Upgrade with new construction additional State-owned sewage treatment plants at Bowie State College, Southern Maryland Pre-Release Unit and Montrose School. Provide additional funding to construct the sewage treatment plant at Maryland House of Correction, Jessup.

General Construction Loan of 1985:

Maryland House of Correction $5,490,000
Bowie State College $950,000
Southern Maryland Pre-Release Unit $203,000

ANTICIPATED RESULTS

Reduced loads of BOD, suspended solids, and phosphorus discharges to the Bay and its tributaries.

PROGRAM - MD Construction Grants: Nitrogen Removal

BUDGET PROJECTION

	86	87	88
Maryland	4,000,000*		

*Carryover from FY 85

PURPOSE

Require nitrogen removal at several sewage plants on the Patuxent River. If the nitrogen removal results in the desired improvements in the estuary, the State will consider requiring nitrogen removal at other plants discharging to the Bay and its tributaries. The State is paying for the capital costs of nitrogen removal because the current EPA position is not to award federal construction grants for nitrogen removal in the Patuxent.

DESCRIPTION

The State expects to promulgate regulations in FY 85 for State grants for nitrogen removal in the Patuxent.

ANTICIPATED RESULTS

The total nitrogen load from POTWs will be reduced by 4900 pounds, a 43% reduction of loads between 1983 and the year 2000.

PROGRAM - VA Pilot Projects for Phosphorus Removal

BUDGET PROJECTION

	84-86
Virginia	$360,000

PURPOSE

Assess the capability of various phosphorus removal processes at sewage treatment plants.

DESCRIPTION

The 1985 General Assembly appropriated funds for up to two pilot projects for phosphorus removal. One project would use simultaneous chemical precipitation and one project would use biological nutrient removal. Suitable treatment plant sites will be selected in the Tidewater region of Virginia. The State Water Control Board conducts this program.

ANTICIPATED RESULTS

From these projects key information regarding actual operation of phosphorus removal by these two processes would be provided including: operational reliability, phosphorus removal capability, total costs (capital and O & M), sludge processing and disposal and effects on overall plant operation.

PROGRAM - VA Grants For Construction of POTWs

BUDGET PROJECTION

	84-86
Virginia	3,300,000
Federal	50,067,000

PURPOSE

Provide adequate funding for the construction of publicly owned sewage treatment facilities.

DESCRIPTION

This program, implemented by State Water Control Board, is designed to provide construction grant assistance to municipalities for planning, design and construction of sewage treatment facilities to comply with federally-legislated treatment standard deadlines.

ANTICIPATED RESULTS

For the 1984-86 VA biennium, it is anticipated that $72,509,000 in federal FY 85 funds will be available to localities. Also the General Assembly approved $3.3 million in State funds for localities with financial hardship needs for the following uses during the 1984-86 biennium:

1) to meet requirements of Nat'l Municipal Policy,
2) to provide inflow and infiltration rehabilitation, and
3) to provide design funds.

These funds are to be distributed equitably Statewide so the Bay portion cannot be determined.

New and expanded POTW capacity expected to be placed in operation over the 84-86 biennia are as follows:

N/EX	Location	Basin	Total Flow Per Permit Limit
EX	Stevens Run	P	0.25 MGD
EX	Louisa	Y	0.2 MGD
EX	Leesburg	P	1.0 MGD
N	Frederick-Winchester	P	5.0 MGD
N	Grottoes	P	0.2 MGD
EX	Buena Vista	J	2.25 MGD
N	Sperryville	R	0.055 MGD
N	New Castle	J	0.175 MGD
EX	Ashland	Y	1.2 MGD
EX	Upper Occoquan**	P	22.5 MGD
EX	Lower Potomac**	P	54.0 MGD
EX	Smithfield	J	0.5 MGD
N	Bath County	J	0.45 MGD
EX	Proctors Creek**	J	12.0 MGD
N*	FMC**	R	2.6 MGD
EX	Mount Jackson	P	0.2 MGD
EX	Berryville	P	0.41 MGD
EX	Appomattox	J	0.054 MGD
EX	Tappahannock	R	0.4 MGD
EX	Surry	J	0.06 MGD

*New discharge at FMC with reduced flows at Fredericksburg and Massaponax. (New Flow = 1.48 MGD (New Flow = 1.472 MGD)

N = New
EX = Expansion/Upgrade
P = Potomac
Y = York
J = James
R = Rappahannock
** = Local funds only

ANTICIPATED RESULTS

Will enable numerous projects on the state priority list to be built. Will fund sewage facilities such as interceptor lines, pumping stations and treatment plant upgrades and capacity.

PROGRAM - VA Construction: Water and Sewer Funding Assistance

BUDGET PROJECTION

	84-86
Virginia	547,300

PURPOSE

Provide adequate funding to localities for water and sewer construction.

DESCRIPTION

This program, implemented by the Virginia Resources Authority, is designed to assist local governments to obtain better rates on sewer and water bonds through purchase and pooling of bonds for resale by a state-backed authority. In VA FY 1985-86 the first bond issues are planned for the summer of 1985.

ANTICIPATED RESULTS

Improve the opportunities for local governments to obtain lower bond rates. Increase the amount of water and sewer construction that can be undertaken by local governments.

PROGRAM - DC Potomac Strategy

BUDGET PROJECTION

	86	87	88
Federal			
D.C.			

PURPOSE

Coordinate actions for water quality improvements in the Potomac Estuary.

DESCRIPTION

The Environmental Protection Agency, Maryland, Virginia and District of Columbia have regulatory responsibility for water quality in the Potomac estuary. The vehicle for defining common goals and implementing mutually beneficial actions is the Potomac Strategy. The primary problem of concern in the Potomac is eutrophication, evidenced by recurring algal blooms. Phosphorus control is being required by the regulatory agencies to control eutrophication.

Future actions under the Potomac Strategy are the investigation of the relationship between pH alkalinity and sediment phosphorus release and the potential recycling of nutrients by the salt wedge.

ANTICIPATED RESULTS

These investigations may provide sufficient insight into nutrient control to allow final NPDES permits to be issued to municipal wastewater treatment plants in FY 87.

PROGRAM - DC Blue Plains WWTP Expansion and Improvements

BUDGET PROJECTIONS

	86	87	88
Federal			
D.C.			

PURPOSE

Improve hydraulic and treatment capacity at the Blue Plains Wastewater Treatment Plant to meet current and future NPDES permit requirements.

DESCRIPTION

The Blue Plains Feasibility Study was completed in August of 1984. The Study examined water quality requirements in the Potomac River and alternate treatment processes to meet both current and future NPDES permit requirements. The Study recommended:

- Expansion of several unit processes to provide adequate hydraulic and process capacity associated with current and future wastewater flows.

- Convert secondary treatment from a modified aeration process to a step aeration process.

Federal and local funding has been requested to begin construction of the recommended facilities. Total project costs are estimated at approximately $100 million. The District's share of these costs is approximately $50 million.

ANTICIPATED RESULTS

The proposed facilities and system improvements will allow the Blue Plains Wastewater Treatment Plant to meet current NPDES permit requirements at peak design flows. This will assist the District of Columbia in limiting nutrient loadings to the Potomac River and the Chesapeake Bay.

NUTRIENTS

Objective 2: Reduce the discharge of untreated or inadequately treated sewage into Bay waters from such sources as combined sewer overflows and leaking sewage systems.

PROGRAM - Pennsylvania's Sewage Facilities Act (Act 537)

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Implement Act 537 which calls for the planning and regulation of community and individual on-lot sewage systems, requires permits for these systems, and provides for grants for implementing its planning and enforcement provisions.

DESCRIPTION

Each of Pennsylvania's municipalities is required to develop and maintain an official ten year plan identifying how it will meet its sewerage needs (both on-lot as well as sewers and treatment facilities). Each plan and any amendment must be approved by DER. DER also provides planning grants to cover 50% of the eligible cost of preparing the official plans. About $70,000 in grants were given to municipalities within the Chesapeake Bay Drainage Basin in FY 84 to update their official plans.

On-lot sewage systems require permits under the Act. These permits are issued by Sewage Enforcement Officers (SEO's) working for Local Agencies as defined by the Act. The SEO's are also responsible for monitoring the installation of on-lot systems and the condition of existing systems. DER provides Enforcement Grants to Local Agencies to cover 50% of the eligible cost of carrying out the permitting, surveillance and monitoring, and enforcement provisions of the Act. About $500,000 in grants are paid annually to over 300 local agencies (individual and multi-municipal units of government) within the Chesapeake Bay Drainage Basin.

ANTICIPATED RESULTS

Protection and improvement of ground water and surface water through the regulation of municipal sewerage planning and the design, installation, and operation of on-lot sewage disposal systems.

PROGRAM - PA Innovative/Alternative Technology

BUDGET PROJECTION

	86	87	88
Pennsylvania	17,000	13,000	13,000
Federal	2,000	2,000	2,000
Other			

PURPOSE

Develop and implement cost-effective innovative/alternative sewage treatment technology to meet the needs of Pennsylvania's rural communities.

DESCRIPTION

In 1978, Pennsylvania initiated the development of a comprehensive rural sewage management project in the community of Iselin (Young Township), Indiana County. The project is designed to research and evaluate alternative and innovative technologies for sewage disposal. The project, which went into operation in 1982, is totally funded ($450,000) by the Commonwealth and designed by Department of Environmental Resources' staff. It is owned and operated by a county municipal services authority. The project features two separate collection and treatment systems, each having the ability of treating flows of 10,000 and 12,000 gallons a day. The treatment systems utilized include as alternative technology a community subsurface system placed in mine spoil material, and a marsh/pond/meadow system with a stream discharge.

The Department, in cooperation with the University of Indiana of Pennsylvania, is conducting a five to eight year research and monitoring program of the project. It is hoped that this technology will provide the foundation for a comprehensive rural sewage management program designed specifically for the three million people living in Pennsylvania's rural areas. Innovative technology is necessary as many of these rural communities (1,500) will never be able to afford existing conventional technology, and yet are in desperate need of adequate wastewater treatment facilities to protect the ground water and surface waters of the Commonwealth.

The State Budget Projection reflects staff and laboratory analyses costs. The federal projection represents Section 106 funds being used to fund university students (wage employees) involved in the research and monitoring (sample collection) of this project.

ANTICIPATED RESULTS

Adequate rural wastewater treatment facilities to protect and improve surface and ground water in Pennsylvania and in the Bay.

PROGRAM - MD Construction Loans

BUDGET PROJECTION

	86	87	88
Maryland	0	NA	NA

PURPOSE

Enable communities to place their sewage treatment projects under construction.

DESCRIPTION

This is an ongoing existing program.

ANTICIPATED RESULTS

Loans will be made to communities, throughout the State for various types of sewerage projects. Loans will also be made available to local governments to finance the 12 1/2% local share of sewerage construction costs. The $2,000,000 will permit loans to be made for approximately 5 projects.

PROGRAM - MD Construction Grants: Innovative/Alternative Projects

BUDGET PROJECTION

	86	87	88
Maryland	0	250,000	250,000

PURPOSE

Enable the State to evaluate the application of innovative and alternative technology to problems of wastewater disposal. Innovative and alternative technology can and should be applied to correct the water quality and public health problems of failing septic systems without the construction of expensive wastewater collection systems. Improved technology will foster acceptable means of overcoming poor soil, groundwater, or bedrock conditions which preclude the use of conventional on-site septic systems.

DESCRIPTION

This program enhancement will provide one additional staff and funding directed toward 1) installation, monitoring and reporting on experimental systems and the use of these data with field experience to develop new State guidelines and design criteria; 2) encouraging local health departments to use these technologies in remodeling systems, and for experimental purposes in order to solve existing pollution problems and to enhance their eventual use for new construction when feasible; 3) assisting in training local health department personnel in obtaining the expertise necessary to review and approve designs; 4) reviewing applications for construction permits in cooperation with the local health departments until local expertise can be developed; and 5) evaluating opportunities to use on-site technologies in lieu of central sewerage facilities as part of the EPA/State facility planning process.

ANTICIPATED RESULTS

In FY 86, this program will develop design criteria, train local health personnel, and work toward approval of the general use of innovative and alternative technologies within a shorter period of time than current staffing allows.

PROGRAM - MD Innovative and Alternative Sewage Systems Program

BUDGET PROJECTION

	86	87	88
Maryland	248,126		

PURPOSE

Evaluate innovative and alternative technology applied to correct the water quality and public health problems of failing septic systems without the construction of expensive wastewater collection systems. (A more detailed purpose statement is included above, under Maryland's construction grant program.) This program provides operating funds to support implementation of the innovative and alternative program.

DESCRIPTION

See Appendix A, NUTRIENTS, Objective 1.

ANTICIPATED RESULTS

Evaluate previously approved I/A projects.
Train local health departments in review of feasibility of these projects.

PROGRAM - MD Construction Grants: Existing Special Water Quality Needs or Public Health

BUDGET PROJECTION

	86	87	88
Maryland	1,000,000		

PURPOSE

Provide financial support for special sewage facilities, such as house connectors and collector sewers, to service areas with failing septic systems. The programs will partially meet the needs of these types of projects, some of which are ineligible for federal construction grants.

DESCRIPTION

Regulations and priority systems will be completed in FY 85.

ANTICIPATED RESULTS

Raw or inadequately treated sewage in several communities will be conveyed to a treatment plant, thereby reducing organic and bacteria loads to the Bay and some tributaries. These funds will also be used to supplement certain federally-funded programs, i.e. to defray house connector fees for individuals unable to amortize the costs on their own, and to make grants available to local communities with a demonstrated hardship for the local share, reducing user costs.

PROGRAM - VA Improvement of Sewer Line Inflow and Infiltration

BUDGET PROJECTION

	84-86
Virginia	450,000
Other	368,000

PURPOSE

Reduce and/or eliminate flow of untreated sewage into Bay waters.

DESCRIPTION

This program, implemented by State Water Control Board, is designed to provide local governments with cost-share funds to repair and improve damaged sewer lines to reduce and/or eliminate infiltration and inflow.

In State FY 85-86:

- $450,000 will be awarded by localities;
- $368,000 will be matched by localities;
- FY 85 monies have already been obligated to three communities: Towns of Colonial Beach and Onancock and Gloucester County.

ANTICIPATED RESULTS

The frequency and duration of raw sewage overflows into the Chesapeake Bay and its tributaries will be reduced, thereby reducing the quantity of nutrients discharged. Wastewater treatment plant operations will be improved since conditions of high influent flows will be reduced. Demonstrate the effectiveness of I/I rehabilitation programs.

PROGRAM - DC Combined Sewage Overflow Abatement

BUDGET PROJECTION

	86	87	88
DC			
EPA			

PURPOSE

Control and reduce the impact of combined sewage discharges into the surface waters of the District of Columbia.

DESCRIPTION

Age and design of the District's sewer system result in the delivery of large quantity of raw sewage combined with rain water at times of heavy precipitation. With the control of any dry weather sewage discharge to the surface waters essentially complete, CSO plays a crucial role in determining the water quality of the District rivers, particularly the Anacostia River. Discharge of the CSO to the streams will be controlled by structural changes in the sewer systems and by constructing swirl concentrators for the collection of pollutants associated with CSO.

In 1984-85, $11 million of DC and $32 million of EPA funds have been allocated for the project.

ANTICIPATED RESULTS

Control and substantial removal of the pollutants in the combined sewage overflow will result in significant improvement in the water quality of the Anacostia and the Rock Creek.

PROGRAM - DC Construct Separate Storm Sewers as a Part of New Development Projects

BUDGET PROJECTION

	86	87	88
DC	2,200,000		

PURPOSE

Remove storm flows from the District's combined sewer system and thereby reduce the likelihood of combined sewer overflow.

DESCRIPTION

Much of downtown Washington D.C. is served by combined storm and sanitary sewers. In the late 1960's, the District abandoned a comprehensive sewer replacement program due to its considerable expense and disruption. At the present time, the District is installing separate storm sewers in coordination with major new development projects in downtown Washington D.C. These new storm sewers will be connected to the existing separate storm sewer system at the edges of the District of Columbia.

In FY 86, the District of Columbia will spend approximately $2.2 million in local monies on this sewer separation program.

ANTICIPATED RESULTS

The new storm sewers will reduce nutrient loadings to the Potomac River and Chesapeake Bay by reducing the likelihood of combined sewer overflows.

NUTRIENTS

Objective 3: Provide for adequate maintenance, operation and replacement of equipment at sewage treatment facilities.

PROGRAM - EPA Operation and Maintenance of POTWs

BUDGET PROJECTION

	86	87	88
Federal	*		

*States had approximately $400,000 over a 10 year period to support O & M Training.

PURPOSE

Support states in training POTW personnel to help prevent, reduce and eliminate pollution. Such training insures improved operations and maintenance at sewage treatment facilities.

DESCRIPTION

Under Sections 104(g) and 109(a) of the Clean Water Act, EPA has provided grants to state agencies to train POTW personnel.

ANTICIPATED RESULTS

The operations and maintenance of POTWs continues to improve under this program.

PROGRAM - PA Outreach Operator Training

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Provide technical training to POTW personnel to improve POTW treatment efficiency and to attain more consistent compliance with NPDES effluent limitations.

DESCRIPTION

DER recently completed a pilot outreach operator training program using FY 82 funds under Section 104(g) of the federal Clean Water Act. Ten plants were selected to determine whether on-site training of operation and maintenance staff would result in improved plant performance. Six of the ten plants were located in the Chesapeake Bay Drainage Basin.

The results confirmed the benefits of the program. Five of the six plants in the Basin showed noticeable operational and effluent improvements. The sixth did not because of problems not related to the training program.

DER plans to continue this Statewide program with a combination of remaining FY 82 funds ($35,000) and FY 84 Section 104(g) funds ($43,000) using the training capabilities of the Pennsylvania Department of Community Affairs. The grant period runs from October, 1984 through September, 1986. The specific plants that will participate will be selected shortly. It is anticipated that several will be located within the Chesapeake Bay Drainage Basin.

Continuation of this program beyond FY 86 will depend on the availability of future federal funding.

ANTICIPATED RESULTS

Improved water quality due to improved and more consistent POTW performance.

PROGRAM - PA Sewage Treatment Plant Operator Training

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Provide classroom training to sewage treatment plant operators to enhance their skills and to help prepare them in taking examinations required under Pennsylvania's mandatory Sewage Treatment Plant Operators Certification Law.

DESCRIPTION

Since 1973, the Pennsylvania Department of Community Affairs has been responsible for training of the Commonwealth's wastewater treatment plant operators. DCA has organized a training system that locates and develops course instructors, finds classroom and laboratory facilities for course sites at locations across the State, selects class texts and resource materials, informs potential students of various educational opportunities and, finally, conducts and evaluates classes for plant operators. This system is built around networking with operator associations (WPCF), DER, EPA, and other interested parties (colleges and universities, the PA Environmental Council, Municipal Associations, the various sections of WPCF, etc). This networking takes place throughout the year, and at the Annual Wastewater Training Advisory Committee Meeting held by DCA.

DCA offers several structured Wastewater Plant Operator Training Courses using the Texas and California State University Manuals. Various specialty courses are also offered, such as NPDES Lab Procedures, Package Plant Operation, and Sludge Management. Other courses offered in recent years include: Flood Damage Reduction in Wastewater Treatment Plants, and Cost Savings in Wastewater Treatment Plant Operations. Classes are held at community colleges, wastewater plants, votechs, and lab facilities across the State, in the evening for several weeks. In FY 83-84, over 1,700 persons attending DCA Wastewater Training.

DCA has had a close relationship with DER over the years in wastewater training. DCA has relied on DER for advice as to training needs, course content, etc., and has worked with DER Regional Personnel to locate trainers and class sites, and to learn more about regional wastewater concerns. DCA training helps operators qualify for DER's mandatory certification program - DCA serves as trainer, DER as tester.

ANTICIPATED RESULTS

Improved water quality due to improved plant performance by skilled operators.

PROGRAM - PA Sewage Treatment Plant and Water Works Operators Certification Act (Act 322)

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			

PURPOSE

Provide for the mandatory certification and licensing of sewage treatment plant (and water works) operators.

DESCRIPTION

Pennsylvania has had a mandatory certification law since 1968. Operators are required to pass a written examination and to demonstrate experience in plant operations before qualifying for certification. All plants are required to have at least two certified operators (1 primary and 1 backup operator).

The State Board for Certification of Sewage Treatment Plant and Water Works Operators (the independent board created under the Act) certifies and decertifies operators. DER provides technical advice, program information, and makes recommendations to the Board on decertifying operators. Certificates must be renewed every two years.

ANTICIPATED RESULTS

Improved water quality through properly operated sewage treatment plants by certified operators.

PROGRAM - PA State Grants For Operation of Sewage Treatment Plants (Act 339)

BUDGET PROJECTION

	86	87	88
Pennsylvania	4,300,000	4,300,000	4,300,000

PURPOSE

Provide annual grants to help defray the cost of operation and maintenance of municipal and public school district sewage treatment facilities.

DESCRIPTION

Act 339 has been in effect since 1953. From State FY 79-80 through 84-85, approximately $23,000,000 in state funds have gone to eligible dischargers within the Chesapeake Bay Drainage Basin. The projections for the next three fiscal years are noted above.

ANTICIPATED RESULTS

Improved water quality through properly operated and maintained sewage treatment plants.

PROGRAM - MD Training Of Sewage Treatment Plant Operators

BUDGET PROJECTION

	86	87	88
Maryland	94,558	NA	NA

PURPOSE

Provide on-site technical assistance for treatment plant operators and enhance the existing operator training and certification program because federal commitments to operator training are being reduced at a time the State is requiring more complicated waste treatment processes.

DESCRIPTION

This program will enhance the existing operator training and certification program by providing contractual services to support the State Training Center which provides general training courses to treatment plant operators throughout the State. Additionally, a site-specific technical assistance program aimed at problems existing at specific sewage treatment plants has been established.

ANTICIPATED RESULTS

Improved operation of sewage treatment plants, especially improved operation of phosphorus removal processes.

PROGRAM - VA Technical Training For POTW Personnel

BUDGET PROJECTION

	84-86
Virginia	60,000

PURPOSE

Encourage wastewater treatment plants to be maintained and operated in an environmentally sensitive manner.

DESCRIPTION

This program, implemented by State Water Control Board, is designed to develop and implement training programs for wastewater treatment plant personnel.

Approximately 600 wastewater treatment plant operators will receive training through specialized workshops and training programs. Several in-house training programs at large municipal treatment facilities will be provided. Field training for approximately 100 wastewater plant operators who cannot participate in other forms of training due to location or staffing patterns will also be provided.

ANTICIPATED RESULTS

Operator skills and knowledge of wastewater treatment plant processes and O & M will be improved. Performance of treatment plants will improve.

PROGRAM - VA O & M Technical Assistance for POTW Managers

BUDGET PROJECTION

	84-86
Virginia	60,000

PURPOSE

Encourage wastewater treatment plants to be maintained and operated in an environmentally sensitive manner.

DESCRIPTION

This program, implemented by the State Water Control Board, is designed to provide assistance to sewage facility owners and operators in all aspects of plant operation to achieve consistent permit compliance. It will provide on-site assistance to approximately 50 facilities to solve the plant's compliance problems with State and federal requirements.

ANTICIPATED RESULTS

Improved operations at POTWs is anticipated. Compliance with NPDES permit limitations will improve.

PROGRAM - DC Operation and Maintenance at the Blue Plains Wastewater Treatment Plant.

BUDGET PROJECTION

	86	87	88
DC	7,500,000		
Federal			

PURPOSE

Increase operating and maintenance staffing at the Blue Plains Wastewater Treatment Plant, and also increase supplies and materials in support of operating and maintenance activities.

DESCRIPTION

In recent years, budgetary constraints have forced reductions in operating and maintenance staff at the Blue Plains Wastewater Treatment Plant. In FY 85 through 87, the District of Columbia will hire an additional 200 new maintenance personnel to assist in maintaining plant operations. During this same period of time, the District of Columbia will hire an additional 40 plant operators.

In addition, in FY 86, the District of Columbia will spend approximately $7.5 million on supplies and materials in support of operating and maintenance functions at the Blue Plains Wastewater Treatment Plant.

ANTICIPATED RESULTS

The increased operating and maintenance staffing and increased supplies and materials in support of operation and maintenance activities at Blue Plains will provide for more effective and efficient treatment of wastewater at the plant, thereby reducing nutrient loadings into the Potomac River and ultimately the Chesapeake Bay.

NUTRIENTS

Objective 4: Establish and enforce nutrient and conventional pollutant limitations to ensure compliance with water quality laws.

Objective 4 implementation strategies also provide a healthier habitat for the Bay's living resources.

PROGRAM - PA NPDES Program

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			

PURPOSE

Continue to carry out an EPA-delegated NPDES Program in Pennsylvania.

DESCRIPTION

Pennsylvania has been carrying out a delegated NPDES Program (Permitting, Compliance Monitoring, and Enforcement) since June 30, 1978.

In PA's review of NPDES Permits, which must be renewed every five years, the State applies the more stringent of EPA's Effluent Guidelines or the State Water Quality Standards in setting effluent limitations.

There are 1265 NPDES dischargers within the Pennsylvania portion of the Chesapeake Bay Drainage Basin - 115 are major dischargers. As a minimum, every major discharger and every federal P.L. 92-500 funded minor discharger is inspected annually.

In accordance with a State/EPA Enforcement Agreement signed on October 15, 1984, PA has also agreed to begin taking enforcement actions involving significant noncompliance by major dischargers within 180 days.

ANTICIPATED RESULTS

Improved water quality through implementation of NPDES Program in accordance with delegation agreements.

PROGRAM - PA Computer Systems for NPDES and State Data

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			

PURPOSE

Manage through data systems all aspects of water pollution control programs to identify the case load, assure timely processing of permit applications, assure that inspections and other monitoring occur, follow individual violations, and track compliance schedules.

DESCRIPTION

EPA operates the National Permit Compliance System (PCS) for NPDES dischargers. Pennsylvania plans to take over several aspects of this system during FY 85, including entering and maintaining effluent limitation data for major dischargers and entering effluent data generated by the self-monitoring program into PCS. Future efforts may involve expanding this to cover selected significant non-major dischargers.

In addition, the Bureau maintains a computerized Facility Inventory System that includes all industrial and municipal facilities that are regulated. This includes the many facilities that do not routinely discharge wastes to surface waters and, therefore, are not subject to NPDES requirements. Enhancements for the future include a possible link with PCS to eliminate duplication where it exists, a computerized enforcement system to replace manual logging and compliance schedule tracking, and computer linkage to DER's laboratory computer system so that sample data can be identified and returned automatically.

ANTICIPATED RESULTS

The use of PCS by the State will result in more timely data entry and make the system available to assist the State in discharger monitoring. Significant non-compliance and trends can be identified, and reports such as the Quarterly Non-Compliance Report can be prepared. The enhancements to the State Facility Inventory System would automate a number of manual operations, achieving greater efficiency in managing the program.

PROGRAM - PA State Water Quality Management Program

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			

PURPOSE

Carry out State Permitting, Inspection, and Enforcement Programs in accordance with State Clean Streams Law and related regulations.

DESCRIPTION

Pennsylvania has had a Water Quality Management Program since 1905 when the Purity of Waters Act was passed. The State's Clean Streams Law was passed in 1937 and has been amended several times since then. The program is administered by DER, and is coordinated with the NPDES Program.

State permits cover the design, construction, and operation of the pollution control facilities needed to meet the NPDES permit effluent limits. State permits stay in effect until revoked, cancelled, suspended, or amended.

DER has also developed and is implementing Compliance Monitoring and Enforcement Strategies for inspecting and taking enforcement actions on a priority basis.

ANTICIPATED RESULTS

Improved water quality through implementation of a State Water Quality Management Program to meet State program priorities.

PROGRAM - MD NPDES: Municipal Compliance

BUDGET PROJECTION

	86	87	88
Maryland	237,138	387,000	397,000

PURPOSE

Enforce more effectively and frequently the National Pollutant Discharge Elimination System (NPDES) permits that are issued pursuant to both State and federal law.

With the resources proposed, enforcement of overflows/spills and raw sewage discharges will be greatly improved, reducing particularly bacteria and nutrients in small tributaries on the western shore of the Bay.

DESCRIPTION

Personnel hired in FY 85 will only be able to concentrate on evaluating and inventorying major interceptors and pumping stations. Additional staff are needed to evaluate fully all collection systems in the State and identify the location, causes, frequency and environmental consequences of bypasses and overflows. Also, continuous monitoring programs must be designed and implemented in coordination with local sewage authorities to provide for early detection of overloaded systems. Staff will need to review plans and specifications of existing sewer systems and conduct field investigations. Legal staff are needed to develop solid foundations for legal actions against water pollution violators and to pursue these legal actions through various legal channels.

ANTICIPATED RESULTS

Continue development of new compliance tracking system.

Investigate and determine corrective measures needed for various pumping station problems.

Evaluate and develop compliance plans to correct collection system overflows.

Negotiate collection system agreement with users of Baltimore City sewer system.

Continue enhancement of enforcement activities.

PROGRAM - VA Enforcement Of Water Quality Laws and Regulations

BUDGET PROJECTION

	84-86
Virginia	584,000
Federal	
Other	

PURPOSE

Ensure compliance with water quality laws.

DESCRIPTION

This program, implemented by State Water Control Board, is designed to take enforcement actions against violators of the various federal and state water pollution control laws.

Enforcement reviews of approximately 200 violations of laws, policies, regulations, standards and permits each month (includes both substantive and technical violations). Appropriate enforcement actions, both administrative and legal, are taken as necessary.

ANTICIPATED RESULTS

Will enhance water quality generally and will ensure appropriate permit compliance.

PROGRAM - VA No-Discharge Certificates

BUDGET PROJECTION

	84-86
Virginia	320,000

PURPOSE

Prevent point and nonpoint discharges to State waters, and recycle and reuse wastewater and sludge via land application.

DESCRIPTION

This program, implemented by State Water Control Board, is designed to maintain the No-Discharge Certificate program which requires industrial and agricultural facilities which have potential dischargers to contain and handle wastes on site. Involves review and approval of plans and specifications for animal waste and other facilities and issuance of certificates and inspections. Also includes approval of land application of sewage sludge. Issue or amend approximately 150 No-Discharge certificates during the biennium.

ANTICIPATED RESULTS

Nutrients and other pollutants from industrial waste and animal waste facilities, as well as from sewage sludge, will be prevented from entering State waters. Land application projects will allow these "pollutants" to be recycled for agricultural uses.

PROGRAM - DC Water Pollution Control Act

BUDGET PROJECTION

	86	87	88
DC			
EPA			
Other			

PURPOSE

Provide a regulatory basis for water pollution control by the District of Columbia.

DESCRIPTION

The District of Columbia Water Pollution Control Act was passed by the District Council on December 11, 1984 and signed by the Mayor on January 9, 1985. It provides for the promulgation of regulations for water quality standards, quality assurances, point source discharges, pretreatment, WWTP construction, water quality management planning, sludge management, fisheries and SAV management, nonpoint source control, groundwater, dredge and fill activities, and oil spills.

ANTICIPATED RESULTS

The implementation of the regulations will increase the efficiency of the effort to improve water quality.

NUTRIENTS

Objective 5: Reduce the levels of nutrients and other conventional pollutants in runoff from agricultural and forested lands.

PROGRAM - SCS Watershed Targeting

BUDGET PROJECTION

	86	87	88
Federal	$11,000,000*		

PURPOSE

Give special attention to critical resource problem areas and assure that the most effective use is made of conservation technical and financial assistance.

DESCRIPTION

Designated targeted areas receive additional technical and financial assistance to control or significantly reduce the identified problem. The Mason-Dixon Erosion Control area, encompassing portions of Maryland and Pennsylvania, received technical and financial assistance (Approximately 1.4 million in FY 84). Other areas needing special attention include Potomac Headwaters, Shenandoah Valley, Chesapeake West, and the Juniata River.

ANTICIPATED RESULTS

Identification, location, and acceleration of conservation treatment on critically eroding cropland and woodland resulting in reduced sediment and nutrient loads to the Chesapeake estuary.

PROGRAM - SCS Training Assistance

BUDGET PROJECTION

	86	87	88
Federal	$2,167,500*	$2,167,500*	$2,167,50*

*FY 84 conservation technical assistance.

PURPOSE

Provide technical assistance to agricultural land users, conservation districts and urban areas regarding BMPs for soil and water conservation.

DESCRIPTION

SCS provides technical assistance for the planning and implementaion of conservation plans to land users for pollution control including the design of site-specific pollution control measures and the handling and distribution of animal wastes and other agricultural pollutants. In FY 84, it was estimated that $2,167,500 in conservation technical assistance was provided in the Chesapeake Bay drainage area.

ANTICIPATED RESULTS

SCS works side-by-side with State and local officials and produces many of the basic handbooks, standards and specifications used by conservation districts. This provides consistent technical quality control in the development and review of sediment and erosion control plans. Through a Memorandum of Understanding with EPA, SCS has assigned a full-time professional staff person to work with the Chesapeake Bay Liaison Office. SCS will also participate with the Liaison Office in identifying priority NPS program areas, cost-effective BMPs, and will develop procedures for tracking accomplishments.

PROGRAM - USDA Agricultural Stabilization and Conservation Service

BUDGET PROJECTION

	86	87	88
Federal	$5,200,000*	$5,200,000*	$5,200,000*

*Based on maintenance of FY 83 level of funding and portion of state in watershed.

PURPOSE

Provide financial assistance to agricultural land users in protecting soil against erosion and waterways from pollution as well as encouraging the development of private forests, enhancing wildlife habitat and providing emergency assistance in the wake of natural disaster.

DESCRIPTION

Provides cost-share opportunities and financial incentives to farmers initiating best management practices covered by the program. Based on the portion of the state that is within the Bay drainage area, it is estimated that $5,200,000 in ACP funds were allocated in FY 83.

ANTICIPATED RESULTS

ACP funds help agricultural land users reduce sediment, chemicals, and animal wastes that contaminate streams and lakes by managing the flow of these pollutants at their source, by catching them in sediment basins, by filtering them through grass and other plants, and by proper distribution of animal wastes and pollutants.

PROGRAM - USDA Experimental Rural Clean Water Program

BUDGET PROJECTION

	10 year funds
Federal	10,800,000*

*Funds are available until expended by MD, VA, PA.

PURPOSE

Achieve improved water quality in approved project areas in the most cost-effective manner possible in keeping with the provision of adequate supplies of food, fiber and a quality environment; assist agricultural land owners and operators to reduce agricultural nonpoint source water pollutants and to improve water quality in rural areas to meet water quality standards or goals; and develop and test programs, policies and procedures for the control of agricultural nonpoint source pollution. The experimental Rural Clean Water Program was funded in 1980-81 to test the effectiveness of conservation practices in controlling water quality problems caused by agricultural activities.

DESCRIPTION

This program is administered by the USDA Agricultural Stabilization and Conservation Service with technical assistance from the Soil Conservation Service and educational assistance from the Cooperative Extension Service. Of the 21 projects nationwide, three projects were selected for implementation within the Chesapeake Bay Drainage Basin. They are the Conestoga Headwaters Project in Lancaster, Pennsylvania, The Double Pipe Creek Project in Carroll County, Maryland and the Nansemond Chukatuk Project in Isle of Wright and Sulfolk Counties, Virginia. The program runs for ten years and permits contracting in the first five years only without an extension. The Pennsylvania project was approved in 1981 and selected for RCWP comprehensive monitoring and evaluation. The Maryland project was approved in 1980 and granted an extension in contracting authority through September of 1986 given an increased emphasis on nutrient and pesticide management. The Virginia project was approved in 1981. The funds identified for these projects include financial and technical assistance, as well as those for monitoring.

ANTICIPATED RESULTS

As these are project activities, the accomplishments will be dependent upon the level of participation. However, the water quality problems being addressed will contribute to the clean up effort underway for Chesapeake Bay. In PA the goal is to reduce the usage of chemical fertilizers and promote the proper management of animal wastes to reduce nitrogen loads to surface and groundwater in combination with normal erosion control techniques. In MD the goals emphasize erosion control from cropland and animal waste management. Additional emphasis will be put on nutrient management in FY 85-86. The VA project deals principally with coliform runoff from hog operations; but, with erosion control and nutrient management, both nutrient and coliform reductions are anticipated.

PROGRAM - EPA Chesapeake Bay Liaison Office Implementation Grants

BUDGET PROJECTION

	86	87	88
Federal	7,250,000*	7,250,000	7,250,000

*A portion of this may be used for point and nonpoint source objectives other than agricultural and forest land runoff.

PURPOSE

Provide grants to the states and the District of Columbia to assist them in implementing programs to improve water quality and living resources in the Chesapeake Bay. Although any project which reduces pollution loadings or improves resource habitat is eligible, FY 85 grant criteria require that 75 percent of the grant amount be applied towards nonpoint source controls. Structural, educational and demonstration projects which address a significant pollution source in geographic areas of concern will also receive priority.

DESCRIPTION

The current Administration is committed to providing $10 million for each of the next four years towards the Chesapeake Bay clean up. Approximately $7.25 million will be available annually for state implementation grants. To qualify for assistance, states must provide 50 percent matching funds. In selecting projects, they must also consider the following criteria:

- The project's potential contribution to reductions in pollutant loadings or improvements in resource habitat;

- The appropriateness and/or cost-effectiveness of the project: Higher priority should be given to projects located in designated critical watersheds;

- The potential beneficial effect of the project on ecologically important areas in the Bay;

- The unavailability of other federal funding. For example, projects that can be funded through EPA's construction grants program should not be considered;

- The project must be included in the Restoration and Protection Plan;

- The project represents an incremental step in a phased long-term commitment to determine effective new programs or is part of a comprehensive abatement program in a specific hydrologic unit;

- NPS implementation efforts should be concentrated in targeted hydrologic units or targeted to types of source for which solutions are not known.

ANTICIPATED RESULTS

The grants will help to focus pollution abatement efforts on nonpoint sources.

In the 4 states, implementation grants will fund agricultural cost-share programs, as well as innovative NPS control activities.

PROGRAM - FWS Chesapeake Bay Implementation Assistance

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Provide technical assistance to agencies and individuals with primary responsibility for land management, with a view to developing and implementing best management practices that mitigate land use and improve the status and prospects for aquatic resources.

DESCRIPTION

Working with the appropriate state-federal agricultural agencies, the U.S. Fish and Wildlife Service (FWS) will help prioritize watersheds where NPS pollutants and their impacts are believed most significant. Aerial photography will be obtained after heavy rainfall events to document critical erosional and runoff areas. In cooperation with soil and hydrological experts, on-site evaluation of land use practices will be undertaken and certain specialized biological evaluations or data collections may be performed. The final product from FWS will typically be its contribution to a site-specific conservation plan. This contribution will emphasize the NPS impacts on important resources and their habitat, and recommend appropriate BMPs to remedy existing problems. Future monitoring recommendations will also be made.

ANTICIPATED RESULTS

FWS analysis will serve as a basis for practical recommendations to mitigate land use problems which will improve resources in Chesapeake Bay by improving water quality and by restoring and improving habitat.

PROGRAM - USGS Technical Assistance

BUDGET PROJECTION

	86	87	88
Federal	NA	NA	NA

PURPOSE

Provide hydrologic information and technical assistance to state and federal agencies with responsibility for land management, with a view toward providing the information for evaluating the success of best management practices (BMP) implemented to control loss of sediment and nutrients to streams

DESCRIPTION

Working in cooperation with appropriate state-federal agencies, the U.S. Geological Survey (USGS) has in place several investigative studies in Pennsylvania and Maryland which are designed to evaluate the effectiveness of BMPs from a hydrologic standpoint. Watersheds and field sites have been instrumented for the purpose of collecting flow and water quality information before, during and after implementation of BMPs. The impacts of BMPs on groundwater quality will be assessed at selected sites. Length of studies will typically be from 5 to 7 years and will cover a variety of physiographic provinces, i.e., Carbonate Valley, Piedmont, Coastal Plain.

ANTICIPATED RESULTS

USGS will provide technical reports describing the hydrologic regime of selected BMP study areas along with appropriate flow and water quality information which will allow appropriate implementation agencies to evaluate success of programs.

PROGRAM - SCS Rural Abandoned Mine Program (RAMP)

BUDGET PROJECTION

	86	87	88
Federal	3,375,000	6,902,000	3,511,000

PURPOSE

Reclaim the soil and water resources of rural lands adversely affected by past coal mining practices.

DESCRIPTION

Provides technical and financial assistance to landusers who voluntarily enter into 5 to 10 year contracts for the reclamation of up to 320 acres of eligible abandoned coal-mined land and waters. A reclamation plan is prepared by the land user with SCS assistance. The plan outlines what will be done to reclaim the land each year and the amount of cost-share assistance involved. Action is occurring in MD, PA, VA, and WV which is within the Chesapeake Bay drainage.

ANTICIPATED RESULTS

RAMP will reduce sediment, acid mine drainage and other types of chemical pollution associated with abandoned coal mine sites. This will be achieved by applying the reclamation practices needed to remove the problem, shaping of the reclaimed area, establishing surface water control systems and establishing permanent vegetation.

PROGRAM - PA Watershed Assessments - Agricultural Nutrient Control

BUDGET PROJECTION

	86	87	88
Pennsylvania	30,000	40,000	40,000
Federal	30,000	40,000	40,000

PURPOSE

Perform watershed assessments to determine the potential nonpoint sources of agricultural related pollution and the measures needed (BMPs) to bring about changes in agricultural land use management.

DESCRIPTION

The watershed assessment work is completed for the initial priority watersheds in the 84-85 project year. Assessments will be initiated in the remaining priority watersheds within the Chesapeake Bay program area. These watersheds are identified in the state plan as 6 A, 10 C and 10 D and lie in portions of Centre, Snyder, Union, Northumberland, Montour, Columbia, Sullivan, and Lycoming Counties. Upon completion of the high priority watershed assessments in 1986, assessment activities will continue for the next two years in medium priority watersheds (4C, 4D, 4F, 5C, 5E, 6C, 7D, 7E, 11A, 12A) and other selected subwatersheds identified or exhibiting potential nonpoint source problems.

Conservation districts will conduct the surveys. Information on farm management practices will be gathered from farmers to determine approximate soil loss rates and the use of nutrients from fertilizers and animal wastes. Data from the survey will be digitized and an analysis made to determine specific problems, quantity of best management practices needed and their specific locations.

ANTICIPATED RESULTS

The assessments will provide data which will allow for the determination of specific agricultural nonpoint source problems and their locations within subwatersheds. They will also provide an implementation plan to improve agricultural land management practices, thus improving water quality in the watersheds by preventing accelerated soil and nutrient losses to surface and groundwaters.

PROGRAM - PA Basin and Watershed Monitoring - Agricultural Runoff

BUDGET PROJECTION

	86	87	88
Pennsylvania	100,000	100,000	100,000
Federal	75,000	90,000	100,000

PURPOSE

Document the water quality of surface runoff and groundwater flow both prior and subsequent to the implementation of agricultural BMPs. Analysis of data collected from monitoring studies will indicate the immediate effectiveness and practicality of agricultural BMP installations. This leads to the secondary purpose of monitoring studies: utilization of collected data to determine future agricultural BMP priority planning.

DESCRIPTION

Currently there are two existing proposals for monitoring programs. These programs are to be conducted by the U.S. Geological Survey and the Susquehanna River Basin Commission over a number of years. Data collected from these two studies will give a comprehensive overview of agricultural Bay-related problems through data analysis collected from the main stem of the Susquehanna River and its major tributaries. A brief description of the two proposed monitoring studies is listed below.

A. The USGS proposal is to collect land data, soils and stream quality data, and precipitation and stream quantity data on three to four agricultural watersheds in the lower Susquehanna River which are underlain by noncarbonate rock formations. A special effort will be made to locate monitoring sites in areas designed for demonstration projects. Each data collection site will consist of a stream gauging station, precipitation gauge and automatic water sampling device. Various physical and chemical parameters will be analyzed at the monitoring sites. Data analysis will involve both statistical trends and water quality modeling. Trend analysis such as regression analysis of concentration and load versus runoff and suspended sediment, Seasonal Kendall, and Wilcox & Rank Sums tests will be used to examine water quality during the preagricultural BMP phase of data collection. Adjustments in data collection program will be made as determined by these analyses. A small basin water quality model such as (HSPF) will be calibrated for each site for preagricultural BMP phase.

B. The second proposed program for the monitoring study is to be conducted by the Susquehanna River Basin Commission. This study is designated to provide nutrient loading data for the main stem Susquehanna River and its major tributaries in the central and lower basis and nutrient runoff data from small watersheds representing each prevalent land use found in the central and lower basin. Nutrient loading will be documented on a seasonal and individual storm basis. Base flow will be sampled monthly as necessary to supplement ongoing monitoring by the Pennsylvania DER and the USGS. Major runoff events will be sampled throughout the rising and falling stream stage. Sampling locations include 3 in the Susquehanna River, 1 in the Juniata River, 1 on the Swatara

Creek, 1 on the Conestoga Creek, and 1 on the Condoquinet Creek.

Nutrient runoff monitoring of specific land use may provide data for the refinement of the nonpoint source watershed model. Four watersheds selected for this purpose are: Paxton Creek, Stony Creek, Susquehanna River Basin, and the Valley and Ridge Providence. Filtered and nonfiltered samples will be analyzed for nitrate, nitrite, ammonia, TKN, total phosphorus, orthophosphate, calcium, magnesium, and iron.

ANTICIPATED RESULTS

The following are brief descriptions of the utilization of data collected by USGS and SRBC monitoring reports.

After agricultural BMP installation, the statistical analysis listed above will be used to identify changes in water quality. Differences in water quality which are due to agricultural BMP will be determined by comparing preagricultural BMP model simulations to observed water quality after agricultural BMP installation. Changes in crop yield will be evaluated by the Pennsylvania Department of Environmental Resources. Reported data on stream flow, suspended solids, and chemical analysis will be stored in the WATTSTORE and published in the annual Data Report titled "Water Resource Data for Pennsylvania". A brief cooperative report on water resource investigation will be prepared describing the hydrological water quality characteristics for each watershed before agricultural BMP installation during the third year of data collection. A final interpretive report will be submitted for approval as a water supply paper in cooperation with the Susquehanna River Basin Commission. It will be available for review by April 30, 1990.

Nutrient runoff monitoring of specific land use will enable the Bay Program to develop an improved nonpoint source watershed nutrient loading modeling. Utilization of these models and data collected from monitoring sites will provide a substantial factual basis for agricultural BMP installation and future priority planning.

PROGRAM - PA Education - Agricultural Runoff

BUDGET PROJECTION

	86	87	88
Pennsylvania	115,000	125,000	125,000
Federal	115,000	125,000	125,000

PURPOSE

Provide farmers better with information on the importance of nutrient management and the economic, social and environmental benefits obtained through the adoption of a sound nutrient management program.

DESCRIPTION

A series of approaches must be taken to reach the farmer and general public. These approaches include the use of promotion materials, media, displays, newsletters and publications. To reach the farmer, channels of existing farm-related agencies and associations will be utilized with one overall lead agency designated. Pennsylvania Association of Conservation District Directors (PACDD) will continue to serve as the lead agency to coordinate all educational activities. Funds will be provided to handle the promotional materials, including brochures to identify the Bay Program and the cost-share program and coordinate news releases and other information to the news media.

ANTICIPATED RESULTS

A newsletter will be used to keep Conservation Districts and other interested agencies and individuals informed of changes in the Bay program. Demonstrations and research projects involving nutrient management and soil erosion will be described in publications and widely disseminated to the agricultural community.

Conservation Districts will promote program activities, needs, problems and solutions at the watershed level and disseminate any pertinent information received from PACDD, Penn State University or other agencies to the farmer.

Cooperative Extension Service will provide an informational resource base which will support a locally based program, provide results of nutrient management research and demonstrations, and disseminate this information to county extension offices and conservation districts.

The Bureau of Soil and Water Conservation in DER will revise and update appropriate manuals to serve as educational guides to expose the farmer to a wide and varied list of manure management practices. Manuals will include types of manure storage, crop nutrient needs, and environmental protection regulations. The educational program is intended to cause a shift in attitude by farmers resulting in accelerated BMP installation.

PROGRAM - PA Demonstration Projects - Agricultural Runoff

BUDGET PROJECTION

	86	87	88
Pennsylvania	250,000	250,000	250,000
Federal	250,000	250,000	250,000

PURPOSE

Continue and expand a number of demonstration projects which were initiated during the startup program of the Chesapeake Bay in Pennsylvania to show state-of-the-art procedures to control excess nutrients from agricultural cropland and livestock operations. These projects will be continued during the 85 federal year and expanded during the the years 86 through 88. A continued focus will be on the need to show developing technology for disposal and/or utilization of animal wastes and to show the benefits of reduced tillage practices on different types of agricultural cropping systems.

DESCRIPTION

The demonstration projects in the current program and in the expanded program will relate to the handling and application of animal wastes, reduced tillage practices and the proper utilization and distribution of chemical fertilizers in order to improve water quality while satisfying crop needs and maximizing yields. Some of these projects will demonstrate energy recovery from excess manure, the burning of poultry wastes to generate heat, the use of recirculating fluidization beds for the burning of animal wastes to generate electric power and other waste heat utilization projects. Studies have shown that even with better nutrient utilization on farms, the exportation of excess manure outside certain critical watershed areas will be necessary to balance available supplies against crop nutrient needs. Several projects will be developed to demonstrate the feasibility of marketing manure outside the primary area of generation. Future expansion into the middle Susquehanna River Basin area during FY 86 through 88 will require the demonstration of some of the techniques from the lower basin under different agricultural conditions. The size and location of farms, their operating systems, and the type of soils and other topographic conditions may require slight modification of these demonstration projects used previously in the initial target watershed areas. The use of the mobile nutrient laboratory in new watershed treatment areas as the program moves up basin is anticipated.

ANTICIPATED RESULTS

These demonstration projects should produce a change of cropping and management systems on the farms that are used for demonstration purposes. The education component of the implementation program will encourage the use of these results by other farmers within the critical watersheds. Excess manure and associated nutrients will be redistributed for safe utilization and uptake by the cropping systems. Infiltration of nitrogen into the groundwater will be reduced. The possibility of new small business creation and of increased profitability by farmers should result from their farm. It is anticipated that up to $90/acre can be saved by individual farmers in their nutrient

application, if proper soil tests and nutrient management recommendations are followed. Certain demonstration projects that provide new products for the sale of manure derivatives and/or the sale of electric power could also increase the potential markets and new businesses related to the agriculture community. Projects that are initiated by Conservation Districts will be designed to demonstrate successful BMPs and new variations of BMPs that have the most potential for water quality improvement. The reduction of conventional tillage through adoption of more soil saving and nutrient saving conservation tillage practices will enhance the overall farm management system by individual land owners. The use of less fuel, and less labor will benefit farmers and less soil erosion from reduced tillage will greatly benefit the Susquehanna River system and, ultimately, the Chesapeake Bay.

PROGRAM - PA Conservation Districts - Technical Assistance

BUDGET PROJECTION

	86	87	88
Pennsylvania	80,500	150,000	320,000
Federal	80,500 (8 positions)	150,000 (15 positions)	302,000 (15 positions)

PURPOSE

Establish one Erosion and Sediment Control/Nutrient Management Technician within each of the 39 affected conservation districts. Districts may share technicians and be cost-shared at 75% (state) and 25% (district).

DESCRIPTION

Work priorities would be established on the basis of EPA identified nutrient loading to Chesapeake Bay; work activities would be governed by procedures established by State Conservation Commission. Work would provide increased knowledge and training to farmers, municipalities, contractors and others engaged in earthmoving activities; and agricultural operations in the proper utilization of nutrient and soil conservation. It would assist, as applicable, in the development of soil and water conservation/nutrient management plans, and any regulatory erosion control functions delegated to conservation districts by the Department of Environmental Resources.

ANTICIPATED RESULTS

Fewer nutrients and sediments would enter Chesapeake Bay because additional technicians would provide greater compliance of regulatory functions and increase the installation rate of BMPs.

PROGRAM - PA State Technical Assistance - Agricultural Runoff

BUDGET PROJECTION

	86	87	88
Pennsylvania	75,000	112,500	150,000
Federal	75,000	112,500	150,000

PURPOSE

Manage a basinwide cost-share program, implement a user information service at the field level, provide technical assistance to conservation districts, and seek cooperation from other agencies, groups, and individuals regarding proper nutrient management.

DESCRIPTION

Work would involve the development and implementation of a comprehensive nutrient management program at the field level. Program elements include education of farmers and agricultural leaders concerning proper management of natural and commercial nutrients, assist in the development of criteria for nutrient management plans, encourage alternative uses of animal wastes, and assist as appropriate in regulatory functions involving improper utilization/disposal of animal wastes.

ANTICIPATED RESULTS

Expected reduction in nutrient levels (N, P) in ground and surface waters within Susquehanna River Basin commensurate with acceptance and installation/proper operation of BMPs. A measurable reduction in nutrients is expected in selected watersheds where demonstration BMPs and water monitoring devices will be installed.

PROGRAM - PA State Water Quality Coordination - Agricultural Runoff

BUDGET PROJECTION

	86	87	88
Pennsylvania	25,000	25,500	26,000
Federal	25,000	25,500	26,000

PURPOSE

Establish a Water Quality Coordinator within the Bureau of Water Quality Management.

DESCRIPTION

This Coordinator would transfer information on water quality aspects of the Chesapeake Bay Program and Conestoga Rural Clean Water Project internal within the Bureau. The Coordinator would assist in the development of inputs and reports to the Bay program including 1) water quality standards review, revision and implementation; 2) ambient and compliance monitoring; 3) federal municipal construction grants; and 4) the installment of point source effluent limitations and NPS management practices. Provides day to day coordination and management of the Conestoga River RCWP, including the preparation of reports required under the RCWP grant agreement.

ANTICIPATED RESULTS

Provide high level awareness on water quality aspects of the Bay program and management of the Conestoga River RCWP within the Bureau of Water Quality Management.

PROGRAM - PA Agricultural BMP Cost-Share Program

BUDGET PROJECTION

	86	87	88
Pennsylvania	1,462,500	1,462,500	1,462,500
Federal	1,462,500	1,462,500	1,462,500

PURPOSE

Continue and improve Pennsylvania's various programs for farmers which were designed to reduce the sedimentation of streams by erosion. These programs should be continued, but increased financial assistance is needed to reduce nonpoint pollution from agricultural sources. Erosion and sediment control programs help to remove phosphorus from runoff, but do not effectively control nitrogen. To improve nitrogen application practices and other nutrient management practices, the development and implementation of nutrient management programs will be needed. The additional funding will be used for the installation of Best Management Practices (BMPs) on the selected farms.

DESCRIPTION

Guidelines titled "Statement of Policy--Chesapeake Bay Nonpoint Source Pollution Abatement Program" have been developed by the State Conservation Commission to implement the Financial Assistance Funding Program. The State Conservation Commission will delegate responsibilities for portions of the program to the conservation districts. To become eligible for financial assistance, the selected landowners must be located in high priority watersheds, become cooperators with the conservation districts, and enter into a written agreement. The installation of BMPs will be cost-shared at a rate not to exceed 80 percent, and up to $30,000 per landowner, including Agricultural Stabilization and Conservation Service monies. If more than one BMP is installed, a nutrient management program will be required. Five percent of the allocated money may be used by the conservation district for administration.

For 1986, $750,000 additional funds are requested to expand the cost-share program. Also, an additional $100,000 will be needed to compensate the conservation districts in administering the cost-share program. For the State to properly administer the program, $75,000 will be needed by the Bureau of Soil and Water Conservation for administrative costs to assist with the program and work closely with the conservation districts.

ANTICIPATED RESULTS

The Financial Assistance Funding Program will accelerate the reduction of agricultural nonpoint pollution into the Lower Susquehanna River. A special effort will be made to enlist the landowners with critical problems. Cooperating farmers will have BMPs and nutrient management programs installed on their farms. This program should especially help to lower nonpoint nitrogen pollution.

PROGRAM - PA Mason-Dixon Project - Agricultural Runoff

BUDGET PROJECTION

	86	87	88
Pennsylvania	920,000	920,000	920,000

PURPOSE

Accelerate the installation of conservation practices on cropland in the Lower Susquehanna River Basin through the Mason-Dixon erosion control project being developed by the U.S. Soil Conservation Service.

DESCRIPTION

The soil is eroding at a rate of 17.7 tons per acre per year on cropland without conservation practices in the Mason-Dixon area. This rate is five times greater than the acceptable soil loss rate of three to four tons per acre per year. Fourteen counties in Pennsylvania and eight counties in Maryland will be included in this project. Approximately 2.8 million acres of cropland are contained within this area, consisting of 24,346 farms of an average size of 135 acres. To implement this program 34 additional federal technicians are needed in the U.S. Soil Conservation Service and an additional $8 million per year of cost-sharing will be required over ten years.

ANTICIPATED RESULTS

With the installation of conservation practices, soil loss rates will be reduced to acceptable rates, and the amount of sediment entering waters of the lower Susquehanna will be minimized.

PROGRAM - PA Rural Clean Water Program - Conestoga River Project

BUDGET PROJECTION

	86	87	88
Pennsylvania	110,000*	120,000*	130,000*
Federal	*	*	*
Other			

*See A.5.USDA Rural Clean Water Program.

PURPOSE

Evaluate the effects of the implementation of agricultural BMPs on surface and groundwater quality in the Upper Conestoga River Basin. Excessive nonpoint source discharges of sediment, nitrogen and phosphorus associated with agriculture are currently degrading many public and private water supplies in the Conestoga River Basin, which ultimately has an impact on the Susquehanna River and the Chesapeake Bay. As a result, the Conestoga River Basin was designated as the No. 1 priority watershed in Pennsylvania's Agricultural 208 Plan. In June 1981, the Federal Rural Clean Water Program funded a project to install agricultural Best Management Practices (BMPs) in the Upper Conestoga River Basin that area designed to reduce nonpoint source contaminants. BMPs will be implemented on about 300 of a total of 1,250 farms which are considered the most critical nonpoint source problems in the study area.

DESCRIPTION

The specific objectives of the study are: 1) to quantify the transport of sediment, nutrients and pesticides in the surface water of the Upper Conestoga River Basin, 2) to quantify the movement of nitrate into groundwater aquifers, 3) to investigate the transport of water soluble pesticides to groundwater, 4) to measure the effectiveness of specific BMPs in controlling nitrate and other contaminant movement into groundwater, 5) to evaluate the cost and effectiveness of individual agricultural BMPs and surface water quality.

ANTICIPATED RESULTS

The project is scheduled to run through 1992, during which time a continuous monitoring and evaluation effort will take place. The Chesapeake Bay Program study recommends the development of a detailed nonpoint source control implementation program. Results of Conestoga River Project will be valuable in the refinement and fine tuning of the agricultural component of the total program.

PROGRAM - PA Silviculture Runoff

BUDGET PROJECTION

	86	87	88
Pennsylvania	65,200	65,200	65,200

PURPOSE

Reduce the overland flow of soil and nutrients into the streams tributary to the Susquehanna River by implementing a forestry program.

DESCRIPTION

Sedimentation and nutrient loadings in the streams occur in part because of active cultivation along stream banks and as a result of the production of more animal waste than conventional agriculture can profitably use. Under this proposal, a portion of the animal waste would be applied to woodland areas and to less productive soils where forest plantations will be established, with all the benefits of afforestation.

A second aspect of this proposal is the establishment and/or maintenance of herbaceous and forested buffer zones between the streams and their cropland watersheds. These filter strips would serve to intercept overland flow and trap sediment and nutrients before they enter the streams. The sites are almost invariably among the most productive, so biomass and timber production will be essential elements to consider in the planning process.

ANTICIPATED RESULTS

The combined result of this two-practice approach will be a significant improvement in the quality of the water entering the Susquehanna River.

PROGRAM - PA Department of Agriculture's IPA Assignment Agreement

BUDGET PROJECTION

	86	87	88
Pennsylvania	6,000		
Federal			

PURPOSE

Assist the Pennsylvania Department of Agriculture in carrying out its responsibilities under the Nonpoint Source Abatement Program.

DESCRIPTION

By means of a matching funding program between the Pennsylvania Department of Agriculture and the USDA/Soil Conservation Service, a full-time staff person has been assigned to the Pennsylvania Department of Agriculture for the purpose stated above.

ANTICIPATED RESULTS

Improve interrelationships between the Pennsylvania Department of Agriculture, Soil Conservation Service, other federal agencies, state agencies and local agricultural groups, with emphasis on accelerating the reduction of agricultural nonpoint source pollution into the Lower Susquehanna River.

PROGRAM - MD Agricultural Technical Assistance Program

BUDGET PROJECTION

	86	87	88
Maryland	1,735,000	1,735,000	1,735,000

PURPOSE

Implement farm soil and water conservation plans and agricultural best management practices (BMPs) which control runoff of sediment, nutrients, animal wastes and agricultural chemicals to waters of the state. The program is designed to provide the technical assistance needed by farm owners and operators in order to develop farm conservation plans and install BMPs.

DESCRIPTION

Technical assistance is provided to farm owners and operators through local soil conservation districts. Staff assigned to districts advise farmers regarding soil erosion and water quality problems, prepare soil and water conservation plans, survey, design and oversee construction of BMPs. Districts are supported by the Maryland Department of Agriculture (MDA) through placement of conservation planners, technical and support staff and through provision of operating funds. Increased Department resources, available as a result of Maryland's Chesapeake Bay Program, allow for the expansion of local soil and water conservation programs. Districts receiving additional staff and funding are enabled: to conduct an information program tailored to local conditions which encourages BMPs and informs farmers about the technical and financial assistance available to them; to establish an outreach program to farmers and landowners in areas where the greatest potential reduction of agricultural pollution could occur; to assess local conditions to identify those which are critical in relation to protecting water quality; and to provide the technical assistance required to develop farm conservation plans, design and implement BMPs. The allocation of MDA resources has been based on the identification of priority watersheds which have the greatest potential for delivery of agricultural nonpoint source pollutants to the Chesapeake Bay. As critical conditions are identified and as research provides information related to effective management of nitrogen and other pollutants, resources will be directed toward those areas in which the greatest reduction in agricultural nonpoint source pollution may be achieved.

ANTICIPATED RESULTS

With the level of support to local soil conservation districts continuing at FY 86 levels, the development of approximately 1000 farm soil and water conservation plans is expected per year. With the continuing availability of cost-share funds as well as technical assistance, implementation of over 2000 BMPs per year is anticipated. Reduction of nonpoint source pollution resulting from sediment, nutrient and chemical runoff from farmland will occur as agricultural best management practices are applied and installed.

PROGRAM - MD Agricultural Cost-Sharing

BUDGET PROJECTION

	86	87	88
Maryland	5,000,000	6,000,000	6,000,000

PURPOSE

Provide funding for the installation of best management practices (BMPs), including both agronomic and structural practices, to reduce nonpoint pollution from agricultural sources. The Maryland Agricultural Water Quality Cost-Share Program was established to assist farmers in correcting existing water quality problems on their farms.

DESCRIPTION

The Maryland Agricultural Cost-Share Program, which began in July of 1983, provides up to 87 1/2% funding for eligible projects with a maximum of $10,000 per project and $25,000 per farm. There are 24 BMPs designed to prevent nutrients, sediment and animal waste from reaching the waters of the state, which are eligible for cost-sharing funding. Any individual, corporation, trust or other business enterprise which participates in the operation of a farm is eligible to receive cost-sharing funding for projects which correct existing water quality problems.

The program is administered by the Maryland Department of Agriculture (MDA) through the local soil conservation districts. Technical assistance for the planning and designing of the projects is provided by the soil conservation districts and the USDA Soil Conservation Service.

The initial appropriation in FY 84 was $5 million and in FY 85, $2 million was approved, all through State bond issue. From July 1, 1983 through March 1, 1985, over 2,000 applications were received for processing by MDA with $5,075,882 approved for eligible projects. Six hundred twenty-eight projects have been completed with $1,545,860 paid to program participants. Currently an average of 130 applications are submitted per month. This is expected to increase to 170 due to the increase in staffing at the local soil conservation district offices under the Chesapeake Bay Agricultural Program. Increased staffing will lead to greater cost-share program participation as outreach is expanded and more technical assistance becomes available.

ANTICIPATED RESULTS

A reduction of nonpoint source pollutants from agricultural land is expected. The highest achievement in pollution reduction should be in the priority watersheds identified as having the highest potential for the delivery of phosphorus to the Chesapeake Bay. Greater agricultural runoff control is expected in these watersheds since additional staffing is being placed in these areas first. With staffing at the FY 86 level and with continuing availability of cost-share funds, the installation of over 2,000 best management practices per year is expected.

PROGRAM - MD Agricultural Research

BUDGET PROJECTION

	86	87	88
Maryland	147,000	147,000	147,000

PURPOSE

Collect the information needed to ensure the installation of best management practices which will curb agricultural nonpoint pollution. The control of nutrient losses from farmland is of major importance in the protection of the water quality of the Chesapeake Bay. Current data regarding nutrient movement from agricultural land is inadequate to provide for the necessary control. Therefore, research is being directed towards gathering data on the processes which control nutrient losses, the pathways by which nutrients move, and the implications of agricultural nutrient movement.

DESCRIPTION

In FY 85, a multi-year, multi-disciplinary program was designed by scientists of the University of Maryland Agricultural Experiment Station. As a part of this program, data is to be obtained from experimental and private farms, located in different agricultural areas within the State, where controls can be maintained and cause-and-effect relationships can be studied on a direct basis. Detailed investigations will include the relationships between soil and crop management practices, soil characteristics (including levels of available nutrients), weather patterns and other factors affecting the amount of nutrients moving in runoff and lost by leaching and cycling into unavailable forms in the soil. The primary focus will be on obtaining basic data on the environmental movement of chemical fertilizers and animal wastes. Experiments with specific objectives will be established on farms, together with installations for collecting hydrologic and weather data. Farms will be managed according to regular productive agricultural practice. Comprehensive scientific data will be collected to obtain an in-depth picture of the sources and pathways of nutrient movement affected by agricultural practices.

ANTICIPATED RESULTS

Preliminary research findings are anticipated in FY 88, with subsequent annual publication of conclusions and recommendations. The research is expected to provide a base for the examination of cause-and-effect relationships in nutrient balances, the mechanism of nutrient release and nutrient flow. It will also provide the data needed to estimate cost/benefit ratio of agricultural management practices in relation to the control of nutrient loss.

PROGRAM - MD Education Demonstration Projects

BUDGET PROJECTION

	86	87	88
Maryland	320,000	320,000	320,000

PURPOSE

Reduce and/or minimize agriculturally related nonpoint source pollution for the purpose of improving water quality and protecting the waters of the State. This program will address the education and demonstration programs of the University of Maryland's Cooperative Extension Service and Agricultural Experiment Station. It is designed to complement the State's technical assistance program and will aid in successful implementation of nonpoint source pollution controls on agricultural land.

DESCRIPTION

The Cooperative Extension Service and Agricultural Experiment Station, under a five-year contract to the Department of Agriculture, will conduct demonstration projects on one or more commercially operating farms to obtain cost and benefit data resulting from implementation of selected best management practices to control loss of sediment and nutrients from cropland. In addition, a Statewide education program will be implemented to encourage farmers to use best management practices. The demonstration projects and data retrieved from research will be used as tools in this effort.

ANTICIPATED RESULTS

It is anticipated that this project will provide data on how to manage nutrients and animal wastes in ways which are most economically attractive to the farmer and least harmful to water quality. The Soil Conservation Committee will focus all educational efforts of state and federal agencies into a coordinated water quality education program to aid the agricultural community in understanding issues and methods to control or reduce agriculturally-related nonpoint source pollution.

PROGRAM - MD Agricultural Drainage

BUDGET PROJECTION

	86	87	88
Maryland	142,000	142,000	142,000

PURPOSE

Assure agricultural drainage projects protect Maryland's waterways from pollution. The EPA Bay Study identified agricultural runoff as one of the major sources of nutrient and sediment inputs to the Bay system. Currently in Maryland, most large agricultural drainage projects involving the channelization of streams to lower the water table under agricultural lands are planned, financed and constructed by local government with cooperation from the USDA Soil Conservation Service (SCS). The involved local government entities include county government, town councils, soil conservation districts (SCDs), public watershed associations (PWAs) and public drainage associations (PDAs). PWAs and PDAs are responsible for managing and maintaining the completed drainage projects.

Until 1984, the Maryland Department of Agriculture (MDA) had no formal roles for asserting the State's agricultural, natural resources or environmental protection interests in this process. A Soil Conservation Service (SCS) plan drawn in accordance with national criteria may or may not have provided adequate protection against pollution, flooding and wetland destruction. On July 1, 1984, Agricultural Article 8-603 became State law and provided the MDA with direct involvement in all agricultural drainage projects constructed, operated and maintained by PDAs.

DESCRIPTION

Agricultural Article 8-603 authorizes the Department of Health and Mental Hygiene, Natural Resources and Agriculture to jointly promulgate, by regulation, the criteria for the design, construction, operation and maintenance of agricultural drainage projects which will assure the prevention of pollution of the waters of the State. Prior to construction or reconstruction of an agricultural drainage project, a local PDA must develop and submit a construction, operation and maintenance plan to the Secretary or Agriculture for approval. Inspection and enforcement of compliance with approved plans will be carried out by the three departments.

In support of this effort, Agricultural Article 8-602 provides for State cost-sharing to support PDA and PWA maintenance programs, From 1979 to 1985, $239,019 in State grants have been utilized for the maintenance of agricultural drainage projects. The 1986 program will allocate $108,500 to approximately 53 PDAs and PWAs resulting in the yearly maintenance of approximately 635 miles of drainage channels in Maryland.

ANTICIPATED RESULTS

The Agricultural Drainage Project Regulations (COMAR 15.01.07) will establish a high standard of design for drainage systems.

The requirements for periodic maintenance of these projects coupled with financial support from the State should result in the prompt repair of damaged channels, eliminate the need to reconstruct these projects every 10 to 30 years, and reduce the potential contribution of pollutants to the waters of the Bay.

PROGRAM - MD Agricultural Runoff Control: Enforcement of Agricultural Nonpoint Source Pollution

BUDGET PROJECTION

	86	87	88
Maryland	29,134	29,134	29,134

PURPOSE

Complement the technical teams in the soil conservation districts with enforcement capability. It is anticipated and desired that farm units in priority areas have best management practices installed within the next five years.

DESCRIPTION

As the districts target their efforts to deal with priority areas, their staff will work cooperatively with the Health Department's enforcement staff to address particularly troublesome farm units where current pollution problems are documented, contributing to, and causing water quality violations. Possible enforcement actions are being considered on a case-by-case basis. No additional staff are being requested in FY 86. A person is to be hired in FY 85.

ANTICIPATED RESULTS

OEP expects to implement approximately 30 enforcement actions in FY 86, and 80 in each succeeding year.

PROGRAM - VA Cost-Sharing for Agricultural Best Management Practices

BUDGET PROJECTIONS

	84-86
Virginia	1,033,000
Federal	1,642,000

PURPOSE

Reduce the amount of sediments and nutrients entering the Bay from Virginia's farmlands.

DESCRIPTION

This program, implemented by the Department of Conservation and Historic Resources, is designed to provide cost-sharing grants to farmers for implementing certain BMPs. The following outlines eligible practices in each area. An asterisk (*) denotes an addition for the 1985 program.

Level I (All 68 Basin Counties)	State Cost-Share Rate
*Minimum Till-Cropland	$15/acre
*No-Till Cropland	$15/acre
*No-Till Pastureland	$15/acre
Grass Filter Strips	$.10/lin. ft.
Permanent Vegetative Cover On Critical Areas	25%
Reforestation Of Erodible Crop And Pasture	$75/acre

Level II-A (Animal Waste Priority Area).

Six BMPs listed under Level I plus:

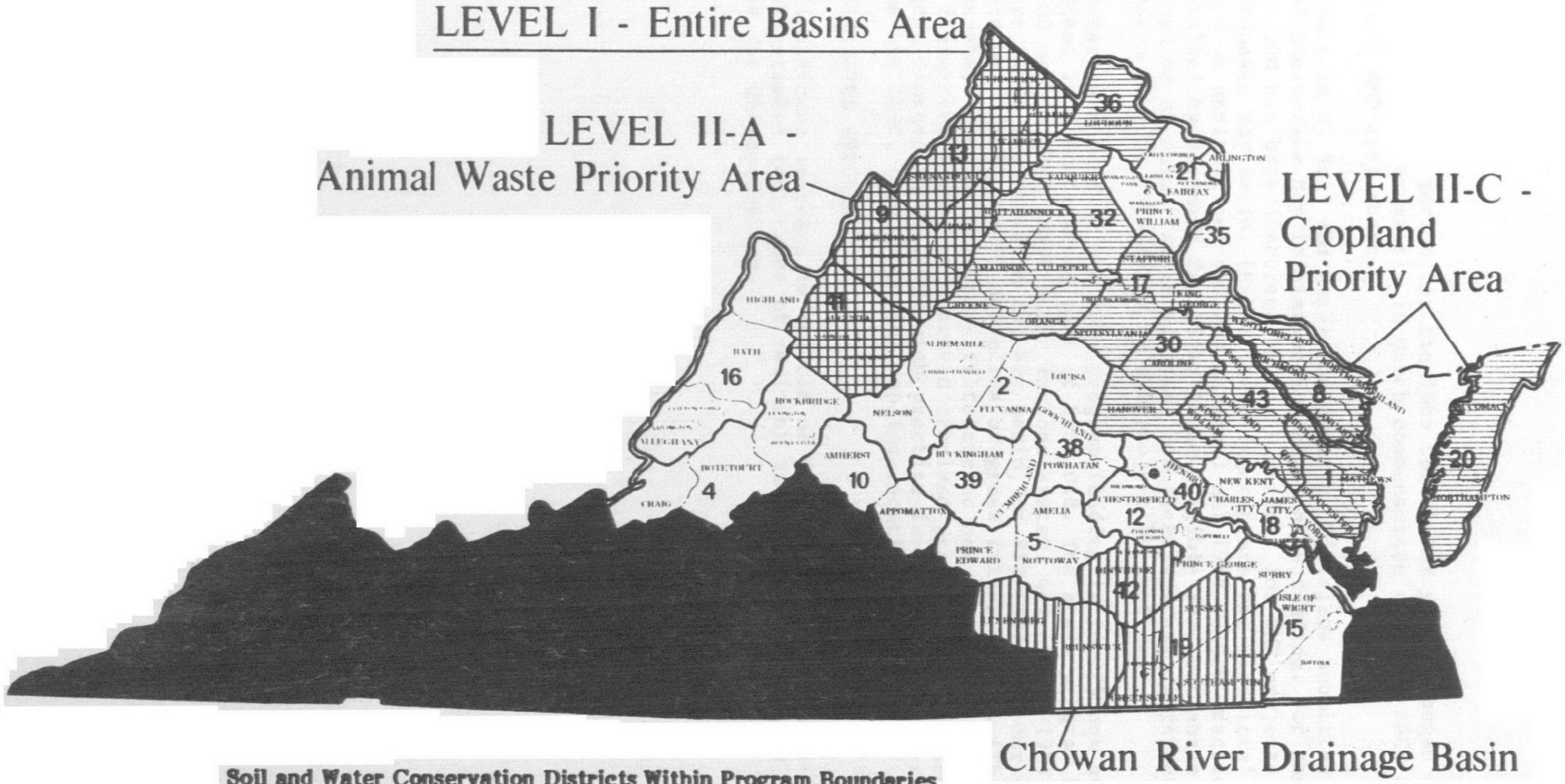
Animal Waste Control Facilities	90% (Federal ACP + State)
Grazing Land Protection	25%

Level II-C (Cropland Priority Area)

Six BMPs listed under Level I plus:

*Protection Cover For Vegetable Cropland	25%
Stripcropping	25%
Terraces	25%
Diversions	25%
Contour Farming	25%
Sediment Retention, Erosion Or Water Control Structures	25%
Sod Waterways	25%

Chesapeake Bay-Chowan River Non-Point Programs



Soil and Water Conservation Districts Within Program Boundaries

Animal Waste Priority Area
Headwaters (41)
Lord Fairfax (13)
Shendoah Valley (9)

Chowan River Basin Program Area
Appomattox River (42)
J. R. Horsley (19)
Southside (3)

Cropland Priority Area
Culpeper (7)
Eastern Shore (20)
Hanover-Caroline (30)
John Marshall (32)
Loudoun (36)
Northern Neck (8)
Three Rivers (43)
Tidewater (1)
Tri-County (17)

Other SWCDs Also Within Program Area
Colonial (18)
Henricopolis (40)
James River (12)
Monacan (38)
Mountain (16)
Natural Bridge (4)
Northern Virginia (21)
Peanut (15)
Peter Francisco (39)
Piedmont (5)
Prince William (35)
Robert E. Lee (10)
Thomas Jefferson (2)

The application period for the 1985 Spring BMP program began during December and closes approximately in March commensurate with the ASCS schedule for federal BMP cost share.

Farmers in 23 Soil and Water Conservation Districts submitted requests for 1984 Chesapeake Bay Initiative BMP cost-share funding. For the 1984 program, $281,350 has been disbursed to the Districts for BMP projects in the Chesapeake Bay basin. (Note: These figures are the Districts' "best estimates" based on applications and may change.) All 1984 funded practices were to be installed by December 31, 1984, to be eligible for cost share with the exception of animal waste systems. For these systems, a farmer must show at least a $10,000 investment in the project by that date.

Greater than half of the 1984 program funding is for 23 new animal waste systems at a State share cost of $160,048. The state program has instituted a $7500 cap in cost share funds for one system. 44% of the 1984 program cost share funds requested in the Bay basin, or $121,302, are for cropland practices, including 97 new miles of grass filter strips. (The State cost-share program for grass filterstrips has previously resulted in 152 miles of filterstrips.) Other approved cropland practices are funded 25% by State funds, limited up to $1000 each practice in Level I, and up to $2000 in Levels II-A and II-C. (See following map for locations.)

ANTICIPATED RESULTS

A significant increase in the use of BMPs by farmers resulting in substantiated reductions of sediment and phosphorus loadings to streams that feed the Chesapeake Bay.

PROGRAM- VA Pollution Source Identification: Agricultural BMPs

BUDGET PROJECTION

	84-86
Virginia	120,000
Federal	178,000

PURPOSE

Reduce the amount of sediments and nutrients entering the bay from Virginia's farmlands.

DESCRIPTION

The program, implemented by the Department of Conservation and Historic Resources, is designed to develop a method for identifying target farms and critical watersheds.

A demonstration pollution-source data base for Westmoreland County has been completed by the EPA Environmental Photographic Interpretation Center. DSWC is in the process of evaluating EPIC's pollution sources of agricultural lands. DSWC is also exploring alternative ways of collecting the pollution source data because initial cost estimates for identifying pollution sources in the Rappahannock and York river basins were underestimated.

ANTICIPATED RESULTS

With a computerized data base of farmland, topography soils and hydrologic information, land areas can be prioritized according to nonpoint source pollution potential. This will enable the state to target its resources more effectively.

PROGRAM - VA Research/Demonstration: Agricultural BMPs

BUDGET PROJECTION

	84-86
Virginia	175,000
Federal	263,000

PURPOSE

Reduce the amount of sediments and nutrients entering the Bay from Virginia's farmlands.

DESCRIPTION

This program, implemented by the Department of Conservation and Historic Resources, is designed to further investigate and demonstrate the effectiveness of various BMPs. The program involves the use of a mobile rainfall stimulator, the application of innovative BMPs, the monitoring of a small demonstration watershed, and developing of a State model farm.

To date, two test sites for the demonstration rainfall simulator have been chosen, one in Southampton County and one in Culpepper. It is anticipated that two more sites will be designated by January, one of which will be in the Shenandoah Valley. The cost of the rainfall simulator is estimated to be $52,000.

To date, 12 innovative BMP demonstration projects have been approved for cost sharing with farmers. These include aerial seedings, waterway protection, pasture renovation, a tile outlet terrace and parallel contour filter strips. These programs will be monitored for effectiveness and become the focus of local tours and educational programs.

A 5.6 square-mile demonstration watershed has been chosen and includes a small creek off the Nomini River in Westmoreland County. An agreement for a water quality/sediment loss monitoring network is presently being developed. The target starting date to begin monitoring is the end of April.

Chippokes Plantation in Surry County has been chosen as a farm site to demonstration agricultural BMPs. Although plans are in the developmental stage, this State-owned farm may become a model farm for demonstrations of BMPs.

ANTICIPATED RESULTS

By studying and demonstrating BMPs under actual field conditions, better guidance concerning BMP use can be developed and farmers will become more inclined to use them, resulting in reduced pollutant loads to the Bay.

PROGRAM - VA Technical/Administrative Assistance: Agricultural BMPs

BUDGET PROJECTION

	84-86
Virginia	300,000
Federal	400,000

PURPOSE

Reduce the amount of sediments and nutrients entering the Bay from Virginia's agricultural lands.

DESCRIPTION

This program, implemented by the Department of Conservation and Historic Resources, is designed to provide the State's Soil and Water Conservation Districts cost-sharing funding for technical and clerical personnel to administer agricultural nonpoint pollution control programs at the District level.

In 1984, funding for technical and administrative assistants for the agricultural BMP programs was disbursed to 24 Districts. 75% or up to $25,000 of the salary costs for full-time technical assistants is available; part-time technical assistants are funded 100%. Up to $5,000 is available for clerical support.

ANTICIPATED RESULTS

Additional field personnel will subsequently improve the capability of local governments and conservation districts to implement effective nonpoint source pollution control programs resulting in reduced pollutant loading to the Bay.

PROGRAM - VA Education: Agricultural BMPs

BUDGET PROJECTION

	84-86
Virginia	122,000
Federal	182,000

PURPOSE

Inform District Directors, farmers and others about the water quality and soil retention benefits of BMPs.

DESCRIPTION

This program is being implemented by the Department of Conservation and Historic Resources in cooperation with the Virginia Cooperative Extension Service.

An education coordinator has been hired and is working out of Fredericksburg because it is centrally located relative to the agricultural and animal waste targeted areas of the State. A strategy for educating farmers about conservation tillage, timely crop fertilization, and cover crop planting is presently being developed by the Extension Service under contract. The educational materials to be prepared will include printed material on fertilizer application and use practices, and distributed through the District offices. During October, the education coordinator held an educational forum for county extension agents in each of the five Agricultural Extension Districts. Agents were informed of the State cost-share program and ways in which they can help bring farmers into the program.

ANTICIPATED RESULTS

Through education, more farmers will be persuaded to implement BMPs, particularly those which are cost-effective to their farming operations. Farmers will also become more aware of the BMP cost-share program and other resources available to assist them. Increased implementation of BMPs will result in decreased pollutant loadings to the Bay from agricultural land.

PROGRAM - VA NPS Best Management Practices Handbook Update

BUDGET PROJECTION

	84-86
Virginia	20,000
Federal	60,000

PURPOSE

Review BMP handbooks (Agriculture, Management, Urban, Groundwater, Hydrologic Modification, Mining, and Forestry) for currency and NPS program definition as they relate to Virginia's Chesapeake Bay drainage area.

DESCRIPTION

A major part of Virginia's Statewide 208 planning effort involved the development of Best Management Practices Handbooks. These handbooks, which were developed by a State Technical Advisory Committee, recommended practices or a combination of practices that provide the most effective and practicable means of preventing or reducing pollution generated by nonpoint sources to levels compatible with water quality goals.

Since the publication of the handbooks in 1979, a great deal has been learned about water quality and the application of BMPs used in controlling pollutants from nonpoint sources. Under this program the BMP Handbooks would be reviewed and, if appropriate, would be revised to reflect any new developments. In addition the program would review the NPS program definition as related to Chesapeake Bay and its drainage area.

ANTICIPATED RESULTS

Following the review and appropriate updating the BMP Handbooks would reflect present conditions and updated technological practices that are used to control NPS pollutants within the Chesapeake Bay drainage area.

PROGRAM - VA Soil Research And Mapping

BUDGET PROJECTION

	84-86
Virginia	1,160,000

PURPOSE

Conserve soil resources and reduce erosion and sedimentation.

DESCRIPTION

This program, implemented by the Department of Conservation and Historic Resources provides for an inventory of soil resources in Virginia toward a planned completed soil survey of the State by 1996. In the past biennium, 1,544,536 acres were mapped. Major activities of the sub-program are providing administrative leadership; monitoring the productivity of soils mapping conducted under contracts with Virginia Polytechnic Institute and State University and the USDA, Soil Conservation Service; promoting soil surveys to local governing bodies, securing local financial commitments to the program; and, establishing priorities for mapping.

ANTICIPATED RESULTS

The basic objective of the program is to conduct an inventory on 1,806,500 acres of the soil resources in Virginia the biennium. The Division of Soil and Water Conservation will provide financial assistance through contracts with Virginia Polytechnic Institute and State University (VPI&SU) and U.S. Department of Agriculture, Soil Conservation Service (SCS) for staff services of soil scientists, laboratory support services and operational costs to cooperatively inventory 1,806,500 acres (combined mapping rates of VPI&SU and SCS utilizing federal, state and local resources).

NUTRIENTS

Objective 6: Reduce the levels of nutrients and other conventional pollutants in urban runoff.

States may use Chesapeake Bay Program implementation grant monies to meet this objective.

PROGRAM - PA Storm Water Management Program

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Develop, implement, administer, and enforce county watershed stormwater management plans pursuant to the Statewide Storm Water Management Act of 1978 and the attendant 25 PA Code Chapter 110 - Storm Water Management Financial Assistance Regulations.

DESCRIPTION

The Department is currently developing a system to prioritize designated watersheds for funding under the Storm Water Management Act. This system will consider the Chesapeake Bay Program as one parameter. In the development of the watershed storm water management plans for watersheds containing urbanized areas, a component to monitor toxics during implementation of the plan could be included if:

1. The watershed is high on the priority list.

2. County elects to do such work.

3. Additional funds are available to do such work.

4. The study is conducted and administered by the Department of Environmental Resources, Bureau of Water Quality Management.

ANTICIPATED RESULTS

This monitoring would help identify and refine control strategies for toxics in urban runoff. The funding of these activities under the Storm Water Management Act is not provided; therefore, other funding sources need to be obtained. These watershed storm water management plans can be used to provide updated hydrologic, hydraulic, land use, and other data for water quality studies.

PROGRAM - MD Sediment And Erosion Control

BUDGET PROJECTION

	86	87	88
Maryland	471,369	471,369	471,369

PURPOSE

Assure consistent Statewide enforcement of the State's sediment control law by transferring field enforcement responsibility for erosion and sediment control plans to the Department of Natural Resources with provisions for subsequent delegation of authority to local jurisdictions; to assure acceptable Statewide enforcement programs by utilizing the positions hired in FY 85 to enable the Department of Natural Resources to carry out inspection and enforcement responsibilities in those jurisdictions that either do not seek delegation or in those areas where local jurisdictions are not capable of carrying out acceptable programs; to improve control techniques and their application by providing funding for review and revision of the Statewide standards for erosion and sediment control plans; and to insure timely temporary and/or permanent stabilization during construction by revising the sediment control regulations.

DESCRIPTION

FY 85:

Enforcement:

Revisions to COMAR which establish minimum standards for delegation of inspection and enforcement responsibility were published in the December 7, 1984 issue of the Maryland Register and became effective on December 17, 1984.

Evaluation of and a determination on the adequacy of all pending requests for delegation of inspection and enforcement responsibility will be completed. Field verification of local inspection and enforcement efforts will be conducted and findings will be factored into the final decisions on delegation.

Revision of Standards and Specifications:

A contract will be awarded to evaluate all existing erosion and sediment control standards and specifications for improvement with special emphasis on sediment basin design criteria and engineering filter fabric. Sediment control practices will also be evaluated with respect to their impact on stormwater runoff to ensure protection of downstream areas from increased stormwater discharges.

Stabilization Requirements:

Final regulations were adopted on June 26, 1984, and became effective on July 16, 1984.

FY 86:

An additional $70,000 has been requested to provide data processing programming services to develop and maintain a computerized system for tracking actions and violations of the Sediment Control law and regulations.

ANTICIPATED RESULTS

Substantial improvement in the effectiveness of sediment and erosion control plans at specific construction sites. Improved standards and specifications.

PROGRAM - VA Urban BMP Technical Assistance and Demonstration Projects

BUDGET PROJECTION

	84-86
Virginia	650,000
Federal	385,000

PURPOSE

Reduce the amount of sediment and nutrients entering the Bay from Virginia's urban areas.

DESCRIPTION

Implemented by the Department of Conservation and Historic Resources, the program is designed to provide for cost-sharing funds for local technical assistance and urban BMP demonstration projects in selected areas undergoing rapid development.

The Technical Assistance Program is intended to provide additional manpower resources at the local level to aid in the implementation of erosion and sediment control regulations and other nonpoint source pollution control programs and projects. Soil and water conservation districts can obtain 75% of the cost of employing urban conservation specialists or engineers provided the remaining 25% of the cost can be obtained from participating localities. This program has been merged with an agricultural technical assistance program, so many of the individuals who are hired have agricultural as well as urban responsibilities. To date, conservation specialists with urban responsibilities have been hired in 13 conservation districts. There has been a net increase of 5.85 man years of technical assistance in the Chesapeake Bay Basin as a result of this program. Applications for additional positions are anticipated in the next fiscal year.

The Urban BMP Demonstration Program is intended to increase understanding of the effectiveness and practicability of certain urban BMPs recommended for use in Virginia. By installing and studying BMPs under actual field conditions the State hopes to develop useful guidelines for BMP use, and be in a better position to convince land developers and their consultants that such practices are economically as well as technically feasible. To date, ten urban BMP demonstration projects have been selected for funding. The BMPs being tested include porous asphalt pavement, infiltration trenches, wet ponds, dry ponds, urban marshes and biotechnical soil stabilization. Project locations include Prince William County, Fairfax County, Albemarle County, Fredericksburg, Henrico County and James City County.

ANTICIPATED RESULTS

Increased implementation of urban BMPs by land developers resulting in reduced pollutant loads to the Chesapeake Bay.

PROGRAM - VA State Erosion And Sediment Control Program

BUDGET PROJECTION

	84-86
Virginia	366,710

PURPOSE

Conserve soil resources and reduce erosion and sedimentation.

DESCRIPTION

This program is being implemented by the Department of Conservation and Historic Resources and provides technical training and advisory assistance to local government officials, consultants, developers, and others who implement or are affected by local programs for controlling soil erosion and sedimentation from construction-related activities.

In each biennia the Department's Division of Soil and Water Conservation plans to carry out the following activities for this program:

Provide information resources and advisory assistance to local officials, developers, consultants, landowners and others on the interpretation and implementation of technical standards established as provided by the State Erosion and Sediment Control Law.

Conduct 8 Statewide training seminars each year of the biennium and participate in local or regional training programs.

Review erosion and sediment control standards and specifications on 40 state construction projects and monitor plan implementation on State projects under construction during each year of the biennium.

ANTICIPATED RESULTS

The capabilities of local government officials, developers and consulting engineers to comply with the State Erosion and Sediment Control Law will be improved resulting in a reduction in sediment loadings to the Chesapeake Bay from urbanizing areas.

PROGRAM - DC Catch Basin Cleaning

BUDGET PROJECTION

	86	87	88
DC	625,316	625,316	625,316
EPA	109,193	109,193	109,193

PURPOSE

Assure the timely and efficient cleaning of all 27,000 catch basins/inlets in the City and prevent or minimize the discharge of suspended particles to our waterways.

DESCRIPTION

Catch basin/inlet grates in need of cleaning affect water quality in the receiving streams by allowing suspended particles to be discharged along with the street wash that enters the basins. During rainfalls, such discharges go directly to receiving streams from the storm sewer system. Discharges from the combined sewer system (including raw sewage) occur only when capacity of the combined sewer is exceeded or when a malfunction exists. Timely cleaning of the basins reduces the amount of debris that is washed out into the receiving streams.

ANTICIPATED RESULTS

This proposal will assist in the prevention of pollution and contamination of the Chesapeake Bay and will enhance the current efforts in stream cleaning in the District and in so doing reduce the sediment load to the tributary Anacostia and Potomac Rivers.

PROGRAM - DC Stream Cleaning

BUDGET PROJECTION

	86	87	88
DC	183,866	183,866	183,866
EPA	127,803	127,803	127,803

PURPOSE

Remove debris thrown into streams and entering from storm flows or placed on the banks of such streams. In addition, simple measures are taken to prevent erosion of stream banks and adjacent areas.

DESCRIPTION

Debris entering into streams or placed on the banks of streams must be removed, lest it be carried downstream, especially when the streams are at flood stage. Furthermore, a desirable goal of preventing erosion of streams banks and adjacent areas, now ignored because of budgetary limitations, will be implemented at known locations.

ANTICIPATED RESULTS

This proposal to assist in the prevention of pollution and contamination of the Chesapeake Bay will enhance the current efforts in stream cleaning in the District and in so doing reduce the sediment load to the tributary Anacostia and Potomac Rivers.

NUTRIENTS

Objective 7: Reduce pollutant discharges from recreational boats in shellfish growing areas and beach areas used for swimming.

Efforts are underway in Maryland, Virginia and D.C. to study the use of pumpout facilities and/or control boat discharges.

APPENDIX B - TOXICS IMPLEMENTATION PROGRAMS

TOXICS

Goal: Reduce or control point and nonpoint sources of toxic materials to attain or maintain levels of toxicants not harmful to humans or living resources of the Bay.

SUMMARY OF PROGRAMS

The Environmental Protection Agency (EPA) has major responsibilities for the control of toxic discharges. Through the National Pollutant Discharge Elimination System (NPDES), EPA has delegated to Pennsylvania, Maryland and Virginia authority to issue and enforce permit programs for dischargers. EPA issues permits for the District of Columbia. In addition, EPA develops permit limitations for toxic pollutants, water quality criteria, Toxicity Reduction Evaluation (TREs), and procedures for wasteload allocations. These, as well as the findings from pilot implementation studies, provide additional tools for controlling toxic discharges. The states implement the NPDES program by issuing permits for municipal and industrial point sources, monitoring for compliance, and taking enforcement actions, as needed. Efforts are also underway to encourage pretreatment of effluents from industrial sources and to reduce chlorine discharged from POTWs. Toxic substances in runoff from urban, suburban and rural areas is addressed by the states also. Controlling stormwater runoff leads to considerable nutrient as well as toxics reduction in the Bay and its tributaries. (Some of the programs dealing with metals and organic chemicals are listed in Appendix A.)

Because of the many uncertainties involved in identifying toxics, their sources and effects, considerable monitoring and research efforts are also underway. (See Appendix E for monitoring and research programs.)

In this Appendix, each program listing includes a program title, budget projection (when available), a purpose, brief description and anticipated program results. Many of the program costs are inseparable from those dealing with nutrients. Funding levels for future programs are largely unavailable at this time.

APPENDIX B: TOXICS

Listing of Program Titles	Page Number
EPA Policy For The Development Of Water Quality-Based Permit Limitations For Toxic Control	3
EPA Pilot Studies For Implementing Toxics Control Policy	4
EPA Development Of Wasteload Allocation Procedure	5
EPA Development Of Water Quality Standards	6
PA NPDES and State Water Quality Management Programs	7
PA Triennial Water Quality Standards Review	8
PA Point Source Toxics Control Strategy	9
PA PCB Sampling Program	10
MD Biomonitoring	11
VA NPDES Permits	12
VA Chesapeake Bay Toxics Strategy	13
VA Toxics Monitoring	14
Virginia Enforcement of WQ Laws and Regulations and No-Discharge Certificates	15
EPA Toxicity Reduction Evaluation (TRE) - Municipal	17
PA Pretreatment Delegation	18
PA Municipal Wasteload Management	19
MD Pretreatment	20
MD Construction Grants: Industrial Pretreatment Loans	21
VA NPDES: Compliance Monitoring	22
VA Pretreatment	23
DC Pretreatment	24
EPA Technical Support Document For Water Quality-Based Toxics Control	26
FWS NPDES Permit Review	27
PA NPDES Program	28
MD NPDES: Industrial Discharge Compliance	29
PA Seasonal Disinfection	31
MD Chlorine Removal	32
VA Control of Chlorine at POTWs	33
DC Dechlorination	34
EPA National Urban Runoff Program	36
PA Stormwater Management Program	37
PA Department of Agriculture Funded Research Projects	38
PA Pesticide Use Profile Program	39
PA Pesticide Use Educational Program	40
MD Stormwater Management	41-42
MD Stormwater Management: Best Management Practices For Existing Urban Areas	43-44
DC Stormwater Management Regulatory Program	45
PA Emergency Response to Pollution Events	47
MD Emergency Response to Oil Spills	48
VA Emergency Response to Pollution Events	49
DC Oil Spill Response	50

TOXICS

Objective 1: Identify and control toxic discharges to the Bay system through implementation and enforcement of the States' NPDES permit programs and other programs.

PROGRAM - EPA Policy For The Development Of Water Quality-Based Permit Limitations For Toxic Control

BUDGET PROJECTION

	86	87	88
Federal	*	*	*

*106/205(j)grant

PURPOSE

Develop an integrated strategy using chemical and biological methods to control pollutants beyond Best Available Technology Economically Achievable (BAT), secondary treatment, and other Clean Water Act technology-based requirements in order to meet water quality standards.

DESCRIPTION

The basis of the Region III program is the state adopted water quality standards. Where a numerical water quality standard has been adopted for a particular toxic substance, an adequate waste load allocation procedure should assure that proper effluent limits will be developed for the permit. If a numerical water quality standard has not been adopted for a particular toxic substance, then the "free from" clause in their water quality standards needs to be invoked and water quality criteria developed. Therefore there is a need to develop procedures for producing reliable water quality criteria. If no criteria can be developed then biotoxicity testing of the effluent should govern the permit requirements to reduce or eliminate the toxicity of the effluent. Consequently there is also need to develop procedures for developing permit requirements based on biotoxicity testing.

ANTICIPATED RESULTS

The states, in cooperation with EPA Region III, will develop or update procedures for producing reliable water quality criteria and for developing permit requirements based on biotoxicity testing and chemical monitoring. The above procedures will be implemented in the NPDES permit program.

PROGRAM - EPA Pilot Studies For Implementing Toxics Control Policy

BUDGET PROJECTION

	86	87	88
Federal	*	*	*

*Approximately $300,000 in FY 85 extramural funds have been set aside to support these studies nationwide.

PURPOSE

Refine and clarify technical guidance provided in "Technical Support Document for Water Quality-Based Toxics Control" and promote transfer of technology to the states by conducting cooperative field studies designed to illustrate practical application of the guidance.

DESCRIPTION

Experience confirms that biological techniques often provide a useful complement and, in certain cases, an effective alternative to more conventionally used chemical specific methods for assessing water quality impacts caused by toxic discharges. The pilot program will build upon previous application of biological and chemical assessment techniques and broaden its scope to include evaluation of water quality standards, wasteload allocation procedures, and permit limit derivation.

ANTICIPATED RESULTS

Real world implementation and feedback on EPA "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants." These pilot studies will not only augment EPA and state capabilities in several important toxics problem areas, but also will help to refine and clarify the technical guidance provided.

PROGRAM - EPA Development Of Wasteload Allocation Procedures

BUDGET PROJECTION

	86	87	88
	*	*	*

Federal

*106/205(j) grant

PURPOSE

Update states' waste load allocation procedures to reflect the most recent scientific knowledge in the assessment of toxic substances.

DESCRIPTION

Wasteload allocation procedures are used to calculate the allowable effluent load that meets the numerical water quality standard at the critical low flow. The appropriate flow of the plant is used with the allowable load to calculate an effluent concentration. Permit writers generally specify this concentration as the daily maximum NPDES permit limit. Most, if not all, states in the Chesapeake Bay drainage area need to update their waste load allocation procedures to reflect the most recent scientific knowledge in the assessment of toxic substances. State involvement in updating waste load allocation procedures is to be developed through negotiations in the 106/205(j) programs.

ANTICIPATED RESULTS

Where a numerical water quality standard has been adopted for a particular toxic substance, an adequate waste load allocation procedure should assure that proper effluent limits would be developed for the permit and effluent toxicity controlled.

PROGRAM - EPA Development Of Water Quality Standards

BUDGET PROJECTION

	86	87	88
Federal	*	*	*

*Accomplish through 106/205(j) grant mechanisms.

PURPOSE

Establish a uniform and scientifically acceptable process for development of water quality criteria to serve as the basis for water quality standards, and to justify control of toxic substances through the NPDES permit.

DESCRIPTION

Water quality standards are the foundation of the states' water quality management process. They drive the development of water quality management plans, serve as the basis for waste load allocations, and determine the reduction necessary in various dischargers' pollutant loadings to attain the level of water quality to protect or attain designated stream uses. EPA Region III's Toxic Control Strategy For Surface Waters seeks to develop within the states procedures for producing reliable water quality criteria which may be used in setting water quality standards. State involvement in developing and updating procedures for producing reliable toxic water quality criteria may be developed through negotiation in the 106/205(j) programs.

ANTICIPATED RESULTS

Establishing adequate and consistent procedures for development of water quality criteria will enable the states to adopt numerical site-specific water quality criteria for toxic substances and improve toxic control. These criteria, in combination with the designated use and value of the water itself, can be translated into enforceable water quality standards. (If no criteria can be developed than biotoxicity testing of the effluent should govern the permit requirements to reduce or eliminate the toxicity of the effluent).

PROGRAM - PA NPDES and State Water Quality Management Programs

See detailed writeup on these two programs under Appendix A, NUTRIENTS, Objective 4.

PROGRAM - PA Triennial Water Quality Standards Review

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Review and revise, as necessary, Pennsylvania's Water Quality Standards in accordance with the Federal Clean Water Act.

DESCRIPTION

Section 303(c)(1) of the Federal Clean Water Act requires the states at least once every three years to review and revise, as necessary, their Water Quality Standards. Phase I of this review was approved as final rulemaking at the State Environmental Quality Board Meeting on December 18, 1984, and has been forwarded to EPA Region III for approval to implement.

Phase II of the triennial review was initiated in January, 1985. Toxics will be included as part of this review. Two major considerations will be addressed:

1. The need for a comprehensive toxics regulation to address human health and fish and aquatic life concerns.

2. The possible need for specific numerical criteria.

The review process is expected to be completed in FY 87 and will be conducted in accordance with State and federal public participation procedures.

ANTICIPATED RESULTS

Up-to-date Water Quality Standards for toxicants developed in consultation with neighboring states to protect state and interstate waters, including the Chesapeake Bay.

PROGRAM - PA Point Source Toxics Control Strategy

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Provide guidance to DER staff in developing NPDES permit effluent limits for toxic pollutants.

DESCRIPTION

The Toxics Control Strategy is a water quality-oriented approach which addresses EPA's priority pollutants and other toxics. It involves a step-wise permit application review process that takes into account (1) observed occurrence of priority pollutants as part of EPA's BAT screening and verification surveys; (2) EPA's recommended water quality criteria; (3) Pennsylvania's general standards for water quality protection; (4) current levels of detectability for these pollutants and available analytical techniques; (5) pollutant treatability; and (6) fate/transport of these pollutants in the aquatic environment.

ANTICIPATED RESULTS

The strategy provides for a consistent Statewide approach for dealing with toxic and hazardous pollutants from a regulatory program perspective.

PROGRAM - PA PCB Sampling Program

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Follow up on the reduced Food and Drug Administration Action Level of 2 ppm; resample and/or bracket stations which exhibited elevated tissue concentrations during previous studies; sample areas with outstanding fish consumption advisories; and sample major interstate streams as they leave Pennsylvania.

DESCRIPTION

To accomplish the above goals, 50 tissue samples and 4 control samples will be collected Statewide. Of these, 8 samples and 2 of the controls will be collected from the Susquehanna River Basin. Fish tissue samples will be collected between March 1 and August 30, 1985, primarily by the Pennsylvania Fish Commission. Sample preparation and laboratory analysis will be done by DER.

Susquehanna River Basin stations will be sampled for skinless fillets from composities of both bottom feeders and predators. For predators, the species collected will reflect either the predominant sport fish or a recreationally popular sport fish for the area sampled. Susquehanna River Basin Station information is as follows:

Station No.	Water Body	County	Sampling Location/Comments
C-1*	Huntsdale Hatchery	Cumberland	Rainbow Trout
C-2*	Young Womans Creek	Clinton	WQN 443/White Suckers
III-25	Susquehanna River	Lancaster	Holtwood Dam Tailwaters
III-26	Susquehanna River	Dauphin	York Haven Dam Tailwaters
III-7	Susquehanna River	Luzerne	0.5 mile upstream from Lackawanna River
III-10*	W. Br. Susquehanna	Union/ Northumberland	Lewisburg; WQN 401

*C = Control

ANTICIPATED RESULTS

The analysis results generated during this program, along with CORE fish tissue data, will be utilized to determine the need for fish consumption advisories. In addition, the data will be published as an update to "PCB's In Pennsylvania Waters" (BWQM Publication No. 51).

PROGRAM - MD Biomonitoring

BUDGET PROJECTION

	86	87	88
Maryland	314,348	NA	NA

PURPOSE

Conduct biomonitoring and chemical testing of industrial and municipal discharges to analyze effluents and determine their toxicity to Bay aquatic resources. The biomonitoring data is needed to improve the quality of State discharge permits. This program will provide a comprehensive approach for analyzing industrial and municipal treatment plant discharges and their potential toxic effects. Bioassay evaluations will include various measures of toxicity (e.g. acute, chronic, and life cycle) and determination of histopathological effects. All information will be provided to appropriate permitting units for use in establishing discharge permit limitations. Data on specific chemical contaminants will be developed for use in establishing water quality criteria or standards.

DESCRIPTION

In FY 85, a contract between the Offices of Environmental Programs and the University of Maryland, for the bioassay portion of this program, was completed. The bioassay laboratory is expected to be equipped by the end of FY 85.

In FY 86, the additional staff will perform ecological field assessments at the points of discharge of industries and sewage treatment plants. The staff will design sampling procedures to collect in-stream toxicity data and to identify the ecological communities that are able to survive near such discharge points. The staff will then attempt to relate the toxicity of the effluents to the diversity of species in those vicinities.

ANTICIPATED RESULTS

Protection of aquatic resources in receiving waters through incorporation of scientifically-derived toxics limits in NPDES permits and through enforcement of those permits.

PROGRAM - VA NPDES Permits

BUDGET PROJECTION

	84-86
Virginia	1,806,000

PURPOSE

Ensure that discharges into State waters meet State and federal water quality standards.

DESCRIPTION

Implemented by State Water Control Board, this program is designed to maintain the NPDES Permit program. It involves issuance, reissuance, modification, application review, and continuance of NPDES permits, as well as technical and laboratory inspections and permit compliance. This includes issuance of approximately 50 new permits and updating, as needed, of the existing 950 permits. Approximately 1,550 technical inspections and 275 laboratory inspections will be conducted.

ANTICIPATED RESULTS

NPDES permits will require that Virginia municipal and industrial dischargers meet all applicable State and federal laws and regulations.

PROGRAM - VA Chesapeake Bay Toxics Strategy

BUDGET PROJECTION

	84-86
Virginia	350,000

PURPOSE

Develop information to prevent significant cases of toxics contamination from developing.

DESCRIPTION

Implemented by State Water Control Board and the Virginia Institute of Marine Science, the program is designed to:

- develop an automated toxic data system that regulatory agencies can use to determine toxic compositions in Bay tributaries.

- obtain additional samples indicating toxicity levels in James and Elizabeth River sediments, water, and shellfish tissues.

Presently the SWCB and VIMS are working together to synthesize new and existing toxics data of the main stem of the Chesapeake Bay and the James River, and to develop an automated program for utilizing the data for management purposes. It is anticipated that VIMS researchers will train agency staff to use the toxics indicating strategy. The proposed strategy, based on the "fingerprint" indicator technology which utilizes gas chromotography and mass spectrometry, will compare toxics distribution patterns in sediment and tissue samples with industrial toxics discharged in effluents.

Twenty industry and sewage treatment plants effluents in the James and Elizabeth Rivers will be sampled in FY 84-85; an additional twenty will be sampled in FY 85-86, although some sites may be repeated. Twenty sediment samples will be analyzed in each fiscal year of the biennium; the first eleven to be done during the fall in the Elizabeth River. The clam and oyster tissue samples will be taken in each year of the biennium also, but the first tissue samples will probably be taken in April.

ANTICIPATED RESULTS

Through the "fingerprint" indicator technology, toxics distribution patterns in sediment and tissue samples will be compared with toxics discharged from industrial and municipal effluents.

PROGRAM - VA Toxics Monitoring

BUDGET PROJECTION

	84-86
Virginia	222,000

PURPOSE

Identify the presence of toxicity in wastewater effluents.

DESCRIPTION

This program, implemented by State Water Control Board, is designed to evaluate toxic levels of industrial and municipal dischargers. This involves lab, on-site bioassays, and field studies to define toxic effects. Monitoring requirements are developed for inclusion in NPDES permit on a site-specific basis. New toxicity-testing protocols are developed and evaluated to increase predictions capability and to determine chronic toxicity of effluents.

Toxics Monitoring Programs will be reviewed, developed, and/or implemented for approximately 110 industries and/or municipalities.

ANTICIPATED RESULTS

With over 3,000,000 compounds known to be in existence and about 55,000 in commercial usage, the Toxics Monitoring Program goes beyond the EPA Priority Pollutants in determining effluent toxicity through a combination of chemical and biological monitoring.

PROGRAM - Virginia Enforcement Of WQ Laws And Regulations and No-Discharge Certificates

See detailed writeup under Appendix A, NUTRIENTS, Objective 3.

TOXICS

Objective 2: Reduce the discharge of metals and organics from sewage treatment plants resulting from industrial sources.

PROGRAM - EPA Toxicity Reduction Evaluation (TRE) - Municipal

BUDGET PROJECTION

	86	87	88
Federal	*	*	*

*$200,000 is currently available in FY 85 funds.

PURPOSE

Conduct and document, as a case history, a TRE at the City of Baltimore's Patapsco Wastewater Treatment Plant. (Dischargers may be required to conduct a TRE where wasteload allocation calculations indicate or project violations of water quality standards, or where there is a significant likelihood of toxic effects to biota in receiving water).

DESCRIPTION

A toxicity reduction evaluation (TRE) is an investigation conducted within a municipal or industrial system to isolate the sources of effluent toxicity, specific causative pollutants, if possible, and determine the effectiveness of pollution control options in reducing the effluent toxicity. The proposed project will also evaluate the link between in-plant toxicity monitoring tools (MICROTOX and respirometry tests) and the EPA's ecosystem bioassay tests used on plant effluents for monitoring toxic discharges into receiving waters. A similar project will be undertaken at an industrial site.

The proposed TRE will provide perspective on Baltimore's ongoing toxics management program at Patapsco. More importantly, it offers important technical support for EPA's Water Quality-Based Toxic Control Policy by correlating in-plant toxicity assessments with effluent toxicity measured through bioassays and assisting in developing a TRE protocol for application nation-wide.

PROGRAM - PA Pretreatment Delegation

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Develop a proposal for delegation of EPA's Pretreatment Program to Pennsylvania.

DESCRIPTION

Pennsylvania carries out a delegated NPDES Program; therefore, in accordance with federal requirements, we are also obligated to carrying out the Federal Pretreatment Program.

DER has developed a draft proposal for program delegation. A package of regulations was submitted to the State's Environmental Quality Board and approved as proposed rule-making on March 26, 1985. We anticipate receiving program delegation by the end of FY 86. Initial statewide program costs are estimated to be $645,000 in FY 87, and $415,000 in FY 88.

In the meantime, DER will continue to assist EPA Region III in implementing the program in Pennsylvania. Of the 93 municipal treatment plants in Pennsylvania that need a pretreatment program, 38 are in the Chesapeake Bay Drainage Basin - 17 have approved programs; 17 have submitted programs to EPA for approval; and 4 may need enforcement action to develop a program.

ANTICIPATED RESULTS

Delegation of EPA's Pretreatment Program to Pennsylvania by the end of Federal FY 1986; pretreatment programs in place for all 38 dischargers within the Basin by end of Federal FY 1986.

PROGRAM - PA Municipal Wasteload Management

See detailed writeup on this program under Appendix A, NUTRIENTS, Objective 1.

PROGRAM - MD Pretreatment

BUDGET PROJECTION

	86	87	88
Maryland	536,823	NA	NA

PURPOSE

Analyze indirect discharges through industry chemical process evaluation and sampling to prevent toxics from reaching surface or groundwaters via sanitary sewage systems. A significant number of industries discharge to sanitary sewer systems with little knowledge of the waste's properties, its potential effect on the toxicity of the plant discharge and on its sludge, or the ultimate impact on the waters of the State.

DESCRIPTION

This initiative has three components that will be enhanced in FY 86: enforcement, program development, and laboratory services. An additional engineer will be added to the enforcement staff to assure that industries involved in pretreatment programs comply with their permits. Emphasis in FY 86 will also be placed on developing a data management system for the pretreatment program so that information can be organized and retrieved on the myriad of substances that must be tracked at high frequencies in pretreatment systems. The laboratory component will increase its staff by a lab helper and a steno clerk as well as some supplies and equipment in order to analyze the increasing volume of sewage treatment plant effluents and sludges for prohibited pollutants.

ANTICIPATED RESULTS

Finalize compliance schedules, monitor POTW program's implementation, and implement regulations.

PROGRAM - MD Construction Grants: Industrial Pretreatment Loans

	86	87	88
Maryland	1,500,000	NA	NA

PURPOSE

Make loans available to industry for the installation of equipment to pretreat their waste streams. This new State program, approved by the General Assembly in 1984, will also assist industries in complying with the pretreatment requirements of the Clean Water Act.

DESCRIPTION

Regulations will be promulgated in FY 85 for the industrial pretreatment loan program.

ANTICIPATED RESULTS

Several industrial firms, limited at present to electroplaters, will receive loans to purchase and install their pretreatment equipment.

Pretreatment of wastes by generating industries will enhance the efficiency of receiving sewage treatment plants and the quality of the waters of the State.

PROGRAM - VA NPDES: Compliance Monitoring

BUDGET PROJECTIONS

	84-86
Virginia	198,000

PURPOSE

Ensure compliance with state and federal water quality laws.

DESCRIPTION

Implemented by State Water Control Board, the program is designed to monitor major and minor discharges to ensure that they are in compliance with their NPDES permits; it involves annual effluent monitoring and quality grab sampling for each discharge, and performs approximately 290 surveys of major municipal and industrial treatment plant effluents.

ANTICIPATED RESULTS

Provide effluent quality data on permitted facilities to compare with self-monitoring reports and to provide indication of compliance with NPDES permit effluent limits.

PROGRAM - VA Pretreatment

BUDGET PROJECTION

	84-86
Virginia	200,000

PURPOSE

Analyze indirect discharges through industry chemical process evaluation and sampling to prevent toxics from reaching surface or groundwaters via sanitary sewage systems. A significant number of industries discharge to sanitary sewer system with little knowledge of the waste's properties, its potential effect on the toxicity of the plant discharge on its sludge, or the ultimate impact on the waters of the State.

DESCRIPTION

This project is being implemented by the State Water Control Board. Funds approved by the 1985 General Assembly for FY 85 will permit the SWCB to implement a full Statewide pretreatment program. Emphasis during the year will be program development and on securing approval of the State program by EPA.

ANTICIPATED RESULTS

Finalize compliance schedules in NPDES permits for applicable POTWs. Monitor implementation of POTW programs.

PROGRAM - DC Pretreatment

BUDGET PROJECTION

	86	87	88
DC	0	NA	NA

PURPOSE

Control the introduction of toxics and shock loads to Blue Plains WWTP.

DESCRIPTION

The Department of Public Works had developed a Sewer Use Ordinance which will be introduced to the District Council in FY 85. The ordinance will prohibit the discharge to the sewer system of many types of wastes, but does not contain a permitting system. The District of Columbia Water Pollution Control Law does contain provisions for establishing a pretreatment permitting system. Promulgation of regulations for the pretreatment permitting system by the Department of Consumer and Regulatory Affairs is projected for FY 86.

ANTICIPATED RESULTS

The program will regulate the substances that can be discharged into the sewers and help prevent WWTP upsets from shock loads. It will also control increases in heavy metals and toxics delivered to the WWTP.

TOXICS

Objective 3: Reduce the discharge of metals and organics from industrial sources.

PROGRAM - EPA Technical Support Document For Water Quality-Based Toxics Control

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Provide procedural recommendations for identifying, analyzing, and controlling adverse water quality impacts caused by the discharge of toxic pollutants. The document is meant to support implementation of the EPA national "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", described above.

DESCRIPTION

Development of techniques to assess and control toxics have focused primarily on specific chemicals. Techniques based on biological measurement of toxic pollutants, although developed for many years, have not been widely used to assess the discharge of toxic pollutants in effluents. The national policy recommends an integrated approach consisting of both techniques. This document provides guidance on the integration of techniques and provides more specific guidance on the application of biological techniques.

ANTICIPATED RESULTS

Consistent reference tool for state permit writers summarizing existing EPA guidance on application and interpretation of biological and toxic chemical assessment techniques. Several orientation workshops have been held, and a pilot implementation project applying the guidance is scheduled for sometime in FY 85.

PROGRAM - FWS NPDES Permit Review

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Document inaccurate or inadequate NPDES permit conditions which contribute to excessive releases of toxic materials, working closely with states or DOD.

DESCRIPTION

After review of suitable candidate NPDES outfalls (with other agencies) select appropriate ones for study. Using selected types of resident organisms and sediments, collect for analysis inorganic and organic compounds above and below outfalls. Samples will be sent to appropriate labs for analyses. After analysis of results, recommendations for revision of NPDES stipulations on toxic substances will be made, where indicated and based on high accumulations and comparisons with literature or current standards. Also, assistance will be provided to states and EPA in developing possible new standards and criteria for toxic materials affecting Bay organisms. A literature search and recommendations for bioassays will be provided.

ANTICIPATED RESULTS

More realistic conditions on selected NPDES permits resulting in reduced discharges of toxic materials, and eventual lower bioaccumulations.

PROGRAM - PA NPDES Program

See detailed writeup on this program under Appendix A, NUTRIENTS, Objective 4.

PROGRAM - MD NPDES: Industrial Discharge Compliance

BUDGET PROJECTION

	86	87	88
Maryland	675,987	NA	NA

PURPOSE

Inspect major industrial NPDES permittees by the end of 1987, two to four times per year, rather than once per year. Minor industrial permittees will be inspected at least twice per year. Compliance monitoring will be conducted annually at all major industries, and at fifteen percent of the minor industries. A computerized data bank of inspection and other permit data will be established, and its management carried out by one additional person hired during FY 85.

Currently all major industrial NPDES permit facilities are inspected and sampled for compliance with permit conditions only once per year. More frequent inspections and more frequent compliance sampling, followed by enforcement actions when necessary, are essential to protecting the aquatic resources of the receiving waters.

DESCRIPTION

This initiative provides more effective and frequent enforcement of permits governing the direct discharge of industrial effluents into the Bay and its tributaries. The FY 86 enhancement will provide additional field engineers to conduct inspections of industrial plants that discharge wastewaters into streams, rivers, and the Bay. An Assistant Attorney General will provide legal support to improve enforcement effects against industrial violators of the State's water pollution control laws. Additional operating resources are requested in FY 86 to enable evaluation of existing operations and design of a computerized system.

ANTICIPATED RESULTS

Implement fee schedule.
Increase inspection and enforcement activity.

TOXICS

Objective 4: Reduce chlorine discharges to critical finfish and shellfish areas.

PROGRAM - PA Seasonal Disinfection

BUDGET PROJECTION

	86	87	88
Pennsylvania			

PURPOSE

Reduce, through seasonal disinfection, disease-producing organisms.

DESCRIPTION

Chapter 95.7 of DER's Rules and Regulations requires effective disinfection to control disease-producing organisms (production of an effluent which will contain a concentration of greater than 200/100 ml of fecal coliform organisms as a geometric average value not greater than 1000/100 ml of these organisms in more than 10% of the samples tested). Chapter 95.2 requires that these concentrations be met during the swimming season (May 1 through September 30).

Chapter 93.7 of DER's Rules and Regulations specifies that for the period October 1 through April 30 the fecal coliform level shall not exceed a geometric mean of 200/100 ml based on 5 consecutive samples collected on different days.

These regulations allow for seasonal disinfection, taking into account that a greater degree of protection is required during the swimming season.

ANTICIPATED RESULTS

Adequate protection of designated uses and reduced chlorination requirements during the non-swimming season.

PROGRAM - MD Chlorine Removal

BUDGET PROJECTION

	86	87	88
Maryland	600,000	2,000,000	1,400,000

PURPOSE

Eliminate the toxic impacts of chlorinated wastewater treatment plant discharges. A body of scientific evidence has developed over recent years which demonstrates that chlorine, even in small concentrations, is toxic to certain sensitive aquatic species and toxic to other species in their sensitive growth stages. While most of the evidence on toxicity is laboratory-based and is not field proven, there is evidence to raise genuine concern over environmental damage caused by the chlorination process. Therefore, as a general policy, disinfection should be continued. However, where chlorine is used for disinfection, dechlorination processes should be installed.

DESCRIPTION

The program includes the following components:

State water quality laws have been modified to establish dechlorination requirements; the approach has changed from a stream-based standard to an effluent-based requirement.

Funding support is available to assist affected public operators in their effort to retrofit dechlorination equipment to their wastewater treatment systems.

Discharge permits are being modified to specify the dechlorination requirement, and reasonable schedules established for treatment plant compliance.

The capital budget allowance for FY 86 includes $600,000 for projects to remove excess chlorine before treated sewage is discharged from publicly owned sewage treatment plants.

ANTICIPATED RESULTS

The $600,000 requested, combined with the $1,000,000 funded last year, will enable grants to be made at approximately 9 sewage treatment plants, 5 of which discharge directly to the Bay and its tributaries.

PROGRAM - VA Control of Chlorine at POTWs

BUDGET PROJECTION

	84-86
Virginia	$1,700,000
Local	255,000 to 425,000

PURPOSE

Reduce chlorine discharges to critical finfish and shellfish areas.

DESCRIPTION

This program, implemented by State Water Control Board, is designed to provide cost-share funds to localities to install dechlorination equipment (or other disinfection technology) at POTWs currently discharging significant quantities of chlorine to critical finfish and shellfish areas.

In State 84-86 biennium, SWCB will award $1.7 million to localities. Local cost share will range from $255,000 to $425,000 depending on technology used.

ANTICIPATED RESULTS

Improvement of shellfish and finfish populations by reducing the amount of chlorine discharged. Demonstrate the technology of dechlorination and alternative disinfection to Virginia.

PROGRAM - DC Dechlorination

BUDGET PROJECTION

	86	87	88
DC	0	0	0
EPA	0	0	0

PURPOSE

Eliminate residual chlorine in the Blue Plains effluent discharged to the Potomac River.

DESCRIPTION

Following recommendations of a facility plan, a system is being designed and constructed to treat the residual chlorine in the effluent discharge resulting from the chlorination at various stages in the treatment process required for disinfection. The dechlorination process will involve chemical neutralization of the chlorine using SO2. Improvements will be made for more efficient and safe use of chlorine at the Treatment Plant.

In 1985, $311,392 of DC and $934,176 of EPA funds have been allocated to the project.

ANTICIPATED RESULTS

Elimination of excessive chlorine in the Blue Plains effluent will result in significant reduction of the present chlorine load to the tidal Potomac and improve the environment for the juvenile fish.

TOXICS

Objective 5: Reduce the levels of metals and organics in urban and agricultural runoff.

States may use Chesapeake Bay Implementation Grant monies to help meet this objective.

PROGRAM - EPA National Urban Runoff Program

BUDGET PROJECTION

	86	87	88
Federal	0*	0	0

*Projects are being completed in FY 85. No additional funding is anticipated.

PURPOSE

Examine urban nonpoint source pollutant loadings and the effectiveness and costs of various best management practices.

DESCRIPTION

Nationwide, twenty-eight urban areas representing different climates, geographic areas and hydrologic regimes were selected for intensive study of the urban nonpoint source problem and associated control measures. Two projects were completed within the Chesapeake Bay drainage area. First the Jones Falls Watershed Urban Stormwater runoff project examined the problems associated with urban stormwater runoff in a densely populated section of Baltimore. Second, the Metropolitan Washington Council of Governments NURP Project investigated control measures in developing areas.

ANTICIPATED RESULTS

Federal, State and local agencies were provided with credible information upon which to base policy decisions regarding urban stormwater runoff and its control, identification of priority pollutants present in urban runoff, and evaluation of their potential threat.

PROGRAM - PA Stormwater Management Program

See detailed writeup on this program under Appendix A, NUTRIENTS, Objective 6.

PROGRAM - PA Department of Agriculture Funded Research Projects

PROJECTION BUDGET

	86	87	88
Pennsylvania	25,000		
Federal			
Other			

PURPOSE

Determine the concentrations of NO3N and PO4P in surface runoff and purcolation from cornfields along the Susquehanna River tributaries contributing excessive amounts of these elements to the river. Also to develop management systems with minimum chemical monitoring to minimize N and P contamination of agriculture drainage water without reducing corn yields.

DESCRIPTION

This research program is implemented by the Pennsylvania State University, College of Agriculture, Department of Agronomy. Funding is provided by the Pennsylvania Department of Agriculture's research grants to research institutions. The project began on October 1, 1983. Total funding for this three-year project amounts to $72,800.

ANTICIPATED RESULTS

Will allow the farm manager to select management practices that provide sufficient nutrients to optimize crop yield while limiting nutrient losses to surface runoff and groundwater in the Lower Susquehanna River Basin.

PROGRAM - PA Pesticide Use Profile Program

BUDGET PROJECTION

	86	87	88
Pennsylvania	20,000		

PURPOSE

Identify the amounts and types of insecticides, herbicides and fungicides used in specific watersheds associated with the Chesapeake Bay Abatement Program.

DESCRIPTION

An accelerated Pesticide Management Program will be initiated by the Pennsylvania Department of Agriculture. A pesticide use profile study of the target region will establish a foundation for initiating a "Proper Pesticide Use Program." A new Pennsylvania Department of Agriculture employee will serve as coordinator for the Chesapeake Bay Program on pesticide matters.

ANTICIPATED RESULTS

A determination of the sources and quantities of pesticides currently being used in a typical farming area of Southcentral Pennsylvania. This information can be used to develop future educational programs.

PROGRAM - PA Pesticide Use Educational Program

BUDGET PROJECTION

	86	87	88
Pennsylvania	20,000	21,000	22,050

PURPOSE

Initiate an education program to bring all pesticide users to a common level of awareness as to the potential impact pesticides may represent to the Chesapeake Bay.

DESCRIPTION

During and following the completion of the pesticide use profile by the Pennsylvania Department of Agriculture, information gathered would be used to develop proper pesticide use educational programs in the Lower Susquehanna River Basin.

ANTICIPATED RESULTS

Through the educational program, there would be an increase in the proper use of pesticides, thus reducing the impact they may have on the Chesapeake Bay. It is anticipated that as this program develops, knowledge gained can be shared with other pesticide users throughout the Commonwealth.

PROGRAM - MD Stormwater Management

	86	87	88
Maryland	1,631,000	1,700,000	1,700,000

PURPOSE

Implement a Statewide stormwater management program. The EPA Bay Study identified urban runoff and runoff from developing areas as a major source of nutrients, toxics, and sediment to the Bay system. On July 18, 1983, the Department of Natural Resources promulgated rules and regulations pursuant to State law, which establish criteria and procedures for local government to follow in implementing a stormwater management program by July 1, 1984. A local stormwater management program must have: An Administration-approved stormwater management ordinance in effect; Stormwater management planning and approval procedures that provide: (1) stormwater management for every land development subject to the law, and (2) the ability and the information necessary to review proposed installation and maintenance measures for stormwater management, and inspection and enforcement procedures that ensure the proper construction and maintenance of approved stormwater management measures.

In general, local governments are inadequately staffed to handle all aspects (plan approval, inspection and maintenance) of implementing a stormwater management program. The new Statewide program will require a substantial increase in effort even for those jurisdictions that currently have a stormwater management program in effect.

DESCRIPTION

This program provided $1.7 million in grants for FY 85 to local jurisdictions to assist in implementing the Statewide Stormwater Management Law. A similar amount has been requested for FY 86. In FY 85, grant agreements were executed and funds awarded to nineteen counties and six municipalities for a total of $1,175,416.

Allegheny County	$ 46,665	Queen Anne's County	$38,162
Anne Arundel County	$134,097	Somerset County	$ 8,790
Baltimore County	$ 91,556	St. Mary's County	$71,736
Calvert County	$ 32,378	Talbot County	$24,876
Carroll County	$ 28,817	Wicomico County	$32,895
Charles County	$ 58,292		
Dorchester County	$ 30,446		
Frederick County	$ 10,552		
Garrett County	$ 24,877	Annapolis	$33,021
Harford County	$ 77,763	Baltimore City	$78,637
Howard County	$ 82,217	Bowie	$ 6,144
Kent County	$ 22,419	Cambridge	$20,664
Montgomery County	$ 33,835	Ocean City	$32,422
Prince George's County	$118,366	City of Rockville	$35,789

An evaluation of the obligation and disbursement of grant funds to date was completed and the Grantees were advised that supplemental grant funding would be made available for additional expenses incurred (only in fiscal year 1985) that are indirect support of new or expanded stormwater management programs.

The Water Resources Administration will continue local stormwater management program reviews and approvals in remaining jurisdictions (20 small municipalities) and determine the need for legal action in any jurisdiction that fails to take positive steps to comply with the requirements of the Stormwater Management Law.

ANTICIPATED RESULTS

Compliance with the Statewide Stormwater Management Law in all counties and municipalities in the State. Significant reductions in nutrients, toxics, and sediments reaching the Bay and its tributaries. Decreased streambank scour.

PROGRAM - MD Stormwater Management: Best Management Practices for Existing Urban Areas

BUDGET PROJECTION

	86	87	88
Maryland	1,750,000*	NA	NA

*Carryover from FY 85.

PURPOSE

Demonstrate the cost and effectiveness of various methods of controlling stormwater runoff from existing urban areas. The EPA Study documented that flushing of pollutants (e.g., stormwater from rooftops, cars, parking lots) from existing urban areas contributes significant amounts of sediments, nutrients and toxics to the Bay. Throughout the State, 700,000 acres of land are now developed. The is no Statewide program to retrofit existing urban areas to reduce runoff pollution. Best management practices techniques have not been fully developed. The knowledge gained from this initiative is intended to lead to a permanent program over the next several years as cost-effective practices and overall cost are determined.

DESCRIPTION

This initiative established a demonstration program to ascertain the cost and effectiveness of various methods of solving stormwater runoff problems created by existing development. Financial assistance in the form of grants is being provided to local governments to install best management practices to reduce pollution from stormwater runoff in existing urbanized areas. This program is administered by the Office of Environmental Programs in consultation with other agencies. Best management practices are also being provided to reduce pollution from stormwater runoff from State-owned facilities. This latter effort will be administered by the Maryland Environmental Services in consultation with other agencies.

The General Construction Loan of 1984 authorized $750,000 for stormwater retrofit of State facilities. The Chesapeake Bay Water Quality Loan Act of 1984 authorized $1 million for grants to local governments for demonstration projects.

Basic standards and criteria for demonstration program were developed and agreed upon. Preliminary proposals were received from 18 local governments. Drafts of local grant regulations were developed and circulated to State agencies for review. Eight potential projects were identified. Inspections of all sites were made by an interagency work group. Evaluations of each site was conducted and none found to be acceptable. A questionnaire was developed and forwarded to over 200 State-owned facilities. The 110 responses were screened based on the initiative's directives with 45 responses passing.

Follow-up screening by telephone or individual site visits yielded six facilities with potential stormwater problems. The initial retrofit project is planned to be the Security Boulevard and Baltimore Beltway location of State

Police Barracks "K" and the State Roads Commission salt storage facility. Salt laden runoff, erosion, sedimentation and related problems are now occurring. Preliminary corrective actions were developed and are being forwarded to these agencies for review. The balance of State agency projects to be retrofitted will be identified.

ANTICIPATED RESULTS

Reduction of nutrients, sediment and toxics from existing developed areas.

PROGRAM - DC Stormwater Management Regulatory Program

BUDGET PROJECTION

	86	87	88
DC	250,000	250,000	250,000
EPA	250,000	250,000	250,000

PURPOSE

Control nonpoint source pollution by requiring BMP's for new land development and redevelopment and encouraging voluntary efforts by homeowners.

DESCRIPTION

In FY 85 development of regulations and BMP criteria was initiated for controlling urban runoff from new development and redevelopment. These regulations are projected to take effect in FY 86. The regulations will require developers to maintain runoff at predevelopment or lower quantities, thereby reducing the sediment, heavy metals and nutrients transported to the surface waters. Additional benefits will be a smoothing of the hydrograph of many of the small tributaries in the District which will reduce scour and bank erosion. Each new development project will be reviewed for compliance with the regulations and a permit issued for the construction and maintenance of the BMP's. After installation, the BMP's will be periodically inspected for proper operation and maintenance. The program will be developed in conjunction with the existing erosion control program and Soil Conservation District.

ANTICIPATED RESULTS

Urban runoff from the District of Columbia, excluding combined sewer overflows, contributes roughly 40,000 pounds of phosphorus, 40,000 pounds of copper, mercury, lead and cadmium and 40 million pounds of suspended solids.

The program is conceived to be a long-term permanent effort with gradual reductions in pollutant loadings. These reductions will probably be less than one percent per year but will, over a period of years, result in a substantial cumulative reduction.

TOXICS

Objective 6: Minimize water pollution incidents and provide adequate response to pollutant spills.

U.S. Coast Guard, NOAA, EPA and FWS participate in responding to pollution spills, as well as PA, MD, VA and DC.

PROGRAM - PA Emergency Response to Pollution Events

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Prevent the occurrence of pollution events (spills) to the extent possible and to minimize the effect of pollution incidents that occur.

DESCRIPTION

This program is being implemented by the Department of Environmental Resources as follows:

1. Emergency situations are promptly investigated by the field staff, who have received training in responding to such situations. Each Regional Office has a 24 hour number for reporting pollution events, and there is back-up coverage in the Central Office. The field staff equipment includes tools, booms, and absorbent materials to contain some types of spills. In addition, the Department is in the process of obtaining specially equipped vehicles for emergency response.

2. Prevention, preparedness, and contingency (PPC) plans are required for NPDES facilities and are reviewed by the Department as part of the permit process. In addition, high risk activities (such as transportation of pollutional materials by rail or truck) require a PPC plan upon notice from the Department. Enforcement actions resulting from pollution events include a requirement to develop or enhance PPC plans to prevent similar occurrences in the future.

3. The Pennsylvania Water Emergency Response Manual is distributed to agencies and industries potentially involved with pollution events. This manual contains up-to-date phone numbers of agencies and clean-up contractors, notification requirements, and instructions on prevention, containment, and clean-up of spills.

ANTICIPATED RESULTS

Prevent spills or minimize the damage caused by spills to the extent possible.

PROGRAM - MD Emergency Response to Oil Spills

BUDGET PROJECTION

	86	87	88
Maryland	425,000	500,000	750,000

PURPOSE

Reduce the number of inland and water-borne oil spills in the State; restrict and contain the spread of spilled oil; eliminate the discharge of petroleum from underground storage tanks; make equipment and supplies available in emergencies for the containment and cleanup of oil spills; and provide training in the control, containment, and cleanup of oil spills to fire departments, state highway administration personnel, private and public schools, the oil industry, and companies transporting oil.

DESCRIPTION

The oil control program is being implemented by the Department of Natural Resources on a Statewide basis. This program issues oil terminal facility licenses, oil operations permits and oil vehicle operators certificates as well as follow-up inspections and enforcement activities. A 24-hour emergency number is available and a specially trained spill response team is maintained. Spill control and cleanup equipment is pre-positioned in key areas throughout the State. Financial support for the program is derived from the Maryland Oil Disaster, Containment, Cleanup, and Contingency Fund supported by oil storage facility fees.

ANTICIPATED RESULTS

Continue to reduce the number and environmental damage caused by discharges of oil to the waters of the State.

PROGRAM - VA Emergency Response to Pollution Events

BUDGET PROJECTION

	84-86
Virginia	736,410

PURPOSE

Minimize the effects of oil spills, etc.

DESCRIPTION

Implemented by State Water Control Board and the Department of Emergency Services , this program is designed to maintain a Statewide response capability for the investigation, control and mitigation of water pollution incidents. This includes oil spills, hazardous materials and fish kills. Respond to investigate 900 pollution complaints, including 550 oil spills, 35 hazardous material, and 110 fish kills.

ANTICIPATED RESULTS

Minimize environmental impacts from oil spills, etc., through a quick response program for investigations and cleanup. Assess fines on person(s) responsible, as appropriate.

PROGRAM - DC Oil Spill Response

BUDGET PROJECTION

	86	87	88
DC	NA	0	0

PURPOSE

Acquire equipment and supplies, and establish a contingency fund for containing and removing oil and hazardous material spills in the Potomac and Ancostia Rivers.

DESCRIPTION

The District of Columbia Water Pollution Control Act became effective in March 1985. The Act authorized the Mayor to procure equipment and establish a contingency fund for responding to oil and chemical spills in the waters of the District .

ANTICIPATED RESULTS

There are an average of twenty-seven spills per year reported in the District. Most of these are gasoline or oil with one hazardous spill per year. The volume of gasoline or oil spilled is generally less than 500 gallons and about a third of these are cleaned up by the spiller. The remainder have historically been cleaned up by the U.S. Coast Guard. By establishing District capability, the response time will be reduced significantly resulting in faster containment and less material escaping to the open water.

APPENDIX C - LIVING RESOURCES IMPLEMENTATION PROGRAMS

LIVING RESOURCES

Goal: Provide for the restoration and protection of the living resources, their habitats and ecological relationships.

Summary Of Programs

The National Oceanic and Atmospheric Administration (NOAA), Fish and Wildlife Service (FWS), Corps of Engineers (COE), Soil Conservation Service (SCS), Environmental Protection Agency (EPA), and U.S. Geological Survey (USGS) are working to restore and protect the Bay's living resources and their habitats. At least $1.5 million is spent annually to regulate the fisheries industry, assess and enhance fish stock, and ensure that habitats, such as wetlands, are protected. Working cooperatively with states and local entities, federal agencies are engaged in data management, monitoring and research projects around the Bay.

In addition to developing comprehensive fisheries management programs, states are replenishing fin and shellfish stocks, building hatcheries and fishways, and "planting" shellfish. In FY 86 alone, the states will spend about $14 million on these efforts. Furthermore, a number of state programs are controlling shoreline erosion, protecting wetlands, and planting submerged aquatic grasses. Approximately $12 M to restore and protect habitats will be expended by states in FY 86.

The implementation programs in Appendix C describe many of the federal and state programs to restore and protect the Bay's living resources, their habitats and ecological relationships. Efforts to reduce nutrients and toxic substances from entering the Bay, described in Appendices A and B, respectively, will contribute largely to the health of the living resources. Each program in this Appendix contains a budget projection (when available), a purpose, a brief description, and results anticipated from the program.

APPENDIX C: LIVING RESOURCES

Listing of Program Titles	Page Number
NOAA Fishery Conservation and Management Act (Magnuson Act)	3
NOAA Baywide Stock Assessment	4
NOAA Chesapeake Bay Implementation: Fishery Statistics	5
NOAA Chesapeake Bay Implementation: Shellfish Habitat Evaluation	6
NOAA Chesapeake Bay Implementation: Assessment of Contaminant Body Burdens and Biological Effects	7
FWS Resource Contaminant Assessment	8
PA Striped Bass Stocking Program	9
MD Fisheries Management Program	10
VA Commercial Fisheries Management	11-12
VA Commercial Fisheries Enforcement	13
VA Management Of Public Health Aspects Of Shellfish Production	14
VA Shellfish Grounds Surveying And Mapping	15
DC Fisheries Management	16
FWS Evaluation of Stocking of Striped Bass	18
PA Restoration of American Shad To The Susquehanna River	19-20
MD Finfish (Intercept Hatchery)	21
VA Fishways for Anadromous Species	22
VA Restocking Striped Bass	23
VA Artificial Reef Construction	24
MD Oysters	26
MD Construction Grants: Existing Special Water Quality Needs or Public Health	27
VA Oyster Conservation and Repletion	28
VA Integrated Shellfish Area Management	29
VA Improvement of Deficient Shoreline Residential Sanitation Systems	30
FWS Endangered Species Program	32
PA Wildlife Restoration/Improvement	33
MD Water Fowl Protection And Management: Ducks	34
VA Waterfowl Management	35
VA Nongame and Endangered Species Program	36
VA Marine Turtles	37
Joint Federal Agency Hydrilla Control Evaluation	39
MD Submerged Aquatic Vegetation Protection and Restoration	40
VA Re-establishment of Submerged Aquatic Vegetation	41
NOAA Estuarine Sanctuaries Program	43
FWS Fish and Wildlife Coordination Act	44
FWS Fish and Wildlife Permit Review: 404	45
FWS Permit Review: NPDES	46
FWS National Wetlands Inventory	47
FWS Reviews: State Highways, Transmission Lines, Pipelines, etc.	48
PA Wetlands Regulation Through Implementation Of The Dam Safety And Encroachment Act	49
MD 401/404 Water Quality Certification Program	50

APPENDIX C: LIVING RESOURCES

Listing of Program Titles	Page Number
MD Non-Tidal Wetlands Program	51
MD Retention of Existing Forestland	52
MD Conservation Easements	53
VA Wetlands and Bottomlands Management	54
DC Anacostia Watershed Restoration Strategy Agreement	55
COE Chesapeake Bay Shoreline Erosion Study	57
PA Sediment and Erosion Control	58
MD Shoreline Improvement Grants Program	59
MD Shoreline Erosion - (Operating Costs)	60
MD Shoreline Erosion - Capital Costs	61
VA Shoreline Erosion Advisory Service	62
VA Forest Land Management	63
COE Proposed Susquehanna Drought Management Study	65
MD Freshwater Conservation	66
VA Water Resource Planning and Management	67
VA Surface Water Investigations	68

LIVING RESOURCES

Objective 1: Develop or enhance state fisheries management programs to protect the finfish and shellfish stocks of the Bay.

PROGRAM - NOAA Fishery Conservation And Management Act (Magnuson Act)

BUDGET PROJECTION

	86	87	88
Federal	*		

*Funds for Chesapeake Bay are not separated from the National program.

PURPOSE

Administer the Magnuson Fishery Conservation and Management Act (Magnuson Act) of 1976. The Act is designed to assure that fishing stays within sound biological, economic and other limitations, and that U.S. commercial and recreational fishermen have the opportunity to harvest all the fishery resource within these limitations. The law authorizes the federal government, in cooperation with fisherman and other interested citizens, to manage most fishing within the Exclusive Economic Zone. The coastal states continue to be responsible for resource management within the 3-mile limit.

DESCRIPTION

The National Marine Fisheries Service is assisted in its administration of the Magnuson Act by eight Regional Fishery Management Councils. These councils, made up of members from government, commercial, recreational, environmental, consumer, and other interests, plan whether and how each fishery should be managed in view of relevant scientific, social, and economic factors. The plans contain objectives for each fishery and appropriate management measures such as gear restrictions and area and seasonal limitations. Maryland, Virginia and Pennsylvania are represented on the Mid-Atlantic Fishery Management Council. The Council intends to consider in 1985 whether management plans should be developed for important Chesapeake Bay species such as striped bass and bluefish. The key policy question is whether the federal government should promulgate regulations for species which are predominately fished in coastal nearshore waters and spend a little time in federal jurisdiction. The Magnuson Act provides authority to manage the harvest of these species only when it occurs predominately in federal jurisdiction.

ANTICIPATED RESULTS

Development of fishing management plans for those species under jurisdiction of the Magnuson Act; these plans seek to provide optimum yields while maintaining a healthy resource stock.

PROGRAM - NOAA Baywide Stock Assessment

BUDGET PROJECTION

	85	86
Federal	400,000-550,000	

PURPOSE

Assess finfish and shellfish resources. The key management question that has been posed by the Chesapeake Bay Program regarding finfish and shellfish resources is: What are the levels of existing stocks of major economic species in Chesapeake Bay and what are the major environmental factors affecting both variability and long-term recruitment of these stocks? NOAA's assessment effort will begin to document the status of economically important Chesapeake Bay species to determine major environmental stresses on these stocks and develop methodologies to assess and predict impacts of identified stresses on Chesapeake Bay's living marine resources.

DESCRIPTION

The stock assessment will consist of the following components:

- Documentation of the relative abundance of economically important species. This will include development and implementation of a stock assessment plan which considers selected species from a Baywide perspective.

- Description of fish and shellfish spawning patterns. This will include development of a general sampling design to establish the magnitude, timing, and density of spawning, document major trends in spawning and survival of eggs, and provide estimates of adult spawning biomass. Effects of physical events will be evaluated.

ANTICIPATED RESULTS

These data will allow development of a Baywide state and federal stock assessment for selected commercial species, which will aid in developing estimates of mortality due to fishing and other anthropogenic factors and which allows for the assessment of impacts of habitat modification.

PROGRAM - NOAA Chesapeake Bay Implementation: Fishery Statistics

BUDGET PROJECTION

	85	86	87
Federal	200,000		

PURPOSE

Provide statistics which will help to understand the impact of habitat changes on fishery resources. Such data are necessary to establish historical use and benefits of the resources and to assess the status of resources when used in conjunction with other data. NOAA's fishery statistics program is designed to improve Virginia's and Maryland's existing data collections for commercial and recreational species and to link the Chesapeake statistics collected by the states and NMFS with the Northeast Regional Marine Fisheries Information System.

DESCRIPTION

These projects will be carried out in cooperation with the states, and involve the following components:

- Increased participation in NMFS annual marine recreational fisheries survey by Virginia and Maryland to document recreational harvest of marine species;

- Improve Maryland's data collection system, using data from dealers and commercial fishermen;

- Increase sampling for bluefish and weakfish in Virginia;

- Establish data communication link between Virginia and NRMFIS at Woods Hole, through purchase of additional hardware and software; and

- Develop an economic data base describing Virginia's harvesting sector.

ANTICIPATED RESULTS

These projects will assist the states and federal government in estimating harvest, determining economic benefits from fishery activities and developing appropriate models and hazard assessments useful in managing habitat quality and waste discharges.

PROGRAM - NOAA Chesapeake Bay Implementation: Shellfish Habitat Evaluation

BUDGET PROJECTION

	85	86	87
Federal			

PURPOSE

Document the extent of Chesapeake Bay which has reduced water quality, and the possible effects on growth and production of oysters and other bivalves. Oysters and other bivalves in Chesapeake Bay have been reported to be in severe decline. Certain information indicates that a primary cause of the decline is overfishing; however, natural and anthropogenic environmental factors have been noted to be significant in certain areas of the Bay, especially as these might affect the ability of oysters to reproduce set, and grow to harvestable size.

DESCRIPTION

It is proposed that there be an inter-state/interagency program designed to use existing data, as well as new data coming forth from research and monitoring, to document the factors which affect oyster and other bivalve populations and the relative importance of the various factors or variables. Attempts will be made to correlate existing information on habitat quality with information on the condition of oysters and other economically important bivalves.

ANTICIPATED RESULTS

Principal products from this program would include 1) information on steps to be taken to improve habitat quality, which would lead to increased oyster production; and 2) information that could be used in hazard assessments and predictive models, as well as for direction of future research, i.e. FY 86 and beyond.

PROGRAM - NOAA Chesapeake Bay Implementation: Assessment of Contaminant Body Burdens and Biological Effects

BUDGET PROJECTION

	85	86	87
Federal	250,000-400,000		

PURPOSE

Assess effects of toxicants on living resources. The EPA Chesapeake Bay Program has confirmed that many areas of the Bay are contaminated with toxic substances. However, it is difficult to relate environmental levels of toxicants to declines in living resources, in great part due to the nature of the data. Of critical importance for understanding the relations of contaminants in sediments and water is the demonstration of correlations between body burdens and levels of contaminants with suspended matter and in sediments. This should be accomplished in conjunction with the EPA and through an expansion of the NOAA Northeast Monitoring Program (NEMP) and the NOAA Status and Trends (S&T) Programs in Chesapeake Bay.

DESCRIPTION

Sampling will be concentrated in areas where available information indicates a high potential for toxic contamination (proximity to sources, hydrologic or sediment characteristics) and which represent important spawning and nursery habitat. Methodologies will be basically the same as NOAA's S&T program, but with additional stations sampled seasonally. Important components include:

- improve data on contaminant loading, siltation and hypoxia in the environment;
- determine contaminant body burdens for species and life stages; and
- integrate these data with condition, distribution, and abundance of living marine resources.

These tasks will be coordinated with states and other federal agencies.

ANTICIPATED RESULTS

Information resulting from this program can be used to determine level of habitat quality necessary to support healthy populations for hazard assessment, and to guide cleanup efforts.

PROGRAM - FWS Resource Contaminant Assessment

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Detect trends in environmental quality as measured by chemical residues n fish and wildlife species and take action to eliminate adverse contaminant impacts through field operations. Relevant authorities include the 1976 Resource Conservation and Recovery Act (RCRA) and the general F & W Coordination Act.

DESCRIPTION

FWS carries out field investigations and surveys, collecting organisms for subsequent tissue analysis (this includes collections for the National Contaminant Biomonitoring Program Network, withh several Chesapeake Bay locations). FWS then prepares reports with recommendations for amelioration of toxic problems and sometimes carries out follow-up studies. As a special related activity, FWS also participates in or undertakes special preliminary resource surveys to determine impacts of "Superfund priority sites" on natural resources. This is under the 1980 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

ANTICIPATED RESULTS

By documenting harmful impacts of toxic sites and materials, or contaminated habitat and food chains, FWS aims to bring about eventual improvement in the impacts on fish and wildlife species, e.g., by recommending specific activities for cleaning up or mitigating the problem situations.

PROGRAM - PA Striped Bass Stocking Program

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other*	35,000	35,000	35,000

*Pennsylvania Fish Commission

PURPOSE

Provide a trophy sport fishery in the Conowingo Pool, Susquehanna River, utilizing a pelagic predator to feed on the abundant gizzard shad population.

DESCRIPTION

Maryland has requested that the Pennsylvania Fish Commission change its present Conowingo Pool management emphasis from the use of striped bass x white bass hybrids to purebred Chesapeake strain striped bass. The present Conowingo Hybrid sport fishery is excellent, but substantial numbers of these fish have been identified in the Bay, most of which probably originated from Conowingo stockings.

The Pennsylvania Fish Commission has agreed to accommodate Maryland's request that purebreds only be stocked in the Conowingo Pool to reduce the number of hybrids entering the Bay. Maryland, in turn, has agreed to provide fingerling striped bass through existing reciprocal agreements for this purpose.

ANTICIPATED RESULTS

Stocking purebred striped bass in the Conowingo Pool should eventually produce a trophy sport fishery comparable to that currently provided through annual hybrid stockings. Any escapement from the Conowingo Pool will enhance the depressed Chesapeake Bay stocks.

PROGRAM - MD Fisheries Management Program

BUDGET PROJECTION

	86	87	88
Maryland	146,194	NA	NA

PURPOSE

Develop fishery management plans. Increasing demand for certain Bay species by commercial and sports fishermen requires fisheries management based on modern, flexible population dynamics theory for equitable distribution among competing harvestors. Further, since water pollution control agencies need to evaluate their activities in terms of the health of living resources, it is necessary to prescribe habitat and water quality criteria.

DESCRIPTION

This program is designed to develop fisheries management plans for specific Bay species sought by commercial and sports-fishermen in order to maintain adequate population levels. Specific elements of this program will: provide resources to establish the fisheries database needed for plan development; establish a requirement to develop plans pursuant to the national standards of the Magnuson Act for specific species; require the definition of habitat and water quality criteria for specific species; and define and prescribe various fisheries gear among the possible strategies available for harvest restriction and distribution of stocks among harvesters.

ANTICIPATED RESULTS

Two staff positions made available by the initiative have been filled and a draft framework management plan for Maryland's eel fishery has been produced. A contract has been awarded to prepare a shad and river herring management plan and a draft striped bass management plan will be developed during the coming year. Field studies and new data analyses to provide background for the management plans will be developed.

PROGRAM - VA Commercial Fisheries Management

BUDGET PROJECTIONS

	84-86
Virginia	1,894,430
Federal	223,800

PURPOSE

Establish and implement a technical and systematic approach to fisheries management, thus providing citizens of the Commonwealth perpetual commercial and recreational utilization of common-property fisheries resources.

DESCRIPTION

Primary activities include the monitoring of Virginia finfisheries and the drafting of appropriate regulatory measures to minimize the commercial and recreational uses of the resources.

This program is responsible for the collection, processing, and dissemination of data relevant to Virginia's seafood industries and marine fisheries. It collects monthly findings and statistics by canvassing over 200 licensed seafood buyers located in 39 Tidewater counties. Annually it processes approximately 18,000 records documenting the commercial harvest of over 70 species of fish and shellfish. Also, it catalogues and analyzes data pertaining to over 8,000 licensed commercial fishermen, employing 40 different gear types. It maintains an oyster tax and harvest reporting system as means of determining levels and location of public and private oyster harvests.

The program also actively participates in the various regional and interstate organizations, such as the Mid-Atlantic Fisheries Management Council, Atlantic States Marine Fisheries Commission, and the Potomac River Fisheries Commission. Other task include liaison activity with intra- and interstate fisheries programs, the commercial and recreational fishing industries, organized user groups, and research/academic institutions.

ANTICIPATED RESULTS

Agency staff will develop comprehensive fishery management plans for oyster and striped bass with input from the Fisheries Management Advisory Committee. Automated fisheries management information systems will enhance the agency's capability in dealing with sensitive management issues by providing rapid access to historical series of fisheries statistics. This will allow agency staff to assess the biological and socio-economic impacts of existing regulations, or absence of regulation, and potential impacts of proposed regulations. VMRC and the Governor's Chesapeake Bay Initiative Package will jointly fund this program.

A new program will document the recreational harvest of marine species in Virginia waters. For some species, sport fishing can contribute significantly to the total catch. Without adequate information for both commercial and sport fishing activities, regulatory actions may unnecessarily restrict one or both

user groups. This program will be funded with federal grant and state matching funds.

PROGRAM - VA Commercial Fisheries Enforcement

BUDGET PROJECTION

	84-86
Virginia	5,503,300

PURPOSE

Enforce the Commonwealth's commercial fisheries laws and regulations.

DESCRIPTION

This program is being implemented by the Marine Resource Commission (MRC). Its primary function is enforcement of laws and regulations regarding commercial fishing, marine shellfish and recreational fishing below the fall line of all tidal waters and streams of the Commonwealth.

Under the Marine Patrol Act, subsidies are paid to various tidewater localities which generate local marine patrol services. The MRC also provides for a marine police dispatch center for the purpose of increasing emergency radio coordination in the timely deployment of state and local police vessels.

Enforcement personnel patrol the tidal waters of Virginia that are bordered by approximately 15,000 miles of shoreline. These personnel enforce all laws and regulations pertaining to the protection and conservation of natural marine resources, orders of the State Health Department pertaining to the harvesting and marketing of shellfish, and laws pertaining to the protection of both private and state property on tidal waters. They help enforce boating laws and regulations, provide transportation on the state waters to both state and federal officials in the conduct of their business, and report apparent violations of laws pertaining to encroachment in state-owned bottoms and wetlands.

In addition, marine inspectors assist persons and vessels in distress, sell commercial seafood licenses and permits to residents and nonresidents, receive and screen applications for the lease of oyster ground, assist in the oyster repletion program, and collect fees and taxes due for the inspection, harvest and sale of seafood products. Enforcement and regulation activities affect an estimated 6,500 persons engaged in commercial seafood harvesting and approximately 5,500 persons employed by processors. Enforcement personnel also provide assistance to the 140,000 registered boat owners, wherever needed, including search and rescue in emergency distress cases.

ANTICIPATED RESULTS

The agency makes approximately 19,000 inspections per year of seafood harvesting and landings.This work is done from vessels that patrol the waterways and at dockside landing areas. Program personnel will issue approximately 17,000 licenses for commercial seafood harvesting and approximately 3,000 special permits which are required for activities such as transporting and replanting shellfish from condemned waters, using dredges to harvest oysters on leased ground, etc.

PROGRAM - VA Management Of Public Health Aspects Of Shellfish Production

BUDGET PROJECTION

	84-86
Virginia	2,133,000

PURPOSE

Provide for quality shellfish and protect the public health.

DESCRIPTION

The program, implemented by the Department of Health, provides for the inspection of the state's 300 shellfish and crabmeat processing plants, the inspection of boats and trucks used in harvesting and transporting shellstock, the sanitary shoreline survey of shellfish fish growing areas, and the bacteriological analysis of oyster and crabmeat samples.

ANTICIPATED RESULTS

Insure that shellfish are safe for human consumption and meet the standards of the National Shellfish Sanitation Program.

PROGRAM - VA Shellfish Grounds Surveying And Mapping

BUDGET PROJECTION

	84-86
Virginia	794,350

PURPOSE

Encourage and support shellfish production by private leaseholders.

DESCRIPTION

This program is implemented by the Marine Resources Commission and is designed to assess the subaqueous beds of the Commonwealth for the planting and propagation of oysters and clams. It maintains all oyster ground lease records and surveys bottomlands used for public and private shellfish cultivation. The MRC leases approximately 107,000 acres of oyster planting ground to approximately 7,500 leases. The program maintains all records of leases applications, assignments, renewable and transfers. The surveying function involves the marking and maintenance of boundary lines of public and privately-leased oyster grounds. Created to stimulate private investment in shellfish propagation, the surveys allow precise location and recording of private leases and public oyster rocks. Surveys protect public access and the investments of private leases from encroachments. The Baylor Survey marks the boundaries of approximately 240,000 acres of naturally productive oyster ground which are open to public shellfishing under regulations established by the Commission. More than 1,500 base maps and 114,130 individual plats document the location of leased grounds.

ANTICIPATED RESULTS

The automated Oyster Ground Lease Management System will centralize ground rent billing. This system will eliminate the need for Law Enforcement Inspectors to collect rent payments personally from lessees residing in their Districts.

The Oyster Fishery Management Plan will analyze trends in private ground production. This program may stimulate private-sector investment in oyster propagation.

PROGRAM - DC Fisheries Management

BUDGET PROJECTION

	86	87	88
DC	65,000	120,000	120,000
DOI	195,000	360,000	360,000

PURPOSE

Manage the aquatic resources of the District of Columbia.

DESCRIPTION

The District is located at the tidal head of the Potomac; and, with the improvements in water quality from advanced wastewater treatment, there has been a dramatic increase in fisheries resources in the District. Striped bass, shad, herring and perch migrate up to the District each year and the juvenile fish use the District as a nursery ground. The resident species of gamefish include largemouth and smallmouth bass, walleye, catfish, eels, crappie and bluegill. With the increased concern over the stressed aquatic resources of the Bay system, the Mayor initiated a fisheries management program to protect the aquatic resources in the District. This program includes not only the fish but also the submerged aquatic vegetation which is slowly increasing within the District. In 1981 there was only one bed of Vallisineria in the District; by 1985, there were two additional beds established with a threefold increase in the bottom area colonized. During the same period Hydrilla became a prominent problem in the Potomac.

ANTICIPATED RESULTS

The regulations will be effective in FY 86 and serious consideration will be given to ensuring at least as stringent regulations for protecting anadromous fish as exist for the Maryland and Virginia portions of the Potomac Estuary. Protection will be afforded to beneficial submerged aquatic vegetation.

LIVING RESOURCES

Objective 2: Provide for the restoration of finfish stocks in the Bay, especially the abundance and diversity of freshwater and estuarine spawners.

PROGRAM - FWS Evaluation of Stocking of Striped Bass

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Evaluate the potential of hatchery production and stocking to restore fully self-sustaining striped bass migratory stocks to Chesapeake Bay.

DESCRIPTION

This will be a cooperative program between FWS and the states of Maryland and Virginia. The following tasks are included:

- The FWS will establish the position of Chesapeake Bay Fisheries Coordinator at Annapolis, Maryland;
- The cooperating agencies will jointly develop a Striped Bass Restoration Plan for Chesapeake Bay to include goal, objectives and milestones of this stocking program;
- The states will furnish FWS hatcheries with striped bass larvae from broodstock, captured in specific Chesapeake Bay tributaries;
- The FWS will keep the striped bass separated in the hatcheries as to tributary origin, will rear them until early autumn of each year, and will assist the states in distributing the resultant fish to waters of origin or waters agreed upon by all cooperators;
- For evaluation purposes, a proportional number of the hatchery-reared striped bass will be marked prior to release; and
- The states will evaluate survival and contribution of the hatchery fish to the population and to the spawning stock, and will provide a report on their evaluation to each other and the FWS, as necessary.

ANTICIPATED RESULTS

The information obtained will allow managers to assess the efficiency of stocking as a means of restoring self-sustaining striped bass populations to Chesapeake Bay. In addition, additional expertise will be developed in the hatchery, rearing, and stocking of this species in the Bay.

PROGRAM - PA Restoration of American Shad To The Susquehanna River

BUDGET PROJECTION

	86	87	88
Pennsylvania	50,000	60,000	70,000
Federal	140,000	150,000	160,000
Other	700,000	725,000	750,000

PURPOSE

Provide for the restoration of shad in the upper Chesapeake. Most of the Susquehanna River historically supported extensive runs of American shad and other migratory fishes prior to development of hydroelectric dams in the lower river. Over 300 miles of river habitat is suitable for reproduction and survival of shad, and technology exists for construction of useful fish passage facilities at high dams. If the long-range restoration goal is achieved, a multimillion dollar recreational fishery will develop in Pennsylvania and Maryland, and substantial contributions will be made to commercial fisheries in the upper Chesapeake Bay.

DESCRIPTION

The restoration program is guided by a 10-member committee with representatives from three state fishery agencies (MD, PA, NY), two federal agencies, four private utility companies, and the Susquehanna River Basin Commission. The U.S. Fish and Wildlife Service provides a full-time program coordinator.

The effort requires that a stock of shad be developed which is imprinted to the upper Susquehanna River and successfully migrates to the sea. As these fish mature in 3-5 years, they are expected to return to their natal river and be effectively transported past dams to reproduce. As the returning population grows each year, permanent fish passage facilities must be built at the dams to allow continued expansion of the self-perpetuating stock. During the next 10 years, principal shad stock contributions to the upper river are from hatchery production and natural spawning of transplanted adults from other rivers. Limited trap and transfer capability already exists on the lowermost dam, Conowingo in Maryland.

Most of this effort is funded by the utility companies which own and operate Conowingo, Holtwood, Safe Harbor, and York Haven hydroprojects. Funding levels were resolved through settlement agreements reached which state and federal resource agencies as part of project relicensing requirements.

ANTICIPATED RESULTS

When downstream migration problems are resolved and adequate adult shad capture capability is developed at Conowingo Dam, the population is expected to grow exponentially. Permanent fishway construction should commence once

stock rebuilding is demonstrated. Full restoration of 2-3 million shad using the Susquehanna River each year will likely take 20-40 years after fish passage is completed.

Ultimately, 200,000 to 400,000 recreational angling days may be ascribed to this restored fishery during spring spawning runs.

PROGRAM - MD Finfish (Intercept Hatchery)

BUDGET PROJECTION

	86	87	88
Maryland (operating)	166,088	NA	NA
Maryland (capital)	5,000,000	NA	NA

PURPOSE

Resolve biological problems associated with the decline of finfish through a combination of hatchery produced fish to increase brood stocks and sharply focused research programs. The present status of anadromous stocks in the Bay requires restrictive management measures on the harvesting of hickory and American shad and striped bass. The EPA Bay Study documented this decline and pointed to reproduction failure as one contributing factor. Hatcheries have a long history of aiding in restoration and enhancement of fish populations.

DESCRIPTION

Hatchery reproduction will be monitored and fish reared will be marked for subsequent recapture to determine survival rates. Research efforts will be integrated with water quality monitoring programs to develop correlative concepts for improvement of the environment and enhancement of fish stocks. An intercept hatchery will be constructed in the Upper Bay on State land capable of producing 10 million striped bass fingerlings per year.

ANTICIPATED RESULTS

Engineering site selection will be completed by Spring, 1985 and an initial design program will be released for contract bidding by July, 1985. During 1985, striped bass will be reared in all available existing State facilities to provide approximately 1.5 million fingerlings to sustain stocks in specific river systems.

PROGRAM - VA Fishways for Anadromous Species

BUDGET PROJECTION

	84-86
Virginia	35,000
State/Federal*	200,000

*Depending upon the availability of DJ funds and authority to breach dams.

PURPOSE

Provide fishways through existing dams on tidal rivers to permit anadromous species (striped bass, American shad, hickory shad, shortnose sturgeon, blueback herring, and alewives) to return to their historic spawning grounds.

DESCRIPTION

This program is being coordinated by the Commission of Game and Inland Fisheries. This agency is working with the Virginia Marine Resources Commission, National Marine Fisheries Service , U. S. Fish and Wildlife Service, and the Virginia Institute of Marine Science to provide passage of anadromous fish through dams on tidal rivers. The main project involves five dams in the City of Richmond which, when complete, will permit anadromous fish to move 200 miles inland to spawn. A hydrology study of the James River at Richmond is being conducted under contract by the Tennessee Valley Authority to recommend optimum breaching of the two lower dams to provide fish passage while preserving the esthetic and recreational boating values of the river. The results of this study will be available July 1, 1985. Plans exist for providing passage through the three remaining dams once the lower two are breached. There are, however, two private entrepreneurs studying the feasibility of using the two lower dams to generate power. If their efforts block plans to breach the dams, they must provide suitable fishways at their expense. Current plans are to breach the dams as soon as feasible, using anticipated federal aid under the expanded Dingell-Johnson Act.

This agency is also working through the Federal Energy Regulatory Commission, permitting action to negotiate anadromous fish passages on the Appomattox, Meherrin, and Rappahannock Rivers. Plans also exist to enhance the fishway at Walkers Dam on the Chickahominy River.

ANTICIPATED RESULTS

To permit anadromous species to spawn further upstream on tidal rivers, opening more spawning areas to them, resulting in an improved inland fishery as well as enhancing the recruitment into Chesapeake Bay stocks.

PROGRAM - VA Restocking Striped Bass

BUDGET PROJECTION

	84-86
Virginia	*

*Funds from existing programs and anticipated funds.

PURPOSE

Determine the feasibility of enhancing anadromous striped bass stocks through restocking and to enhance spawning stocks in Virginia's rivers.

DESCRIPTION

In 1985, using fingerlings and larvae raised at the Virginia Game Commission's Brookneal Hatchery, striped bass will be stocked in the James River at points jointly agreed upon by the Virginia Institute of Marine Science (VIMS), the Virginia Marine Resources Commission, and the Game Commission. The success of these introductions will be evaluated by VIMS, identifying stocked fingerlings from natural reproduction based upon DNA characteristics of the Brookneal fish and existing James River stocks. This effort will be conducted using available resources.

In 1986, subject to the availability of funds, an effort will be made to obtain brood fish from the Rappahannock, Mattaponi, and Pamunkey rivers and spawn them at the Brookneal Hatchery. The progeny of this effort will be raised to fingerling size using available federal facilities and will be returned to river of origin at Phase I (2") fingerlings. The method of tagging these fingerlings will be developed by VIMS and the Game Commission. The James River will be stocked with fingerlings and fry of the Brookneal strain. If efforts to obtained brood fish from other rivers are not successful, the Brookneal strain may be introduced into these rivers.

VIMS will establish criteria to determine when natural reproduction is sufficient to discontinue stocking operations. VIMS will also evaluate the success of the stocking effort and make the determination of the significance of the results to the overall enhancement of Virginia's striped bass fishery.

ANTICIPATED RESULTS

To evaluate the effectiveness of a restocking program to enhance striped bass populations in the estuarine environment in Virginia.

PROGRAM - VA Artificial Reef Construction

BUDGET PROTECTION

	84-86
Virginia	268,700

PURPOSE

Construct and maintain artificial reefs.

DESCRIPTION

This program, implemented by the Marine Resources Commission, is for the construction and maintenance of artificial reefs for habitat for finfish. The construction of two artificial reefs off Virginia's coast began in the mid 1970s. Parramore Reef is located off Wachapreague Inlet (Eastern Shore) and Tower Reef is located off the Virginia Capes. Approximately 50,000 tires or other modular structures are to be added to each reef site each year.

A study is also being conducted to determine which reef materials are the most suitable. The study will also recommend reef site locations in the Virginia portion of the Chesapeake Bay.

ANTICIPATED RESULTS

The artificial reefs will provide additional habitat for finfish species harvested in the regional recreational fishery and will provide information on future Bay sites.

LIVING RESOURCES

Objective 3: Provide for the restoration of shellfish stocks in the Bay, especially the abundance of commercially important species.

PROGRAM - MD Oysters

BUDGET PROJECTION

	86	87	88
Maryland	1,620,531	NA	NA

PURPOSE

Improve existing stocks of oysters. The EPA Bay Study found a decline in living resources generally correlated with declines in water quality. It could take 10 to 15 years for natural reproduction sufficient to increase the harvest from the 1983 total of 1.5 million bushels if the State did not improve the existing stocks.

DESCRIPTION

This program is designed to enhance the Maryland oyster industry through an aggressive program of oyster repletion, implementation of new oyster culture technology, and to provide extension service to the industry in order to increase and stabilize harvest at approximately 2 1/2 million bushels annually.

Specific program activities include: increased shell planting and seeding to approximately 600,000 acres compared to the current 215,000 acres; innovative techniques for spawning and rearing oysters at the Deal Island Hatchery; and supplying seafood industry with improved processing techniques and expanded oyster marketing.

ANTICIPATED RESULTS

The Deal Island Hatchery facility will be constructed during the Spring of 1985 and experimental planting of eyed larvae on natural bars will be initiated in mid-summer. Initiative funds were used to plant 300,000 cubic yards (5.2 million bushels) of dredged shell, purchase and plant all available fresh shell and move approximately 80,000 bushels of seed oysters. The magnitude of the 1985 program is approximately what is needed in future years to sustain Maryland's oyster harvest at 2.5 to 3 million bushels annually.

PROGRAM - MD Construction Grants: Existing Special Water Quality Needs or Public Health

See Appendix A, NUTRIENTS, Objective 1.

PROGRAM - VA Oyster Conservation and Repletion

BUDGET PROJECTION

	84-86
Virginia	1,800,000

PURPOSE

Increase oyster production on public shellfishing grounds.

DESCRIPTION

This program is being implemented by the VA Marine Resources Commission. It is designed to:

- place clean shell on oyster reefs to provide good environment for oyster spat set, and

- place seed oysters on oyster reefs to supplement natural production.

ANTICIPATED RESULTS

MRC will increase funding levels for Public Oyster Ground Replenishment to $900,000 per year. These funds will provide for increased shell-planting and seed transfer activities.

The section will initiate studies to explore alternate (and less expensive) sources of cultch material and to expand the number of Virginia suppliers. The program goal is to increase replenishment activity to 2 million bushels of shell per year.

Staff will begin testing, validation, and use of the Virginia Oyster Management Model (VOMM). This is a computerized econometric model which provides managers with the ability to predict the potential results of various levels of replenishment activity . The model takes many variables into consideration, like the price of shells and seed, oyster growth rates, production levels of specific growing waters, and price of market oysters. The VOMM is one tool, among many, which may be used to enhance the effectiveness of the replenishment program.

PROGRAM - VA Integrated Shellfish Area Management

BUDGET PROJECTION

	84-86
Virginia	*

*This activity is a cooperative effort being conducted by State staff assigned to other programs.

PURPOSE

Provide an integrated approach to the restoration of condemned shellfish areas.

DESCRIPTION

This program is being coordinated by the Council on the Environment and involves the Bureau of Shellfish Sanitation of the Department of Health, the State Water Control Board, the Division of Soil and Water Conservation, the Department of Housing and Community Development, the Virginia Institute of Marine Science and the Marine Resources Commission.

The program is designed to restore formerly productive shellfish areas to a healthy and productive state. All condemned shellfish areas have been classified according to the sources of problems and potential productivity. This analysis has led to the development of a priority list for the restoration of condemned shellfish areas. Areas with the greatest potential productivity and the lowest restoration costs have received the highest priority for action. Specific restoration plans involving combinations of management actions are being developed for the highest priority areas and will be implemented using Chesapeake Bay initiative and other funds.

ANTICIPATED RESULTS

Analysis and ranking of condemned shellfish areas suitable for restoration. Restoration and resulting reopening of highest priority areas to shellfish harvesting.

PROGRAM - VA Improvement of Deficient Shoreline Residential Sanitation Systems

BUDGET PROJECTION

	84-86
Virginia	260,000

PURPOSE

Reopen shellfish grounds closed as a result of deficient residential sanitary facilities in adjacent watershed/shoreline areas.

DESCRIPTION

Implemented by the Department of Housing and Community Development, the program is designed to provide grants to individuals through local governments so that deficient residential sanitary facilities can be corrected or new facilities installed. This will result in the reopening of shellfish grounds closed as a result deficient residential sanitary facilities.

ANTICIPATED RESULTS

It is anticipated that a total of 1081 acres of shellfish grounds will be reopened in 1985-86 as a result of this program. The program is being expanded to include other agencies so that there can be a totally integrated and comprehensive approach toward eliminating all possible shellfish ground closures.

LIVING RESOURCES

Objective 4: Restore, enhance and protect waterfowl and wildlife.

PROGRAM - FWS Endangered Species Program

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Carry out the mandates of the Endangered Species Act of 1973 as amended. This includes: assessment of the status of rare species, adding those in danger of extinction to the federal list of endangered species (listing); prevention of adverse effects on listed species which result from federal actions (section 7 consultation); and development of recovery plans bringing about the recovery of listed species (recovery).

DESCRIPTION

The Annapolis Field Office carries out the three functions described above for MD, VA, WV and DE. This program tends to focus on individual species which are in trouble. Work deals both with the Chesapeake Bay area and with watersheds and ecosystems unrelated to the Bay. Principal target species around the Bay currently include the Bald Eagle, Peregrine Falcon, Piping Plover, Maryland Darter, Delmarva Fox Squirrel and several Eastern Shore wetland plant species now being listed as endangered or threatened. In addition to endangered species, a special Chesapeake Bay Implementation project is analyzing trends in these and other species of special importance to the Bay (including FWS' National Species of Special Emphasis on "NSSE's"); this will also present maps of present and past distribution of key species.

ANTICIPATED RESULTS

To reestablish the Eastern Peregrine Falcon population, to bring about full recovery of the Bald Eagle, Delmarva Fox Squirrel, and Piping Plover; to maintain the Maryland darter population; to survey and list as threatened or endangered those species which are in trouble.

PROGRAM - PA Wildlife Restoration/Improvement

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Restore and improve wildlife habitat (water quality, aquatic food webs, streambank vegetation) within the Susquehanna River Basin and Upper Chesapeake Bay primarily for animals, small game, and non-game animals and waterfowl.

DESCRIPTION

Implementation of Best Management Practices for nutrient and associated sediment/erosion control should reduce the amount of silt and nutrients entering the receiving waters and, in addition, could include the planting and maintenance of permanent streambank vegetation of importance to wildlife.

ANTICIPATED RESULTS

The reduction of nutrient and sediment loading to the receiving waters and the establishment of permanent vegetative cover should result in greater wildlife use and, in some cases, higher animal populations, for the publics' use and enjoyment.

PROGRAM - MD Water Fowl Protection And Management: Ducks

BUDGET PROJECTION

	86	87	88
Maryland	NA	108,802	NA

PURPOSE

Operate a hatchery to aid in protecting and restoring the black duck and other nonmallard species. Duck populations wintering in Maryland have declined gradually since the early 1950's due to habitat losses through the conversion of wetlands and adjacent habitat to other land uses. This reduction in duck habitat acreage is particularly significant with respect to the concurrent reduction observed in black duck numbers in Maryland and the adjoining mid-Atlantic states, given that Maryland historically has been a significant black duck production area. In the past few years, it was necessary to purchase hand-reared ducks with funds from the Migratory Waterfowl Stamp; the purchase of non-mallard species is almost impossible. The current rate of improving duck habitat on both public and privately owned land will be accelerated to realize an increase in the black duck and other non-mallard breeding population. An accelerated waterfowl habitat restoration effort on public and private land is expected to influence approximately sixty thousand acres of lands beneficial to dabbling ducks within the first three-year period. A hatchery operation will aid in protecting and restoring the black duck and other non-mallard species.

DESCRIPTION

To reserve the downward trend of duck populations in Maryland, (particularly black ducks), and to increase the rate of waterfowl habitat improvement in public lands by: providing for the construction of hatchery on State land to propagate nonmallard breeding pairs needed to fill unoccupied breeding niches; providing an intensive waterfowl habitat education project focusing on the provision of basic information for the design of projects on private lands; and expanding the existing program of tax incentives for conservation of waterfowl habitat.

ANTICIPATED RESULTS

Final construction of hatchery has been delayed pending adequate design of waste treatment facilities and site location. Hatchery production estimate for the first year of operation is 1,500 birds.

PROGRAM - VA Waterfowl Management

BUDGET PROJECTION

	84-86
Virginia	47,750
Federal	143,250

PURPOSE

Protect and manage migratory waterfowl on the Chesapeake Bay and its tributaries.

DESCRIPTION

The Commission of Game and Inland Fisheries sets seasons, bag limits and related hunting regulations within a framework established by the U.S. Fish and Wildlife Service. It enforces the regulations through auto, foot, boat, and aerial patrols, conducts aerial census of waterfowl periodically during the migrations, reacts to crop damage created by flocks of Canada and snow geese and tundra swans, conducts disease control activities such as outbreaks of avian cholorea, obtains blood samples to determine parasite loads, improves Commission-owned marshlands to increase the waterfowl carrying capacity, and regulates hunting pressure through the sale of waterfowl blind licenses which limit the placement of blinds to one per 1,000 yards of shoreline. Through purchase, it obtains marshlands for protection of waterfowl habitat, conducts banding programs to study migratory patterns of wildfowl; reacts to oil spills, treating oiled birds; and it relocates resident flocks of waterfowl that threaten to exceed the carrying capacity of their range.

ANTICIPATED RESULTS

This is a continuing program designed to maintain optimum waterfowl populations within the Commonwealth.

PROGRAM - VA Nongame and Endangered Species Program

BUDGET PROJECTION

	84-86
Virginia	63,708
Federal	191,125

PURPOSE

Provide a program of research and management for Virginia's nongame and endangered species in the Chesapeake Bay.

DESCRIPTION

Through a comprehensive program of wildlife research, the Commission of Game and Inland Fisheries collects data needed for the management of the bald eagle, peregrine falcon, colonial nesting birds, shore birds and the osprey. Research activities include annual and seasonal inventories of nongame and endangered birds, aerial census and monitoring of nests, banding of juvenile birds, recapture of previously banded birds for survival and movements data, and the re-introduction of species (peregrine falcon) for the purpose of re-establishment. Management data is routinely used to resolve potential conflicts between development projects and the protection of these species.

ANTICIPATED RESULTS

Protection and continued recovery and restoration for nongame and endangered species of the Chesapeake Bay region.

PROGRAM - VA Marine Turtles

BUDGET PROJECTION

	84-86
Virginia	77,000

PURPOSE

Monitor and study endangered sea turtles in Chesapeake Bay.

DESCRIPTION

The Virginia Institute of Marine Science, with the support of the Commission of Game and Inland Fisheries, is studying the endangered marine turtles to determine the importance of the Bay to these species, the migration routes to and from the Bay, and methods to reduce mortality of turtles while they are in the Bay. Inasmuch as the turtles are endangered, these studies are eligible for support from the Endangered Species and Non-Game Tax Check-Off Program. VIMS studies have determined that the Bay is important to juvenile marine turtles. Using aerial telemetery, the study has learned many useful facts about these animals which will lead to better management and decreased mortality while in Bay waters.

ANTICIPATED RESULTS

To obtain greater understanding of the marine turtles and to determine preferred habitat needs in the Bay, as well as to reduce mortality while they are in the Bay.

LIVING RESOURCES

Objective 5: Restore, enhance and protect desirable species of submerged aquatic vegetation.

PROGRAM - Joint Federal Agency Hydrilla Control Evaluation

BUDGET PROJECTION

	86	87	88
State			
Federal			
Other			

PURPOSE

The exotic submerged plant Hydrilla Verticillata now occurs in the tidal Potomac River, the Susquehanna Flats, and several other localities within the the Bay basin. The purpose of the present study, which is authorized through the Aquatic Plant Control Program and Regulatory Functions Program, is to determine the impact of hydrilla and to propose and test control measures. These activities are carried on in cooperation with USDA, USDI, Maryland, Virginia, and the District of Columbia.

DESCRIPTION

An initial reconnaissance phase (in FY 84) determined that hydrilla constituted a problem to public uses of the Potomac in selected areas, and that further study was warranted. Studies are being conducted (by USDA) on the biology of the plant, its distribution and spread (USGS), and on its ecological role and value (FWS). The COE has proposed a number of control measures, several of which were tested in 1984 (barrier films, mechanical harvesting). A study plan to test efficacy of herbicide control is under review by concerned agencies. The plan to test Diquat has been reviewed by all state agencies impacted in Virginia, Maryland, and Washington, D.C. The consensus of the reviewers was not to allow the testing. Therefore, it will not occur.

ANTICIPATED RESULTS

A better understanding of the biology and effects of hydrilla will result from the ongoing studies, including potential beneficial roles. Areas adversely affected will be identified, and appropriate (and most feasible) control measures tested and recommended for implementation by the states and/or federal agencies involved.

PROGRAM - MD Submerged Aquatic Vegetation Protection and Restoration

BUDGET PROJECTION

	86	87	88
Maryland	96,499	NA	NA

PURPOSE

Revegetate areas of the Bay with submerged aquatic vegetation. The EPA Study found that increased nutrient runoff deterred the ability of submerged aquatic vegetation to regenerate. Sediments also caused biofouling of the plants which hindered their growth and expansion. The EPA study has shown areas where regeneration would likely be successful at present.

DESCRIPTION

This program is designed to revegetate areas of the Bay with submerged aquatic vegetation that will enhance the habitat for fish and shellfish, provide food for wildfowl, and improve the overall quality of the Bay waters. Efforts to date have included:

Provided nursery ponds to build planting stock of various species and resurveyed submerged aquatic vegetation distribution to confirm reports of regrowth and to investigate reasons for regrowth.

ANTICIPATED RESULTS

Investigate SAV planting methods and procedures. Establish SAV nursery at the University of Maryland at Horn Point. Revegetate selected sites.

PROGRAM - VA Re-establishment of Submerged Aquatic Vegetation

BUDGET PROJECTION

	84-86
Virginia	150,000

PURPOSE

Restore, enhance and protect desirable species of Bay system vegetation.

DESCRIPTION

This program is being implemented by the Virginia Institute of Marine Science and is designed to:

- re-establish SAVs in suitable areas on an experimental basis.
- conduct related monitoring and research to determine what conditions are necessary for successful large-scale re-establishment.

Approximately 15 acres of eelgrass was transplanted this past fall. Monitoring of the survival rate of these plants is to resume in March. Eelgrass remains dormant during the winter, but begins to grow rapidly in March when water temperatures rise above $10^{o}C(50^{o}F)$.

Monitoring also continues for water quality, temperature, insolation (amount of sunlight coming to the surface), and submerged light (amount of light penetrating to certain depths) at selected transplant sites. Seed test sites in the York River and the ocean side of the Eastern Shore are ongoing. Seed germination, which has been observed at two of the three sites, will be evaluated to determine the potential value of using seeds for future revegetation efforts rather than using whole plants. If successful, planting with seeds would be much more economical and less labor-intensive.

ANTICIPATED RESULTS

Re-establishment of submerged aquatic vegetation (SAV) in Virginia's estuarine areas will have a number of direct and indirect benefits, including:

- Improvement of habitat by providing cover, food, an bottom stabilization in 26 acres of planted area. This would help a number of species in the Bay such as the blue crab, finfish and waterfowl.
- Help to improve water quality clarity by filtering and settling materials from the water column and by acting as a nutrient buffer.
- Stabilize bottoms to help prevent shoreline erosion.

LIVING RESOURCES

Objective 6: Protect and enhance and restore where possible dunes, and other important shoreline and riverine systems.

PROGRAM - NOAA Estuarine Sanctuaries Program

BUDGET PROJECTION

	86	87	88
Federal			
Other			

PURPOSE

Establishes natural field laboratories where scientific researchers and the general public learn about coastal and estuarine ecology in a natural setting. These sites also protect vital habitats for estuarine-dependent life including endangered species, and serve as relatively undisturbed and protected areas for long-term management related research.

DESCRIPTION

National estuarine sanctuaries are a federal-state cooperative effort to provide research and educational benefits for each site. The sanctuaries are owned or leased and managed by individual states under the direction of the National Estuarine Sanctuary Program regulations. These regulations specify the need for long-term resource management planning by states and a periodic review of operations by the federal government. The regulations also include biogeographic classification scheme and typology of estuarine areas from which potential estuarine sanctuaries are identified.

The program is administered by the Sanctuary Programs Division (SPD), Office of Ocean and Coastal Resource Management (OCRM) within the National Oceanic and Atmospheric Administration. Fifteen sanctuaries have been established.

The Chesapeake Bay National Estuarine Sanctuary contains an established and proposed component. The sites are located at the mouth of the Rhode River and at Monie Bay on the eastern shore. The Monie Bay component is owned by the State of Maryland occupying about 16% of the Deal Island Wildlife Management Area. The proposed Rhode River component encompasses about 78% of the Smithsonian Institutions Environmental Research Center in Edgewater, Maryland.

ANTICIPATED RESULTS

The sanctuaries will provide educational and research opportunities, as well as preservation functions. These relatively undisturbed areas can be used as control systems for comparison with environmental changes documented elsewhere.

PROGRAM - FWS Fish and Wildlife Coordination Act

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Review several types of federal projects under the Fish and Wildlife Coordination Act general provisions. These aim to insure that federally funded land and water resources development activities give adequate consideration to fish and wildlife and habitat protection.

DESCRIPTION

Review such projects as:

a. Corps of Engineers - Federal channel maintenance dredging, flood control, Hydrilla analyses and control. FWS is involved in site inspections, recommendations, technical assistance, and sometimes carries out specialized work.

b. SCS - Inspect, review, recommend, for such projects as Upper Chester River Watershed Project, (PL-566 type-activity).

c. FERC - Hydroelectric facilities construction or rehabilitation, with a special regard for fish passage devices. Federal Power Act provisions may be involved.

These kinds of projects may fall under the 1969 National Environmental Policy Act provisions and thus include an Environmental Impact Statement or Environment Assessment, which are then reviewed as part of our responsibility.

ANTICIPATED RESULTS

Comments, based on expert knowledge of habitats and living resources contained in them, result in improved protection and conservation for those resources.

PROGRAM - FWS Fish and Wildlife Permit Review: 404

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Try to ensure that wetlands and other aquatic habitats are not degraded by dredge and fill activities, as defined in Section 10, Rivers and Harbors Act 1899 and/or Section 404, Clean Water Act 1972.

DESCRIPTION

Generally meet with representatives of other agencies, including National Marine Fishery Service, EPA, and states, to coordinate response and recommendations addressed to Corps of Engineers, the regulatory authority. Activity includes frequent predevelopment consultation and frequent field inspections.

ANTICIPATED RESULTS

Protection and conservation of fish and wildlife resources and habitat are the objectives of activity. Where certain activity impacts must take place such as dredging for navigation, frequently recommend imposition of compensation or mitigation.

PROGRAM - FWS Permit Review: NPDES

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Try to minimize impacts on aquatic resources of toxic materials discharged under Section 402 of the Clean Water Act.

DESCRIPTION

Review conditions and materials described in NPDES permits and compare with impacts on various living organisms as described in literature. FWS new thrust is to perform field collections and analyses on selected organisms in selected areas, to document uptake and impacts. (See B.3.)

ANTICIPATED RESULTS

FWS' goal is to describe deleterious effects of certain substances in effluents upon organisms, then recommend changes in NPDES standards, with a view to bring allowable concentrations more within acceptable limits.

PROGRAM - FWS National Wetlands Inventory

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Plans, directs, coordinates and monitors the gathering, analysis, dissemination and evaluation of information relating to the location, quantity, condition and ecological importance of the Nation's wetlands, including the Chesapeake Bay.

DESCRIPTION

FWS obtains aerial photography and other imaging and performs extensive ground -truthing to verify interpretation of wetland (both non-tidal and tidal) areas. FWS then produces series of mainly 1:24,000 USGS quad maps (other scales are also produced) locations and identifying types of wetlands by our own classification method. Recent work completed in the Virginia and Maryland areas; some digitization is now taking place. (See E.4.)

ANTICIPATED RESULTS

Through wide dissemination of maps and other technical assistance, FWS aims to inform both the governmental and private sectors as to location, value, and importance of wetlands. Generally aim to reduce or prevent destruction of these habitat features because of their great value to fish and wildlife.

PROGRAM - FWS Reviews: State Highways, Transmission Lines, Pipelines, etc.

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Review the effects of proposed activities on fish and wildlife resources and habitats under the general Fish and Wildlife Conservation Act (and possibly the Clean Water Act and NEPA). This category covers all other projects and actions requiring a permit, lease or license, and not covered by other procedures.

DESCRIPTION

Carry out field inspections of sites where activities proposed, recommending impacts, mitigations, etc. Also attend pre-development and progress meetings to keep a consistent presence operative during these kinds of projects.

ANTICIPATED RESULTS

Protection against excessive or unnecessary impacts to fish and wildlife resources and habitats. Mitigation plans are required to compensate for unavoidable damage taking place.

PROGRAM - PA Wetland Regulation Through Implementation Of The Dam Safety And Encroachment Act

BUDGET PROJECTION

	86	87	88
Pennsylvania			

PURPOSE

Regulate activities to prevent the loss of wetland areas. Wetland areas are regulated as bodies of water, as defined in the Dam Safety and Encroachment Act.

DESCRIPTION

DER requires an activity affecting wetland areas to obtain a permit prior to conducting the activity. The Department will consider in permitting review of wetland activities the effect on the water quality, sediment loading, nutrient loading and ecological habitat of the Chesapeake Bay.

ANTICIPATED RESULTS

The permit program will prevent the loss of wetland areas which affect the Chesapeake Bay.

PROGRAM - MD 401/404 Water Quality Certification Program

BUDGET PROJECTION

	86	87	88
Maryland	97,782		

PURPOSE

Improve regulation of dredge and fill activities to protect water quality and living resources. Maryland has been unable to satisfy full review of the Section 401 Certification for the Army Corps of Engineers' nationwide permits. The effect of this initiative would increase the number of environmental impact evaluations and enable closer scrutiny of the permit activities.

DESCRIPTION

One of the sources of sediment and nutrients to the Chesapeake Bay is the approximately 2,000 construction projects in the State each year for which water quality certificates are issued by the Office of Environmental Programs. OEP is required, pursuant to Section 401 of the Clean Water Act, to issue the certificates placing limits on the construction activities as necessary or in some cases to disapprove the construction where there will be negative water quality impacts. Section 404 dredge or fill permits are subsequently issued or not issued by the Army Corps of Engineers based on the state's water quality certification. Reports on environmental assessments and environmental impacts are received from the Department of Natural Resources where wetlands are concerned or are a part of the project. These reports are utilized by OEP in the water quality certification process. Regulations governing review of projects are currently being developed.

ANTICIPATED RESULTS

Evaluation of public drainage projects and their impact on water quality. Investigation of water quality impacts associated with major dredge and fill projects such as marina construction, major bulkheading projects and dredging activities. Monitor 404 activities and report findings.

PROGRAM - MD Non-Tidal Wetlands Program

BUDGET PROJECTION

	86	87	88
Maryland	169,596		

PURPOSE

Protect Maryland's non-tidal wetlands in cooperation with local governments. Maryland's non-tidal wetlands are transitional environments existing as isolated entities or between open waters and dry land. These wetlands possess many of the same values as tidal wetlands. They have complex and extensive root systems which stabilize streambanks, reduce the velocity of sediment laden water and trap sediments and pollutants contained in these waters. They also play valuable role in providing wildlife habitat and food, particularly to waterfowl and fur-bearing animals. These functions of non-tidal wetlands can directly influence the habitat of living aquatic resources in the Bay. Since 1973, Maryland has lost 14,150 acres of non-tidal wetlands; by comparison, 250 acres of vegetated tidal wetlands have been filled or dredged during the period 1971-1983.

DESCRIPTION

This is a cooperative program for protecting Maryland's non-tidal wetlands, with shared responsibilities at the State and local government levels. The program is designed to: Encourage and assist local governments with the design and implementation of locally administered non-tidal wetlands management programs; initiate a non-tidal wetlands resource assessment and monitoring system which will provide for a quantitative analysis of wetland types; and establish criteria for soil and water conservation plans to help maintain the integrity of non-tidal wetland systems.

ANTICIPATED RESULTS

Continue training and education sessions. Develop wetlands mapping system.

PROGRAM - MD Retention Of Existing Forestland

BUDGET PROJECTION

	86	87	88
Maryland	97,300	57,400	58,700

PURPOSE

Maintain existing forested buffer areas along the Bay and its tributaries to intercept surface runoff and infiltrate it through the forest soil profile prior to reaching the water. The protection of forestland located adjacent to Chesapeake Bay and its tributaries is of strategic importance to water quality protection because surface runoff is virtually nonexistent in undisturbed forestland. Approximately one-third of the land area in Maryland's portion of the Chesapeake Bay basin is currently forested and, in most cases, is subject to conversion to other less protective land uses.

DESCRIPTION

Program activities include: Define and map the critical land areas currently forested adjacent to the Bay and its tributaries; provide technical assistance to landowners, including the preparation of forest management plans; cooperate with local soil conservation districts in developing forested buffers as best management practices for agricultural lands. To date, 23 forest management plans, covering approximately 3255 acres, within the Chesapeake Bay critical area, have been written. Also 30 acres of buffer plantings have been accomplished.

ANTICIPATED RESULTS

In FY 85, the main efforts have been to develop an information and education program directed to the public and also to the forest landowners within the critical area zone. In FY 86, we will continue that program and step up the number of forested areas which will be put under management in the critical area.

PROGRAM - MD Conservation Easements

BUDGET PROJECTION

	86	87	88
Maryland	71,825	NA	NA

PURPOSE

Expand the conservation easement program in Maryland. The EPA study has documented the adverse effects associated with nonpoint pollution. One means of addressing the problems of sediment and stormwater management associated with development is through the existing easement donation statutory framework of the Maryland Environmental Trust. Easements offer landowners the opportunity to make their individual contribution to protecting the Bay. Because they are permanent, as the total number of easements increases, so will the amount of long-term protection.

DESCRIPTION

Private landowners are encouraged to preserve and protect undeveloped or low density areas along the shoreline of the Chesapeake Bay and tributaries through the execution of easements within the existing Maryland Environmental Trust Easement Program. The Trust Program was expanded to accommodate the expected increase in easements. This program provides for the intensification of the Maryland Environmental Trust easement program to increase substantially the acreage of land along the Chesapeake Bay and tributaries placed under easement each year through cooperative efforts with the Chesapeake Bay Foundation and provision of assistance to easement donors to identify and put into use conservation practices appropriate to their properties.

Since July 1984, over 1,000 acres, including some three miles of shoreline, have been put in the easement program.

ANTICIPATED RESULTS

The conservation easement initiative in FY 86 is expected to generate easement donations on approximately 1,000 acres of significant open space in the Bay region. This is in addition to the regular ongoing easement program of the Maryland Environmental Trust. The Trust will target special areas such as shoreline and will follow up on properties including natural heritage sites, spawning watersheds, and features of critical State concern. Preservation opportunities within the framework of local land management programs and the Critical Areas Commission will be explored. The Trust intends to apply innovative preservation techniques such as the bargain purchase, restriction, and resale of property.

PROGRAM - VA Wetlands and Bottomlands Management

BUDGET PROJECTION

	84-86
Virginia	543,420

PURPOSE

Conserve wetlands, submerged habitat and coastal primary sand dunes, and accommodate necessary development.

DESCRIPTION

Implemented by the Marine Resources Commission, the program provides for the regulation (through a permitting process) of over 5,000 miles of tidal shoreline and 2,300 square miles of water surface, covering 1,472,000 acres of bottomlands. Those areas are essential habitat for valuable finfish and shellfish. Also, 225,000 acres of tidal wetlands, vital as a spawning and nursery habitat, are regulated.

In the 1962-72 decade, permit applications to encroach into submerged land increased from about 12 in 1962 to 182 in 1971. In 1972, the first year of the Wetlands Act, applications increased precipitiously to 519. From 1973 to 1982 an average increase in applications of about 10% per year has been realized. Last biennium permit applications averaged 1050 per year while this biennium over 1300 are being processed annually. Concomitantly, requests to use or develop wetlands areas have increased at about the same rate. Similarly, since passage of a sand dune protection act, applications for use or development of coastal sand dune systems have increased dramatically in Norfolk and Virginia Beach. It can be anticipated that all these rates of increase will continue or accelerate during the next several biennia as development pressures along the shoreline continue to build.

ANTICIPATED RESULTS

Through appropriate scientific and technical project evolution, the permitting decision process can be expected to conserve habitat which is critical to support living resources.

PROGRAM - DC Anacostia Watershed Restoration Strategy Agreement

BUDGET PROJECTION

	86	87	88
DC	238,000	238,000	238,000
EPA	238,000	238,000	238,000

PURPOSE

Install BMPs on the small tributaries to the Anacostia River.

DESCRIPTION

There are eight small tributaries to the Anacostia River located within the District of Columbia. The sources of most of these tributaries were enclosed within storm sewers, as development took place over the last two hundred years, and the existing stream channels now receive most of the urban runoff. Fortunately, most of the tributaries are encompassed within federal or District parks. BMPs would be installed on these tributaries to rehabilitate the tributaries and to reduce heavy metals, nutrients and sediment loads to the Anacostia.

A pilot grant program for residential neighborhood blocks will be implemented to reduce urban runoff from homes and to directly involve the citizens in the restoration of water quality. Materials and supplies for installing BMPs will be furnished to the homeowner who inturn will install the BMPs. Primary emphasis will be to increase infiltration of roof and other drainage into the yard and to decrease erosion and nutrient losses from yards.

The Corps of Engineers may dredge the severely silted tidal portion of the Anacostia; the District will assist the Corps in locating suitable upland disposal sites.

ANTICIPATED RESULTS

The program will improve the aquatic habitat of the tributaries as well as result in reductions of pollutant loads to the Anacostia. It is anticipated that a 20% loading reduction can be achieved on most of the tributaries.

LIVING RESOURCES

Objective 7: Conserve soil resources and reduce erosion and sedimentation to protect Bay habitats.

PROGRAM - COE Chesapeake Bay Shoreline Erosion Study

BUDGET PROTECTION

	85	86	87
Federal	500,000	300,000	600,000
State		300,000	600,000

PURPOSE

Formulate a Baywide shoreline erosion control plan which will protect both land and water resources of the Chesapeake Bay from the adverse effects of continued erosion. Within this broad purpose, several major study objectives have been established: to define the magnitude of the erosion problem, to examine the range of possible corrective measures, and to recommend specific projects if economically and environmentally justified.

DESCRIPTION

The study is being conducted in two phases. The reconnaissance phase of the study includes an identification of critical erosion areas, a general investigation of protection measures, a preliminary assessment of environmental impacts, and a determination of areas where the federal interest would be served by shoreline erosion protection projects. The reconnaissance phase will take 18 months, including review by higher authority, and cost $500,000.

If potential federal projects are identified in the reconnaissance phase, then the feasibility phase will be undertaken to conduct site-specific investigations of these projects. Benefits, costs, and impacts will be examined to determine which of the potential projects are justified. The feasibility phase will take about 30 months, including review by higher authority, and is estimated to cost $3,000,000. Based on present administration policy, this amount will be shared equally between the federal government and non-federal sponsor(s).

Most federal work is funded by COE, but FWS is developing a trends assessment for Chesapeake Bay shoreline and impacts of erosion control measures on aquatic resources. (See E.4)

ANTICIPATED RESULTS

The reconnaissance report will be completed in March 1986, and will contain recommendations for detailed feasibility studies at specific project sites, if warranted. Assuming that detailed investigations are warranted at certain sites and that the appropriate cost sharing arrangements can be negotiated, a feasibility report will be completed by September 1988. The feasibility report will contain recommendations for construction of federal shoreline erosion control projects, if such construction is economically and environmentally acceptable.

PROGRAM - PA Sediment and Erosion Control

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Increase the utilization of erosion, sedimentation, and nutrient control measures in the Susquehanna River Basin.

DESCRIPTION

Training and education programs for government employees and the public will be conducted throughout the Susquehanna River Basin to increase the utilization of erosion and sedimentation control practices on both farmland and other soil disturbance locations. Erosion and sedimentation technicians and soil engineers will be hired to increase enforcement and provide technical assistance.

ANTICIPATED RESULTS

The utilization of improved practices in the erosion and sedimentation control program will result in lower sediment and nutrient levels in the critical watersheds. Increased training, education and enforcement will result in higher utilization of improved erosion and sedimentation control practices throughout the Susquehanna River Basin.

PROGRAM - MD Shoreline Improvement Grants Program

BUDGET PROJECTION

	86	87	88
Maryland	2,000,000	NA	NA

PURPOSE

Create a State Debt, the proceeds to be used to provide State grants to certain local jurisdictions, to assist with certain eligible costs for acquisition, design, construction, equipping, rehabilitation, and improvement of certain projects designed to enhance the shoreline of the Chesapeake Bay.

DESCRIPTION

The $2 million appropriated by the 1984 General Assembly is to be used to fund a portion of the 25 proposals which collectively totaled $5,000,00. A list of proposals recommended (by an interdepartmental review group) for funding have been approved by the Secretary of the Department of Natural Resources and have been approved for funding by the Board of Public Works.

ANTICIPATED RESULTS

Oversight and implementation of projects to be funded under FY 85 $2,000,000 bond bill appropriation. Coordination with local jurisdictions to develop new project proposals for FY 87 funding.

PROGRAM - MD Shoreline Erosion - (Operating Costs)

BUDGET PROJECTION

	86	87	88
Maryland	378,431	NA	NA

PURPOSE

Reduce erosion and sedimentation from shoreline areas. The EPA Bay Study found that heavy sediment loadings degrade water quality and cause loss of aquatic life. The present shore erosion control program addresses only critical eroding areas (more than two feet per year). Less critically eroding areas can be stabilized through less expensive vegetative means using, wherever possible, clean spoil from maintenance dredging of channels to reduce annual dredging costs. There are 376 miles of critical erosion areas and 965 miles where erosion is less than two feet per year.

DESCRIPTION

This program is designed to reduce erosion and sedimentation into the Bay and its tributaries by establishing a vegetative shore erosion program for non-critical eroding areas, by augmenting the existing structural program and by using spoil from dredging projects to complement both approaches. Personnel in this program will actively enhance the current level of effort for structural and non-structural projects to mitigate shoreline erosion.

ANTICIPATED RESULTS

MD would construct 56 projects to protect approximately 14,000 feet of shoreline.

PROGRAM - MD Shoreline Erosion - Capital Costs

BUDGET PROJECTION

	86	87	88
Maryland	1,000,000		
Federal			
Other			

PURPOSE

Reduce erosion and sedimentation into the Bay and its tributaries by establishing a vegetative shore erosion program for non-critical eroding areas, by augmenting the existing structural program for critical areas, and by using spoil from dredging projects to complement both approaches.

DESCRIPTION

The EPA Bay Study found that heavy sediment loadings degrade water quality and cause loss of aquatic life. The present shore erosion control program addresses only critical eroding areas (more than two feet per year). Less critically eroding areas can be stabilized through less expensive vegetative means using, wherever possible, clean spoil from maintenance dredging of channels to reduce annual dredging costs. There are 376 miles of critical erosion areas and 965 miles where erosion is less than two feet per year. Prior to the end of the current fiscal year, approximately 37 projects will be selected for design or construction.

ANTICIPATED RESULTS

Plant vegetation on approximately 9,000 linear feet of shoreline comprising 30 different sites.

PROGRAM - VA Shoreline Erosion Advisory Service

BUDGET PROJECTION

	84-86
Virginia	275,200

PURPOSE

Control shoreline erosion.

DESCRIPTION

This program is implemented by the Department of Conservation and Historic Resources, Division of Soil and Water Conservation. It is designed to provide technical advice to private property owners on methods for controlling shoreline erosion. Various control methods are also evaluated.

The primary efforts of the next two biennia will be to:

- Improve the understanding of property owners on the proper alternatives of minimizing tidal shoreline erosion.

- Provide advice, consultation and education to 325 property owners on tidal erosion problems each year.

ANTICIPATED RESULTS

Reduce shoreline erosion through technical assistance to private property owners.

PROGRAM - VA Forest Land Management

BUDGET PROJECTION

	84-86
Virginia	12,757,255*
Federal	904,431*

*Figures represent approximately 66% of the total statewide budget.

PURPOSE

Improve forest resources management.

DESCRIPTION

This program is being implemented by the Virginia Department of Conservation and Historic Resources. It includes eight major operations of the Department's Division of Forestry: Forest Fire Management, Forest Management, Insect and Disease Protection, Tree Seedling Production, State Forest Management, Forest Management of Other State Owned Lands, Information and Education and Administration. Through the operations of this program, the Commonwealth protects and encourages development of some 14.2 million acres of privately owned forest resource which provide raw materials for an industry that contributes $3.9 billion annually to the State's economy and directly employs more than 64,000 of her residents in manufacturing and another 47,000 in full time employment of support services.

ANTICIPATED RESULTS

Provide a forest resource to meet Virginia's need while encouraging the volunteer use of best management practices in forest operations to protect water moving into the Bay.

LIVING RESOURCES

Objective 8: Maintain freshwater flow regimes necessary to sustain estuarine habitats.

PROGRAM - COE Proposed Susquehanna Drought Management Study

BUDGET PROJECTION

	86	87	88
Federal		910,000	
State			

PURPOSE

Identify those projects and management measures to maintain freshwater inflow to Chesapeake Bay and to develop a comprehensive drought management plan for the Susquehanna River Basin.

DESCRIPTION

The Susquehanna River Basin has a population of about 5 million people and drains an area of approximately 27,500 square miles in New York, Pennsylvania, and Maryland. The Basin contributes approximately 50% of the freshwater inflow to the Chesapeake Bay. Increasing consumptive uses of water as well as expanding municipal and industrial growth is placing increasing demands on the Basin's limited water resource. The steadily decreasing flow in the Susquehanna River is having an adverse impact on the Chesapeake Bay and certain parts of the Susquehanna Basin have already experienced water shortages and rationing.

The decreasing freshwater inflow to Chesapeake Bay results in the loss of valuable fish and wildlife habitat. Some of the important species adversely affected include oysters, striped bass, clams, submerged aquatic vegetation, and canvasback ducks. The adverse economic impacts on commercial and sport fishing are significant with the net losses to the oyster fishery alone estimated at $60 million annually.

The study will be conducted in two phases, with the initial reconnaissance phase to be initiated in FY 87 and completed in 18 months. The initial phase would define the problem and identify those alternatives to be investigated in detail in the feasibility phase.

ANTICIPATED RESULTS

Identification of those measures required to maintain freshwater inflows to Chesapeake Bay and the development of a detailed comprehensive drought management plan for the Susquehanna River Basin.

PROGRAM - MD Freshwater Conservation

BUDGET PROJECTION

	86	87	88
Maryland	154,497	NA	NA

PURPOSE

Provide personnel (4) in the Department of Natural Resources to quantify both existing and potential consumptive losses of freshwater flow to the Bay and to implement structural, non-structural, and water conservation solutions to maintain freshwater flow regimes necessary to maintain estuarine habitats. Additionally, enforcement of plumbing codes, which require use of accepted conservation techniques designed to promote efficient water use and reduce consumptive losses, will be accomplished via the Office of Environmental Programs and the Water and Sewer Planning Process.

DESCRIPTION

The EPA Bay Study and Chesapeake Bay Study by the Corps of Engineers identify that freshwater inflow from Bay tributaries directly affect the Bay's salinity regime, a critical habitat component.

To address the need for future freshwater conservation, a $25,000 one-year interagency agreement was developed with the Interstate Commission on the Potomac River Basin to formulate state-of-the-art computer operating rules for improved reservoir management in the Potomac and Patuxent Reservoirs. The desired result is to increase the freshwater inflows to the Chesapeake Bay during normally low flow periods -- thus, off-setting the adverse effects on the Bay of consumptive freshwater losses. Similarly, regulations have been drafted that require all counties in the State to demonstrate, in locally prepared sewer and water plans, compliance with the provisions of the Water Conservation Plumbing Fixtures Act.

ANTICIPATED RESULTS

A Statewide water conservation program will be in full swing with educational workshops and direct assistance to local utilities. Refined operating rules for the Washington area's Potomac and Patuxent reservoirs will be implemented, where appropriate, to ensure minimum flow. Analysis of water saving potential for individual water appropriation and use permittees will begin, with changes incorporated into permit conditions.

PROGRAM - VA Water Resource Planning and Management

BUDGET PROJECTION

	84-86
Virginia	1,377,000

PURPOSE

Provide for the maximum conservation, development and utilization of Virginia's water resources.

DESCRIPTION

Implemented by the State Water Control Board, this program is designed to develop comprehensive plans to develop solutions for long-range water resources problems and utilization of water resources. It provides for the maximum conservation, development, and utilization of Virginia's water resources. Major subprograms are: Flood Plain Management; Groundwater Planning Management; Surface Water Planning; and Water Quality Management and Planning. Maintains status of approximately 190 communities participating in National Flood Insurance Program. Investigates 50-75 groundwater pollution problems annually. Obtain by regulation from 1,000-2,000 water users data on water withdrawal/use. Revise, as appropriate, the five BMP Handbooks to combat nonpoint source pollution.

ANTICIPATED RESULTS

Ensures that the States's water resources are utilized to the benefits of the citizens of Virginia.

PROGRAM - VA Surface Water Investigations

BUDGET PROJECTION

	84-86
Virginia	340,000

PURPOSE

Understand and anticipate relationship of stream flow to quality.

DESCRIPTION

This program, implemented by State Water Control Board, is designed to maintain a network of stream gauging stations to continually record stream flows through the State. The accurate measurement of streamflow is the most important water quality parameter since pollution loadings and the water resources are directly dependent on flow data. Operate and calibrate a stream gauging network of approximately 50 flow recording stations, and compute flow records.

ANTICIPATED RESULTS

Data will be used to help maintain water quality.

APPENDIX D - OTHER RELATED MATTERS

OTHER RELATED MATTERS

Goal: Participate in other related activities to further enhance the Bay and its sources.

Summary of Programs

The implementation programs described in Appendices A, B and C have a direct impact on the Chesapeake Bay. A number of other programs have an indirect or a potentially direct impact on the Bay. These are addressed as "Other Related Matters," Appendix D.

It has become increasingly apparent that "cross-media" environmental pollution is a serious problem. Air deposition, leachate from waste dumps, residuals from industries and sewage treatment plants, and contaminated spoil from dredged areas are now recognized contributors to Bay pollution. An integrated approach to environmental problem-solving is acknowledged in this appendix.

In addition, as the Bay's water quality and living resources are restored, the citizens of the region can share in its recreational abundance. Efforts to provide for recreational opportunities are included, also.

All of the states are routinely managing their environmental problems, implementing federal programs and their own laws and regulations. Following are some of the initiatives underway by federal and state agencies to address other related matters.

APPENDIX D: OTHER RELATED MATTERS

Listing of Program Titles	Page Number
EPA Technology Transfer	3
EPA Superfund	4
DOD Installation Restoration Program	5
COE Proposed Chesapeake Bay Dredged Material Disposal Study	6
PA Solid Waste Management Act (Act 97)	7-8
PA Resource Conservation Recovery Program Primacy	9-10
Maryland Use of Suitable State Lands for Sludge, Sludge Compost and Sewage Effluent	11
VA Waste Management	12
VA Management Of Public Health Aspects Of Drinking Water And Sewage Systems	13
DC Sludge Disposal	14
PA Groundwater Quality Management	16
PA Acid Precipitation Monitoring Network	18
VA Protection of Public Beaches	20
VA State Parks Land Management	21
VA Land Contributions	22
MD Recreational Fishing	24
VA Public Boat Ramp Acquisition and Construction	25
VA Improvement of Public Landings For Commercial Fishing Craft	26

OTHER RELATED MATTERS

Objective 1: Manage sewage sludge, dredged spoil and hazardous wastes to protect the Bay system.

EPA, DOD, FWS, and each state have active programs to address this objective.

PROGRAM - EPA Technology Transfer

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Develop and disseminate new technology in the areas of air and water pollution, solid wastes, pesticides, hazardous wastes and radiation to supplement existing knowledge.

DESCRIPTION

The technology transfer activities in the area of water quality assessment are oriented toward state regulatory agency personnel and include the development of guidance documents and the provision of direct technical assistance. EPA regional personnel, using Agency developed methodologies and information, assist state personnel to conduct wasteload allocations, use attainability analyses, water quality criteria modification or other water quality assessment procedures, thereby transferring to state employees the knowledge and techniques required to successfully carry out these functions.

ANTICIPATED RESULTS

Provides water quality managers and engineers with new technological information to be used in improving the performance of existing treatment technology and in disposing of waste materials.

PROGRAM - EPA Superfund

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Provide the general authority to clean up hazardous waste sites or to respond to spills of hazardous substances onto land or into the air or non-navigable waters.

DESCRIPTION

Comprehensive Emergency Response, Compensation and Liability Act, known as Superfund, authorizes the federal government (EPA) to respond directly to releases (or threatened releases) of hazardous substances and pollutants or contaminants that may endanger public health or welfare.

The government generally can take legal action to recover its cleanup costs from those subsequently identified as responsible for the release. Where responsibility can be determined, Superfund authorizes the federal government to take legal action to compel individuals or companies to clean up problems for which they are responsible.

ANTICIPATED RESULTS

Serious environmental damage resulting from the careless disposal of hazardous wastes or accidental spills of hazardous wastes can be avoided by direct government action. Use of Superfund authorities can help prevent damage to Bay from hazardous waste sites if potential threats are identified.

PROGRAM - DOD Installation Restoration Program

BUDGET PROJECTION

	86	87	88
Federal			
State			
Other			

*Scheduled for FY 86 & 87

PURPOSE

Control the migration of contaminants from abandoned and existing dump sites on Department of Defense (DOD) facilities.

DESCRIPTION

Phased program to assess toxic threat from DOD installations, develop technical database to determine the extent of the contamination, and the development and implementation of techniques for remedial action, as appropriate.

ANTICIPATED RESULTS

Identification and evaluation of toxic threats from federal facilities and development of a strategy to control them.

PROGRAM - COE Proposed Chesapeake Bay Dredged Material Disposal Study

BUDGET PROJECTION

	86	87	88
Federal		150,000	
State			

PURPOSE

Identify, early in the process, long-term disposal actions. Due to the length of time required to implement specific dredged material disposal sites or management actions, it is critical that acceptable dredged material disposal alternatives be identified.

DESCRIPTION

The initial reconnaissance phase of the study would be initiated in FY 87 and would be completed in March 1988. The reconnaissance phase would include an identification of projected disposal needs, examination of disposal alternatives, development of preliminary benefits and costs, selection of the best alternatives for further detailed study, and coordination with interested agencies.

The feasibility phase would include a detailed analysis of disposal alternatives leading to a recommendation for long-term action.

ANTICIPATED RESULTS

Anticipated study results are an early identification of feasible long-term solutions to dredged material disposal throughout the Chesapeake Bay. The study will determine any recommendations for federal action and result in a report prepared for the Congress in response to the authorizing resolution.

PROGRAM - PA Solid Waste Management Act (Act 97)

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Continue to carry out the mandates of Pennsylvania's Solid Waste Management Act.

DESCRIPTION

Solid Waste is a generic term that includes within its definition wastes generated from residential, commercial, industrial and agricultural activities. These wastes are classified into three major groups: municipal, residual and hazardous. Annually, Pennsylvanians and their industries general approximately 40 million tons of solid waste. The Department of Environmental Resources' authority to regulate solid waste activities is derived from the Solid Waste Management Act, Act 97, passed into law in July of 1980. The purpose of the act is to:

(1) Establish and maintain a cooperative State and local program of planning, technical and financial assistance for the comprehensive solid waste management;

(2) Encourage the development of resource recovery as a means of managing solid waste, conserving resources, and supplying energy;

(3) Require permits for the operation of municipal and residual waste processing and disposal systems, licenses for the transportation of hazardous waste and permits for hazardous waste storage, treatment, and disposal;

(4) Protect the public health, safety and welfare from the short and long term dangers of transportation, processing, treatment storage, and disposal of all wastes;

(5) Establish the Pennsylvania hazardous waste facilities plan, that addresses the present and future needs for the treatment and disposal of hazardous waste in this Commonwealth;

(6) Develop an inventory of the nature and quantity of hazardous waste generated within this Commonwealth or disposed of within this Commonwealth, wherever generated;

(7) Project the nature and quantity of hazardous waste that will be generated within this Commonwealth in the next 20 years or will be disposed of within this Commonwealth, wherever generated;

(8) Implement Article I, Section 27 of the Pennsylvania Constitution; and

(9) Utilize, wherever feasible, the capabilities of private enterprise in accomplishing the desired objectives of an effective, comprehensive solid waste management program.

Over 90% of the wastes currently generated in the Commonwealth are land disposed or land applied. Using sewage sludge as a soil conditioner, as a part of a normal farming operation, or in a land reclamation project to restore or enhance the soil are examples of land application practices that are permitted under Act 97. Permits are required for all land disposal practices to insure that the air, land, and ground and surface water are not degraded by improper waste management practices.

Pennsylvania's projected annual statewide budget is $3,400,000 for FY 86, 87, and 88.

ANTICIPATED RESULTS

Adequate management of solid waste to prevent surface and groundwater pollution.

PROGRAM - PA Resource Conservation Recovery Program Primacy

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Continue to seek primacy to carry out a federally delegated Resource Conservation Recovery Act Program.

DESCRIPTION

Recognizing that proper solid waste management and control is a national problem, Congress passed the Resource Conservation and Recovery Act (RCRA) in 1976 (amended in 1980). The Resource Conservation and Recovery Act (P.L. 94-580) was established to "protect human health and the environment from the improper handling of solid waste and to encourage the conservation of natural resources", and gives the Environmental Protection Agency (EPA) the authority to develop a nationwide program to regulate hazardous waste from "cradle to grave". Congress recognized that parts of RCRA's waste management system required a federal role, while other aspects were best handled at the state or local level. Therefore, responsibilities under RCRA are divided between the federal government and the states.

In order to cope with these rapidly increasing waste problems created by our technological society in its production of goods and services, the Administration sponsored and the Legislature passed in July of 1984, a new comprehensive Solid Waste Management Act, Act 97. This new solid waste statute authorized the Department of Environmental Resources to develop and implement a comprehensive solid waste management program including control or hazardous wastes.

The passage of this law made it possible for the Commonwealth to qualify for "primacy" to implement the federal and state hazardous waste programs in Pennsylvania.

Working under the broad provisions of Act 97, the Department of Environmental Resources has structured a program which provides for the identification an listing of hazardous waste produced in Pennsylvania. Standards permitting requirements and regulations have been established for all those who generate, transport, store or treat hazardous waste. The Department, in cooperation with the Federal Environmental Protection Agency, is enforcing the stringent permitting and monitoring requirements. Concurrent with this joint effort on the part of the state and federal government, Pennsylvania has applied for and expects to receive final program authorization (primacy) by the end of 1985, which will enable the Department to carry out both the federal and state hazardous waste management program.

Pennsylvania's projected annual statewide budget is $4,500,000 ($1,100,000-State; $3,400,000 Federal) for FY 86, 87, and 88.

ANTICIPATED RESULTS

Obtain RCRA primacy by end of 1985 and carry out both the State and Federal Hazardous Waste Management Programs.

PROGRAM - Maryland Use of Suitable State Lands for Sludge, Sludge Compost and Sewage Effluent

BUDGET PROJECTION

	86	87	88
Maryland	30,000	NA	NA

PURPOSE

Promote the use of State land to assist in the management of sludge or for land application of sewage effluent. Develop new markets for sludge compost. Assist the public in understanding the beneficial uses of certain types of sludge.

DESCRIPTION

One contractual employee has been hired as a result of rearranging budget priorities. Complete the MES sludge management plan; secure permits for additional State-owned lands; complete the Queen Anne's County project; continue to develop educational materials; continue the planning process for a regional composting facility; and assist in the formation of an interagency technical team for sludge management. Secure suitable State-owned land for sludge management at Cheltenham Boys' Village and Point Lookout and Rocky Gap State Parks. In cooperation with DNR's Land Management and Recreation Services, investigate possible use of State-owned land in the Merkle Wildlife Management Area (Prince George's County) and several abandoned sand/gravel pits in Anne Arundel and Prince George's Counties. Computerize the MES sludge management plan. Complete the ComPRO demonstration project in Druid Hill Park, Baltimore City. Develop a detailed plan for a second compost demonstration project in the St. Michael's facility (Talbot County). (Note: This will be similar to the Queen Anne's project.)

ANTICIPATED RESULTS

Utilization of sludge as a resource. Elimination of backup of sludge piles at treatment plants.

PROGRAM - VA Waste Management

BUDGET PROJECTION

	84-86
Virginia	876,975
Federal	1,287,660

(These sums represent the portion (approximately 55%) of the Statewide program being conducted within the Bay drainage system.)

PURPOSE

Provide for the management of solid, hazardous and low-level nuclear waste.

DESCRIPTION

This program, implemented by the Department of Health, includes meeting the requirements associated with the Southeast Interstate Low-Level Radioactive Waste Compact. This includes the cost of training, the inspection of all packaging and transportation of low-level waste, the development of low-level waste regulations, and the formulation of a limited agreement with the Nuclear Regulatory Commission for the regulation of low-level nuclear waste. The regulation of solid waste consists of reviewing all plans for new landfill sites, inspecting current landfill operations, issuing permits to operate sanitary landfills, and investigating open dumps. Assistance is offered to industry and local governments on the proper disposal of solid waste, new site selection and proper closure of sites no longer in use. The hazardous waste management portion of this program regulates the generation, transportation, treatment storage and disposal of hazardous waste.

ANTICIPATED RESULTS

This is a continuing effort. During the current biennium, several program developments are anticipated, including:

(1) Advancement of the Low-Level Nuclear Waste Management Program in the Bureau of Solid Waste Management;

(2) Continued promulgation of changes to the Resource Conservation and Recovery Act (RCRA) and changes to the U.S. Department of Transportation Hazardous Materials Transportation Regulations by the Bureau of Hazardous Waste Management; and

(3) Enforcement of the Regulations Governing the Transportation of Hazardous Materials, and the Virginia Hazardous Waste Management Regulations.

PROGRAM - VA Management Of Public Health Aspects Of Drinking Water And Sewage Systems

BUDGET PROJECTION

	84-86
Virginia	14,924,088
Federal	906,780

PURPOSE

Protect the public health and the environment.

DESCRIPTION

This program, implemented by the Department of Health, provides for the management of drinking water systems, central and on-site sewage treatment and disposal systems, and sanitary and sewage facilities at marinas.

ANTICIPATED RESULTS

This is a continuing effort to insure that drinking water supplied through public drinking water systems will not cause human illness; and regulate the treatment and disposal of sewage so that it does not contaminate drinking water sources, cause nuisances, contribute to or cause human illness or damage the aquatic environment.

PROGRAM - DC Sludge Disposal

BUDGET PROJECTION

	86	87	88
DC	312,000	559,667	0
EPA	935,000	1,679,000	0

PURPOSE

Design and construct a complex of facilities for the disposal of municipal sewage sludge.

DESCRIPTION

Recommendation of a facility plan adopted by the District calls for the construction at Blue Plains Wastewater Treatment Plant of a facility for composting a portion of the sewage sludge and a facility for incinerating the remaining sludge. The composted sludge will be marketed. The incineration facility will be designed for energy recovery.

ANTICIPATED RESULTS

Construction and operation of the facilities will enable the District to find a permanent solution for the disposal of the sludge, thereby enhancing attainment of the Blue Plains effluent discharge permit limits.

OTHER RELATED MATTERS

Objective 2: Manage groundwater to protect the water quality of the Bay.

EPA, USGS and the states are protecting groundwater through a number of their existing programs. Some new initiatives are underway, as well.

PROGRAM - PA Groundwater Quality Management

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Develop and implement a comprehensive Groundwater Quality Management Program in Pennsylvania.

DESCRIPTION

DER is in the process of completing two federally-funded reports. One is a Groundwater Quality Protection Strategy which is intended to serve as an umbrella program for all DER activities involved in the areas of groundwater quality protection and management. The second proposes to integrate the Department's monitoring activities under the Groundwater Quality Monitoring Strategy which will serve to meet both ambient and compliance monitoring objectives. DER anticipates proposing to the State's Environmental Quality Board that an appropriate regulation be promulgated to implement the Groundwater Quality Protection Strategy and, if necessary, the final Monitoring Strategy.

The Protection Strategy will address leaking underground storage tanks, revisions to DER's Spray Irrigation Manual and Implementation Guidance, and ways of strengthening DER's existing on-lot sewage disposal program.

As part of the Monitoring Strategy, a pilot effort will be conducted to establish three ambient groundwater quality monitoring systems within high priority groundwater basins in the State. This will enable DER to assess the effectiveness of this method of monitoring before finalizing the Monitoring Strategy.

DER has applied for $233,800 in Section 106 funds to carry out these State-wide activities during FY 85.

ANTICIPATED RESULTS

Improved monitoring and protection of groundwater quality in Pennsylvania (and, ultimately, surface waters in Pennsylvania and the Bay).

OTHER RELATED MATTERS

Objective 3: Consider and address the impacts of atmospheric deposition on the Bay system.

EPA and the states are studying and monitoring atmospheric deposition to assess its effects on the Bay system.

PROGRAM - PA Acid Precipitation Monitoring Network

BUDGET PROJECTION

	86	87	88
Pennsylvania	33,000 (6 Sites)		
Federal	13,500 (2 Sites)		

PURPOSE

Determine the deposition rates of various chemical species on agricultural and forest lands and on aquatic ecosystems, and observe long-term trends in the deposition rates as they may be affected by changes in man's inputs.

DESCRIPTION

The Department of Environmental Resources, in conjunction with the Pennsylvania State University, operates a 15 site (statewide) acid precipitation monitoring network which measures selected parameters including pH, specific conductance, alkalinity, acidity, and various anions and cations on a weekly basis. Eight of these sites are in the Susquehanna River Basin (Little Buffalo State Park, Perry County; Frances Slocum State Park, Luzerne County; Hills Creek State Park, Tioga County; Little Pine State Park, Lycoming County; Parker Dam State Park, Clearfield County; Sinnemahoning State Park, Cameron County; Gettysburg National Military Park, Adams County; and Leading Ridge Watersheds, Huntingdon County). The objectives of this network are: 1) to determine the magnitude and distribution of atmospheric deposition and associated toxic and nutrient elements in Pennsylvania; and 2) to assess the potential environment impacts.

ANTICIPATED RESULTS

An understanding of the temporal and spatial distribution of atmospheric deposition in Pennsylvania.

OTHER RELATED MATTERS

Objective 4: Improve and maintain public access to the Bay including public beaches, parks and forested lands.

PROGRAM - VA Protection of Public Beaches

BUDGET PROJECTION

	84-86
Virginia	1,070,000
Local	1,070,000

PURPOSE

Enhance the public beaches of the Commonwealth.

DESCRIPTION

The program is implemented by the Department of Conservation and Historic Resources. The Public Beach Commission administers a 50/50 State-locality matching grant program designed to improve the quality of locally controlled public beaches. The two stage grant requests are reviewed in public hearings by the six Governor-appointed and two ex-officio commissioners. Technical review of the proposals is offered to the Commission by the public beach advisor located at the Virginia Institute of Marine Science. The Commission, through its technical advisor, maintains a coastal information system and archives of the data gathered in monitoring the completed project's performance. Technical assistance is provided to the localities to insure the anticipated projects meet all known environmental and engineering considerations.

ANTICIPATED RESULTS

This is a continuing effort. For the next two biennia the Commission will focus on:

- Promoting the enhancement of public beaches through its grant program;
- Continuing to upgrade the advice to localities through the evaluation of ongoing monitoring efforts;
- Anticipating future problem areas in the growing demand for accessible public beaches; and
- Supporting experimental research which can lead to better public beaches.

PROGRAM - VA State Parks Land Management

BUDGET PROJECTION

	84-86
Virginia	3,515,145

PURPOSE

Operate and maintain the system of State recreational resources.

DESCRIPTION

This program is being implemented by the Department of Conservation and Historic Resources which provides for operation and maintenance of state parks operated by the Department's Division of State Parks and Recreation in a manner that will protect the Bay and its resources.

The program provides for the continued recreational use of 16 State Parks, 4 State Historical Parks and 5 Natural Areas in the Chesapeake Bay drainage.

The budget provides salaries and maintenance and operational funding for those parks. It is not budgeted for Chesapeake Bay protection, although good forest, agriculture and urban construction BMP's are part of normal park property operations.

ANTICIPATED RESULTS

This is a continuing effort to provide recreational facilities to meet a portion of Virginia's recreational needs.

PROGRAM - VA Land Contributions

BUDGET PROJECTION

	84-86
Virginia	84,887*

*Represents approximately 85% of total program funding.

PURPOSE

Preserve lands for public use.

DESCRIPTION

This program, implemented by the Virginia Outdoors Foundation, provides a mechanism for preserving a representational portion of Virginia's natural, scenic, historic, scientific, and recreational areas for present and future generations by providing a mechanism for charitable donations of open space easements or real property. The activities of this program include promotion and solicitation necessary to acquire donations and easements.

ANTICIPATED RESULTS

This is a continuing effort, through private donations of 1000 acres of land easements per year and donations of other land, cash, stocks, etc. to assist the program. These sensitive properties will be protected from inappropriate development and maintained in current use.

OTHER RELATED MATTERS

Objective 5: Improve opportunities for recreational and commercial fishing.

PROGRAM - MD Recreational Fishing

BUDGET PROJECTION

	86	87	88
Maryland	963,875	NA	NA

PURPOSE

Utilize funds from the Chesapeake Bay Saltwater Sportfishing License to increase recreational fishing opportunities in the Bay.

DESCRIPTION

This program has been designed to provide for the research and monitoring of sportfish to determine limiting factors for recruitment, fishing pressure, and best available enhancement techniques; acquisition and maintenance of fishing piers to increase fishing access; increased production of sportfish from hatcheries for research; and construction and placement of sportfish habitat reefs to increase estuarine fish nursery areas and increase production of marine species in the estuary.

ANTICIPATED RESULTS

Expect to initiate mapping of sportfish habitat for environmental review and create sportfish habitat in certain areas.

PROGRAM - VA Public Boat Ramp Acquisition and Construction

BUDGET PROJECTION

	84-86
Virginia	190,000

PURPOSE

Provide public access to public water where existing access is inadequate or nonexistent.

DESCRIPTION

This program is implemented by the Commission of Game and Inland Fisheries. The Commission of Outdoor Recreation's 1982 Tidewater Virginia Recreational Boating Access Study states that "existing public access ramps will become overcrowded as increasing numbers of boaters attempt to launch their crafts at those ramps which serve their favorite water body. In order to keep pace with projected increases in recreational boating demand, it is estimated the (Virginia Game) Commission will need to average at least five new high-capacity sites per year." By 1990, resident boating demand will exceed 33.5 million annual activity days in the tidewater areas of Virginia and over 87,000 watercraft of the 121,000 registered in the area will be competing for access. The Game Commission has fifty boat landings on the tidal waters of the Cheasapeake Bay, and acquires and/or constructs about two new boat access facilities per year. The demand for boating access to the tidal waters of Virginia will exceed the supply for at least the next ten years.

ANTICIPATED RESULTS

Improve boater access to the tidal waters of the Chesapeake Bay and its tributaries.

PROGRAM - VA Improvement of Public Landings For Commercial Fishing Craft

BUDGET PROJECTION

	84-86
Virginia	130,000

PURPOSE

Encourage commercial fishing.

DESCRIPTION

This program, implemented by the Department of Highways and Transportation, is designed to survey the present condition of public landings used by commercial fishing vessels and to improve and repair them as needed and as possible.

Public landing sites are features of the public road system. The origins of many landings date to the Colonial period when Tidewater rivers and creeks and watercraft were the chief transportation system for agricultural trading. Landing sites often developed prior to the roads, which were later constructed along old routes that terminated at waterfront landing sites.

Public landing sites declined in importance as transportation of farm-to-market commerce shifted to a continually growing road system. The Highway Department assumed public landings in 1932, as part of its massive acquisition of the secondary road system from the counties.

The chief commercial use of public landings today is the landing and loading of seafood by Virginia watermen. Some sites have been turned over to the Commission of Game and Inland Fisheries to be operated as recreational boat ramps.

ANTICIPATED RESULTS

Determine which landing sites are in use by commercial fisherman and what remaining sites are capable of being improved for use. Begin program of development and maintenance.

APPENDIX E - INSTITUTIONAL/MANAGEMENT PROGRAMS

INSTITUTIONAL/MANAGEMENT

GOAL: Support and enhance a cooperative approach toward Bay management at all levels of government.

Summary of Programs

The Chesapeake Bay Agreement was signed in 1983 by federal and state agencies who recognized the need for a cooperative effort to effectively restore and protect the Bay. Pursuant to the Agreement, an institutional structure has evolved under the guidance of the Chesapeake Executive Council. The details of this and other federal, regional, and state arrangements are described in this Appendix. In addition, the citizens of the Bay are actively involved in the decision-making and education processes, and are engaged in a variety of voluntary projects to help cleanup the Bay and its tributaries.

Government agencies at the federal and state levels oversee the restoration and protection programs in their areas of responsibility. Ongoing are efforts by all agencies to manage, plan, track and evaluate their implementation activities. In 1985, funds to support these activities and others to help control nutrient and toxic pollution under Clean Water Act sections 106 and 205 were awarded. Approximately $16 million is directed to aid the Bay region; an additional $2.75 million is available through the Chesapeake Bay Program. The agencies are continually measuring results to determine if the activities are effectively meeting the Baywide objectives as well as the objectives of their own agencies. The states are assessing their remedial programs annually.

To measure progress in the longer-term are comprehensive monitoring, research and data management strategies. As results from these activities reveal new information, more streamlined objectives will be crafted and implementation strategies will be reviewed and modified, as necessary. Approximately $5 million is being spent on monitoring and another $5 million is committed for research.

Each program in Appendix E describes a Bay institutional or management program. Some budget projections are included, along with the purpose and anticipated results of the activities.

APPENDIX E: INSTITUTIONAL/MANAGEMENT

Listing of Program Titles	Page Number
Chesapeake Executive Council	3
Implementation Committee	4
Chesapeake Bay Interagency Coordination Group	5
Department of Commerce Coastal Zone Management Program	6
The Chesapeake Bay Commission	7-8
The Chesapeake Research Consortium	9
The Interstate Commission of the Potomac River Basin	10
The Susquehanna River Basin Commission	11
The Potomac River Fisheries Commission	12
The Atlantic States Marine Fisheries Commission	13
PA Nonpoint Strategy Committee	14
MD Critical Area Commission	15
EPA/State/Local Public Participation And Input	17-18
EPA Grant To Citizens Program For Chesapeake Bay (CPCB)	19
PA Public Input and Participation	20
DC Chesapeake Bay Public Participation Program	21
DC Public Information Depository and Information Dissemination Program	22
EPA/State/Local Public Education and Outreach	24-25-26-27
EPA Public Education and Outreach: Citizens Program for Chesapeake Bay	28
PA Bay-Oriented Public Education	29
PA Environmental Education	30
PA Water Supplier Technical Assistance	31-32
MD Environmental Education	33
MD Youth Conservation Corps	34
VA Grant For Chesapeake Bay Education Projects	35
VA Field Studies for School Children	36
VA Chesapeake Bay Public Television Series	37
VA Environmental Public Service Announcements	38
VA Youth Conservation Corps	39
EPA Chesapeake Bay Liaison Office	41
EPA Water Quality Planning: 205(j) Grants	42
EPA Water Quality Management: 205(g) Grants	43
EPA State Water Pollution Control Program Assistance: 106 Grants	44
EPA Office of Marine and Estuarine Protection (OMEP)	45
EPA III Water Management Division	46
EPA III Environmental Impact and Marine Policy Branch	47
EPA III Hazardous Waste Management Division	48
EPA III Environmental Services Division	49
NOAA Estuarine Programs Office	50

APPENDIX E: INSTITUTIONAL/MANAGEMENT

Listing of Program Titles	Page Number
DOD/EPA Joint Resolution	51
FWS Documentation of Trends in Natural Resources	52
FWS Habitat Resources Program Activities	53
FWS Other Programs and Facilities	54
PA Computer Systems for NPDES and State Data	55
MD Water Quality Management Planning	56
MD Financial Management of Public and Private Sewage Treatment Plants	57
VA Tracking and Reporting On Bay Management Programs and Environmental Trends	58
VA Coordinated Environmental Review System	59
VA Bay Related Environmental Reviews	60
EPA Data Management System	62-63-64
NOAA Chesapeake Bay Implementation: Data Acquisition for CBDC	65
NOAA National Estuarine Atlas	66
USGS Land Use Management System	67
PA Storet	68
MD System Development: Regional Data Center	69
VA Water Quality Data Automation	70
VA Chesapeake Bay Data Base Management	71
EPA Chesapeake Bay Mainstem Monitoring	73-74
USGS Lower Potomac Oxygen Study	75
National Oceanic and Atmospheric Administration Programs	76
NOAA Status and Trends Program	77
Chesapeake Bay River Fall Line Monitoring (MD, VA, PA, DC)	78-79
PA Water Quality Network	80-81
PA Assessment of Nutrient Sources from Main Stem and Selected Watersheds in the Susquehanna River Basin	82
MD Mainstem Monitoring (Chemical and Biological Indicators of Water Quality)	83
MD Tributary Monitoring (Chemical and Biological Indicators of Water Quality)	84
MD Patuxent River Special Studies	85
MD Living Resource Monitoring	86
VA Mainstem Monitoring	87
VA Tributary Monitoring	88
Virginia Ambient Water Quality Monitoring	89
VA Living Resources Monitoring	90
VA James River Water Quality Monitoring	91
VA Tributary Kepone Monitoring	92
VA Stream Pollution Source Studies	93
VA Kepone Health Effects Research	94

APPENDIX E: INSTITUTIONAL/MANAGEMENT

Listing of Program Titles	Page Number
Virginia Special Water Quality Technical Studies	95
DC Tributary Monitoring	96
EPA Chesapeake Bay Program	98
EPA Office of Research and Development	99-100
NOAA Weather and Satellite Programs	101
NOAA Oxygen Depletion Studies	102
FWS Research Activities	103
USGS Estuary Study	104
USDA Agricultural Research Activities (ARS)	105
NOAA Sea Grant Program (Maryland and Virginia)	106
PA Research Program	107
Maryland Research Coordination	108
VA Research To Support Management of the Commonwealth's Marine Resources	109-110
VA Advisory Services in Support of the Development, Management and Conservation of the Commonwealth's Marine Resources	111

INSTITUTIONAL/MANAGEMENT

Objective 1: Adequately coordinate Bay management activities and develop and maintain good mechanisms for accountability.

PROGRAM - Chesapeake Executive Council

PURPOSE

Support a cooperative approach among the Environmental Protection Agency (EPA), the State of Maryland, the Commonwealths of Pennsylvania and Virginia, and the District of Columbia (the States) to fully address the extent, complexity, and sources of pollutants entering the Bay, recognizing that EPA and the states share the responsibility for management decisions and resources regarding the high priority issues of the Chesapeake Bay.

DESCRIPTION

The Executive Council is the highest formally constituted body in the Bay area. It is composed of policy level (State Cabinet/Department Secretaries) officials from the participating states and Regional Administrator, EPA Region III. The EPA chairs the Council and facilitates interstate decision making and consensus development on Bay water quality and resource issues. A primary focus of the Executive Council, which meets quarterly, is to achieve stated Baywide objectives. An independent Citizens Advisory Committee (CAC) advises the Executive Council.

ANTICIPATED RESULTS

The Executive Council has given strong leadership to interstate cooperation and has facilitated a continuing dialogue among the states by establishing:

- an Implementation Committee that meets monthly;
- Subcommittees on Planning, Modeling and Research, Monitoring and Data Management;
- a Chesapeake Bay Liaison Office in Annapolis;
- a Citizens Advisory Committee.

It is anticipated that the Executive Council will be a vital catalyst in assuring that interstate coordination and cooperation continues on Bay restoration and protection programs. The Executive Council has been effective to date, and is expected to continue to play a key role in interstate coordination.

PROGRAM - Implementation Committee

PURPOSE

Carries out the charges, directives and policies of the Executive Council and provides a collegial form for consensus decision making on Bay water quality and resource issues. The EPA, by chairing the Implementation Committee, maintains focus and direction on receiving the Executive Council policy directives through attaining the Baywide objectives.

DESCRIPTION

The Implementation Committee is the operating level arm of the Executive Council. As such, it is composed of representatives from federal and state departments in such areas as health, agriculture and natural resources. In addition to the state and EPA members, other agencies participate on the Implementation Committee. These are the Corps of Engineers, the National Oceanic and Atmospheric Administration, the Soil Conservation Service, the Fish and Wildlife Service and the U.S. Geological Survey.

This committee meets monthly to address the institutional/management objectives through four subcommittees and one advisory committee. The subcommittees are Modeling and Research, Monitoring, Data Management and Planning. The Scientific and Technical Advisory Committee (STAC) provides independent advice.

ANTICIPATED RESULTS

The very essence of the Implementation Committee is cooperative Bay management. In addition to being the forum for governmental cooperation and coordination, the Implementation Committee facilitates the generation and dissemination of technical and citizen information on Bay problems and solution options. It is anticipated that the Implementation Committee will carry out the mandates of the Executive Council.

PROGRAM - Chesapeake Bay Interagency Coordination Group

PURPOSE

Assure that the activities of the various federal agencies with Chesapeake Bay-related missions and mandates coordinate their activities and programs. This is to assure that there is maximum cooperation, no overlap, and the most efficient expenditure of limited federal funds.

DESCRIPTION

The Interagency Coordination Group was first convened by Senator Mathias of Maryland in August of 1984, and is composed of those federal departments with program activities in the Bay or its drainage lands. The EPA, as the federal agency with the primary federal water quality responsibility in the Bay, is responsible for facilitating the coordination. Other participating agencies include Soil Conservation Service (USDA), Corps of Engineers (U.S. Army), National Oceanic and Atmospheric Administration (U.S. Department of Commerce), Fish and Wildlife Service (Department of Interior) and U.S. Geological Survey (Department of Interior).

ANTICIPATED RESULTS

Following the initial coordination meeting, formal memoranda of understanding between EPA and the participating agencies were drafted and signed. These memoranda identify areas of joint cooperation and pledge support in terms of staff contributions to the Chesapeake Bay Liaison Office (CBLO) for interagency projects and activities.

PROGRAM - Department of Commerce Coastal Zone Management Program

BUDGET PROJECTION

	86	87	88
State			
Federal			
Other			

PURPOSE

Encourage states to develop and implement land and water resource management programs for their coastal areas to ensure the effective management, beneficial use, protection and development of the coastal zone.

DESCRIPTION

The federal government provides financial assistance to the states to develop and implement resource management programs if the states meet the guidelines established for program approval. These guidelines are rather broad and basically require the states to establish a process for making decisions on coastal resource use, rather than requiring any specific substantive decisions. Maryland and Pennsylvania have approved CZM Plans; Virginia is developing one.

ANTICIPATED RESULTS

It is anticipated that the CZM program will continue efforts toward the establishment of a comprehensive and coordinated management strategy. This will assure the orderly and environmentally sound development of coastal areas by reconciling the increasing and often conflicting demands on coastal resources through a decision making process.

REGIONAL ACTIVITIES

PROGRAM - The Chesapeake Bay Commission

BUDGET PROJECTION

	86	87	88
MD and VA	75,000	75,000	75,000

PURPOSE

Examine all aspects of governance of the Bay and its resources. Its purposes are to:

- assist the legislatures of Maryland and Virginia in responding to problems of mutual concern related to Chesapeake Bay;
- promote inter-governmental cooperation;
- encourage cooperative, coordinated resource planning and action;
- provide, where appropriate, for uniformity in application of legislation; and
- examine existing management system and where appropriate, make recommendations for the benefit of present and future inhabitants of the Chesapeake Bay region.

DESCRIPTION

The Chesapeake Bay Commission was created in 1980 by joint action of the Maryland and Virginia General Assemblies (NR Article, Sec. 8-302, Annotated Code of Maryland; Title 62.1, Section 62.1-69.5 to 62.1-69.20, Code of Virginia). The Acts creating the Commission recognized Chesapeake Bay and its tributaries, wetlands, and dependent natural resources as an integrated ecosystem shared by the two states. The substantial joint interest of the two states in the use of resources includes management and regulatory programs, implementation methods, and actions affecting migratory fowl, finfish, shellfish, commercial and mercantile uses, and water quality.

ANTICIPATED RESULTS

It is anticipated that the Commission will continue to coordinate the legislative process in the states to address those issues which are best addressed by the states acting jointly. Specific goals/results which are anticipated by the Commission include:

- An invitation to Pennsylvania to be a full partner in the Commission;
- The establishment of identical bills on monitoring in Maryland and Virginia;

- Coordination and policy development of fisheries management plans;
- Analysis and periodic evaluation of progress by the states toward Bay restoration and protection.

PROGRAM - The Chesapeake Research Consortium

PURPOSE

Coordinate the scientific staff and facilities of the member institutions to achieve a broad-based, Baywide approach to the complex investigations which are essential to wise management of the resources of the Chesapeake Bay.

DESCRIPTION

The Chesapeake Research Consortium (CRC) was incorporated in 1972 as an association of four institutions -- The Johns Hopkins University, the University of Maryland, the Smithsonian Institutions, and the Virginia Institute of Marine Science -- each of which has longstanding involvement in research on problems affecting the Bay.

ANTICIPATED RESULTS

In addition to carrying out a number of research projects, the Consortium will continue to be available to play a coordinative role in the Bay's scientific community.

PROGRAM - The Interstate Commission of the Potomac River Basin

PURPOSE

Promote interstate cooperation in the prevention of stream pollution through water quality and land-use planning measures. The 1970 amendments expanded its scope to include water supply and other water-use planning.

DESCRIPTION

The Interstate Commission on the Potomac River Basin (ICPRB) was created in 1940 by Congressional approval of the Potomac Valley Conservancy District Compact. Signatories include Maryland, Virginia, West Virginia, Pennsylvania, the District of Columbia, and the federal government. Amendments to the Compact were ratified in 1970. The Commission's activities are limited to fact finding, technical investigations, education and coordinating the efforts of states and federal agencies involved in water quality and water management.

ANTICIPATED RESULTS

The Commission anticipates results in two primary areas.

- Through analysis of studies on sediment related nutrient transport, the Commission hopes to achieve a better understanding of the effects in the estuarine portions of the river of best management practices to control nonpoint source runoff in the upper basins.

- Through coordination of water supply activities along the Potomac, including reservoirs and intakes, the Commission assures an adequate water supply for the Washington, D.C. metropolitan area.

PROGRAM - The Susquehanna River Basin Commission

PURPOSE

Promote interstate cooperation; remove causes of possible controversy; make secure and protect developments within the states; and encourage and provide for the planning, conservation, utilization, development, management, and control of the water resources of the basin.

DESCRIPTION

Created in 1970 by an Act of Congress and by an interstate compact among New York, Pennsylvania, Maryland, and the federal government, the Commission has a very broad mission and powers relating to the Susquehanna River basin.

ANTICIPATED RESULTS

The anticipated results of the Susquehanna River Basin Commission are spelled out in the Comprehensive Plan for Management and Development of the Water Resources of the Susquehanna River Basin, which is updated periodically.

PROGRAM - The Potomac River Fisheries Commission

PURPOSE

Recognize the respective ownership, riparian rights, and rights of access of the two states and their citizens to the beds, waters, and fisheries of the Potomac River; and carry out necessary conservation and improvement of the tidewater portion of the Potomac River fishery resource through a Commission composed of representatives of the two states.

DESCRIPTION

Created in 1958 by an Interstate Compact approved by Congress, the Commission has authority to regulate fishing in the Potomac River. The Compact recognizes the ownership of the river by Maryland and the rights of both Maryland and Virginia citizens to have access to the river's waters and harvest its fisheries.

ANTICIPATED RESULTS

The Commission anticipates the establishment and maintenance of a program to conserve and improve the biological resources of the tidal portions of the Potomac River.

PROGRAM - The Atlantic States Marine Fisheries Commission

PURPOSE

Promote the better utilization of the marine, shell, and anadromous fisheries of the Atlantic seaboard; develop a joint program for promotion and protection of the fishing industry; and prevent the physical waste of the fisheries from any cause.

DESCRIPTION

The Atlantic States Marine Fisheries Compact (ASMFC) was adopted by several states in 1941 and authorized by Congress in 1942. Currently member states include: Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia, North Carolina, South Carolina, Georgia, and Florida. The tidal waters of the Atlantic Coast to the three-mile limit of state jurisdiction are within the ASMFC area of concern. Membership is limited to coastal states and contiguous states that are visited during an anadromous fish migratory cycle.

ANTICIPATED RESULTS

The Commission is working on or has adopted management plans for several species important in Chesapeake Bay, including striped bass, Atlantic menhaden, summer flounder, shad, and river herring.

The Commission is also involved in coordinating efforts under the Fisheries Management and Conservation Act for management of species using the waters beyond the three-mile limit of state jurisdiction -- the fisheries conservation zone -- and is actively involved in reviewing and commenting on federal fisheries legislation.

STATE ACTIVITIES

PROGRAM - PA Nonpoint Strategy Committee

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Provide guidance and coordinate the efforts of the various subcommittees. It serves as an advisory group to the Department of Environmental Resources and the State Conservation Commission.

DESCRIPTION

The Committee is an unofficial, voluntary group made up of diverse governmental, public, and private organizations. This committee will provide long-range planning for program implementation and review annual expenditure proposals for demonstration projects, technical needs, and financial assistance.

ANTICIPATED RESULTS

The orderly functioning of these unofficial subcommittees and the Nonpoint Strategy Committee should avoid duplication of effort and speed acceptance and implementation of nutrient management measures.

PROGRAM - MD Critical Area Commission

BUDGET PROJECTION

	86	87	88
Maryland	574,625	NA	NA

PURPOSE

Manage land in the critical area around the Bay to protect water quality and living resources. The EPA Bay Study documented that the quality and productivity of the waters of the Bay and its tributaries have declined due to the impact of human activity that has caused increased levels of pollutants, nutrients and toxics in the Bay system and declines in protective land uses such as forested and agricultural lands. The shoreline areas of the Bay system are particularly fragile and sensitive environments, very susceptible to being adversely impacted by human activity. Pollutants and nutrients associated with development in these areas will quickly reach waters of the Bay and its tributaries.

DESCRIPTION

A Chesapeake Bay Critical Area Commission, consisting of State and local government officials and public members, was created to issue regulations, consistent with the minimum criteria contained in statute, setting forth requirements to be followed by affected local jurisdictions in developing protection programs for their shoreline areas. Local protection programs, including periodic amendments, are subject to the approval of the Commission. Where a local program is not developed or approved, the Commission will adopt the program for the local jurisdiction. The protection programs are enforced by the local jurisdictions in the same manner as other local laws. However, the Commission has authority to intervene and to seek other enforcement remedies regarding violations of the program of a given jurisdiction.

ANTICIPATED RESULTS

The criteria for the critical area will be drafted for public hearing and comment in July and August, will be approved by the Commission December 1, 1985, and will be submitted to the General Assembly in January, 1986 for their approval. Once the criteria are approved by the General Assembly, the local jurisdictions will begin to develop protection programs based on the approved criteria.

INTERNATIONAL/MANAGEMENT

Objective 2: Assure a continuing process of public input and participation.

All federal and state governments in the Bay region consult with the public on matters concerning the Bay and its resources.

PROGRAM - EPA/State/Local Public Participation And Input

PURPOSE

Enlist the help of citizens and encourage dialogue with concerned and affected persons with the purpose of improving decisions and enhancing the successful implementation of programs to restore the Bay.

DESCRIPTION

A comprehensive program of public involvement will provide each person in the Basin with the opportunity to influence decisions which affect the Bay. Citizen advisory committees to governmental, technical or policy organizations, special programs geared to specific interest groups or subjects, comment gathering methods and interest prompting methods employing new technologies will be used.

Citizen Advisory Groups

There are numerous citizen advisory groups in the Chesapeake Bay Region. Maryland's Department of Natural Resources alone has 63. Individuals on such committees usually represent an organization or a geographic area; few are simply interested, unaffiliated persons. Most state and federal agencies provide staff support to their CAC's. EPA, with the Citizens Program for Chesapeake Bay, is supporting the Chesapeake Bay Executive Council's CAC.

Comment Gathering

Comment gathering mechanisms most commonly used are hearings and workshops. State and federal agencies with regulatory powers hold hearings as necessary. Most citizen organizations have members who give testimony. Academic institutions also provide "expert" testimony. Virginia and Maryland will be attempting to involve people in their home communities by working through existing watershed organization or by developing watershed networks.

Innovative Programs

Ten organizations have citizen monitoring efforts and three (Anne Arundel Community College, Citizens Program for Chesapeake Bay, and the D.C. Water Quality Program) have proposed programs to their governing/funding bodies. Of the ten, six are citizen organizations, three city or county planning agencies, and one is a college with a grant to purchase a vessel and train students to perform monitoring.

Two hotline telephones for pollution information (Pennsylvania Environmental Council and Anne Arundel Community College Environmental Center) and one events information line (at AACC) were reported.

The Chesapeake Bay Foundation and numerous other organizations have organized a portion of their members into smaller groups which respond to action alerts to attend hearings, write personal letters, send telegrams, go to pollution locations, attend a legislative session, talk to a legislator, etc. Most organizations study proposed actions; some watchdog law development and enforcement and alert members if action is needed.

ANTICIPATED RESULTS

Citizens will take advantage of their increased opportunities to be involved in decisions to bring about Bay restoration. Because of that participation, public support for federal cleanup programs and state initiatives will be sustained and increased. Willingness to pay for cleanup will be expressed to officials at all levels, creating political will necessary to maintain local, state, regional and federal funding of Bay restoration efforts.

PROGRAM - EPA Grant To Citizens Program For Chesapeake Bay (CPCB)

BUDGET PROJECTION

	85	86	87
Federal	110,000		

PURPOSE

Provide increased opportunities for the public to participate in developing and implementing the Chesapeake Bay Restoration and Rehabilitation Plan.

DESCRIPTION

CBCP provides support to the Executive Council's Citizen Advisory Committee, organizes and staffs rivershed networks in Virginia, organizes and staffs workshops and meetings throughout the basin.

ANTICIPATED RESULTS

More diverse, broader participation will occur, involving more individuals and enhancing the Plan as well as the process of implementing it.

PROGRAM - PA Public Input and Participation

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Reduce the amount of nutrients from Pennsylvania's farmlands entering the Chesapeake Bay.

DESCRIPTION

The program is designed to utilize the Citizens Advisory Committee as a vehicle to inform and encourage public input to decision-making and public participation in Chesapeake Bay matters.

ANTICIPATED RESULTS

Broadbased public involvement should encourage greater public support of Bay restoration/management programs.

PROGRAM - DC Chesapeake Bay Public Participation Program

BUDGET PROJECTION

	86	87	88
DC			
Federal			

PURPOSE

Provide the public with an opportunity to participate in water quality issues and programs which affect the Anacostia and Potomac Rivers, as well as the Chesapeake Bay.

DESCRIPTION

The District of Columbia will establish a program of public information and participation designed to give District residents an opportunity to participate in local programs and decision-making. The public participation program will also be designed to heighten public awareness and interest in water quality issues.

ANTICIPATED RESULTS

The public will have a greater opportunity to learn about issues affecting the Potomac River and Chesapeake Bay, and have an opportunity to participate in the local decision-making process.

PROGRAM - DC Public Information Depository and Information Dissemination Program

BUDGET PROJECTION

	86	87	88
DC			
Federal			

PURPOSE

Inform the public about issues and programs affecting the Anacostia and Potomac Rivers, and the Chesapeake Bay.

DESCRIPTION

The District of Columbia will establish a central depository to maintain reports, plans, studies and other information related to the Chesapeake Bay and Potomac River water quality. The District government will also distribute background information and program description to the public upon request.

ANTICIPATED RESULTS

The public will have a central location to collect information on water quality issues affecting the Potomac River and Chesapeake Bay. Also, the public will gain greater awareness of issues affecting the Potomac River and Chesapeake Bay through a public information dissemination program.

INSTITUTIONAL/MANAGEMENT

Objective 3: Enhance Bay-oriented public education opportunities to increase public awareness and understanding of the Bay system.

PROGRAM - EPA/State/Local Public Education and Outreach

PURPOSE

Maintain and expand efforts to inform the public of their mandates by the agencies and organizations which take or influence action on the Bay.

Government agencies will use all possible opportunities and channels of communication to increase public awareness of the problems of the Bay and what is required to solve them, the progress or lack of progress in solving existing problems and the steps being taken to prevent future ones.

DESCRIPTION

Environmental information and data will be made available to the public in many forms, including general information, annual reports and detailed technical reports or data. To reach the mass audience, strong media program will complement information dissemination to the identified, concerned public. Efforts will be made to inform target groups through organization publications. For those who do their own research, more resource centers will be available. General information will be available. Speakers program, exhibits, audio visual productions, formal education activities and special events targeted to specific public sectors will increase awareness. Inquiry response will support outreach efforts.

Information Centers

Citizens who do their own research have numerous opportunities in the major cities within the basin, at the larger universities that permit entry to the public, at federal offices in Washington, D.C. and in some state, regional and municipal agency libraries. Some organizations and agencies are considering establishing information centers to increase access for those who live long distances from urban centers and universities.

Publications

Many fact sheets are available concerning Bay related issues. Prime sources are the Chesapeake Bay Foundation, Cooperative Extension Service, Sea Grant Colleges, the Soil Conservation Service, Save Our Streams (MD), and, on their specific programs, state agencies. Generally such publications are action oriented.

Brochures, bulletins, booklets and posters are available from federal, state, regional and local government units; citizen organizations; academic institutions and industrial associations.

The Soil Conservation Service, Cooperative Extension, Maryland Department of Agriculture, Maryland Sea Grant and others from the public and private sectors have jointly produced material for the agricultural community's use re: nonpoint source control through the use of best management practices. More such cooperative efforts are being explored among government and private sector organizations.

Newsletters are many and varied. Some are specific to watersheds (James, Magothy, Sassafrass); others for an entire state (LCW Voter); some are for the entire Bay Region (CPCB, CBF, Audubon Naturalists Society); still others are issues oriented or deal with a specific agency's activities.

Most government organizations publish annual reports of their activities. Technical reports and data compilations are available from NOAA and EPA. Federal agencies make limited copies of research and technical reports available and then refer requestors to the National Technical Information Center (NTIS) which offers paper and microfiche copies for a fee. Some theses, unpublished research and articles, and privately funded or performed research can be lost to the public and the research community in the so-called "gray" literature. Maryland Power Siting Commission may develop and computerize a bibliography of such literature on the Bay Program computer during 1985-86.

Audio Visuals

EPA Region III and Maryland Department of Natural Resources have film collections to lend. Maryland Sea Grant and Anne Arundel County Outdoor Education Center also lend a few films.

The Chesapeake Bay Foundation has "Chesapeake Horizons"; the Interstate Commission on the Potomac has two Potomac films; Smithsonian-Edgewater, Maryland and the Virginia Soil and Water Conservation Commission have several to lend. The Lower James River Association is planning to produce a documentary.

Numerous small watershed organizations have slide shows to lend or show (with a speaker). Both Maryland and Virginia Sea Grants develop topical shows as the need is perceived.

State, local and regional organizations have at least one show about themselves, the area of concern or special issues of interest. A number of organizations develop shows as needed from their slide collections to meet requests for speakers.

Smithsonian, Christopher Newport College, schools of communication and cable television units have video taping capabilities. Smithsonian has a tape of Maryland's Conservation Corps work on the Bay; C.N. College has tapes on toxic substances in the Lower Bay and on enrichment which it lends to requestors for the cost of return shipping. The Susquehanna Tri-State Commission is developing a tape about the River for public television.

Exhibits

Most organizations can and do mount a display for a special event. Sea Grant in Maryland and Virginia, VIMS, and Old Dominion University, the Virginia Council on the Environment, Hampton Roads Water Quality Agency, the Maryland Office of Environmental Programs and the Department of Agriculture have exhibits. The Upper Chesapeake Watershed Association has an exhibit and a traveling tent show. The Cooperative Extension Service has an exhibit on nonpoint pollution problems and the Chesapeake Bay Foundation shows its display 12 to 20 times annually.

Speakers

State, interstate, federal, regional, academic, county, watershed and local groups have the capability to respond to speaker requests. Most have agency personnel or members as speakers. The Pennsylvania Environmental Council taps a network of statewide experts who have volunteered. The Citizens Program for Chesapeake Bay plans to train a cadre of volunteers.

Media

Most state and federal agencies doing work on the Bay have information personnel responsible for activities with print and broadcast media. Research organizations have publicists and some academic institutions have communications or Bay programs that provide some information about the Bay to media. Citizen organizations seek media attention at some time or another for their special events or issues of concern.

Inquiry Response

Organizations with listed telephone numbers generally have some form of inquiry response and referral function. Some organizations provide the service only for their members.

Education

In-school programs are provided through degree granting institutions and the Sea Grant Colleges which develop curricula and curriculum units. The Mathematics and Science Center in Richmond has enrichment programs, lends field and classroom equipment, and holds classes for gifted and talented high school students. Smithsonian has an intern program, Baltimore City Planning sponsors classes and the Anne Arundel Community College offers courses. The Virginia Council on the Environment has a K-12 curriculum on the Bay in development. The Maryland State Department of Education has a Chesapeake Bay curriculum and offers grants to local schools for environmental education activities.

Most agencies and organizations with speakers programs provide a form of continuing education. Some offer seminars, lectures on and off campus, public issue meetings, symposia or field education/training.

Teacher training appears to be the most popular form of workshop. Training in monitoring and pollution prevention or observation also is often given. Co-sponsorship and contracting with citizens groups are common practices within government. Some groups schedule a certain number of workshops every year.

Tours

Walking, driving, canoeing, and on-the-Bay tours are conducted by citizen organizations. Sea Grant-Maryland uses its research vessel as does the CBF to show the Bay to decision makers. Nature areas such as parks and sanctuaries have regularly scheduled guided tours of their properties. Education oriented organizations like the Mathematics and Science Center in Richmond conduct summer field trips and study programs to and on the Bay.

ANTICIPATED RESULTS

Heightened public awareness of the problems of the Bay, government programs to remedy the problems and increased understanding of the individual's potential to act to clean up the Bay will contribute to Bay improvement. More people will voluntarily change their pollution producing actions and will have greater interest in the actions of government, industry, municipalities and farmers to curb pollution. Further, because they will be better informed, citizens will have greater capability to participate in the implementation process. Media attention to the Bay will elevate its restoration to an issue of national prominence.

PROGRAM - EPA Public Education and Outreach: Citizens Program for Chesapeake Bay

BUDGET PROJECTION

	85	86	87
Federal	140,000		
Other			

PURPOSE

Increase the number of informed, concerned citizens in the Chesapeake Bay Basin and heighten awareness of the general public.

DESCRIPTION

Publish a quarterly newsletter and bulletins as necessary; develop and provide information materials to homeowners; develop and implement a citizen monitoring effort; provide information to organizations to use to inform their constituencies; support new education efforts in Pennsylvania; establish and support a volunteer speakers bureau.

ANTICIPATED RESULTS

Greater public awareness of Bay problems and programs will keep the issue before elected officials who will continue to support funds to implement clean up.

PROGRAM - PA Bay-Oriented Public Education

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Reduce agricultural nonpoint nutrient loading to the Chesapeake Bay.

DESCRIPTION

This educational program is designed to inform educators and students at all levels about Chesapeake Bay program objectives and related activities coordinated through the Pennsylvania Environmental Education Network Master Plan.

ANTICIPATED RESULTS

Broadbased public education efforts should create greater public awareness of Bay restoration/management programs and goals.

PROGRAM - PA Environmental Education

BUDGET PROJECTION

	86	87	88
Pennsylvania	18,000	19,000	20,000
Federal	18,000	19,000	20,000

PURPOSE

Develop and implement a teaching unit and a series of seminars and workshops for secondary students (grades 10-12), teachers, and the general public concerning pollution and soil and water conservation relative to the Chesapeake Bay.

DESCRIPTION

The Bureau of State Parks will employ an experienced Environmental Education Specialist to develop and conduct seminars on the Chesapeake Bay pollution problem at environmental education centers, and select state parks and school districts within the Susquehanna River Basin.

The Bureau will conduct workshops for environmental education specialists and school teachers to develop a teaching cadre knowledgeable about the Chesapeake Bay problems. Bureau specialists and technicians will also conduct learning activities on these problems for the general public utilizing the state park network.

The Bureau will develop and produce a teaching implementation plan, a compilation of information and materials, and a narrated slide/video cassette program focusing on the Susquehanna River and surrounding land areas to describe Pennsylvania's contribution to the Chesapeake Bay.

ANTICIPATED RESULTS

The project should create a significant increase in the awareness of the Chesapeake Bay problem among the general public in Pennsylvania. In addition, the project will provide a teaching unit and a cadre of teachers capable of integrating the Chesapeake Bay issue into the school curriculum. The end result should produce a citizenry aware of the Chesapeake Bay problems and involved in cleaning up the Bay.

PROGRAM - PA Water Supplier Technical Assistance

BUDGET PROJECTION

	86	87	88
Pennsylvania	80,000	84,000	88,000
Federal	80,000	84,000	88,000
Other			

PURPOSE

Institute educational and technical assistance efforts to improve water systems operations; encourage water conservation to reduce loads at existing on-lot and public sewage treatment facilities; and reduce the need for expansion of treatment works as well as reduce the need for increased public water supplies as population grows or as per capita water consumption increases within the Chesapeake Bay Basin.

DESCRIPTION

DER proposes to expand its existing water conservation and technical assistance program which works with water suppliers, sewer authorities, large volume water users, local officials and local interest groups to a water supplier technical assistance program within the Susquehanna and Potomac River drainage basins. The formal assistance program would address four primary action areas as follows:

Conservation planning and water awareness education by working with public water supply agencies to develop and implement system-specific water conservation programs for the water supply agency service area. This includes a specific water conservation plan and long-range water conservation awareness and education programs.

Leak detection and loss reduction program by loaning several sets of leak detection equipment to water suppliers and training their personnel to conduct leak surveys on components of their water distribution system. The company would then be responsible for initiating necessary repairs to eliminate leaks found during leak detection surveys.

Drought contingency planning, working with the water supplier to analyze existing water sources, yields and conservation needs to develop drought contingency plans to enable public water supply agencies to withstand the impacts of drought on their service area and to enable them to survive local water shortage crises.

System operation and management programs need to be developed to enable small public water suppliers and their consumers to develop effective programs for (a) system operation and maintenance, (b) systems management, (c) rate structuring, (d) planning for needed water supply development, (e) supply and demand problem resolution, (f) quality adjustments and improvements.

This is a new initiative for which PA is requesting $80,000 in EPA CBP funds to carry out in FY 86. The projections for FY 87 and FY 88 are subject to the availability of State and federal funds.

ANTICIPATED RESULTS

A comprehensive water supplier technical assistance program will have significant benefits for the Chesapeake Bay with tangible benefits including:

1. Water conservation efforts will reduce the demand of presently overloaded on-lot and public sewage treatment facilities within the area.

2. Leaks and water supply lines will be corrected, thus reducing the possibility of water losses causing increased flow to sewer lines or causing breaks in sewer lines.

3. Reduced demands for more water will reduce impacts on surface waters and ground water.

4. Water conservation efforts will reduce the future impacts and potential for over-loaded sewage treatment facilities within the Chesapeake Bay region.

PROGRAM - MD Environmental Education

BUDGET PROJECTION

	86	87	88
Maryland	280,675	NA	NA

PURPOSE

Expand an environmental education program to increase students' understanding of the Bay and its problems. During the past five years, a great deal of curriculum development has been done related to educating students about the ecology and problems of the Bay. These projects have included: "Decision Making/The Chesapeake Bay"; Sea Grant's junior high science units on the oysters, tides, marshes and food webs in the estuary; National Aquarium teacher resource booklets on the biology of the Bay; and the EPA document, "Chesapeake Bay: Introduction to an Ecosystem".

There are also a number of programs currently in existence which allow children to have direct, on-site field experience with the Bay. Some of these programs are conducted in conjunction with existing outdoor education centers; others are with the Chesapeake Bay Foundation's Estuarine Field Studies Program.

DESCRIPTION

This program is designed fund a contractual State specialist in environmental education. The specialist will help to train teachers on how to implement environmental education programs with their students. Additionally, grants are available to local systems for curriculum modification and implementation of instructional programs which support environmental education.

ANTICIPATED RESULTS

Increased numbers of teachers will provide environmental education to more students, increasing the next generations' potential for environmentally sensitive decision making.

PROGRAM - MD Youth Conservation Corps

BUDGET PROJECTION

	86	87	88
Maryland	568,947	NA	NA

PURPOSE

Provides productive employment for disadvantaged youth and also involves them with career and/or vocational education by providing summer work opportunities in restoring and creating natural resources habitat.

DESCRIPTION

Many areas of the Bay and tributaries can benefit from near shore habitat creation and rehabilitation which would result in increased fisheries reproduction and survival. The joining of the federal summer youth employment program with the State's efforts to restore the health and welfare of the Bay provides an excellent opportunity for disadvantaged youths. The Youth Conservation Corps will undertake labor intensive projects for stabilizing and refurbishing streams and estuaries. Projects under the vegetative erosion control program and the submerged aquatic vegetation plantings will benefit from youth labor. Moreover, the youths are given meaningful summer employment and provided with experiences that can assist them with later career planning.

We will hire 700 disadvantaged young people, between the ages of 14 and 21, lead by 115 crew chiefs and field coordinators, to work on over 80 projects directly related to the Chesapeake Bay and build upon that core by developing a volunteer conservation corps, open to everyone, regardless of their background, working through environmental science programs in the school system to further enhance the Bay cleanup.

ANTICIPATED RESULTS

This program will increase environmental awareness of participants and will directly contribute to fisheries and habitat improvement.

PROGRAM - VA Grant For Chesapeake Bay Education Projects

BUDGET PROJECTION

	84-86
Virginia	250,000

PURPOSE

Increase public awareness and understanding of the Chesapeake Bay estuarine system and its resources.

DESCRIPTION

Implemented by the Council on the Environment, this program is designed to use grants to environmental groups, local governments, museums, etc. to develop and implement Chesapeake Bay education programs that will reach large numbers of the public.

Numerous public and private agencies were invited to submit grant proposals for the educational grant program in September: 29 proposals were received; an ad hoc advisory group was established to evaluate and make recommendations to the COE Administrator on the grant proposals; and 6 grant awards have been made.

ANTICIPATED RESULTS

Through sources which the general public accepts as credible, Bay environmental information will reach more people in Virginia, increasing grass-roots understanding and support for Bay initiatives.

PROGRAM - VA Field Studies for School Children

BUDGET PROJECTION

	84-86
Virginia	90,000

PURPOSE

Increase the opportunities for school children to experience the Bay environment.

DESCRIPTION

Funding is being provided through the Department of Education to the Chesapeake Bay Foundation so that it can expand its program in Virginia of conducting Chesapeake Bay field trips for school children.

ANTICIPATED RESULTS

Expanded opportunities for hands-on experience with the Bay, its rivers and wetlands, will broaden the base of public understanding of and support for the Bay cleanup efforts. The school children who are able to participate in these field trips will share their experiences with their parents as well as with their schoolmates.

PROGRAM - VA Chesapeake Bay Public Television Series

BUDGET PROJECTION

	84-86
Virginia	50,000

PURPOSE

Increase public awareness of the Bay, the problems it faces and the efforts being made to restore and protect it.

DESCRIPTION

Funds are being provided to the Hampton Roads Educational Telecommunications Association, Inc. (WHRO) through the Department of Information Technology to assist in defraying the costs of producing a television series of the Chesapeake Bay.

ANTICIPATED RESULTS

The series will increase the amount of Chesapeake Bay materials available to public television stations and, consequently, will expand the opportunities for citizens to learn about the Bay.

PROGRAM - VA Environmental Public Service Announcements

BUDGET PROJECTION

	84-86
Virginia	40,000

PURPOSE

Increase public awareness and understanding of the Chesapeake Bay estuarine system and its resources.

DESCRIPTION

This program, implemented by the Department of Conservation and Historic Resources, is designed to produce PSAs concerning the environmental conditions of the Chesapeake Bay, including at least one demonstrating how phosphorus harms the ecology of the Bay and how it enters the Bay.

ANTICIPATED RESULTS

Through television, mass audiences that otherwise could not be reached will learn about Bay problems and solutions.

PROGRAM - VA Youth Conservation Corps

BUDGET PROJECTION

	84-86
Virginia	300,000

PURPOSE

Improve the physical condition of streams and small watersheds.

DESCRIPTION

Implemented by the Department of Conservation and Historic Resources, this program is designed to employ young people to carry out stream and small watershed improvement projects during the summer vacation period.

Summer youth project ideas were solicited from State agencies in December. Several agencies with field offices in the Tidewater area proposed summer jobs which include planting marsh grass, tree cutting, brush clearing, removing debris from creeks and drainage pipes, seeding right-of-ways, and other unskilled manual labor jobs associated with mitigating nonpoint source pollution of the Chesapeake Bay. Working together with the Tidewater Service Delivery Areas, the Division of Parks and Recreation will request that the agencies prepare formal project proposals. During early January, a Request for Proposals will be prepared and distributed to State agencies previously contacted, Soil and Water Conservation Districts, cities and counties. An ad hoc committee comprised of Parks and Recreation and Council on the Environment staff will review project proposals after initial eligibility screening by the Service Delivery Areas. The program is expected to employ a minimum of 525 disadvantaged youth in the summer of 1985.

ANTICIPATED RESULTS

Through employment of over 500 youth this program will increase their environmental awareness and improve the quality of the Bay drainage area.

INSTITUTIONAL/MANAGEMENT

Objective 4: Track and evaluate all activities which may impact estuarine water quality and resources.

PROGRAM - EPA Chesapeake Bay Liaison Office

BUDGET PROJECTION

	85	86	87
Federal	2,750,000	2,750,000	2,750,000

PURPOSE

Coordinate state and federal restoration and protection efforts. The EPA Chesapeake Bay Liaison Office (CBLO) was established by the Chesapeake Bay Agreement of 1983 to advise and support the Chesapeake Bay Executive Council and it committees.

DESCRIPTION

The current administration has committed $10 million per year for the next four years to support this program. Approximately $7.25 million of the $10 million will be available annually for state implementation grants (see Appendix A.5). The remaining funds are used to support the following activities:

1. Program Administration - The CBLO provides staff support for the Executive Council and its committees (Appendix E.1), interagency coordination, grants management, technical planning and analysis, and program tracking and evaluation.

2. Public Participation/Education - The CBLO coordinates an information network for the Chesapeake Bay. In addition, public participation and education efforts are supported through a grant to the Citizens Program for the Chesapeake Bay (Appendix E. 2-3).

3. Data Management - The Chesapeake Bay Program Computer Center serves as the central repository for information concerning the Bay and is maintained by the CBLO (see Appendix E-5).

4. Monitoring - State and federal water quality and living resource monitoring activities are coordinated through the CBLO. The CBLO also supports an integrated mainstream sampling program of 50 hydrographic and water quality stations (see Appendix E-6).

5. Research and Modeling - The CBLO tracks and evaluates ongoing federal, state and university Bay related research activities. In addition, technical studies which support the development of predictive management tools are funded through grants or contracts to research institutions (see Appendix E-7).

ANTICIPATED RESULTS

The activities of the CBLO support the goals and objectives of this Chesapeake Bay Restoration and Protection Plan. It is anticipated that the office will provide the necessary support for an effective, coordinated implementation effort.

PROGRAM - EPA Water Quality Planning: 205(j) Grants

BUDGET PROJECTION

	85	86	87
Federal	2,180,570*		

*Total funds available for Bay states.

PURPOSE

Provide funds to be used by the states in water quality management planning in priority water bodies where designated uses are not being met.

DESCRIPTION

Provides EPA funds for various water program activities such as water quality assessments, river basin planning, NPS planning, technical studies and water quality monitoring and modeling.

ANTICIPATED RESULTS

Development of water quality management plans in environmentally stressed areas such as the Elizabeth River. Allows states to conduct technical and analytical assessments of Bay water quality and to plan for control of pollutant sources.

PROGRAM - EPA Water Quality Management: 205(g) Grants

BUDGET PROJECTION

	85	86	87
Federal	6,719,000*		

*Total funding for PA and MD.

PURPOSE

Administer the municipal construction, nonpoint source and NPDES grants programs.

DESCRIPTION

The management assistance grants are used for day-to-day program operations, including project design reviews and establishment of construction priorities within the state.

ANTICIPATED RESULTS

Allows states to assume construction grant program management responsibilities which include development of priority lists. This ranking process can favor projects which impact the Chesapeake Bay. EPA has issued new standards for municipal enforcement which the states must follow up on in their own enforcement document.

PROGRAM - EPA State Water Pollution Control Program Assistance: 106 Grants

BUDGET PROJECTION

	85	86	87
Federal	5,150,000*		

*Total for all Bay states.

PURPOSE

Provide funds for states in administering their water quality programs.

DESCRIPTION

These funds are used primarily for the NPDES permit program, water quality monitoring, compliance monitoring and enforcement activities. This grant program can also be used to fund activities that improve Bay water quality management programs, including NPS program development and management of NPS programs and demonstration projects (not direct cost sharing to landowners). Supplemental funds are being used to support groundwater programs. In addition to funding states, approximately $240,000 has been awarded to two interstate commissions: Susquehanna River Basin Commission and the Interstate Commission for the Potomac River.

ANTICIPATED RESULTS

Allows states to implement pollution control programs called for in the Clean Water Act and to focus on activities that will improve Bay water quality.

PROGRAM - EPA Office of Marine and Estuarine Protection (OMEP)

BUDGET PROJECTION

Federal	86	87	88

PURPOSE

Develop and implement at the national level strategies to protect the marine and estuarine environment, using relevant authorities of the Clean Water Act (CWA); Marine Protection, Research and Sanctuaries Act (MPRSA); and other environmental statutes.

DESCRIPTION

OMEP works with EPA's Region III and with the states of the Chesapeake Bay watershed to implement the following national programs with component projects pertaining to the Bay:

- Provides national direction and programmatic guidance for the Chesapeake Bay Program as well as other joint federal/state estuary restoration programs such as those for Narragansett Bay, Buzzards Bay, Long Island Sound and Puget Sound. Provides opportunities for exchanges of information and technical methods among the separate programs. Supports selected demonstration projects of general national utility, such as development and testing of particular monitoring or restoration methods and strategies.

- Develops national guidelines for Regional evaluations of requests for Section 301(h) (CWA) waivers for release of sewage treatment wastewaters to estuarine waters. Provides guidance for monitoring waters that may receive such effluents.

- Provides technical assistance to the Region for evaluating, designating and monitoring dredged material disposal sites in estuarine waters (under MPRSA).

ANTICIPATED RESULTS

The anticipated results of OMEP's National Estuarine Program guidance for the Chesapeake are to assist in planning and coordination of Bay Program activities, and to provide technical assistance by supporting selected national demonstration projects of relevance to estuarine protection and restoration.

The anticipated results of national 301(h) and dredged material disposal programs for the Chesapeake are to provide technical guidance to the Region for assessing suitability of proposed release or disposal sites; for monitoring waters affected by wastewater release if any are approved under Section 301(h); and for monitoring dredged material disposal sites.

PROGRAM - EPA III Water Management Division

BUDGET PROJECTION

	86	87	88
Federal			
Other			

PURPOSE

Implement, in conjunction with Region III states, water quality programs to: 1) reduce the pollution of surface waters, 2) prevent the contamination of groundwaters, and 3) maintain the purity of drinking waters.

By implementing water quality programs to meet the goals stated above, the Water Management Division fulfills mandates contained in the Clean Water Act and Safe Drinking Water Act.

DESCRIPTION

Programs of the Water Management Division are administered through delegation to state agencies or direct implementation by EPA. These programs include:

1. Construction grants financial assistance for municipal sewage treatment plants.

2. Pollution discharge permit issuance and enforcement.

3. Water quality management planning functions including water quality standards development, wasteload allocation procedures development, and nonpoint source program management. State program grants are provided to assist state planning and program administration (106, 205j, 205g).

4. Public water system surveillance, underground injection control management, and development and implementation of a Regional groundwater strategy to maintain drinking water quality and protect groundwater. Grant assistance and technical oversight provided.

5. Management of the Chesapeake Bay Program. Financial assistance provided to states through grants for Chesapeake Bay initiatives.

ANTICIPATED RESULTS

Implementation of Water Management Division programs will continue water quality improvements by the following means:

- reduction of pollutant loadings from point source discharges,
- improved compliance with NPDES permit limitations,
- development of Regional strategy for toxics management,
- development of coordinated groundwater protection strategy,
- coordination of state NPS programs.

PROGRAM - EPA III Environmental Impact and Marine Policy Branch

BUDGET PROJECTION

	86	87	88
Federal			
Other			

PURPOSE

Evaluate environmental impact studies for federally funded projects within Region III; and protect regional wetlands and coastal zones, particularly with regard to dredge and fill operations and ocean dumping.

The Environmental Impact and Marine Policy Branch is a component of the Regional Office of the Assistant Administrator for Policy and Management whose functional authority is derived from the Clean Air Act and the Clean Water Act.

Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA) require that all federally funded projects be evaluated in terms of environmental impact.

Section 404 of the Clean Water Act, the Wetlands Act, and the Ocean Dumping Act provide the basis for the branch's wide range of wetlands and coastal zone management activities.

DESCRIPTION

The two sections of the Environmental Impact and Marine Policy Branch carry out the following functions:

- The NEPA Compliance Section is responsible for receiving and coordinating the review of draft Environmental Impact Statements (EISs), and assists other federal agencies in developing conceptual frameworks for including environmental considerations into their decision-making processes; the section also prepares, files, and distributes final EIS. The section has contract funds available to prepare EISs and to undertake other special studies.

- The Wetlands and Marine Policy Section is responsible, in conjunction with the Corps of Engineers, for monitoring and enforcing federal regulations for dredging and filling wetlands. The section is also involved in the development of port facilities, managing coastal zones, and the ocean dumping of wastes.

ANTICIPATED RESULTS

The branch will continue to review and assess federal projects for impacts to the natural resources of the Chesapeake Bay and to mitigate negative impacts to wetlands. The branch will also assist in submerged aquatic vegetation restoration programs and NPS management.

PROGRAM - EPA III Hazardous Waste Management Division

BUDGET PROJECTION

	86	87	88
Federal			
Other			

PURPOSE

Assess and clean up dangerous hazardous waste sites; and prevent the proliferation of such sites by requiring that all newly generated hazardous wastes be treated and disposed in an environmentally sound manner which safeguards public health.

DESCRIPTION

Though many federal statutes have an impact on the management of hazardous materials, the core legislation which authorizes the programs of the Hazardous Waste Management Division consists of:

- the Toxics Substances Control Act (TSCA), which regulates commerce to protect human health and the environment by requiring testing and use restrictions on certain chemical substances;

- the Federal Insecticides, Fungicide, and Rodenticide Act (FIFRA), which regulates the manufacture, distribution, and use of pesticides and herbicide;

- the Resource Conservation and Recovery Act (RCRA), which provides technical and financial assistance for the development of solid waste management plans and facilities for the recovery of energy and other resources from solid waste, and regulates the treatment, storage, transportation, and disposal of hazardous wastes; and

- the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as SUPERFUND), which finances emergency clean up measures for releases of hazardous substances, and provides for the recovery of spent funds from, and the assessment of penalties against, culpable parties.

ANTICIPATED RESULTS

Through the Superfund program, hazardous wastes sites will be evaluated and remedial actions scheduled. Implementation of the 1984 RCRA amendments will expand the scope of that program and increase the number of regulated facilities. Continuing emergency response capacity will be available for cases of hazardous waste spills and uncontrolled disposals.

PROGRAM - EPA III Environmental Services Division

BUDGET PROJECTION

	86	87	88
Federal			
Other			

PURPOSE

Provide technical assistance to states in air quality monitoring, Chesapeake Bay Program quality assurance, environmental emergency response, water quality monitoring and analysis, public water supply program activities, federal facility compliance, and air, water, hazardous waste, and toxics substances enforcement.

DESCRIPTION

The Environmental Services Division is a client-oriented service division providing technical assistance to regional and state programs in areas described above. The division provides a regional focal point for research and development, technical assistance, and technology transfers; manages various special studies, surveys and projects; provides laboratory analyses and biomonitoring support for regional and state environmental programs; and is reasonsible for developing and implementing ambient and compliance monitoring guidelines.

ANTICIPATED RESULTS

Continued technical support to EPA and regional, state and local agencies located in the Chesapeake Bay area. Through this support, data on Chesapeake Bay natural resources will be updated and quality-assured and used as a basis for implementing new and ongoing Chesapeake Bay Program initiatives.

PROGRAM - NOAA Estuarine Programs Office

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Provide a national perspective and agency-wide leadership for NOAA's broad range of estuarine programs. The NOAA Estuarine Programs Office (EPO) is responsible for coordinating NOAA's efforts under the Chesapeake Bay Restoration and Protection Plan.

DESCRIPTION

The EPO was established in 1984 and is staffed by representatives from the major offices in NOAA. The office works closely with the Office of Marine and Estuarine Programs in EPA to ensure that NOAA programs and activities in the Chesapeake and other major estuaries are compatible with EPA estuarine efforts. For the Chesapeake Bay Program, the Director of EPO represents NOAA on the Implementation Committee while EPO staff members participate in the CBP Subcommittee.

ANTICIPATED RESULTS

The EPO and staff from other NOAA offices have developed a research plan for the NOAA studies to be conducted under the Chesapeake Bay Program. The NOAA study effort will focus on four major areas: 1) data acquisition and management for the Chesapeake Bay Data Center; 2) observation on living marine resources; 3) improvements in fishery statistics; and 4) evaluation of the effects of oxygen depletion on living marine resources. These studies constitute one of the major federal efforts to protect and restore the living marine resources of the Bay.

PROGRAM - DOD/EPA Joint Resolution

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Foster cooperation between EPA and DOD to enhance federal Chesapeake Bay pollution abatement activities.

DESCRIPTION

Under the agreement, the Defense Department (DOD) will give priority consideration to funding pollution abatement projects and studies, develop environmental self-auditing at several installations, review practices to insure quality of environmental improvement, provide information needed to issue or re-issue major National Pollutant Discharge Elimination System (NPDES) wastewater discharge permits, and review land management practices at several installations to reduce runoff into the Bay. The two agencies will meet annually to evaluate progress.

ANTICIPATED RESULTS

The resolution covers more than 50,000 installations in the Chesapeake Bay region encompassing 400,000 acres and represents a long-term commitment by DOD that will significantly upgrade the quality of Chesapeake Bay waters.

PROGRAM - FWS Documentation of Trends in Natural Resources

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Assess and document trends in important natural resources in Chesapeake Bay, and identify improved means to manage Bay resources in the future.

DESCRIPTION

Extensive literature review and evaluation of raw data will be used for trend analysis. Some additional information may need to be collected. Components of the analysis include:

- Evaluate land use impacts on historical SAV beds;
- Develop a working policy for protection, management, and enhancement of SAV in Chesapeake Bay: a special project is funding the mapping of 1985 beds of SAV as a means of monitoring this resource;
- Identify, map, and evaluate historical and existing high quality habitat areas for species of special emphasis (e.g. anadromous fishes, waterfowl);
- Identify major wetland changes and relate these to specific land use changes in a major watershed, the Choptank River; and
- Identify trends in shoreline development and relate these to distribution and abundance of Bay organisms.

ANTICIPATED RESULTS

These data should strengthen understanding of the relationship between habitat modification ~~and~~ loss, and declines in valuable living resources. In addition, this information can be used to develop policy and guidance for improved management of these resources.

PROGRAM - FWS Habitat Resources Program Activities

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Protect, conserve and enhance fish and wildlife and their habitat in the Chesapeake area through recommending and advocating means and measures to mitigate developmental impacts or improve the resource.

DESCRIPTION

a. Surface mining impacts (Surfacing Mining Control and Reclamation Act) - analyze and report on efforts of these activities on fish and wildlife resources and habitats by means of site inspections and recommendations to Office of Surface Mining. This would tend to occur in far western or northern portion of Chesapeake Bay watershed.

b. Coastal Zone Management activities - (CZM Act) provide technical advice to state programs, including for estuarine sanctuary establishment and programs.

c. Coastal barriers activities (Coastal Barrier Resources Act) - Prepare recommendations for protection of fish and wildlife resources in CBRA units (in Bay area) and update maps of areas.

d. Ecological emergencies - Respond, as necessary and required, to emergencies such as hazardous material spills, which endanger fish and wildlife resources. Typically we supervise collection and treatment of impacted waterfowl.

e. Outer Continental Shelf activities (OCS Act and 1978 Amendment) - Review impacts of prepared offshore drilling for oil and gas on Chesapeake Bay areas.

f. Occasional work preparing management plans for natural resources on military bases on Chesapeake Bay area (formerly funded through Sikes Act, now directly, by specific project).

ANTICIPATED RESULTS

Through participation in programs listed, FWS aims to provide maximum feasible support for protection and conservation of fish and wildlife species and habitats under its jurisdiction.

PROGRAM - FWS Other Programs and Facilities

BUDGET

	86	87	88
Federal			

PURPOSE

Carry out several other programs which are not planned or administered at the Annapolis FWS Office.

DESCRIPTION

Migratory Bird Program Activities - (Migratory Bird Conservation Act, M.B. Huntingpond Conservation Stamp Act, Migratory Bird Treaty Act)

Anadromous Fish Program Activities - (Anadromous Fish Conservation Act with Chafee Amendment, Atlantic Striped Bass Conservation Act)

National Wildlife Refuge System Activities - (National Wildlife Refuge System Administration Act, Refuge Recreation Act, Refuge Revenue Sharing Act) - (various locations in Chesapeake Bay watershed).

Enforcement Activities - (various federal statutes, e.g. Endangered Species Tax)

Research Activities - carried out mainly by Columbia National Fisheries Research Lab and Patuxent Wildlife Research Center (including, at the latter, work on condition assessments of canvas backs and a program analyzing tissues of oldsquaw ducks).

ANTICIPATED RESULTS

The fishery program is closely tied to the Emergency Striped Bass Study (EPBS), with an emphasis currently on hatchery technical assistance to Maryland from FWS. Other agencies such as NMFS are involved, and FWS will have a special coordinator on board in Annapolis sometime in April 1985.

PROGRAM - PA Computer Systems for NPDES and State Data

See detailed writeup on this program under NUTRIENTS, Objective 4.

PROGRAM - MD Water Quality Management Planning

BUDGET PROJECTION

	86	87	88
Maryland	261,355		

PURPOSE

Support water quality planning, water quality modeling and wasteload allocations for setting NPDES permit conditions and adopting nonpoint source controls for watersheds. This effort will also evaluate the effectiveness of targeted agricultural efforts in reducing pollution.

DESCRIPTION

A review and revision of Water Quality Management Plans was initiated in FY 85, and will continue in FY 86. The OEP staff will continue working with the Maryland Department of Agriculture to implement the agricultural cost-sharing program. No new staff is being requested in FY 86.

ANTICIPATED RESULTS

Two updated Basin Plans. Reduction of point and nonpoint source pollutants.

PROGRAM - MD Financial Management of Public and Private Sewage Treatment Plants

BUDGET PROJECTION

	86	87	88
Maryland	34,550	34,550	34,550

PURPOSE

Provide the necessary fiscal and economic review of all sewage treatment plants for adequate financial analysis and fiscal planning so that operations, maintenance, repairs, replacement of equipment, and plant expansions are accomplished when needed with financing from a system of user charges and other funds.

DESCRIPTION

New regulations require that all existing sewage treatment plants demonstrate to the Department of Health and Mental Hygiene that there are adequate revenues to support the facility presently and in future years. New facilities are required to demonstrate adequate fiscal planning and revenue, including necessary bonds and escrow accounts, before construction permits are to be issued by the Department. One additional position is required to provide the necessary fiscal and economic review of information submitted pursuant to this initiative.

ANTICIPATED RESULTS

Sewerage treatment facilities will function as designed.

PROGRAM - VA Tracking and Reporting On Bay Management Programs and Environmental Trends

BUDGET PROJECTION

	84-86
Virginia	75,000

PURPOSE

Coordinate Bay management activities and develop and maintain good mechanisms for accountability.

DESCRIPTION

Implemented by the Council on the Environment, this program is designed to:

- designate a single state agency as primary coordinator for Bay related management activities.
- monitor the implementation of State Bay management activities.
- report regularly on the status and accomplishments of Bay management programs.

ANTICIPATED RESULTS

The COE has established a formal process for tracking of and reporting on the progress of the Commonwealth's Chesapeake Bay initiatives. The formal reporting is accomplished through a quarterly report format coordinated by the COE. Comprehensive overview sessions are conducted quarterly in order that the status of all Chesapeake Bay initiatives and related projects can be reviewed. The cabinet secretaries of Commerce and Resources and Human Resources conduct the reviews, with Council on the Environment staff assisting. Agency heads, project managers, and other staff persons also participate in the sessions.

Presentations are made to the General Assembly as requested.

PROGRAM - VA Coordinated Environmental Review System

BUDGET PROJECTION

	84-86
Virginia	80,000*

*Represents only Council on the Environment involvement and does not show costs to other participating state agencies.

PURPOSE

Monitor and evaluate environmental consequences of all activities subject to state and federal environmental impact reporting requirements.

DESCRIPTION

This program is coordinated by the Council on the Environment and involves a wide range of state agencies and institutions. The program is designed to evaluate NEPA documents and other types of federal and state environmental impact documents. Approximately 100 documents related to projects, plans, etc. are reviewed each year.

ANTICIPATED RESULTS

Incorporate environmental considerations into State and federal decisions on projects and activities subject to environmental reporting requirements. Influence decisions to reflect a sensitive integration of human activities and the environment in which they take place.

PROGRAM - VA Bay Related Environmental Reviews

BUDGET PROJECTION

	84-86
Virginia	130,000

PURPOSE

Monitor and evaluate all activities which may impact estuarine water quality and resources.

DESCRIPTION

This program is implemented by the State Water Control Board and is designed to use review systems to evaluate 401 certification, NEPA Environmental Impact Statements, highways projects, channel modifications, etc. Expect to issue approximately 175 Section 401 certifications, review approximately 80 Environmental Impact Statements, and review approximately 180 highway projects.

ANTICIPATED RESULTS

Ensure that 401 projects will comply with State water quality standards.

INTERNATIONAL/MANAGEMENT

Objective 5: Develop and maintain a coordinated Chesapeake Bay data management system.

PROGRAM - EPA Data Management System

BUDGET PROJECTION

	86	87	88
Federal			
State			
Other			

PURPOSE

Serves as the Congressionally mandated data repository for information concerning the Chesapeake Bay. The Chesapeake Bay Program Computer Center in Annapolis is currently funded through the U.S. EPA Region III, Chesapeake Bay program. This is a cooperative effort that involves the EPA, the States of Maryland, Virginia, and Pennsylvania, the District of Columbia, and several federal agencies that are involved in Bay-related projects. The Data Center is responsible for servicing the Bay Program partners for their data processing needs as they relate to the Chesapeake Bay Program.

DESCRIPTION

During the initial research phase of the Bay Program (1977-1983) approximately 100 million characters of information concerning the Bay were collected and stored on the Bay Program PDP 11/70 and EPA IBM computers. With the aid of a federal grant in 1983, the Maryland Office of Environmental Programs contracted to purchase a VAX 11/780 computer system for use by the Chesapeake Bay Program members. This purchase opened a new era for data processing by the Bay Program, since the VAX computer has the capacity to support multiple users running large data analysis programs, simultaneously, while operating at a cost that can be supported by the Program.

The CBP computer system, including hardware, software, and related technical support capabilities, is not a static entity. A number of system improvements are planned for the FY 85-86 period, and others are being considered. The Bay Program Data Center operates a VAX 11/780 computer manufactured by Digital Equipment Corporation.

SOFTWARE

VMS OPERATING SYSTEM

The VAX operates under a commercial operating system developed by Digital Equipment Corporation which is called VMS, or Virtual Memory System. VMS is the heart of the VAX, and all other software programs run under this operating system.

SAS

The SAS software package is licensed by the State of Maryland for the CBP computer center. This package is used by nearly all users of the CBP VAX computer. At any given time during the day there will be from one to five simultaneous users.

BMPD

The Bio-Medical Data Programs software package is licensed by the State of Maryland. Primary users to date are the staff at Maryland DNR including the Tidewater Fisheries Branch and the Geological Survey.

DATA BASE MANAGEMENT SYSTEM

With the increased volume of data to be entered into the system and the increased and more sophisticated retrievals of data that will be required, plans are being made to obtain and install a Data Base Management System (DBMS). When installed, all users will employ it for data storage, management and retrieval.

MISCELLANEOUS SOFTWARE

The State of Maryland intends to acquire a library of mathematical functions for installation on the VAX. The primary users will be those who perform modeling and those involved in application programming.

CHESSEE

CHESSEE is an online, interaction program which allows casual or computer literate users to browse through the CBP data base to quickly locate information of interest. CHESSEE is hierarchical in design, containing six major areas of interest, each of which includes more detailed options. Four of these (BAY PROGRAM, DATA MANAGEMENT, MONITORING, and REPORTS) are composed of short text files which contain paragraphs of descriptive documents. The other two key areas (DATA BASE and DATA DICTIONARY) contain summaries, contents, and means of water quality and living resource data, and a dictionary to help users locate data files.

GENERAL SUPPORT

The CBP computer center staff provides support to approximately 100 individual and 27 institutional users of the computer center and members of the general public.

Support is also provided to the Chesapeake Bay Information Center and other citizens' groups in a number of ways:

- Development of user-friendly programs that can be run by citizens. CHESSEE is an example of these.

- Retrieval of specified CBP data base information.

- Demonstrations of the CBP computer systems.

ANTICIPATED RESULTS

The Chesapeake Bay Program Computer Center will continue as a repository for the historical data base and new state data. Computer system access for state personnel and other users will be maintained. As system requirements grow, and as resources permit, increased user capabilities will be provided through improvements in operating efficiency and the acquisition of advanced hardware, software, and related system components.

PROGRAM - NOAA Chesapeake Bay Implementation: Data Acquisition for CBDC

BUDGET PROJECTION

	85	86	87
Federal	200K		

PURPOSE

Support the needs of the Chesapeake Bay data center. NOAA will identify and acquire existing information to help complete the historical data set for Chesapeake Bay.

DESCRIPTION

This information is needed to provide as clear a picture as possible of the current trends and problems and define gaps in information required for the understanding and management of the Bay's living marine resources. NOAA's initial data acquisition effort will address the following tasks:

- Identification of NOAA-collected or supported Chesapeake Bay environmental data and related data sets appropriate for supplementing the present Chesapeake Bay Data Center data holdings.

- Coordinate with the Chesapeake Bay Data Center to identify the priority data needs and ensure that NOAA collected data is organized in a format that is compatible with the CBDC data bases.

- Provide the Chesapeake Bay user community with information on the data that is available and data that needs to be collected through newsletters and data reports.

ANTICIPATED RESULTS

Refining the historical data base, as well as providing new data as it becomes available, will allow better analysis of trends and status of water quality.

PROGRAM - NOAA National Estuarine Atlas

BUDGET PROJECTION

	86	87	88
Federal			
State			
Other			

PURPOSE

Develop a National Estuarine Inventory to systematically and quantitatively identify and compile a data base on all large and medium sized estuaries in the contiguous U.S.

DESCRIPTION

NOAA's Ocean Assessments Division has recently completed a preliminary draft of a National Estuarine Atlas. Information concerning Chesapeake Bay in the draft atlas includes estimates for: the dimensions and boundaries of estuarine waters; flow rates; tidal parameters; stratification; surface area; and 25 categories of land use in the portions of the drainage basin directly affecting the Bay. The estimates are based on existing data and literature.

ANTICIPATED RESULTS

When development is completed, the atlas, inventory and data base will be used to make comparisons, rankings, statistical correlations and other analyses related to resource use, environmental quality and economic values among estuaries. This inventory can also be used to identify priority watersheds for pollution control.

PROGRAM - USGS Land Use Management System

BUDGET PROJECTION

	86	87	88
Federal			
State			
Other			

PURPOSE

Develop a land use management system for the Chesapeake Bay drainage basin that merges remote sensing data with other data such as soil type or critical resource habitat.

DESCRIPTION

The Chesapeake Bay Program has requested the USGS to undertake a pilot project applying its ARC INFO Geographic Information System (GIS). Suggested sites for the pilot study are the Stratford Hall quadrangle in the Potomac basin and eleven quadrangles in the upper Patuxent basin. The CBP has funded a remote sensing project which is being field evaluated in the Stratford Hall quadrangle by the local soil conservation district. The U.S. Fish and Wildlife Service has compiled an extensive atlas of environmental information in the Patuxent River. In many ways these data are similar to what the CBP would like to collect on the whole Bay drainage area.

ANTICIPATED RESULTS

These pilot projects would provide valuable feedback to the CBP on limitations and applications of a GIS and constitute a meaningful hands-on learning experience for USGS. Upon completion, the land use management system would facilitate the tracking of land use changes and trends and would help to identify watersheds for pollution control.

PROGRAM - PA STORET

BUDGET PROJECTION

	86	87	88
Pennsylvania Federal	14,000	14,000	14,000

PURPOSE

Store, retrieve, and analyze Pennsylvania's ambient water quality data in EPA's STORET System.

DESCRIPTION

Chemical and biological data from Pennsylvania's ambient water quality network and water chemistry, fish tissue, and sediment analyses from EPA's CORE Monitoring Stations are routinely entered into STORET by DER. This system provides for convenient storage, retrieval, and analysis of stored data - not just by DER, but by anyone with access to STORET.

ANTICIPATED RESULTS

Up-to-date ambient chemical, biological, and fish tissue data on Pennsylvania's waters, including the Chesapeake Bay Drainage Basin.

PROGRAM - MD System Development: Regional Data Center

BUDGET PROJECTION

	86	87	88
Maryland	255,541	NA	NA

PURPOSE

Provide Maryland's share of funding for continuance of the EPA Chesapeake Bay Liaison Office in Annapolis.

DESCRIPTION

One of the primary accomplishments of the Chesapeake Bay Program was the establishment of a data base containing both historical and program-generated data. To assure continuation of this data base, the States of Maryland, Virginia, and Pennsylvania have agreed to provide a centrally located and jointly maintained data center. The Environmental Protection Agency will continue to contribute to this center by funding computer support personnel.

The office will coordinate the federal/interstate system and operate the computer database center, including the historical and program data generated by the EPA study. The initiative includes operating funds for hardware/software to be located at both the Department of Natural Resources and the Office of Environmental Programs, and to store and analyze new monitoring data. (See EPA Data Management System, also in E.5.)

ANTICIPATED RESULTS

During FY 86, staff and subcontractors will be improving the existing Living Resources Database data entry procedures and will be working with CBP staff in the storage of living resources data in the Regional CBP data base. Installation of a multiplexer will occur for dedicated telephone communication. Staff will be involved with developing a program for reduction of data and model results developed from monitoring program.

PROGRAM - VA Water Quality Data Automation

BUDGET PROJECTION

	84-86
Virginia	921,000

PURPOSE

Automate the data files of the State Water Control Board and its regional offices.

DESCRIPTION

This program, implemented by State Water Control Board, is designed to:

- purchase the necessary computer hardware and software for automation the SWCB data files.
- prepare a six year plan for implementing the SWCB's data needs and strategies.

ANTICIPATED RESULTS

During March of 1984 the State Water Control Board contracted with a consultant to design an automated system layout including hardware and software purchase recommendations, to recommend a staffing pattern for the system, and to write a six-year plan for implementing the Board's data needs and strategies. The consultants report was presented October 31, 1984. The SWCB is presently reviewing the report recommendations and making plans for feasible implementation. Equipment purchase orders are expected to take place during the first half of 1985.

PROGRAM - VA Chesapeake Bay Data Base Management

BUDGET PROJECTION

	84-86
Virginia	300,000

PURPOSE

Develop a coordinated data management system for use by all researchers and analysts utilizing or contributing to the Chesapeake Bay data base.

DESCRIPTION

Implemented by State Water Control Board, this program is designed to:

- link all appropriate state agencies and research institutions with the Chesapeake Bay Computer Center in Annapolis, MD.

- purchase necessary computer hardware and software for state agencies and train state personnel in the use of that equipment.

ANTICIPATED RESULTS

This initiative is the essential underpinning of all Bay related research. Under the management of the SWCB, data collectors and data manipulators are trained to prepare the monitoring information in a useful format. But all involved agencies do not have computer capabilities. The SWCB is working with the Department of Information Technology on a consultation basis to determine the hardware and software needs of the agencies: State Health Department (Bureau of Shellfish Sanitation), Virginia Marine Resources Commission, Soil and Water Conservation Commission, and the Council on the Environment. It should be noted that under this initiative the SWCB will coordinate the monitoring data with all such similar Bay data being transferred to EPA. The data is transferred to STORET at EPA-Research Triangle Park, North Carolina, as well as to the EPA, Annapolis VAX computer. (See E.5., EPA Data Management System.)

INSTITUTIONAL/MANAGEMENT

Objective 6: Implement a coordinated Baywide monitoring program.

PROGRAM - EPA Chesapeake Bay Mainstem Monitoring

BUDGET PROJECTION

	86	87	88
Maryland and Virginia	42,000	44,500	47,250
Federal	840,000	890,000	945,000

PURPOSE

Monitor to determine long-term trend in observational data which can help conclude the results of remedial actions on behalf of the Bay.

DESCRIPTION

A unified network of 50 hydrographic and water quality stations (E.6. Fig. 1) has been operative in Chesapeake Bay since mid FY 84.

The program is operated by EPA through grants to the states of Maryland and Virginia who, in turn, contract sample collection and analysis to other institutions. Its purpose is chiefly to document water quality over the very long-term using data collected on the parameter list in the table below. Collections occur at a temporal (bi-weekly, except November-February) and spatial resolution sufficient to capture interannual and seasonal pattern and variability attributable to some major environmental events. Water column samples are collected at surface and bottom and at stratified stations above and below the pycnocline, when present.

Sediments are sampled to determine baseline and long-term trends for a complex suite of organic compounds, metals and selected major nutrients. Thirty stations are included in this sampling program, a subset of the fifty mainstem stations. The FY 84 sampling is an initial program which may be subjected to revision upon evaluation of the resulting database by the collecting agencies, in cooperation with USEPA/EMSL, Cincinnati. Current projection is for the collections to be made annually,but by consensus, the interval can be extended to three or five years. NOAA, under cooperative arrangements developed through the MOU process is sampling a small number of stations in the lower Bay, and their data may assist in determining variability in the parameter concentrations and enable better decisions to be made on appropriate sampling intervals for trend description.

EPA provides overall quality assurance linking national standards, submitting laboratory audits and examining data interface among federal, state and contractor collection teams and laboratories. Quality assurance plans are in place and are continually being updated.

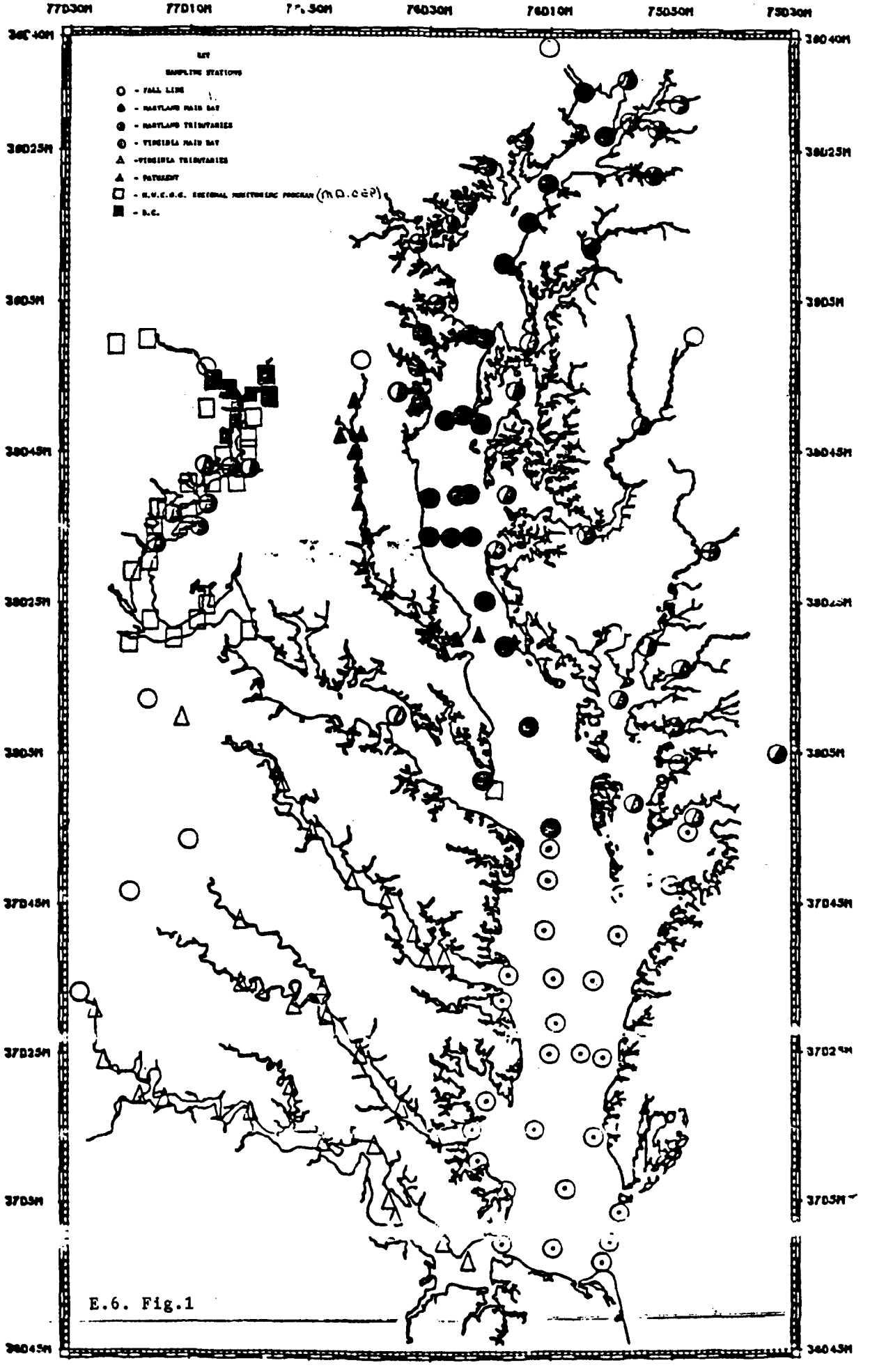
The Chesapeake Bay Monitoring Parameter List summarizes the basic measurements made at mainstem, tributary, and fall line sampling sites.

Physical Measurements	Water Chemistry	Biological Parameters
Temperature	Silicate	Particulate Organate Carbon
Salinity*	Total Nitrogen***	Dissolved Organic Carbon
Alkalinity**		
Dissolved Oxygen	Nitrate	Chlorophyll a
Secchi Depth	Nitrate	Phaeophytin
pH	Ammonia	
Total Suspended Solids	Total Phosphorus (filtered)	
	Total Phosphorus (unfiltered)	
	Orthophosphate	

* Reported as specific conductivity
** Fresh waters only
*** Calculated using TKN measurement as interim consensus method

ANTICIPATED RESULTS

This is an ongoing program which over the next one or two decades will document trends. (Detailed parameter lists for the organics and discussions of the complex methodological decisions can be found in the summary Monitoring Plan at the Chesapeake Bay Liaison Office in Annapolis.)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37005M
SAMPLING STATIONS
- FALL LINE
- MARYLAND MAIN BAY
- MARYLAND TRIBUTARIES
- VIRGINIA MAIN BAY
- VIRGINIA TRIBUTARIES
- PATUXENT
- D.C.

E.6. Fig.1

PROGRAM - USGS Lower Potomac Oxygen Study

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Evaluate pattern and process in deep water oxygen losses in the lower Potomac estuary.

DESCRIPTION

A number of specialized studies are directed at understanding summer deep water oxygen depletion. These are centered in the vicinity of Piney Point, in the lower estuary.

ANTICIPATED RESULTS

Five years of detailed data and a series of interpretive reports and papers are addressing the problem.

PROGRAM - National Oceanic and Atmospheric Administration Programs

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Characterize long-term trends at selected sites, and describe patterns in meteorological forcing functions and major elements of the Bay's living resources.

DESCRIPTION

The National Weather Service provides near-realtime overall satellite and ground based weather information at many sites in the basin. They also archive weather and climate data which is of vital long-term use. There are number of NWS sites in the basin and scores of cooperative observers in the network. Data from NWS are used for cruise planning by other agencies, in hydrographic modeling, and as an interpretive tool for monitoring data.

National Environmental Satellite Data and Information Service (NESDIS) receives repeated long-term LandSat and LandSat-D image data on a regular schedule for the Bay and adjacent lands and water. Over the long-term, satellite data can provide information on changing forest cover and land use. Future satellite sensors may enable gathering synoptic water quality data for entire LandSat scenes at predictable points in time.

National Marine Fisheries Service operates a nationwide Status and Trends program which has established 3 regularly sampled sites in Chesapeake Bay. Both sediment and living tissue samples will be collected at five sites at least annually on a continuing basis. Another element of this program (Mussel Watch) will collect molluscan tissue at 6 sites in Chesapeake Bay for annual, long-term contamination analyses. These studies will provide information necessary to relate the delivery of toxic materials to Chesapeake Bay, their deposition and accumulation at specific sites in the sediments and the implication of these for commercially and ecologically significant components in the food chain.

NOAA's Fisheries Statistics Programs will augment the Mainstem Program in both Maryland and Virginia by supplementing and refining existing state efforts. (See E.6 state programs.)

ANTICIPATED RESULTS

NOAA's programs provide basic information on environmental forcing functions and long-term trend in selected toxics in sediment and tissues, and major commercially important species.

PROGRAM - NOAA Status and Trends Program

BUDGET PROJECTION

	85	86	87
Federal			

PURPOSE

Quantify the current status and long-term, temporal and spatial trends of key contaminant concentrations, water quality parameters, and biologcal indicators of effects in coastal and estuarine environment.

DESCRIPTION

NOAA's National Ocean Service conducts the Status and Trends Program. The Status and Trends Program will measure toxic chemicals in the surface sediments at five locations in Chesapeake Bay. The program is also monitoring contaminant levels in selected species of bottomfish at the Chesapeake Bay sites. Another element of the program (missed watch) will analyze major and trace elements, PAHs, PCBs, other chlorinated hydrocarbons, and percent lipids.

ANTICIPATED RESULTS

These studies provide information necessary to relate the delivery of toxic materials to Chesapeake Bay, their deposition and accumulation at specific sites in the sediments and the implication of these for commercially and ecologically significant components in the food chain.

PROGRAM - Chesapeake Bay River Fall Line Monitoring (MD, VA, PA, DC)

BUDGET PROJECTION

	86	87	88
State	Funds from each.		
Federal	USGS		
Other	Local funds in Upper Potomac		

PURPOSE

Establish a number of key data sets at the fall lines of major rivers to understand the general broad scale inputs to Chesapeake Bay, and to adequately interpret the complex data bases resulting from the Mainstem and Tributary collection programs. CBP, the states and USGS are cooperating in this effort.

DESCRIPTION

It is intended that these collections be continuing and that they provide comparable long-term data sets to those in the tidewater monitoring effort. Each state has separate arrangements with USGS.

Such collections will be in place during FY 85, but continuation over the long-term is not currently assured. The rivers currently targeted are: The Susquehanna, Choptank, Patuxent, Potomac (current collection underway), Rappahannock, York (both the Pamunky and Mattaponi) and James. Flow will be measured at each station as well as major nutrients and suspended solids using methodology compatible with that in the Mainstem and Tributary programs. Selected organics and metals are also measured. All analyses in the fall-line program will be accomplished at the Atlanta, Georgia laboratories of the USGS. Negotiations are currently underway to enhance quality assurance compatibility among the two programs, operating under a USEPA/USGS MOU.

- Federal Components: USGS, in cooperative agreements with the states in assembling fall-line data on the Susquehanna, Patuxent, Choptank, Rappahannock, York and James Rivers.

- State Components

  Pennsylvania: No direct fall-line sampling. (See PA tributary monitoring summary.)

  Maryland: Cooperative funding agreements with USGS for Susquehanna, Choptank and Patuxent. (The Potomac fall-line at Chain Bridge is sampled under a multistate arrangement with PRMC and MWCOG, not involving USGS.)

  Virginia is negotiating fall-line agreements with USGS to provide data sets on the Rappahannock, York and James. Virginia also contributes to the Potomac Chain Bridge station through PRMC and MWCOG.

District of Columbia participates in the cooperative arrangement at Chain Bridge through PRMC and MWCOG, again without direct USGS input.

ANTICIPATED RESULTS

Annual evaluations of flow hydrograph solids and nutrient loadings to interpret long-term trend data and provide input to State of the Bay assessments.

PROGRAM - PA Water Quality Network

BUDGET PROJECTION

	86	87	88
Pennsylvania	140,000	147,000	154,000
Federal			
Other			

PURPOSE

Conduct ambient fixed station monitoring to obtain chemical, biological, and fish tissue data on Pennsylvania's surface waters.

DESCRIPTION

DER conducts routine ambient monitoring at 118 Water Quality Network (WQN) Stations in the Susquehanna River Basin and 3 WQN Stations in the Potomac River Basin. (59 of these stations are sampled monthly and 62 are sampled on a quarterly schedule). Fourteen of the Susquehanna River Basin stations have been incorporated into the EPA "CORE" monitoring network.

Routine sampling at each WQN station consists of field measurements, collection of samples for laboratory analysis, and reading the USGS gage, if present. Standard field measurements are stream pH, temperature, and dissolved oxygen. The standard laboratory analyses currently performed on each sample are listed in Table 1.

Table 1
Water Quality Network
Standard Laboratory Analyses

pH
Alkalinity (Total as $CaCO_3$)
Acidity (Total Hot)
Hardness (Total as $CaCO_3$)
Conductivity (Micromho at 25oC)
Turbidity (JTU)
Chloride (Total)
Nitrite (NO_2-N, Total)
Nitrate (NO_3-N, Total)
Ammonia (NH_3 + NH_4-N, Total)
Phosphorus (Total as P)
Total Dissolved Solids
Calcium (Total)
Magnesium (Total)
Iron (Total)
Fecal Coliform (No./100 ml)

In addition to these routine analyses, many stations receive special analyses as determined by the Regional or Central Office based on local conditions and water quality standards. During low flow, a separate, fixed sample is collected at each station for heavy metals analysis. The metals included are:

copper, zinc, nickel, chromium, cadmium, mercury, lead, aluminum, manganese, and arsenic.

During 1972-73, biological monitoring was incorporated into the WQN system. Currently,1 benthic macroinvertebrates (fishfood organisms) are sampled qualitatively using a hand screen and by hand picking organisms from rocks at most stations. The composition of the aquatic community serves as an additional indicator of water quality trends. Biological sampling is conducted on an annual or quarterly basis.

Since about 1979, DER has been cooperating in the EPA "CORE" monitoring network. This is a nationwide system of 1,000 stations established under the "Basic Water Monitoring Program" guidelines. In Pennsylvania, most of the stations designated as "CORE" stations were existing WQN stations. Chemical sampling is conducted monthly at the 14 "CORE" stations in the Susquehanna Basin. In addition to the parameters listed in Table 1, "CORE" samples are analyzed for chemical oxygen demand and total suspended solids. Concentrations of fish tissue contaminants are measured once a year at "CORE" stations. Each sample consists of a composite of five whole fish, with white suckers being the target organism. The fish tissue is analyzed for PCB, pesticides, and heavy metals.

Routine monitoring will be continued at stations operated by the United States Geological Survey in the Susquehanna River Basin. The National Stream Quality Accounting Network (NASQAN) is a data-collecting program for obtaining regional and nationwide overviews of the quality and quantity of surface streams. Four stations are operated on the basin in Pennsylvania: The Susquehanna River at Danville; the West Branch Susquehanna River at Lewisburg; the Susquehanna River at Harrisburg; and the Juniata River at Newport. Sampling is conducted bi-monthly for a list of inorganic parameters, discharge, and bacteria. In addition, four samples per year are analyzed for trace metals. The station at Harrisburg is part of a radiological subnetwork, and this station and the Lewisburg Station receive pesticide analyses on water and sediment as part of another subnetwork.

The National Hydrologic Bench-Mark Network was established to provide data on stream basins little affected by man's activities, and which are not expected to be significantly altered by man. One station is operated in Pennsylvania, on Young Womans Creek near Renovo. A complete list of parameters is measured ten times per year. It includes most of the parameters analyzed at NASQAN stations plus some additions. DER collects an annual fish tissue sample (brown trout) at this site as part of the "Core" network.

ANTICIPATED RESULTS

Up-to-date long-term chemical, biological and fish tissue data on Pennsylvania's surface waters.

PROGRAM - PA Assessment of Nutrient Sources from Main Stem and Selected Watersheds in the Susquehanna River Basin.

BUDGET PROJECTION

	86	87	88
Pennsylvania	100,000	100,000	100,000
Federal (USGS)	70,000	70,000	70,000
SRBC	140,000	140,000	140,000

PURPOSE

Implement a quantitative program of environmental measurements and analysis that will provide base line nutrient loading data for main stem, major tributaries and other representative subwatersheds.

DESCRIPTION

The program is planned for a 5 year period, 1985-89. Thirteen gage sample sites were selected and installed in FY 84 at an initial startup cost of $76,000 (PA - 106 Funds - $25,000; MD - $13,000; SRBC - $38,000). Sampling was started October 1984. Nutrient loading will be documented on a seasonal and individual storm basis. Base flow will be sampled monthly at 13 stations (3 main stem; 7 major tributaries; 3 minor tributaries). Major runoff events will be sampled just prior to, at peak, and throughout falling stages.

Nutrient runoff data from tributary watersheds of specific land use will be collected in the same pattern as noted above. Four watersheds were selected and include sites representative of suburban, urban, and industrial, pristine forest, mixed forest/agriculture, mixed urban, suburban, agriculture and forest and a major urban area.

Samples will be analyzed by USGS Laboratory for pH, temperature, specific conductance, suspended sediment, organic carbon-total and nitrogen and phosphorus species. Data will be placed in STORET and Chesapeake Bay Program Computer.

ANTICIPATED RESULTS

The data collected will provide a basis for model refinement, and model verification, and will establish a sound data base for government, agriculture, and the public to most effectively plan and implement immediate and long-range nutrient reduction efforts.

PROGRAM - MD Mainstem Monitoring (Chemical and Biological Indicators of Water Quality)

BUDGET PROJECTION

	86	87	88
Maryland	14,970		
Federal	287,238		
Others			

PURPOSE

Characterize existing water quality conditions and determine long-term trends in the mainstem of Chesapeake Bay.

DESCRIPTION

Baseline trend monitoring of water quality and sediment parameters will be conducted. The monitoring plan is designed to improve the spatial, temporal and parameter coverage of existing trend programs. Twenty-two stations will be sampled on a bi-monthly basis for water column parameters. Stations that are located in stratified areas are sampled at four depths: surface, 0.5 meters off the bottom, and at some area above and below the point of stratification. Sediments will be sampled once yearly at these stations. This program is coordinated with Maryland tributary sampling and Virginia mainstem efforts. In addition to the chemical/physical program, the monitoring of indicators of water quality have been integrated into the program. This includes phytoplankton, zooplankton, benthic organisms, toxics and ecosystem processes. These programs have been instituted in both mainstem and tributary locations.

ANTICIPATED RESULTS

Information on present water quality conditions and the detection of long-term trends in response to management decisions.

Program - MD Tributary Monitoring (Chemical and Biological Indicators of Water Quality)

BUDGET PROJECTION

	86	87	88
Maryland		NA	NA
Federal			
Other			

PURPOSE

Characterize existing conditions of water quality and determine of long-term trends in Maryland's tidal rivers.

DESCRIPTION

Data collection is designed to complement the mainstem program with a parallel program in the tidal rivers. Frequency is either same as mainstem program or m monthly. Stations are shown in E.6. Figure 1, and the Parameter List on E.6.p.74. The Tributary river monitoring effort is supported by both the Governors' State initiatives and EPA 106 water pollution control grant funding. Stations are located (Fig. 1) in twelve Maryland rivers on the Western Short and 12 on the Eastern Shore. In addition, 3 major embayments are sampled on the Eastern Shore supplementary work in the upper Potomac. This is accomplished jointly with Virginia and DC through the Potomac Regional Monitoring Committee (PRMC) organized by the Metropolitan Washington Council of Governments (MWCOG). Chemical and biological (included in mainstem budget) indicators will be sampled as part of this program.

ANTICIPATED RESULTS

Information on short-term ambient water quality characterization and long-term trends in response to management decisions.

PROGRAM - MD Patuxent River Special Studies

BUDGET PROJECTION

	86	87	88
Maryland	390,000	409,500	429,975
USGS	85,000	82,000	85,000
EPA	168,000		

PURPOSE

Monitor, model and conduct research in the Patuxent River Basin to provide information to more accurately characterize the present water quality in the Basin, and allow managers to more effectively evaluate and select management options for future implementation. Additionally, the Patuxent will serve as a surrogate for various Baywide monitoring, modeling and research activities.

DESCRIPTION

OEP is presently in the process of developing a basin-wide nonpoint source pollution model in cooperation with the USGS. Additionally, OEP is developing a hydrodynamic and water quality model of the tidal portion of the estuary. Several process oriented data collection and research activities are under way to provide supplemental information for the model development.

ANTICIPATED RESULTS

OEP will develop several comprehensive quantitative management decision tools to assist policy makers in improving and protecting the quality of the Patuxent River.

PROBLEM - MD Living Resource Monitoring

BUDGET PROJECTION

	86	87	88
Maryland	776,529		
Federal			
Other			

PURPOSE

Implement a regional monitoring program to determine association and potential cause and effect relations among living resources, hydrography data and climatic data, and to provide a framework for directed applied research.

DESCRIPTION

This is designed to determine association and potential cause-effect relationships between habitat variables, hydrographic and climatic parameters, and two biological resources, initially concentrating on:

- abundance of anadromous fish, striped bass larvae, and oysters;
- selectivity of net sizes;
- stress and biological abnormalities due to habitat conditions;
- food availability measured by zooplankton and pholoplankton populations;
- laboratory and field assays of finfish larvae and juveniles, oysters, and oyster spat;
- histopathology and morphology of striped bass larvae; and
- collection of hydrolographic and climatic data.

ANTICIPATED RESULTS

During FY 86, the monitoring of habitat quality and abundance of striped bass eggs and larvae in the Upper Chesapeake Bay and Choptank River will continue. Modeling (statistical and deterministic) will continue to address larval transport, effects of habitat quality indicators or larval density, and effects of freshwater inflow and the C&D Canal during the spawning period. Equipment will be purchased for improved sampling and on-site bioassay capabilities during the spawning period. Continuation of interpretation and analysis of data.

PROGRAM - VA Mainstem Monitoring

BUDGET PROJECTION

	84-86
Virginia	23,455
Federal	445,659

PURPOSE

Conduct long-term monitoring in the Bay. In the past there has been no long-term water quality monitoring effort in the Virginia portion of the mainstem Bay. This program of water and sediment monitoring will provide a long-term data base by which we can assess trends in Bay water and sediment quality. These data are essential for effective Bay management.

DESCRIPTION

Baseline monitoring of water and sediment quality will be conducted at twenty-eight stations in the Virginia mainstem. Water quality parameters are sampled twenty times per year, surface and bottom, and at some areas above and below the point of stratification. Sediment samples are taken annually. An initial plankton monitoring program also was started this summer.

ANTICIPATED RESULTS

The establishment of a long-term monitoring network in the Virginia mainstem that can be interpreted for trends in conjunction with other Bay monitoring programs.

PROGRAM - VA Tributary Monitoring

BUDGET PROJECTION

	84-86
Virginia	300,000

PURPOSE

Provide adequate water quality and habitat data.

DESCRIPTION

This program is being implemented by State Water Control Board with the participation of other local, state and federal agencies.

The program is designed to develop and maintain baseline monitoring and analytical programs for water quality and habitat in nine tributaries to the Bay and to track the changes in the water quality and habitat of these water resource. Water quality sampling for FY 84-85 in the Chesapeake Bay tributaries began during mid-July and continues at 32 stations twice a month during March through October, then once a month from November through February. This program is often referred to as the Chesapeake Bay Tributary Monitoring Program. Benthic community and planktonic communities will also be sampled in the lower Bay and tributaries of Virginia. Benthic sampling will be by ODU.

Sediment will be sampled by VIMS during the Spring 1985. Sediment will be analyzed for organic toxics by VIMS and analyzed for metals by DCLS. As noted above, many different research groups share in the responsibilities of this initiative. To ensure that samples and analyses are being done in a uniform manner among the researchers, the State Water Control Board has provided the samplers and lab technicians with reporting and sampling formats. Samples taken by VIMS will be analyzed in their own labs. Samples taken by SWCB will be analyzed by DCLS with the exception of chlorophyll samples which will also be analyzed by VIMS. Chlorophyll samples will later be analyzed by SWCB.

ANTICIPATED RESULTS

Long-term trend description for water quality and habitat. Components will be factored into State of the Bay Reports.

PROGRAM - Virginia Ambient Water Quality Monitoring

BUDGET PROJECTION

	84-86
Virginia	468,000

PURPOSE

Acquire and maintain adequate information on ambient water quality conditions in Virginia's rivers and streams.

DESCRIPTION

This program, implemented by State Water Control Board, is a Statewide program and consists of:

Surface water network - 308 stations monitored monthly for surface water quality. Monitored annually for metals, pesticides and herbicides in the water column and semi-annually for the aforementioned parameters in the sediments (EPA core network of 40 stations).

Biological network - 161 stations examined qualitatively for benthos.

Groundwater network - 120 wells for chemical analysis, 250 wells for level readings, 15 wells for salt water intrusion and 2 wells in high pumping areas.

ANTICIPATED RESULTS

Provides detailed chemical, physical and biological data essential to preserving and managing the Commonwealth water resources.

PROGRAM - VA Living Resources Monitoring

BUDGET PROJECTION

	84-86
Virginia	548,000
Federal	420,000

PURPOSE

Operate a continuing program to monitor fishery resources in waters of the Commonwealth.

DESCRIPTION

This program is being conducted primarily by the Virginia Institute of Marine Science and the Marine Resources Commission.

- Juvenile fish sampling and index calculation for numerous stations in Virginia tidal rivers, with emphasis on early life stages.
- Spatfall survey and routine sanitation monitoring of shellfish in current and potential productive areas.
- Assembly and use of dockside harvest statistics.
- Biological sampling of commercial catch.
- Characterization of significant spatial and temporal patterns of phytoplankton and zooplankton communities.

ANTICIPATED RESULTS

The monitoring effort will result in the continued expansion and refinement of the fisheries database. This will permit greater understanding of the relationship of finfish and shellfish stocks to water quality climate and fishing effort, and will provide the basis for the development and implementation of fisheries management plans.

PROGRAM - VA James River Water Quality Monitoring

BUDGET PROJECTION

	84-86
Virginia	400,000

PURPOSE

Provide adequate water quality data for the James River.

DESCRIPTION

This program is being overseen by the Virginia State Water Control Board with implementation by the Richmond Regional Planning District Commission. The program is designed to collect data in order to recalibrate the Upper James river Estuary Wasteload Allocation model, to determine the presence of sediment toxics in the James River from fall line south to the Chickahominy River, to verify any excessive phosphorus and nitrogen levels in the James River, and to provide water column data for the Hopewell water supply, to provide data to measure the impact of Richmond's Shockoe Retention Basin.

ANTICIPATED RESULTS

This project is the continuation of a monitoring program of the James River which began in FY 83-84. A final summary report to the General Assembly is expected at the end of FY 85-86, however, the first FY 84-85 report of progress was completed October 20, 1984.

All 1984 water and sediment sampling has been completed. Data is presently being analyzed and entered in EPA's centralized Water Quality Data Base. Preliminary analysis of data will be conducted in the winter by VPI and DCLS. Initial findings are expected to be reported Spring 1985.

PROGRAM - VA Tributary Kepone Monitoring

BUDGET PROJECTION

	84-86
Virginia	150,000

PURPOSE

Determine distribution and concentration of the pesticide Kepone in the estuarine environment.

DESCRIPTION

This program implemented by State Water Control Board, is designed to continue a systematic sampling of fin and shellfish, sediments, and groundwater in the James River estuary to determine Kepone levels. More than 317 fish samples have been collected and prepared for Kepone analysis since July 1, 1984. Sediment samples from 21 stations were collected and prepared for Kepone analysis. DCLS is presently doing the sediment analysis.

ANTICIPATED RESULTS

A recent analysis report (third quarter of calendar year 1984) states that fish samples contain Kepone levels lower than any other samples since 1980 for the same time of year. River flow levels influence the amount of Kepone which is taken up by fish; high flow and other unknown factors resulted in lower Kepone levels for this quarter.

Finfish samples are being analyzed by VIMS and sediment samples by DCLS.

PROGRAM - VA Stream Pollution Source Studies

BUDGET PROJECTION

	84-86
Virginia	830,000

PURPOSE

Understand and anticipate stream conditions.

DESCRIPTION

Implemented by State Water Control Board, this program consists of stream studies designed to identify and measure environmental changes resulting from changes in pollution loads discharged to receiving waters. This includes dye/flow studies and stream/water quality surveys. We expect to conduct about 15 stream studies.

ANTICIPATED RESULTS

Surveys will establish wasteload allocations for affected discharges.

PROGRAM - VA Kepone Health Effects Research

BUDGET PROJECTION

	84-86
Virginia	300,000

PURPOSE

Determine effects of organic chemicals (specifically, the pesticide kepone) on human health.

DESCRIPTION

Implemented by the Department of Health, this program is designed to:

- Medically re-evaluate as many as possible of the 30 original Life Science Products Company employees who were originally hospitalized because of kepone exposure.

- Determine whether kepone levels in Virginia seafood are carcinogenic to humans.

ANTICIPATED RESULTS

During 1985, the five-year re-evaluation of Life Science workers will take place. It is hoped that the majority of the original 30 occupationally exposed patients will be located, and will agree to participate in the medical evaluations. When the last evaluation took place in 1980, only 13 persons elected to participate.

A contract between Medical College of Virginia (MCV) and the Health Department has been negotiated, and a medical protocol agreed to, modified from 1980.

Research to determine the carcinogenity potential of kepone levels in Virginia seafood has begun. The research plan includes 18 months of laboratory study; the remaining time will be used for data analysis and report preparation.

A contract between MCV and the Health Department has been negotiated. Monthly progress reports have been submitted, as have quarterly financial statements, detailing the progress of this investigation.

PROGRAM - Virginia Special Water Quality Technical Studies

BUDGET PROJECTION

	84-86
Virginia	325,000

PURPOSE

Understand and anticipate the environmental effects of pollution.

DESCRIPTION

This program, implemented by State Water Control Board, is designed to conduct and support environmental studies assessing the effects of pollution on the chemical and biological indicators of water quality, i.e., bioassays, evaluation of toxic impacts, benthic studies. Will conduct special environmental investigations that include 30 benthic surveys, 15 special environmental surveys, 1 standard evaluation and 250 bioassays to determine toxicities.

ANTICIPATED RESULTS

These studies may result in water quality criteria designed to maintain the balances in indigenous populations of aquatic species.

PROGRAM - DC Tributary Monitoring

BUDGET PROJECTION

	86	87	88
DC	50,000		
EPA	200,000		

PURPOSE

Document current conditions and long-term trends in water quality and living resources in District waters of the Potomac, Anacostia and several tributary streams.

DESCRIPTION

Sampling is conducted monthly at 13 stations and every two weeks during the months of April through October at 8 stations in tidal waters of the Potomac and Anacostia Rivers.

Sampling is coordinated with Maryland and Virginia tributary monitoring through the Potomac Regional Monitoring Committee (PRMC) and the Metropolitan Washington Council of Government (MWCOG).

ANTICIPATED RESULTS

Long-term trend description will result from this continuing program. Annual reports from PRMC and MWCOG summarize elements integrated to cover the upper Potomac estuary.

INSTITUTIONAL/MANAGEMENT

Objective 7: Implement a coordinated Baywide research program.

PROGRAM - EPA Chesapeake Bay Program

BUDGET PROJECTION

	85	86	87
Federal	300,000		

PURPOSE

Provide technical information to support model development and guide management and implementation strategies.

DESCRIPTION

The EPA Chesapeake Bay Program, through the Modeling and Research Subcommittee, supports technical studies specifically addressed towards modeling and similar management tools. Current emphasis is on processes which govern transport and fate of nutrients and toxicants, impacts on productivity and biota, and the processes which lead to episodes of low dissolved oxygen. Funding is managed through grants or contracts to research institutions.

ANTICIPATED RESULTS

Data necessary to develop useful predictive models, and increased understanding of the processes linking pollution to water quality and resource impacts.

PROGRAM - EPA Office of Research and Development

BUDGET PROJECTION

	86	87	88
Federal			
Other			

PURPOSE

Develop and assess scientific and technical data and economic methodologies in order to improve the basis for environmental decision-making.

DESCRIPTION

Currently, ORD supports environmentally related research, development, and demonstration efforts through its headquarters office in Washington, D.C. and its laboratories nationwide, as well as sponsoring research elsewhere in the scientific and academic communities, through cooperative agreements, contracts, and grants.

A program to undertake long-term and anticipatory environmental research is managed by ORD's Office of Exploratory Research. The research grants assistance program funds activities in the following areas:

- Environmental Chemistry and Physics - Environmental chemistry and physics research involves understanding the basic processes by which pollutants are transported, transformed, degraded, or otherwise distributed in all environmental media, including air and water.

- Environmental Biology - Environmental biology involves the examination of effects of pollutants and their components, as well as the environment as a whole.

- Environmental Health - Environmental health research involves utilizing short-term in vitro studies, accurate and chronic animal toxicology, controlled human exposure, and epidemiology to determine whether or to what extent exposure to pollutants contributes to health effects.

- Environmental Engineering - Environmental engineering research involves multimedia (solid, liquid, gaseous) pollution control processes associated with hazardous material and energy production as well as with consideration, increased efficiencies, recycling, and reuse.

- Environmental Measurements - Environmental measurement research involves methods, techniques and devices needed to identify and measure levels of pollutants and to monitor them in numerous situations.

- Economic Benefits - The development and validation of methods for measuring economic benefits will assist in evaluating the effectiveness of environmental control programs.

Currently, OER is funding several projects within the Chesapeake Bay area which relate directly to water quality and/or living resources.

ANTICIPATED RESULTS

To provide an ongoing source of information to refine environmental policy, management and regulation.

PROGRAM - NOAA Weather and Satellite Programs

BUDGET PROJECTION

	86	87	88
State			
Federal			
Other			

PURPOSE

Characterize, through NOAA's weather and satellite programs, long-term trends at selected sites, and describe patterns in meteorological forcing functions.

DESCRIPTION

- The National Weather Service provides near-realtime overall satellite and ground-based weather information at many sites in the basin. They also archive weather and climate data which is of vital long-term use. There are numerous NWS sites in the basin -- cooperative observers in the network. Data from NWS is used for cruise planning by other agencies, in hydrographic modeling, and as an interpretive tool for monitoring data.

- National Environmental Satellite Data and Information Service (NESDIS) receives repeated long-term LandSat and LandSat-D image data on a regular schedule for the Bay and adjacent lands and water. Over the long-term, satellite data can provide information on changing forest cover and land use. Future satellite sensors may enable gathering synoptic water quality data for entire LandSat scenes at predictable points in time.

ANTICIPATED RESULTS

NOAA's weather and satellite programs provide basic information on environmental forcing functions and long-term trends in weather, climate and land use.

PROGRAM - NOAA Oxygen Depletion Studies

BUDGET PROJECTION

	85	86	87
Federal	400,000		

PURPOSE

Determine if increasing episodes of low dissolved oxygen in Chesapeake Bay have impacts upon the biota of the estuary.

DESCRIPTION

The NOAA study will have several components:

- Determine effects of hypoxia on distribution and migratory pattern of important fin and shellfish.

- Determine the effects of hypoxia on reproductive capacity and behavior; resistance to disease, toxicants, and predation; feeding ability; and other important physiological factors in key Bay species.

- Determine the effects of higher nutrient loads on the composition of the phytoplankton and zooplankton communities of the Bay and impacts of any shifts in the composition and quality of this food supply on the Bay's living resources.

- Determine the utility of remote sensing as a tool to enhance the monitoring and research capabilities of the Chesapeake Bay Program.

It is anticipated that research will be conducted by NOAA, federal and state agencies, and other research institutions.

ANTICIPATED RESULTS

The results from this study will be linked to results of ongoing ecological process research and monitoring programs to provide guidance for control measures to reduce impacts of low dissolved oxygen.

PROGRAM - FWS Research Activities

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Provide scientific information necessary to protect, restore, and enhance the nation's fish and wildlife resources.

DESCRIPTION

FWS supports a variety of research and field studies to address the above goal. The Patuxent Wildlife Research Center conducts research on migratory waterfowl, endangered species, wildlife diseases, contaminant impacts on fish and wildlife, and studies on important habitat types such as wetlands, submerged vegetation, etc. Research is conducted at FWS fishery labs on fish diseases, life histories, toxicant impacts, and special efforts such as the Emergency Striped Bass Study (ESBS) which is being conducted in cooperation with NMFS. FWS field offices conduct studies on pollutant impacts on living resources, effects of habitat modification, evaluation of mitigation procedures for projects such as dams, and other management-directed research. A significant portion of these activities are directly related to the Chesapeake Bay area, or to species important in the estuary.

ANTICIPATED RESULTS

Information obtained will be used to improve management of fish and wildlife resources.

PROGRAM - USGS Estuary Study

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Provide for a study to help:

- understand physical, chemical, and biological processes within the estuary;
- develop flow and transport models to predict movement and fate of nutrients and algae; and
- develop efficient techniques for the study of tidal rivers and estuaries. The ultimate goal is to aid water quality decision-making.

DESCRIPTION

The study is being conducted in an interdisciplinary manner. Five major problem areas are being addressed: nutrient enrichment; algae blooms; dissolved oxygen; sedimentation; and effects of water quality on living resources, including SAV. A number of investigations are currently ongoing, including benthic flux studies, submerged vegetation processes, and modeling efforts.

ANTICIPATED RESULTS

Increased understanding of basic processes within the tidal river, and relationships to living resources, which will improve the ability to manage these types of systems.

PROGRAM - USDA Agricultural Research Activities (ARS)

BUDGET PROJECTION

	86	87	88
Federal			

PURPOSE

Develop means to increase production of food and fiber, while at the same time avoiding or minimizing hazards to the environment.

DESCRIPTION

Much of USDA's research efforts which are important to Chesapeake Bay are focused through the Agricultural Environment Quality Institute and the Plant Physiology Institute (PPI) of the Beltsville Agricultural Research Center of ARS. Areas addressed by AEQI include fate of pesticides in soils and water, safe use of municipal, agricultural, and industrial organic wastes for soil improvement, nitrogen cycle in soils and evaluation of best management practices. PPI contains the Hydrology Lab, which tests methologies such as mathematical modeling and remote sensing to predict runoff, and investigates all aspects of water movement and storage.

Information developed by ARS is dissiminated to the agricultural community through a variety of means, including the ARS Information Service, the scientific community, and through state extension services.

ANTICIPATED RESULTS

Improve the scientific and technical basis for agricultural production, and reduce impacts of agricultural activities on the environment.

PROGRAM - NOAA Sea Grant Program (Maryland and Virginia)

BUDGET PROJECTION

	85	86	87
Maryland	733,000	1,000,000	
Virginia	733,000	1,000,000	
Federal	1,456,000	1,000,000	

PURPOSE

Continue the Sea Grant program, administered within the participating states, which fosters marine-related research, advisory services, and education operating under the guidelines of the National Sea Grant College Program of NOAA. Goals include: expanding knowledge for managing the states' and the nations' marine and estuarine resources; providing technical assistance; training; enhancing public awareness of pertinent issues.

DESCRIPTION

The research component of this program is administered by the states of Maryland (at University of Maryland) and Virginia (at VIMS, VPI, ODU & U.VA) Funding is provided by federal and nonfederal sources. Research and development in both programs focuses on fisheries and other marine resources, technology and engineering, and environmental research. In addition, both have strong education and marine advisory components.

ANTICIPATED RESULTS

To provide a continuing input of knowledge needed to develop, utilize, and manage the marine resources of the states, and to develop outreach programs for marine industries, users, and the general public.

PROGRAM - PA Research Program

BUDGET PROJECTION

	86	87	88
Pennsylvania			
Federal			
Other			

PURPOSE

Reduce agricultural non-point nutrient loading to the Chesapeake Bay.

DESCRIPTION

To research new technologies which could provide for the proper utilization of nutrients by plants or construction or conversion of unwanted animal wastes.

ANTICIPATED RESULTS

To develop new technologies or systems which, if adopted, would provide practical methods to manage nutrients.

PROGRAM - Maryland Research Coordination

BUDGET PROJECTION

	86	87	88
Maryland	500,000	NA	NA

PURPOSE

Establish an annual research budget and to direct the Governor's Council on the Bay to determine research priorities.

DESCRIPTION

Many of the initiatives stemming from the findings of the EPA Bay Study, as well as questions identified by the regional monitoring program, will require research to confirm the activities of management actions.

ANTICIPATED RESULTS

It is anticipated that the projects that were initiated in FY 85 will be continued and/or completed during FY 86. Another series of project recommendations will be solicited form the management agencies and reviewed and new projects, to the extent that funding allows, will be initiated during FY 86.

PROGRAM -VA Research To Support Management of the Commonwealth's Marine Resources

BUDGET PROJECTION

	84-86
Virginia	11,300,000

PURPOSE

Provide the technical foundation for management of the marine resources and to provide those results to the regulatory and management agencies of the State.

DESCRIPTION

This program is implemented by the Virginia Institute of Marine Science.

A program of directed research focuses on fifteen program areas, all of which are related to existing or anticipated resource management issues. Relative emphasis between programs may vary as required but all are active:

1. Investigate the fisheries of Virginia and factors affecting fluctuations in abundance.

2. Investigate and define the distribution of benthic animals and communities and their interactions with the biological, physical and chemical environment.

3. Develop an understanding of plankton processes in the Chesapeake Bay system and Virginia coastal waters.

4. Describe and evaluate the tidal freshwater ecosystems of Virginia's major rivers.

5. Investigate structure and function of mesohaline marshes and submerged aquatic vegetation.

6. Study diseases of marine and estuarine organisms.

7. Develop and perfect methods and techniques for economical culture of marine and estuarine organisms.

8. Determine the fate and effect of toxic chemicals in the Chesapeake Bay system.

9. Study nutrient cycling processes and controls in riverine, estuarine and coastal marine environments.

10. Evaluate factors leading to, and the consequences of, nutrient enrichment.

11. Understand the dynamics of benthic boundary layers and associated processes of sediment resuspension, transport, and animal-sediment interaction in coastal and estuarine environments.

12. Describe and understand the circulation of waters in the estuarine and coastal environment.

13. Develop a better understanding of shoreface, surf zone and beach processes.

14. Describe and explain the late Quaternary sedimentology, stratigraphy and geologic evolution of the Chesapeake Bay and coastal waters.

15. Conduct investigations related to the development, utilization, and management of resources of significance to the marine environment.

During FY 84-85 enhanced efforts in four interdisciplinary program elements have been possible through the Virginia Chesapeake Bay Initiatives ($1,850,000 of the above total). These program elements are:

A. River circulation studies for revitalization of the James River Seed Oyster Industry.

B. Biological studies of factors causing decline in Virginia's oyster and critical finfish populations.

C. Chemical poisons in Virginia's tidal waters.

D. Re-establishment of submerged aquatic vegetation.

ANTICIPATED RESULTS

The initiative research studies will result in:

A. Recommendations on means for enhancement of the seed oyster beds.

B. Establishment of a monitoring scheme to assess levels of toxic organic chemicals in seafood.

C. Establishment of methodology to assess the metabolites of parent toxic compounds.

D. Establishment of improved methodology to re-establish SAV, and assessment of the variables critical to SAV growth.

The continuing elements of the program will result in advances in understanding and predictive capability needed to develop, utilize, and manage the marine resources of the Commonwealth.

PROGRAM - VA Advisory Services in Support of the Development, Management and Conservation of the Commonwealth's Marine Resources

BUDGET PROJECTION

	84-86
Virginia	1,100,000

PURPOSE

Enhance development of the commercial and recreational fisheries of the Commonwealth, and provide to the Legislative and Executive Branches and the citizens the technical foundation for the wise utilization and management of the marine resources of the Commonwealth.

DESCRIPTION

This program is implemented by the Virginia Institute of Marine Science. This broadly based program has two principal components. One component will assist development of the commercial and recreational fishing industry. This is achieved by introduction of new harvesting technology, assessment of market structure for products and by products, and development of agriculture/mariculture systems. Communication is based between advisory personnel and the watermen of the Commonwealth and other components of the commercial and recreational industry. A regular series of publications is devoted to public education and information. The second component provides a continuing mechanism for translation of the Institute's directed research program to meaningful advice regarding the conservation and management of the marine resources. This is achieved by assessment of stocks and causes of stock variability, and evaluation of marine habitat and the causes and impacts of water quality degradation. Communication is based between teams of research specialists and members of regulatory/management agencies and/or legislative commissions.

In addition, an active marine education program (K-12) is maintained to instill an awareness and understanding of the workings and importance of the marine environment and its resources as an integral component of the setting and economy of the Commonwealth.

ANTICIPATED RESULTS

Results anticipated from industry related services include economic feasibility analyses of the soft-shell crab industry in Virginia, hard clam seed production and grow-out, and crab meal production. In addition, assistance will be advanced to help local seafood producers in developing export markets. Harvesting technology improvements include modifications for vessels participating in multi-species or alternate fisheries. Recreational fishery analyses include the mid-Atlantic tuna and billfish.

Ongoing advisory work with management agencies and legislative bodies include assessment of dredging and disposal projects, stock assessment for fisheries management, and assessment of water quality impacts.