

*Section 309 Assessment and Strategy
of Pennsylvania's Coastal Zone
Management Program*

Performed Under the
Coastal Zone Enhancement Grants Program
Section 309
Coastal Zone Management Act

Prepared by
Pennsylvania Department of Environmental Protection
Office for River Basin Cooperation
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*Pennsylvania Coastal Zone Management Program
309 Assessment*

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Overview

Introduction

This assessment of Pennsylvania's Coastal Zone Management Program (CZM) is a result of the Final Section 309 Guidance (July 24, 2000). Section 309 of the Coastal Protection Act of 1996 (PL 104-540) [revised by PL 960464; PL 101-508] encourages states to revise their previous 309 Assessments and develop new Strategies to achieve program changes in one or more of the coastal zone enhancement areas:

- Coastal wetlands
- Coastal hazards
- Public access
- Marine debris
- Cumulative and secondary impacts
- Special area management planning
- Ocean resources
- Energy and government facility siting and activities
- Aquaculture (added 1996)

Under the 309 grant program, states that improve their programs to meet the goals in one or more of the enhancement areas are eligible for additional federal funding.

As required by the program, CZM conducted a reassessment of the nine enhancement areas in both the Lake Erie and Delaware Estuary Coastal Zones. This provided CZM with an opportunity to reevaluate its management direction and past efforts in the priority enhancement areas.

Following the guidance set forth by NOAA on July 24, 2000, CZM will submit a combined assessment and strategy. The assessment provides an overview of the 309 efforts since 1997, followed by an evaluation and update of the enhancement areas in accordance with the questions provided in the guidance. A copy of the 1997 Assessment and Strategy is attached for reference.

Overview of Past 309 Efforts

In February 1997, CZM submitted its 309 Assessment and Strategy in accordance with the Coastal Zone Enhancements Grants Program. One priority area, Special Area Management Plans (SAMP), was identified for programmatic changes. These changes outlined a procedure for creating Special Area Management Plans as part of Pennsylvania's approved Coastal Zone Management Program, and created a SAMP for the Lake Erie Bluffs and Shoreline.

Enhancement Area Analysis Summary

In accordance with the July 24, 2000 Section 309 Guidance, the Pennsylvania Coastal Zone Management Program has analyzed the nine priority enhancement areas for changes since the last assessment and elaborated the changes that have taken place.

The following enhancement areas have been considered for their priority as coastal issues for Pennsylvania and their potential for CZM program changes. High priority is assigned to areas in which program changes are anticipated through direct CZM efforts, 309 and otherwise. Medium priority is assigned to areas in which CZM and its networked partners expect to invest significant effort and resources during the next five years, but do not anticipate significant program changes. Low priority is assigned to topical areas that, while important to the program, are sufficiently addressed or are expected to have minimal impact.

- **Special Area Management Plans**

This enhancement area was considered high priority during the last assessment. The CZM program changes were accomplished by creation of a SAMP process in Pennsylvania's Coastal Zone Management Program, and through development of a SAMP for the Lake Erie Bluffs and Shoreline. The planning process for the Lake Erie SAMP enabled CZM to work with other state and local management interests in a collaborative process for resource protection.

Based on the assessment, CZM ranks this category as a medium priority and does not plan to make any program changes to this area in the current strategy. It does intend to continue development and implementation of the SAMP, as resources are available.

- **Cumulative and Secondary Impacts**

This category was considered a medium priority in CZM's last assessment and will be ranked medium in this one. It is a priority Commonwealth initiative identified by the 21st Century Environment Commission. As was the case in both previous assessments, wise land use planning is considered to be the key to minimizing cumulative and secondary impacts. CZM will continue to fund local projects dealing with zoning and planning using 306 funding. It will follow Departmental leads toward planning on a watershed

basis. Other federal, state, county and local funding sources are being directed toward planning efforts in both coastal zones.

The implications for coastal zone management of Pennsylvania's new Growing Smarter legislation (Acts 67 and 68 of 2000) need to be evaluated. DEP has already initiated review procedures for evaluating the compatibility of permit issuance and grant funding with local comprehensive plans.

- **Ocean Resources**

Pennsylvania has re-evaluated its approach to this enhancement area. In consideration of priority coastal resource management issues related to impacts of water quality and quantity and the ecosystem and fisheries management effects of invasive species and ballast water, this area will be considered a high priority. CZM needs to clarify procedures for monitoring major water withdrawals and diversions and fully participate in interstate and international cooperative efforts. In addition, opportunities exist to join regionally and nationally in effective programs to monitor and control invasive species, whether native or non-native. CZM needs to elaborate program policies on both water diversions and invasive species monitoring and management.

- **Public Access**

This area was considered a medium priority as an enhancement area in the last assessment. CZM will continue to encourage public access improvements through its local matching grants program. Pennsylvania has reviewed the public's qualified access rights along the shoreline and continues to support navigational rights in the area between the ordinary high and low watermarks. Case law defining those rights in Pennsylvania is still limited. The Commonwealth, through its Growing Greener and Agricultural Preservation legislation, has markedly increased its commitment to recreation and open space protection. County and municipal open space bond issues are receiving consistent public support. Conservancies and land trusts are increasingly active in both Pennsylvania coastal zones. Public access will continue to be considered a medium priority in this assessment.

- **Coastal Hazards**

This enhancement area was considered a medium priority in the last assessment, in consideration of the ongoing activities taking place with the Bluff Recession and Setback Act (BRSA). Management of the bluffs was significantly improved by creation of the SAMP. CZM met a goal of the initial 309 strategies by securing a legal opinion that under current law and regulations, the bluff face is considered a no-build zone.

A staff position was created in the Lake Erie Coastal Zone to assist with bluff recession monitoring, BRSA administration and technical advisory services.

Pennsylvania continues to develop its emergency management and response capabilities for natural and man-made disasters--from storm damage, to shipwrecks, to hazardous material spills--through the Pennsylvania Emergency Management Agency and DEP's Environmental Emergency Response Program.

CZM does not plan to seek overall program changes with regard to coastal hazards under this assessment, and coastal hazards will again be a medium priority issue. CZM will continue to both administer and evaluate the Bluff Recession and Setback Act, and will work to improve management and local understanding of control points and recession monitoring.

- **Wetlands**

This area was considered a medium priority of the program during the last assessment period. CZM has continued implementation of its wetlands monitoring and enforcement program to ensure coordination among agencies dealing with coastal wetlands. A CZM-supported staff position has been added to DEP's Southeast Regional Office staff to strengthen coastal wetland assessment, protection and mitigation capabilities. Updated wetland mapping has been secured from the U.S. Fish and Wildlife Service and biennial monitoring overflights have occurred.

In 1998, Pennsylvania elaborated a Wetlands Net Gain Strategy that is community-based, locally driven, and watershed specific, as a tool to meet water quality goals through effective watershed management.

The Pennsylvania Department of Transportation is finalizing a Wetland Banking Memorandum of Agreement and DEP is to be a signatory party. The purpose of this agreement is the establishment of a wetland banking system. This system will provide effective advanced compensatory mitigation opportunities for unavoidable, minimized impacts to wetlands of the United States and the Commonwealth of Pennsylvania resulting from transportation-related construction or maintenance activities. The document itself will serve as an umbrella, banking instrument for developing site-specific subordinate instruments. DOT Regions 1 and 6 contain the Lake Erie and Delaware Estuary coastal zones.

CZM will continue to consider wetlands a medium priority for program enhancement, while working through current Commonwealth programs to improve wetlands. CZM will not consider overall changes to the wetlands enhancement area in the current strategy.

- **Marine Debris**

Marine debris is controlled and reduced through existing state, federal, and local legislation and efforts. This was considered a low priority during the last assessment and will be once again. Marine debris will not be considered for program changes in the current strategy.

Cleanup events are regularly held on Presque Isle and the Delaware River, as well as Estuary tributaries. Recycling rates in Pennsylvania continue to climb, exceeding the 25% statewide goal. The Pennsylvania Fish & Boat Commission continues to enforce hygienic boating practices and operates pumpout stations in both coastal zones. The City of Erie is meeting its mandated updates of its sewer system, with elimination or control of existing combined sewer overflows which have contributed to marine debris in the past.

- **Energy and Government Facility Siting**

This assessment area is being addressed by existing CZM policies and state coordination and review mechanisms. As was the case in the last review, CZM does not anticipate making any 309 changes in this category. It will be a medium priority because of possible use conflicts related to submerged lands and aquatic resources of the Commonwealth.

The past several years have seen increased applications for gas-fired turbine electric generation plants and an application for a gas pipeline transiting Pennsylvania's Lake Erie submerged lands. Pennsylvania's established procedures are handling these requests in a timely manner. DEP granted permits for the pipeline, but other required state and federal approvals for it are pending.

- **Aquaculture**

This priority enhancement area is being coordinated through the PA Department of Agriculture, designated as the lead agency in Pennsylvania by 1998 legislation. In CZM's networked program, this legislation and the subsequent aquaculture plan will become part of Pennsylvania's coastal zone management.

DEP is a designated participant in the Aquaculture Advisory Committee established by law, and is currently working on effluent limits for aquaculture facilities. Regulatory standards should be developed within the next two years. Aquaculture was a low priority in the last assessment. While it will now be considered a medium priority, it will not be a 309 initiative in the current strategy.

Public Review and Responses

CZM mailed copies of the Assessment to the Erie County Department of Planning and the Delaware Valley Regional Planning Commission for review and public accessibility, and sent notice of availability to the Coastal Zone Advisory Committee and both Coastal Zone Steering Committees. CZM placed the document on the DEP web site, (www.dep.state.pa.us/subjects/Office for River Basin Cooperation), listed its availability in the Department's weekly newsletter, (www.UPDATE.dep.state.pa.us), and placed a notice in the Pennsylvania Bulletin. Copies of the 1997 document were attached to the mailings and available on the website for reference.

Assessment Area Updates:

Special Area Management Planning

Legislative Objective

1456 (a) (6) Preparing and implementing special area management plans for important coastal areas.

Section 309 Programmatic Objectives

1. Develop and implement special area management planning in coastal areas applying the following criteria:
 - areas include coastal resources that are being severely affected by cumulative or secondary impacts;
 - areas have a multiplicity of local, state, and federal authorities which prevent effective coordination and cooperation in addressing coastal development on an ecosystem basis;
 - areas have a history of long-standing disputes between various levels of government over coastal resources that has resulted in protracted negotiations over the acceptability of proposed uses;
 - there is a strong commitment at all levels of government to enter into a collaborative planning process to produce enforceable plans;
 - a strong state or regional entity exists which is willing and able to sponsor the planning program

Introduction

In 1997, as part of the Assessment and Strategy, Pennsylvania identified SAMPs as a priority enhancement area. It was proposed that existing concerns about coastal hazards, wetlands and public access would be better managed through creation of a SAMP for the Lake Erie Bluffs and Shoreline. A procedure for creating SAMPs was developed and added to Pennsylvania's FEIS. A specific SAMP was created for the Lake Erie Bluffs and Shoreline, which created an oversight structure utilizing existing management authorities.

Resource Characterization

Identify areas of the coast subject to use conflicts that can be addressed through special area management planning.

Several such areas exist within both of Pennsylvania’s coastal zones, but management concerns either haven’t reached a threshold requiring creation of a SAMP, or are already being addressed in other ways. Such areas include flooding in the Delaware Estuary Watershed (complicated by issues of global warming), Presque Isle Bay, submerged coastal lands of the Commonwealth in both zones (including dredging issues, littoral sand management, biological and archaeological resources, and public access), preservation of coastal agricultural lands and open space, and the Lake Erie Moraine.

Conclusion

Identify major gaps in meeting the programmatic objectives for this enhancement area.

There are no current major gaps identified in this enhancement area. Several topics identified in the SAMP for the Lake Erie Bluffs and Shoreline still need to be addressed, such as bluff seep wetlands and the impacts of urbanization. Implementation projects involving study of a small coastal watershed (309) and Open Space Preservation (306) have been completed. Three others, on shoreline protection structures (309), maritime history (309) and small coastal ravines (306), are still underway.

Needs for improved technical advisory services to bluff property owners and closer cooperation with municipal zoning and code enforcement officers were identified in the SAMP as management needs. These needs have been addressed through funding of a CZM position in DEP’s Northwest Region, Office of the Great Lakes, to provide for daily administrative oversight of the BRSA and the ready availability of technical assistance.

Priority in view of the coastal program

<u>1992 Assessment</u>	<u>1997 Assessment</u>	<u>2001 Assessment</u>
High ___	High <u>X</u>	High ___
Medium ___	Medium ___	Medium <u>X</u>
Low <u>X</u>	Low ___	Low ___

Justification of the proposed priority

The SAMP for Pennsylvania’s Lake Erie Bluffs and Shoreline and the subsequent implementing actions enhanced coordination among eight municipalities and the additional groups with management interests involved in the SAMP. Ongoing implementation and management activities will be accomplished through regular CZM and DEP programmatic activity. Creation of the process for SAMP designation in Pennsylvania’s CZM Program allows for future consideration of issues requiring coordinated area-wide efforts. None currently achieve the required threshold.

Cumulative and Secondary Impacts

Legislative Objective

1456B (a) (5) Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect of various individual uses or activities on coastal resources, such as wetlands and fishery resources

Section 309 Programmatic Objectives

- Develop, revise or enhance procedures or policies to provide cumulative and secondary impact controls.

Resource Characterization

As in the case of past assessments, Pennsylvania has chosen to address cumulative and secondary impacts as a tool as well as an issue. In the first assessment, CZM considered the impacts of recreational boating on Lake Erie. During the past assessment, cumulative and secondary impacts were considered as part of the larger encompassing concept of sustainable development. The need to protect natural resources is an important ongoing objective. This function is provided, to some extent, through existing federal and state programs that protect resource areas such as wetlands, and private and local efforts that deal with species protection, preservation of open spaces, farmland and recreation access. Another important objective is the preservation of economic vitality in the coastal zones. A key element to balancing both objectives and helping to control cumulative and secondary impacts is land use management.

The cumulative and secondary impacts of existing land use activities and decisions for new development are major factors in both of the coastal zones. The decisions that impact land uses come from a complex process of both government and private efforts. The combination of land use activities, along with the rapid growth or movements of populations within the coastal zone, can have negative impacts on water supply and quality, habitat and living resources, and open spaces.

County populations in the Delaware Estuary region have remained relatively static during the past strategy period, according to figures from the Delaware Valley Regional Planning Commission. These figures are estimates, to be updated when the 2000 Census figures are available.

Delaware Estuary Coastal Zone	1990 Population	1998 Population	Percentage Change
Bucks County	541,174	587,942	8.64
Delaware County	547,651	542,593	-0.92
Philadelphia	1,585,577	1,406,267	-9.42

The Lake Erie coastal zone population has also remained relatively static, according to population estimates from the U.S. Census Bureau.

Lake Erie Coastal Zone	1990 Population	1998 Population	Percentage Change
Erie County	275,572	276,401	.31

Impacts to Coastal Resources

Sprawl in the watersheds of both coastal zones continues as coastal county populations remain static or decline overall, driven by changes in individual housing preferences and mobility. The protection of open spaces and habitats continues to be a primary concern in both coastal zones as populations move from more urban areas. The shifts of population and new development have an impact on both the environment and the economy of the coastal regions and have affected program goals of sustainability. Mechanisms to meet these goals are in place within existing government structures. Many private and non-profit initiatives are continuing, supported by increased state funding for watershed protection.

Management Characterization

Pennsylvania's Land Recycling Program has developed into a model for the nation by establishing a new paradigm and philosophy in the field of contaminated site management, one which facilitates the redevelopment of previously used property, thereby reducing the encroachment of growth upon undeveloped land. In the past four years, more than 650 sites have been remediated and more than 1,000 site cleanups have been initiated through the voluntary process provided by Act 2.

The keys to success have been statutory liability release, standardized procedures and realistic goals, cleanup options, funding assistance for “innocent” parties, and bipartisan, top-level government support.

An important part of the land recycling legislative package (Acts 2,3 &4) established the Cleanup Standards Scientific Advisory Board, which formulated statewide health standards and worked on implementation of the acts. DEP has proposed amendments to Chapter 250, Administration of Land Recycling Program, Title 25, Environmental Protection, to update the statewide health standards and other requirements.

The Land Recycling Program has developed and continues to update a directory of sites and a grant program providing incentives for inventory listings. See www.dep.state.pa.us/subjects for details on this and other assessment topics.

As stated in the previous assessment, most cumulative and secondary impacts are related to land use issues. Local levels of government directly control land use in the Commonwealth of Pennsylvania. A number of state programs influence land management through technical assistance and financial incentives in areas such as water quality, forestry, habitat protection, wildlife protection, and erosion and pollution control. These programs provide services that indirectly influence land management decisions.

Growing Greener:

On December 15, 1999, Governor Tom Ridge signed into law Act 68, the Environmental Stewardship and Watershed Protection Act. Recognizing that Pennsylvania will invest over \$5 billion during the next five years on environmental protection and water and sewer investments, this Act directs the investment of nearly \$650 million of new money and redirected existing funds to the environmental challenges identified by the 21st Century Environment Commission. The Departments of Environmental Protection, Conservation and Natural Resources, and Agriculture, and the Pennsylvania Infrastructure Investment Authority (PENNVEST) will receive money to clean up abandoned mines and restore watersheds, help communities address land use impacts, eliminate the maintenance backlog in state parks, provide funds for recreational trails and local parks, protect open space, tackle the backlog of farmland preservation projects statewide, and provide new and upgraded water and sewer systems.

Growing Smarter:

On January 7, 1999, Governor Tom Ridge signed Executive Order 1999-1: Land Use Planning. This order was issued in response to the 21st Century Environment Commission’s identification of land use as the most pressing environmental priority facing the Commonwealth. (E.O.1997-4)

The land use planning directive identifies losses to sprawl and the environmental consequences of present growth patterns. It notes the importance of a healthy environment linked to a dynamic economy and the well being of communities. The importance of the Greenways Partnership Commission (E.O. 1998-3) and its promotion of a network of greenways are recognized.

In response to the Executive Order on Land Use Planning, Pennsylvania passed “Growing Smarter” legislation, signed into law by Gov. Ridge on June 22, 2000 as Acts 67 and 68. Land use forums, finished in November 2000, were held for 1400 participants in 53 counties, including all coastal counties.

These new laws encourage sound land use planning at the local level and require state agencies to consider local land-use ordinances and comprehensive plans in making certain permit and funding decisions related to infrastructure or facilities. An interim policy was adopted by DEP on August 21, 2000. The 2000-01 budget included \$3.6 million for land-use planning and assistance, a major increase in funding.

These acts enable counties and municipalities to plan together for both growth and conservation of resources, implementing these plans through cooperative agreements and consistent ordinances. They create additional tools to combat sprawl, allow for transfer of development rights, and clarify the authority of counties and municipalities to create locally designated growth areas as part of their comprehensive land use planning.

Executive Order 98-1 established the Governor’s Green Government Council to move the Commonwealth and its agencies by continuous improvement to a goal of environmental sustainability, setting a statewide example.

Additional initiatives have focused on cumulative and secondary impact related issues:

- CZM funded local planning: 12 projects, \$471,797--CZM and local funds.
- DEP watershed planning: watershed overlay teams, regional watershed coordinators and conservation district watershed specialists, newly established watershed groups. The Growing Greener initiative has funded three cycles of projects for watershed planning, protection and restoration. The four coastal zone counties have received funding for 50 projects investing a total of over \$4.7 million. (Bucks: 20 grants, \$827,434; Philadelphia: 13 grants, \$3,192,259; Delaware: 10 grants, \$488,594; Erie: 7 grants, \$215,414.) (Erie County has received an additional 3 grants investing \$351,613 in projects improving and preserving habitat for rare and endangered species in the French Creek watershed adjacent to the Lake Erie watershed.)
- Stormwater management, flooding studies,
- DELEP implementation
- Integration of CZM into DEP’s Office for River Basin Cooperation, and interstate basin activities.

- Recycling achievements

Conclusion

Pennsylvania has significantly enhanced its management capabilities since the last assessment. Legislative and regulatory advances have been made in programs affecting cumulative and secondary impacts of development: land recycling, watershed management, open space preservation, infrastructure development, and land use planning. DEP has established a strong environmental education and public outreach program with expected benefits in public awareness and personal responsibility toward the coastal environment.

Priorities in the view of the coastal program

<u>1992 Assessment</u>	<u>1997 Assessment</u>	<u>2001 Assessment</u>
High <u>X</u>	High <u> </u>	High <u> </u>
Medium <u> </u>	Medium <u>X</u>	Medium <u>X</u>
Low <u> </u>	Low <u> </u>	Low <u> </u>

Justification of the proposed priority

CZM continues to view this priority area for its potential contributions toward effective management of sustainable coastal communities and resources. Related to new land use tools, while not being considered as a 309 enhancement area in this strategy, the continuing development of the Coastal GIS system and its monitoring capabilities continues as an important issue for CZM. An integrated GIS will enable CZM to assist counties and municipalities in planning for the growth and development of their jurisdictions. CZM will continue to support DEP’s organizational GIS initiatives and development of its own specific capabilities.

CZM will continue to support municipal land use planning through the funding of local projects dealing with ordinances and plans. These activities will encourage local planning initiatives and help control cumulative and secondary impacts, but will not be considered as part of a 309 programmatic change.

Ocean Resources

Legislative Objective

1456B (a) (7) Planning for the use of ocean resources

Section 309 Objectives

- Develop and enhance regulatory, planning and intragovernmental coordination mechanisms to provide meaningful state participation in ocean resource management and decision-making.
- Where necessary and appropriate develop a comprehensive ocean resource management plan that provides for the balanced use and development of ocean resources, coordination of existing authorities, and minimization of use conflicts.

Ocean Resources Characterization

As stated in the introduction, past 309 assessments did not determine ocean resources to be a relevant category, including potential resource categories in other priority enhancement areas. CZM has reconsidered this judgment after experiencing significant direct and interstate impacts on our Lake Erie and Delaware Estuary coastal resources related to water quality and quantity issues, invasive species, and the presence of active and expanding port facilities serving global maritime trade.

Lake Erie:

Source	Impact (Significant /Moderate Insignificant)	Type of Impact
Water Quantity	Significant	Aesthetic, resource damage, lake levels (bluffs, wetlands, aquatic resources)
Water Quality	Significant	Changes in aquatic flora and fauna, beneficial uses
Port Development	Significant	Environmental protection, economic development, public access
Fisheries Resources	Significant	Species composition, survival of endangered species, resource economics

Dredging and sand management	Significant	Resource damage and depletion, water quality
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Delaware Estuary:

Source	Impact (Significant /Moderate Insignificant)	Type of Impact
Water Quality and Quantity	Significant	Aesthetic, beneficial uses, economic benefits, survival of aquatic resources
Fisheries Management	Significant	Economic use, endangered species survival
Port Development	Significant	Maritime commerce, tourism, public access, dredging and material management

Changes since the last assessment

In past Section 309 assessments, ocean resources were determined not to be a major problem within Pennsylvania’s coastal zones, and were not considered as an enhancement area. Invasive species were considered within the context of wetlands.

Conclusion

PA CZM has identified that there are gaps in maintaining or addressing this objective.

- Full participation in Great Lakes and Delaware River Basin water quantity and quality monitoring.
- Interstate cooperation in ports management and economic development on both coasts.
- State participation in interstate efforts related to invasive species and ballast water management.
- State participation in interstate efforts related to dredging and sand management.

Priority in view of the coastal program

2001 Assessment

High X
Medium ___
Low ___

Justification of the proposed priority ranking

In previous assessments, CZM determined that ocean resources did not require consideration by the Pennsylvania program. This view has been revised after administrative relocation of CZM and increasing participation in interstate issues related to Lake Erie and Delaware Estuary aquatic systems. Interactions with other river basin organizations dealing with coastal waters also led to the reassessment of the Commonwealth's approach to the category of ocean resources.

During the last 5-year program enhancement cycle, Pennsylvania met 309 programmatic objectives for ocean resources by developing state participation in Great Lakes and Delaware Estuary resource management and decision making processes through:

- Creation of the Office for River Basin Cooperation in the Department of Environmental Protection and integration of Coastal Zone Management into that office, elevating institutional priorities related to coastal resource planning and interstate watershed management. Pennsylvania has recognized responsibility for interstate coastal consistency issues, is a signatory to the Chesapeake Bay 2000 Commitment, and participates in nutrient management, ballast water, non-native invasive species, and anadromous and catadromous species issues with coastal resource implications.
- Participation in creation, management and implementation of the tri-state Delaware Estuary Program.
- Support for location of the Office of the Delaware Estuary with the Delaware River Basin Commission, an interstate compact organization in which Pennsylvania is a signatory member.
- Initiation of DEP programs for integrated water management, with watershed overlay teams, regional watershed coordinators, and watershed specialists working for the conservation districts.
- Chairing the Council of Great Lakes Governors and the Great Lakes, Delaware River Basin, and the Susquehanna River Basin Commissions.
- Creation of the first EPA approved state program meeting the goals of the Great Lakes Water Quality Initiative.
- Implementation of an Office of the Great Lakes in DEP that participates in activities of the Great Lakes Dredging Team; development of the Lake Erie Lakewide Management Plan (LaMP); International Joint Commission related activities (Presque Isle Bay Area of Concern and Advisory Committee); development of a Sea Grant Program in

Pennsylvania; the Great Lakes Protection Fund; the State of the Lakes environmental conferences; and Great Lakes invasive species programs. A regional CZM staff position providing local technical advisory services and oversight of the Bluff Recession and Setback Act has been located in the Office of the Great Lakes. This individual participated in SAMP development and Great Lakes grant programs, while working to integrate regional watershed initiatives and new Growing Greener funding opportunities with local coastal zone priorities.

- Conditional approval of Coastal Nonpoint Pollution Control Plans (6217) for both coastal zones, leading to a two-tiered geographic structure for Pennsylvania's approved coastal management program..
- CZM-led creation of a Special Area Management Plan for the Lake Erie Bluffs and Shoreline.
- Support of the Delaware Estuary Partnership, a nonprofit friends group supporting implementation of the Delaware Estuary Program.
- Participation in a planning process led by the Delaware River Basin Commission (Flowing to the Future.)
- Publication of a report by the 21st Century Environment Commission depicting land use issues as top state priorities. This report led to PA land use legislation and increased funding for planning to help address cumulative and secondary impact issues and management of ocean resources in both coastal zones.
- Increased efforts by the Erie-Western Pennsylvania Port Authority and the Delaware River Port Authority on issues such as use of public trust lands, public access, and development of tourism and cruise ship sailings from Pennsylvania ports. Development by these organizations and others of increased shipbuilding and maritime commerce
- Commonwealth participation in Interstate Council on Water Policy and Northeast-Midwest Institute issue development.
- Issuance of fish consumption advisories in both coastal zones.
- Encouragement of the S.O.N.S. (Save our Native Species) of Lake Erie in their efforts to become a 501 (c) (3) organization in an effort to extend their work in fish propagation and stocking, fisheries management, education, and public access.
- Participation in ballast water and non-native invasive species management efforts in the Chesapeake Bay.

- Involvement by Lake Erie CZM staff in improving local coastal resource management efforts by teaching and working with local organizations. This involvement includes classes at local schools and universities, the Presque Isle State Park Advisory Committee, Presque Isle Bay Advisory Committee, Presque Isle Partnership, Pennsylvania Lake Erie Watershed Association, Earth Force, SONS of Lake Erie, Lake Erie Region Conservancy, and the Bayfront Center for Maritime Studies are just part of the list. Additional staff has been added to the Southeast Regional Office, in the Watershed Coordinator's office. This individual's duties emphasize wetlands management and project development, but also include submerged lands and estuarine resources management.

Important issues for ocean resources face CZM in the next five years, involving application of program policies on water quality and quantity management, fisheries management, public access (submerged lands and protection of public trust rights), dredging, emergency response programs, and historic resources.

As identified in the conclusions above, CZM wants to be a full participant in Great Lakes and Delaware River Basin water quantity and quality monitoring. It wants to promote interstate cooperation in ports management and water-dependent economic development. CZM will actively participate in interstate efforts related to invasive species and ballast water management. Using federal consistency determinations, CZM will cooperate in interstate efforts related to dredging and sand management.

Two of the most pressing issues facing CZM are (1) water management and the relationship between water quantity and quality, and (2) native and non-native invasive species impacts, which have had dramatic consequences for both the Lake Erie and Delaware Estuary coastal zones. Pennsylvania needs to elaborate a program definition of its ocean resources, consolidate and clarify the legal and regulatory basis for ocean resources management, and define the management program's organizational interactions for effective protection of ocean resources in both coastal zones.

Public Access

Legislative Objective

1456B (a)(3) Attaining increased opportunities for public access, taking into account current and future public access needs, to coastal areas of recreation, historical, aesthetic, ecological, or cultural value.

Section 309 Programmatic Objectives

- Improve public access through regulatory, statutory and legal systems.
- Acquire, improve, and maintain public access sites to meet current and future demand through the use of innovative funding and acquisition.
- Develop or enhance a Coastal Public Access Management Plan, which takes into account the provision of public access to all users of coastal areas of recreational, historical, aesthetic, ecological, and cultural value.
- Minimize potential adverse impacts of public access on coastal resources and private property rights through appropriate protection measures.

Resource Characterization

Pennsylvania's coastal waters continue to provide diverse opportunities for public access. There is still a great demand for traditional public access, while the range of uses continues to expand to include personal watercraft, festival sites, ferry boats and aerial trams. Geographic and urban constraints still create obstacles to public access in both coastal zones.

Limited funds and privately owned waterfront land haven't stopped citizens from finding imaginative ways to connect with their coastal waterfronts. Safety issues, water quality, funding levels and major rail and road transportation corridors next to waterfronts remain constraints to access. Local communities and interest groups continue to initiate efforts to claim access to their waterfronts in both coastal zones.

Extent of Public Access

During this assessment period, CZM has invested in 35 new public access planning and implementation projects through its local grant program, for a combined CZM, state and local investment of \$3,280,211.

In the Lake Erie Coastal Zone, the Erie-Western Pennsylvania Port Authority has accepted a major role in promoting public access to the coast. The Pennsylvania Sea Grant Project is a major new partner in promoting access and tourism. The Bayfront Center for Maritime Studies

has opened and is combining education with practical applications promoting access to Lake Erie, focusing on city youth whose previous opportunities have been limited. A boat-building program at the Independence Seaport Museum supports similar activities for the Delaware Estuary. The following is a list of some of the Commonwealth initiatives since the last assessment:

Presque Isle State Park has completed its marina expansion and improvements, addition of 6 miles of general purpose trail, improvement of the pontoon boat excursions to the lagoon system, innovative shoreline and trail protection involving beneficial use of dredged material, beach nourishment, plans for a Great Lakes research center, development of ferry docks, expansion of its environmental education program, and development of a handicap accessible fishing pier.

The Port Authority has extended the Bayfront bike path, made progress toward a bluff-top promenade and greenway above the Bay in the City of Erie, and opened the Liberty Street Pier with a public park (8.5 acres), festival site (5,000 seat amphitheater), playground, and public walkway (over 1000 ft.) (306 contributions). Other efforts include development of transient boating docks and a reception facility with amenities, towing services, and a public walkway at Wolverine Park and the West Basin. Improvements have been made to Lampe Marina and the East Avenue boat launch, where new facilities are being added to accommodate ferryboats. Development of South Pier as a handicapped accessible access area (1500 ft.) (306A) has also been completed with volunteer assistance from the S.O.N.S. of Lake Erie. The Port Authority has expanded its marina operations with purchase of the privately owned Perry's Landing Marina and clubhouse facilities.

Besides cooperating with Port Authority projects, the City of Erie has maintained its zoning requirement for waterfront access in new developments or major renovations. Improvements have been made at the Chestnut Street Park boat launch area.

Other developments include:

- Opening of intermodal parking and transportation serving the waterfront.
- Official designation of the Pennsylvania portion of the Seaway Trail and Pennsylvania's designated Bikeway Z, (approx. 45 miles) both following the Erie coast.
- Opening of the Erie Maritime Museum (306 exhibit).
- Development of the Lake Erie Region Conservancy, providing a local vehicle for acquisition and management of open space and threatened habitats.
- Improvements to the ravine access trail at Kelly's Run (306A) (400 ft.).
- Expansion of sightseeing services (2 dinner cruise vessels, one tour boat) and passenger ferry availability (2 Port Authority boats) on Presque Isle Bay, from downtown Erie to Presque Isle State Park..
- Completion of a littoral drift study (306) to assess prospects for a harbor at Shades Beach Park.

- Dredging and marina improvements at Northeast Marina.
- Creation of pools on Walnut Creek to improve habitat for spawning fish and access for sport fishing.

Delaware Estuary Coastal Zone:

In the southeastern portion of the Commonwealth, the Delaware Estuary Coastal Zone (DECZ) still provides many active and passive recreational opportunities. Commercial interests continue to occupy much of the waterfront along the Delaware. Water quality problems continue to limit some water dependent activities. Swimming is not an official beneficial use in the tidal Delaware Estuary. Some of the public access initiatives since the last assessment include:

- Pending plans for major redevelopment of Penn's Landing and the Chester waterfront (\$200-300 million proposals) have been announced.
- The Pennsylvania Environmental Council is completing a study of the Delaware Estuary public access opportunities.
- Joint marketing is being done for the Philadelphia and Camden, NJ waterfronts, which will be connected by an aerial tram. Groundbreaking is expected early in 2001. Current passenger ferry rides linking the two shorelines have been extended to include sightseeing.
- Improvements are being made to the dike and trail at Morrisville (306A).
- The Delaware River Port Authority, whose traditional role is operation of the area's toll bridges, has committed major support for tourism and recreational development.
- Spurred by the National Park Service, planning was completed and implementation begun for the Delaware Heritage Trail circling the upper Delaware Estuary from Morrisville and Trenton to the Betsy Ross Bridge.
- Extension of the Hog Island Road is pending, improving access to Fort Mifflin and the riverfront adjacent to Philadelphia International Airport. Fort Mifflin has made dike repairs and improved its attractiveness as a tourism site.
- Improvements are being made to the Pennsbury Manor historic site on the Delaware in Bucks County (306A).
- Wetland restoration and a ferry dock will improve access at Bartram's Garden on the Schuylkill. Plans are being developed for a bikeway connecting with Fort Mifflin, part of an overall plan linking Valley Forge with the Delaware River.
- A grant of \$23 million was donated by the William Penn foundation for improvements to environmental education and park facilities in Philadelphia's Fairmount Park, including coastal areas on the Delaware and the Schuylkill Rivers.
- State and Federal improvements were made to the Delaware and Lehigh Canal National Heritage Corridor and Delaware Canal State Park in the Bucks County coastal zone. Development proceeds on the Schuylkill River State Heritage Park corridor

- Plans for expansion of the park at Chester’s Commodore Barry boat launching area are being funded by CZM (306).
- A \$5 million Environmental Education Center at the John Heinz National Wildlife Refuge at Tinicum is scheduled to open early in 2001. Restoration work on floodgates affecting tidal flow to the marsh has been completed. Trail improvements adjacent to a wetlands restoration site and a damaged oil pipeline have been completed. A tidal water trail has been developed for the Refuge.
- Work has begun on the interpretive center at the Fairmount Water Works, with restoration of the Engine House as a waterfront dining site.
- Planning for both the North Philadelphia Waterfront (City of Philadelphia) and the Lower Schuylkill River (Schuylkill River Development Council) is being developed. Bulkhead repair and installation for the Schuylkill River Trail was completed (306A).
- A recreational re-use study was completed for a Tacony riverfront industrial site (306).

Demand for Public Access in Pennsylvania

As was the case in 1980 when the CZM program was developed, the demand for public access is still high in each of the coastal zones. The records available for 1996 through 1999 indicate that the demand for “traditional” types of public access has remained high, but relatively level or declining slightly. In some cases, declines were directly attributable to facility remodeling, increased costs, changes in definitions and weather limitations.

	1991	1996	1997	1998	1999
Fishing Licenses					
Erie	34,941	29,902	33,814	31,519	32,079
Bucks	39,975	35,723	30,260	33,995	32,823
Philadelphia	31,036	31,536	27,039	25,504	24,510
Delaware	18,721	15,843	15,378	14,218	13,493
Boating Registrations	1991	1996	1997	1998	1999
Erie	10,367	10,713	10,765	NA	11,382
Bucks	13,907	16,061	16,000	NA	16,478
Philadelphia	6,155	6,127	6,136	NA	5,970
Delaware	4,889	5,436	5,495	NA	5,653
State Park Use	1991	1996			
Delaware Canal (Bucks)	1,297,493	1,526,419	NA		
Neshaminy (Bucks)	699,639	302,647	NA		
Presque Isle (Erie)	4,026,226	3,884,460	NA		

Impediments to Providing Adequate Access

Pennsylvania CZM consistently tries to achieve a balanced program, meaning that resources are limited for promoting and developing public access to the coasts. Since CZM remained in DEP and the parks and recreation function was assigned to DCNR, the program emphasis is on resource protection and environmental quality.

In the LECZ, access to the water's edge is still a priority management issue, including clarification of the public's trust rights below the ordinary high water mark.

In both coastal zones economic interests continue to compete with public access for available sites.

Management Characterization

Changes since the Last Assessment

Management Category	Changes Since Last Assessment		
Regulatory Programs	significant	<i>moderate</i>	none
Acquisition Programs	<i>significant</i>	moderate	none
Comprehensive Access Planning	<i>significant</i>	moderate	none
Operation and Maintenance Programs	<i>significant</i>	moderate	none
Innovative Funding Techniques	<i>significant</i>	moderate	none
Public Education and Outreach	<i>significant</i>	moderate	none

The Department of Community and Economic Development (DCED) and DCNR have increased emphasis on tourism and recreation as spurs to economic development and improvement of quality of life.

In spite of departmental changes, CZM continues to maintain its functional relationships with other organizations as it has in the past. Executive Order 1980-20, which directs State agencies to enforce and act consistently with the goals, objectives and policies of the Coastal Zone Program, has remained the same. MOUs have continued in force.

Pennsylvania has substantially increased investment in open space and recreation through Growing Greener, Agriculture Preservation and local bond issues. DCNR has developed a policy for creating, accepting and managing Conservation Areas. There is active support for land trusts. DCNR continues their established Natural Areas Program that includes Gull Point at Presque Isle and tidal wetlands at Neshaminy State Park. Pennsylvania organizations have been creative in designing projects that make use of ISTEA and TEA-21 inter-modal

transportation grants in support of coastal access. Projects include bike trails, inter-modal parking and ferry boats.

Land Acquisition and Comprehensive Access Planning

State agencies and local municipalities have authority to acquire land through condemnation for public access, but generally continue to follow a willing seller policy. Municipalities can require public access for future land uses, but cannot require it retroactively.

The City of Erie is finalizing a new city zoning ordinance, which retains the waterfront access requirement of a 12-ft. public walkway for new development or substantial improvements.

Through the mechanisms provided, CZM has been able to address its public access policy in both coastal zones. By encouraging public interest by both communities and local interest groups in reclaiming access to their coasts, CZM has been able to facilitate, support and supplement access.

Through its public access planning efforts (309 PAMP), CZM focused on the reality of many special-purpose access providers within the coastal zones and the need for private commercial efforts to provide substantial public contact with coastal resources. Transportation availability, local site-support groups, linear projects such as bikeways and greenways, maintenance needs, liability issues, harbors of refuge on Lake Erie, open space preservation, biological diversity, and education/information dissemination are still important issues.

In addition to developing a public access management plan, Pennsylvania has been an active participant in continued development of the Delaware Estuary Program and its public access goals and objectives.

Operation and Maintenance Programs

Resource Management Plans for all state parks such as Presque Isle, Neshaminy, and Delaware Canal are now a requirement in Pennsylvania. \$125 million of the Growing Greener initiative for DCNR is directed to eliminating an infrastructure maintenance backlog in state parks and forests.

An additional \$27.4 million is dedicated to matching grants to acquire land to protect open space and critical natural habitat; to conserve river resources; to create greenways; to build community parks and playgrounds; and to promote and enhance heritage tourism through the Pennsylvania Heritage Parks Program. These Growing Greener funds will augment DCNR's existing Community Conservation partnership grant programs. Growing Greener funds also will be used to supplement research and protection efforts for the state's native wildlife and wild plants. This will be done through the Wild Resource Conservation Fund, which in the past has been funded by special-purpose license plate sales.

The challenge for CZM will be to integrate these new funding initiatives and potential match funding with the public access goals in both coastal zones.

Conclusions

Gaps in Addressing Programmatic Objectives

GAPC designation required for investment of 306A funds inhibits the CZM grant approval process. CZM revisited the designation process in the PAMP and is evaluating broader categories such as riparian buffers, in line with DEP initiatives such as the Stream ReLeaf program.

High bluffs and erosion of unconsolidated lacustrine and glacial coastal soils, variable lake levels, and violent storms will always make access and permanent installations difficult. Funding availability has increased through Growing Greener, but the cost of suitable sites and appropriate construction has escalated dramatically. Ongoing issues of security, maintenance, vandalism, nonpoint source pollution, and industrial use continue to complicate the provision of public access. Impediments to the use of CZM 306 funds for public access projects (previously outlined) still restrict CZM's participation in new or improved access initiatives.

Enhancement Area Priority

<u>1992 Assessment</u>	<u>1997 Assessment</u>	<u>2001 Assessment</u>
High <u>X</u>	High ___	High ___
Medium ___	Medium <u>X</u>	Medium <u>X</u>
Low ___	Low ___	Low ___

Justification of the Proposed Priority

This area was a primary concern of the first 309 assessment. The issue was subsequently addressed through the PAMP and concurrent Commonwealth initiatives. The PAMP continues to provide management direction to address public access issues in both coastal zones. Specifically the PAMP provided maps and data on the existing condition of public access, suggestions for new or revised public access goals and policies, an overview of public access efforts and public and private funding opportunities to help enhance public access in Pennsylvania. The SAMP for the Lake Erie Bluffs and Shoreline also addressed public access issues within that specific area.

Public access was considered a medium priority in the last assessment. Based on the previous 309 assessments, CZM has determined that public access is a medium priority and does not anticipate making any programmatic changes. CZM will continue to encourage public access improvements through its local matching grants and will work diligently to maintain public trust rights of access.

Coastal Hazards

Section 309 Programmatic Objections

- Direct future public and private development and redevelopment away from hazardous areas, including the high hazard areas delineated as FEMA V-zones and areas vulnerable to inundation from sea and Great Lakes level rise.
- Preserve and restore the protective functions of natural shorelines features such as beaches, dunes, and wetlands.
- Prevent or minimize threats to existing populations and property from both episodic and chronic coastal hazards.

Levels of Risk

Hazard	High Risk	Medium Risk	Low Risk
Hurricane/Typhoon			Low
Flooding		Medium	
Storm Surge			Low
Episodic Erosion			Low
Chronic Erosion	High		
Sea/Lake Level Rise		Medium	
Subsidence	High		
Earthquakes			Low
Tsunamis			Low
Maritime Accidents		Medium	

Resource Characterization

The major coastal hazards in the LECZ are bluff recession and shoreline erosion. As a consequence of fluctuating lake levels and the unconsolidated material makeup of the bluffs, these hazards are constant and severe. The natural coastal hazard in the DECZ is primarily flooding. Because of significant maritime shipping, both coastal zones are subject to damage from man-made hazards from accidents and spills.

Recent trends for lake levels are downward, nearing long-term averages. When levels rise, more lake wave energy reaches the bluff, causing accelerated bluff recession. When they fall, bluff erosion is less severe and exposed beaches encourage shoreline access. If levels continue to fall, there are likely to be fewer severe problems related to shoreline erosion and bluff

recession along the entire shoreline, preserving the stability of residential, commercial and industrial structures. However, maritime navigation problems can be expected to increase as water levels recede.

As was the case in previous assessments, unrestricted development along the face of the Lake Erie bluffs could have negative destabilizing effects, initiating or accelerating recession. Removal or mismanagement of vegetation on the bluff face can also cause accelerated bluff recession.

One of the most effective ways CZM found to remove inappropriate development from the bluff area in the past was FEMA’s National Flood Insurance Program. When active, this discontinued service helped remove or demolish insured structures on bluff properties with “zones of imminent collapse.” Since many structures were present before passage of the BRSA, there remains a need for a similar state program to remove structures before they are damaged by bluff recession.

The inconsistency of permitting standards for shoreline protection structures was an issue raised by regional CZM field staff. The lack of reference data--for length, height and spacing of shore perpendicular structures--created difficulties in correctly processing permits and insuring that installations would perform as expected.

Flooding continues to be a problem on many of the major tributaries to the Delaware Estuary. Watershed planning and management efforts have been developed since the last assessment in an attempt to address this hazard. Focused efforts have occurred on the Neshaminy in Bucks County, the Schuylkill, which flows through Philadelphia, and the Chester, Ridley, and Darby Creek watersheds in Delaware County.

Management Characterization

Changes to the State’s hazards protection program since the last assessment.

Mechanism	Changes since Last Assessment		
Building restriction	<u>Significant</u>	Moderate	None
Repair/rebuilding restrictions	Significant	<u>Moderate</u>	None
Restrict “hard” shoreline protection structures	Significant	<u>Moderate</u>	None
Restrict renovation of shoreline protection structure	Significant	<u>Moderate</u>	None
Beach/dune protection	<u>Significant</u>	Moderate	None
Permit compliance program	Significant	<u>Moderate</u>	None
Inlet management plans	Significant	Moderate	<u>None</u>
SAMPS	<u>Significant</u>	Moderate	None
Local hazards mitigation planning	<u>Significant</u>	Moderate	None

Innovative procedures for dealing with takings	Significant	Moderate	<u>None</u>
Methodologies for determining setbacks	Significant	<u>Moderate</u>	None
Disclosure requirements	Significant	Moderate	<u>None</u>
Publicly funded infrastructure restrictions	Significant	Moderate	<u>None</u>

Permit and Compliance Program

In March 2000 CZM received a project report, *Bluff Recession Monitoring Along the Pennsylvania Open Water Coastline of Lake Erie*. This study (306) updated control point locations, property ownership, recession rates, and zones of imminent collapse. It also contained intensive nearshore bathymetry just east of the Ohio state line for monitoring the littoral movement of sand relocated from Conneaut Harbor. This study was developed to assist municipal officials in enforcing ordinances enacted for Bluff Recession and Setback Act (BRSA) compliance. Information from the report was presented to local zoning and code enforcement officers at an October 2000 meeting at Presque Isle. Copies of the study will be provided to them. The Pennsylvania Sea Grant Project has assisted CZM by preparing fact sheets on issues related to living along the bluffs, and on the dynamics of bluff recession.

Methodologies for determining setbacks

CZM has undertaken initiatives to enhance monitoring through utilization of both a global positioning system and a geographic information system. Through the use of these technologies, CZM has been able to enhance bluff monitoring in the LECZ (309).

Enhancement Area Priority

<u>1992 Assessment</u>	<u>1997 Assessment</u>	<u>2001 Assessment</u>
High <u>X</u>	High ____	High ____
Medium ____	Medium <u>X</u>	Medium <u>X</u>
Low ____	Low ____	Low ____

Justification of the proposed priority ranking

CZM will continue administering the BRSA and evaluating the effectiveness of the Act. The previous 309 assessments ranked this area as high and medium. In this assessment, Coastal Hazards are being considered as a medium in consideration of ongoing CZM activities dealing with the bluffs. CZM anticipates that it will be integrating the results of the SAMP implementation project on Shoreline Protection Structures (309). This project is intended to provide proper placement and design criteria for shoreline protection structures, to assist the state regulatory agency responsible for evaluating permit applications.

As mentioned earlier, placing a staff position in the Lake Erie coastal zone has improved oversight of day-to-day administration of the BRSA and established a more cooperative working relationship with local code enforcement and zoning officers.

Wetlands

Legislative Objective

1456B (a) (1) Protection, restoration or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands

Section 309 Programmatic Objectives

- Protect and preserve existing levels of wetlands, as measured by acreage and functions, from direct, indirect and cumulative adverse impacts, by developing or improving regulatory programs.
- Increase levels of wetland sustainable acreage and functions within degraded wetlands.
- Utilize non-regulatory and innovative techniques to provide for the protection and acquisition of coastal wetlands.
- Develop and improve wetlands creation programs as the lowest priority.

Resource Characterization

Overall, the quality and quantity of coastal zone wetlands has remained stable. Areas in the LECZ and DECZ exhibit wide plant and animal species diversity. As in the past, CZM continues protecting existing wetlands through the photo interpretation of color infrared aerial photography (CIRAP), monitoring overflights, and creating a coastal zone wetlands database.

Direct and indirect threats to coastal wetlands, both natural and man-made

Threat	Significance		
Development/fill	high	<u>medium</u>	low
Erosion	high	<u>medium</u>	low
Pollution	high	<u>medium</u>	low
Channelization	high	medium	<u>low</u>
Nuisance or exotic species	<u>high</u>	medium	low
Freshwater Input	high	medium	<u>low</u>

Development and Erosion

Many Delaware Estuary Coastal Zone wetlands have already been impacted by development and fill. As the Lake Erie Coastal Zone (LECZ) becomes more developed, wetlands are increasingly susceptible. Currently, small coastal ravines with a drainage area of under 100 acres can be filled based on a general permit. CZM is studying the potential cumulative impacts of such activities through a baseline study (306). Inland development has increased stormwater runoff, turning intermittent streams into year-round flows. This has a detrimental effect on coastal ravine seep wetlands from increased erosion, ravine wall collapse, and nonpoint source pollution.

Invasive Species were considered a high threat to both the LECZ and the DECZ wetlands, which contain rare species that are being displaced. Many invasive species are difficult to control because they lack natural enemies, and chemical control methods are often not appropriate. Rare plants are being impacted in the LECZ, especially on very diverse and botanically rich Presque Isle State Park.

The 1986 wetland base aerial photography and interpretive Mylar sheets are outdated, out of scale and difficult to use. These Mylars are used continuously by CZM staff and are crucial when determining annual changes in wetland habitat and when building wetland enforcement cases. New interpretive Mylar sheets are needed that reflect current wetland status. They should be taken on lower altitude CIRAP scale. An up-to-date status and trends report would also be helpful to CZM staff when planning for future wetland management initiatives.

Management characterization

Changes since the last Assessment

Management Category	Changes since last assessment		
Regulatory Programs	significant	<u>moderate</u>	none
Wetlands Protection Standards	significant	<u>moderate</u>	none
Assessment Methodologies	significant	<u>moderate</u>	none
Impact Analysis	significant	<u>moderate</u>	none
Restoration/Enhancement Programs	<u>significant</u>	moderate	none
SAMPs	significant	<u>moderate</u>	none
Education/Outreach	significant	<u>moderate</u>	none
Wetlands Creation Programs	significant	<u>moderate</u>	none
Acquisition Programs	<u>significant</u>	moderate	none
Other _____	significant	moderate	none

Regulatory Programs

The Commonwealth does an in-depth review of all permits for wetland impacts, which are to be avoided or minimized as much as possible. Since 1991, impacts are evaluated through the use of an environmental assessment as part of the permit process. Other methods of assessment include wetland evaluation techniques, habitat evaluation techniques and site analysis. Because of the environmental assessment, a more thorough review and analysis can be done. Projects located in exceptional value wetlands are scrutinized more closely than other projects.

The Pennsylvania Coastal Zone Management Program and the Bureau of Dams, Waterways and Wetlands track permitted wetland impacts by using a Chapter 105 permit activity report and recording the information on a database. The recorded information is valuable because it allows CZM to track wetland impacts by type of impact, location and type of wetland.

CZM contracted with the U.S. Fish and Wildlife Service to create new Delaware Estuary and Lake Erie databases of coastal wetlands. These have been done. As part of the overall project, a new set of Mylar overlays were developed on the 1999 CIRAP of both coastal zones. New status and trends documents are being developed. As part of this updated coastal wetland inventory, new hydrogeomorphic classifications will be attached to all the wetland polygons.

Restoration/Enhancement Programs

With the introduction (1996) of the Wetlands Replacement Fund that allows for payment in lieu of mitigation and the start of the wetlands registry, which identifies property owners who desire to have wetlands created or restored on their property, restoration and enhancement programs are becoming more important in the Commonwealth. These regulatory and voluntary programs allow for future restorations and enhancements to occur. This will be a positive change, as larger, more diverse wetlands will be built in the coastal zones. Wetland mitigation projects for transportation impacts have occurred at the John Heinz National Wildlife Refuge at Tinicum (26 acres), Pennypack Park (20 acres), and Tullytown (5 acres). A 1.5-acre tidal wetland has also been restored at Bartram's Garden on the Schuylkill River.

Education/Outreach

Education and outreach has expanded through creation of a DEP environmental education program and wide distribution of the weekly UPDATE of environmental news and events. Interagency wetlands training has occurred for staff of the Department of Environmental Protection as well as for other Commonwealth and Federal agencies and private consultants. The public has been made more aware of the importance of wetlands through a variety of media, including seminars and training sessions. In Pennsylvania, the Wetlands Advisory Board reviews regulations and advises DEP on wetland issues. This board is composed of agency personnel, academia and the general public. Wetlands are an important component of DEP's integrated watershed management process embodied in the Growing Greener grant program.

Wetland Creation Programs

Wetland creation programs are linked with restoration and enhancement programs in Pennsylvania. The wetland fund (1996) allows for the creation of wetland “in lieu of “ mitigation for some projects. Also, the wetland registry (1996) allows interested parties to register their property as potential mitigation, creation, or restoration sites for wetlands. As mentioned, Pennsylvania Department of Transportation is circulating a draft MOA which provides the basis for wetland banking for mitigation of transportation project impacts.

Conclusion

Identify major gaps in addressing the programmatic objectives

The current exotic plant control projects at Presque Isle in the LECZ (306), and projects at other locations in both coastal zones, are trying to prevent the degradation of coastal wetlands. By initiating and studying possible control methods, CZM tries to enhance coastal wetlands and improve wetland functions.

As a basis for utilizing innovative techniques in providing for the protection of coastal wetlands, CZM still lacks a bluff wetland inventory and analysis. Such studies could be done jointly with the Bureau of Forestry PNDI Program. A final product could be a map of the sites showing their location along with the occurrence of rare species, with GIS technology utilized for creating maps of the sites.

To help in the development and improvement of wetland protection and creation programs, CZM added and is providing specialized training for a staff person in the Southeast Region Office, whose work includes monitoring, enforcement, and siting and construction of wetland replacement fund projects.

Priority in the view of the coastal program

<u>1992 Assessment</u>	<u>1997 Assessment</u>	<u>2001 Assessment</u>
High <u> X</u>	High <u> </u>	High <u> </u>
Medium <u> </u>	Medium <u> X</u>	Medium <u> X</u>
Low <u> </u>	Low <u> </u>	Low <u> </u>

Justify the Proposed Priority.

Pennsylvania’s diverse coastal wetlands are important to their ecosystems. CZM has been implementing its Chapter 105 regulations for wetland protection through regional office enforcement. CZM continues to require that wetlands destroyed within the coastal zones be mitigated in the coastal zone (official program 306 boundary) and is asking for this to be reflected in DOT’s proposed wetland banking MOA. Addition of the 6217 tiers to the CZM

program boundaries could affect the program's management practices for mitigation, monitoring and definition of coastal wetlands.

Updated Mylar sheets identifying changes, a new wetlands data base, and current status and trends reports have addressed outstanding issues in the monitoring and protection of coastal wetlands.

Coastal wetlands were an important management consideration in preparing the SAMP for the Lake Erie Bluffs and Shoreline during the last strategy implementation. Work remains to be done on identification, analysis and protection of bluff wetlands.

During 309 strategy implementation, CZM will continue development of its wetlands monitoring and enforcement program to ensure coordination and protection of all coastal wetlands. CZM will also follow closely the progress of the new wetland tracking process and will try to integrate this information into the program's GIS. As always, the protection of coastal wetlands is important and will be designated as a medium priority, but not for a 309 program change.

Marine Debris

Legislative Objective

1456B (a) (4) Reducing marine debris entering the Nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris

Section 309 Objectives

- Develop and revise programs that reduce the amount of marine and lake debris in the coastal zone.

Marine/Lake Debris Characterization

As stated in the last 309 assessments, marine debris is trash and garbage, either in coastal waters or washed up on the shore. Types of debris include plastic and Styrofoam items, beer and soda cans, fishing lines, and floatable material released through municipal storm water sewerage systems.

Marine debris originates from two sources: ocean and land. Ocean-based debris comes from boats and ships (commercial and sport fishing, military, merchant, recreational, etc.), offshore oil and gas platforms, and illegal dumping. Land-based debris comes from industry, solid waste disposal sites, sewer systems, illegal dumping, and littering.

Marine debris of all kinds in Pennsylvania remain insignificant in their impacts on both coastal zones.

Changes since the last assessment

In past Section 309 assessments, marine debris was determined not to be a major problem within Pennsylvania's coastal zones, and was not considered as a priority enhancement area.

Since the last assessment, the City of Erie is nearing completion of water and water treatment system improvements with an expected total investment over \$110 million. The city's final goal is to have approximately 11 to 12 inactive combined sewer overflows. The capacity of the wastewater treatment plant has been increased substantially and a new outfall pipe constructed into Lake Erie. Water meters have been installed, reducing water consumption and wastewater generation.

Erie County has finalized a stormwater management plan, adopted by all coastal municipalities except Springfield Township, which is in a lightly populated rural area. Encouraged by Growing Greener funding, the DEP regional watershed coordinator and volunteer water monitoring program, several local watershed groups have organized around major tributaries, including an overall Pennsylvania Lake Erie Watershed Association. The Presque Isle Bay Advisory Committee has been re-energized by hopes for de-listing as an Area of Concern by the International Joint Commission.

The Partnership for the Delaware Estuary has completed a project (306) of storm drain stenciling and public education. The Heritage Conservancy began a Delaware River Watershed Initiative, and the Philadelphia Water Company has created an Office of Watersheds. Extensive watershed planning has been done for the Neshaminy in Bucks County and the Chester and Ridley Creeks in Delaware County. The Schuylkill River system is the focus of intense planning and preservation activity. Sojourns have been held the past few years on both the Schuylkill and the Delaware (including tidal areas), raising awareness of ecosystem health issues. The cumulative effect of these activities is continuation of Marine Debris as an issue of low priority and insignificant impact in Pennsylvania’s coastal zones.

The PF&BC and private marinas continue to operate pump out facilities in both coastal zones. The Erie-Western Pennsylvania Port Authority has created pumpout facilities at a new transient boating facility near Dobbins Landing in Downtown Erie. The PF&BC continues to develop programs to educate the boating public about problems associated with the discharge of sewage and litter from boats.

Management Characterization

Identify state ocean/Great Lake management programs and initiatives developed since the last assessment.

Program	Status	309\$
State/local program requiring recycling	Yes	
State/local program to reduce littering and wasteful packaging	Yes State & Local	
State/local regulations consistent with Marine Plastic Pollution Research and Control Act	Yes State PF & BC Boating Regulations	
Marine debris concerns incorporated into harbor, port, marina, and coastal solid waste plans	Yes State & County recycling efforts. 6217 facility waste management programs	

The Commonwealth continues to stress pollution prevention or source reduction. DEP emphasizes that reducing waste at the beginning of the manufacturing process is less costly than

first producing the pollutants and later cleaning up the air, land and water at the end of the pipe. To accomplish this change, DEP encourages everyone to think “up the pipe”, to the points where pollution can be avoided altogether, rather than focusing on how to best manage the pollution after it is created.

This significantly different way of thinking required a paradigm shift and attention to opportunities to educate businesses, local governments, citizens, and regulators about new ways of doing business in a more economically and environmentally compatible manner. DEP continues using existing regulatory and legal enforcement mechanisms to assure compliance with environmental laws, but also assists in development of new tools in applying waste reduction cost measures. DEP has established a procedural mechanism for evaluating the effectiveness of new environmental technologies and expediting their introduction.

To bring about this paradigm shift, DEP created the Office of Pollution Prevention and Compliance Assistance. The office’s mission is three-fold: to develop mechanisms for DEP staff to recognize opportunities for companies to save costs by “going beyond compliance”, to develop and provide information to advise companies how to save costs by “going beyond compliance”, and to develop the capacity within the public and private sectors to deliver this technical assistance.

Pennsylvania’s “Municipal Waste Planning, Recycling and Waste Reduction Act” - Act 101 mandates recycling in Pennsylvania’s larger municipalities (population in excess of 10,000), requires counties to develop municipal waste management plans, and provides grants to offset expenses. The goals of the act are to reduce Pennsylvania’s municipal waste generation; recycle at least 25% of waste generated; and educate the public as to the benefits of recycling and waste reduction. Mandated municipalities must collect at least three of the following materials: clear glass, colored glass, plastics, aluminum, steel, and bimetallic cans, high-grade office paper, corrugated paper and newspaper. Commercial, municipal, and institutional establishments within a mandated municipality are required to recycle aluminum, high-grade office paper and corrugated paper in addition to other materials chosen by the municipality.

Also under this act, Pennsylvanians are encouraged to help reduce waste by purchasing products that are durable, repairable, recycled, recyclable and/or have minimal packaging, and to find other uses for surplus goods instead of throwing them away. DEP provides technical assistance to county /municipal recycling coordinators to establish programs, and attempts to educate students by providing Recycling Lesson Plans. Manufacturers are encouraged to design their products with recycling in mind and assess their processes to minimize discards.

The Act imposed a \$2 per ton fee on municipal waste that funds recycling programs and municipal grants. All of the four coastal counties in Pennsylvania are served by recycling coordinators. The Commonwealth will pay up to 50% of their salaries. DEP’s regional offices serving both coastal zones also have recycling coordinators.

In 1997 and 1998, the 25% goal for recycling was exceeded statewide (32.6.) Pennsylvania continues to lead the nation with the largest number of residential recycling programs.

Conclusion

PA CZM has identified that there are no gaps in maintaining or addressing this objective.

Priority in view of the coastal program

<u>1992 Assessment</u>	<u>1997 Assessment</u>	<u>2001 Assessment</u>
High ___	High ___	High___
Medium ___	Medium __	Medium___
Low <u>X</u>	Low <u>X</u>	Low <u>X</u>

Justification of the proposed priority ranking

In previous assessments, CZM determined that marine debris was a low priority enhancement area, because it was not identified as a problem at that time. The types and amounts of marine debris that were noted were found to be insignificant, and considered more of a nuisance than a problem. This marine debris consisted of floatables that originated from combined sewer overflows, inefficient sewage treatment plants, and the careless disposal of litter. The most prevalent types of marine debris identified, consisted of wood, sticks, paper, lumber, tires, Styrofoam, plastics, cans, and bottles. This type of marine debris is common, and found throughout the United States.

Impacts from these nuisance areas have remained minor, and have even diminished through the various actions and programs undertaken by the Commonwealth.

Since 1991, PADEP has ensured that major sewage treatment facilities are functioning effectively and are following the mandated federal CSO strategy. As a result, less floatable debris have a chance to enter coastal waters during a storm event.

The present administration has worked to change the way in which Pennsylvanians think about pollution, by emphasizing prevention of pollution before it's created, as opposed to cleaning up pollution problems after they have occurred. To this end, PADEP has created the Office of Pollution Prevention and Compliance Assistance.

Through Pennsylvania Municipal Waste Planning, Recycling and Waste Reduction Act implementation the Commonwealth leads the nation with the largest number of residential recycling programs. In 1998, 25.6% of municipal waste generated in Pennsylvania was recycled (EPA standard measurement), surpassing the state goal of recycling 25% of our

municipal waste. This act also encourages manufacturers to design their products with recycling and discard minimization in mind.

Pennsylvania created the Green Government Council to apply environmental standards to government activities and new buildings.

Since all these activities help prevent material from entering the environment in the first place, less material has a chance of ending up as marine debris.

From the waterside, the PF&BC helps reduce the impacts from floatable marine debris by enforcing the federal Clean Vessel Act and the Marine Plastics Pollution Research and Control Act. It also conducts ongoing education of the public about the problems associated with litter from boats.

In conclusion, the various actions and programs undertaken by the Commonwealth to address litter maintain as insignificant the problem of marine debris in Pennsylvania's Coastal Zones.

Energy & Government Facility Siting

Legislative Objective

1456B (a) (8) Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities and energy-related activities and Government activities which may be greater than local significance.

Section 309 Programmatic Objectives

- Enhance existing procedures and long range planning processes for considering the needs of energy-related and government facilities and activities of greater than local significance.
- Improve program policies and standards that affect the subject uses and activities so as to facilitate siting while maintaining current levels of coastal resource protection.

Management Characterization

For the purpose of this assessment, energy facilities and activities of greater than local significance are defined as the production, generation, transmission, distribution, or supply of natural or artificial gas, electricity, or steam for the production of light, heat, or power, to or for the public for compensation. Also included is the transportation or conveyance of natural or artificial gas, crude oil, gasoline, petroleum products, materials for refrigeration, oxygen, nitrogen, or other fluid substance by pipeline or conduit to the public for compensation.

Examples of government facility siting and activities of greater than local significance include the Philadelphia and Erie International Airports, the Philadelphia Naval Base (now the Philadelphia Naval Business Center), and the U.S. Coast Guard Stations. Government activities of greater than local significance are defined as any actions taken by these facilities that are necessary to fulfill their specifically assigned responsibilities or tasks. Recent projects involve proposals for peak electric generating by several gas-fired turbine plants and the Millennium natural gas pipeline. All are being adequately addressed by existing state regulations and procedures.

The Governor's Green Government Council (GGGC) was created by Executive Order 1998-1 to assist Commonwealth agencies in working cooperatively across jurisdictional boundaries in implementing strategic environmental management practices. This was done for the purpose of supporting sustainable development and moving towards the Commonwealth's goal of zero emissions.

“Building Green in Pennsylvania” has evolved as one of the major initiatives of the GGGC. The Commonwealth’s Green Building Program includes all aspects of the building delivery process, design, construction, commissioning, operation and maintenance, and de-commissioning, creating prototypes in new state building construction for local government and the private sector to emulate.

Acting through the legislature, regulatory reform, and revisions to the state’s permitting processes, the Commonwealth has improved its ability to provide for the siting of energy-related and government facilities and activities of greater than local significance. Existing procedures were sufficient to address siting issues that arose during this assessment period.

Provision for Greater Wetland Mitigation Opportunities

By continuing operation of the Wetland Replacement Registry and the Wetland Replacement Fund, DEP has provided a greater opportunity for wetland mitigation to those energy-related and government facility-siting activities that do impact coastal wetlands

The registry matches property owners who want wetlands created or restored with permittees who are required to do wetland mitigation. The Fund provides applicants with the flexibility needed to meet wetland replacement requirements by allowing monetary contributions to a mitigation fund in lieu of creating replacement wetlands.

Although this Fund and Registry did not come about as a 309 requirement, CZM participated in the development of both to ensure that any wetlands destroyed in the coastal zone are mitigated for within the coastal zone boundaries.

Conclusion

Thus far, the Pennsylvania CZM Program has not encountered any gaps that would preclude or even delay the planning processes necessary to provide for the needs of energy-related and government facilities and activities of greater than local significance within Pennsylvania’s coastal zones.

Priority in view of the coastal program

<u>1992 Assessment</u>	<u>1997 Assessment</u>	<u>2001 Assessment</u>
High ___	High ___	High ___
Medium ___	Medium ___	Medium <u>X</u>
Low <u>X</u>	Low <u>X</u>	Low ___

Justification of the proposed priority

Within Pennsylvania there exist more than adequate procedures and planning processes for considering the needs of energy-related and government facilities and activities. CZM's analysis during the previous assessment showed that on the state and local levels, strong planning processes existed to address the siting needs of energy-related facilities and activities. CZM has encouragement and enforceable policies that specifically address energy facility siting and the planning process. The enforceable policies are based on state permit programs that are networked into CZM.

Overall, the state's permitting process, CZM's direct review of government facility siting and energy facility needs, the federal consistency review procedures, and the CZM funded UWAG pre-permit forum provide for adequate siting consideration.

Since our last assessment, DEP has developed procedures to make more potential sites available, especially through the Land Recycling Program, provided regulatory relief, simplified the state permitting process and facilitated the wetland mitigation process.

Permits issued for the Millenium natural gas pipeline, which is proposed to cross Lake Erie submerged lands, did raise long-term issues of potential resource protection and use conflicts that may need to be considered in future strategies. A significant increase in new power plant permit requests, with accompanying water withdrawal and temperature control issues, will also require increased program attention.

Based on this and past 309 assessments, CZM has determined that the energy and government facility siting enhancement area is now a medium priority, but does not anticipate making any changes to Pennsylvania's CZM Program.

Aquaculture

Section 309 Programmatic Objective

- Enhance existing procedure and long range planning processes for considering the siting of public and private marine aquaculture facilities in the coastal zone.
- Improve program policies and standards that affect aquaculture activities and uses so as to facilitate siting while maintaining current levels of coastal resource protection.

Management Characterization

State's Aquaculture Activities

On October 16, 1998, Governor Tom Ridge signed Act 1998-94, the Aquaculture Development Act, recognizing the industry as an agricultural activity. This Act was designed to ease regulatory burdens by designating the Department of Agriculture as the authority over commercial aquaculture operations.

Aquaculture is a vital sector of Pennsylvania's agriculture, supplying fresh food fish, ornamental species and over 70% of the trout stocked in the northeastern United States.

Artificial propagators register with the Department of Agriculture for five years at a fixed cost, instead of the previous annual renewals required by the Pennsylvania Fish and Boat Commission. The Department of Agriculture will also require registration for five years by businesses acting as live fish dealers, live fishbait dealers, live baitfish dealers and transporters of live fish.

As part of the act, the Department of Agriculture was to develop a plan to promote and develop aquaculture industry in the Commonwealth. Economic development and exportation of products for the Commonwealth will be major components of the plan. In addition, the Act creates a twenty-one member advisory committee, including the Secretary of PADEP, to develop and consent to the plan mentioned above. A fund, known as the Aquaculture Development Account was established to stimulate the growth of aquaculture in the Commonwealth.

The Department is to cooperate with the Pennsylvania Agriculture Statistics Service to compile biennially a survey of Pennsylvania's aquaculture industry.

The aquaculture program within the Department of Agriculture is designed to help current and prospective aquaculture farmers to easily access information to help them achieve success. The program provides:

- Links to information regarding: regulations impacting aquaculture, species production research sales and marketing
- Guidance on business development strategies
- Access to local sources for: food fish, ornamental fish, sports fish and bait fish
- Marketing initiatives designed to help Pennsylvania fish farmers penetrate new markets and expand current sales.
- Local educational opportunities for aquaculturalists

Describe the State's Ability to Address Aquaculture

As stated, the Aquaculture Development Act's purpose is to encourage aquaculture operators to make a long-term commitment by offering them the same protection and opportunities afforded other agricultural practices. In addition, the Act reduces the number of governmental agencies with jurisdiction over aquaculture by transferring authority over commercial aquaculture operations to the Department of Agriculture.

Fish hatchery operations conducted by the Pennsylvania Fish and Boat Commission and its cooperating partners are not considered as part of aquaculture as managed by the Department of Agriculture. Stocking from these hatcheries is of particular importance for the Lake Erie coastal zone, particularly with the yet to be determined effect of invasive species such as the round goby on natural reproduction cycles. The Fairview Fish Culture Station, run by the Fish and Boat Commission, and the volunteer operations of the 3-C-U and Sons of Lake Erie hatcheries stock lake trout, steelhead, walleye and yellow perch, all-important to Pennsylvania's recreational fishing industry. Shad and sturgeon propagation by the Fish and Boat Commission at hatcheries in other parts of the state are of long-range importance to all of Pennsylvania's coastal waters.

The Department of Agriculture currently has a person designated as the State's Aquaculture Coordinator. This person oversees and coordinates activities with other governmental agencies and the public. The Department of Agriculture currently has a guidance packet of information that describes aquaculture in Pennsylvania. The Aquaculture Development Plan Outline was completed December 16, 1999, and implementing regulations are being completed.

The Pennsylvania Sea Grant Coherent Area Project at Penn State Erie, The Behrend College, is progressing toward status as a full state Sea Grant College program by planning expansion into Pennsylvania's Delaware Estuary Coastal Zone. One possible area of interest in this expansion is aquaculture, with the University of Pennsylvania as a cooperating institution. The University of Pennsylvania's Veterinary School, the Philadelphia Naval Business Center and the Delaware River Port Authority have cooperated on a feasibility study for aquaculture at the former Navy base located in the Delaware Estuary coastal zone.

Conclusion

Identify Major Gaps

No gaps have been identified to date with regard to CZM initiatives and this enhancement area.

Priority in View of the Coastal Program

<u>1997 Assessment</u>	<u>2001 Assessment</u>
High ___	High ___
Medium ___	Medium ___
Low <u>X</u>	Low <u>X</u>

Justify the Proposed Priority.

CZM will not seek to consider aquaculture as part of this assessment and strategy, in accordance with the Aquaculture Development Act. A stated purpose of this act is to reduce the amount of governmental agencies with jurisdiction over aquaculture by transferring authority over commercial aquaculture operations to the Department of Agriculture." As a networked program, CZM will work through the Department of Agriculture if issues arise with regards to aquaculture and will seek its input on the CZM State Advisory Committee. CZM will contribute to development of the Pennsylvania Sea Grant Program. It also will review future aquaculture activities in the coastal zones for program consistency.

309 Program Enhancement Strategy

Introduction

This document contains the Section 309 Strategy for the Pennsylvania Coastal Zone Management Program (CZM). The following information is provided for the designated enhancement area: *Summary of the Problem, Program Changes, Work Schedules, Cost, and Likelihood for Success.*

Summary of the Problem

In Pennsylvania, the coastal zones consist of two widely separated and diverse coastal areas. Because of this diversity, policies are often difficult to apply uniformly and management techniques have to be developed or modified to meet a specific problem. Coastal zone issues in Pennsylvania are often multi-faceted and complex.

After an internal and public review has focused its program enhancement efforts on Ocean Resources (Lake Erie and the Delaware Estuary), CZM has reached a preliminary definition that reaches beyond the formal coastal zones to include their entire watersheds (resource quantity and quality), aquatic flora and fauna, submerged and sub-aquatic resources, and maritime commerce, recreation and tourism. Although other enhancement area categories are being considered as medium priorities, those issues will not be included in separate strategies, but will be dealt with through existing programs, state or 306 funding, or tangentially as they relate to ocean resources. If Pennsylvania expeditiously meets the goals of its 2001 strategy, it may seek amendments to add additional issues for program enhancement.

CZM's 309 strategy for the next five years will address the need to define and improve CZM's management regime for ocean resources, especially program policy changes related to water quantity (diversions) and resource impacts from invasive species.

The timing appears opportune for CZM to address these issues and incorporate appropriate management and policy changes into its program, since the Department has indicated a need for a more comprehensive approach to water management.

In Pennsylvania, activities occurring beyond the shoreline are increasingly having direct and significant effects on Lake Erie and Delaware Estuary resources, including threatened habitats

for rare and endangered species. While the Commonwealth will seek to address these pressures from cumulative and secondary impacts through a comprehensive program, CZM needs to address ocean resource needs to guarantee adequate representation of coastal issues in such a plan. By applying information and educational resources, CZM hopes to expand the land-based, water- surface mindset evidenced during interactions with many coastal residents.

The revised approach to the priority enhancement category of ocean resources encompasses almost all of CZM's program policy areas, incorporating intergovernmental relations (water and air quality), dredging, public access, energy facility siting, fisheries management, historic resources, wetlands, and coastal hazards.

Specific goals are:

1. Creation of a management plan and monitoring regime for surface and ground water withdrawals for both 6217 coastal zones, compatible with interstate and international initiatives, for long-term protection of Lake Erie and Delaware Estuary aquatic resources.
2. Establishment of an invasive species management initiative by CZM, to protect Pennsylvania's critical coastal habitats and rare and endangered species, incorporating enforceable state statutes and defining Pennsylvania's role in interstate management efforts. These efforts are expected to take into account actions affecting both coastal zones, either by direct introductions of invasive species or by indirect access for them through connecting channels and canals from other watersheds. The applicability of federal interstate consistency to invasive species issues will be evaluated.
3. Analysis of state management, acquisition and restoration tools for critical coastal habitats, submerged lands and aquatic resources, to determine the necessity of future program change. Assessment of the implications of approved 6217 boundaries and DEP's integrated watershed management strategies for overall CZM program management. Evaluation of programmatic approaches to dredged material, sand mining, and littoral sand management.

Strategy

CZM's 309 strategy for the next five years will address the need to define and improve CZM's management regime for ocean resources, including program policy changes related to water quantity (diversions) and resource impacts from invasive species.

- CZM will assist DEP's Office for River Basin Cooperation in achieving international agreement on thresholds and policies for Great Lakes water diversions.

- CZM will work for development and public awareness of interstate and international agreements on control of inter-basin diversions and creation of appropriate monitoring and reporting systems.
- CZM will work to create mechanisms to ensure full state participation in existing planning and management programs for Great Lakes and Delaware Estuary ocean resources, including coordination with federal agencies, particularly for native and non-native invasive species prevention, monitoring and control, and ballast water management. CZM recognizes that there may be federal consistency issues involved in diversions, invasive species and ballast water related activities in all of Pennsylvania's major watersheds
- CZM will analyze existing laws, regulations and programs affecting the management of ocean resources. Specifically, CZM will work to help the Commonwealth meet the goals of the Beach Monitoring Act. It will work toward consistency in resource-wide consumption advisories.
- CZM will work for the expansion of Pennsylvania Sea Grant to the Delaware Estuary with an emphasis on ocean resources management and an ultimate goal of full Sea Grant College Program status.

If the timetable for achievement of the above goals can be accelerated, additional 309 ocean resource strategies could include:

- Economic valuation studies of Pennsylvania's coastal watersheds.
- Support for development of protocols and policies to increase cruise vessel use of PA ports.
- Impact assessment of FastShip technologies on the Delaware Estuary and the implications for resource management.

Program Changes

Potential administrative and program changes, further described below, are expected to occur as a consequence of CZM activities in the enhancement area of Ocean Resources, although these changes may evolve over the course of this 309 timeframe. Whatever the result, this 309 process will enable CZM to focus its limited resources and efforts, assist in identifying the responsibilities of other entities who provide the various planning and protection services for Ocean Resources, and help to define how CZM can act as the facilitator in fulfilling its mission to enhance the planning and protection processes within the coastal resource areas. Additionally, this approach will attempt to consolidate CZM and non-CZM resources, providing a broader spectrum of protection opportunities and building relationships to create a collaborative planning process.

Initially, CZM will conduct research in the designated program areas. CZM will develop its working definition of Ocean Resources to present as part of its routine program change process to state, local and federal agencies for review, input and final adoption. This enhancement area

is an important part of the overall coastal management process, based on the Governor's Executive Order 1980-20: "To the maximum extent permitted by law, all administrative departments, independent administrative boards and commissions, and other state agencies shall enforce and act consistently with the goals, policies, and objectives of the CZM Program."

By developing a formal change to the program document, *Commonwealth of Pennsylvania Coastal Zone Management and Final Environmental Impact Statement*, (FEIS), addressing Ocean Resources, CZM will bring greater visibility and broader coverage within the Commonwealth's coastal areas for their multidisciplinary planning approach.

- **Program Change 1: Amending the CZM Program Document to include a new policy (XI) and definition of Ocean Resources**

CZM will explore the development of a new policy that is expected to encompass coastal watershed, Lake Erie and Delaware Estuary resources. The new policy will define Ocean Resources for Pennsylvania's CZM program. This new policy will be the end result of intense programmatic and policy analysis. The new overarching policy will be the first step in a series of programmatic activities that will expand recognition of CZM's efforts beyond the public's perceptions of a land-based, surface-water program.

This program change will institutionalize Ocean Resources as a CZM program area and provide a means for CZM to enhance its ability to address complex water resource problems through a more comprehensive approach. The program change will ensure that CZM's limited program resources will be used in concert with other available resources to maximize resource protection and economic vitality.

- **Program Change 2: Incorporation of specific program area changes including but not limited to water diversions and non-native species control (ANS) as part of existing policies such as Policy III, Fisheries Management, and Policy VIII, Port Activities, and the new Ocean Resources Policy**

As stated in program change #1, CZM will develop language and amend the FEIS to include a new definition and policy on Ocean Resources. Development of this enhancement area will expand CZM's ability to deal with the issues listed above. CZM will also evaluate the areas of submerged coastal lands, ballast water management, and port related issues. Specific areas currently being considered for projects by CZM may include:

Aquatic Nuisance Species (ANS) Management Plan

- **Analysis of existing state programs.**
- **Coordination with Great Lakes Commission, Council of Great Lakes Governors, Delaware Estuary and Chesapeake Bay Program efforts.**
- **Development of model ANS plan for Pennsylvania.**
- **Development of a new coastal ANS policy.**

Ballast Water Management Plan

- **Analysis of existing state programs.**
- **Coordination with Great Lakes Commission, Council of Great Lakes Governors, Delaware Estuary and Chesapeake Bay Program efforts.**
- **Development of a model Ballast Water Management plan for Pennsylvania.**
- **Development of a coastal ballast water policy.**

Submerged Coastal Lands

- **Analysis of existing state programs.**
- **Determination of water dependency, priority uses, and appropriate compensation and mitigation.**
- **Inventory of biological, historical and cultural resources.**
- **Elaboration of the submerged lands management process for Pennsylvania.**

Coastal and Lake Diversions – Coordination with the Great Lakes Charter and Annex 2001

- **Analysis of existing state programs, laws and regulations.**
- **Coordination with Council of Great Lakes Governors on the further development of Annex 2001.**
- **Coordination with the DEP Office of Water Management and the Great Lakes Commission on a new monitoring/data collection program.**
- **Development of a new coastal diversion policy.**

The areas listed above will be utilized as a starting point for CZM and will serve as a guide for development of any implementation studies and projects.

As stated earlier in the document, this 309 process will build on CZM's comprehensive approach to managing Pennsylvania's coastal waters and ocean related resources.

Finally, as in the case of Program Change 1, the end result of Program Change 2 will be greater substance for CZM efforts in the protection of PA's coastal resources and assistance in leveraging CZM's program resources with other available resources to maximize coastal resource protection and economic vitality.

Work Plan/Schedule

2001:

Task # 1: Development of a definition for Ocean Resources

- A. Research other coastal state policies and definitions.
- B. Develop a draft definition for Ocean Resources.
- C. Develop a broad policy for Ocean Resources.
- D. Develop specific areas as sub-policies for Ocean Resources.

Task #2: Diversions

- A. Coordinate with Council of Great Lakes Governors on Annex 2001 and develop next steps for binding agreements.
- B. Analyze existing state and federal laws and regulations on diversion issues.
- C. Explore the use of federal consistency for Great Lakes diversions.
- D. Coordinate with DEP's Office of Water Management and the Great Lakes Commission to evaluate the status of current monitoring and the remaining data needs for Great Lakes water quantity issues.

Task #3: Aquatic Nuisance Species and Ballast Water

- A. Initiate an analysis of existing state and federal programs, laws, and regulations addressing aquatic nuisance species, ballast water and submerged lands management.
- B. Coordinate with PA Sea Grant on evaluating existing programs.

2002:

Task #1: Ocean Resources Policy

- A. Finalize a draft program change for Ocean Resources Policy.
- B. Submit the change to NOAA for approval.
- C. Finalize the Ocean Resource Policy.

Task #2: Diversions

- A. Continue to coordinate with the Council of Great Lakes Governors on development of new binding agreements on diversions.
- B. Draft a new diversion policy based on existing laws and regulations.
- C. Finalize an analysis of the use of Federal Consistency determinations for diversion issues.

Task #3: ANS and Ballast Water

- A. Finalize analysis of existing state and federal program on ANS and ballast water issues.
- B. Initiate development of a Ballast Water Management Plan and an ANS Management Plan.

2003:

Task #1: Diversions

- A. Submit a draft diversion policy to NOAA for approval as a program change.

Task #2: ANS and Ballast Water

- A. Finalize the ANS and Ballast Water Plans.
- B. Draft ANS and Ballast Water policies
- C. Define Pennsylvania's process for management of submerged lands.

2004:

Task #1: ANS and Ballast Water

- A. Finalize new CZM program policies on Ballast Water and ANS.
- B. Submit Ballast Water and ANS policies to NOAA as program changes.

Task #2: Submerged Lands

- A. Characterize outstanding issues related to management of submerged lands.

2005:

Task #1: Implementation tasks

- A. Institute policy implementation tasks.
- B. Develop a new CZM program assessment and strategy.

Cost Estimates

2001: \$140,000 Staff Cost (2 person yr.), development or contractor (consultant) costs

2002: \$140,000 Staff Cost (2 person yr.), development or contractor (consultant) costs

2003: \$140,000 Staff Cost (2 person yr.), development or contractor (consultant) costs

2004: (\$140,000) Staff Cost (2 person yr.) & implementation projects

2005: (\$140,000) Staff Cost (2 person yr.) & implementation projects

Likelihood of Success

The Pennsylvania Coastal Zone Management Program anticipates that by establishing a definition and policy for Ocean Resources, its partners and constituency will look very favorably upon developing supporting policies in the areas listed. CZM regards this approach as an extension of very successful elements of the current program. It has become apparent to CZM that successful management of natural resources requires the cooperative effort of various sectors representing government, non-profit groups, business and industry, and private citizens. To that end, expanding CZM's current program policies and activities serves to build on past successes.

Technical and Fiscal Needs

In the immediate future, the Department of Environmental Protection cannot realistically expect any increase in state funding levels specific to coastal zone management beyond cost to carry. While watershed and municipal planning funding has increased dramatically (Growing Greener & Growing Smarter), coastal projects are in statewide competition. Successful investment of funds from all sources and demonstrated resource improvements will help determine future Commonwealth appropriations. Pennsylvania's Strategy implementation will help demonstrate the need for additional funding in areas of coastal concern.