

NEW JERSEY COASTAL MANAGEMENT PROGRAM

**ASSESSMENT AND ENHANCEMENT STRATEGY
FY 2006 - 2010**

JUNE 2006

**Prepared in accordance with Section 309 of the Coastal Zone
Management Act**

**By the
COASTAL MANAGEMENT OFFICE
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL
PROTECTION**

Assessment Areas:

Introduction	page	1
Aquaculture	page	4
Coastal Hazards	page	9
Cumulative and Secondary Impacts	page	27
Energy and Government Facility Siting	page	36
Marine Debris	page	43
Ocean Resources	page	47
Public Access	page	56
Special Area Management Planning	page	68
Wetlands	page	73

INTRODUCTION

The federal Coastal Zone Management Act was enacted in 1972 to deal with the increasing stresses on the nation's coastal areas. The statute creates a voluntary partnership between federal and state government to reduce conflicts between land and water uses in the coastal zone and conserve coastal resources. The goal is to provide for both responsible development in coastal areas and conservation of coastal resources. The New Jersey Coastal Management Program Plan received final approval from the National Oceanic and Atmospheric Administration (NOAA) in 1980. Subsequent amendments to the Act established a program to encourage states and territories to develop changes that would enhance their Coastal Management Programs. The amendments established nine areas for coastal zone enhancement: wetlands, public access, coastal hazards, cumulative and secondary impacts, energy and government facility siting, marine debris, ocean resources, special area management plans, and aquaculture. States participating in this program must evaluate their Coastal Management Program in these nine issue areas every five years through a process known as a Section 309 Assessment.

NOAA provides coastal states with guidance for the Section 309 Assessment. The programmatic objectives of each enhancement area and the specific series of questions found in this Assessment were provided by NOAA after consultation with states and territories. New Jersey's previous Section 309 Assessment was completed in 2001. The current Assessment focuses on updates and improvements made within each enhancement area since the last Assessment. In addition to updating its Assessment, each state must develop a five-year Strategy, to begin October 1, 2006, to implement changes in the enhancement areas identified with a high ranking of importance in order to be eligible for Section 309 funding. Strategies may also be developed for areas ranked medium.

The guidance provided by NOAA recommends that the current Assessment "build" on the 2001 Assessment including:

- Identifying changes that have taken place within each of the nine enhancement areas, including problems that have arisen, and changes in the status of the resources;
- Describing the nature of problems, changes in the status of resources, or new issues, including the extent to which they are being addressed and their relative importance;
- Providing the basis for determining the priority needs for improvement of state and territorial coastal management programs;
- Considering endangered and threatened species issues and opportunities to improve and conserve endangered and threatened species' habitats;
- Considering opportunities to enhance protection and management of marine and other special land and water coastal areas in the context of Marine Protected Areas; and
- Providing the public with an opportunity to learn more about accomplishments under Section 309 and to comment on the state's identification and justification of current priority needs, as well as the possible means that the state is considering to address the identified needs.

While developing the Assessment, states are requested to review the priorities identified in the previous Assessment and consider the objectives for each of the nine enhancement areas. The priorities should reflect the suitability of Section 309 of the Coastal Zone Management Act, with its emphasis on program changes, for addressing the underlying issues. Program changes are changes to coastal management programs as opposed to changes in the manner programs are

implemented. In addition, new emphasis has been placed on developing a Strategy that includes performance measures to gauge the success of the Strategy and to evaluate resource enhancements. Program changes include:

1. New or revised authorities, including enforceable policies, regulations and memoranda of agreement;
2. Changes to coastal zone boundaries;
3. New or revised coastal land acquisition, management and restoration programs;
4. New or revised special area management plans or plans for areas of particular concern;
5. New or revised local coastal programs and implementing ordinances; and
6. New or revised guidelines, procedures and policy documents, formally adopted, to provide specific interpretations of enforceable coastal management program policies.

The final determination of New Jersey's priority needs is made in full consultation between NOAA and the state with due consideration of public comments. The priority rankings listed in this document are a result of that consultation. Strategies for FY 2006 - 2010 were developed for enhancement areas ranked high and for which Section 309 funds would be expended. The New Jersey Coastal Management Program Strategies for FY 2006 - 2010 are included in this document following their respective enhancement area Assessments.

Aquaculture

Section 309 Programmatic Objective

I. Enhance existing procedures and long range planning processes for considering the siting of public and private marine aquaculture facilities in the coastal zone.

II. Improve program policies and standards which affect aquaculture activities and uses so as to facilitate siting while ensuring the protection of coastal resources and waters.

Resource Characterization

1. Briefly describe the state's aquaculture activities (e.g., existing procedures, plans, program policies and standards).

Almost all aquaculture in New Jersey's waters consists of hard clams (*Mercenaria mercenaria*) and oysters (*Crassostrea virginica*). Approximately 2500 acres of bottom are leased along the Atlantic Coast estuaries (excluding the Delaware Bay) of which less than 600 acres are used for hard clam aquaculture activities. Oyster aquaculture activities are dominant in the Delaware Bay. However, of the approximately 35,000 acres leased, fewer than 10% are actively used for traditional aquaculture activities such as shell planting and seed transplanting. In addition, Rutgers University has initiated a few pilot scale research operations extending over a few acres in the vicinity of the Rutgers University Cape Shore Oyster Hatchery in Middle Township, Cape May County. These relatively new operations primarily utilize hatchery seed grown on intertidal rack and bag systems. Both the historical success in rearing these species and the existence of statutes and regulations that deal primarily with on-bottom culture of shellfish species have led to the focus of aquaculture interest on the two species.

Nevertheless, finfish aquaculture activities are also occurring in New Jersey though the number of water acres dedicated to these activities remains small. Currently, 12-15 aquatic farmers are engaged in raising several species including trout, tilapia, koi, large mouth bass, hybrid striped bass, and blue gill. Approximately 64 pond acres are developed for bass aquaculture and about 18 acres for the farming of koi.

Rutgers University is building a \$5 million commercial-scale Multispecies Aquaculture Demonstration Facility in Cape May with financing from the NOAA, Public Service Electric and Gas, and the State Commission on Science and Technology. This facility will be operational by the end of 2006 and will contain a fully equipped hatchery building and nursery for shellfish and finfish. As part of the operation, Rutgers has leased grounds in Delaware Bay and along the eastern New Jersey coast for shellfish growout. Activities will be coordinated with the hatchery program at Cape Shore and the research program at the Rutgers University Haskin Shellfish Research Laboratory in Bivalve. The hatchery is a demonstration project designed to encourage private companies to pursue additional aquaculture activities. (New York Times, Jun. 12, 2005 and Rutgers Haskin web page)

2. Briefly describe environmental concerns (e.g., water quality, protected areas, impacts on native stock and shellfish resources). Also, describe any use conflicts (e.g., navigational, aesthetic, incompatible uses, public access, recreation, and future threats (e.g., shoreline defense works, introduced species)).

One of the biggest threats to both naturally grown oysters, as well as those produced by aquaculture activities is the virulent parasite known as Dermo. According to scientists at the Rutgers University Haskin Shellfish Research Laboratory, the number of young oysters in the Delaware Bay in the spring of 2005 appeared to be at an historic low following five years of abnormally high adult mortality. The causes of this decreased recruitment are unknown but may include Dermo infestation in adults, as well as erratic changes in water temperature, fluctuations in salinity, pollution, new predators or disease.

A number of organizations and municipalities have approached the New Jersey Department of Environmental Protection (NJDEP) with proposals to develop shellfish aquaculture activities in restricted waters. The objectives of these programs range from raising community awareness and encouraging public stewardship to achieving water quality improvements by increasing the number of filter feeding oysters to remove impurities from the water column. Although the proposals emphasize that the oysters will not be harvested or consumed, NJDEP is concerned about possible illegal harvesting and the consequential impacts to human health. NJDEP is concentrating on implementing management programs to improve coastal water quality and reduce the number of water areas that are classified as restricted for shellfish harvest. This will, in turn, increase the overall area where aquaculture activities can occur in the future. Better water quality will also serve to protect native shellfish stocks, a priority for NJDEP.

The aquaculture industry faces use conflicts with commercial and recreational fishermen, as well as development along the shoreline that limits pier space for commercial fishing and aquaculture activities. Some aquaculture techniques require specialized equipment that can interfere with navigation, create snags for recreational fishing gear, and obstruct migratory fish patterns. In some instances, successful aquaculture activities require prohibitions on other uses and activities in proximity to the aquaculture site. In New Jersey, where user competition for space along the shore and in coastal waters is particularly keen, a sound aquaculture management and enhancement strategy must thoroughly address potential conflicts.

As previously stated, interest in finfish aquaculture in New Jersey remains low. If the desire to conduct this activity increases, environmental concerns including effects on water quality and native fish stocks will be examined and addressed.

Management Characterization

1. Identification of significant changes in the state's ability to address the planning for and siting of aquaculture facilities.

Characterization of the scope of change

Description of recent trends

Identification of impediments to addressing the change

Successes

Two significant recent changes have occurred that bear on New Jersey's ability to address the planning for and siting of aquaculture facilities. These are changes regarding the New Jersey Aquaculture Development Act and changes involving aquaculture permitting as discussed below.

Updates and Changes Regarding the New Jersey Aquaculture Development Act

In 1997, the New Jersey Legislature adopted Title 4, Chapter 27 "The New Jersey Aquaculture Development Act." In July 2004, the New Jersey Department of Agriculture (NJDOA) adopted new rules (N.J.A.C. 2:89) as directed by the Aquaculture Development Act. These rules:

- Provide the licensing requirements for the Aquatic Farmers License Program (see below);
- Provide filing and application requirements and exemptions from licensing;

- Set forth the requirements for effluent treatment;
- Establish the identification and certification requirements of the Aquatic Farmer License;
- Set forth an Aquatic Organism Health Management plan and incorporate by reference the industry standards set forth by the “International Aquatic Animal Health Code” as identified by the Office des International Epizooties (OIE). The OIE lists the diseases of finfish, mollusks and crustaceans, the consequences, spread and diagnoses of same, as well as sets forth the criteria for urgent notification of aquatic animal diseases;
- Establish an aquatic organism import protocol;
- Set forth the parameters for compliance and monitoring; and
- Establish violations and enforcement actions.

Under N.J.A.C. 2:89, Subchapter 2, the NJDOA administers the Aquatic Farmer License Program. An Aquatic Farmer License is required for all commercial aquatic farms in New Jersey that produce more than \$2500 per year in aquaculture products. The Aquatic Farmer License Program provides the following benefits to the New Jersey aquaculture industry:

- Demonstrates definitive ownership of the organism being raised;
- Prevents the introduction of aquatic pests that may be detrimental to wild stocks and other aquaculture operations;
- Reduces the regulatory burden;
- Establishes a production history for the aquatic farm; and,
- Makes farmers eligible for other NJDOA and USDA programs and for marketing assistance from the NJDOA.

Since the Program was established in July 2004, 173 licenses have been issued with more pending. Of the issued licenses, 154 were for shellfish operations, 15 for finfish, 2 for aquatic plants, and 2 for combined finfish and aquatic plant production. The renewable license is effective for five years.

The Aquaculture Development Act mandated expansion of the State’s aquaculture leasing program. NJDEP actively worked with stakeholders to examine locations for new aquaculture development zones (ADZs). Individuals wishing to explore innovative aquaculture practices were encouraged to do so within the ADZs. Criteria for identifying potentially acceptable locations included the suitability of the site for specific types of aquaculture practices; absence of submerged aquatic vegetation; presence of natural shellfish stocks; and absence of user conflicts such as issues related to navigation, boat traffic, and existing commercial and recreational fishing. Out of approximately twenty sites that were considered in the Delaware Bay and along the Atlantic coastal area, NJDEP proposed 4 ADZs in the Delaware Bay (interest in Atlantic coastal sites diminished as the process progressed). The proposed ADZs encompass 1285 acres and are located in near-shore areas off of Maurice River Township, Cumberland County and Dennis and Middle Townships, Cape May County. Although the specific criteria and guidelines for activities and structures in the ADZs are being developed, the most likely aquaculture systems that would occur are the rack and bag system and the long-line system. NJDEP’s Division of Fish and Wildlife has received provisional permits for the proposed ADZs from the US Army Corps of Engineers and NJDEP’s Division of Land Use Regulation.

A potential barrier to the establishment of one of the sites in Middle Township, (ADZ number 4) is an existing Clam Line, a theoretical line defined by N.J.S.A. Title 50, extending from the shore into Delaware Bay, south of which areas cannot be leased for aquaculture development activities. Some members of the Aquaculture Advisory Council with the endorsement of many organizations, groups, businesses, and agencies have drafted changes to Title 50 including

language allowing leases for aquaculture activities below the Clam Line. Only if this and other changes are approved by the state legislature can the lands in this ADZ be leased for aquaculture development. The process of reaching consensus regarding the many additions and deletions to the current law has been lengthy and is as yet, incomplete. At present there are no plans or a timeline for moving toward the legislative stages.

Updates and Changes Regarding Permitting

Recently, NJDOA and NJDEP have discussed the development of General Permits for shellfish aquaculture activities and community-based shellfish restoration projects. Several organizations including Rutgers Cooperative Research & Extension and the New York/New Jersey Baykeeper have progressed toward implementing volunteer-based oyster gardening programs. The NY/NJ Baykeeper is working in three locations- Liberty Flats, the Raritan Bay in Keyport, and the Navesink River near Oyster Point in Red Bank. A partnership, which includes the Rutgers Cooperative Research & Extension, the Barnegat Bay National Estuary Program, NJDEP's Bureau of Shellfisheries and others, has just initiated a program focused on the Barnegat Bay region. The goals of these programs are to educate the community about estuary and bay ecosystems, to promote environmental stewardship, and to contribute to the re-establishment of oyster populations.

NJDOA and NJDEP recognize the benefits of these programs. Partially funded by a Section 309 grant, NJDEP is working to develop a general permit for these activities to facilitate their successful implementation. The general permit would address activities and structures associated with these community-based restoration programs, as well as for commercial aquaculture activities. In addition, both Departments are working to identify the best locations for these projects to avoid placing growing and/or mature oysters and clams in waters that are not approved for harvest or where conflicts with other user groups might occur. Creating a zone or area within approved waters and closing the zone harvest has also been considered. Additional research and discussions will determine the feasibility of these regulatory changes.

Conclusion

- 1. Identify priority needs or major gaps in addressing the programmatic objectives for this enhancement area that could be addressed through a 309 Strategy.*
- 2. What priority was this area previously and what priority is it now for developing a 309 Strategy and designating 309 funding and why?*

The successful implementation of aquaculture in New Jersey requires the efforts of many groups with varying interests and responsibilities. Active participation of and communication between each group is needed to discuss problems that arise and establish their possible solutions. Additionally, scientific research regarding aquaculture must continue. Without a more complete understanding of the observed decline in oyster populations or environmental threats to existing oysters, good management is unobtainable. This management must also address use conflicts and must find the balance between resource use, habitat restoration, and the protection of human health. Revision of existing rules and regulations is necessary in order for New Jersey aquaculturists and those working to restore shellfish populations to take the fullest advantage of potential shellfish areas and new and innovative techniques. NJDEP has made significant progress in this program area and has paved the way for the implementation of additional measures to address the programmatic objectives of enhancing procedures and planning and improving policies to protect coastal resources and waters.

Notwithstanding the potential significance of aquaculture to New Jersey's coastal area, for the purposes of Section 309, the aquaculture enhancement area is rated low and no Strategy for FY 2006 -2010 is provided for this enhancement area. The reason for rating this enhancement area as low, is that the New Jersey Coastal Management Program does not propose to employ Section 309 funding for aquaculture related activities. In New Jersey, NJDEP's Division of Fish and Wildlife and the NJDOA are the primary agencies that plan for and manage aquaculture activities and funding for these activities originate from sources other than Section 309.

Last Assessment

High _____

Medium X

Low _____

This Assessment

High _____

Medium ____

Low X

Coastal Hazards

Section 309 Programmatic Objectives

- I. *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.*
- II. *Preserve and restore the protective functions of natural shoreline features such as beaches, dunes, and wetlands.*
- III. *Prevent or minimize threats to existing populations and property from both episodic and chronic coastal hazards.*

Coastal Hazards Characterization

1. *Characterize the general level of risk in your state from the following coastal hazards:*

<u>Hazard</u>	<u>High Risk</u>	<u>Medium Risk</u>	<u>Low Risk</u>
Hurricane/Typhoon		X	
Storm Surge	X		
Flooding	X		
Shoreline Erosion (episodic or chronic)	X		
Sea Level Rise	X		
Subsidence		X	
Geological Hazards (including earthquakes and tsunamis)			X
Other (specify) Extratropical storms	X		

2. *If the level of risk or state of knowledge about any of these hazards has changed since the last Assessment, please explain. Also, identify any ongoing or planned efforts to develop quantitative measures for this issue area.*

The general levels of risk for each of the coastal hazards in the Section 309 Assessment are unchanged from the previous Assessment. However, the New Jersey Coastal Management Program (NJCMP) carefully considered elevating the risk of the Hurricane/Typhoon hazard to High. The special consideration of this hazard stemmed primarily from the credible predictions of the National Weather Service and others that the current interval of more numerous and more severe Atlantic tropical cyclones will continue for at least another decade. These predictions are based on the long-term cyclical pattern of tropical cyclone frequency and intensity. Notwithstanding ever-increasing research focused on determining the ramifications of global warming on this historical pattern, the effects remain a matter of debate. With more research more robust climatological and oceanographic models should be available for the next five-year Section 309 Assessment and Strategy. For now, the historical cyclical pattern was sufficient reason to examine the risk level associated with Atlantic cyclones.

The decision to continue to rank the Hurricane/Typhoon hazard as medium is primarily a matter of geography. New Jersey is at a sufficiently northern latitude that both the frequency and

intensity of hurricanes making landfall in New Jersey is appreciably less than is the case in the southern portion of the U.S. Warm ocean surface water temperatures fuel hurricanes. The waters off the New Jersey coast are cooler than ocean waters to the south and the configuration of the eastern seaboard serves to shelter the state from the landfall of hurricanes. However, ranking is a relative measure and the Medium risk category adequately reflects the certainty that the serious effects of the landfall of a hurricane on the densely developed New Jersey coast will occur.

On-going data collection, research, and modeling continue to refine our knowledge concerning the effects of global warming on the expression of phenomena that are regarded as coastal hazards. The U.S. Geological Survey evaluated the vulnerability of the U.S. east and west coasts to the effects of sea level rise. The results of the investigation, which took into consideration six variables, tidal range, wave height, coastal slope, shoreline erosion rates, geomorphology, and historical rates of relative sea level rise, are presented in the report, *National Assessment of Coastal Vulnerability to Sea-level Rise*. The USGS study indicates that most of New Jersey's coast is highly susceptible to the effects of sea level rise.

While the precise rate of sea level rise is uncertain, current models indicate that global warming will cause the rate to increase. Recent projections forecast that relative sea level rise at the New Jersey coast will be between 0.31 m and 1.10 m by 2100. The approximate central value of this range, 0.71 m, is more than twice the rise that occurred during the last century. This increase would result in the threat of more sustained extreme storm surges, increased coastal erosion, escalating inundation of coastal wetlands and saline intrusion.

New Jersey's Beach Profile Network continues to conduct semi-annual surveys to monitor the condition of beaches and dunes at 120 stations along the coast. These stations extend from Aberdeen on Raritan Bay, south to Cape May Point and along the Delaware Bay to Reeds Beach. Cross-section measurements are made of specific beach and dune profiles and the data is used to make volumetric comparisons through time. In this way, the data generated by the survey is used to identify areas subject to coastal hazards and assess changes in risk posed by coastal hazards to people and property.

The Stevens Institute of Technology continues to provide quantitative data relevant for the assessment of coastal hazards through the Coastal Monitoring Network. Stevens maintains automated stations at three locations along the New Jersey oceanfront that collect and disseminate real time oceanographic and meteorological information including wave height and period, mean water level, water temperature, wind speed and direction, barometric pressure, air temperature, and digital imagery of the beach.

3. Summarize the risks from inappropriate development in the state, e.g., life and property at risk, publicly funded infrastructure at risk, resources at risk.

Many parts of New Jersey's densely populated coastal area are highly susceptible to the effects of the following coastal hazards: flooding, storm surge, episodic erosion, chronic erosion, sea level rise, and extra-tropical storms. Reconstruction of residential development and the conversion of single family dwellings into multi-unit dwellings continues in hazardous areas. Although application of more stringent construction standards and techniques results in more storm-resistant structures in the hazard areas, the value of property at risk is increasing significantly. In addition, the vulnerability of development in the coastal area increases the potential for water quality degradation following storm events. With anticipated accelerating sea level rise and increasing storm frequency and intensity, vulnerability to the risks of coastal hazards will not abate; it will only become more costly.

Another aspect of inappropriate development in New Jersey relates to the impact of sea level rise on coastal wetlands. Generally, coastal wetlands will respond to sea level rise in one or more of three general ways. The wetlands can be lost to inundation, they can accrete vertically, or they can migrate inland. In order to survive, wetlands must maintain their elevation relative to the tidal range. Vertical accretion results from the accumulation of subsurface organic plant matter or from the deposition of sediment on the wetlands. Only wetlands exposed to a sufficient source of sediment can adapt vertically in that manner. Additionally, given the projected rate of sea level rise, organic plant matter is not likely to accumulate in sufficient quantities to prevent wetland inundation and loss. The most likely prevailing adaptation involves inland migration of coastal wetlands as the hydrology of the inland area becomes suitable for wetland species. This process would continue as sea level rises until the migrating wetlands encounter either natural or manmade obstacles. Development in areas suited to the inland migration of coastal wetlands serves to preclude this adaptation and the wetlands will either diminish in extent or will be lost to inundation.

Management Characterization:

2. *In the table below, indicate significant changes to the State's hazards protection programs since the last Assessment.*

<u>Mechanism</u>	<u>Changes Since Last Assessment</u>
Building setbacks/restrictions	Moderate
Methodologies for determining setbacks	None
Repair/rebuilding restrictions	None
Restriction of hard shoreline protection structures	Moderate
Promotion of alternative shoreline stabilization methodologies	Moderate
Renovation of shoreline protection structures	None
Beach/dune protection	Moderate
Permit compliance	Moderate
Inlet management plans	None
Special Area Management Plans (SAMP's)	None
Local hazard mitigation planning	Moderate
Local post-disaster redevelopment plans	None
Real estate sales disclosure requirements	None
Methodologies for determining setbacks	None
Restrictions on publicly funded infrastructure	None
Public education and outreach	Moderate
Mapping/GIS/tracking of hazard areas	Moderate

3. *For categories with changes:*

- a. *summarize the change*
- b. *specify whether it was a 309 or other CZM driven change and specify the funding source*
- c. *Characterize the effect of the changes in terms of both program outputs and outcomes.*

Building setbacks/restrictions: Moderate Change. In 2004, the New Jersey Department of Environmental Protection (NJDEP) adopted revised Stormwater Management regulations. These regulations were submitted to NOAA as a program change during April 2006. The NJCMP role in developing the request for program change document was funded by Section 306 and 309 monies. These regulations contain general principles for the development of stormwater

management plans and stormwater control ordinances designed to reduce flood damage, including damage to life and property. They also provide minimum design and performance standards to address post-construction stormwater runoff quality impacts of major development and establish minimum design and performance standards to control erosion, and encourage and control stormwater infiltration and groundwater recharge.

Furthermore, the revised regulations provide special protection for Category One waters. Category One waters are special waters requiring particular protection from measurable changes in water quality because of their exceptional ecological, recreational, water supply and fisheries significance, as well as other distinguishing characteristics. The regulations require a 300-foot special water resource protection area adjacent to these waters. In addition to the benefits attendant to the reduction of flood damage, the 300-foot special water resource protection area will serve to preserve areas suitable for the horizontal landward migration of certain coastal wetlands in response to sea level rise.

NJDEP's Coastal Zone Management (CZM) rules were amended to encourage dedication of developed and undeveloped flood hazard areas as public open space. Additionally, the rules were changed to clarify the types of development that can occur in undeveloped flood hazard areas. Allowable exceptions to preservation of flood hazard corridors are water dependent uses, infill development, and uses for which there is no feasible alternative location.

Restriction of hard shoreline protection structures: Moderate Change. The CZM rules provide that alternatives to hard shoreline protection structures are preferred methods of shoreline stabilization. NJDEP's Division of Land Use Regulation has redoubled its efforts to ensure that stabilization is necessary and that alternative stabilization techniques such as bioengineering are justifiably discounted before the Division issues a permit for a hard protection structures.

Promotion of alternative shoreline stabilization methodologies: Moderate Change. In June 2003 NJDEP in conjunction with the Jacques Cousteau National Estuarine Research Reserve sponsored a workshop entitled, *Stabilization of Eroding Bay & River Shorelines*. The workshop focused on the causes of bay and river shorelines erosion, alternative shoreline stabilization methodologies, and the standards for and regulation of stabilization projects. The workshop was partially funded by a NOAA 310 grant.

Beach/dune protection: Moderate Change. NJDEP adopted two changes to the CZM rules that relate to beach and dune protection. The first change increased the minimum dune design volume required for protection from a 100-year storm from 540 square feet to 1,100 square feet. This change brings the state standard in conformance with recommendations contained in FEMA's Coastal Construction Manual. Secondly, the CZM rules were changed to provide new construction standards for geotextile bags or tubes. The changes restrict the placement of geotextile bags or tubes where dunes are present to areas seaward of the dune toe. Additionally, the rule restricts the length of shoreline along which a geotextile bag or geotube may be placed to 500 feet in order to reduce potential adverse affects to the beach that longer devices can create. The CZM rule amendment was submitted to NOAA as a program change during April 2006. The amendment was a 309 activity.

In February 2003 with funding from a NOAA 310 grant, the NJCMP sponsored a workshop entitled, *Beach and Dune Management*. The workshop was designed to assist municipalities in understanding the permit process, it provided an overview of the current state of knowledge regarding shoreline and dune habitats and processes, and it highlighted the protection that beaches and dunes provide coastal communities.

Federal/State/Local-sponsored beach nourishment and re-nourishment projects continue along the New Jersey coast. A State/Local-sponsored beach nourishment project was recently completed at Strathmere Beach, New Jersey. Stable funding for state-sponsored shore protection projects is \$25 million annually generated by the State's real estate transfer tax.

In 2004, the Richard Stockton Coastal Research Center completed a study entitled, *Beach-Dune System Susceptibility Assessment for the Borough of Mantoloking, Ocean County, New Jersey*. The study coupled Light Detection and Ranging (LIDAR) data from 2000 with 2004 GPS data to identify significant dune erosion and breach potentials from 2-, 5-, 10-, 20-, 50-, and 100-year storm events. Although the study is intended for use by the Borough to preemptively mitigate for the susceptibility to significant dune erosion or dune breach, it serves as a valuable example for studies that can be conducted at other coastal municipalities. The Borough of Mantoloking funded this project.

Permit compliance: Moderate Change. NJDEP has increased permit compliance in two ways. First, NJDEP's Bureau of Coastal and Land Use Enforcement has substantially increased the personnel and resources dedicated to monitoring compliance with coastal permits issued by NJDEP. Additionally, NJDEP successfully integrated Land Use permit decisions into NJDEP's New Jersey Environmental Management System (NJEMS). This computerized system supports collection and review of permit applications and facilitates permit compliance and enforcement activities. NOAA 306 funding contributed to these activities.

Local hazard mitigation planning: Moderate Change. Through a NOAA Grant, the New Jersey Sea Grant College Program completed and distributed the *Manual for Coastal Hazard Mitigation*. The Manual provides a comprehensive guide for municipalities and individuals regarding the reduction of the effects of coastal hazards. In its introductory sections, the Manual identifies the range of coastal hazards, describes how communities and individuals can prepare for the hazards, and provides information regarding minimizing the threat posed by coastal hazards. The Manual then provides a wide range of mitigation techniques that can be employed by individuals, communities, and regions.

Following adoption of the Federal Disaster Mitigation Act of 2000 and the applicable Interim Final Rules, New Jersey's Office of Emergency Management (NJOEM) developed a program regarding mitigation planning for municipalities. The program draws on guidance prepared by FEMA in the document, *Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000*. The program includes technical assistance and a "tool kit" designed to guide the development of municipal pre-disaster mitigation plans. As a result of this initiative, Atlantic City, New Jersey completed and adopted a FEMA approved multi-hazard mitigation plan. Development of the Atlantic City hazard mitigation plan involved organizing City resources, assessing the hazards risks, preparing the mitigation plan, implementing the plan, and monitoring progress. While this is not a 309 change, it is an important achievement involving coastal hazards for this oceanfront urban area and will serve as a useful regional model for the development of other municipal multi-hazard mitigation plans in New Jersey. The NJCMP has taken steps to join forces with FEMA and NJOEM in expounding the benefits of hazard mitigation planning and encouraging other coastal municipalities to follow Atlantic City's example. This project was funded by FEMA, the State of New Jersey, and Atlantic City. Participation of the NJCMP is funded by a Section 309 grant from NOAA.

Public education and outreach: Moderate Change. The NJCMP contributed to the development of a brochure entitled, *Floodplain Management in the Coastal Zone*. The brochure will be

published by the Association of State Floodplain Managers and is intended to provide coastal property owners with information regarding the techniques that they can employ to reduce their vulnerability to coastal hazards. The NJCMP's contribution to this endeavor was a NOAA funded 309 activity.

NJOEM has developed and widely distributed educational information regarding coastal hazards. In 2002, the Office prepared and made available to the public a pamphlet entitled, *The Official Hurricane Survival Guide*. The Guide provides information that includes hurricane classification, personal plans of action, emergency supply and evacuation kits, protecting your home, pet safety, and evacuation procedures. The State of New Jersey funded preparation of the Guide.

Additionally, NJOEM continues its Community Emergency Response Team (CERT) program. This outreach program educates people about disaster preparedness for hazards that may affect their communities and provides training in basic disaster response skills. FEMA and the State of New Jersey fund the CERT program.

Mapping/GIS/tracking of hazard areas: Moderate. New Jersey's Office of GIS is assisting FEMA with flood map modernization for the state. This cooperative effort includes developing a cost-share program with FEMA and New Jersey counties for acquisition of LIDAR-based elevation data in 2006.

3. *Discuss significant impediments to meeting the 309 programmatic objectives (e.g., lack of data, lack of technology, lack of funding, legal defensibility, inadequate policies, etc.). (programmatic objectives are underlined)*

Section 309 Programmatic Objective I: 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 level rise and Great Lakes level rise.

All of the impediments to meeting this 309 programmatic objective that appeared in the last New Jersey Coastal Zone Section 309 Assessment and Strategy remain. These include lobbying efforts of special interest groups, legal challenges to NJDEP permit decisions, provision of flood insurance through the National Flood Insurance Program, and public perception that large-scale beach nourishment projects eliminate vulnerability to coastal hazards. We refer you to our previous 309 Assessment and Strategy for discussions of these impediments. Although the NJCMP cannot eliminate these impediments, the Program views them as obstacles to overcome with creative initiatives designed to achieve this 309 programmatic objective.

The structure of governmental authority in New Jersey impedes the ability of the NJCMP to address the programmatic objectives for this enhancement area. New Jersey's coastal zone is comprised of 245 municipalities. Each municipality has its own land use and resource management practices. The imbedded "home rule" framework that characterizes the state's municipalities severely constrains the NJCMP's ability to establish uniform management strategies among coastal municipalities.

Economic and societal factors undoubtedly constitute significant impediments to the direction of public and private development and redevelopment away from hazardous areas of New Jersey's coast. Tourism in New Jersey coastal communities is estimated to be a \$16 billion industry employing hundreds of thousands of people. However, not only tourists, but also seasonal and full-time residents are willing to pay a very substantial premium for a place with an ocean view and easy access to the beach. Moreover, the trend in New Jersey is to replace relatively modest

houses in proximity to the beach with significantly more expensive dwellings. While the CZM rules direct new development away from coastal high hazard areas, jurisdiction regarding redevelopment is limited under New Jersey's Coastal Area Facility Review Act (CAFRA). Specifically, the in-place reconstruction of existing development, including storm damaged development and expansion within the existing footprint of a development is accommodated by CAFRA. Notwithstanding that replacement structures must meet current standards for resistance to coastal hazards, the net result is that the value of real estate at risk is escalating rapidly with no end currently in sight.

Another impediment to meeting the 309 programmatic objectives in the category of coastal hazards involves stakeholder perspectives and attitudes. In his 1990 paper, *Greenhouse Effect, Sea Level Rise, and Barrier Islands: Case Study of Long Beach Island, New Jersey*, EPA's James Titus discusses some of the prevailing attitudes of the public and municipal officials in his consideration of the economics of responses to sea level rise. Titus examines four alternative responses to sea level rise: no coastal protection, engineering a retreat, raising an island in place, and encircling the island with levees (dikes). Titus concludes that an economically appropriate response will be case specific and should be built upon public consensus. Additionally, an appropriate response will take into consideration factors such as environmental conditions and the intensity and type of development that is present.

Titus demonstrates that in certain instances, structural engineering solutions will not be practical or economically feasible. In these cases future public and private development and redevelopment must be directed away from the hazardous areas. While some derogatorily refer to this option as "retreat," from the perspective of sound planning based on the best available science, the concept actually involves "strategic adjustment." Prudent planning requires that we expand upon the existing studies of the societal, economic, and environmental costs of possible mitigative actions while the greatest number of alternatives exists.

Section 309 Programmatic Objective II: Preserve and restore the protective functions of natural shoreline features such as beaches, dunes, and wetlands.

NJDEP in conjunction with the US Army Corps of Engineers and local sponsors continues to conduct beach nourishment and re-nourishment for the purposes of restoring New Jersey beaches. The State continues to appropriate funds to support this program and to provide the non-federal matching share of these large-scale beach nourishment projects. Current annual appropriations derived from the State's real estate transfer tax are \$25 million. This on-going program has restored significant stretches of eroding beaches along the oceanfront. Additional aspects of these projects involve construction, restoration, and enhancement of dunes adjacent to the beach nourishment areas and selective notching of existing groins to facilitate littoral drift.

While oceanfront communities have applauded the beach nourishment effort, some residents have objected to the construction and enhancement of the accompanying dunes. The concerns expressed involve the loss or diminution of ocean views, loss of direct beach access from oceanfront dwellings, and the consequential reduction these changes may have in property values. Additionally, some object that public access to the beach must be provided as a condition of beach nourishment projects. The dune construction issue is a more acute problem at locations where the beach nourishment and associated dune creation is to occur on private property. In these cases, NJDEP has experienced resistance in obtaining the necessary easements to advance projects.

In one recent case, the New Jersey Superior Court awarded damages to an Ocean City beachfront resident whose property was affected by a dune project. While the primary basis for the court's decision rested on the fact that the dune crossed the plaintiff's property, the court stated in its decision that, "as a result of the dune project, the view of the ocean from the (plaintiff's) condominium has been completely obstructed and direct access to the beach has been eliminated."

From the perspective of coastal hazards, coastal wetlands function to buffer uplands from chronic and episodic erosion caused by wave action. Accelerating sea level rise places these important coastal features at risk. Data is needed to identify and clearly define the geomorphological, biological, and hydrological factors that are conducive to the landward migration of coastal wetlands, the development of coastal wetlands along open water areas, and the transformation of freshwater wetlands to tidal wetlands.

Finally, funding plays a role in achieving this Programmatic Objective. If sufficient funds were available, acquisition of vulnerable property would be a viable method of avoiding private development and redevelopment in hazardous areas. However, funding for property acquisition by public agencies is limited and the competition for the limited funds is substantial.

Section 309 Programmatic Objective III: Prevent or minimize threats to existing populations and property from both episodic and chronic coastal hazards.

New Jersey's beach nourishment and re-nourishment effort discussed in Programmatic Objective II above, contributes to the protection of populations and property from both episodic and chronic coastal hazards. The impediments discussed above apply here also.

Conclusion

- 1. Identify priority needs or major gaps in addressing the programmatic objectives for this enhancement area that could be addressed through a 309 Strategy.*

By virtue of their location at the interface between oceans and continents, coastal areas are among the most dynamic environments on earth. A characteristic of these dynamic environments is that they are particularly susceptible to a broad range of phenomena that are considered natural hazards. Many parts of New Jersey's densely populated coast are highly vulnerable to the effects of flooding, storm surge, episodic erosion, chronic erosion, sea level rise, and extra-tropical storms. Hurricanes/typhoons also pose a substantial threat to the state's coastal area.

Manifestations of these phenomena occur at broadly different rates. Their expression ranges from the gradual such as sea level rise and chronic erosion that can be measured on a decadal time-scale, to catastrophic events such as hurricanes/typhoons, extra-tropical storms and storm surges that can be measured in terms of days or even hours. Just as their rates of occurrence differ, so are their effects expressed in profoundly different ways.

Catastrophic events alter the natural features of the shoreline such as beaches, dunes and wetlands, and threaten people and property. In New Jersey, both reconstruction of residential development and the conversion of single family dwellings into multi-unit dwellings continue in hazardous areas. Although application of more stringent construction standards and techniques results in more storm-resistant structures, the value of property at risk is appreciably increasing. With anticipated accelerating sea level rise and increasing storm frequency and intensity, vulnerability to the risks of coastal hazards will be exacerbated and the costs of damages and

losses resulting from the events will only increase. Catastrophic events require anticipatory preparations for the inevitability of an event, the capacity for rapid response to an imminent threat of an event, and preparation for addressing the aftermath of an event.

In the previous Section 309 Assessment and Strategy, the NJCMP identified public education and outreach regarding coastal hazards and coastal hazards mitigation as a priority need. Although, as discussed above, the Program has made substantive progress in addressing these needs, focus will remain on improving delivery of information to the public and local government regarding the inherent risks of coastal hazards and the preferred methods to minimize the risks. The NJCMP will continue to make a concerted effort to strengthen a regional perspective among municipalities through coordinated coastal hazard mitigation initiatives.

The effects of gradually occurring phenomena are more predictable and allow for long-range planning and measured preparation. Accelerating sea level rise places coastal wetlands at risk. From the perspective of coastal hazards, coastal wetlands function to buffer uplands from chronic and episodic erosion caused by wave action. In New Jersey, data is needed to identify and clearly define the geomorphological, biological, and hydrological factors that are conducive to the landward migration of coastal wetlands, the development of pioneering coastal wetlands along open water areas, and the transformation of freshwater wetlands to tidal wetlands.

In anticipation of increasing threats of coastal hazards, New Jersey's Governor Jon Corzine intends to convene a high level summit to consider the economic ramifications of global climate change and sea level rise in New Jersey. The focus issues of the Summit will be flooding and storms. Sea level rise will be considered as an aspect of these issues. As envisioned, the Summit will involve a roundtable discussion lead by Governor Corzine, with participation of certain members of the Governor's cabinet, select financial services and insurance industry leaders, and leading experts from both the scientific community, government, and industry. The goal of the Summit is to identify general policy directions that would be more fully developed during two subsequent stakeholder sessions. The New Jersey Coastal Management Program will be actively involved at every stage of this important initiative. This information is essential for the development of measures designed to accommodate the perpetuation of these important coastal features.

2. *What priority was this area previously and what priority is it now for developing a 309 Strategy and designating 309 funding and why?*

Last Assessment

High X
Medium _____
Low _____

This Assessment

High X
Medium _____
Low _____

The state's coastal area continues to experience substantial seasonal and residential population increases. Conversion of formerly seasonal homes to year-round residences continues unabated. In many instances, formerly modest houses are replaced with significantly more expensive homes while property values continue to escalate.

At the same time, risks associated with coastal hazards continue to increase. Factors such as escalating sea level rise and cyclical and possibly long-term increases in storm frequency and intensity threaten both the natural environment and built environment of New Jersey's coast. Consequently, the ranking of the Coastal Hazards Section 309 enhancement area remains a high priority with the NJCMP.

Coastal Hazards Section 309 Enhancement Area Strategy

Proposed Program Changes and Implementation Activities

During the 2006-2010 Section 309 Assessment and Strategy interval, NJCMP proposes to adopt as regulations and submit to NOAA for their review and acceptance as a program change, eight refined Coastal Program Goals that serve as the foundation of the NJCMP and its Coastal Zone Management rules. Refinement of the Coastal Program Goals relates to all three Section 309 Programmatic Objectives for the Coastal Hazards enhancement area. Four of the refined Goals relate to coastal hazards. These are, "Safe, Healthy and Well Planned Coastal Communities;" "Coastal Open Space;" "Coordinated Coastal Decision-making, Comprehensive Planning, and Research;" and "Coordinated Public Education and Outreach." Each of these goals is supported by supplemental policies that would be employed to achieve the goals.

The supplemental policies for each of the four goals that pertain to coastal hazards are as follows. For the goal of Safe, Healthy, and Well-Planned Coastal Communities, the proposed supplemental policies are, "minimize the threat of natural hazards to life and property;" "preserve and enhance beach and dune systems and wetlands, and manage natural features to protect the public from natural hazards;" "promote and implement strategies for the development of hazard mitigation plans;" and "promote and implement strategies that eliminate or reduce risks to human health and the ecosystem from coastal activities." For the goal of Coastal Open Space, the proposed supplemental policy is "minimize natural hazards." For the goal of Coordinated Coastal Decision-making, Comprehensive Planning and Research, the proposed supplemental policy is "encourage the preparation of comprehensive plans, including: ...land acquisition plans that further the goals and related policies of New Jersey's Coastal Management Program." Finally, for the goal of Coordinated Public Education and Outreach, the proposed supplemental policies relating to Coastal Hazards are "coordinate education and outreach activities on coastal issues," and "encourage coast related education and participation opportunities for the public."

During the two succeeding years after adoption of the refined goals and approval of the related program change by NOAA, the NJCMP proposes to implement aspects of the goals by working with coastal communities to substantially reduce the threats posed by coastal hazards. As envisioned, this initiative would involve several activities. The first implements the supplemental policies to "minimize the threat of natural hazards to life and property," "promote and implement strategies for the development of hazard mitigation plans," and "coordinate education and outreach activities on coastal issues." This would involve development of effective hazard mitigation strategies based on a systematic evaluation of risks and vulnerabilities of coastal communities. This would entail continued cooperation and coordination among the NJCMP, FEMA, NJOEM and the Jacques Cousteau National Estuarine Research Reserve to encourage and assist coastal municipalities to adopt FEMA approved multi-hazard mitigation plans. Second, through the Division of Land Use Regulation permitting program, the NJCMP will continue to promote the hazard mitigation benefits of natural coastal systems such as beaches, dunes, wetlands, and flood plains. Third, the NJCMP will continue to collect and assess information regarding the economic and societal benefits of hazard mitigation strategies. For both the related topics of natural coastal systems benefits, and economic and societal benefits of hazard mitigation strategies, the NJCMP will develop non-technical guidance that will be accessible to the public on the NJCMP website. Regarding these topics, the NJCMP will also develop and strategically disseminate related informational brochures and fact sheets to municipalities and the public at risk. Finally, in response to the uncertainties relating to the effects of climate change on coastal hazards, the NJCMP will maintain sufficient flexibility to modify its strategy in response to

emerging scientific data and refined models relating to the frequency and intensity of coastal hazards.

During the 2006-2010 Section 309 Assessment and Strategy interval, the NJCMP proposes to participate in partnership with all appropriate State agencies in developing and instituting enforceable policies in accordance with anticipated directives stemming from the Governor's Summit Confronting Climate Change in New Jersey and the subsequent stakeholder sessions. In preparation for the Summit, NJDEP is coordinating with New Jersey's Department of Banking and Insurance to ensure that Summit participants can proceed with informed discussions of policy issues and directions that should be pursued by the State in light of global climate change. At a minimum, the NJCMP anticipates that policy changes will necessitate revisions to the CZM rules as they relate to all the Section 309 Programmatic Objectives for the Coastal Hazards enhancement area. The specific changes must await the recommendations stemming from the Governor's Summit and subsequent stakeholder sessions.

During the 2006-2010 Section 309 Assessment and Strategy interval, the NJCMP proposes to examine the current Coastal Zone Management rule pertaining to barrier island corridors (N.J.A.C. 7:7E-3.20) and to determine if policy changes are needed on New Jersey's barrier islands. This Strategy directly involves the Section 309 Programmatic Objective to "direct future public and private development and redevelopment away from hazardous areas, including high hazard areas delineated as FEMA V zones and areas vulnerable to inundation from sea level rise."

The values of coastal wetlands are widely recognized. These values may be measured in terms of their ecology and their fundamental contribution to economically important estuarine and marine resources. Coastal wetlands are also valuable for their ameliorative effects on the forces of coastal erosion. During the 2006-2010 Section 309 Assessment and Strategy interval, the NJCMP proposes to carefully examine the potential effects of sea level rise on tidal wetlands and determine the most appropriate measures that can be taken to accommodate the perpetuation of these important coastal features. This examination will focus on the physical factors that influence the future disposition of these wetlands. The goal of this endeavor is to identify and clearly define the geomorphological, biological, and hydrological factors that are conducive to the landward migration of coastal wetlands, the development of coastal wetlands along open water areas, and the transformation of freshwater wetlands to tidal wetlands.

As discussed in the Section 309 Assessment (Coastal Hazards) that accompanies this Strategy, NJDEP's recently adopted revised Stormwater Management regulations provide for a 300-foot special water resource protection area adjacent to Category One waters. This buffer serves to preserve areas potentially suitable for the horizontal landward migration of certain coastal wetlands in response to sea level rise and the development of tidal wetlands adjacent to open water areas. For this reason, the NJCMP will focus its attention on those coastal areas that are not currently afforded the protection of the Category One special water resource protection area designation.

New Jersey's Coastal Zone Management (CZM) rules provide for the establishment of wetlands buffers of up to 300-feet for all wetlands in the coastal area except those regulated under the Freshwater Wetlands Protection Act, in which case the Freshwater Wetlands Protection Act Rules prevail. Currently, the CZM rules do not contain a specific methodology for establishing 300-foot buffers adjacent to coastal wetlands for the purpose of accommodating horizontal wetlands migration in response to sea level rise. In addition, the CZM rules do not contain provisions for establishing buffers adjacent to open waters. During the 2006-2010 Section 309 Assessment and

Strategy interval, the NJCMP proposes to define the parameters that are conducive to wetlands migration and development in response to sea level rise. This information would be employed in CAFRA and Waterfront Development permit decision-making as the basis for requiring buffers of up to 300-feet where the appropriate conditions exist.

Although the CZM rules do not currently contain provisions for establishing buffers adjacent to open waters, a proposed revision to the CZM Flood Hazard Area rule (N.J.A.C. 7:7E-3.25) is being considered, along with revisions to the Flood Hazard Control Act rules that implement the New Jersey Flood Hazard Control Act (N.J.S.A. 58:16A-50 et seq.). The Flood Hazard Control Act rules under consideration would establish riparian buffers along tidal waters. Should these rules be adopted, the revised CZM rules will be proposed as a program change.

Additionally, incorporation of a methodology for establishing buffers for wetlands migration would entail either preparation of a policy guidance document or revision of the current Wetlands Buffers rule (N.J.A.C. 7:7E-3.28). This revision of the CZM rules and/or preparation of a wetlands buffer policy guidance document would result in submission of a formal request to NOAA for a program change in the NJCMP.

The Partnership for the Delaware Estuary (formerly, The Delaware Estuary Program) is intending to propose a demonstration project in New Jersey, to rebuild and stabilize an eroded marsh edge with an intertidal, mussel-dominated community in a brackish region of the Delaware Estuary. One of the goals of the project relates directly to the response of tidal marshes to sea level rise. An expected outcome of the project is that dense beds of marsh mussels (*Geukensia demissa*) will significantly contribute to vertical marsh accretion by filtering suspended matter and depositing it on the marsh surface, facilitating overall plant productivity, and stabilizing the marsh surface. The NJCMP will closely monitor the results of the project for its implications regarding the advisability of instituting similar projects in New Jersey's coastal area.

Anticipated Effect of the Program Changes and Implementation Activities

The anticipated effect of the refinement of the NJCMP Goals and the implementation of their supplemental policies pertaining to coastal hazards mitigation is that through the efforts of the NJCMP, coastal communities will be better informed and prepared for the inevitability of coastal hazards events. Through the development of FEMA approved multi-hazard mitigation plans, coastal communities will participate in a program that increases regional consistency in coastal hazards mitigation through the application of uniform risk and vulnerability assessment methodology while retaining specificity appropriate to the exigencies of the particular community.

The NJCMP anticipates substantive policy change directives to emerge from the Governor's Summit Confronting Climate Change in New Jersey. These changes are likely to involve policies relating to land use, development, and redevelopment; protective functions of natural shoreline features; and threats to existing populations and property in the coastal area, and consequently would entail changes in the NJCMP's enforceable policies.

Except for Pullen Island in the Brigantine National Wildlife Refuge, all of New Jersey's barrier islands are developed. However, in light of the Section 309 Programmatic Objective to direct future public and private development and redevelopment away from hazardous areas, examination of the current Coastal Zone Management rule pertaining to barrier island corridors is warranted. The purpose of the review is to determine whether changes are needed to the policies

pertaining to development on New Jersey's barrier islands. Depending on the conclusions of the review, the barrier island corridor rule may be revised.

By developing a methodology and protocol for identifying land areas that are conducive to the establishment of migrating and pioneering coastal wetlands, the NJCMP will be positioned to manage the conservation of these critical areas in anticipation of and in response to sea level rise. The current CZM rules do not provide for buffers adjacent to open water areas where the conditions are suitable for pioneering wetlands. However, the NJCMP anticipates that the ability to establish buffers adjacent to open waters would be accomplished through adoption of amendments to Flood Hazard Control Act rules and the related CZM Flood Hazard Area rule. As previously mentioned, the current CZM rules do enable the NJCMP to establish buffers of up to 300-feet adjacent to tidal wetlands. With the proposed development of a policy guidance document or revision of the current Wetlands Buffer rule to address wetlands migration, the NJCMP's ability to manage this important coastal wetlands resource will be significantly strengthened.

Appropriateness of Program Changes and Implementation Activities

New Jersey's federally approved Coastal Management Program and the Coastal Zone Management rules at N.J.A.C. 7:7E were founded on broad coastal goals. These goals, referred to in the current rules as the "eight basic coastal policies," have remained essentially unchanged since the Coastal Zone Management rules were promulgated in 1978. This Section 309 Coastal Hazards enhancement area Strategy includes updating and modifying these policies to become coastal goals and to provide additional guidance through the inclusion of supplemental policies for each of the eight goals. These would be adopted as regulations by NJDEP and submitted to NOAA for incorporation into the NJCMP.

The refined goals will provide a clear statement of the NJCMP vision for both government agencies that are partners in managing coastal resources and the public. Moreover, the goals will provide a sound basis for decision-making regarding activities in and affecting the coastal zone.

Following acceptance of the refined goals and supplemental policies, the NJCMP will proceed to implement the program change through several initiatives. The first initiative involves increasing regional consistency regarding municipal preparation and response to coastal hazards through community development of FEMA and State sponsored pre-disaster mitigation plans. This initiative involves all three of the Section 309 Programmatic Objectives for the Coastal Hazards enhancement area. These plans will be formulated based on guidance provided by FEMA in the document, *Multi-Hazard Mitigation Planning Guidance under the Disaster Mitigation Act of 2000*. Additionally, New Jersey's program, which is managed by NJOEM, includes technical assistance and a "tool kit" designed to guide the development of municipal pre-disaster mitigation plans. The NJCMP intends to continue to coordinate with and assist FEMA and NJOEM in expounding the benefits of hazard mitigation planning and encouraging coastal municipalities to participate in this valuable program.

An initial workshop designed to explain the actions that local governments can take to reduce or eliminate long term risk to people and property from hazards occurred on 18 April 2006. The workshop, *Understanding Hazard Mitigation Planning: Safe and Sustainable New Jersey Communities*, was co-sponsored by the NJOEM, the Coastal Training Program of Jacques Cousteau National Estuarine Research Reserve, and the NJCMP. The agenda for the first workshop was as follows: "What are Coastal Hazards?," "Disaster Mitigation Planning," "Hazard Mitigation Techniques," and "Wayne Township's Hazard Mitigation Planning Experiences." A

follow-up workshop, *Hazard Mitigation Plan Technical Assistance*, occurred on 17 May 2006. At the workshop, FEMA, NJOEM and NJDEP representatives provided county and municipal emergency management coordinators with guidance on the preparation of hazard mitigation plans. In cooperation with FEMA, and NJOEM, the NJCMP proposes to build upon the success of these workshops and organize additional workshops at convenient locations to ensure that all of the municipalities in the state's coastal area have an incentive and opportunity to avail themselves of this program.

As previously mentioned, the 245 municipalities in New Jersey's coastal zone have their particular land use and resource management practices. The NJCMP will continue to make an earnest effort to strengthen a regional perspective among municipalities through coordinated coastal hazard mitigation initiatives.

Recommendations stemming from the Governor's Summit Confronting Climate Change and subsequent stakeholder sessions will likely involve policy changes that will necessitate revisions to the CZM rules as they relate to all the Section 309 Programmatic Objectives for the Coastal Hazards enhancement area. These changes are likely to involve policies relating to land use, development, and redevelopment; protective functions of natural shoreline features; and threats to existing populations and property in the coastal area, and consequently would entail changes in the NJCMP's enforceable policies.

In light of the Section 309 Programmatic Objective to direct future public and private development and redevelopment away from hazardous areas, examination of the current Coastal Zone Management rule pertaining to barrier island corridors is warranted. Depending on the conclusions of the review, the barrier island corridor rule may be revised. A rule revision would constitute an enforceable policy of the NJCMP.

Increasing sea level rise threatens to inundate coastal wetlands and exacerbate erosion of shorelines. Differences among alternative solutions to this predicament are stark. The loss of wetlands and the accompanying environmental degradation can simply be accepted. Development (and the armoring of the shoreline as necessary) can continue in upland areas that are conducive to wetland migration and the founding of new wetlands, and the expense of purchasing developed property can be borne in the future. Or, conservation measures can be taken now for upland areas that are conducive to coastal wetlands adaptation.

Armoring shorelines with structures typically benefits a few select upland property owners at the expense of broader economic and recreational considerations. Structural shore protection provides extremely limited habitat value and in fact, frequently damages marine and estuarine systems and living resources. Additionally, in far too many instances, hard shore protection structures result in increased erosion or shoaling by altering local shoreline sand supply, effects often suffered by adjacent property owners.

Wetlands on the other hand, serve to protect shorelines from the erosive forces of waves and at the same time provide an essential and highly productive habitat for marine and estuarine species. A primary aspect of the NJCMP's mission is to ensure that coastal resources and ecosystems are conserved as a vital aspect of sustainable coastal communities. With accelerating sea level rise and the long-term viability of the coastal wetlands in question, steps must be taken now to accommodate their adaptation to changing conditions.

Work Plan

Task 1: Adopt refined NJCMP Goals.

- A. Update and modify the eight basic NJCMP policies as coastal goals with operational policies clearly articulated.
- B. Propose as regulations.
- C. Adopt regulations as enforceable policies of the NJCMP.
- D. Submit refined NJCMP Goals to NOAA as a Program Change

Comment: New Jersey's Federally approved Coastal Management Program and the Coastal Zone Management rules at N.J.A.C. 7:7E were founded on broad coastal goals. These goals, referred to in the current rules as the "eight basic coastal policies," have essentially remained unchanged since the Coastal Zone Management rules were promulgated in 1978.

Based on substantial evidence, there is acute national concern that the health of our oceans is seriously compromised as a result of nonpoint and point source pollution, climate change, overfishing and coastal development. Two national Commissions, the Pew Oceans Commission and the US Commission on Ocean Policy issued similar conclusions in 2003 and 2004 respectively, that our oceans and coastal areas are in crisis and that a national ocean policy is needed. As a result of both the Commissions' conclusions and the Department's 26 years of experience implementing the existing coastal goals through the Coastal Management Program and Coastal Zone Management rules, NJCMP concluded that revision of the eight original coastal policies is warranted. A draft of the refined goals that accurately reflects current conditions and trends relevant to comprehensive coastal management in New Jersey is complete. Shortly, NJDEP plans to propose the refined coastal goals as regulations and adopt the regulations as enforceable policies soon thereafter.

Task 2: Implement the refined NJCMP Goals by achieving development of consistent, comprehensive municipal coastal hazards mitigation plans.

- A. In cooperation with FEMA and NJOEM, encourage and assist coastal municipalities to adopt FEMA approved multi-hazard mitigation plans.
- B. Coordinate with the NJOEM to sponsor workshops for the state's coastal municipalities on hazard mitigation planning. These workshops will be strategically located to ensure convenient accessibility for coastal municipalities.
- C. Coordinate with the Association of State Floodplain Managers and assist in promoting the coastal version of the No Adverse Impact national policy initiative and related toolkit (in preparation by the Association with the assistance of NOAA).
- D. Provide links on the NJCMP website to pertinent NOAA Coastal Service Center websites such as "On-Line Hurricane Information for Coastal Officials", "Coastal Storms Program", Hurricane Planning and Impact Assessment Reports", Risk and Vulnerability Assessments", and "Coastal Inundation Visualization Tool".

Comment: This task relates directly to the Section 309 Programmatic Objective to "prevent or minimize threats to existing populations and property from both episodic and chronic coastal hazards." The FEMA, NJOEM, NJDEP multi-hazard mitigation planning process addressed by this task, involves five steps. Initially, coastal municipalities establish a planning process by setting up a planning team, coordinating with resource agencies and stakeholders, reviewing and

incorporating existing information, and providing opportunities for public involvement in the process. The second step involves identifying hazards, assessing hazards risks, inventorying community assets, and determining the vulnerability of community assets to hazards. The third step involves developing a mitigation strategy by identifying and analyzing a comprehensive range of mitigation measures, and developing an action plan for implementing mitigation measures. Step four entails maintaining the plan by providing for plan monitoring/evaluating/updating, incorporating the plan into existing municipal planning mechanisms, as well as providing for continued public involvement. The final step involves adoption of the plan by the governing body of the jurisdiction.

Task 3: Implement the refined NJCMP Goals by effectively targeting coastal hazards education and outreach initiatives.

- A. Develop and disseminate to the public fact sheets regarding natural coastal systems benefits, and economic and societal benefits of hazard mitigation strategies.
- B. Develop non-technical guidance that will be accessible to the public and posted on the NJCMP website.
- C. Continue to promote through the Division of Land Use Regulation permitting program the hazard mitigation benefits of natural coastal systems such as beaches, dunes, wetlands, and flood plains.
- D. Continue to collect and assess information and lessons learned regarding the economic and societal benefits of hazard mitigation strategies.
- D. Address through the preparation of fact sheets, public misconceptions and erroneous beliefs regarding the nature and risks of coastal hazards and hazards mitigation.
- F. Maintain sufficient flexibility to modify strategy in response to emerging scientific data and refined models relating to the frequency and intensity of coastal hazards.

Comment: Upon approval of the refined NJCMP Goals by NOAA as a program change, the NJCMP will conduct this task as an implementation activity. This task stems directly from the proposed goal of "Coordinated Public Education and Outreach." Task 3 is intended to provide timely, comprehensive, and accurate information to the public regarding diverse aspects of coastal hazards. The breadth of this task is reflected in the components listed above.

Task 4: Address directives stemming from the Governor's forthcoming Summit Confronting Climate Change in New Jersey.

- A. Develop enforceable policies in accordance with Summit recommendations and directives.
- B. Institute enforceable policies.

Comment: New Jersey's Governor Jon Corzine will convene a Summit in September, 2006 to examine the economic ramifications for New Jersey of global climate change, sea level rise, and related changes in coastal and other hazards; and to generate strategic policy options that the State of New Jersey should consider. The Summit will be a closed roundtable discussion chaired by the Governor, and will involve the participation of certain members of the Governor's Cabinet, financial services and insurance industry leaders, and recognized experts from both the scientific community and industry.

While climate change threatens to affect diverse aspects of New Jersey's economy, the Summit will focus on floods and storms. Sea level rise is a major contributing factor to the threat of both floods and storms and we will consider it as an aspect of these issues. Greater frequency and intensity of these phenomena could easily cause billions of dollars of disruption to New Jersey's

economy. Additionally, changes in these hazards are likely to substantially affect many New Jersey citizens through direct and indirect costs relating to property damage and insurance, as well as the displacement of residents from areas of greatest risk.

Task 5: Review the Coastal Zone Management barrier island corridor rule (N.J.A.C. 7:7E-3.20) with respect to the development on barrier islands.

- A. Develop recommendations regarding the necessary rule changes.
- B. Develop revisions to the barrier island corridor rule, as appropriate.

Comment: The current Barrier Island Corridor rule allows for new or expanded development within the oceanfront barrier island corridor if the development complies with the requirements for impervious cover and vegetative cover. In light of the increasing threats posed by storm frequency and intensity, as well as sea level rise, the NJCMP intends to examine the necessity for rule changes and develop recommendations for rule revisions. This task conforms to the Section 309 Programmatic Objective to direct future public and private development and redevelopment away from hazardous areas.

Task 6: Develop methodology, protocol, and regulations and/or guidance documents designed to accommodate the adaptation of coastal wetlands to sea level rise.

- A. Explore revisions to the CZM Flood Hazard Area rule (N.J.A.C. 7:7E-3.25) in light of amendments to Flood Hazard Control Act rules.
- B. Identify and clearly define factors conducive to the landward migration of coastal wetlands, the development of coastal wetlands along open water areas, and the transformation of freshwater wetlands to tidal wetlands.
- C. Either prepare a guidance document or revise the CZM Wetlands Buffer rule (N.J.A.C. 7:7E-3.28) to provide a methodology for establishing buffers of up to 300-feet for wetlands migration.

Comment: By developing a methodology and protocol for identifying land areas that are conducive to the establishment of migrating and pioneering coastal wetlands, the NJCMP will be positioned to manage the conservation of these critical areas in anticipation of and in response to sea level rise.

Summary of Estimated Costs and Work Plan Timeline

The NJCMP anticipates addressing three or four of the 309 resource areas per year through the CZM grant. Based on previous funding allotments the NJCMP estimates that one Section 309-funded FTE per year for FY 2006 - 2010 will be devoted to implementation of tasks identified under Coastal Hazards. The funding allotment is inclusive of the salaries of professional staff and (as applicable) contracting for specific non-staff professional services.

Task 1: Year one (2006)

Task 2: Year two and three (2007-2008)

Task 3: Year two and three (2007-2008)

Task 4: Year one through five (2006-2010)

Task 5: Year four and five (2009-2010)

Task 6: Year two and three (2007-2008)

Likelihood of Attaining the Proposed Program Changes and Implementation Activities

The likelihood of attaining the proposed program changes and implementation activities ranges from highly likely to moderately likely. Our expectations for success are discussed by task below.

Regarding the first Task that involves adoption of the NJCMP refined goals, the likelihood of attaining the proposed program change is deemed to be high. The refined goals are drafted and are undergoing internal NJDEP review. The refined goals are comprehensive and appropriate and the NJCMP expects to proceed soon with their proposal.

The likelihood of success of the second and third Tasks involving implementation of the refined NJCMP Goals, including municipal coastal hazards planning, coastal hazards education and outreach, and improving techniques employed to inform the public regarding coastal hazards, is also considered high. NJCMP plans to continue to coordinate and cooperate with other agencies and organizations that are involved with developing and disseminating information and guidance concerning coastal hazards. The NJCMP will furnish its expertise and resources toward achieving the goals associated with these tasks. With the current strategy, the NJCMP proposes to place more emphasis on directly addressing prevalent public misconceptions and erroneous beliefs regarding the nature and risks of coastal hazards and hazards mitigation.

Planning for Governor Corzine's Summit Confronting Climate Change in New Jersey is proceeding. Considering the effects of climate change that are already being experienced, the NJCMP anticipates that the Summit will produce policy recommendations that will lead to substantive program changes. The NJCMP also believes that recommendations stemming from the Governor's Summit will very likely include policies that relate to development on New Jersey's barrier islands and thus, Task five.

Part of the sixth Task may be more challenging to achieve. While the CZM rules provide for buffers adjacent to wetlands, they do not contain provisions for buffers adjacent to open waters. Incorporating clarifying protocol into the existing wetlands buffer rule is a relatively straightforward task, although some objection by the regulated public is to be expected. Actually developing a new rule that addresses buffers to open water is considerably more difficult and the NJCMP will certainly experience considerable opposition during the rule making process. Nevertheless, these rule changes are management measures that must be taken in light of the substantial threat that sea level rise poses for the persistence of coastal wetlands.

Cumulative and Secondary Impacts

Section 309 Programmatic Objectives

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

Resource Characterization

1. Identify areas in the coastal zone where rapid growth or changes in land use require improved management of cumulative and secondary impacts (CSI). Provide the following information for each area:

Type of growth or change in land use (e.g., residential, industrial, etc.)

Rate of growth or change in land use

Types of cumulative and secondary impacts

Continuing population growth and increasing popularity of New Jersey as a tourist destination have intensified development and redevelopment of the coastal zone. According to the New Jersey Department of Labor and Workforce Development, three coastal counties, Ocean, Monmouth, and Middlesex, ranked first, second, and third respectively in the number of residential building permits issued per county. Ocean County issued 22,927 permits, Monmouth County issued 14,964 permits, and Middlesex County issued 13,549 permits. Although these are only totals of residential building permits, not of residential units actually built or other types of development, they do reflect the intensity of development in these coastal areas. If these rates continue, the effect will be escalating cumulative and secondary impacts resulting from factors such as increased areas of impervious surfaces, habitat loss, and degradation of water quality.

New Jersey's southern counties of Cape May, Cumberland, and Salem have also issued increased numbers of residential construction permits. Greater development in this area is of particular concern because these counties have historically relied on natural resources as their economic base and have insufficient infrastructure to support intense development.

Loss of New Jersey's forests is documented in a May 2004 report by Richard G. Lathrop Jr. of Rutgers University titled "Measuring Land Use Change in New Jersey: Land Use Update To Year 2000". Lathrop's study used medium scale satellite imagery and air-photo interpreted data to assess land use changes from 1986 and 1995/1997 to 2000. More current information will become available when NJDEP completes updating its land use/land cover data using 2002 air photos. This data will enable comparisons between the 1995/1997 air-photo data and the 2002 air-photo data. These data are expected to be available during the summer of 2006.

2. Identify areas in the coastal zone, by type or location, which possess sensitive coastal resources (e.g., wetlands, water bodies, fish and wildlife habitats, threatened and endangered species and their critical habitats) and require a greater degree of protection from the cumulative or secondary impacts of growth and development.

Area	CSI Threats/Sensitive Coastal Resources
Delaware Estuary	Delaware Bay was designated as Wetlands of International Importance in 1992. A major estuarine system, it is the second largest avian staging area in the Western Hemisphere, and host to approximately 1.5 million shorebirds annually. It is the staging area for more than 90% of North American populations of six species of migratory shorebirds. The Western hemispheric population of the Red Knot depends on the suitability of Delaware Bay habitat for survival. The Delaware Estuary is home to the largest population of horseshoe crabs in the world and consequently, is an integral link in the migratory path of numerous species of birds, including shorebirds and waterfowl. Pea Patch Island, located within the Delaware River, is the largest heronry north of Florida. The estuary provides vital spawning, nursery and feeding grounds for over 200 species of fish, shellfish and marine mammals. It supports wading birds, reptiles and mammals and serves as a source of drinking water. The estuary includes more than 641 square miles of wetlands. The Delaware Bay was once home to commercial densities of Eastern Oysters. However, the MSX and Dermo parasites have plagued the Bay's oyster populations. Efforts are underway to restore the oyster population, through planting of shell in the estuary. Historically, the Delaware River may have supported the largest stock of Atlantic sturgeon of any Atlantic coastal river system. Although Atlantic sturgeon numbers have been significantly reduced as a result of over-fishing and habitat destruction, recent genetic evidence indicates that a small remnant stock persists. Shortnose sturgeon have been listed on the federal endangered species list since 1967. The Delaware River stock is increasing but remains highly susceptible to contaminants and habitat degradation. Additional development in the drainage areas of the Delaware estuary threatens these resources, as well as the restoration of Atlantic sturgeon.
Upland forests	Forests, particularly upland forests, are being converted to developed land throughout the coastal zone, fragmenting contiguous forest areas, reducing the value of the forest as habitat.
Critical wildlife habitat	Critical wildlife habitats serve an essential role in maintaining wildlife, particularly in wintering, breeding, and migrating. Such areas are threatened by invasive species and by development.
Ocean	New Jersey's coastal waters are rich in natural resources and provide habitat for fish, shellfish, turtles, marine mammals and birds. Ocean waters are used extensively by the public for a multitude of uses including recreational and commercial fishing, boating, surfing, diving, shipping, siting of telecommunications cables, and as sources of sand for beach nourishment. There is interest in new uses of the ocean, particularly for alternative energy generation, including wind turbine facilities and wave or tidal energy devices.

Management Characterization

1. *Identify significant changes in the state's ability to address cumulative and secondary impacts since the last Assessment (e.g., new regulations, guidance, manuals, etc.). Provide the following information for each change:*

- Characterize the scope of the change*
- Describe recent trends*
- Identify impediments to addressing the change*
- Identify successes in improved management*

During the last five years, New Jersey has taken several steps to reduce the cumulative and secondary impacts of development. These include creating management measures to protect the state's waterways, preparing revisions to the State Development and Redevelopment Plan (State Plan), implementing regulatory changes, and acquiring land.

New Jersey recognizes that the secondary and cumulative impacts of development can seriously affect the State's waters. In response, in 2004, NJDEP adopted revised Stormwater Management regulations (N.J.A.C. 7:8). These regulations set forth minimum design and performance standards to address post-construction stormwater runoff quality impacts of major development including standards for the control of total suspended solids and nutrients in stormwater runoff. The rules also set forth minimum design and performance standards to control erosion impacts, encourage and control stormwater infiltration and groundwater recharge, and control stormwater runoff quantity impacts of major development.

Furthermore, the revised stormwater regulations provide special water resource protection for Category One waters. Category One waters are defined as those special waters identified for protection from measurable changes in water quality characteristics because of their clarity, color, scenic setting, other characteristics of aesthetic value, and exceptional ecological, recreational, water supply and/or fisheries significance." In order to protect the Category One waters, the regulations require a 300-foot special water resource protection area adjacent to these waters. (See details in Wetlands Section). These stormwater regulations are implemented through a number of programs, including the New Jersey Coastal Management Program (NJCMP). NJDEP has designated additional Category One waters over the past several years, including tributaries to the Shark, Manasquan, Metedeconk, and Delaware Rivers. The Category One designation will provide additional protections to these coastal waterbodies that help prevent water quality degradation and discourage development where it would impair or destroy natural resources and environmental quality.

NJDEP also developed the Municipal Stormwater Regulation Program and new rules to address pollutants entering our waters from storm drainage systems owned or operated by local, State, interstate or federal government agencies. Additional detail is provided in the wetlands section of this report.

A program change document incorporating the Stormwater Management regulations and the Municipal Stormwater Regulation Program rules in the NJCMP was submitted to NOAA in April 2006. Section 306 and 309 funds were employed by the NJCMP in the preparation of this submission.

The New Jersey Clean Marina Program, which was launched in 2005, represents another significant measure to address cumulative and secondary impacts. NOAA 310 funds were employed for this endeavor. This program encourages marina owners, yacht clubs, boatyards and boaters to voluntarily adopt practices that help prevent adverse impacts to water quality, sensitive habitats, and living resources in proximity to marinas. By the end of 2005, two marinas were certified New Jersey Clean Marinas and 18 more pledged to pursue clean marina status.

In the spring of 2004, the Office of Smart Growth in the Department of Community Affairs released a Preliminary State Plan and Preliminary State Plan Policy Map to initiate its third round of cross-acceptance. The cross-acceptance process is designed to encourage consistency between municipal, county, regional, and state plans. Employing NOAA 306 funds, NJDEP continues its involvement in this State planning process and continues to work with municipalities, counties and the Office of Smart Growth on plan endorsement. Coastal management rules and policies are critical elements considered in NJDEP's review of municipal plans for plan endorsement. Since

2000, 27 municipalities in the CAFRA area have had centers approved by the State Planning Commission and accepted by NJDEP for CAFRA permitting. Centers are areas identified for compact development and redevelopment. An additional 22 municipalities in the CAFRA area are actively involved in the plan endorsement process.

In 2004, NJDEP amended the CZM rules to add the CAFRA findings to those regulations. Although the findings have always been requirements under the statute, their addition to the CZM rules highlights the need to make the findings prior to the issuance of a CAFRA permit. A number of the findings relate to cumulative and secondary impacts, including requirements for conformance with water and air quality standards; consideration of the dilution, assimilative, and recovery capacities of the air and water environments at the site and within the surrounding region; consideration of the capacity of water supplies; and affects on other natural resources.

In 2003 employing State and NOAA 306 funds, amendments to the CZM rules were adopted that incorporate use of NJDEP's Landscape Maps of Habitat for Endangered, Threatened and Other Priority Species. The Landscape Project is a pro-active, ecosystem-level approach for the long-term protection of imperiled species and their important habitats in New Jersey. Its goal is to protect New Jersey's biological diversity by maintaining and enhancing imperiled wildlife populations within healthy, functioning ecosystems. As part of the project, critical habitat maps were developed to provide users with peer-reviewed, scientifically sound information that is easily accessible via the Internet and hard copy. {PRIVATE "TYPE=PICT;ALT="}Critical area maps can be integrated with planning and protection programs at every level of government—state, county and municipal—and can provide the basis for proactive planning, zoning and land acquisition projects. Although the NJCMP has enforceable policies for protecting endangered and threatened species habitat and for critical wildlife habitat, it lacks an enforceable policy to protect other prime natural communities. In addition, the Program has enforceable policies that address preservation of forested areas, however these areas are not designated special areas and therefore are more difficult to protect through the coastal permitting process.

The State continues to actively implement its land acquisition program, the Green Acres Program. Legislation enacted in 2002 directed the Green Acres Program to give greater emphasis to the acquisition of water resource lands and flood prone areas. Since the last Assessment, the Green Acres Program has acquired 110,366 acres of land in the coastal counties. Land is acquired in three different categories: State acquisitions, local government acquisitions, and acquisitions by non-profit organizations. The acquisitions in the coastal counties breakdown as follows: 77,909 acres in State acquisitions, 39,202 acres of which are in CAFRA municipalities; 18,884 acres in local acquisitions, 6272 acres of which are in CAFRA municipalities; 13,573 acres by non-profits, 8483 acres of which are in CAFRA municipalities. In coordination with the State Green Acres Program, the NJCMP has worked with non-governmental organizations and the Coastal and Estuarine Land Conservation Program to acquire lands that preserve critical coastal resources. The NJCMP participation in these activities is funded in part by a NOAA 306 grant.

As noted above, the Delaware estuary possesses sensitive coastal resources that require protection from the secondary and cumulative impacts of development. The estuary includes waters of three states, New Jersey, Delaware and Pennsylvania. Numerous government agencies including the three state Coastal Management Programs, the Delaware River Basin Commission and the Delaware River Port Authority manage these waters and the adjacent uplands. These agencies have different mandates and objectives that complicate coordinated management of the estuary. The Delaware Estuary Program is developing common goals that can be endorsed by the various agencies involved.

Another area where numerous government agencies have divergent management responsibilities is the Atlantic Ocean. As discussed under the section on Ocean Resources, the NJCMP has taken steps over the past five years to improve coordination regarding management of this area. However, many of the new proposed ocean uses involve areas beyond the limits of state waters. This makes management of these areas when an activity may have a foreseeable effect on a state's defined coastal zone, more difficult and to some, more problematic. Moreover, incomplete information about the resources themselves can be an impediment to their management and protection

Conclusion

- 1. Identify priority needs or major gaps in addressing the programmatic objectives for this enhancement area that could be addressed through a 309 Strategy (i.e., inadequate authority, data gaps, inadequate analytical methods, lack of public acceptance, etc.).*
- 2. What priority was this area previously and what priority is it now for developing a 309 Strategy and designating 309 funding and why?*

Development and redevelopment continue in New Jersey's coastal areas in response to strong demand for housing, commerce, and tourism. This development is accompanied by the potential to cause cumulative and secondary impacts as a result of factors such as increased areas of impervious surfaces, habitat loss, and degradation of water quality.

Improved monitoring of environmental quality and ecosystem health would facilitate management of the estuary, as would the ability to review activities in the estuary that while not in New Jersey's coastal zone, do affect the uses or resources of the state's coastal zone. There are also data gaps concerning the distribution and abundance of birds, marine mammals and sea turtles in the ocean waters off New Jersey. There is a need for a comprehensive ocean policy and regulations for the new uses under consideration that take into account the cumulative effect of multiple uses. Finally, the lack of an enforceable policy to protect prime natural communities is another gap.

In response to the increasing development pressure on the Delaware Bay/River and its diversity of natural resources, the NJCMP proposes to focus additional attention on this geographic region. In the Delaware Bay, inadequate information concerning characteristics of the Bay bottom, its substrate, and benthos, hinders the Program's ability to quantify the secondary and cumulative impacts of development.

Data acquisition is occurring with a mapping project of the Bay bottom in Delaware and New Jersey. Data from this project will be instrumental in the future for quantifying secondary and cumulative impacts to the Delaware Bay. Oyster bed restoration efforts are underway as are measures to protect migratory birds using the area. It would be beneficial to focus available resources on the collection of data, including cataloging areas and resources of concern, and identifying potential threats to these areas. To date, there is no comprehensive plan to delineate spawning and nursery habitat for Atlantic or shortnose sturgeon. Any advances in this area would be instrumental in the effort to restore these fish. This overall approach would allow the NJCMP to assess existing management tools and their ability to address the potential threats identified.

Four particular areas that possess sensitive coastal resources and require greater protection from the cumulative or secondary impacts of growth and development are the Delaware estuary, upland forests, critical wildlife habitats and the ocean. The Delaware estuary is a vital ecosystem,

which is managed by three states—New Jersey, Delaware and Pennsylvania. The estuary provides habitat for shellfish and more than 130 species of finfish. More horseshoe crabs spawn in the estuary than anywhere else on earth. The estuary experiences the second largest concentration of migrating shorebirds in the Western Hemisphere. Historically, the estuary contained significant oyster populations and efforts are underway to restore those populations. Increased development in the estuary drainage areas threatens these resources

Throughout the coastal zone, upland forests are being converted to developed land, which fragments contiguous forest areas diminishing the forests' habitat value. Upland forests also benefit air and water quality, and improve the quality of life for residents. Areas that are critical to maintaining wildlife, particularly for wildlife wintering, breeding, and migrating, need greater protection.

As coastal land areas experience greater development and redevelopment the trend has been to look towards the ocean as an opportunity for expanding development. There is interest in developing new uses of the near shore and ocean off the New Jersey coast, particularly for alternative energy generation, including wind turbine facilities and wave or tidal energy devices and commercial aquaculture of finfish. Currently there are few policies to guide the review of proposals and applications or assess the impact for this new area of development.

Each of the four areas identified above, is in need of revised or enhanced management policies or procedures. In some instances, additional information is needed to develop appropriate management measures.

As a result of these gaps, this 309 area has been elevated to a high priority.

Last Assessment

High _____
 Medium X
 Low _____

This Assessment

High X
 Medium _____
 Low _____

Cumulative and Secondary Impacts Enhancement Area Strategy

Proposed Program Change and/or Implementation Activities

During the 2006-2010 Section 309 Assessment and Strategy interval, NJCMP proposes to address the above issues by revising existing and incorporating new enforceable policies into the federally approved program. Among the enforceable policies that would be addressed, are the NJCMP's eight basic coastal policies, which are the foundation of the NJCMP and its Coastal Zone Management rules. These policies guide program activities and have remained essentially unchanged for the past 26 years. The Strategy includes updating and modifying these policies as coastal goals and providing supplemental policies measures that would be employed to achieve the goals. These would be adopted as regulations by NJDEP and submitted for incorporation into the NJCMP. Refinement of the Coastal Program Goals relates to the Section 309 Programmatic Objectives for the Cumulative and Secondary Impacts enhancement area. These are, "Healthy Coastal Ecosystems;" "Effective Management of Ocean and Estuarine Resources;" "Coastal Open Space;" "Safe, Healthy and Well Planned Coastal Communities;" "Coordinated Coastal Decision-making, Comprehensive Planning, and Research;" and "Coordinated Public Education and Outreach." Each of these goals is supported by general policies that would be employed to achieve the goals.

Further, the NJCMP will consider incorporating the Surface Water Quality Standards, N.J.A.C. 7:9B, into the coastal management program. These standards classify surface waters of the state and address the protection and enhancement of surface water resources. . The addition of these standards would enhance the NJCMP's ability to protect water quality and discourage development in instances that would impair or destroy natural resources and environmental quality.

The NJCMP proposes to direct additional attention to the Delaware Bay/River and its diverse natural resources in response to increasing development pressure. For the Delaware Bay, the NJCMP's ability to quantify secondary and cumulative impacts of development is hindered by insufficient data regarding characteristics of the Bay bottom, its substrate, and benthos. Data acquisition is underway with the Delaware Bay bottom mapping project. The results of the mapping project will be valuable for future quantification of secondary and cumulative impacts to the Delaware Bay. Data from the project will be evaluated to determine whether new or modified management measures are appropriate. The NJCMP will work with the Delaware and Pennsylvania coastal programs, as well as the Delaware Estuary Program, to consider a regional approach and/or the implementation of consistent management measures and standards for shared resources.

The NJCMP will also work to develop a specific enforceable policy to protect the state's most important natural communities. The enforceable policy may involve a rule that provides standards for activities that might affect a habitat that is significant for its contribution to biodiversity. For example, these measures might be applied to Delaware Bay beaches that support horseshoe crabs and migratory birds. Elsewhere in the coastal zone, the measures might be applied in upland forests to protect various songbird habitats.

Another initiative that the NJCMP will undertake in the 2006-2010 Section 309 Assessment and Strategy interval is submission of an interstate federal consistency listing for the Delaware Estuary. Listing of the Delaware Estuary would improve management of cumulative and secondary impacts by enabling New Jersey to review large-scale activities that would have a reasonably foreseeable effect either individually or cumulatively on New Jersey's coastal zone, thus ensuring consistency with the NJCMP.

The NJCMP will continue to work with the Office of Smart Growth and plans to lend technical assistance to local governments to ensure that local governments address issues concerning sensitive coastal resources and sound coastal planning in local plans endorsed by the State Planning Commission. It is anticipated that this effort will be supplemented by rulemaking that addresses the findings that the NJDEP makes prior to approving changes to the State Development and Redevelopment Plan for incorporation to the CAFRA Planning Map and the coastal management program.

As noted, there is need for continued development of an ocean policy that considers potential new uses, the cumulative and secondary impacts of multiple uses and the potential for conflict between these. The Strategy for addressing new and developing ocean uses is discussed under the Ocean Resources section.

Anticipated Effect of the Program Changes or Implementation Activities

The NJCMP is a networked program, implemented by NJDEP. In this context, the anticipated Program Changes and Implementation Activities are appropriate because they approach the issue

of cumulative and secondary impacts by addressing the array of issues from diverse perspectives, including information gathering, the establishment of clear, common goals to land use planning, the employment of regulatory tools and the involvement of various levels of government.

It is anticipated that the Program Changes and Implementation Activities will afford the Delaware Estuary and adjacent coastal land area greater protection from the adverse cumulative and secondary impacts of development. New Jersey will be better positioned to identify, characterize and protect significant ecological communities in the coastal zone. Data from the Delaware Bay bottom mapping project promises to increase management capabilities of initiatives such as oyster bed restoration and aquaculture.

The NJCMP's coordination with the Office of Smart Growth facilitates the integration and conduct of sound coastal management at the local government level.

The refined goals will provide a clear statement of the NJCMP vision for both government agencies that are partners in managing coastal resources and the public. . Moreover, the goals will provide a sound basis for decision-making regarding activities in and affecting the coastal zone.

Appropriateness of Program Changes and Implementation Activities

The NJCMP is a networked program, implemented by NJDEP. In this context, these measures are appropriate because they approach the issue of cumulative and secondary impacts by addressing the issues from diverse perspectives, including information gathering, the establishment of clear, common goals to land use planning, and the employment of regulatory tools. The approach is also appropriate because it involves various level of government.

Task 1: Adopt the refined NJCMP coastal goals.

- A. Update and modify the eight basic NJCMP policies as coastal goals with clearly articulated operational policies.
- B. Propose as regulations
- C. Adopt regulations as enforceable policies of the NJCMP.

Task 2: Strengthen protection of the Delaware Bay and River.

- A. Focus management measures on the Delaware Estuary and adjacent coastal land area.
- B. Coordinate activities between the CMP and the Delaware National Estuary Program CCMP to achieve a more comprehensive approach to management of the resources of this multi-state region.
- C. Continue to gather data on the Delaware Bay and River and adjacent coastal lands.
- D. Assess data to improve management of the estuary and its shared resources.
- E. Enhance or adopt new enforceable policies pertaining to the resources of the Delaware Estuary.
- F. Submit an interstate federal consistency listing for the Delaware Estuary.

Task 3: Develop policy changes to improve management of significant ecological communities and habitats for biodiversity.

- A. Employ mapping to identify and characterize habitats/communities and threat of conversion of or adverse impact from cumulative and secondary impacts of development

- B. Consider new or revised enforceable policies or strategies (acquisition, restoration) that afford greater protection to habitats/communities currently not protected.
- C. Integrate Natural Heritage/Community Priority site mapping into the NJCMP.

Task 4: Continue to coordinate with the Office of Smart Growth to Achieve Sustainable Growth in the Coastal Zone.

- A. In conjunction with the Office of Smart Growth, work with municipal and county governments on local planning for coastal areas through the plan endorsement process.
- B. Supplement this work with incorporation of standards into the Coastal Zone Management rules regarding plan endorsement and incorporation of endorsed plans into NJDEP decision-making in the coastal zone.

Comment: The plan endorsement process is designed to provide for sustainable growth in New Jersey's coastal zone while recognizing and conserving the rich and diverse coastal zone resources. NJDEP in coordination with the State's Office of Smart Growth, works with the coastal municipalities to ensure that coastal resources are fully considered in the plan endorsement process.

Summary of Estimated Costs and Work Plan Timeline

The NJCMP anticipates addressing three or four of the 309 resource areas per year through the CZM grant. Based on previous funding allotments the NJCMP estimates that one quarter to one third of the federal 309 funds allotted to the State will be devoted to implementation of tasks identified under Cumulative and Secondary Impacts. For FY 2006 - 2008 one Section 309 funded FTE will be dedicated to this enhancement area each year. For FY 2009 and 2010, 1.5 FTE will be dedicated to this enhancement area each year. The funding allotment is inclusive of the salaries of professional staff and (as applicable) contracting for specific non-staff professional services.

Task 1: Year one (2006)

Task 2: Year two through five (2007-2010)

Task 3: Year two and three (2007-2008)

Task 4: Year one through five (2006-2010)

Likelihood of Attaining the Proposed Program Changes and Implementation Activities

Regarding the first Task that involves adoption of the NJCMP refined goals, the likelihood of attaining the proposed program change is deemed to be high. The refined goals are drafted and are undergoing internal NJDEP review. The refined goals are comprehensive and appropriate and the NJCMP expects to proceed soon with their adoption.

The likelihood of achieving program changes stemming from the second, third, and fourth tasks is considered high. NJCMP has a close working relationship with the agencies and organizations that are key to accomplishing the proposed tasks. In the case of the Delaware Estuary task, the bay bottom mapping project that is currently underway, will furnish valuable data that will contribute to the ability of the NJCMP to strengthen protection of the estuaries significant coastal resources.

Energy and Government Facility Siting

Section 309 Programmatic Objectives

- I. *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.*
- II. *Improve program policies and standards which affect the subject uses and activities so as to facilitate siting while maintaining current levels of coastal resource protection.*

Management Characterization

1. *Identify significant changes in the state's ability to address the siting of energy and government facilities since the last Assessment (e.g., new regulations, guidance, manuals, etc.). Provide the following information for each change:*
 - *Characterize the scope of the change*
 - *Describe recent trends*
 - *Identify impediments to addressing the change*
 - *Identify successes*

Enforceable policies

The most significant changes affecting the state's ability to address the siting of energy and governmental facilities are the 2003 amendments to the Coastal Zone Management (CZM) rules (N.J.A.C. 7:7E) and the incorporation of certain of these and earlier amendments into the New Jersey Coastal Management Program (NJCMP). The CZM rules are the Department of Environmental Protection's (NJDEP) substantive use and development rules pursuant to the Coastal Area Facility Review Act, the Waterfront Development Act, and the Wetlands Act of 1970. These rules are the enforceable policies of the NJCMP and are used for Federal Consistency reviews. Rule amendments for development in water areas; for certain special areas, including ports, wetlands, and endangered or threatened species habitat, and resources, most notably marine fish and fisheries, were incorporated into the Program. Furthermore, the Freshwater Wetlands Protection Act and implementing rules were incorporated into the approved NJCMP in April 2004 and the activity was partially funded by Section 306 and 309 funds. These changes are relevant to the siting of energy and government facilities. In February 2006, the NJCMP also submitted additional routine program changes to NOAA, including changes in all the remaining special area rules and most of the use rules.

Among the 2003 amendments were changes to the standards for siting energy facilities. Previously, the siting determinations were to be made by NJDEP's Office of Energy, and the standards referred to the State Energy Master Plan. The rule required consideration of the need for the energy facility. Enactment of New Jersey's Electric Discount and Energy Competition Act, N.J.S.A. 48:3-49 to 98 in 1999, significantly modified the regulation of the energy industry in New Jersey. The expressed intent of the Act was to reduce the cost of energy and improve the quality of services, thereby improving the quality of life and making the state more competitive in regional, national, and international markets. The Act shifted the state's reliance for energy to competitive markets. The Act also reduced the role of the Board of Public Utilities, which had replaced the Office of Energy, and diminished the State's consideration of the need for energy facilities. As a result, the siting standards were supplanted by standards that reflect the legislative intent of CAFRA to review energy projects within a comprehensive environmental design

strategy that preserves the most ecologically sensitive and fragile areas from inappropriate development and provides adequate environmental safeguards for the construction of any developments in the coastal area. These standards are considered in selecting energy facility sites. Whereas the previous siting standards referred to the State Energy Master Plan, the revised standards require consideration of the Special Areas identified in the CZM rules in selecting a site for a facility. NOAA 306 and 309 funding, as well as State funding contributed to this accomplishment.

Prime Fishing Areas are designated as Special Areas in the CZM rules (N.J.A.C. 7:7E-3.4). As noted in the rules, for the purposes of NJDEP permit decisions, a number of publications are to be used when determining prime fishing areas. One of these publications is the 1984 map entitled, *New Jersey's Recreational and Commercial Ocean Fishing Grounds*. During the previous 309 Assessment and Strategy interval, the NJCMP, with the cooperation of the NJDEP Division of Fish and Wildlife and charter and party boat captains, updated this map and created a digital prime fishing area coverage map. The digital map will enable specific timely permit determinations based on accurate current revised data. The updated map must be incorporated into regulation and submitted as a program change in 2004. This was a Section 309 activity.

Energy deregulation and renewable energy

As discussed in the previous 309 Assessment and Strategy, the Electric Discount and Energy Competition Act (EDECA), NJSA 48:3-49 et seq. contains two provisions that are affecting New Jersey's coastal zone. These are the Societal Benefits Charge and the Renewable Portfolio Standard. These, as well as the federal Production Tax Credit and other federal incentives have increased development interest in renewable energy sources, particularly large scale commercial facilities. In particular, the wind turbine industry has exhibited the greatest growth during this Assessment interval. Technological advancements enable wind turbines to produce more energy at a lower cost than ever before. Coupled with the aforementioned incentives, the new technologies enable companies to create large, profitable facilities. As is characteristic of the deregulated energy markets, the price of electricity depends on many factors, such as environmental regulation of fossil fuel powered facilities and the market demand for electricity. The northeastern United States is one of the largest consumers of electricity in the nation and because of the demand, experiences some of the highest electricity prices. These factors and the absence of large suitable areas of land for wind turbine facilities have increased the interest in siting facilities offshore.

This interest in coastal facilities is not limited to wind turbines. Recent decreases in the domestic supply of natural gas and its concomitant increase in cost have made electricity generation with gas fired generators more expensive. This in turn has increased the interest in Liquefied Natural Gas terminals as supplemental sources of natural gas from foreign suppliers. Currently, most of the LNG is tankered to the Gulf Coast and distributed by pipeline; however, there is substantial interest in locating facilities closer to the centers of demand. These market changes will require coastal managers to reevaluate and perhaps modify the criteria employed for environmentally sound, energy facility siting.

The NJCMP has identified offshore energy infrastructure development as a major emergent issue. Currently, many companies are exploring the feasibility of developing facilities along the East Coast. Recently, strong private interest has developed in the use of the Outer Continental Shelf (OCS) for non-traditional energy and energy-related projects, for example renewable energy and natural gas facilities, both liquid and compressed. In other parts of the country, interest has been shown for reuse of existing structures on the OCS for mariculture or recreation. Although individual energy infrastructure projects may not significantly impact New Jersey's coastal zone,

and while they may have less potential for adverse impact than oil and gas exploration and development, the cumulative impact of a number of projects can nonetheless, significantly affect the uses and resources of the coastal zone.

There are no specific federal criteria for siting facilities such as wind farms, no clearly articulated development approval process, and no mechanism for developers to gain property rights beyond the limits of state waters. The Energy Policy Act of 2005 directs the Minerals Management Service to modify their regulations for the OCS to address alternative uses, to resolve the gaps in siting criteria, and to set a timeline for instituting the changes. In anticipation of its new responsibilities under the Energy Policy Act, the OCS Policy Committee, which serves an advisory role to the Minerals Management Service, created a Subcommittee on OCS Alternative Energy/Use. This subcommittee held teleconferences to discuss various issues related to alternative uses on the OCS and made recommendations to the Policy committee. New Jersey's Coastal Program Manager served on the subcommittee and called for MMS to provide for an active state role on decisions regarding alternative uses of the OCS. MMS recently established new administrative boundaries in the ocean for planning and coordination with coastal states. The NJCMP does not believe that these boundaries accurately reflect areas where New Jersey has legitimate concerns regarding facility siting that warrant consultation with the State.

On December 23, 2004, then Governor Richard J. Codey signed Executive Order #12, creating a Blue Ribbon Panel on Development of Wind Turbine Facilities in Coastal Waters. The Panel is charged with identifying and weighing the costs and benefits, including economic and environmental factors, of developing offshore wind turbine facilities. The Panel also evaluated the need for offshore wind turbines and is comparing wind turbine technology with other electric power sources, including fossil fuel, nuclear, and renewable fuels as part of a comprehensive solution to the state's long-term electricity needs. The executive order prohibits funding and permitting of offshore windmill projects in New Jersey until the panel's 15-month study is complete. The Blue Ribbon Panel submitted their findings and policy recommendations to the current Governor Jon Corzine in May 2006. The NJCMP involvement in the Blue Ribbon Panel activities was funded by both Section 306 and 309 funds.

In April 2003, New York Governor George E. Pataki sent letters to the 11 governors from Maine to Maryland, inviting each state to participate in discussions involving the development within two years of a regional cap-and-trade program covering carbon dioxide emissions from power plants. By July 2003, the Governor had received positive responses from the governors of Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, Rhode Island, and Vermont. The governors agreed to have their representatives participate in the discussions. Thus was formed the Regional Greenhouse Gas Initiative (RGGI). After discussions began, representatives from the Eastern Canadian Provinces Secretariat and the Province of New Brunswick began participation as observers of the proceedings. Maryland and Pennsylvania also sent representatives as observers.

The RGGI action plan sets forth the goal of developing a multi-state cap-and-trade program covering greenhouse gas emissions. The program will initially be aimed at developing a program to reduce carbon dioxide emissions from power plants in the participating states, while maintaining energy affordability and reliability and accommodating, to the extent feasible, the diversity in policies and programs in individual states. After the cap-and-trade program for power plants is implemented, the states may consider expanding the program to other types of sources.

The action plan also establishes guiding principles for the program design. These principles include: emphasizing uniformity across the participating states; building on existing successful

cap-and-trade programs; ensuring that the program is expandable and flexible, allowing other states or jurisdictions to join the initiative; starting the program simply by focusing on a core cap-and-trade program for power plants; and focusing on reliable offset protocols (i.e., credits for reductions outside of the power sector) in a subsequent design phase. This creation of cap-and-trade will further drive the market for renewable energy sources.

All of the Northeast and Mid-Atlantic states are in various stages of studying methods or implementing programs to reduce greenhouse gas emissions. For example, in April 2000, New Jersey adopted a statewide goal of reducing greenhouse gas emissions to 3.5% below 1990 levels by 2005. Similarly, the New England governors and the Eastern Canadian premiers issued a Climate Change Action Plan in August 2001, which calls for the reduction of greenhouse gases to 10% below 1990 levels by 2020. New York's State Energy Plan calls for the reduction of the state's carbon emissions to 5% below 1990 levels by 2010 and to 10% below those levels by 2020. The regional cap-and-trade program will assist all participating states in reaching such state-specific goals.

The renewable portfolio standards rules, proposed by the New Jersey Board of Public Utilities in October 2005 (N.J.A.C. 14:8 –2) and adopted in April 2006, implement provisions of the Electric Discount and Energy Competition Act. These provisions require each electric power supplier or basic generation service provider that sells electricity to retail customers in New Jersey to include, in its electric energy portfolio, electricity generated from renewable energy sources. A company's energy portfolio is the combined energy generated or supplied by that company. The most significant amendment proposed implements the April 2003 Renewable Energy Task Force recommendation that the renewable energy percentage requirement be increased to 20% of a company's energy portfolio by 2020. This proposed change to the state renewable portfolio standards would drive interest in large-scale energy developments, with wind energy predicted to see the largest growth. The majority of wind facility proposals are expected to be in and offshore of New Jersey's coastal areas where sufficient wind speeds are found.

Development projects

As noted above, there have been an increasing number of energy projects proposed in New Jersey's coastal zone and Outer Continental Shelf during this Assessment interval. These projects range from wind farms, to LNG facilities, to electric transmission cables. Several of these projects are summarized below to highlight the need to address both onshore and offshore infrastructure in a broad policy context.

Neptune Cable project consists of a 600MW electric transmission cable running from Sayreville, New Jersey, under Raritan Bay, into the Atlantic Ocean then ashore in Long Island, NY. The main purpose of the cable is to transmit electricity from New Jersey to power constrained Long Island. Permits were issued for this project, but it has not yet been constructed.

The Atlantic County Utilities Authority wind project is the first coastal wind generating facility in the US and is located at the site of the Atlantic County Utilities Authority wastewater treatment facility near Atlantic City. Five 1.5 MW turbines were approved by NJDEP, and as of December 2005, four have been constructed. The facility is located near back-bay marsh habitat of various coastal avian species. Subsequently, the New Jersey Audubon Society sued the authority, resulting in a settlement to increase post-construction avian impact studies and conditions were imposed on the operation of the facility.

AmerGen Energy Company, LLC has applied to FERC to renew the license for the Oyster Creek Nuclear Generating Facility beyond its initial 2009 license expiration date. Oyster Creek is the

oldest operating nuclear generating facility in the US. Because the facility operates under a federal license, NJDEP will review the project under Federal Consistency provisions.

The Bald Eagle meteorological wind towers project proposed installation of nine meteorological towers offshore of New Jersey's coast each extending several hundred feet above the ocean surface and powered by wind. One of the structures would include a helicopter-landing pad. The project also proposed demonstration wind power fields, each comprised of 1-10 wind turbines. New Jersey found the proposal inconsistent with the State's enforceable policies on January 23, 2004.

Long Island Power Authority proposes the installation of 40 wind turbine generators, 3.6 miles south of Jones Beach, Long Island and 30 miles offshore of New Jersey. Each tower would extend several hundred feet above the ocean surface, with interconnecting submarine electrical cables, an offshore electric substation platform, and a submarine electric transmission cable leading from the offshore electric substation platform to Long Island. New Jersey requested review of the proposal under the unlisted activity provision of the Federal Consistency procedures. OCRM is awaiting more detailed information on the project prior to making a decision regarding New Jersey's assertion that the project has reasonably foreseeable effects on the uses and resources of its coastal zone.

Federal Consistency

Federal Consistency is the CZMA requirement that federal actions that are reasonably likely to affect any land or water use or natural resource of the coastal zone be consistent with the enforceable policies of a coastal state's or territory's federally approved coastal management program. A state CMP reviews the federal action to determine if the proposed action will be consistent with the CMP. The NJCMP list of federal actions was last updated in 1980. Additionally, the NJCMP has not listed interstate activities. The listing is necessary pursuant to 2001 amendments to the federal regulations for Federal Consistency, to enable the state to review interstate activities.

The Coastal Management Office staff has revised the 1980 lists of federal actions, federal permits and licenses, and federal assistance that would be subject to Federal Consistency and included a list of interstate activities that would be subject to Federal Consistency review. These lists were forwarded to OCRM's Federal Consistency Coordinator for review, as well as all federal agencies and the states of Delaware, Pennsylvania, New York, and Connecticut. The Coastal Management Office has discussed changes to the interstate listings with Delaware, New York, and Pennsylvania's Coastal Management Programs and with the federal agencies. Based on guidance received from OCRM, Coastal Management Office staff has drafted site maps, which identify the locations of federal actions in federal waters, and adjacent states. The Coastal Management Office has modified the lists based on comments received and is preparing the analysis of foreseeable coastal effects of the listed federal actions that is required as part of the program change request. Until the interstate listing submission is completed and approved, New Jersey cannot use Federal Consistency to address federal actions in adjacent states and federal actions in federal waters will be subject to Federal Consistency on a case by case basis. This was a Section 309 activity

Ocean Atlas

The New Jersey Ocean Atlas is a GIS based tool that is publicly available on the NJCMP website. The Atlas identifies critical areas and existing ocean uses. This GIS-based information will allow for more effective management of ocean resources, including project siting and future uses of ocean space.

The New Jersey Ocean Atlas is a dynamic GIS digital data tool that will be updated by the CMP as additional data layers are created or as new data relevant to ocean resource management becomes available. The Ocean Atlas is a current, comprehensive source of information for spatial ocean resources data. An up-to-date New Jersey Ocean Atlas will strengthen the NJCMP's ability to make informed decisions based on readily accessible data and also serve as a planning tool for stakeholders. The NJCMP's involvement with the Ocean Atlas is a Section 309 activity.

Conclusion

- 1. Identify priority needs or major gaps in addressing the programmatic objectives for this enhancement area that could be addressed through a 309 Strategy.*
- 2. What priority was this area previously and what priority is it now for developing a 309 Strategy and designating 309 funding and why?*

During the Assessment interval, the NJCMP has made strides in developing elements of an ocean resource management plan. The legal framework for managing ocean resources and uses has been identified, as have issues likely to affect New Jersey. As described above, development of policy regarding offshore wind development is underway, and ocean resources and uses have been mapped. Upon completion, the policy will be incorporated as enforceable policies of the NJCMP. The policy needs to effectively address the primary, secondary and cumulative impacts to marine and coastal uses and resources resulting from offshore energy infrastructure development and needs to further address the adequacy of the enforceable policies pertaining to onshore facilities. At present, there is a suite of individual rules that address ocean issues, but no single, comprehensive policy.

Another major gap in meeting the programmatic objectives for this enhancement area has to do with commercial fisheries. Commercial fishing is a major activity in New Jersey's coastal zone and contributes significantly to the state's economy in terms of jobs, capital and increasingly in-demand foods. Not only are the financial contributions of this industry important, but the fisheries also provide the more intangible value that reflects New Jersey's rich coastal heritage. A major issue facing fisheries is the increasing pressure for alternative uses of the OCS and the lack of quality spatial and temporal information regarding commercial fishing. Without such information it is difficult to adequately address the issues of alternative uses for areas of the OCS and to identify the potential conflicts new uses represent. A more complete understanding of the significant existing uses of the OCS is fundamental to properly directing alternative uses to minimize conflict.

As a result of the past nature of energy siting when the previous Assessment was undertaken and the cooperative nature of government facility siting, this entire enhancement area is rated as a low priority. However, since the previous Assessment, energy costs have increased markedly causing increased interest in exploring alternative sources of energy. As a consequence, coastal managers must appropriately alter how they address the new patterns of facility siting. The rapidly evolving nature of the energy sector requires a shift in the priority placed on the need, planning, and siting of future facilities.

The alternative uses of the OCS and accompanying designation of administrative boundaries by MMS is a major issue for the NJCMP. Alternative energy sources have received far greater attention in the past few years as a result of increasing prices for traditional energy sources and the many incentives for producing such energy. This has driven interest in developing large-scale alternative energy projects. The passage of the Energy Policy Act of 2005 is an initial step in

addressing the regulatory and ownership shortcomings of past energy policy and the Act established MMS as the lead agency for regulating alternative uses of the OCS. Consequently, MMS is drafting regulations and involving affected states in the process. At the same time, MMS has set new federal OCS administrative boundaries for areas beyond state submerged lands. MMS indicates that these boundaries are to be used for Department of the Interior planning, coordination, and administrative purposes. The NJCMP must take a proactive role in the coming years to ensure that the impacts to the state's resources and uses are minimized while simultaneously ensuring that any alternative use of the OCS benefits the state. An initial step will be to ensure that affected states are an integral part of the process established by MMS.

The alternative use of the OCS and the recent designation of administrative boundaries by MMS are major concerns that must be addressed by the NJCMP. Although there are moratoria until 2012 preventing offshore oil and gas exploration and production off New Jersey's coast, that deadline is approaching and legislation is now being considered that would open parts of the OCS to those activities. MMS recently requested comments on including the Mid- and North Atlantic planning areas into the 5-year planning process. This places renewed emphasis on the need for New Jersey to reevaluate its enforceable policies with regard to offshore oil and gas.

Last Assessment

High _____
 Medium _____
 Low X

This Assessment

High _____
 Medium X
 Low _____

The Energy and Government Facility Siting enhancement area is rated medium in this 309 Assessment. The NJCMP anticipates that for the foreseeable future, the focus of interest in siting energy facilities will involve offshore locations. Consideration of energy facility siting is provided in the Ocean Resources enhancement area section and will be addressed as an aspect of Ocean Resources. Consequently, no Strategy is provided for the Energy and Government Facility Siting enhancement area.

Marine Debris

Section 309 Programmatic Objectives

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

Marine/Lake Debris Characterization

1. In the table below, characterize the extent of marine/lake debris and its impact on the coastal zone.

Source	Impact (significant/moderate/ insignificant)	Type of Impact (aesthetic, resource damage, etc.)
Combined Sewer Overflows (CSO's)	Moderate	Aesthetic, Resource damage, Water quality
Stormwater outfalls	Significant	Aesthetic, Resource damage, Water quality
Boat Littering	Insignificant	Aesthetic, Resource damage
On Shore Littering	Significant	Aesthetic, Resource damage
Landfills	Insignificant to moderate	Aesthetic, Resource damage, Water quality

2. If any of the sources above or their impacts have changed since the last Assessment, please explain.

In the current Assessment, Combined Sewer Overflows (CSO) has changed from a significant source of marine debris to a moderate source. As a result of the 1988 Sewage Infrastructure Improvement Act (SIIA) in New Jersey and the 1994 EPA National CSO Policy, New Jersey has realized a significant reduction in marine debris entering coastal waters from CSO. This reduction has continued over the last 5 years.

To assist communities in their efforts to control the discharge of solids/floatables materials, the New Jersey Department of Environmental Protection (NJDEP), under the SIIA, has provided planning and design grants for up to 90% of the eligible costs. To date, NJDEP has awarded over \$8.9 million in planning grants and \$18.2 million in design grants. NJDEP has also awarded \$182 million in loan money for the construction of the required solids/floatables control facilities.

Currently, SIIA planning and design activities have been completed for all known CSO points. Eighty percent of the planned CSO solids/floatables control facilities have been completed and are operating. Currently, about 200 of the anticipated 250 solids/floatables control facilities have been constructed and are operating. Based upon the data collected, it is estimated that at each CSO Point with a solids/floatables control facility, an average of 3 tons per year of solids/floatables is captured and disposed of. Using this as a guide, it is projected that approximately 700 to 750 tons per year of solids/floatables materials will ultimately be captured

and prevented from entering waters of the state once all of the solids/floatables control plants have been constructed and are in operation.

Other provisions in the SIIA required that 94 coastal municipalities map ocean and tidal water outfalls, their sewer systems and provide bacterial monitoring at those identified outfalls four times per year. The SIIA appropriated \$33.5 million to carry out its purposes. Of that money, \$6 million was used for storm sewer mapping in the form of grants, ranging from \$26,000 to \$183,000, to the 94 municipalities with outfalls to tidal waters. Although the grant funding for municipalities was, in most cases, insufficient to pay for the complete project, all but 7 municipalities complied with the mapping requirement. The passage of the SIIA was followed shortly by the State Mandate State Pay legislation and NJDEP is currently reevaluating compliance options. Thus far 150 ocean outfalls have been mapped and approximately 7,700 estuarine outfalls have been mapped under the program.

For this Assessment, on shore littering has been elevated from an insignificant source of marine debris, to a significant source. As much as 80% of marine debris in coastal waters and on beaches stems from sources on land. While some of the debris is deposited directly in waterways, most of it enters estuaries, coastal waters, and the ocean from storm drains, rivers, and streams. Annually, New Jersey spends \$1,500,000 to clean beaches and \$40,000 to retrieve debris from the NY/NJ Harbor.

3. Do you have beach clean-up data? If so, how do you use this information?

NJDEP collects beach clean-up data through its Clean Shores (inmate labor) and Adopt A Beach (volunteer) programs, and in conjunction with the Ocean Conservancy's International Coastal Cleanup Day. The data collected on Coastal Cleanup Day is compiled into a report with data collected from around the country and the world. The report has been submitted to the US Congress in recent years, because it provides useful information for crafting legislation. At the State level, NJDEP uses all of its cleanup data for outreach and educational purposes to both discourage littering and encourage voluntary cleanups. To date, the Clean Shores Program has collected more than 54,500 tons of debris, while the Adopt A Beach program has removed over 900,000 items of debris from the state's beaches and shorelines.

Management Characterization

1. For the categories below, identify significant state ocean/Great Lakes management programs and initiatives developed since the last Assessment:

- * State/local program requiring recycling*
- * State/local program to reduce littering*
- * State/local program to reduce wasteful packaging*
- * State/local program managing fishing gear*
- * Marine debris concerns incorporated into harbor, port, marina, and coastal solid waste management plans*
- * Education and outreach programs*

Two sets of new stormwater rules were signed by the Commissioner on January 6, 2004 and were published in the February 2, 2004 issue of the New Jersey Register. Together the two rules establish a comprehensive framework for addressing water quality impacts associated with existing and future stormwater discharges. These rules include the Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program Rules (N.J.A.C. 7:14A) and the Stormwater Management Rules (N.J.A.C. 7:8). NJCMP participation in the April 2006 request for a program change regarding these rules was funded by Section 306 and 309 grants.

2. *For the changes identified above provide a brief description of the change:*

- * *Characterize the scope of the change*
- * *Describe recent trends*
- * *Identify impediments to addressing the change*
- * *Identify successes*

While derelict fishing gear and derelict vessels contribute to marine debris in a limited way, the largest remaining contributors of marine debris in New Jersey's waters are from stormwater/nonpoint sources. Opportunities to engage in boating, swimming and fishing are diminished if water quality is impaired by marine debris. Most of the trash on beaches and in coastal waters is not left there by beach-goers and boaters, but instead is deposited on the beach by wind and tides. Rainwater runoff from streets into storm sewers is a significant source of this trash. Many residents do not understand that trash that enters the storm sewer can end up as marine debris. The changes made to the two rules address this source as it exists today and as development occurs into the future.

Phase II New Jersey Pollutant Discharge Elimination System Stormwater Rules (N.J.A.C. 7:14A)

These Rules are intended to address and reduce pollutants associated with existing stormwater runoff and they establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. This program addresses pollutants entering waters, including coastal waters, from storm drainage systems owned or operated by local, county, state, interstate or federal government agencies. These systems are called “municipal separate storm sewer systems” (MS4s).

Under this program permits must be secured by municipalities; certain public complexes such as universities and hospitals; and state, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances; the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component. This program will help to reduce marine debris by educating the public and by implementing best management practices throughout municipalities.

Stormwater Management Rules (N.J.A.C. 7:8)

These Rules set forth the required components of regional and municipal stormwater management plans, and establish the stormwater management design and performance standards for new (proposed) development. These standards for new development set forth requirements for groundwater recharge, stormwater runoff quantity control and a buffer adjacent to Category One waters and their immediate tributaries.

The regulatory programs that apply these rules include local approvals under the Municipal Land Use Law, and NJDEP permits under the Flood Hazard Area Control Act (Stream Encroachment), Freshwater Wetlands Protection Act, Coastal Area Facility Review Act (CAFRA) and the Waterfront Development Law. The rules do not expand or create new jurisdiction for these existing permit and approval processes; rather they establish certain environmental performance standards to be met once the requirements of the rules have been triggered by a development proposal or permit application.

By providing specific guidelines for new developments, these rules alleviate problems associated with stormwater runoff, including the introduction of debris into the marine environment. There is and will continue to be much new development along the coast of New Jersey. As this development occurs, site designs will now include features that help to prevent the accumulation and eventual transfer of debris from drainage systems into coastal waters.

Conclusion

1. *Identify priority needs or major gaps in addressing the programmatic objectives for this enhancement area that could be addressed through a 309 Strategy.*

As was outlined in the prior 309 Assessment, New Jersey has a significant number of programs in place to meet the programmatic objectives of this enhancement area. Many of these programs, in place since the 1980's, have been updated and managed effectively and have contributed to the reduction of marine debris in coastal waters of the state. In concert with programs established by the EPA and NOAA, continued implementation of New Jersey's programs with the changes that have occurred in the management of these programs, further improvements in this enhancement area is anticipated. The state's public education and outreach regarding litter and marine debris continue to serve as effective means of reducing the sources of litter in the marine ecosystem.

Because of new management measures that have been implemented to address sewage management, the impact of CSOs depositing marine debris into coastal waters has been reduced. While there are still regions affected by CSOs, elimination of these overflows will involve long-term control plans costing billions of dollars and the cooperation of various levels of government throughout the state. The changes to stormwater management rules described above are likely to lead to future reductions in the impact of marine debris due to stormwater systems.

2. *What priority was this area previously and what priority is it now for developing a 309 Strategy and designating 309 funding and why?*

Last Assessment

High _____
 Medium _____
 Low X

This Assessment

High _____
 Medium _____
 Low X

This enhancement area continues to receive a low priority rating in this Assessment since there are numerous existing programs in place to address this issue. New Jersey has made significant progress over the past 25 years in addressing marine debris through the implementation of programs referenced in the prior Assessment in addition to those addressed above. This enhancement area will continue to be addressed by NJDEP until adequate floatables reduction/elimination programs are fully implemented at the source levels.

Comprehensive inspections and enforcement of water quality requirements, as well as improved public education have contributed to the progress in reducing the impacts of marine debris. Continued planning, coordination and outreach between NJDEP and local agencies should further improve the progress in addressing the marine debris issue.

Since the NJCMP is not proposing to expend Section 309 funds on marine debris activities, no Strategy is provided for this enhancement area.

Ocean Resources

Section 309 Programmatic Objectives

- I. *Develop and enhance regulatory, planning, and intra-governmental coordination mechanisms to provide governmental coordination mechanisms to provide meaningful state participation in ocean resource management and decision-making processes.*
- II. *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. These plans should consider, where appropriate, the effects of activities and uses on threatened and endangered species and their critical habitats.*

Resource Characterization

1. *In the table below, characterize ocean resources and uses of state concern and specify existing and future threats or use conflicts.*
2. *Describe any changes in the resources or relative threat to the resources since the last Assessment.*

Resource or Use	Threat or Conflict	Degree of Threat	Anticipated Threat or Conflict
Fish stocks (including shellfish)	Contaminant loading Habitat issues Bycatch Overfishing	H	Habitat degradation Increased contaminant loading/fish advisories
Fisheries (commercial and recreational)	Loss of access to fishing grounds	H	Loss of access to fishing grounds
Living marine resources	Algal blooms	M	Hypoxia or harmful organisms
Sand mining for beach nourishment	Fish and shellfish habitat disturbance and destruction	M	Increasing demand for beach nourishment
Sand mining for commercial aggregates		L	Renewed interest for offshore sand, Fish and shellfish habitat disturbance and destruction
Artificial reefs	Habitat modification	L	Overfishing due to fish congregation Conflict with marine mineral utilization Placement/aggregation of unsuitable material
Telecommunication cables	Loss of fishing grounds due to spatial conflicts	L	Additional loss of fishing grounds due to spatial conflicts if new cables are installed
Alternative Uses of OCS		H	Secondary & cumulative impacts, Increase loss of fishing grounds use conflicts, habitat degradation, mortality and displacement

Dredged material placement in the Historic Area Remediation site(HARS)	Bioaccumulation of contaminants	L	Food chain impacts
Oil and gas exploration	None at the present time, Oil and Gas Moratorium in place until 2012 MMS 5yr planning Call for Information	M	Oil spills and drilling discharges Spatial use conflict Onshore impact from offshore activity. Exploration impacts, Marine pollution
Water Quality Bathing Boating	Marine debris and floatables on the beach Contaminated stormwater from stormwater outfalls and non-point sources	L	Tourism and health related impacts Beach Closures Marine pollution affecting birds, mammals and marine organisms
Marine mammals and Turtles	Incidental fishing takes Vessel strikes Entrainment and impingement in sand dredging gear	M	Increased alternative uses of OCS

Prime Fishing Areas: The increasing coastal population and reliance on the commercial and recreational benefits of the ocean highlight the importance of proper ocean management. The marine waters off New Jersey's coast are used for diverse purposes, including mineral extraction, dredged material disposal/restoration, navigation, military/national security operations, research, and commercial and recreational activities. These competing uses for a public resource have the potential to conflict with one another. Although substantial information exists regarding the distribution and migration of fish species, information regarding fishing grounds off New Jersey's coast is outdated. The first effort to map this information was undertaken by the New Jersey Department of Environmental Protection's (NJDEP) Bureau of Marine Fisheries in the 1980s. The resulting information identified many areas of significant recreational and/or commercial importance. With the passage of 20 years since the initial project and the increase of both recreational and commercial fishing efforts, the Bureau of Marine Fisheries concluded that the initial mapping may not have identified all the significant areas currently fished. In 2002, the New Jersey Coastal Management Program (NJCMP) using NOAA 309 grant money, partially funded a new survey to map the areas that recreational fishermen consider significant fishing areas.

Sand mining for Commercial Aggregates: As a result of diminished interest in commercial mining of aggregates offshore during the past 5 years, the status of this use is reduced to low.

Telecommunication Cables: There was a flurry of activity in the late 1990's with the installation of a number of cables. However, as a result of changes in the telecommunications industry over the last five years, activity in this sector has fallen off; therefore, this use is changed to a low rating

Alternative Uses of the Outer Continental Shelf: Increased demand for alternative uses such as energy production, energy transmission, aquaculture and mineral utilization could have profound effects not only on the natural resources of New Jersey's coastal zone but could directly impact various existing uses that are vital to New Jersey. Commercial Fishing plays an important role in New Jersey's maritime industry and makes a significant contribution to the state's economy. If navigation is impeded by new uses, the impact on New Jersey's economy could be significant. Not only could the construction and operation of new facilities on the Outer Continental Shelf (OCS) have a negative impact on the natural resources found there, but also the secondary impacts and increased risk of ship collisions could prove deleterious to marine life.

Dredged material management: On May 4, 2003, legislation was adopted that prohibits the NJDEP from permitting or otherwise authorizing in State waters the transport of dredged material for the purpose of placing or dumping of such material into State waters of the Atlantic Ocean at a site designated for remediation if the material is found to exceed 113 parts per billion of polychlorinated biphenyls in the tissue of worms tested and analyzed in accordance with the applicable federal procedures, or a level subsequently determined by NJDEP Commissioner to be more protective of human health and the environment. This law was incorporated into the NJCMP as an enforceable policy in 2003.

Ocean water quality: The NJCMP received NOAA approval of its Coastal Nonpoint Pollution Control Program (prepared pursuant to Section 6217 of the Coastal Zone Management Amendments). All of the conditions for full program approval have been met except for one condition regarding inspections of Onsite Sewage Disposal Systems. Most significantly for ocean water quality, all of the conditions regarding stormwater have been met due to the promulgation of NJDEP's stormwater regulations. The number of beach closings continues to decline. New Jersey continues to have a model program for beach monitoring. In addition, the State has made substantial progress in eliminating floatables from coastal waters through controls on combined sewer outfalls, Operation Clean Shores, and increased awareness of non-point pollution controls. Please refer to the Marine debris section for an overview of the Stormwater Regulations impact.

Oil and Gas: Although the regions offshore New Jersey continue to fall under moratoria until 2012, there has already been significant interest in commencing oil and gas exploration on the OCS. Recently MMS requested comments on including the areas under moratoria into the 5 year planning process and on the idea of gas only leasing. This renewed interest and looming end of the moratoria increase the potential for oil and gas exploration and development and the associated threats to the resources and uses of New Jersey's Coastal Zone.

Management Characterization

1. *Identify state ocean management programs and initiatives developed since the last Assessment.*
 - *Statewide comprehensive ocean/Great Lakes management statute*
 - *Statewide comprehensive ocean/Great Lakes management plan or system of Marine*
 - *Protected Areas*
 - *Single purpose statutes related to ocean/Great Lakes resources*
 - *Statewide ocean/Great Lakes resources planning/working groups*
 - *Regional ocean/Great Lakes resources planning efforts*
 - *Ocean/Great Lakes resources mapping or information system*
 - *Dredged material management planning*
 - *Habitat research, assessment, monitoring*

- *Public education and outreach efforts*
2. *For categories with changes:*
- *Summarize the change*
 - *Specify whether it was a 309 or other CZM driven change and specify funding source*
 - *Characterize the effect of the changes in terms of both program outputs and outcomes*

During the past 5 years various initiatives have been carried out by NJDEP to address the needs of comprehensive ocean management planning, ranging from working groups to statutes directly addressing needs arising related to ocean resources. As discussed in greater detail in the Energy and Government Facility sitting section, there have been many initiatives to address the increased interest in alternative uses of the OCS and the impacts such uses would have. During the past five years the Program has been directly involved in ocean resource mapping such as the Ocean Atlas and the Prime Fishing Areas mapping. Both of these 309 funded initiatives are key in the NJCMP's role of balancing management of uses with resource protection, while insuring multi-use conflict is minimized. For example, the Program assembled NJDEP's internal working group on offshore wind in order to address emerging policy issues associated with the push for offshore wind turbines. The Program continues to participate with the Governor's Blue Ribbon Panel on Development of Wind Turbine Facilities in Coastal Waters. These are key elements of the Program's ocean resource planning efforts. The State also has representatives on both MMS's OCS Policy Committee and the Subcommittee on Alternative Uses of the OCS, playing a pivotal role in the State's ability to shape the response to regional issues regarding the OCS.

The Program has also been involved in other aspects of ocean resource management not directly linked to Alternative Uses. As discussed above, the State's incorporation of the PCB Legislation into its enforceable policies provides another tool to protect water quality, reduce habitat degradation and bioaccumulation of toxins. Preparation of the request for a program change was a Section 306 activity. During this time, NJDEP released a draft revision of its Artificial Reef Plan to address issues such as material suitability to ensure the highest quality materials are used that would minimize any adverse impacts associated with their use. The program continues to use its website as a portal for information, including factsheets and other releases. During 2005 the NJCMP, employing Section 306, 309, and 310 funding, worked with the former Governor to release the New Jersey Coast 2005 initiative, which, among other coast related issues, committed NJDEP to strengthening standards for ocean discharges, while implementing measures to prevent sewage spills through maintenance and upgrades as discussed in the Marine Debris section. Ocean water quality, from the perspective of beach closings and tourism, continues to be addressed. The majority of beach closings impacting New Jersey stem from issues associated with Wreck Pond discharges during rain events. New Jersey Coast 2005 pushed the implementation of remediation efforts to address the problem. NJDEP's four-point plan to improve water quality and to reduce the impacts of the pond's discharge on neighboring beach areas, is comprised of the following elements:

- Dredging of Wreck Pond and Black Creek to remove sediment;
- Stormwater management measures to stem sediment and bacteria loading in Wreck Pond;
- Extension of the pond outfall pipe to move the mixing zone further offshore and reduce sand movement into the pond; and
- Wildlife management measures to reduce fecal loadings that affect water quality.

Once this initiative is completed and coupled with the various elements of the Stormwater Regulations, the NJCMP expects a reduction in the already low number of beach closings resulting from water quality issues.

Conclusion

- 1. Identify priority needs or major gaps in addressing the programmatic objectives for this enhancement area that could be addressed through a 309 Strategy.*
- 2. What priority was this area previously and what priority is it now for developing a 309 Strategy and designating 309 funding and why?*

During the Assessment interval, New Jersey developed elements of an Ocean Resource Management Plan. The tasks involved identifying and mapping current uses (prime fishing areas, submerged cables), identifying the federal and State legal framework for managing ocean resources and uses, and identifying the uses anticipated to affect New Jersey's waters. In addition, New Jersey has been coordinating with other states and federal agencies with jurisdiction over ocean resources and uses of the ocean bottom. While a great deal of information was collected and mapped, more information is needed and policy issues remain unresolved. Moreover, during the current Assessment interval, there was renewed national interest in exploration for oil and gas reserves; and new interest in developing offshore alternate energy facilities, such as wind turbines; and the development of commercial ocean finfish aquaculture. The Energy Policy Act of 2005 modified authorities for energy-related issues, including alternate energy facilities on the OCS. How this modified authority will impact the coastal states is still not entirely clear.

Establishment of offshore wind development policy is progressing. NJCMP believes that the development of policy with regard to offshore alternate energy facilities and coordination of existing authorities would be more effectively addressed under an Ocean Resources Strategy rather than an Energy Facility Siting Strategy. Currently, several different rules address ocean issues. The NJCMP intends to create a single comprehensive policy that effectively address the primary, secondary and cumulative impacts to marine and coastal uses and resources resulting from offshore energy infrastructure development and will further address the adequacy of the enforceable policies pertaining to onshore facilities. However, completion of a comprehensive policy is hindered by insufficient data regarding the offshore distribution of birds, mammals, and turtles. When this essential information becomes available, the NJCMP will complete the policy development and incorporate the comprehensive policy into the Program's enforceable policies.

Another major gap in meeting the programmatic objectives for this enhancement area relates to commercial fisheries. Commercial fishing is a major activity in New Jersey's coastal zone and contributes significantly to the state in terms of jobs, capital and increasingly in-demand foods. Not only are the economic aspects of this industry important to New Jersey, the fisheries are also part of the state's rich coastal heritage. A major issue facing fisheries is the increasing potential for conflicts with alternative uses of the OCS and the lack of quality spatial and temporal information regarding commercial fishing. Without such baseline data, it is difficult to address the issues of alternative uses and to identify the potential conflicts new uses of the OCS constitute. Additionally, water dependent facilities such as commercial marinas and dry docks are being displaced by housing and private marinas. Consequently, recreational party and charter boats and commercial fishing fleets are experiencing decreasing dock space along New Jersey's rapidly developing coast.

New Jersey has been actively involved in ocean management initiatives at the federal level including commenting on the U.S. Ocean Commission Report and proposals for Integrated

Ocean Observing Systems, as well as reviewing the Advance Notice of Proposed Rulemaking by the Minerals Management Service for Alternate Uses of the Outer Continental Shelf. NJCMP considers alternative uses of the OCS and accompanying designation of administrative boundaries by MMS as a major issue. Alternative energy sources including the development of large-scale alternative energy projects, have received far greater interest in the past few years as a result of increasing prices for traditional energy sources and the many incentives for producing energy from alternative sources. The passage of the Energy Policy Act of 2005 is an initial step in addressing the regulatory and ownership shortcomings of past energy policy. The Act established MMS as the lead agency for regulating alternative uses of the OCS. As a result, MMS is drafting regulations and involving affected states in the process. As part of this process, MMS has delineated new federal OCS administrative boundaries for areas beyond states' submerged lands. MMS maintains that these boundaries are intended for Department of the Interior planning, coordination, and administrative purposes. The NJCMP will actively seek to ensure that the impacts to the state's resources and uses are minimized while alternative uses of the OCS benefit the state. To achieve this, the NJCMP will remain an integral part of the process established by MMS.

Offshore oil and gas issues remain on hold until 2012; but that deadline is approaching and the moratoria have been increasingly challenged. MMS recently requested comments on including the Mid- and North Atlantic planning areas into their 5-year planning process. This places renewed emphasis on the need for New Jersey to reevaluate its enforceable policies with regard to offshore oil and gas.

Finally, as a result of the changes in the nature and level of interest in ocean based activities off New Jersey's coast, the rating of the Ocean Resources enhancement area has been elevated to high.

Last Assessment

High _____
 Medium X
 Low _____

This Assessment

High X
 Medium _____
 Low _____

Ocean Resources Enhancement Area Strategy

Proposed Program Changes and/or Implementation Activities

The NJCMP will work with MMS on the creation and implementation of a MMS sponsored program on Alternate Energy-Related Uses of the Outer Continental Shelf. The NJCMP had a representative on the MMS subcommittee for Alternate Uses of the OCS. In NJDEP's recent comments on the MMS Advance Notice of Proposed Rulemaking for Alternate Uses of the OCS, urged that the proposed rulemaking ensure coordination, consultation and cooperation between MMS and the coastal states regarding alternate uses and development of alternate energy sources on the OCS.

Recommendations from the Governor's Blue Ribbon Panel on the Development of Wind Turbine Facilities in Coastal Waters were released in May 2006. The Panel's report was a collaborative effort of representatives from various state agencies, academia and environmental groups. NJCMP will have a lead role in implementing the recommendations selected by the Governor. Implementation of the recommendations will require coordination between programs and agencies to address new technologies and modification or creation of enforceable policies to address the design, review, construction and monitoring of offshore alternate energy and land-

based support facilities. For example, enforceable policies put in place to address submerged telecommunications cables can be used as a starting point to develop comparable policies that address the installation of submerged electric cables (that will transfer energy from offshore).

As previously noted, during the Assessment interval (2001-2005) New Jersey began developing elements of an Ocean Resource Management Plan which included identifying and mapping current uses (prime fishing areas, submerged cables) and offshore resources. However, there are still major gaps in information that will be required to develop or enhance new policies and to inform decision making on ocean resources, uses and their management. The NJCMP will work with various stakeholders to develop new spatial and temporal data sets. Developing a coordinated and balanced approach to ocean resource management will require the NJCMP to work with various State and federal agencies such as the MMS, National Marine Fisheries Service, and US Fish and Wildlife Service, and academic institutions to collect and map data. This data will not only help to inform the development of enforceable policies and decision making but will also aid the NJCMP in tracking information to respond to the NOAA Performance Measurement System.

Anticipated Effect of the Program Changes and Implementation Activities

The anticipated effect of the refinement and creation of enforceable policies to address the growing interest in alternate uses of the ocean will be improved coordination with State and federal agencies, greater transparency in decision making and clear guidance for applicants. The collection and analysis of data will contribute to the continued development and enhancement of New Jersey's Ocean Resource Management Plan and will help to inform the decision-making process as well as providing information to the public on the suitability of a site prior to project application.

Appropriateness of Program Changes and Implementation Activities

The NJCMP approach to addressing Ocean Resources Management focuses on the development and enhancement of regulatory, planning, and governmental coordination mechanisms to provide meaningful participation in ocean resource management and decision-making processes. To achieve success the NJCMP intends to continue to develop and enhance an ocean resource management plan that addresses expanded and new development in the ocean, coordination of existing authorities, and minimization of conflicts with ocean resources and existing uses. New Jersey will continue to involve government, industry and user groups to ensure that enforceable policies are developed with consideration of stakeholder concerns.

Work Plan

The Work Plan for the tasks under Ocean Resources Management is expected to span the entire 309 Strategy interval. The tasks include data collection and assessment, inter-governmental coordination, existing policy review, policy enhancements, drafting of new policies and standards, proposal and adoption. In addition to these specific tasks the NJCMP will continue to coordinate the Department's responses to new and emerging issues and initiatives involving ocean resources. These initiatives may include greater involvement in the development of Integrated Ocean Observing Systems and responding to inquiries for the development of new technologies and uses of the ocean off the New Jersey coast.

Task 1: Develop Strategy for Alternate Uses of the Outer Continental Shelf and Commercial and Recreational Fishing.

- A. Develop a strategy for shared management of critical resources and habitats and other ocean uses such as commercial and recreational fishing in concert with appropriate federal and State agencies.
- B. Examine existing ocean management measures and strengthen review of alternate uses.
- C. Conduct commercial fishing resources mapping.

Comment: In recognition that any new or developing ocean use will require a coordinated approach to protect critical resources and habitats and other ocean uses including commercial and recreational fishing, the NJCMP will work with the various federal and State agencies to coordinate a strategy for shared management. The NJCMP will work to ensure State participation in deciding management and decision-making processes effecting New Jersey's coastal zone. In addition, the NJCMP will identify appropriate changes to existing management measures and enforceable policies to ensure careful review of proposed alternate uses, considering protection of existing uses and ocean resources. Information pertaining to the spatial and temporal distribution of commercial ocean fishing will become all the more important as there is more demand for alternate uses of the ocean. The NJCMP proposes to partner with the NJDEP's Fish and Wildlife Division, National Marine Fisheries Service (NMFS) and various academic researchers to engage the commercial fishing community in the identification of areas of particular importance to maintaining the viability of commercial and recreational ocean fishing. One possible approach to data analysis is to use existing Vessel Trip Reporting (VTR) data collected by NMFS to better understand the New Jersey's commercial fishing industry. Upon collection and analysis of the information, the resulting data may be incorporated into enforceable policies regarding ocean uses and into New Jersey's Ocean Atlas.

Task 2: Establish Criteria and Guidelines for Submerged Electric Transmission Cables.

- A. Develop criteria and guidelines for placement of submerged electric cables.
- B. Provide for public review of the criteria and guidelines.
- C. Propose and adopt the criteria and guidelines for the placement of submerged electric cables.

Comment: Development of offshore alternate energy sources will require the transmission of the energy to land as well as interconnection between offshore facilities. The NJCMP anticipates working with industry, federal agencies and stakeholders to establish guidelines and criteria for the proper placement of submerged electric cables. Enforceable policies will be drafted, vetted through a public review process, proposed and adopted.

Summary of Estimated Costs and Work Plan Timeline

It is anticipated that the NJCMP will address three or four of the 309 resource areas per year through the CZM grant. Based on previous funding allotments it is estimated that one Section 309 funded FTE per year for FY 2006 - 2010 will be devoted to implementation of tasks identified under Ocean Resources Management. The funding allotment is inclusive of the salaries of professional staff and (as applicable) contracting specific non-staff professional services.

- Year one (2006) and two (2007):
 - Data collection and inter-governmental coordination tasks will be the first tasks addressed in order to facilitate an understanding of the issues and resources potentially impacted by development of alternate uses of the ocean.

- Year three (2008) and four (2009):
 - Inter-governmental coordination activities will continue as standards and enforceable policies are developed, vetted, proposed
- Year five (2010)
 - Enforceable policies adopted and implemented.

Public Access

Section 309 Programmatic Objectives

- I. Improve public access through regulatory, statutory, and legal systems.*
- II. Acquire, improve, and maintain public access sites to meet current and future demand through the use of innovative funding and acquisition techniques.*
- II. 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.*
- IV. Minimize potential adverse impacts of public access on coastal resources and private property rights through appropriate protection measures.*

Resource Characterization

Extent and Trends in Providing Public Access (publicly owned or accessible):

- 1. Provide a qualitative and quantitative description of the current status of public access in your jurisdiction. Also, identify any ongoing or planned efforts to develop quantitative measures to assess your progress in managing this issue area.*

With its numerous rivers and bays, in addition to the Atlantic shoreline, New Jersey boasts over 1,000 miles of coastline that today is used for residential, industrial, commercial and recreational purposes. New Jersey's variety of waterfronts includes urban shorelines (tidal rivers and bays), residential ocean beachfront, residential bay front and open space waterfront. The urban waterfront has experienced dramatic changes over the years as former industrial sites have been redeveloped into residential communities. Many previously sites inaccessible are receiving new life as public parks and walkways.

Along the ocean, public access is largely available via street end accessways that lead to a boardwalk or directly to a beach, often with dune crossovers, particularly as beach nourishment projects restore dune systems across the state. Highly developed residential backbay communities offer considerably less public access opportunities as access is often limited to visual or fishing access at street ends. There are some instances of parks along the tidal rivers and backbays, and many marinas and other commercial establishments offer boating and other access opportunities there. Larger open bays offer more public access opportunities including beaches and areas for launching boats and other recreational watercraft. Through land acquisition programs like the Coastal and Estuarine Land Conservation Program and the New Jersey Department of Environmental Protection's (NJDEP) Green Acres Program, more open space has been preserved and is open to the public.

Despite such efforts to preserve open space statewide, development has also continued to increase, particularly along the coast, threatening public access. Through NJDEP's CAFRA, Waterfront Development and Coastal Wetlands permitting programs, coastal permits that are granted include conditions that require public access to help offset losses that may be incurred as new development occurs. NJDEP now tracks all access requirements included in coastal permits in its database NJEMS, which will allow for follow-ups and enforcement actions to secure easements and ensure compliance.

There is anecdotal evidence of a growing nationwide trend for developers to convert hotels in popular tourist areas into individually owned condominiums. As a historically popular tourist

destination and with its now-booming residential development, the New Jersey shoreline is a highly likely location for such conversions. With diminishing availability of short-term lodging, the non-resident public would find it increasingly difficult to arrange oceanfront accommodations, and thus the opportunity for ocean access by the general public would diminish.

Conflicting interests between private landowners along the shore and the general public have increased with development and has resulted in a number of recent court cases throughout the state, including one that was decided at the State Supreme Court (*Raleigh Avenue Beach Association v. Atlantis Beach Club, inc. et al.*, (185 N.J. 40 (2005))). In this case the Court ruled that the owner of a private beach club could not limit public access to its beach. These cases increase general awareness of the public access issue and publicizes the State's efforts to protect the public trust and State's mission to encourage public access. Further, in 2005, New Jersey's previous Governor announced an initiative on coastal issues that includes promotion and protection of coastal public access.

NJDEP completed a GPS inventory of all public access sites along the 127-mile long Atlantic coast, including notations of amenities such as lifeguards and parking. There are currently over 1,300 accessways identified along the Atlantic Ocean and the effort to inventory accessways will resume along the bays and urban tidal rivers of the state. The information obtained will be provided to the public free of charge on an NJDEP website that will include each site's location, amenities, and a description of the municipalities in which the points are found. The accessways recorded as part of the inventory, while useful public information, were recorded based solely on observation of current use and available signage, and do not reflect ownership or easements. As development pressures increase throughout coastal communities, such sites may be lost to the public.

2. Briefly characterize the demand for coastal public access within the coastal zone, and the process for periodically assessing public demand.

New Jersey's coastal waters and adjacent shorelines are a valuable but limited public resource. While it is the fourth smallest state in the country, New Jersey, with approximately 1,135 people per sq. mi., has the highest population density of any of the 50 states. With the entire population living within 50 miles of the coastline, in addition to the region being a major tourist destination for two of the largest metropolitan areas in the country (New York City and Philadelphia), demand for public access is extremely high. As significant residential development continues to occur in the southern coastal counties and redevelopment of urban coastal areas takes place statewide, some traditional accessways are being restricted or even lost, while demand for access continues to increase. Further, it is expected that demand for access along the oceanfront beaches will continue to increase as a result of the ongoing federal-state beach nourishment program, which creates more usable beaches. These large-scale beach nourishment projects are funded through a combination of federal, state, and local cost-shares. Providing and maintaining access to the newly nourished beaches is critical.

The Public Trust Doctrine, which was enunciated by the New Jersey Supreme Court in several court decisions, requires that tidal water bodies be accessible to the general public for navigation, fishing and recreation. The Court has recognized the "increasing demand for our State's beaches and the dynamic nature of the Public Trust Doctrine" and found that the public must be given both access to and use of privately owned dry sand areas as reasonably necessary to use the tidal water bodies.

NJDEP strives to protect and enhance these public access rights through the implementation of the coastal program and associated rules in the coastal area of New Jersey, providing access through the actions of the Shore Protection Program as well as through the continued acquisition of property through the Green Acres and Coastal Blue Acres Programs.

The decision in the recent State Supreme Court case *Raleigh Avenue Beach Association v. Atlantis Beach Club, inc. et al.*, (185 N.J. 40 (2005)), affirmed NJDEP's authority to approve fees charged for the use of beach facilities. As a result of this responsibility, NJDEP recently researched the beach fees charged by municipalities throughout the state. The findings of this study will serve as a foundation to evaluate the fairness of beach fees, determine how they are calculated and managed and provide insight into public demand for beaches throughout the state.

3. Identify any significant impediments to providing adequate access, including conflicts with other resource management objectives.

While there have been gains in awareness of access rights and the Public Trust Doctrine, the lack of a thorough understanding by the public and their local governments, remains an impediment that, once overcome, could allow NJDEP to meet its programmatic objective. Informing the public of where they can access public trust lands is an important step that can allow them to realize and exercise their rights. As described above, an inventory of public access sites has been developed for the Atlantic Ocean coast, but points still need to be identified for the bays and coastal rivers. This information needs to be made available on a user-friendly website. Additionally, identifying titleholders of accessways and securing easements for them could help to ensure that these sites would be available for the public into the future. A complete inventory would facilitate more coordinated efforts focused on long-term inspection, monitoring and enforcement of public access requirements that would enhance this important coastal program objective.

The lack of awareness among local government officials concerning how to more adequately provide coastal public access presents a further impediment. Local governments can support public access by educating municipal staff and local citizens, creating ordinances that make parking readily available, providing appropriate signage, not vacating or selling off street ends and paper streets, and adequately training enforcement officers in public trust rights. In an effort to increase local knowledge, municipal official workshops were convened during 2005 to address public access issues pertinent to local officials including the Public Trust Doctrine, the role of the State, and steps that can increase public access in municipalities. At these workshops, a handbook created by NJDEP, *Coastal Public Access in New Jersey: The Public Trust Doctrine and Practical Steps to Enhance Public Access*, was provided to all attendees. NJDEP is intent on delivering more of these workshops and recognizes the importance of reaching out to real estate agents and local enforcement agencies (police, park rangers, etc.).

Currently, there is no statutory authority that codifies the Public Trust Doctrine and provides guidance and direction on public access to and use of the tidal shorelines and waters. The State must instead rely on permit regulations and court decisions, making it more difficult and resource intensive to preserve and enhance public access. Enacting legislation regarding public access issues would allow for the development of enforceable policies in support of the programmatic objectives of NJDEP. Additionally, strengthening the current public access to the waterfront permitting rule by incorporating the public access objectives of other programs within NJDEP, could help to bring together the State's numerous public access policies under one overarching rule.

In some areas conflicts occur between public access goals and coastal resource protection. Environmentally sensitive areas along New Jersey's shore are often subjected to heavy recreational use. While public use of these water areas is generally encouraged, there is concern about the long-term impacts of this specific use on estuarine resources such as submerged aquatic vegetation, shellfish habitat and nesting shorebirds. When a natural resource would be adversely affected by frequent human disturbance, as is the case when an endangered species or colonial nesting bird utilizes a coastal shoreline, the public access requirements are modified. These conflicts must be properly managed to provide reasonable access to and enjoyment of the tidal waters while protecting the sensitive coastal resources subject to impact from these recreational uses.

4. Please explain any deficiencies or limitations in data.

As mentioned above, over 1,300 accessways have been recorded on the oceanfront coast of the state. These points were collected, using GPS technology, by identifying current sites (mostly street ends) where the public is able to access the beach. While these access sites exist at present time, it is not known how many of them are preserved with a conservation easement. Such knowledge is useful in maintaining access in a climate of development where accessways may be eliminated. It will be equally important to identify such sites along the bays and tidal streams of the state.

Access Type	Current Number(s)	Change Since Last Assessment
State/County/Local Parks (# and acres)	<p><i>Numbers are for entire counties</i></p> <p><u>State Parks:</u> Atlantic- 66,758.74 acres Cape May- 50,433.72 acres Monmouth-17,607.15 acres Ocean-107,012.89 acres</p> <p><u>County Parks:</u> Atlantic- 6,000 acres Cape May- 1,780 acres Monmouth-13,447 acres Ocean- 4,600 acres</p>	NA
Beach/Shoreline Access Sites (#)*	<p>All municipal ocean and bay beaches are open to the public (beach tag required at most locations) and some privately owned beaches are open to the public</p> <p>Atlantic coast inventory recorded over 1,300 accessways along the 127-mile ocean coast</p>	1,300 recorded accessways (first year measured)
Recreational Boat (power or non-power) Access Sites (#)	Public: 159 Private (Accessible to public): 122	Public: +101 Private: +11

Designated Scenic Vistas or Overlook Points (#)	Not available	
State or Locally Designated Perpendicular Rights-of-Way (i.e. street ends, easements) (#)	Atlantic coast inventory recorded over 1,300 accessways along the 127-mile ocean coast	1,300 recorded accessways (first year measured)
Fishing Points (i.e. piers, jetties) (#)	560 sites recorded along the ocean coast	560 sites recorded (first year measured)
Coastal Trails/Boardwalks (# and miles)	<u>Coastal Trails:</u> Coastal Heritage Trail (nearly 300 miles, largely highway) Hudson Riverfront Walkway (around 15 miles completed) Boardwalks/promenades in many oceanfront and bayfront municipalities <u>Boardwalks:</u> Approximately 47 miles of boardwalk/promenade throughout beach municipalities	<u>Coastal Trails</u> +4 miles of Hudson River Walkway added <u>Boardwalks:</u> 47 miles estimated (first year estimated)
ADA Compliant Access (%)	Public facilities are required to be handicap accessible 76% of beach municipalities claim to have at least one handicap accessway	First year estimated
Dune Walkovers (#)	Walkovers that provide public access are included in beach access sites above	NA
Public Beaches with Water Quality Monitoring and Public Notice (% of total beach miles) and Number Closed due to Water Quality Concerns (# of beach mile days)	186 ocean monitoring stations updated weekly throughout summer covering at least 95% of the ocean coast in beach miles. 2003: 5.4 beach mile days 2004: 4.8 beach mile days 2005: 2.2 beach mile days	NA
Number of Existing Public Access Sites that have been Enhanced (i.e. parking, restrooms, signage - #)*	Access sites with restrooms: 258 recorded along the ocean coast	First year measured

5. Does the state have a Public Access Guide or website? How current is the publication or how frequently is the website updated?

As mentioned above, the State is currently putting together a public access website that will feature over 1,300 accessways to beaches along the Atlantic coastline. The accessways were

collected using GPS units. The website will feature information about amenities such as lifeguards, restrooms and parking and will be updated prior to the opening of the beaches each season. Accessways will be identified in the future along back bays and other tidal waterways.

Management Characterization

For each of the management categories below, identify significant changes since the last Assessment.

For categories with changes:

- Summarize the change
- Specify whether it was a 309, 306A, or other CZM driven change and specify funding source
- Characterize the effect of the changes in terms of both program outputs and outcomes

Management Category	Changes since last Assessment
Statutory, regulatory, or legal system changes that affect public access	Coastal permits all require easements when requiring public access NJ Limited Liability Act amendment (A3035) NJ State Supreme Court Case Decision: <i>Raleigh Ave. Beach Association v. Atlantis Beach Club</i> (185 N.J. 40 (2005))
Acquisition programs or techniques	
Comprehensive access management planning (including development of GIS data layers or databases)	Atlantic Ocean coastal accessway inventory Coastal permitting database modified to track public access permit conditions
Operation and maintenance programs	
Funding sources or techniques	
Education and outreach (access guide or website, outreach initiative delivered at access sites, other education materials such as pamphlets)	Municipal workshop series: <i>Coastal Public Access in New Jersey: The Public Trust Doctrine and Practical Steps to Enhance Public Access</i> delivered at 4 regional locations throughout the state Production of handbook: <i>Coastal Public Access in New Jersey: The Public Trust Doctrine and Practical Steps to Enhance Public Access</i> provided to workshop participants and other interested parties
Beach water quality monitoring and/or pollution source identification and remediation programs	Earth 911 public education website, accessible via the NJCMP website

Statutory, regulatory, or legal system changes:

Easements

When granting coastal permits for development that include provisions for public access to coastal lands and waters, the Division of Land Use Regulation now requires all permittees to submit conservation easements for the parcels of land dedicated to public access usage.

Amendment to New Jersey Landowner Liability Act (A3035)

The New Jersey Landowner Liability Act (N.J.S.A. 2A: 42A-2 et seq.) offers landowners that make their properties available for a variety of purposes limited protection from the liability they would normally face under common law. In December 2001, an amendment to the Act was passed that limits the liability of landowners that allow public access on lands with conservation or trail easements held by government or nonprofit organizations. The purpose of this amendment is to protect such landowners from the threats of liability that come when opening land to the public. This is an important protection for private landholders that can help to enhance coastal public access and encourage conservation throughout the state.

Raleigh Ave. Beach Association v. Atlantis Beach Club (185 N.J. 40 (2005))

The ruling in *Raleigh Avenue Beach Association v. Atlantis Beach Club, Inc., et al.* utilized criteria established in *Matthews v. Bay Head Improvement Association, 95 N.J. 306 (1984)* to uphold the right of the public to access the upland dry sand of a wholly privately owned and operated beach. The decision also affirmed that NJDEP has the authority to regulate fees charged for use of beach services under CAFRA.

Comprehensive access management planning (including development of GIS data layers or databases):

Atlantic Ocean coastal accessway inventory

During 2004, the Coastal Management Office, employing Section 309 funds, conducted fieldwork in an effort to build a web-based inventory of public accessways. Staff members used Global Positioning System units to record data along the Atlantic coastline from Monmouth to Cape May County. The GPS units were loaded with data collection fields to be filled in for each site location. Data were collected at every location that appeared to be a public accessway. Any confusing sites were checked against existing NJDEP records. Some of the information collected at the sites included the location of lifeguards, number of restrooms, handicap accessibility, available parking, and food establishments. A summary sheet containing such information for every coastal municipality was created and will be used as a guide for the public. All information was verified by contacting municipal officials and will be posted on an interactive web-based map that will be available to the general public.

Coastal permitting database

NJCMP staff worked with Office of Information Technology (OIT) staff during 2005, to implement a 'tracking system' that captures new permits that contain a 'public access condition'. Access conditions are now included as a field in the NJEMS (NJDEP-wide electronic tracking database). The NJDEP's Bureau of Coastal and Land Use Enforcement monitors the database to

ensure that easements and public access requirements are being complied with. NOAA 306 funding was used in this endeavor.

Education and outreach (access guide or website, outreach initiative delivered at access sites, other education materials such as pamphlets):

Municipal workshop series

During 2005 and 2006, NJCMP staff developed and hosted a series of workshops entitled *Coastal Public Access in New Jersey: The Public Trust Doctrine and Practical Steps to Enhance Public Access*. These workshops were funded by a 309 grant from NOAA. The target audience included county and municipal officials including planners, public works department staff, mayors, administrators and legislative representatives. Held in five different coastal areas of the state, each workshop was crafted for the specific region and included presentations and discussions on the Public Trust Doctrine, the role of the State and local governments in public access matters, and practical steps that municipalities can take to protect and improve public access. Speakers included staff from the Coastal Management Office, Land Use Regulation Program, Coastal and Land Use Enforcement and the Green Acres program as well as a representative from the New Jersey Office of the Attorney General. A follow-up workshop was held at the request of one region to further address concerns brought up at the first workshop.

Public Access Handbook

In 2005, using NOAA Section 309 funds, NJCMP staff developed a handbook entitled *Coastal Public Access in New Jersey: The Public Trust Doctrine and Practical Steps to Enhance Public Access*, that was disseminated to all participants of the workshops described above. The handbook provides additional details on topics presented at the workshops and is intended for use as a reference tool for coastal managers at the municipal level to inform them of important issues and provide useful steps for protecting and improving public access.

Beach water quality monitoring and/or pollution source identification and remediation programs:

Earth 911 public education website

NJDEP administers the Cooperative Coastal Monitoring Program with the New Jersey Department of Health and Senior Services and local environmental health agencies. Recreational beach water quality monitoring is performed routinely on Mondays and throughout the week as necessary at 186 ocean monitoring stations during the beach bathing season. The results are posted on a public website accessible through the NJCMP's home page. During the Assessment interval, NJCMP's participation in the monitoring program included NOAA 310 funds.

Conclusion

1. Identify priority needs or major gaps in addressing the programmatic objectives for this enhancement area that could be addressed through a 309 Strategy.

New Jersey's coastal waters and adjacent shorelines are a valuable but limited public resource. While it is the fourth smallest state in the country, New Jersey, with approximately 1,135 people per sq. mi., has the highest population density of any of the 50 states. With the entire population living within 50 miles of the coastline, in addition to the region being a major tourist destination for two of the largest metropolitan areas in the country (New York City and Philadelphia), demand for public access is extremely high.

As significant residential development continues to occur in the southern coastal counties and redevelopment of urban coastal areas takes place statewide, the demand for access continues to increase. Further, it is expected that demand for access along the oceanfront beaches will continue to increase as a result of population growth and the ongoing federal-state beach nourishment program, which creates more usable beaches.

Currently, protection and enhancement of public access throughout the state is assured through court cases, State aid programs (including shore protection and Green Acres), and through the CAFRA, Waterfront Development, and Coastal Wetlands permitting programs, which are guided by the State’s coastal zone management rules. Updating these rules with more specific requirements and in a way that links the different programs of New Jersey's Coastal Management Program (NJCMP) is a primary goal for addressing public access conflicts. The absence of public access legislation also makes it more resource intensive for the State to preserve public access. Developing a strategy that focuses on improvements within these regulatory vehicles, in concert with continued efforts to provide education of public trust rights will help NJDEP meet its programmatic objective.

2. What priority was this area previously and what priority is it now for developing a 309 Strategy and allocating 309 funding and why?

Public access was previously a high priority area and much progress has been made in achieving public access goals. At the same time, there is much that remains to be done to ensure adequate public access throughout the state. Therefore, prioritizing public access as a high priority area and developing a Strategy to meet the needs identified in this Assessment will enable 309 funds to be used in the most efficient way to improve and maintain this important issue area.

<u>Last Assessment</u>	<u>This Assessment</u>
High <u> X </u>	High <u> X </u>
Medium <u> </u>	Medium <u> </u>
Low <u> </u>	Low <u> </u>

Public Access Enhancement Area Strategy

Proposed Program Change and/or Implementation Activities

During the 2006-2010 Section 309 Assessment and Strategy interval, the NJCMP intends to further the process of enhancing the State’s coastal enforceable policies by proposing an amended public access rule. In addition, NJCMP will continue to review other State rules and regulations for opportunities to enhance public access and address conflicts currently encountered by the NJCMP in providing and protecting public access. Adoption of new or enhanced rules and regulations would constitute a program change, as new enforceable policies would be enacted.

As the result of a 2001-2005 Section 309 task, a tracking system of public access conditions in coastal development permits was created and is currently in use. In order to ensure that public access permit conditions are being met by permittees, the tracking system will be monitored by NJCMP and guarantee that necessary compliance and enforcement actions take place. The tracking system will be evaluated periodically to ensure its efficacy.

As revealed in focus groups and workshops held to discuss public access during the 2001-2005 309 Assessment and Strategy interval, information about public access rights ensured by the

Public Trust Doctrine and public access locations is integral to the public's access to the coast. The web-based inventory of over 1,300 public accessways along the state's Atlantic Coast is a useful tool for increasing awareness of public access sites and NJCMP plans to manage it and work with regional non-profit organizations to share knowledge of public accessways in regions not currently included on the site. In addition, NJCMP will track trends in development along the coast to identify potential future threats to public access.

Anticipated Effect of the Program Changes or Implementation Activities

As an enforceable policy the proposed coastal permitting public access rule will have a profound affect on public access along the coast. The new rule will allow the NJCMP to address limitations inherent in the current rule by providing a clear description of public trust rights, and more specific and uniform public access requirements for those accepting State aid through NJDEP's Shore Protection and Green Acres programs. Amending the rule will also serve to address many of the conflicts currently associated with public access including the loss of established public accessways, particularly at street ends; municipal ordinances that discourage public access because they do not require signage, parking, or amenities; and the lack of knowledge concerning ownership of public access areas.

The tracking system that NJCMP has launched to organize coastal development permit conditions, including public access requirements, has been an important step in allowing for the monitoring of permit conditions. As data continue to be compiled, it is expected that Compliance and Enforcement will have the means by which to better track the implementation of public access conditions, thus ensuring that despite additional development, these sites remain open to the public.

By managing the current inventory of accessways and working with regional non-profit organizations to identify more accessways, NJCMP will provide the public with ample information guiding opportunities to access New Jersey's shorelines. Additional information provided by non-profit organizations through workshops or other means, could enhance knowledge of the general public and of those who play crucial roles in the characterization and enforcement of public access rights at the local level. NJCMP will serve as a guide to public access and the Public Trust Doctrine by sharing its public access knowledge and information with those who share a common goal of improved public access.

Appropriateness of Program Changes and Implementation Activities

The 2006-2010 Section 309 Assessment highlights a number of priorities in order for the NJCMP to meet its public access objectives. These include development of a public access inventory, facilitating public access workshops, proposing an amended coastal public access permitting rule, tracking permit conditions requiring public access, obtaining information on the ownership of lands adjacent to lands and waters subject to public trust rights and an overall monitoring of development trends along the coast.

An updated coastal permitting rule dealing with public access is the most effective way to address the majority of the concerns highlighted in the 2006-2010 Section 309 Assessment. As development continues along New Jersey's coasts, clear guidance is necessary to describe public trust rights and to define what qualifies as appropriate access. A rule has been drafted, its proposal and adoption as an enforceable policy of the State will help balance coastal development with adequate public access. No other single action taken by the NJCMP could address as many

of the programmatic objectives as proposing this permitting rule and making it an enforceable policy.

The rule will also provide specific public access guidelines and requirements in order for municipalities to receive Shore Protection funds through State Aid Agreements and when municipalities, counties, and non-profit organizations receive Green Acres funding. It is anticipated that when this rule becomes an enforceable policy, knowledge of municipal ownership of lands subject to public trust rights will be gained, access to coastal lands by way of street ends will be protected in perpetuity, ordinances preventing or limiting public access will be repealed or amended, and the quality and quantity of public access sites throughout the state will be improved.

Many non-profit organizations throughout the state share the same public access goals as the NJCMP. Working together with these organizations to share and disseminate public access information throughout the various regions of the state will allow NJCMP to reach stakeholders that might otherwise be inaccessible. In addition, many of these non-profit organizations, including the NY/NJ Baykeeper, the American Littoral Society, and the Partnership for the Delaware Estuary have already compiled regional inventories of public accessways. Identifying and working together with such organizations to disseminate their inventory information, along with NJCMP's own public access inventory, is an efficient way for the NJCMP to provide the public with more complete information on New Jersey's public accessway locations. Overall, NJCMP recognizes its responsibility to provide public access and share Public Trust Doctrine information with non-profit organizations, the public and any other interested parties. Sharing such information will lead to a variety of outcomes including a more informed public, a more consistent public access message and possibly additional legislation, all of which would strengthen public access throughout the state.

Work Plan

Task 1: Complete, propose, adopt, and implement amendments to the Public Access to the Waterfront rule (N.J.A.C. 7:7E-8.11).

- A. Submit rule for proposal and signature by the Commissioner.
- B. Address public and agency comments on the rule proposal.
- C. Adopt rule and submit as enforceable policy.
- D. Provide an informational session for NJDEP staff who will implement changes to the rule.

- E. Enhance, monitor and manage the coastal permit public access conditions tracking system.
- F. Enhance and manage the coastal public access inventory website.
- G. Analyze coastal development trends for opportunities to expand public access to the waterfront.
- H. Continue to strengthening the NJCMP working relationships with New Jersey's non-profit and non-governmental organizations and advocacy groups to further shared public access goals.

Comment: Draft amendments to the coastal permitting public access rule are currently being evaluated within NJCMP. The next steps will be to refine the draft, propose the rule for adoption and address public comments and finally adopting of the rule as an enforceable policy.

Summary of Estimated Costs

It is anticipated that the NJCMP will address three or four of the 309 resource areas per year through the CZM grant. Based on previous funding allotments it is estimated that one Section 309 funded FTE for FY 2006 and 0.5 FTE for 2007 will be devoted to implementation of tasks identified under Public Access. The funding allotment is inclusive of the salaries of professional staff and (as applicable) contracting specific services provided by professionals other than staff.

Task 1: Year one and two (2006-2007)

Likelihood of Attaining the Proposed Program Changes and Implementation Activities

NJCMP anticipates that the rule proposal will be successful because it represents the combined efforts of numerous NJDEP offices and reflects the interests of the various offices.

Other implementation activities described in this Strategy will include the oversight, enhancement and monitoring of initiatives already in place, in addition to maintaining established relationships with partners. The likelihood of achieving these goals is high, based on the current success of such activities.

Special Area Management Planning

Section 309 Programmatic Objectives

I. Develop and implement special area management planning in coastal areas applying the following criteria:

- *Areas with significant coastal resources (e.g., threatened and endangered species and their critical habitats, wetlands, waterbodies, fish and wildlife habitat) that are being severely affected by cumulative or secondary impacts;*
- *Areas where a multiplicity of local, state, and federal authorities hinder effective coordination and cooperation in addressing coastal development on an ecosystem basis;*
- *Areas with 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.*

Resource Characterization

Introduction:

New Jersey as the fifth smallest state in the nation is also the most densely populated. The proximity of New Jersey's coast to the New York and Philadelphia metropolitan areas has contributed to the state's population growth throughout history. The resources of New Jersey's 127 mile Atlantic shoreline, and 87 miles of tidal Delaware River and Bay shoreline have contributed to the state's ever increasing popularity. It is said "one sixth of the U.S. population can drive to the New Jersey coast on a tank of gas."

Surrounded by water on all sides except on the northern border with New York, 14 of New Jersey's 21 counties have estuarine or marine shorelines. New Jersey's coastal areas possess a wide variety of natural resources including shallow-ocean and bay waters; estuaries; beaches and dunes; tidal and freshwater wetland habitats. The state's coastal areas support waterfowl, shorebirds, shellfish and marine fisheries, and a number of threatened and endangered plant and animal species.

In recognition of the state's diverse and sensitive coastal areas and resources, its increasing population, and in response to Section 305 (b)(3) of the federal Coastal Zone Management Act the New Jersey Department of Environmental Protection (NJDEP) prepared (1976) an "inventory of areas of particular concern within the coastal zone." New Jersey designated 'Geographic Areas of Particular Concern' on the basis of three criteria:

1. Regional or statewide significance of the area;
2. Need for special attention based on threat to the preservation of the area or obstacles to its development consistent with the policies of the New Jersey Coastal Management Program; and
3. Availability of state legal authorities to promote desired uses of the areas.

Using these criteria New Jersey adopted two generic Geographic Areas of Particular Concern (wetlands and beaches) and twelve specific Geographic Areas of Particular Concern (ten natural areas, Higbee Beach, and the Hackensack Meadowlands District). The New Jersey Coastal

Management Program (NJCMP) then relied upon coastal policies, standards and management strategies to promote the conservation of each site identified. The Hackensack Meadowlands District (now known as the New Jersey Meadowlands) was identified as one of the specific Geographic Areas of Particular Concern. The varied management challenges present in the New Jersey Meadowlands District necessitated that a Special Area Management Plan (SAMP) be adopted for this region. The NJCMP also developed a process known as ‘Areas of Preservation and Restoration’. This process provides for identification of areas for preservation or restoration based on their “conservation, recreational, ecological or aesthetic values,” rather than identifying specific sites.

Since full federal approval of the NJCMP in 1980, other federal and State programs (regulatory, acquisition and designation) have been implemented to effect the conservation and preservation of coastal areas first identified as Geographic Areas of Particular Concern. The NJCMP now relies primarily upon the Coastal Zone Management rules (N.J.A.C. 7:7E-1.1 et seq.) to protect these special coastal areas and manage their use. These rules address a wide range of land and water types; present and potential land and water uses; and natural, cultural, social, and economic resources in the coastal zone. Under this framework, the more valuable environmentally sensitive areas in the coastal zone are classified as Special Areas and receive special management protection policies. The Coastal Zone Management rules also recognize environmentally sensitive and rural areas where more restrictive impervious site coverage limits apply. However, as specific areas or resources become threatened by indirect impacts or encroaching development the existing regulatory tools may not afford the desired level of protection.

1. *Using the criteria listed above, identify areas of the coast subject to use conflicts that can be addressed through special area management planning (SAMP).*

Use and overuse conflicts and the impacts of encroaching development remain the primary concerns with regard to preservation of special coastal areas.

Leisure travel trends of 2004 show New Jersey surpassing the national average, with an increase of 4.4 percent as compared to a nationwide average of 3.7 percent. The largest growth rate was in the overnight leisure travel market, which grew 3.5 percent nationally while in New Jersey it grew by 9.1 percent. During the summer of 2005, it was estimated that travel and tourism in 6 coastal counties (Atlantic, Cape May, Cumberland, Monmouth, Ocean and Salem) would generate over \$32 billion in revenue. The popularity of ecotourism and the number of opportune destinations (wildlife management areas, shallow estuarine areas, extensive marshes and shorebird viewing areas) recognized during the past decade has contributed substantially to the growth of the tourism industry in New Jersey. Due to intensive demand for coastal recreation, management of these special areas will be essential to protect sensitive coastal resources while providing the public with an opportunity to experience them.

Both the resident and tourist populations of New Jersey's coast rely on its natural resources and the health of the marine environment. Within the coastal zone there are 17 counties and 245 municipal governments that plan and zone development within their individual community boundaries. There is no legal requirement to incorporate the coastal management policies into the municipal or county master plans or zoning ordinances. However, as previously discussed the growth of leisure travel and nature tourism and their contribution to a region's economy can play a significant role in influencing the development of more protective land use standards and policies at the local level. Moreover, the State Planning Process provides a means for coastal management policies to be incorporated into local government planning.

Areas Subject to Use Conflicts

Area	Major Conflicts
Delaware Bay Estuary	The Delaware Bay is bounded by three states – New Jersey, Delaware and Pennsylvania. Each of the states has different regulatory programs and standards for the same resources. Within New Jersey the land area adjacent to the estuary is governed by multiple local and county agencies. As one of the least populated shorelines with a diversity of exceptional natural resources, the region is now experiencing tremendous population growth and development.
Mullica River/Great Bay - Site of the Jacques Cousteau National Estuarine Research Reserve	The designation of this area as the site for the National Estuarine Research Reserve was specific to the high quality resources present and the abundance of publicly owned and managed lands. However, development pressures within the watershed continue to escalate and may result in adverse impacts to the resources cited for their high quality in the designation of the JCNERRS.

Management Characterization

1. *Identify areas of the coast that have or are being addressed by a special area plan since the last Assessment:*

The table below recognizes several types of special area plans in progress throughout the state. Only one of these programs is a special area management plan recognized by NOAA but all are comprehensive management programs and follow many of the same criteria.

Area	Status of Activities	SAMP or Other Management Designation
New Jersey Meadowlands	A revised Master Plan (January 2004) and zoning ordinances (February 2004) for the NJ Meadowlands have been adopted.	SAMP
Delaware River National Estuary Program	Implementation of the CCMP September 1996	EPA - Estuary Program funding, foundation grants, state support of individual programs
New York-New Jersey Harbor National Estuary Program	Implementation of the CCMP March 1996	EPA - Estuary Program funding, foundation grants, state support of individual programs
Barnegat Bay National Estuary Program	Implementation of the CCMP May 2002	EPA - Estuary Program funding, and Section 319 funding, foundation grants, state support of individual programs, State Watershed Management Program funding.
Great Egg Harbor River and Maurice River	Wild, Scenic and Recreation Rivers Program designation by the National Park Service. Each has a specific management plan Great Egg Harbor: May 2000 Maurice River: January 2001	National Park Service funding for development and implementation of the management plans.
Mullica River and Great Bay - Jacques Cousteau National Estuarine Research Reserve	This area is the site for littoral environmental observation, education and research.	NOAA - NERRS

2. *Identify any significant changes in the state's SAMP programs since the last Assessment (i.e., new regulations, guidance, Memorandums of Understanding (MOU), completed SAMPs, implementation activities, etc.). Provide the following information for each change:*
 - *Characterize the scope of the change*
 - *Describe recent trends*
 - *Identify impediments to addressing the change*
 - *Identify successes*

The New Jersey Meadowlands is the only area in New Jersey's coastal zone with a SAMP. Since the last 309 Assessment (2001), New Jersey Meadowlands Commission adopted a revised Master Plan in January 2004, the first major revisions since 1970. The revisions to the Master Plan were followed in February 2004 by amendments to the Zoning Ordinances for the district to reflect the revised Master Plan. NOAA 306 funds were employed in the revision of the Master Plan. The Master Plan states:

This Master Plan is an expression of the overall vision of a re-greened Meadowlands and a revitalized urban landscape. It is also a commitment by the New Jersey Meadowlands Commission, in exercising its authority under the Hackensack Meadowlands Reclamation and Development Act, to continue to serve as trustee of the natural resources of the Meadowlands District and to foster a sustainable regional economy. The Plan recognizes the Meadowlands as a large but fragile expanse of waterways, marshes, and meadows that are home to a wide variety of wildlife species, including several threatened or endangered species. The Plan also recognizes that the Meadowlands are a cultural and economic landscape shaped by centuries of human habitation.

NJDEP and the New Jersey Meadowlands Commission (NJMC), both elements of the NJCMP, have been working collaboratively to better coordinate and integrate state and federal decision making in the New Jersey Meadowlands District. In addition, the execution of a Memorandum of Understanding (November 2005) between the NJMC and NJDEP has led to more effective implementation of state and federal regulations and greater natural resource protection. The Memorandum of Understanding (MOU) clearly establishes the roles and responsibilities of each agency (NJMC and NJCMP) as it pertains to land use planning and permitting and regulatory oversight within the New Jersey Meadowlands District.

Conclusion

1. *Identify priority needs or major gaps in addressing the programmatic objectives for this enhancement area that could be addressed through a 309 Strategy.*
2. *What priority was this area previously and what priority is it now for developing a 309 Strategy and designating 309 funding and why?*

New Jersey does not perceive any major gaps in meeting the programmatic objectives of this enhancement area. Currently, regulatory policies, permit applications, and the federal consistency review process serve to effectively manage and protect coastal resources. Additionally, other efforts such as statewide initiatives (acquisition, watershed planning strategies, State Development and Redevelopment Plan), a more assertive statewide nonpoint pollution control program, and individual resource mapping and cataloging efforts serve to identify these special areas and focus attention on limiting adverse impacts. The NJ Meadowlands recently revised its Master Plan and zoning ordinances to increase protection of

areas containing endangered species. Therefore, the NJCMP is reducing the rating for this enhancement area to low for this Assessment. Notwithstanding the low rating for this enhancement area, because of the increasing development pressure on the Delaware Bay/River and its diverse natural resources, the NJCMP proposes to focus additional attention on this geographic region, as detailed in the Cumulative and Secondary Impacts section of this Assessment. The approach proposed in the Cumulative and Secondary Impacts section will enable the NJCMP to assess existing management tools and modify them as necessary to address potential threats to the Delaware Bay/River and its diverse natural resources.

Since the NJCMP is not proposing to expend Section 309 funds on SAMP activities, no Strategy is provided for this enhancement area.

Last Assessment

High _____

Medium X

Low _____

This Assessment

High _____

Medium _____

Low X

WETLANDS

Section 309 Programmatic Objectives

- I. *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*
- II. *Increase acres and associated functions (e.g., fish and wildlife habitat, water quality protection, flood prevention) of restored wetlands, including restoration and monitoring of habitat for threatened and endangered species.*
- III. *Utilize non-regulatory and innovative techniques to provide for the protection, restoration, and acquisition of coastal wetlands.*
- IV. *Develop and improve wetlands creation programs.*

Resource Characterization

1. Extent of Coastal Wetlands

Wetlands Type	Extent in acres, 1995	Extent in acres, as of year shown	Trends
Tidal	208,847 (186,066 CAFRA)	208,770 (2000) (186,021 CAFRA; 2000)	Small decrease
Freshwater	108,035 (CAFRA)	107,261 (CAFRA; 2000)	Moderate Decrease
Publicly Acquired	Not Available	3974 (current to 2005)	
Restored/Created	8121	7.61 (current to 2005)	
Other	Not Applicable	Not Applicable	Not Applicable

New Jersey's Coastal Management Program (NJCMP) defines wetlands as areas inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation. The tidal wetlands are protected pursuant to the Coastal Wetlands Act of 1970, which represents one of three primary statutes of the NJCMP (along with the Waterfront Development Law and the Coastal Area Facility Review Act). In accordance with the Wetlands Act, the tidal wetlands were first mapped in the 1970s. The Wetlands Act regulates dredging, draining, excavation or deposition of material, and the erection of any structure, driving of pilings or placing of obstructions in any tidal wetlands that have been mapped or delineated pursuant to the Act. This statute allows the New Jersey Department of Environmental Protection (NJDEP) to regulate all activities in coastal tidal wetlands, since there is no minimum threshold established in the law. Although NJDEP does not track the losses in tidal wetlands, this strong regulatory program has successfully protected tidal wetlands, with the permitted activities limited primarily to wetlands crossings for docks and infrastructure. One shortcoming of this law is that it lacks sufficient administrative penalty authority in cases involving violators.

One historical weakness in the NJCMP was the lack of direct regulatory authority over freshwater wetlands. This was rectified when the State passed the Freshwater Wetlands Protection Act in 1987. This act enabled NJDEP to protect freshwater wetlands, as well as buffers up to 150 upland of those wetlands, throughout the state. This law provides significant protection to freshwater wetlands in the coastal zone. This Assessment considers all wetlands in the coastal zone.

NJDEP compiled the 1995 wetland data for the previous 309 Assessment through photo-interpretation of 1995/1997 aerial photography with a 1-meter resolution. The acreage for tidal wetlands includes both saline and freshwater tidal wetlands. The year 2000 data are provided as an interim assessment to provide trends in wetlands acreage since 1995. However, these data were created using medium scale satellite imagery (i.e., 10 meter spatial resolution SPOT Panchromatic imagery). Taking into account the inherent limitations of the 10 meter Panchromatic SPOTView NJ image mosaic, this image data source does not provide the same level of categorical detail and positional accuracy in mapping land use/land cover as is possible with meter scale color infrared digital orthophotography. However, the SPOT image mosaic does provide a cost-effective alternative for the mapping and monitoring of broader trends in urban growth and land use change at the municipal to watershed scale. Statewide data for 2002, using the same methodology employed in 1995 (aerial photography) will be available during the summer of 2006. These data can be more accurately compared to the 1995 data for a trends analysis. Although the methodology is the same, the technology has improved between 1995 and 2002 enabling greater accuracy in processing the data including the geo-referencing.

The SPOT imagery has additional shortcomings. Because the SPOT dataset included only newly developed areas, there may be some wetland changes that can not be determined using this data. For example, vegetated wetlands that became open water due to erosion or former ponded areas that were re-flooded would not be identified. Similarly, any vegetated wetlands that formed in the interim would also be missed. However, it is unlikely that these processes significantly contributed to the overall acreage of wetlands statewide.

Records maintained by the Division of Land Use Regulation provide the basis for estimating permitted losses of freshwater wetlands in the CAFRA area from filling, excavation, and clearing. However, losses from permitted activities do not necessarily occur, since some projects are not constructed. Both general and individual permits are issued by the Division for small disturbances to wetlands. General permits allow for work such as minor road crossings, above and below ground utility repairs, dam repairs, bank stabilization, and stream channel cleaning. From 11/1/2001 through 9/30/2005, the Division issued general permits for disturbing 43.16 acres of freshwater wetlands in the CAFRA area. The total individual freshwater wetlands permit disturbances authorized (filled, excavated, cleared) was 28.86 acres. Mitigation is required for wetlands losses approved under an individual permit.

2. *If information is not available to fill in the table, provide a qualitative description of wetlands status and trends based on best available information. Also, identify any ongoing or planned efforts to develop quantitative measures for this issue area. Provide explanation for trends.*
3. *Characterize direct and indirect threats to coastal wetlands, both natural and man-made. For threats identified, provide the following information: scope of the threat, recent trends, and impediments to addressing the threat.*

Threat	Significance
Development/ Fill	Low
Alteration of hydrology	Medium
Erosion	Low
Pollution	Low
Channelization	Low
Nuisance or exotic species	Medium
Freshwater Input	Low
Sea/Lake level rise	Medium

Alteration of Hydrology

Drawing on NOAA 309 grant money, the Coastal Management Office recently funded a research project to determine the potential impacts of Open Marsh Water Management (OMWM) on the hydrology, water chemistry, vegetation, and associated fauna of a globally imperiled Sea Level Fen ecological community in Stafford Township, Ocean County, New Jersey. Sea level fens are a unique seepage wetland that occurs within the mosaic of tidally influenced vegetation communities, located at the upland/tideland interface where fresh groundwater seepage discharges and occasional tidal inundation occurs. These communities provide significant wetland functions in the landscape as well as habitat for biological diversity, supporting 18 rare plant species of which two are listed as State Endangered. Threats to sea level fens in New Jersey include interruption of groundwater flow by ditching and local/regional groundwater withdrawal, development of adjacent upland buffer in the landscape, invasion by *Phragmites australis*, and possibly salt marsh management.

Sea level fens occur on the land immediately adjacent to *Spartina patens* dominated high salt marsh, where OMWM is used by the US Fish and Wildlife Service and Ocean County Mosquito Extermination Committee as a non-chemical mosquito control method. The purpose of research is to determine the potential impacts of OMWM on the hydrology, water chemistry, vegetation, and associated fauna in the globally imperiled sea level fen ecological community. The results of this study will be used to determine the need for changes to the Coastal Zone Management or Freshwater Wetlands Rules, permit restrictions, Special Area Management Plans, OMWM Standards, and State land acquisition or conservation easements.

Nuisance or Exotic Species

Nationwide, invasive nonindigenous species cause billions of dollars in damage annually. Although this problem is national and international in scope, there are practical and inexpensive steps that can be taken to address the issue of introduction of invasive nonindigenous plants. On February 27, 2004 then Governor James McGreevey signed Executive Order #97 mandating the formation of the New Jersey Invasive Species Council and requiring the development of a comprehensive New Jersey Invasive Species Management Plan. This policy outlines specific actions NJDEP can take to limit any further intentional introductions of specified known invasive plants. The policy is intended to guide the planning and implementation of planting, landscaping and land management activities on lands and waters affected through programs administered by NJDEP. By prohibiting the use of these harmful nonindigenous plants, it is the intention of NJDEP to direct its employees to seek and substitute benign indigenous or native species alternatives for planting and landscaping. When planning or implementing such activities employees will refer to a list of Invasive Nonindigenous Plant Species, which are unsuitable for use in planting, landscaping, habitat restoration and reforestation in New Jersey. In addition, NJDEP employees will provide the list of Invasive Nonindigenous Plant Species to all consultants and contractors hired to perform landscape design and other plantings to ensure that listed plant species are not used for any NJDEP properties.

In February 2004 NJDEP's Office of Natural Land Management, Natural Heritage Program published a report titled, *An Overview of Nonindigenous Species in New Jersey*, available on-line at <http://www.nj.gov/dep/parksandforests/natural/heritage/InvasiveReport.pdf>. The report defines the concepts and terminology related to invasive plants in New Jersey, provides the background on the numbers and origins of nonindigenous species in the state, and addresses mechanisms for the control and prevention of further invasive plant distribution. It also describes the current state and federal programs relevant to invasive species management. Fact sheets on 27

of the most problematic invasive species, including those that threaten wetlands, are included in the report to help guide management and control initiatives.

Since the previous 309 Assessment, significant progress has been made on research using two species of Chrysomelid beetles to control infestations by the invasive nuisance species purple loosestrife (*Lythrum salicaria* L.) in New Jersey wetlands. The wetland areas of New Jersey have proven to be very susceptible to the establishment of this invasive plant. It can be found throughout most of the state, but it is primarily a problem in the northern and central counties. This plant displaces native flora, which is an essential food source for native fauna. It can also decrease the water storage capacity of a wetland, reduce the ability of the wetland to attenuate floods, clog drainage channels and irrigation ponds, and reduce the capacity of a wetland to hold and absorb excess water. The control of purple loosestrife is considered one of the first critical steps in the restoration of native wetlands

Chemical and mechanical control of this plant species has proven impractical. Based on initial research by the Philip Alampi Beneficial Insect Laboratory (PABIL), NJDEP and the New Jersey Department of Agriculture entered into a cooperative agreement to pilot the use of Chrysomelid beetles (*Galerucella californiensis* and *Galerucella pusilla*) on purple loosestrife at several Wildlife Management Areas. A few years later, additional beetles were released in known bog turtle (an endangered native species adversely affected by purple loosestrife) sites. The release of *Galerucella* spp. beetles has expanded to include privately owned land known to be habitat for the bog turtle.

Data collection surveys begun in 1997 and continuing through 2004 have yielded promising results. Data indicate that the beetles remain in a location as long as there is a sustainable loosestrife population. Once the beetle population reaches a level that causes a significant reduction in loosestrife (50% defoliation), they disperse to nearby locations to continue feeding and reproducing. Initial results show declining percent cover of purple loosestrife at a majority of the beetle release sites. In response to the reduction in loosestrife, there has been an observable increase in other plant species at most sites. If this trend continues diversity will increase in these wetlands.

It is uncertain how long it will take for the released and dispersed beetle population to significantly reduce the purple loosestrife population statewide. Many factors influence the success of the project, including the size of the plant infestation, the number of beetles that survive, the success of beetle establishment at a given site, and the environmental conditions at each site. This is a long-term project and it may take up to 10 years to determine whether significant control of the plant is achieved.

Sea Level Rise

A long-term threat to coastal wetlands, especially along the estuaries and back bays, is potential drowning of wetlands due to sea level rise. The increase in shore protection structures creates ever more defined and static shorelines and inhibits the ability of wetland systems to migrate upland in response to sea level rise. A likely result is increased inundation and drowning of wetlands. Establishing and maintaining larger buffers between wetlands and shore protection structures would help address this threat. However, the number of existing shore protection structures and the number of existing buildings that may in the future require additional protection impede efforts to create such buffers.

Wetlands Management Characterization

1. *Within each of the management categories below, identify significant changes since the last Assessment.*

2. *For categories with changes provide the following information for each change:*

- *Characterize the scope of the change*
- *Describe recent trends*
- *Identify impediments to addressing the change*

Regulatory Programs and Wetlands Protection Standards:

The regulatory framework for the NJCMP's protection of wetlands is found in the Coastal Zone Management (CZM) rules, N.J.A.C. 7:7E, the Coastal Permit Program Rules, N.J.A.C. 7:7, and the Freshwater Wetlands Protection Act rules.

Freshwater Wetland Protection Act

The Freshwater Wetland Protection Act (N.J.S.A. 13:9B) became law on July 1, 1987 and was enacted to preserve the purity and integrity of wetlands from random, unnecessary, or undesirable alteration or disturbance. The Act established a framework for the regulatory program to pursue assumption of the federal 404 program. The regulations to implement the Act are known as The Freshwater Wetland Protection Act Rules, N.J.A.C. 7:7A and were promulgated in June 1988. The Freshwater Wetland Protection Act and implementing regulations were incorporated in the New Jersey Coastal Management Program in March 1994 for assumable waters. On May 28, 2004 the Freshwater Wetland Protection Act and regulations were incorporated in New Jersey's approved Coastal Zone Management Program for non-assumable waters (those waters for which the US Army Corps of Engineers retains jurisdiction). By incorporating the Freshwater Wetland Protection Act and regulations in the NJCMP, NJDEP estimates that an additional 50,000 to 60,000 acres of wetlands are included in the Program.

The Freshwater Wetlands Protection Act Rules were modified significantly on September 4, 2001 with the adoption of amendments that further protect New Jersey's freshwater wetlands. One change provides for a combined freshwater wetlands general permit and floodplain (stream encroachment) permit for five activities – utility lines, road crossings, outfalls, stream bank stabilization, and stream cleaning. The combined permit for an activity located in a freshwater wetland in a floodplain is more easily and quickly obtained, while environmental protection under both programs is ensured. The adoption introduces new general permits for six activities that have environmental or safety benefits that compensate for any wetland disturbance involved. These include landfill closure and maintenance, farm animal waste management, movement of livestock watering areas away from streams, stream cleaning, redevelopment of one extra acre of significantly degraded brownfield areas, and tree cutting around public airports. Several existing general permits were also amended. These amendments allow underground utility lines in exceptional resource value wetlands, if threatened or endangered species habitat will not be impacted; allow longer road crossings if impact is 1/8 acre or less; require an onsite alternatives analysis for many road crossings; allow NJPDES permitted outfalls (former general permit only allowed stormwater outfalls); restrict the types of wetlands that may be impacted during lake dredging; encourage participation in federal wetlands restoration programs; allow trails and boardwalks on private property with a ¼ acre limit on total disturbance; allow removal of unsafe dams; and require use of environmentally beneficial bioengineering techniques when possible, in order to control stream bank erosion. The adoption streamlines the approval of a project that needs both a general permit and a transition area waiver, by providing one approval for the project.

Stormwater Management

On February 2, 2004 NJDEP promulgated revised Stormwater Management regulations (N.J.A.C. 7:8) many of which have implications for wetlands. Studies of New Jersey watersheds suggest that wetlands play a major role in maintaining an adequate and healthy supply of water, food, and habitat for many species while at the same time mitigating the undesirable effects of nearby human-induced landscape alterations. NJDEP intends to prevent the loss and encourage the restoration of environmentally critical areas such as wetlands and stream corridors by moderating the effects of development and protecting habitat for plants and animals. Two components of the extensive Stormwater Management regulations have benefits for preserving and protecting wetlands from indirect and cumulative impacts. These are the rules for erosion control, groundwater recharge, and runoff quantity standards (N.J.A.C. 7:8-5.4); and stormwater runoff quality standards (N.J.A.C. 7:8-5.5).

N.J.A.C. 7:8-5.4 sets forth minimum design and performance standards to control erosion impacts, encourage and control stormwater infiltration and groundwater recharge, and control stormwater runoff quantity impacts of major development. Groundwater contributes to aquifer recharge and baseflow for streams and wetlands. The changes in the regulations recognize the importance of groundwater recharge to the health of receiving wetlands. The regulations require that hydrologic and hydraulic analysis methods be used to demonstrate that standards for groundwater recharge are met: either that the site and its stormwater management measures maintain 100% of the average annual pre-construction groundwater recharge volume for the site, or that the increase in stormwater runoff volume from pre-construction to post-construction for the two-year storm infiltrates. Additional analysis must be done to ensure control of stormwater runoff quantity impacts of development.

N.J.A.C. 7:8-5.5 sets forth minimum design and performance standards to address post-construction stormwater runoff quality impacts of major development. The regulations stipulate that stormwater management measures shall be designed to reduce the post-construction load of total suspended solids (TSS) by 80% expressed as an annual average. Additionally, the management measures must reduce to the maximum extent feasible, the post-construction nutrient load in stormwater runoff. This standard is included because nutrients are a major class of pollutants in stormwater and can adversely impact sensitive environments such as wetlands.

The revised stormwater regulations provide special water resource protection for Category One waters. (Category one waters are defined as those special waters identified for protection from measurable changes in water quality characteristics because of their clarity, color, scenic setting, other characteristics of aesthetic value, and exceptional ecological, recreational, water supply and/or fisheries significance.) Applicants proposing development draining to a Category 1 water or mapped tributaries upstream of the Category One water within the same HUC 14 drainage area must maintain a special water resource protection area for the waterbody. This buffer prevents new point source discharges of stormwater to the waterway and preserves the existing aesthetic and ecological values of the waterway. The preservation of riparian area function, vegetative composition and cover, flow characteristics of surface and groundwater hydrology, and geochemical characteristics of the substrate of riparian buffer areas is required because these characteristics contribute to the reduction of nonpoint source pollution. These riparian areas are often forested wetlands. In order to protect the Category One waters, the regulations require a 300-foot special water resource protection area of existing vegetation and prohibit the construction of stormwater piping or structures within it. There is an exception in cases where development or disturbance has previously occurred. Nonetheless, the special water resource area

cannot be reduced to less than 150 feet. No stormwater outfalls are permitted within the special water resource protection area (300 foot buffer). All stormwater must be discharged outside of and sheet flow through the special water resource protection area as a means of polishing water quality to achieve the Category One anti-degradation provisions of the Surface Water Quality Standards. If the stormwater discharge cannot comply with the Soil Erosion and Sediment Control Standards for Offsite Stability, then stabilization measures may be placed within the special water resource protection area, but in no case may a stormwater outfall structure or stabilization be placed closer than 150-feet from the surface water feature. In addition, where stabilization encroaches within the 300-foot buffer, the post-construction TSS load must be reduced by 95% prior to discharge. All encroachments within the 300-foot special water resource protection area, whether for stormwater facilities or development of an already disturbed buffer, must maintain the functional value of the buffer.

Coastal Zone Management Rules

The CZM rules have also been updated to include new standards for mitigating impacts to coastal wetlands at N.J.A.C. 7:7E-3B. The mitigation standards have been expanded to require a water budget, goal statement, detailed landscape plans, and financial assurance. The Rules also now include performance standards for each year of monitoring. With these changes the quality of the coastal wetland mitigation will improve. The routine program change document for incorporating these rule changes into the NJCMP was submitted on February 6, 2006.

The CZM rules at N.J.A.C. 7:7E-4.2(f) and (g) for maintenance and new dredging have been revised to provide greater protection for coastal wetlands. The definition of maintenance dredging is narrowed to limit maintenance dredging to areas that are actively used for navigation or mooring of vessels and the area must have been dredged within the prior ten years. New dredging now requires chemical and physical analysis of the material to be dredged and bioassay and bioaccumulation testing may be required depending upon the results of the pre-dredging analysis. Standards for reprofiling and prop-wash dredging are also incorporated into the maintenance and new dredging rules. These rule changes have been incorporated into the NJCMP.

Impact Analysis

The New Jersey Landscape Project

In 2002, the Freshwater Wetlands Protection Act rules formally adopted the New Jersey Landscape Project as a tool to reduce the loss of critical wildlife habitat, including wetlands habitat. The CZM rules followed with this adoption in October 2003. The Landscape Project provides users with peer-reviewed scientifically sound information that can be integrated with planning, protection, and land management programs, such as the development of habitat protection ordinances and management guidelines for species conservation on newly acquired land. NJDEP's Division of Land Use Regulation uses the Landscape Project maps and associated information to review permit applications. These maps and overlays include Land Use/Land Cover such as forests, forested wetlands, emergent wetlands, and grasslands, and species data such as bald eagle foraging areas, peregrine falcon nests locations, and critical areas for wood turtles.

The maps, which identify critical areas for imperiled species based on land use classifications and known species locations, enable state, county, and municipal regulators and planners, as well as private agencies, to prioritize conservation acquisitions; enhance protection through the

regulatory process; identify important habitat areas in need of protection; and guide stewardship of conserved areas with best management practices. About half of the threatened and endangered species in New Jersey are wetland-dependent. The use of the Landscape Project by the Division of Land Use Regulation for review of development proposals and acquisition programs, contributes to the long-term conservation of imperiled species and critical habitat areas.

Assessment Methodologies

New Jersey is currently developing a wetland monitoring and assessment program for all waters of the United States, including wetlands. The State has established the following goal for New Jersey's wetlands: "Improve quality and function and achieve no net loss. Explore innovative techniques for creation enhancement and maintenance of New Jersey wetlands".

NJDEP has established a Wetlands Monitoring Steering Group coordinated through the Office of Policy, Planning and Science and the Division of Land Use Regulation. The steering group includes scientists and staff from the wetlands regulatory program, surface and groundwater monitoring program, surface and groundwater standards and criteria program, the Natural Heritage Program, and as appropriate Rutgers University. NJDEP has also developed a Wetlands Research Advisors Group to provide scientific and program peer review in the development of the wetland monitoring and assessment program.

The State is currently conducting research and evaluation of rare and vulnerable wetland types through the Natural Heritage Program under several USEPA Wetlands Protection Development Grants. Each of the research projects includes Level 3 Intensive Site Assessments and has components of inventory, ecological community classification, and baseline monitoring of vegetation and hydrology.

The State developed the Freshwater Wetland Mitigation Quality Assessment Procedure (WMQA) as an interim evaluation tool to determine the probability that a constructed wetland will develop into a natural wetland system over time. Currently, this methodology is used to provide NJDEP with indicators of mitigation site potential.

In 2004, NJDEP published two research studies as follow-ups to the WMQA study. The first was the results of field-tests of the WMQA method at both natural and mitigation wetlands in the Upper Passaic, Whippany, Rockaway watershed and the second was the results of field-tests of seven additional methods at the same natural wetlands and at sites in the Rancocas Watershed. These studies are available at www.state.nj.us/dep/dsr/wetlands2/. The methods evaluated employ professional judgment regarding field indicators of wetland quality and function and are relatively inexpensive and easy to implement. Variability among raters was tested and it was concluded that training could minimize the variability. However, no single method accommodates all situations for assessing wetlands.

To fulfill the EPA mandate for states to establish wetlands monitoring programs by 2014 for waters of the United States, and to explore metrics for water quality reporting (rather than qualitative assessment methods), NJDEP, in collaboration with Rutgers University, is conducting research on quantitative wetland biological assessment methods. A goal of this research is to develop a wetlands index of biological integrity for New Jersey. Research has focused on riparian forested wetlands with special attention given to vegetative species and macroinvertebrates in an effort to possibly link the assessment to NJDEP's macroinvertebrate data for streams (AMNET). Publication of initial results is anticipated in 2006.

The reasons for monitoring and assessing wetlands in New Jersey is to increase wetland quantity, quality and function and to assess the relationship between the state's wetland resources and water quality. The evaluation of cumulative impacts within a watershed and determination of maximum sustainable impacts contributes to the goal of maintaining and improving wetland and water quality. Development of an assessment program is intended to improve regulatory and non-regulatory decision-making processes for increased protection of the state's wetland and water resources, as well as to achieve improved protection of rare plant and animal species. Integrating a wetland monitoring and assessment program into the State's existing surface and groundwater monitoring programs and existing programmatic framework is important for building a comprehensive, sustainable and holistically informative monitoring program. In addition, monitoring and assessing the State's wetland mitigation enhancement, restoration and creation projects is crucial to ensuring that the values and functions of wetlands lost through permit decisions are adequately compensated for. Standards will be developed for the purpose of assessing the state's wetland.

Restoration/enhancement programs

Special area management plan: Meadowlands

In January 2004, the New Jersey Meadowlands Commission (NJMC) adopted an updated comprehensive master plan with many new and expanded wetland considerations. The overall vision of a revitalized Meadowlands includes protecting, preserving, and enhancing the wetlands in the district. Currently, wetlands comprise approximately 5784 acres, or about 29.5% of the Meadowlands District. The NJMC also has management rights without ownership of almost 1600 acres. The NJMC is pursuing the acquisition of additional wetland sites, as they become available. Enhancement activities are currently underway for degraded portions of wetlands owned by the NJMC. The objectives of the enhancement efforts are to restore wetland functions, such as flood protection and water purification, improve fish and wildlife habitat, provide passive recreational opportunities, and control the spread of invasive species such as *Phragmites*.

The NJMC has created a Land Use Plan that divides the District into 20 planning areas, including three preserve areas: The Hackensack River Preserve, the Berry's Creek Preserve, and the Penhorn Preserve. The NJMC intends to acquire and protect from development approximately 2600 acres of wetlands within the preserves.

Education/Outreach:

Rutgers University offers courses for the Continuing Education Program for Engineers and Environmental Consultants. These include annual courses on Freshwater Wetlands permitting, Coastal Program permitting, and Stream Encroachment permitting. NJCMP staff present on these topics providing information on new and relevant program and regulatory changes. These courses focus on the process for obtaining permits, letters of interpretation, and other important regulatory reviews. When the new Stormwater Management rules were adopted in February 2004, classes were added to the program to cover the new rules and regulations.

The Coastal Management Office coordinated with the Jacques Cousteau National Estuarine Research Reserve, the NJDEP Land Use Regulation Program (LURP) and the Bureau of Coastal and Land Use Enforcement (CLUE) to hold a series of five coastal decision-maker workshops for municipal officials at appropriate locations around the state. The title of the workshops was, 'Understanding Land Use Regulations and Enforcement Seminar for Municipal Officials.' LURP staff presented information on five land use regulations including CAFRA, Waterfront Development, Freshwater Wetlands Protection Act, Coastal Wetlands, and Stream Encroachment.

CLUE staff provided an overview of enforcement issues including violations using case studies and examples. Approximately 140 people attended including zoning officials, construction officials, township engineers, mayors, environmental, planning, and zoning board members, and staff of city housing and building departments.

Mitigation

NJDEP requires compensatory mitigation for activities in wetlands that involve investigation, cleanup, or removal of hazardous materials, the installation of underground utility lines, the closing of landfills, redevelopment projects as well as activities requiring Individual Permits (activities that exceed the requirements of General Permits). Mitigation of wetlands impacts is achieved through wetland creation, restoration, enhancement, monetary contribution, or preservation. NJDEP includes performance standards as permit conditions in every permit that requires mitigation. Also, the NJDEP website contains a checklist of standard monitoring requirements that ensure quality assessments of the status of the mitigation sites.

Revisions to the Freshwater Wetlands Protection Act regulations require that a mitigation project must have a high probability of long-term success. This necessitates, at minimum, adequate dedicated financial resources to complete the project; a design that takes advantage of and fits into the watershed; the presence of adequate hydrology and soils that will support a hydric community; and long term stewardship of the mitigation area.

The revised mitigation section of the rules also require 20% additional mitigation for each year after the initial mitigation start date until the mitigation is performed. The goal of this rule change is to stimulate compliance with the requirement that mitigation occur prior to or concurrent with the wetland disturbance.

The mitigation rules have also been updated to define the critical components of a complete wetland mitigation proposal. These components are detailed on a checklist for the purposes of improving the quantity and quality of wetland mitigation through the preparation of consistent detailed plans. The checklist requires a detailed water budget, soil amendments, preventative maintenance/adaptive management strategies; and detailed landscape and grading plans.

NJDEP now requires wetland mitigation construction meetings to ensure that the approved plan is being properly executed. Also, following completion of construction, the wetland mitigation designer must sign a newly implemented “Construction Completion Form” that holds the designer responsible for assuring that the plan was properly followed. Once again, the goal of these changes is to improve the success rate of wetland mitigation in the state.

Another change that has occurred is the establishment of a Wetland Mitigation Unit. The Unit is responsible for overseeing the development of rules related to mitigation; the management of the wetland mitigation database; the establishment of consistent wetland mitigation conditions that are attached to permits; the mitigation permit compliance; and the review of wetland restoration grants from the wetland mitigation fund.

A review of 90 wetland mitigation sites in New Jersey concluded that, on average, only about one-half of the area of all mitigation sites could be characterized as wetlands (Amy Greene Environmental Consultants, Inc. 2002). One of the reasons identified for the failure of a wetland mitigation creation project is the presence of unsuitable hydrological conditions, suggesting that the hydrologic characteristics were not accurately described or adequately understood. As a result of that research, NJDEP's Division of Land Use Regulation identified the need to better characterize hydrologic conditions of proposed mitigation sites, and relate the onsite conditions to regional conditions in order to develop a site specific water budget for compensatory wetland mitigation projects. On August 30, 2005, the Division of Land Use Regulation was awarded an

EPA Program Development grant to develop a water budget manual for New Jersey for compensatory wetland mitigation sites. Since New Jersey has four physiographic provinces with distinct hydrologic regimes, the manual will describe the most appropriate methods for understanding hydrologic conditions in each of the physiographic provinces. This will allow on-site data to be interpreted in a regional context. Another product of the grant will be a web-based version of the manual that will contain information on how to create a water budget. In addition, a course will be developed for wetland mitigation designers on appropriate methods for developing a hydrologic budget for wetland mitigation projects. The goal of the grant is to improve the effectiveness of compensatory mitigation. The Division intends to keep the regulated community involved so that the product is easily understood and will be used by mitigation practitioners.

Mapping/GIS/Tracking Systems

As briefly mentioned above, NJDEP has committed resources to establish a Wetland Mitigation Unit and one of the responsibilities of the Unit is to manage the State's wetland permit/mitigation database. The database contains information on over 500 wetland mitigation sites. It was created using Access 2003 software and contains detailed information for permits including:

- Permit number
- Location
- Applicant/agent
- Permit analyst
- Impact type
- Wetland class
- Status
- Date received/issued/denied
- Additional comments, notes, unresolved issues
- Actions taken and date, etc.
- Enforcement actions

The tracking system user will be able to link from the permit/mitigation database directly to other files such as letters in a WORD document, excel files, relevant emails, scanned documents and photographs. A link to a GIS database is not yet enabled, but NJDEP is continuing to explore this option. NJDEP is aware of the need to better track the financial assurances and is in the process of adding relevant fields to the database including information on the assurance type (escrow, bond, letter of credit, etc.), date, release date and issuing agency.

The database, when complete, will include extensive mitigation related data for individual mitigation sites, as well as mitigation banks. Some of the data available will include site name, number, and location; mitigation bank name, number of credits, wetland type; number of credits still available, and used credits; and closing date for the bank. Plans are in place to add a table for mitigation site evaluations that will allow the analyst to enter data based on a checklist from a site evaluation completed 3-5 years after the mitigation project is initiated. This will help ensure that New Jersey is successfully achieving functionally equivalent wetlands to replace those that are lost.

Acquisition

Working in partnership, NJDEP and the New Jersey Environmental Infrastructure Trust leverage funds available from the federal government to make more money available at the lowest possible cost for projects that enhance and protect ground and surface water resources, including acquisition of open spaces such as wetlands. In 2002, the Environmental Infrastructure Financing Program helped finance the acquisition of property in Middle Township, Cape May County, New Jersey. The parcel consisted of an upland area and an area of mixed upland forest and shrub

wetlands. These wetlands, classified as freshwater wetlands by NJDEP's Division of Land Use Regulation, are particularly important for aquifer recharge, because the parcel is located in proximity to the Wildwood Water Pumping Station and pond. Also included on the property are two man-made ponds and a tributary to Fishing Creek. In addition, NJDEP's Office of Natural Lands Management has records of several threatened/endangered animal species on or in the vicinity of the site. The site also lies within a migratory raptor concentration area.

The Coastal and Estuarine Land Conservation Program administered by NOAA and funded through the Federal Coastal Zone Management Program has been used successfully in New Jersey to acquire wetlands for preservation purposes. The acquired land areas are all high resource value wetlands adjacent to areas threatened by conversion to development.

Publicly Funded Infrastructure Restrictions

NJDEP continues to place restrictions in sewer system permits (typically CAFRA permits), where construction of laterals would facilitate construction that would threaten environmentally areas such as wetlands and wetlands buffers. Typically the sewerage authority would have to identify all of the lots and blocks involved and pass a resolution agreeing not to service them without prior approval from NJDEP.

Conclusion

- 1. Identify priority needs or major gaps in addressing the programmatic objectives for this enhancement area that could be addressed through a 309 Strategy.*
- 2. What priority was this area and what priority is it now for developing a 309 Strategy and designating 309 funding and why?*

The major gaps and priority needs in addressing wetland protection, preservation, restoration, and acquisition of wetlands include those related to tracking and monitoring current activities. New Jersey has a very robust regulatory program for permitting and mitigating impacts to coastal wetlands, however efforts must be enhanced to better track and monitor these activities. Specifically, NJDEP should place more emphasis on maintaining accurate records of financial assurances related to mitigation efforts and should focus more resources and effort on improving mitigation project monitoring for short- and long-term success. Since initial efforts to put these improvements in place have already begun, this area remains a medium priority for developing a 309 Strategy.

Since the NJCMP is not proposing to expend Section 309 funds on this enhancement area, no Strategy is provided for the Wetlands enhancement area.

Last Assessment

High _____
 Medium X _____
 Low _____

This Assessment

High _____
 Medium X _____
 Low _____

