

Appendix A: Pertinent Correspondence

Section 1 - General Correspondence

Section 2 – Agency and Public Comments and Responses

Section 3 – Public Workshop Minutes

Section 1 - General Correspondence



State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection
Natural and Historic Resources
Division of Engineering and Construction
September 7, 2000

Robert C. Shinn, Jr.
Commissioner

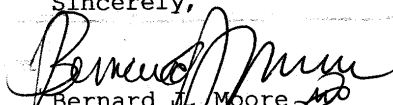
LTC. Colonel Timothy Brown
Phila. Dist. Corps of Engineers
Wanamaker Bldg.
100 Penn Square East
Philadelphia, PA 19107-3390

Dear LTC. Col. Brown:

I am writing in support of the project identified by the Corps of Engineers' Feasibility Report and Environmental Impact Statement for Great Egg Harbor Inlet to Townsends Inlet, New Jersey. We fully support this project selected for future construction. We are aware that funds have been included in the Federal FY 2001 budget to initiate Preconstruction, Engineering and Design efforts and are willing to cost share this portion of the project at 75 percent Federal and 25 percent non-Federal, understanding that adjustments may be necessary to bring the non-Federal PED cost sharing in line with the project cost sharing during the first year of construction. At the appropriate time, the State is prepared to enter into a Project Cooperation Agreement (PCA) establishing our commitment to see this project reach construction.

The State of New Jersey is very supportive of this project which will provide necessary shore protection to the local communities. We look forward to working with the Corps of Engineers in constructing this important project.

Sincerely,


Bernard J. Moore
Administrator

mm

Phone
(732) 255-0770

1510 Hooper Avenue, Toms River, NJ 08753

Fax
(732) 255-0774

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OFFICE OF THE MAYOR

CITY OF OCEAN CITY

AMERICA'S GREATEST FAMILY RESORT

September 19, 2000

Lt. Colonel Timothy Brown
U.S. Army Corps of Engineers, Philadelphia District
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107

Re: Great Egg Harbor Inlet to Townsend's Inlet
Feasibility Report

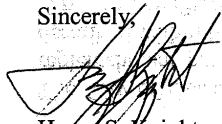
Dear Lt. Colonel Brown:

The City of Ocean City wishes to express its full endorsement of the proposed beach replenishment project for the south end of Ocean City (34th Street to 59th Street) as described within the Great Egg Harbor Inlet to Townsend's Inlet Feasibility Report. The City has benefited greatly from the current federal project which includes the beaches north of 34th Street. The proposed project will ensure the protection of Ocean City along the entire oceanfront.

The City has endeavored through its own efforts and in conjunction with the State of New Jersey, to maintain an engineered beach at the south end of Ocean City. Frankly, federal resources are critical for the continued preservation of the beaches at the south end of Ocean City. The Army Corps of Engineers has shown time and again that they have the necessary resources to properly investigate, analyze, and implement the solutions which are required along our nation's coastlines.


The City is prepared to cooperate with the federal and state governments to implement the proposed project. As always, we greatly appreciate the Army Corps of Engineers work in the preservation of Ocean City's beaches.

Sincerely,



Henry S. Knight
Mayor

861 ASBURY AVENUE, OCEAN CITY, NJ 08226-3695
609-525-9335 FAX: 609-398-0740

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CAPE MAY COUNTY
DEPARTMENT of PUBLIC WORKS
Office of the COUNTY ENGINEER



DAMES & MOORE
Frederick

4 Moore Road
Cape May Court House, NJ, 08210-1601
(609) 465-1035 ☐ Fax: 465-1418

Dale M. Porter
Engineer

June 25, 2001

Robert L. Callegari, Chief, Planning Division
U.S. Army Engineer District, Philadelphia
Wanamaker Building, 100 Penn Square East
Philadelphia, PA 19107-3390

Attention: Lieutenant Colonel Timothy Brown
District Engineer

RE: Great Egg Harbor Inlet to Townsends Inlet, New Jersey
Feasibility Study

Dear Mr. Callegari:

Cape May County beaches are a national treasure and as such should be maintained in a manner that retains the charm that draw visitors from far and near. The beaches are the most critical component of the County's tourism industry and they provide storm protection for the infrastructure and development of the coastal communities. The periodic restoration of our beaches is essential for the protecting of the lives and properties of our residents and visitors as well as ensuring the vibrancy of the tourist industry.

The County supports the immediate implementation of the selected plan for the South End of Ocean City and Ludlam Island to reduce the potential for storm damages in the communities of Ocean City, Sea Isle City and Strathmere. The benefits gained in storm damaged protection far outweigh the costs in implementing these beachfill projects.

The selected plan for South End of Ocean City consists of constructing a berm and dune built to a height of +3.9 meters from an offshore borrow source. This plan extends from 34th Street to 59th Street and will tie-in to the existing 50-year federal beachfill in the northern portion of Ocean City.

The selected plan for Ludlam Island consists of constructing a berm and dune built to a height of +4.5 meters from an offshore borrow source. This plan will extend from Corsons Inlet State park in the north to Townsends Inlet in the south. Several areas on Ludlam Island have been severely and repeatedly ravaged by storms particularly over the last ten (10) years.

In 1962, a northeaster storm wreaked havoc on Cape May County. The three communities to greatly benefit from the proposed beachfill project suffered a tremendous loss or damage to structures as the result of this storm. The communities have since been rebuilt and real estate development has continued, thus increasing the potential for storm damages.

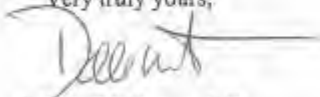
Strathmere is particularly vulnerable to being isolated in the event of severe storm as was demonstrated during the February, 1998 northeaster storm. While minor-to-moderate damages were inflicted in the Mid-Atlantic and New England area as the result of this storm, the community of Strathmere was cut-off from the rest of Cape May County. The dune and roadway to the south of Strathmere in the Whale Beach area was destroyed during this storm. In 1991, twice in 1992 and once in 1994, the dune in the Whale Beach area had been washed away by storms. New Jersey Department of Environmental Protection constructed emergency dune repairs to restore the dunes that protected the access from Sea Isle City to Strathmere. Unfortunately, these emergency dune repairs were not able to withstand nature's fury. After the 1998 storm, the County had the responsibility of reconstructing the storm-ravaged section of Ocean Drive in the Whale Beach area. Given the knowledge that the emergency dune repairs did not provide much in the way of storm damage protection, the County constructed a dune using geotextile tubes for its core. The tubes were covered with sand and dune grass. When looking at this dune from the roadside, one would say that the dune is in great condition with its tall and green dune grass. But one only needs to walk over the top of the dune to see the scarring effects that waves have done. Currently, sand is being placed on and in front of the tubes for the third time since the tubes were installed in 1998. The geotextile tubes have worked admirably to prevent the flooding and damages wreaked by the storm wave actions. However, this area needs more than just the geotextile tubes and the short berm area in front toward the ocean; this area needs the long-term storm damage prevention benefits that will be provided by the proposed beachfill project.

Nothing short of the full implementation of the dune and berm on Ludlam Island is acceptable. Some feel that the Whale Beach area should be left alone so that nature can take her course but this action or inaction would require even a greater investment into the infrastructure of this area, such as constructing a bridge to span Whale Beach. A large breachable area such as Whale Beach will result in increase potential for damages from back bay flooding of the adjacent communities.

The Whale Beach area is not alone in the storm damaged inflicted over the past years. Strathmere itself has been particularly hard hit along with the south end of Sea Isle City at Townsends Inlet. The storm damage prevention benefits gain by implementing the proposed beachfill project with its commitment of periodic renourishment is long overdue. The beachfill project will also provide greater tourism interest and opportunities that will pay back dividends over and above the cost of the program.

The property owners, municipalities, County and State have a tremendous amount of development and infrastructure investments in these communities. The County has committed resources in this area and we cannot afford to replace this investment. On behalf of the Cape May County Board of Chosen Freeholders, I cannot emphasize how important it is for the federal government to move as quickly as possible to implement this much needed shore protection.

Very truly yours,



Dale M. Foster, P.E.
County Engineer

CC: Freeholder Board
City of Ocean City
City of Sea Isle City
Township of Upper
County Planning Board



LEONARD C. DESIDERIO
MAYOR

City of Sea Isle City

4416 LANDIS AVENUE
SEA ISLE CITY, NEW JERSEY 08243
609-263-4461
FAX 609-263-6139

DIRECTOR
DEPARTMENT OF REVENUE AND FINANCE

August 7, 2001

Lt. Colonel Timothy Brown
U. S. Army Corps of Engineers
Wannamaker Bldg
100 Penn Square East
Philadelphia, Pa. 19107-3390

Re: New Jersey Shore Protection
Great Egg Harbor Inlet to Townsend's Inlet
Feasibility Report

Dear Lt. Colonel Brown,

On behalf of the Board of Commissioners of the City of Sea Isle City, I wish to express our deepest appreciation to the Army Corps of Engineers for all they do for our community in our efforts to protect our ocean-shorefront.

Without the assistance of the Army Corps of Army Engineers and the State of New Jersey, it would be too costly for our City to preserve its ocean-shorefront.

As you are aware the City has undertaken a dedicated effort to protect our shorefront with the construction of low profile groins along with beach nourishment projects and have an on-going Beach Erosion Plan.

The City strongly supports the Great Egg Harbor Inlet to Townsends Inlet Feasibility Report done by the Army Corps and urges even more involvement in our erosion problems.

Sincerely,

CITY OF SEA ISLE CITY

Leonard C. Desiderio
Mayor

"The Sea and Sand Family Vacationland"

CENAP-PL-E
6562/am
06 MARCH 1998
DAYAN *MD*
PASQUALE *J*
ZAPPILE *8*
BURNES *3*
CALLEGARI *B*

Environmental Resources Branch

Dear:

The U.S. Army Corps of Engineers, Philadelphia District, has initiated the "Great Egg Harbor Inlet to Townsends Inlet Feasibility Study." This study is cost shared between the New Jersey Department of Environmental Protection and the Federal Government on a 50/50 basis. The purpose of the study is to fully evaluate the locations and optimum design for shore protection measures along Peck Beach and Ludlam Island.

The study area is located on the southern Atlantic coast of New Jersey in Cape May County, extending approximately 24.1 Kilometers from Great Egg Harbor Inlet to Townsends Inlet. The two inlets enclose the barrier islands known as Peck Beach and Ludlam Island. Peck Beach contains both Ocean City and Corson Inlet State Park. Ocean City is a highly developed residential town that measures 11.4 Kilometers in length. A federal project currently exists at the northern portion of Ocean City, therefore this study will focus on the southern portion (south of 36th street) of Ocean City. Ludlam Island contains the towns of Strathmere and Sea Isle City. The town of Strathmere in the northern portion of the island consists of mostly residential structures and very little commercial development. Whale Beach is a narrow, sparsely developed stretch of land that encompasses the southern portion of the town of Strathmere and the northern portion of Sea Isle City. Sea Isle City is a highly developed residential community similar to Ocean City. The southern section of Sea Isle City is a residential section known as Townsends Inlet.

The primary focus of the study is to investigate and identify potential methods of protecting areas experiencing coastal erosion due to hurricane and storm damage. This will include any environmental impacts that might be caused by these protective measures.

We would like to initiate coordination with you early in the planning process. We welcome any comments or concerns with regard to potential impacts to resources within the study area. The proposed study area is outlined on the enclosed map.

-2-

Any questions or concerns in regard to this study can be directed to Mr. Nathan Dayan of the Environmental Resources Branch at (215) 656-6562. Thank you for your cooperation.

Sincerely,

Robert L. Callegari
Chief, Planning Division

Enclosures

MFR: Letter documenting coordination with for the "Great Egg Harbor
Townships Inlet Feasibility Study." Coordinated with CENA del to PC.

N. Dayan
CENAP-PL-E

Mr. Carl Braun
NJDEP - Land Use Regulation Program
P.O. Box 401
501 East State Street, Floor 2
Trenton, New Jersey 08625-0401

Mr. Larry Schmidt
NJDEP - Program Coordination
P.O. Box 418
401 East State Street, Floor 2
Trenton, New Jersey 08625-0418

Mr. Larry Niles, Chief
Endangered & Non-Game Species
NJDEP, Division of Fish, Game & Wildlife
CN 400
Trenton, New Jersey 08625-0400

Mr. Willie DeCamp
Ocean County Isaak Walton League
1229 Bay Avenue
Mantoloking, New Jersey 08738

Mr. Richard Merion, President
Alliance for a Living Ocean
P.O. Box 95
Ship Bottom, New Jersey 08008

Mr. Tom Fote, Legislative Chairman
New Jersey Angler Association
22 Cruiser Court
Toms River, New Jersey 08753

Ms. Karen Wurst, Biologist
National Marine Fisheries Service
James J. Howard Marine Science Laboratory
Highlands, New Jersey 07732

Mr. Gef Flimlin
Marine Extension Agent
Rutger's Cooperative Extension of Ocean County
Toms River, New Jersey 08755

**Mr. Clifford Day, Supervisor
New Jersey Field Office
U.S. Fish and Wildlife Service
927 North Main Street
Building D
Pleasantville, New Jersey 08232**

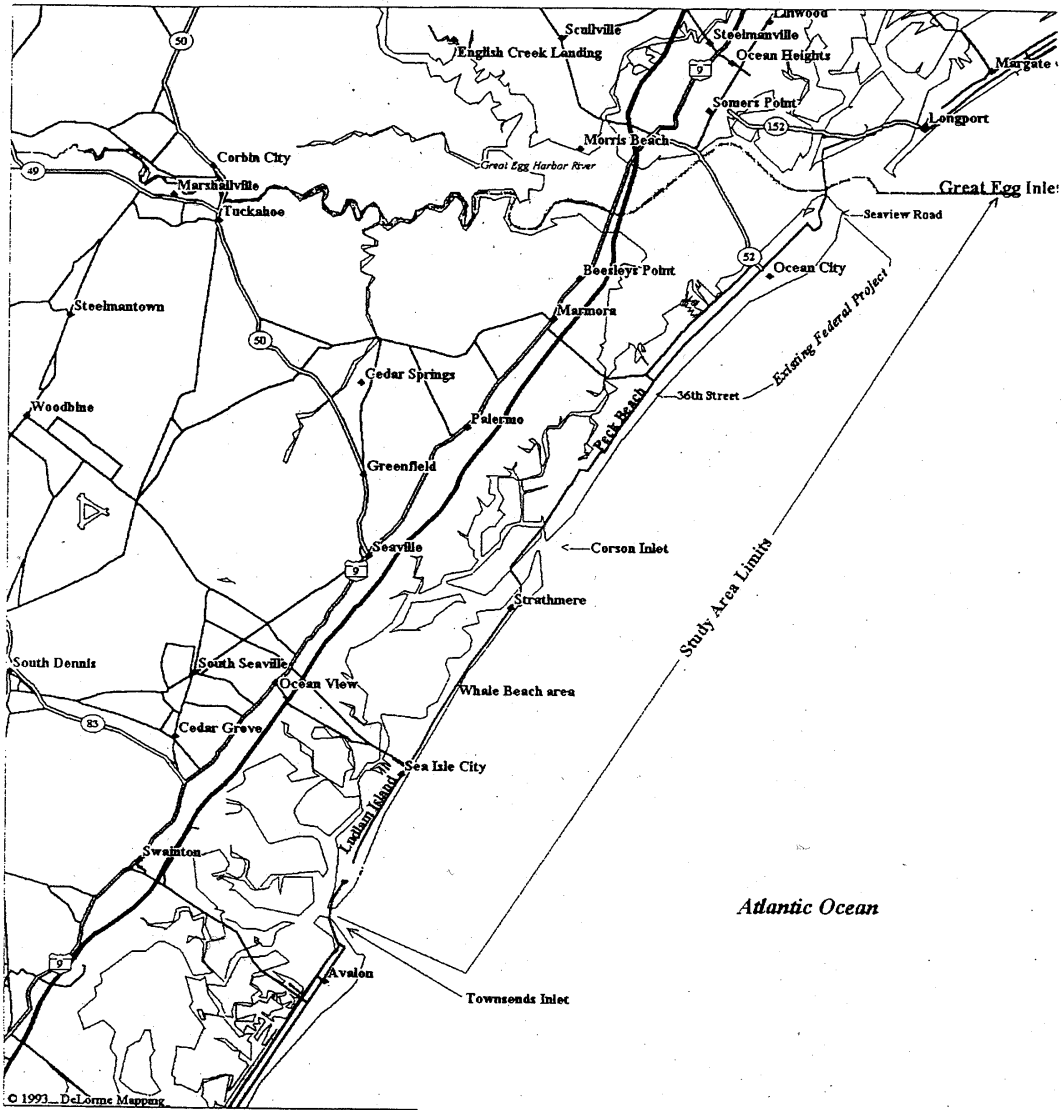
**Mr. Jim Joseph, Chief
New Jersey Department of Environmental Protection
Division of Fish, Game & Wildlife
Nacote Creek Research Station
P. O. Box 418
Port Republic, New Jersey 02841**

**Mr. Joel Fogel, Director
Waterwatch/Coastal Patrol
P.O. Box 22
Somers Point, New Jersey 08244**

**Mr. Robert W. Hargrove
Chief, Environmental Impacts Branch
Environmental Protection Agency
Region II
Jacob K. Javits Federal Building
New York, New York 10278**

**Mr. Bob Scro
NJDEPE
Bureau of Marine Water Classification & Analysis
P.O. Box 465 Stony Hill Road
Leeds Point, New Jersey 08220-0405**

**Ms. Liz Rosenblat
Office of Environmental Planning
401 East State Street
CN 418
Trenton, New Jersey 08625**



LEGEND

- | | |
|-----------------------|---------------|
| ○ State Route | — State Route |
| • Town, Small City | — US Highway |
| ▭ US Highway | — Airfield |
| - - - County Boundary | ▭ Land Mass |
| — Population Center | ▭ Open Water |
| — Major Street/Road | |
| — Interstate Highway | |

Scale 1:150,000 (at center)

2 Miles

5 KM

Great Egg Inlet to Townsends Inlet
Mag 12.00
Tue Apr 23 12:57:38 1996

Figure I-1



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Habitat Conservation Division
James J. Howard Marine
Sciences Laboratory
74 Magruder Road
Highlands, New Jersey 07732

March 25, 1998

Mr. Robert L. Callegari, Chief
Planning Division
Environmental Resources Branch
Philadelphia District, Corps of Engineers
Wanamaker Building, 100 Penn Square East
Philadelphia, PA 19107-3391

ATTN: Mr. Nathan Dayan

RE: Great Egg Harbor Inlet to Townsends Inlet Feasibility Study

Dear Mr. Callegari:

In response to your request for information regarding fisheries resources in the area of the above referenced project, we offer the following information.

Several species of sea turtles including the threatened loggerhead (*Caretta caretta*), and endangered Kemp's ridley (*Lepidochelys kempii*), and green (*Chelonia mydas*) sea turtles may occur in inshore waters of New Jersey. These turtles feed primarily on mollusks, crustaceans, sponges and a variety of marine grasses and seaweeds. In addition, the endangered leatherback (*Dermochelys coriacea*) sea turtle may occupy the coastal waters of New Jersey, foraging for jellyfish. These sea turtles may be found in New Jersey waters from late spring to mid-fall.

Also, Endangered right whales (*Eubalaena glacialis*) and humpback whales (*Megaptera novaeangaliae*) are present in the mid-Atlantic waters off the coast of New Jersey in late winter through early spring. Finback whales (*Balaenoptera physalus*) which are the most likely species to occur in the coastal waters of New Jersey are present throughout the year. Lastly, the harbor porpoise (*Phocoena phocoena*) which has been proposed for listing as threatened under the Endangered Species Act may also be in the project area. While Mid-Atlantic waters are the southern extreme of their distribution, stranding data indicates a strong presence of harbor porpoise off the coast of New Jersey, predominantly during the spring.


Surf clams (*Spisula solidissima*) may also be found within the study area. The harvest of surf clams is an economically important commercial fishery in New Jersey. As a result, shoreline protection/erosion control options should be designed to minimize impacts to this resource. The



New Jersey Department of Environmental Protection, Bureau of Shellfisheries can assist your office in determining the location of commercially valuable surf clam beds. They will also have information of the presence of hard clams (Mercenaria mercenaria) in the back bay areas. We recommend that you consult with them during the early stages of the study.

If you have any questions, or need additional information, please contact Anita Riportella at 732-872-3116.

Sincerely,


Stanley W. Gorski
Field Offices Supervisor

ar/peck.ir
cf: Milford-N.Haley

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**US Army Corps
of Engineers**

Philadelphia District

Public Notice

Public Notice No.	Date
CENAP-PL-E-98-03	27 March 1998

Application No.	File No.
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**In Reply Refer to:
Environmental Resources Branch**

Great Egg Harbor Inlet to Townsends Inlet Feasibility Study Cape May County, New Jersey

Pursuant to Section 102 of the National Environmental Policy Act, Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act, NOTICE IS HEREBY GIVEN THAT the Philadelphia District U.S. Army Corps of Engineers has initiated The Great Egg Harbor Inlet to Townsends Inlet Feasibility Study, which addresses the need for shore protection and storm damage reduction for the communities of Ocean City, Strathmere and Sea Isle City, Cape May County, New Jersey. This study is cost shared between the New Jersey Department of Environmental Protection and the Federal Government on a 50/50 basis.

The study area is located on the southern Atlantic coast of New Jersey in Cape May County, extending approximately 24.1 Kilometers from Great Egg Harbor Inlet to Townsends Inlet. The study area is outlined on the enclosed map. The two inlets enclose the barrier islands known as Peck Beach and Ludlam Island. Peck Beach contains both Ocean City and Corson Inlet State Park. Ocean City is a highly developed residential town that measures 11.4 Kilometers in length. A federal project currently exists at the northern portion of Ocean City, therefore this study will focus on the southern portion (south of 36th street) of Ocean City. Ludlam Island contains the towns of Strathmere and Sea Isle City. The town of Strathmere in the northern portion of the island consists of mostly residential structures and very little commercial development. Whale Beach is a narrow, sparsely developed stretch of land that encompasses the southern portion of the town of Strathmere and the northern portion of Sea Isle City. Sea Isle City is a highly developed residential community similar to Ocean City. The southern section of Sea Isle City is a residential section known as Townsends Inlet. Significant beach and dune erosion has left these communities vulnerable to storm damages and with reduced recreational opportunities. Severe storms in recent years have caused a reduction in the overall beach height and width along the study area, which, along with the absence of suitable dunes, exposes the communities to catastrophic damage from ocean flooding and wave attack.

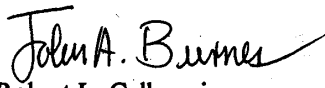
The primary focus of the study is to investigate and identify potential methods of protecting areas experiencing coastal erosion due to hurricane and storm damage. This will include any environmental impacts that might be caused by these protective measures.

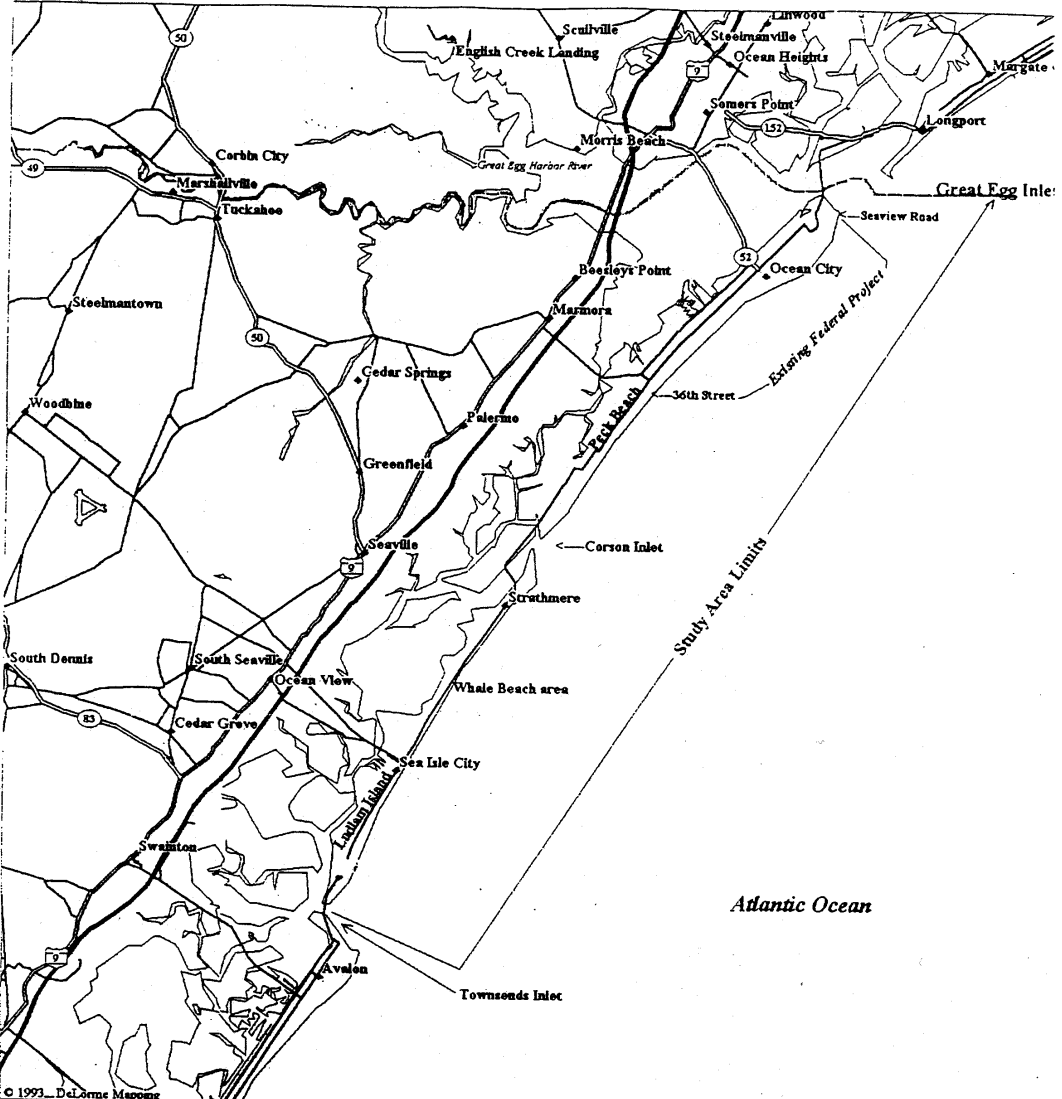
Significant issues to be addressed in the EIS with regard to the proposed action include impacts on aquatic biota, water quality, fisheries, cultural resources, socioeconomics, and aesthetics.

This notice initiates scoping procedures as outlined in 33 CFR Part 230.12. Scoping is an early and open process for identifying the significant issues related to the proposed action. Participation of the general public and other interested parties in identifying significant issues and alternatives is being solicited by means of this public notice.

The public is invited to participate in the project scoping by providing written comments, questions, and concerns to this office within 30 days receipt of this notice.

Any questions or concerns in regard to this study can be directed to Mr. Nathan Dayan of the Environmental Resources Branch at (215) 656-6562. Thank you for your cooperation.

FOR 
Robert L. Callegari
Chief, Planning Division
Philadelphia District
U.S. Army Corps of Engineers



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- LEGEND**
- State Route
 - Town, Small City
 - ◻ US Highway
 - County Boundary
 - Population Center
 - Major Street/Road
 - Interstate Highway
 - State Route
 - US Highway
 - Airfield
 - Land Mass
 - Open Water

Scale 1:150,000 (at center)

2 Miles

5 KM

Great Egg Inlet to Townsends Inlet
Mag 12.00
Tue Apr 23 12:57:38 1996

Figure I-1



IN REPLY REFER TO:
FP-98/016

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
927 North Main Street (Bldg. D1)
Pleasantville, New Jersey 08232

Tel: 609-646-9310
FAX: 609-646-0352

April 10, 1998

Robert L. Callegari
U.S. Army Corps of Engineers
Philadelphia District
Wanamaker Building
100 Penn Square East
Philadelphia, Pennsylvania 19107-3390
Attn: Nathan Dayan

Dear Mr. Callegari:

The U.S. Fish and Wildlife Service (Service) has reviewed the U.S. Army Corps of Engineers (Corps) Public Notice Number CENAP-PL-E-98-03, dated March 27, 1998, regarding a proposed storm damage reduction study between Great Egg Harbor Inlet and Townsends Inlet. The proposed study area includes the communities of Ocean City, Strathmere, and Sea Isle City, Cape May County, New Jersey. The Public Notice identifies the need to conduct a Feasibility Study and prepare environmental documentation pursuant to the National Environmental Policy Act (NEPA)(83 Stat. 852; 42 U.S.C. 4321 *et seq.*). The purpose of the proposed study is to assess the feasibility of providing shore protection and stabilization in an area that has been affected by severe storms, which have caused a reduction in the overall beach height and width and exposed the subject communities to damage from ocean flooding and wave attack. The study area encompasses approximately 24.1 kilometers of shoreline.

AUTHORITY

The following comments on the proposed activity have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401; 16 U.S.C. 661 *et seq.*), the Endangered Species Act of 1973 (ESA)(87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), and NEPA, and are consistent with the intent of the Service's Mitigation Policy (Federal Register, Vol. 46, No. 15, Jan. 23, 1981).

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FEDERALLY LISTED SPECIES

The piping plover (*Charadrius melodus*), federally listed as threatened pursuant to the ESA, currently nests within the study area. Specifically, the piping plover nests in Ocean City, Strathmere, and Sea Isle City. Piping plovers nest on sandy beaches above the high tide line on mainland coastal beaches, sand flats, and barrier island coastal beaches. The nesting sites are typically located on gently sloping foredunes, blowout areas behind primary dunes, washover areas cut into or between dunes, ends of sandpits, and on sites with deposits of suitable dredged or pumped sand.

Other than the piping plover and an occasional transient bald eagle (*Haliaeetus leucocephalus*) or peregrine falcon (*Falco peregrinus*), no other federally listed or proposed threatened or endangered flora or fauna under Service jurisdiction are known to occur in the project area. Further consultation pursuant to Section 7(a)(2) of the ESA will be necessary to ensure no adverse impacts on piping plovers occur as a result of the proposed project.

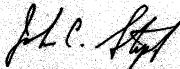
SERVICE REVIEW

Based on a preliminary review of the study area and fish and wildlife resources that occur within the study area, the Service recommends that the Feasibility Report and environmental documentation pursuant to the NEPA incorporate the following issues.

1. Address all structural and non-structural alternatives to storm damage protection including beach nourishment and acquisition (buy-out).
2. Address impacts on shellfish and finfish at potential borrow areas and at potential storm damage protection sites and include justification of borrow site selection based on environmental criteria.
3. If dredging is proposed, identify proposed methods of dredging and the impact of such dredging on sea turtles, shellfish, and finfish.
4. Identify direct, indirect, and cumulative impacts on the piping plover, a federally listed (threatened) species; least tern (*Sterna antillarum*), a State-listed (endangered) species; and, any other State-listed species known to inhabit the study area. Additionally, identify actions to avoid or minimize impacts on federally listed and State-listed species.
5. Identify a monitoring program that would allow the Corps to gather information on long-term beneficial and adverse impacts of the proposed project on fish and wildlife resources, including beach nesting birds.

The above views constitute the Service's comments on the Public Notice to prepare a Feasibility Report and environmental documentation pursuant to NEPA. Should you have any questions regarding these comments, please contact John Staples or Eric Schradung of my staff.

Sincerely,


for Clifford G. Day
Supervisor



State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

Office of Program Coordination
PO Box 418
Trenton, NJ 08625-0418
Phone 609-292-2662
Fax 609-777-0942

April 23, 1998

Mr. Robert L. Callegari
Chief, Planning Division
Philadelphia District, Corps of Engineers
Wanamaker Building, 100 Penn Square East
Philadelphia, PA 19107-3391

RE: Great Egg Harbor Inlet to Townsends Inlet Feasibility Study

Dear Mr. Callegari:

The Office of Program Coordination of the New Jersey Department of Environmental Protection (NJDEP) has completed its review of the limited information contained in your recent letter regarding initiating the Great Egg Harbor Inlet to Townsends Inlet Feasibility Study. We offer the following comments regarding natural resources and open space resources.

NATURAL RESOURCES

The NJDEP's Division of Fish, Game and Wildlife's (DFGW) has already commented on the reconnaissance study for this same area; those comments were included in our July 10, 1995 letter (see attached). However, since the time of that response, additional information regarding shellfish resources has arisen. Therefore, the original and updated information is summarized below and should apply to this feasibility study.

Shellfish Resources

The DFGW's Bureau of Shellfisheries responded to the reconnaissance study for this project by indicating that, "unlike most of the State's waters along the Atlantic Ocean, this region has not produced commercially viable concentrations of surf clams (*Spisula Solidissima*) in over twenty years". While this was true when the comments were submitted, recent data collected during the 1996 and 1997 surf clam inventory surveys has revealed that the stocks of surf clams in the region are improving. The Bureau has found localized areas that contain high densities of surf clams; any proposed borrow area should now be investigated thoroughly since the offshore lumps typically used for sand extraction are also prime surf clam habitat.

Back-bay areas still contain productive hard clam (*Mercenaria mercenaria*) beds. While not comprehensive, various site inspections conducted throughout the back-bays within the project area indicate the viable hard clam habitat is present; shellfish densities vary depending on location. It is noted that a number of shellfish aquaculture leases exist throughout this region; these leases augment the natural value of the estuarine shellfisheries of the region.

Any questions regarding additional information on shellfish issues should be directed to Jeff Normant (609-984-5546) of the Bureau of Shellfisheries.

Marine Fisheries

The DFGW's Bureau of Marine Fisheries re-emphasizes their concerns from the reconnaissance study relative to potential impacts on fisheries resources from borrow area activities. Offshore lumps, wrecks, artificial reefs and areas identified as prime-fishing grounds should be avoided. Several lumps offshore of Corson's Inlet (2-3 miles) and several ridges within two miles of the beach off Strathmere and Sea Isle City are particularly noted. These areas are popular fishing sites since they attract and hold fish; such sites should not be considered as borrow areas for beach nourishment. Monitoring studies of any proposed borrow sites, as well as mitigation for impacts at borrow areas, need to be coordinated with the Bureau of Marine Fisheries.

A second area of concern is the impact of beach nourishment and the loss of jetties on shore based recreational fishing activities. Losses to existing beach habitat and temporary impacts to benthic organisms/forage would need to be developed to address these impacts and provide a basis for assessing mitigation requirements.

Questions or future coordination regarding marine issues should be directed to John McClain at 609-748-2020.

Wildlife Resources

The Bureau of Wildlife Management indicates that large numbers of waterfowl can be expected to utilize the marsh/wetlands adjacent to the coastal study area during the period from October through April. Primary species include black duck, brant, mallard, bufflehead, old squaw, scoter and scaup. In addition, salt marsh areas in the study are extensively used by clapper rail for nesting during their breeding season (April – August). Mammals that occur in the study area are river otter, raccoon, fox, and an occasional white-tailed deer.

Questions or future coordination regarding marine issues should be directed to Lee Widjeskog at 609-748-0455.

Endangered and Threatened Species

The Great Egg Harbor to Townsends Inlet reach of the Atlantic coastal beaches, bays and marshes continues to provide critical habitats for several endangered and threatened species and other important coastal wildlife.

Thirty to forty pairs of piping plovers (federally threatened, State endangered) nest on the barrier beaches in this area and represent roughly 25% of the nesting population of New Jersey. Nesting piping plovers are found in all three municipalities that make up this stretch of coastline (Ocean City, Upper Township, Sea Isle City). Two to five least tern (State endangered) colonies have existed in the study area over the past decade. The areas that most consistently support nesting least terns are around Corson's Inlet and Townsends Inlet. One of the largest black skimmer (State endangered) colonies in New Jersey is located in Corson's Inlet, frequently on the Strathmere Natural Area.

Several osprey pairs (State threatened) nest mostly on artificial structures in this region, although they are abundant immediately south of the area. One pair of peregrine falcons (federally threatened, State endangered) nest in a nesting box behind Sea Isle City. Another pair nests on the marshes of the Tuckahoe River but undoubtedly feed in the marshes behind this coastal reach.

Several wading bird colonies are located on the dredge disposal islands in the back-bays and marshes behind barrier islands in this stretch. Herring gulls, laughing gulls and great-backed gulls nest on the marsh islands but are not as numerous as in the regions immediately north or south of this area. Several small common tern and Forsters tern colonies are also located in this area. Other notable nongame marsh birds breeding in the study area include willets and American oystercatchers. Beaches, tidal flats and marshes in this area all provide important feeding and roosting habitat for migratory shorebirds.

In regard to the protection measures that may be proposed, beach nourishment will probably enhance habitat for beach nesting birds, although this often presents difficult management challenges where human interaction occurs. If the protection measures take the form of hard structures, negative impacts to beach nesting bird habitat are likely; hard structural solutions to beach erosion should be avoided. General precautions would include timing restrictions during construction and a management plan to adequately protect endangered birds that nest on any habitat created by the beach nourishment.

It is also noted that the study area include two State-owned parcels (Corson's Inlet State Park and Strathmere Natural Area) as well as the relatively undeveloped Whale Beach area. These areas do not normally meet the strict federal cost/benefit requirements for shore protection measures but provide some of the most important existing beach nesting habitat. If beach nourishment activities avoid these areas in favor of more populated areas, then suitable beach nesting habitat will essentially be shifted to areas that present a greater likelihood of conflicts with human activities. Therefore, any beach nourishment in the study area should also include creation and/or enhancement of habitat on Corson's Inlet State Park, Strathmere Natural Area and Whale Beach; it should also include provisions for management of this habitat and the nesting birds.

Additional information or questions regarding endangered/threatened/nongame resources should be directed to Dave Jenkins at 609-292-9400.

OPEN SPACE RESOURCES

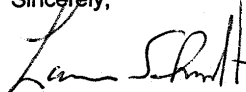
As noted above, Corson's Inlet State Park and the Strathmere Natural Area are in the study area. Both areas have been hammered by storms extensively this and other past years. Significant loss of primary dunes has closed the former walkway entrance at Seaview Avenue in Strathmere and repeated northeasters have created a "gut", linking the Atlantic Ocean and Middle Thorofare in North Carson's.

The primary concern of the NJDEP's Division of Parks and Forestry is the sensitivity of laying pipe across Strathmere Natural Area. Approximately ten years ago, the plan to pump sand from Corson's Inlet to downbeach properties originally called for destruction of dunes and the laying of pipe diagonally across the area. The obvious intrusion into nesting areas and disturbance of protected areas precluded such action from taking place; the pipe was laid along the high water mark. (The lack of communication and coordination between the project partners has improved greatly since that time.)

The Division of Parks and Forestry welcomes this initiative to minimize the destruction of primary and secondary dune systems on our parklands. Additional information or questions regarding these open space resources should be directed to Thomas Keck at 609-861-2404.

Thank you for the opportunity to be part of the scoping process for this important project.

Sincerely,



Lawrence Schmidt
Director
Office of Program Coordination

Attachment

C: Nathan Dayan, ACOE
Robert McDowell, NJDEP
Andrew Didun, NJDEP
Jeff Normant, NJDEP
John McClain, NJDEP
Lee Widjeskog, NJDEP
Dave Jenkins, NJDEP
Carl Nordstrom, NJDEP
Thomas Keck, NJDEP
Bernard Moore, NJDEP
Ruth Ehinger, NJDEP

CENAP-PL-E
6562/am
31 JULY 1998

Environmental Resources Branch

DAYAN
JB PASQUALE

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Mr. Andy Didun
NJ Department of Environmental Protection
CN 400 - Division of Fish, Game & Wildlife
Trenton, New Jersey 08625-0402

JUL 31 1998

LIPSKI
CALLEGARI

Dear Mr. Didun:

The U.S. Army Corps of Engineers, Philadelphia District, is currently conducting the "Great Egg Harbor Inlet to Townsend Inlet, New Jersey Feasibility Study." Enclosed for your review is a draft scope of work for the benthic sampling to be complete for the proposed project. This benthic work will examine the proposed borrow areas as well as the placement site for this study. These conditions will be compared to surrounding reference sites (for the borrow areas) and the site of the recent Ocean City nourishment activities (for the placement site). This SOW is also being coordinated with the U.S. Fish and Wildlife Service.

As a result of recent meetings between our offices, we would like to request that you also review the location(s) of the proposed borrow areas for concerns you may have relating to surf clams and prime fishing Areas.

It is currently anticipated that the benthic sampling for this project will be finished by September 30, 1998. In order to meet this schedule we request that you provide us with any comments you might have on the SOW or the proposed borrow areas no later than August 14, 1998.

Any questions or concerns with regard to this study can be directed to Mr. Nathan Dayan of the Environmental Resources Branch at (215) 656-6562. Thank you for your cooperation.

Sincerely,

Robert L. Callegari
Chief, Planning Division

Enclosure

CENAP-PL-E



State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection
Division of Fish, Game and Wildlife
P.O. Box 400
Trenton, NJ 08625-0400

Robert C. Shinn, Jr.
Commissioner

August 7, 1998

Robert L. Callegari
US Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3391

Dear Mr. Callegari:

This serves to respond to your July 31, 1998 inquiry about the draft scope of work for the "Great Egg Harbor Inlet to Townsend Inlet, New Jersey Feasibility Study". Specifically, your request is for the Division of Fish, Game and Wildlife [DFGW] to provide input on: a) the proposed benthic sampling program; and, b) the selection of proposed offshore borrow areas relative to our concerns about surf clams and prime fishing areas. This latter information will weigh heavily on decisions made relative to the regulatory authority of the state's Land Use Regulation Program [i.e. Federal Consistency].

Benthic Sampling Program

In regard to the benthic sampling program, the DFGW supports the sampling effort described and does not have any major concerns or recommendations. In fact, the results of the proposed benthic sampling will be important information for more detailed future comments regarding shellfish [surf clams] and this project. We ask that the data from the sampling, even in raw form, be supplied to our Bureau of Shellfisheries for consideration [see shellfish comments below].

Relative to the inshore impacts of burial by beach nourishment, we note that an additional area of discussion beyond the proposed program is needed. As indicated in prior correspondence, loss of habitat type / diversity [i.e. jetties] and losses to shore-based recreational fishing activities [i.e. lost access on jetties to deeper water; lost attraction of fish to rock communities for recreational fishing] would also need to be considered and should be evaluated as part of a sampling program.

Borrow Areas - Shellfisheries

With regard to the offshore borrow areas and shellfish, we note that the surf clam inventories in the study area show that, although low, stocks have recently [1996 / 1997] improved. Increased surf clam production appears to be the trend off of Cape May, however, current data is not abundant enough or specific enough to afford us the luxury of placing selection priorities on the borrow sites indicated. Therefore, as inferred above, the proposed benthic sampling program may provide the needed insight into the final selection of preferred or opposed borrow areas.

Borrow Areas - Marine Finfish

In regard to the offshore borrow areas and marine finfish, we note that some of the proposed sites [lumps] are specifically those noted in prior correspondence [April 23, 1998 letter from L. Schmidt] to "not consider as borrow areas". They include L2, M3 and O1. Area L2 is the **Sea Isle Lump**, which is identified as a prime fishing area in the "Blue Book" as well as in the "Anglers Guide to the United States Atlantic Coast" by Freeman and Walford (1974). Under chapter 7:7E-3.4 **Prime Fishing Areas**, submarine and sand mining is prohibited in this area. Site M3 includes all of one and the majority of another lump that, while not technically identified as a prime fishing area, serves to attract and hold fish just as well. It too

should be avoided. Of the three major "lump" sites, site O1 is the least objectionable, but still includes the tip of a ridge running parallel to shore.

Site L1 lies directly adjacent to the Sea Isle Lump (L2). Unless it can be shown that mining this site would have no adverse effect on the continued existence of the Sea Isle Lump, it should not be mined. Site M8 is the least objectionable of all the sites, although it too includes a small lump.

DFGW Preferences on Borrow Areas

In reference to prior discussions about borrow areas and the DFGW's preference in their selection, we have emphasized that using sand from nearby inlets in the study area be investigated as a first choice. We reiterate that preference here; both Townsends and Corson Inlets have a build-up of sand that should be considered for beneficial use [i.e. beachfill] before establishing new borrow areas. If excess sand is available from Great Egg Harbor Inlet after its use for the Ocean City beachfill, then this inlet should also be considered before new borrow areas.

Unless changes are shown in the results of the current benthic sampling program relative to shellfish [surf clam] abundance, the use of the inlets as borrow sites should be followed by the selection of site M8, then site L1 [provided no adverse effects on L2] and finally site O1. Any excavation of these sites, however, should be shaped to mimic their bottom contours / relief except that the resultant contours will be at a deeper depth. No excavation of any site should cause a depression in the bottom that could create anoxic conditions. This fine-tuning and contour shaping of potential borrow areas are the same suggestions made in our recent discussions concerning the Cape May Meadows project. Sites L2 and M3 should no longer be considered for borrow.

* * * *

We hope these comments are of service to you. We appreciate this opportunity to provide information into the selection of potential borrow sites before they are presented in formal documentation. This is precisely the kind of coordination needed to avert future conflicts. If you require any further information, feel free to contact me [609-984-2413] or our technical staff: John McClain [Marine Finfish; 609-748-2020] and Jeff Normant [Shellfisheries; 609-785-0730].

Sincerely,



Andrew Didun, Supervisor
DFGW, Office of Environmental Review

c. R. McDowell, Director
R. Itchmoney, Asst. Director
B. Moore, Administrator; Engineering & Construction
L. Schmidt, Director; Program Coordination
J. McClain, Marine Fisheries
J. Normant, Shellfisheries
M. Mauriello, LURP
E. Schriding, USFWS

CENAP-PL-E
26 AUGUST 1998

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Environmental Resources Branch

AUG 26 1998

Dear :

Versar, Inc. will be conducting environmental studies related to a US Army Corps of Engineers sponsored shoreline protection feasibility study between Great Egg Harbor Inlet and Townsends Inlet, New Jersey. We would appreciate it if your township would grant permission to the Versar crew allowing them to drive their field vehicle (a standard 4X4 pickup truck) on the beach during the last two weeks of September 1998. They will be collecting sediment samples in the surf zone along the entire length of the barrier island, from Great Egg Harbor Inlet to Townsends Inlet. They will contact you a week before the sampling to let you know what days they will be driving on the beach. In addition, they will display a "beach survey" sign on their vehicle to let the public know they are conducting official survey work.

If you intend to issue a permit or letter granting permission, please fax or mail it directly to our contractor:

William Burton
Versar, Inc.
9200 Rumsey Road
Columbia, Maryland 21045
410-740-6986 (office)
410-964-9200 (fax)

Any questions or concerns regarding this letter can be directed to Mr. Nathan Dayan of the Environmental Resources Branch at (215) 656-6562. Thank you for your cooperation.

Sincerely,

Robert L. Callegari
Chief, Planning Division

N. Dayan - CENAP-PL-E

Chief Muller, Sea Isle City Police
4416 Landis Avenue
Sea Isle City, New Jersey 08243
(fax:609-263-8507)

Dominick Longo
Director of Public Safety
835 Central Avenue
Ocean City, New Jersey 08226
(fax:609-399-1910)

Public Safety/Life Guards
Upper Township
Dennisville Road
Tuchahoe, New Jersey 08250
(Fax: 609-628-3092)

TIME OF MEETING: 8:00 AM-5:00 PM on April 13 and 14.

FOR FURTHER INFORMATION CONTACT: Mr. Elwood H. Weber, ARMS Task Force, HQ Army Materiel Command, 5001 Eisenhower Avenue, Alexandria, Virginia 22333; Phone (703) 617-9788.

SUPPLEMENTARY INFORMATION: Attendees are encouraged to make reservations as soon as possible by calling Radisson central reservations at (800) 333-3333. EAC and public (Government) attendees should request the "Government Rate" when making reservations. To assist in the EAC Meeting administrative support requirements, request that all attendees contact the ARMS Team via telephone (399) 782-3360/4090 or email to person@oc-army.mil. Previously registered EAC attendees will confirm database information and new attendees will register at the door. Meeting dress will be corporate casual.

Gregory D. Showalter,
Army Federal Register Liaison Officer,
[FR Doc. 99-5774 Filed 3-8-99; 8:45 am]
BILLING CODE 3710-06-M

DEPARTMENT OF DEFENSE

Department of the Army

Availability of U.S. Patents for Non-Exclusive, Exclusive, or Partially-Exclusive Licensing

AGENCY: U.S. Army Research Laboratory, Adelphi, Maryland.
ACTION: Notice.

SUMMARY: In accordance with 37 CFR 404.6, announcement is made of the availability of the following U.S. patents for non-exclusive, partially exclusive or exclusive licensing. All of the listed patents have been assigned to the United States of America as represented by the Secretary of the Army, Washington, DC.

These patents covers a wide variety of technical arts including: Multilayered Ferroelectric Composites Waveguides, Thin Film Ferroelectric Composites, A Method to Reduce Gun Barrel Erosion, A Method to Dispense Liquid with Gas and A Shaped Charge Device.

Under the authority of Section 11(a)(2) of the Federal Technology Transfer Act of 1986 (Public Law 99-502) and Section 207 of Title 35, United States Code, the Department of the Army as represented by the U.S. Army Research Laboratory wish to license the U.S. patents listed below in a non-exclusive, exclusive or partially exclusive manner to any party interested in manufacturing, using, and/

or selling devices or processes covered by these patents.

Title: Multilayered Ferroelectric Composite Waveguides.

Inventors: Louise Sengupta and Michael S. Kluebena.

Patent Number: 5,830,591.

Issued Date: Nov. 3, 1998.

Title: Method and Apparatus for Liquid Injection to Reduce Gun Barrel Erosion.

Inventor: Aviezer Birk.

Patent Number: 5,841,057.

Issued Date: Nov. 24, 1998.

Title: Method and Apparatus for Dispensing Liquid with Gas.

Inventor: Aviezer Birk.

Patent Number: 5,845,718.

Issued Date: Dec. 8, 1998.

Title: Shaped Charge Device with Multiple Confinements.

Inventor: William Walters.

Patent Number: 5,847,312.

Issued Date: Dec. 8, 1998.

Title: Thin Film Ferroelectric Composites and Method of Making.

Inventors: Somnath Sengupta and Leona Sengupta.

Patent Number: 5,846,833.

Issued Date: Dec. 8, 1998.

FOR FURTHER INFORMATION CONTACT: Michael Rausa, Technology Transfer Office, AMSRL-CS-TT, U.S. Army Research Laboratory, Aberdeen Proving Ground, MD 21005-3035, tel: (410) 278-5028; fax: (410) 278-5820.

SUPPLEMENTARY INFORMATION: None.

Gregory D. Showalter,
Army Federal Register Liaison Officer,
[FR Doc. 99-5776 Filed 3-8-99; 8:45 am]
BILLING CODE 3710-06-M

DEPARTMENT OF DEFENSE

Department of the Army

Availability of U.S. Patents for Non-Exclusive, Exclusive, or Partially-Exclusive Licensing

AGENCY: U.S. Army Research Laboratory, Adelphi, Maryland.
ACTION: Notice.

SUMMARY: In accordance with 37 CFR 404.6, announcement is made of the availability of the following U.S. patents for non-exclusive, partially exclusive or exclusive licensing. All of the listed patents have been assigned to the United States of America as represented by the Secretary of the Army, Washington, D.C.

These patents cover a wide variety of technical arts including: Self-Imaging Waveguide Splitters, A Random Number Generator and an Acoustic Manufacturing System.

Under the authority of Section 11(a)(2) of the Federal Technology Transfer Act of 1986 (Public Law 99-502) and Section 207 of Title 35, United States Code, the Department of the Army as represented by the U.S. Army Research Laboratory wish to license the U.S. patents listed below in a non-exclusive, exclusive or partially exclusive manner to any party interested in manufacturing, using, and/ or selling devices or processes covered by these patents.

Title: Self-Imaging Waveguide Optical Polarization Or Wavelength Splitters.

Inventor: David M. Mackie.

Patent Number: 5,838,842.

Issued Date: Nov 17, 1998.

Title: Random Number Generator For Jittered Pulse Repetition Interval Radar Systems.

Inventor: John W. McCorkle.

Patent Number: 5,847,677.

Issued Date: Dec 8, 1998.

Title: Self-Imaging Waveguide Optical Polarization or Wavelength Splitters.

Inventor: David M. Mackie.

Patent Number: 5,852,591.

Issued Date: Dec 22, 1998.

Title: Acoustic Monitoring System.

Inventor: Michael V. Scanlon.

Patent Number: 5,853,005.

Issued Date: Dec 29, 1998.

FOR FURTHER INFORMATION CONTACT: Ms. Norma Cammarata, Technology Transfer Office, AMSRL-CS-TT, U.S. Army Research Laboratory, 2800 Powder Mill Road, Adelphi, Maryland 20783-1197, tel: (301) 394-2952; fax: (301) 394-5818.

SUPPLEMENTARY INFORMATION: None.
Gregory D. Showalter,
Army Federal Register Liaison Officer,
[FR Doc. 99-5777 Filed 3-8-99; 8:45 am]
BILLING CODE 3710-06-M

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

Intent to Prepare a Draft Environmental Impact Statement (DEIS) for a Proposed Storm Damage Reduction Project from Great Egg Harbor Inlet to Tompcocks Inlet, Cape May County, New Jersey

AGENCY: U.S. Army Corps of Engineers, DoD.
ACTION: Notice of Intent.

SUMMARY: The action being taken is an evaluation of the alternatives for storm damage reduction and the control of further erosion for the communities of Ocean City, Stratford and Sea Isle City, Cape May County, New Jersey. The

purpose of any consequent work would be to provide shore property protection and to stabilize the shoreline at a predetermined width.

FOR FURTHER INFORMATION CONTACT: Questions regarding the DEIS should be addressed to Mr. Steve Allen, (215) 656-6559, U.S. Army Corps of Engineers, CENAP-PL-E, Wansamaker Building, 100 Penn Square East, Philadelphia, PA 19107-3390.

SUPPLEMENTARY INFORMATION:

1. Proposed Action

a. The proposed document evaluates a study area located on the southern Atlantic coast of New Jersey in Cape May County, extending approximately 24.1 kilometers from Great Egg Harbor Inlet to Townsends Inlet. The study area includes the beaches, nearshore areas and offshore areas along the coastline. This area is subject to severe damages due to major storm events.

b. The authority for the proposed project is the resolution adopted by the U.S. House of Representatives Committee on Public Works and Transportation and the U.S. Senate Committee on Environment and Public Works dated December 1987.

2. Alternatives

In addition to the no action alternative, the alternatives considered for storm damage reduction will fall into structural and non-structural categories. The structural measures being evaluated for storm damage reduction include, but will not be limited to beach (berm and dune) restoration/nourishment, bulkheads, seawalls, revetments, offshore breakwaters, groins, beach dills, or combinations thereof. Non-structural measures being considered are development regulations, and land acquisition.

3. Scoping

a. This study is the sixth of six interim feasibility studies addressing long-term storm damage reduction along the New Jersey Coastline. The Great Egg Harbor Inlet to Townsends Inlet study area was identified in the *New Jersey Shore Protection Study, Report of Limited Reconnaissance Study (1990)*, as one of the primary areas to be recommended for further study in the feasibility phase.

b. The scoping process is on-going and has involved preliminary coordination with Federal, State, and local agencies. Participation of the general public and other interested parties and organizations were invited by means of a public notice. Based on the input of these agencies and the

interested public, a decision to have a formal scoping meeting will be made.

c. The significant issues and concerns that have been identified include the impacts of the project on aquatic biota, fisheries, water quality, intertidal habitat, shallow water habitat, cultural resources, and socio-economics.

4. Availability

It is estimated the DEIS will be made available to the public in FY 2000 but is contingent on fund allocation by Congress.

Gregory D. Skewitzer,
Acting Federal Register Liaison Officer.
(FE Doc. 99-5775 Filed 3-8-99; 8:45 am)
BILLING CODE 5710-04-0

DEPARTMENT OF EDUCATION

Notice of Proposed Information Collection Requests

AGENCY: Department of Education.

SUMMARY: The Acting Leader, Information Management Group, Office of the Chief Information Officer, invites comments on the proposed information collection requests as required by the Paperwork Reduction Act of 1995.

DATES: Interested persons are invited to submit comments on or before May 10, 1999.

ADDRESSES: Written comments and requests for copies of the proposed information collection requests should be addressed to Patrick J. Sherrill, Department of Education, 400 Maryland Avenue, SW, Room 5624, Regional Office Building 3, Washington, DC 20202-4651, or should be electronically mailed to the internet address Pat.Sherrill@ed.gov, or should be faxed to 202-708-9346.

FOR FURTHER INFORMATION CONTACT: Patrick J. Sherrill (202) 708-8198. Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339 between 8 a.m. and 8 p.m., Eastern time, Monday through Friday.

SUPPLEMENTARY INFORMATION: Section 3506 of the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35) requires that the Office of Management and Budget (OMB) provide interested Federal agencies and the public an early opportunity to comment on information collection requests. OMB may amend or waive the requirement for public consultation to the extent that public participation in the approval process would defeat the purpose of the information collection, violate State or

Federal law, or substantially interfere with any agency's ability to perform its statutory obligations. The Acting Leader, Information Management Group, Office of the Chief Information Officer, publishes that notice containing proposed information collection requests prior to submission of these requests to OMB. Each proposed information collection, grouped by office, contains the following: (1) Type of review requested, e.g. new, revision, extension, existing or reinstatement; (2) Title; (3) Summary of the collection; (4) Description of the need for, and proposed use of, the information; (5) Respondents and frequency of collection; and (6) Reporting and/or Recordkeeping burden. OMB invites public comment at the address specified above. Copies of the requests are available from Patrick J. Sherrill at the address specified above.

The Department of Education is especially interested in public comment addressing the following issues: (1) is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology.

Dated: March 3, 1999.

Joseph Schaubert,
Acting Leader, Information Management Group, Office of the Chief Information Officer.

Office of the Under Secretary

Type of Review: New.
Title: Evaluation of the Public Charter Schools Program: Year 1 Data Collection Instruments.

Frequency: Annually.
Affected Public: Federal Government; State, local or Tribal Gov't, SEAs or LEAs.

Reporting and Recordkeeping Hour Burden:

Responses: 125.
Burden Hours: 94.

Abstract: The evaluation of the Public Charter Schools Program (PCSP) is the first national study of federal support for charter schools. The contractor, SRI International, will gather data on charter school policies and practices at the state, chartering agency, and charter school levels. The study examines the use of PCSP funds at these levels, assesses the impact of flexibility provisions in states' charter school legislation, and assesses the effect of

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Environmental Resources Branch

Mr. Andrew Didun, Supervisor
Office of Environmental Review
New Jersey Department of Environmental Protection
Division of Fish, Game and Wildlife
P.O. Box 400
Trenton, New Jersey 08625-0400

Dear Mr. Didun:

Enclosed for your review and comment is the draft report entitled: "An Evaluation and Comparison of Benthic Community Assemblages Within Potential Offshore Sand Burrow Sites and Nearshore Placement Sites For the Great Egg Harbor Inlet to Townsends Inlet, New Jersey Feasibility Study". This study was developed based on a need to provide baseline macrobenthic and surfclam (*Spisula solidissima*) data and to compare several alternative sites to facilitate sand burrow site selection. This study also evaluated benthic resources located in the nearshore subtidal and intertidal habitats in the vicinity of Ocean City, New Jersey. Please review the draft report and provide any comments by 9 April 1999. Questions and/or comments can be directed to Steve Allen of the Environmental Resources Branch at (215) 656-6559. Thank-you.

Sincerely,

Robert L. Callegari
Chief, Planning Division

Enclosure

Copy Furnished:

Mark Mauriello, NJDEP (LURP)

CENAP-PL-E
6559/am
19 MARCH 1999
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Environmental Resources Branch

MAR 22 1999

LUCAS *SL*

GALLINI *GG*

CALLEGARI *CC*

Mr. Douglas Adamo
U.S. Fish and Wildlife Service
977 North Main St. (Bldg. D)
Pleasantville, New Jersey 08212

Dear Mr. Adamo:

Enclosed for your review and comment is the draft report entitled: "An Evaluation and Comparison of Benthic Community Assemblages Within Potential Offshore Sand Borrow Sites and Nearshore Placement Sites For the Great Egg Harbor Inlet to Townsends Inlet, New Jersey Feasibility Study". This study was developed based on a need to provide baseline macrobenthic and surfclam (*Spisula solidissima*) data and to compare several alternative sites to facilitate sand borrow site selection. This study also evaluated benthic resources located in the nearshore subtidal and intertidal habitats in the vicinity of Ocean City, New Jersey. Please review the draft report and provide any comments by 9 April 1999. Questions and/or comments can be directed to Steve Allen of the Environmental Resources Branch at (215) 656-6559. Thank-you.

Sincerely,

Robert L. Callegari
Chief, Planning Division

Enclosure



State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

Division of Fish, Game and Wildlife
P.O. Box 400
Trenton, NJ 08625-0400
Robert McDowell, Director

April 26, 1999

Robert Callegari, Chief
US Army Corps of Engineers
Planning Division
100 Penn Square East, Wansmaker Bldg.
Philadelphia, PA 19107 - 3391

Dear Mr. Callegari:

This serves to respond to your request for the Division of Fish, Game and Wildlife [DFGW] to review and comment on the draft report entitled "An Evaluation and Comparison of Benthic Community Assemblages Within Potential Offshore Sand Borrow Sites and Nearshore Placement Sites For the Great Egg Harbor to Townsends Inlet, New Jersey, Feasibility Study". In general, the DFGW does not have major criticisms of the document's results / discussion, which concludes that none of differences [between borrow sites] would preclude an area from being used as a sand source for beach replenishment activities. We do not dispute the findings of the beach nourishment sites. Moreover, sampling techniques appear to be comparable to the Bureau of Shellfisheries [BSF] techniques although, for comparison purposes, the BSF questions if Versar lined the bottom of the surf clam dredge with a 2" rebar to retain smaller clams since there are some size differences. This should be explained.

The DFGW, however, does not agree with the following statement "It is unknown whether dredging operations will alter the substrate composition of the borrow area to preclude surf clam recolonization after dredging" [page 4-4]. The document identifies changes in substrate as one potential adverse impact [the creation of anoxic borrow pits was another]. Preliminary borings can surely determine if the degree / depth of dredging proposed at a specific borrow area will remove the existing substrate and expose a different one or one of lesser suitability. Borrow area selection and the depth / degree of dredging should specifically avoid locations where changes in substrate type would occur, particularly if those changes result in unsuitable substrates. Dredging should also avoid the creation of anoxic borrow pits [as noted in the report].

In regard to the borrow areas analyzed in this document and the preferred borrow areas noted in the DFGW's last letter of August 7, 1999, we are concerned about the implications of this document. That is, some borrow sites that we recommended for avoidance [Area M], now Area M] or avoidance with precautions [area L1, now Area L]

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were analyzed, yet areas we recommended for use, such as the inlet areas [Townsend and Corson Inlets] and Area M8, were not studied at all in the benthic analysis. The DFGW is, therefore, concerned that all of the viable / possible borrow sites are not being considered. If the selection of a borrow area is based heavily on this document, then this document is incomplete.

As a reminder, the DFGW reiterates / clarifies its position on the preferred borrow sites for the Great Egg Harbor Inlet to Townsends Inlet Project:

- 1st) select Townsends and / or Corson Inlets to remove their built-up sands [if suitable] before establishing new borrow areas;
- 2nd) if excess sand is available from Great Egg Harbor Inlet after its use for Ocean City beachfill, then use this site before establishing new borrow sites;
- 3rd) combination of 1 and 2 above;
- 4th) select proposed borrow areas in the following order of acceptability:
 - a) site M8; and any combination above;
 - b) site O1; and any combination above;
 - c) site L1 [provided there is no adverse impact to the adjacent Sea Isle Lump].

Original sites L2 [Sea Isle Lump] and M3 [now Area M] were not recommended for borrow. Site L2 is a Prime Fishing Area and M3 attracts and holds fish / biota just as well as a Prime Fishing Area but is technically not identified as one in "Anglers Guide to the United States Atlantic Coast" by Freeman and Walford (1974). The Sea Isle Lump and Area M are still recommended by the DFGW for elimination as borrow sites.

We hope this information is of service to you. Thank you for this opportunity to comment. If you require any further information, feel free to contact me [609-984-2413], John McClain [Marine Fish; 609-748-2020] or Jeff Normant [Shellfish; 609-785-0730].

Sincerely,



Andrew Didun, Supervisor
DFGW, Environmental Review

- c. R. McDowell, Director
- R. Itchmoney, Asst. Director
- B. Moore, Administrator, Engineering and Construction
- S. Allen, USACOE
- J. McClain, Marine Fisheries
- J. Normant, Shellfisheries
- M. Mauricello, LURP
- E. Schradung, USFWS



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
927 North Main Street (Bldg. D1)
Pleasantville, New Jersey 08222



FP-99/019
(ER# 99/0247)

May 5, 1999

Mr. Steve Allen
U.S. Army Corps of Engineers
Philadelphia District
CENAP-PL-E
Wanamaker Building
100 Penn Square East
Philadelphia, Pennsylvania 19107-3390

Dear Mr. Allen:

The U.S. Fish and Wildlife Service (Service) has reviewed the U.S. Army Corps of Engineers (Corps) Notice of Intent to Prepare a Draft Environmental Impact Statement (DEIS), dated March 9, 1999, for a proposed storm damage reduction project from Great Egg Harbor Inlet to Townsends Inlet, Cape May County, New Jersey. The Notice of Intent to Prepare a DEIS was issued pursuant to the National Environmental Policy Act (83 Stat. 852; 42 U.S.C. 4321 *et seq.*). The purpose of the proposed project is to provide shore protection and stabilization for the communities of Ocean City, Strathmere, and Sea Isle City. The study area extends approximately 24.1 kilometers and includes beaches, nearshore areas, and offshore areas along the coastline. The study area is subject to severe damages due to major storm events.

AUTHORITY

The following comments on the proposed activity have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, 16 U.S.C. 661 *et seq.*), the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), and the National Environmental Policy Act of 1969, and are consistent with the intent of the Service's Mitigation Policy (Federal Register, Vol. 46, No. 15, Jan. 23, 1981).

FEDERALLY LISTED SPECIES

The piping plover (*Charadrius melodus*), federally listed as threatened pursuant to the ESA, currently nests within the study area. Specifically, the piping plover nests in Ocean City, Strathmere, and Sea Isle City. Piping plovers nest on sandy beaches above the high tide line on

mainland coastal beaches, sand flats, and barrier island coastal beaches. The nesting sites are typically located on gently sloping foredunes, blowout areas behind primary dunes, washover areas cut into or between dunes, ends of sandpits, and on sites with deposits of suitable dredged or pumped sand.

Further consultation pursuant to Section 7(a)(2) of the ESA will be necessary to ensure no adverse impacts on piping plovers occur as a result of the proposed project. Other than the piping plover and an occasional transient bald eagle (*Haliaeetus leucocephalus*) or peregrine falcon (*Falco peregrinus*), no other federally listed or proposed threatened or endangered flora or fauna under Service jurisdiction are known to occur in the project area.

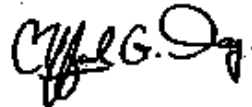
SERVICE REVIEW

Based on a preliminary review of the study area and fish and wildlife resources that occur within the study area, the Service recommends that the Feasibility Report and DEIS incorporate and address the following issues.

1. Address all structural *and non-structural* alternatives to storm damage protection including beach nourishment and acquisition (buy-out).
2. Evaluate appropriate sand by-pass systems (such as modifying or notching the groins within the project area) to ensure that littoral drift nourishes downdrift beaches, thereby eliminating sand starvation.
3. Address impacts on shellfish and finfish at potential borrow areas and at potential storm damage protection sites and include justification of borrow site selection based on environmental criteria.
4. If dredging is proposed, identify proposed methods of dredging and the impact of such dredging on sea turtles, shellfish, and finfish.
5. Identify direct, indirect, and cumulative impacts on the piping plover, a federally listed threatened and State-listed endangered species; least tern (*Sterna antillarum*), a State-listed endangered species; and, any other State-listed species known to inhabit the study area. Additionally, identify actions to avoid or minimize impacts on federally listed and State-listed species.
6. Identify a monitoring program that would allow the Corps to gather information on long-term beneficial and adverse impacts of the proposed project on fish and wildlife resources, including beach nesting birds.

The above views constitute the Service's comments on the Public Notice to prepare a Feasibility Report and DEIS. Should you have any questions regarding these comments, please contact John Staples or Eric Schwaefling of my staff at (609) 646-9310.

Sincerely,

A handwritten signature in black ink, appearing to read "Clifford G. Day". The signature is stylized with a large, looped initial "C" and "D".

Clifford G. Day
Supervisor



**US Army Corps
of Engineers**
Philadelphia District

Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3300

Coordination via facsimile from USACE
to NJDEP Division of Fish and Wildlife

Fax Cover Sheet

FAX Number: (609) 984-1414

DATE: 30 July 1999

TO: Mr. Andrew Didun

Location: NJDEP Div. FGW

Telephone Number: (609) 984-2413

FROM: Steve Allen

Location: Environmental Resources Branch

Telephone Number: (215) 656-6559

Fax Number: (215) 656-6543

E-Mail Address: steven.d.allen@nap02.usace.army.mil

Remarks:

**GREAT EGG TO TOWNSENDS INLET POTENTIAL SAND
BORROW AREAS**

Attached are revised borrow area dimensions under consideration. We would like to discuss our options for utilization. Please take a look at the map and accompanying description and give me a call to discuss. I can be reached at the above number. Thanks.

Number of Pages: 3 (including cover sheet)

ATTENTION!
DO NOT PROCESS, STORE, OR TRANSMIT CLASSIFIED INFORMATION ON UNSECURED TELECOMMUNICATIONS SYSTEMS. OFFICIAL DOD TELECOMMUNICATIONS SYSTEMS, INCLUDING FACSIMILE MACHINES, ARE SUBJECT TO MONITORING FOR TELECOMMUNICATIONS SECURITY MONITORING AT ALL TIMES. USE OF THIS SYSTEM CONSTITUTES CONSENT TO TELECOMMUNICATIONS SECURITY MONITORING.

E-mail coordination from NJDEP to USACE

Allen, Steven D NAP

From: Andy Didun [ADIDUN@dep.state.nj.us]
Sent: Tuesday, August 10, 1999 5:09 PM
To: steven.d.allen@nap02.usace.army.mil
Subject: Steve:

Steve:

Re: Great Egg Harbor to Townsends Inlet- Potential Borrow Areas

After consulting with both Marine Finfish and Shellfish, we have reached the following conclusions about your July 30, 1999 FAX and the phone conversation we [you & I] had following the FAX:

- 1) there is no strong opposition to the use of M8 or the new L3 borrow sites [depending on benthic results];
- 2) there is no strong opposition to the proposed shoreward expansion of L1 site provided it does not extend into the nearby "finger" areas further in toward the shore [again, depending on benthic results];
- 3) we cannot support the idea of borrowing from around or near the important fishery lumps, that is, the expansion areas shown around M3 and L2 / L1 [except as noted in #2 above for the L1 expansion]; we have grave concerns about the stability of the lumps and question what impacts to the lumps themselves might result from the removal of sand in close proximity to them.

Hope this helps. If you have more, feel free to contact me at 609-984-2413 or FAX 609-984-1414 or E-mail
adidun@dep.state.nj.us

E-mail Coordination from Minerals Management Service to
USACE

Allen, Steven D NAP

From: Khaled.Bassim@mms.gov
Sent: Monday, September 27, 1999 9:09 AM
To: steven.d.allen@nap02.usace.army.mil
Cc: Roger.Amato@mms.gov; bdrucker@mms.gov
Subject: SOW for Sand Sites - Great Egg to Townsends, NJ

Hi Steve -

I work with Barry Drucker at MMS; I am the biologist for the Marine Minerals Activities Division.

I had a chance to look over the SOW. It looks comprehensive. I don't foresee a problem with the 32 acre sample spacing, given the extensive analysis that will be performed.

I just have 2 questions, and one request:

- 1) Where are the reference sites located?
- 2) Will there be any efforts made to consult with MMS on Essential Fish Habitat and/or correlate the surfclam areas with designated EFH for surfclam?

And the request: could you please forward to me the coordinates of the boundaries of the proposed borrow areas in LAT/LONG?

We appreciate the heads-up, and I look forward to further communication.

Sincerely,

Khaled M. Bassim
Biological Oceanographer, International Activities and Marine Minerals Division
U.S. Minerals Management Service
381 Elden Street, MS 4030
Herndon, VA 20170

Phone: (703) 787-1300
FAX: (703) 787-1284

E-mail coordination from USACE to National Marine Fisheries Service

Allen, Steven D NAP

From: Allen, Steven D NAP02
Sent: Wednesday, October 13, 1999 3:09 PM
To: 'anita.riportella@noaa.gov'
Subject: Great Egg Harbor Inlet to Townsends Inlet, NJ Feasibility Study

Dear Anita,

Thank you for explaining the EFH process to me and applying it to this study. As we discussed, attached is the scope of work for the benthic/surfclam investigation for the proposed sand borrow sites for the above referenced project. These borrow sites are being proposed as a result from coordination with NJDEP Div. of Fish, Game and Wildlife where previously proposed sites were abandoned due to fisheries concerns. Please review the scope of work and provide me any comments by Friday, 15 October 1999. I apologize for the short notice. If you have any questions, please contact me at (215) 656-6559. Thank you.

Steve Allen
Environmental Resources Branch

P.S. I'll be Faxing a hard copy that will have the map figures attached.



New Borrow Sites.doc

*Email Coordination from National Marine Fisheries
Service to USACE*

Allen, Steven D NAP

From: Robert Reid [reid@sh.nmfs.gov]
Sent: Monday, October 18, 1999 9:34 AM
To: Steven.D.Allen@usace.army.mil; Anita Riportella
Subject: Benthos of Borrow Sites

Hi Steve,

I'm a benthic ecologist at the NMFS Howard Lab, NJ. Anita Riportella asked me to send you any comments on the draft scope of work for assessing borrow sites from Great Egg to Townsends Inlet.

Overall, the proposed assessment looks fairly thorough and comprehensive. The 86 very large (if 0.4m² isn't a typo) benthic samples, screened to 0.5mm, may even be overkill, and should be quite expensive and time-consuming to analyse. But I don't have the statistical expertise to say whether there's a more efficient way to do that part of the project. I do have some concern that only the top 10 taxa "by numerical count and/or biomass" (that leaves some wiggle room -will both abundance and biomass be considered?) will be IDed to species. I haven't seen that approach used, and don't know if it will yield "publishable" info as stated. I also don't know if it's valid to calculate diversity indices, "species" richness etc. when the top 10 species are IDed and the rest are grouped by class or phylum (should say "class where possible, or phylum"?).

The surf clam assessment looks fine. I assume that will be done after the benthic sampling, so the benthos isn't disturbed before sampling it.

Have you been comparing notes with New York District COE? They've done a good deal of similar work off northern NJ lately, and may have developed good methods. The data might be more valuable if similar collection and analysis methods were used for the entire coast, permitting broader comparisons. I think NYD has done the "BRAT" analysis of trophic value of benthos off the northern coast; data from that should be helpful in determining the value of benthos at your sites. And Frank Steidle of our Lab has a wealth of data on forage value of local benthos.

Sincerely,
Bob Reid

E-mail coordination from USACE to National
Marine Fisheries Service

Allen, Steven D NAP

From: Allen, Steven D NAP02
Sent: Monday, October 18, 1999 5:16 PM
To: 'Robert Reid', Anita Riportella
Subject: RE: Benthos of Borrow Sites

Bob,

Thank you for reviewing the scope of work. I'm glad that you reviewed it because you caught two errors that I must have overlooked. You are correct in stating that a 0.4 sq m dredge would be excessively large (I would feel sorry for the poor person who would have to lift it!). It should have said 0.04 sq.m. This sampler is a "young" sampler, and in the past we may have called it a "Young-Modified Van-Veen Sampler". Also, the taxonomic identification levels were incorrect. We normally require taxonomic identification down to species or lowest group possible for all specimens in the sample (Somehow the top 10 species specification slipped by me. I think I accidentally pulled it in from another scope that I was using as a "boiler plate". I'll make sure that I change it). Therefore, the statistical analyses will be more valid with id's down to species or lowest possible grouping for the entire sample.

The methodology for this scope is similar to other benthic studies for other Phila. Dist. shore protection studies conducted along the NJ Coast. There is a large body of data associated with these other studies that can offer good comparisons. However, I will see where we can integrate some of the similarities in the work that New York District has been doing.

Again, Thank you very much for reviewing the scope under short-notice. If you have any questions, please call me at (215) 656-6559.



United States Department of the Interior

MINERALS MANAGEMENT SERVICE
Washington, DC 20240



OCT 14 1999

Mr. Carmen Zappile
Department of the Army
Philadelphia District, Corps of Engineers
Wanamaker Building, 100 Penn Square East
Philadelphia, Pennsylvania 19106-3391

Dear Mr. Zappile:

I received a letter on October 6, 1999, from Robert Callegari advising the Minerals Management Service that sand from the Outer Continental Shelf (OCS) may be needed for the proposed Great Egg Harbor Inlet to Townsends Inlet shore protection project and initiating coordination between our respective offices for use of the sand. We look forward to working with you in the environmental review of the proposed borrow areas and preparation of a project-specific Memorandum of Agreement (MOA) as required by the OCS Lands Act.

I have enclosed copies of the general MOA established with the Army Corps of Engineers which outlines the procedures for use of OCS sand and our policy and guidelines for National Environmental Policy Act requirements. As stated in the MOA, I would suggest that we meet after you have reviewed this information to go over any site specific needs, compare each agency's environmental data at the sites, and answer questions.

If you have questions or need additional information, contact me at (703) 787-1282 or E-mail to Roger.Amato@mms.gov.

Sincerely,

Roger Amato
Physical Scientist

Enclosures

CENAP-PL-PC
06 OCT 1999
Mb/6576
ZAPPILE

06 OCT 1999

Planning Division

LUCAS

SUBJECT: Potential Sand Borrow Area use for Great Egg Harbor Inlet to Townsends Inlet Feasibility Study

GAUDIN
JOHNSON
CALLEGARI

Mr. Roger V. Amato
U.S. Department of the Interior
Mineral Management Service
Office of International Activities and Marine Minerals
381 Elden Street
Herndon, Virginia 20170-4817

Dear Mr. Amato:

This letter initiates coordination for the use of sand resources approximately 3 nautical miles off of Corson Inlet, New Jersey for the proposed Great Egg Harbor Inlet to Townsends Inlet shore protection project. This potential project would be co-sponsored with the New Jersey Department of Environmental Protection. There are two potential sand borrow areas being considered for use. Sand from one of the potential borrow sources (M8-see attachment) would be placed at Ocean City, New Jersey specifically from 34th Street to approximately 59th Street. Initial sand quantity is estimated at 912,000 cubic meters and nourishment is estimated at 266,000 cubic meters every 3 years. A second potential borrow site (L3) only contains a relatively small portion (258 acres) outside the 3 nautical mile limit. Sand from this area would be placed along Ludlam Island, ranging from Strathmere to Sea Isle City. Sand quantity has not been finalized, however, it can be assumed that this area will be dredged to an average depth of 5 feet. Periodic nourishment would occur approximately every 5 years.

Please contact Mr. Carmen Zappile of my staff at (215) 656-6576, regarding any additional information that you require for use in executing a Corps/MMS Memorandum of Agreement.

Sincerely,

Robert L. Callegari
Chief, Planning Division

Attachment
Copy Furnished:
Bernard Moore-NJDEP

CENAP-PL-E

6559/sda

20 JUN 2000

ALLEN *SA*

PASQUALE *JP*

ZAPPAL *Z*

JOHNSON *JO*

CALLEGARI *RC*

Environmental Resources Branch

JUN 21 2000

SUBJECT: Review Benthic Report for Great Egg Harbor Inlet to Townsends Inlet, New Jersey Feasibility Study.

(See Distribution List Attached)

Dear :

Enclosed for your review and comment is the draft report entitled: "An Evaluation and Comparison of Benthic Community Assemblages Within New Potential Offshore Sand Borrow Sites For the Great Egg Harbor Inlet to Townsends Inlet, New Jersey Feasibility Study". This benthic study was developed based on a need to provide baseline macrobenthic and surfclam (*Spisula solidissima*) data and to compare several alternative sites to facilitate sand borrow site selection for the beach berm and dune restoration alternative. Please review the draft report and provide any comments by July 15, 2000. Questions and/or comments can be directed to Steve Allen of the Environmental Resources Branch at (215) 656-6559. Thank-you.

Sincerely,

Robert L. Callegari
Chief, Planning Division

Enclosure

Mr. Andrew Didun, Supervisor
Office of Environmental Review
New Jersey Department of Environmental Protection
Division of Fish, Game and Wildlife
P.O. Box 400
Trenton, New Jersey 08625-0400

Mr. Douglas Adamo
U.S. Fish and Wildlife Service
977 North Main St. (Bldg. D)
Pleasantville, NJ 08232

Ma. Anita Ripocella
National Marine Fisheries Service
Habitat and Protected Resources Division
Sandy Hook Laboratory
Highlands, NJ 07732

Mr. Khaled M. Basim
Biological Oceanographer, International Activities and Marine Minerals Division
U.S. Minerals Management Service
381 Elden Street, MS 4030
Hamdon, VA 20170



State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

*NJ Division of Fish and Wildlife
PO Box 400
Trenton, NJ 08625
Robert McDowell, Director*

July 14, 2000

Robert L. Callegari
US Army Corps of Engineers
Philadelphia District, Environmental Resource Branch
Wanamaker Building, 100 Penn Square East
Philadelphia, Pa. 19107-3390

Dear Mr. Callegari,

This is in response to your letter requesting the NJ Division of Fish and Wildlife [DFW] to review and comment on the draft report "*An Evaluation and Comparison of Benthic Community Assemblages Within New Potential Offshore Sand Borrow Sites for the Great Egg Harbor Inlet to Townsends Inlet, New Jersey, Feasibility Study*" prepared by Versar, Inc. Our Bureau of Shellfisheries [BSF] staff has reviewed the report and found the data presented on surf clam stocks within each potential borrow area comparable to data collected by the BSF during its annual surf clam inventory survey. However, we are concerned that Versar compared their small-localized sampling areas to a broad region [i.e. Cape May Inlet to Great Egg Harbor Inlet] that was sampled by the BSF in 1996. Due to varying physical and environmental conditions that influence the distribution of surf clam populations throughout this region, this comparison is inappropriate. Versar should compare their data to the data we collected within / near the study sites.

Thank you for the opportunity to comment on this draft report. If you have any questions regarding this issue, please contact Mr. Jeffrey Norman in the BSF at (609) 748-2040.

Sincerely,

Robert McDowell, Director
Division of Fish and Wildlife

c. T. McCloy, J. Joseph, A. Didun, J. Norman, S. Allen [ACOE].

Section 2 – Agency and Public Comments and Responses

FISH AND WILDLIFE COORDINATION ACT
SECTION 2(b) REPORT

GREAT EGG HARBOR INLET TO TOWNSENDS
INLET FEASIBILITY STUDY
CAPE MAY COUNTY, NEW JERSEY



Prepared by:

U.S. Fish and Wildlife Service
Ecological Services, Region 5
New Jersey Field Office
Pleasantville, New Jersey 08232

July 2001



Wildlife Service

FP-01/16

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New Jersey Field Office
Ecological Services
927 North Main Street, Building D
Pleasantville, New Jersey 08352
Tel: 609/646 9310
Fax: 609/646 0352
<http://njfieldoffice.fws.gov>



July 3, 2001

Lieutenant Colonel Timothy Brown
District Engineer, Philadelphia District
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, Pennsylvania 19107-3390

Dear Lieutenant Colonel Brown:

Enclosed is the final report of the U.S. Fish and Wildlife Service (Service) on potential environmental impacts to fish and wildlife resources from the U.S. Army Corps of Engineers, Philadelphia District (Corps) Great Egg Harbor Inlet to Townsends Inlet Feasibility Study, Cape May County, New Jersey (study). This report was prepared pursuant to Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401; 16 U.S.C. 661 *et seq.*) (FWCA).

The study area, which is 24.1 kilometers (15 miles) in length and extends from the southern portion of Ocean City to the southern portion of Ludlum Island at Townsends Inlet, has been historically subjected to significant damage due to storm events. Based on information provided in the Corps and New Jersey Department of Environmental Protection's (NJDEP) (2000) Integrated Environmental Impact Statement (IEIS), the selected plan for the study area includes construction of a berm and dune, utilizing sand from offshore borrow sources. Periodic nourishment is expected to occur at 3-year intervals for the South End Ocean City portion of the project and at 5-year intervals for Ludlum Island, following completion of initial construction.

This final report is provided in accordance with our Fiscal Year-2000 scope-of-work agreement and is based on information provided in the *New Jersey Shore Protection Study, Great Egg Harbor Inlet to Townsends Inlet Feasibility Study, Volume 1: Draft Feasibility Report, Integrated Environmental Impact Statement* (U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000), *Section 7 Biological Assessment for Potential Impacts to the Piping Plover (Charadrius melodus) and Seabeach Amaranth (Amaranthus pumilus) Resulting from Beach Nourishment Projects Along the New Jersey Coast* (U.S. Army Corps of Engineers, 2001), *An Evaluation and Comparison of Benthic Community Assemblages*

Within Potential Offshore Sand Borrow Sites for the Great Egg Harbor Inlet to Townsends Inlet, New Jersey Feasibility Study (benthic report) (Scott and Wirth, 2000), and Pre-construction Benthic Assessment of Placement Sites for Ocean City, Cape May County, New Jersey (benthic report) (Scott, 2001), the latter two documents were prepared by Versar, Inc. for the Corps. The Service (1999) previously provided the Corps with a Planning Aid Report (PAR) on the Draft Great Egg Harbor Inlet to Townsends Inlet Feasibility Study, Cape May County, New Jersey which included an evaluation of sand borrow sites. The Service (2000) also provided a Planning Aid Letter, supplementing the PAR, which included a preliminary evaluation of the above-mentioned benthic report by Scott and Wirth (2000) and of the proposed borrow sites.

The information presented in this final report is also provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) (ESA) to ensure protection of federally listed threatened and endangered species. These comments do not preclude separate review and comments by the Service on any forthcoming environmental documents pursuant to the National Environmental Policy Act of 1969 (83 Stat. 852; 42 U.S.C. 4321 *et seq.*) (NEPA).

Federally Listed Threatened and Endangered Species

The federally listed (threatened) Piping Plover (*Charadrius melodus*) nests on beaches of Ocean City (on the northern end of Peck Beach near Great Egg Harbor Inlet), the middle portion of Peck Beach Island, and nearly the entire length of Ludlam Beach to its southernmost point at Townsends Inlet. Piping Plovers nest on sandy beaches above high-tide elevation on mainland and barrier island coastal beaches, as well as sand flats. The nesting sites are located on gently sloping fore dunes, blowout areas behind primary dunes, wash-over areas cut into or between dunes, ends of sand spits, and on sites with deposits of suitable dredged or pumped sand.

Coastal development for residential and commercial uses, and the subsequent stabilization of the once shifting and dynamic beach ecosystem, have resulted in the destruction and alteration of natural beaches along the Atlantic coast to such an extent that many beaches no longer provide suitable habitat for Piping Plovers. Disturbance by humans and the direct loss of nests have become major contributing factors to the population decline of the Piping Plover.

Dredged spoil deposition has the potential to create additional Piping Plover nesting habitat, provided the material is deposited prior to nesting (U.S. Fish and Wildlife Service, 1996) and benthic organisms of the intertidal zone are allowed to recover. As a result, Piping Plovers could expand their nesting range within the project area after nourishment is completed.

In addition, the project may create habitat for the seabeach amaranth (*Amaranthus pumilus*), a federally listed (threatened) plant. The seabeach amaranth is an annual plant, endemic to Atlantic coastal plain beaches, primarily occurring on wash-over flats at the accreting ends of barrier beach islands and lower fore dunes of non-eroding beaches. The species occasionally establishes small temporary populations in other areas, including bay side beaches, blowouts in

fore dunes, and sand and shell material placed as beach replenishment or dredge spoil. Although no extant occurrences of the seabeach amaranth are known within the proposed project area, the species has recently naturally re-colonized coastal sites within northern New Jersey, New York, Delaware, and Maryland. Therefore, it is possible that the seabeach amaranth may become naturally reestablished within the project area during the project life.

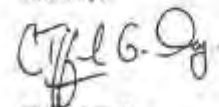
The lead federal agency for a project has the responsibility, under Section 7(c) of the Endangered Species Act, to prepare a Biological Assessment (BA), if the proposal is a major construction project that requires an Environmental Impact Statement or if the proposal may affect a federally listed species. The Corps has submitted a BA (U.S. Army Corps of Engineers, 2001) to the Service, addressing potential project-related adverse impacts to the Piping Plover and seabeach amaranth. The BA contains an analysis of any potential effect of the proposed action on these species. The BA may be incorporated into the Corps NEPA documentation.

Other than the Piping Plover, seabeach amaranth, and an occasional transient Roseate Tern (*Sterna dougallii dougallii*) or Bald Eagle (*Haliaeetus leucocephalus*), no other federally listed or proposed threatened or endangered flora or fauna under Service jurisdiction are known to occur within the project area. Appendix A of this report provides current lists of federally listed species, federal candidate species, and State-listed species in New Jersey.

The Corps has consulted with the National Marine Fisheries Service (NMFS) concerning the presence of the federally listed (endangered) Atlantic Ridley turtle (*Lepidochelys kempi*) and leatherback turtle (*Dermochelys coriacea*), and the federally listed (threatened) loggerhead turtle (*Caretta caretta*) and green turtle (*Chelonia mydas*) within the study area. In addition, the Corps should continue coordination with the NMFS regarding potential adverse effects on portions of the study area designated as Essential Fish Habitat, pursuant to Section 305(b)(2) of the Magnuson - Stevens Fishery Conservation and Management Act (P.L. 94-265).

Any questions regarding this report or federally listed endangered or threatened species should be directed to John Staples, Doug Adams, or Carlo Popolizio of my staff at (609) 646-9310, extensions 18, 44, and 32, respectively. The Service looks forward to continued cooperation with the Corps to ensure a successful completion of the proposed project.

Sincerely,



Clifford G. Day
Supervisor

Enclosures

References

- Scott, L.C. 2001. Pre-construction benthic assessment of placement sites for Ocean City, Cape May County, New Jersey. Versar, Inc., prepared for U.S. Army Corps of Engineers, Philadelphia District, Philadelphia, Pennsylvania. 21 pp. + appendices.
- _____ and F.P. Wirth, III. 2000. An evaluation and comparison of benthic community assemblages within new potential sand borrow sites for Great Egg Harbor Inlet to Townsend Inlet, New Jersey. Versar, Inc., prepared for U.S. Army Corps of Engineers, Philadelphia District, Philadelphia, Pennsylvania. 45 pp. + appendices.
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FISH AND WILDLIFE COORDINATION ACT SECTION 2(b) REPORT

GREAT EGG HARBOR INLET TO TOWNSENDS INLET FEASIBILITY STUDY CAPE MAY COUNTY, NEW JERSEY

Prepared for:

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EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers, Philadelphia District (Corps) initiated the New Jersey Shore Protection Study, incorporating the Great Egg Harbor Inlet to Townsends Inlet Feasibility Study, under the authority of resolutions adopted by the Committee on Public Works and Transportation of the U.S. House of Representatives and the Committee on Environment and Public Works of the U.S. Senate in December 1987. The Great Egg Harbor Inlet to Townsends Inlet Feasibility Study was initiated to address rapid shoreline erosion and subsequent storm damage vulnerability of structures and properties associated with the communities of Ocean City, Strathmere, and Sea Isle City, New Jersey. The study area, which includes the aforementioned communities, encompasses the Atlantic coast barrier islands (Peck Beach Island and Ludlam Island) of Cape May County, New Jersey, from Great Egg Harbor Inlet to Townsends Inlet.

To provide the necessary shoreline protection, the Corps has selected a beach nourishment plan that includes the construction of an approximately 125-foot-wide berm and dune system along the entire 15-mile length of the study area. The proposed berm, which ties into an existing federal beach nourishment project at the northern portion of Ocean City, would be periodically re-nourished for the life of the project (i.e., 50 years). Sandy material dredged from four offshore borrow sites would be used for the initial beach nourishment, as well as subsequent re-nourishment cycles. The New Jersey Department of Environmental Protection's Division of Engineering and Construction, the non-federal study sponsor, is expected to implement two additional beach nourishment projects (within the reach of the federal project area) in conjunction with the City of Ocean City and the Borough of Strathmere.

The U.S. Fish and Wildlife Service (Service) generally supports the Corps selected plan of action for the study area, however, the Service has concerns involving potential adverse impacts associated with both the beach nourishment and the offshore (borrow site) dredging components of the plan. Concerns regarding the beach nourishment component of the plan focus on potential adverse indirect impacts on the federally listed (threatened) Piping Plover (*Charadrius melodus*) and seabeach amaranth (*Amaranthus pumilus*), a federally listed (threatened) plant. Indirect adverse impacts due to beach nourishment include increased off-road vehicle traffic, beach maintenance activities, and other beach-related recreational activities. Disturbances due to such increased human use levels may interfere with nesting Piping plovers and the potential for seabeach amaranth to colonize in suitable locations.

To minimize potential indirect adverse impacts on federally listed species due to proposed beach nourishment and re-nourishment activities, the Service recommends that the Corps incorporate the following measures into the final project design: seasonal restrictions on project activities; further consultation with the Service prior to initial beach nourishment and all subsequent re-nourishment activities; monitoring and compliance with the Service's *Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act*, dated April 13, 1994.

(Appendix D); and, monitoring to detect any colonization by seabeach amaranth in the project area.

The Service also recommends that the Corps incorporate measures to enhance Piping Plover and other beach-nesting shorebird nesting and foraging habitats into final project plans. Such measures may include elimination of beach nourishment along sparsely developed segments (i.e., Whale Beach) of the study area, permanent or seasonal road closures in areas where plover road crossings are anticipated; and creation of preferred Piping Plover foraging habitats via natural coastal processes (i.e., wash-over areas, ephemeral pools, mud flats, and sand flats), wherever possible, throughout the study area. Incorporating shorebird monitoring and habitat enhancement into project planning, and deed-restricting the project area, would minimize indirect (human use) adverse impacts anticipated as a result of creating beach nesting bird habitat.

Potential project-related impacts to federally listed threatened and endangered species have been addressed in the Corps programmatic Biological Assessment (BA) (U.S. Army Corps of Engineers, 2001), which incorporates all proposed beach nourishment projects along the New Jersey coast within the purview of the Philadelphia District. The Service will provide a Biological Opinion (BO) in response to the BA. Service comments are also included in this document.

Service concerns associated with the offshore dredging component of the selected plan focus on potential adverse impacts on shellfish and other benthic organisms that colonize the proposed borrow sites. Potential dredging-related adverse impacts to shellfish and other benthic organisms (i.e., effects on re-colonization and species diversity) could be minimized by incorporating the following measures into final project plans: rotational dredging, restricting dredging during shellfish and finfish spawning periods, and dredging via hydraulic-pipeline method to minimize turbidity and entrainment of federally listed sea turtles.

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L INTRODUCTION

Peck Beach Island and Ludlaw Island are two coastal barrier islands located between Great Egg Harbor Inlet and Townsends Inlet in Cape May County of southern New Jersey. These barrier islands have experienced various degrees of coastal erosion and storm damage from wave energy and tidal inundation. In April 1995, the U.S. Army Corps of Engineers, Philadelphia District (Corps) initiated the Great Egg Harbor Inlet to Townsends Inlet Reconnaissance Study to address rapid shoreline erosion and subsequent storm damage vulnerability (U.S. Army Corps of Engineers, 1996). The results of the reconnaissance study indicated that federal interest exists for the study to continue into the feasibility phase. The feasibility study investigated federal interest in shore protection from coastal erosion along approximately 24 kilometers (15 miles) of New Jersey shoreline and included an evaluation of various alternative plans of improvement based on hurricane and storm damage reduction benefits (U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000).

The Service provided a Planning Aid Report (PAR), dated June 1999, regarding three offshore borrow sites identified as L1 (old), M3, and O1 (previous borrow sites), which had been selected as potential sand sources for the beach nourishment alternatives evaluated in the feasibility study. The PAR was based primarily on the Service's review of *An Evaluation and Comparison of Benthic Community Assemblages Within Potential Offshore Borrow Sites and Near-Shore Placement Sites for the Great Egg Harbor Inlet to Townsends Inlet, New Jersey Feasibility Study* (Scott and Bruce, 1999). To compare the results of the aforementioned study with the results of a benthic study conducted within proximity to the current study area, the Service also reviewed *An Evaluation and Comparison of Benthic Community Assemblages and Surf Clam Populations Within the Offshore Sand Borrow Site for the Great Egg Harbor Inlet and Peck Beach, Ocean City, New Jersey Project* (Scott and Kelley, 1998).

As a supplement to the above-mentioned PAR, the Service provided a Planning Aid Letter (PAL), dated August 16, 2000, following review of the draft report entitled: *An Evaluation and Comparison of Benthic Community Assemblages Within Potential Offshore Sand Borrow Sites for the Great Egg Harbor Inlet to Townsends Inlet, New Jersey Feasibility Study* (benthic report) (Scott and Wirth, 2000). The benthic report focuses on the status of benthic macro-invertebrates, including Atlantic surf clams (*Spisula solidissima*), that inhabit four newly proposed borrow sites (L1, L3, M8, and IN) discussed below, and provides detailed data and analyses on such benthic communities with respect to abundance, species richness, diversity, and biomass.

In this final Fish and Wildlife Coordination Act (FWCA), Section 2(b) Report, the Service provides updated information regarding fish and wildlife resources, including federally listed and State-listed threatened and endangered species; identifies New Jersey Natural Heritage Priority (NHP) Sites in the project area; discusses potential impacts on those, and other fish and wildlife resources, from beach nourishment activities (including potential impacts on the new borrow sites); identifies opportunities for fish and wildlife habitat improvements, and updates the current state of knowledge concerning the proposed activities and their potential adverse impacts on fish and wildlife resources. The information in this report is based primarily on the

Service's evaluation of Scott and Wirth's (2000) benthic report, the *New Jersey Shore Protection Study, Great Egg Harbor Inlet to Townsends Inlet Feasibility Study, Volume 1: Draft Feasibility Report, Integrated Environmental Impact Statement (IEIS)* (U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000), the *Section 7 Biological Assessment for Potential Impacts to the Piping Plover (Charadrius melodus) and Seabeach Amaranth (Amaranthus pumilus) Resulting from Beach Nourishment Projects Along the New Jersey Coast* (U.S. Army Corps of Engineers, 2001), and Scott's (2001) benthic report *Pre-construction Benthic Assessment of Placement Sites for Ocean City, Cape May County, New Jersey*.

II. DESCRIPTION OF THE PROPOSED ACTION

A. SELECTED BEACH NOURISHMENT PLAN

To reduce the potential for coastal erosion and damage to the study area, an approximately 125-foot-wide berm, including a dune system, has been proposed along the entire length of the project area. The berm would be periodically re-nourished for the life of the project (i.e., 50 years). Periodic re-nourishment is expected to occur at 3-year intervals for the South End Ocean City (Peck Beach Island) portion of the project and at 5-year intervals for Ludlam Island subsequent to the completion of initial beach nourishment (U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000). According to information provided by the Corps and New Jersey Department of Environmental Protection (NJDEP) (2000), sandy material dredged from four offshore borrow sites will be used for initial beach nourishment (i.e., berm and dune construction) and periodic beach re-nourishment.

The South End Ocean City portion of the project will tie into an existing federal beach nourishment project located at the northern portion of Ocean City. The NJDEP's Division of Engineering and Construction is expected to implement two additional beach nourishment projects (within the reach of the federal study area) in conjunction with the City of Ocean City and the Borough of Strathmere.

B. SELECTION OF BORROW AREAS

After the Service submitted the aforementioned PAR, the three previously proposed borrow sites were eliminated as sand sources due to unsuitable grain sizes, following recommendations from the New Jersey Division of Fish and Wildlife's (NJDFW) Bureau of Shellfisheries (NJBSF) and Bureau of Marine Fisheries (NJBMF). According to information provided by the Corps and NJDEP (2000), borrow site O1 was eliminated due to the high clay content in sediment core samples. Borrow site M3 was eliminated as a sand source due to the presence of prominent relief-shoal features, which are considered valuable finfish and shellfish habitats. Borrow site L1 was shifted to the east by approximately 1,000 feet to provide a buffer area to the Sea Isle "Lump," which also contains valuable finfish and shellfish habitats (Allen, pers. comm., 2000). As a result of the elimination of borrow sites O1 and M3, and the reconfiguration of borrow site

L1, the Corps, in consultation with NJBSF and NJBMF, identified four new borrow sites (L1, L3, M8, and IN) for further evaluation as sand borrow sources for the proposed project.

III. STUDY AREA

The overall study area consists of two coastal barrier islands, known as Peck Beach Island and Ludlam Island, that are bounded to the north by Great Egg Harbor Inlet and to the south by Townsends Inlet. The entire project impact area lies within Cape May County, New Jersey and extends 24.1 kilometers (15 miles) in length (Figure 1). Three of the new borrow sites (L1, L3, and M8) are located offshore of the coastal barrier islands, with the fourth (IN) located at Corson Inlet (Figure 1). Due to the aforementioned borrow site reconfiguration, borrow site L1 overlaps with a portion of borrow site L1 (old).

The island known as Peck Beach Island contains both Ocean City and Corson Inlet State Park within the Ocean City political jurisdiction. Ludlam Island contains Strathmere, Sea Isle City, and Townsends Inlet and is divided into Upper Township and Sea Isle City political jurisdictions. As previously noted, a federal beach nourishment project exists at the northern end of Ocean City; therefore, this project (i.e., subject of this report) will focus on the southern portion (south of 36th Street) of Ocean City (South End Ocean City), south to Townsends Inlet (U.S. Army Corps of Engineers, 1996).

IV. METHODS AND PROCEDURES

This final FWCA, Section 2(b) report incorporates information compiled from searches of the Service's New Jersey Field Office library and office files, personal interviews, New Jersey Division of Fish, Game and Wildlife's (1994) Notable Information of New Jersey Animals database, and the New Jersey Natural Heritage Program (NJNHP) database (New Jersey Department of Environmental Protection, 2000). The NJNHP database was reviewed for information regarding federally listed species, State-listed species and other fish and wildlife in the vicinity of Peck Beach Island and Ludlam Island. Interviews were held with personnel from the NJBSF, NJBMF, the National Marine Fisheries Service (NMFS), and the Corps. A Service biologist conducted site inspections of the project impact area on January 27 and April 21, 1999.

V. EXISTING CONDITIONS

A. ESTUARINE EMERGENT WETLANDS

Estuarine emergent wetlands occur within the back bays and inlets of the project area. The low marsh areas are typically dominated by salt marsh cordgrass (*Spartina alterniflora*), while the high marsh areas are dominated by salt meadow cordgrass (*S. patens*) and salt grass (*Distichlis spicata*). The transition area between high marsh and uplands is vegetated by marsh elder (*Iva*

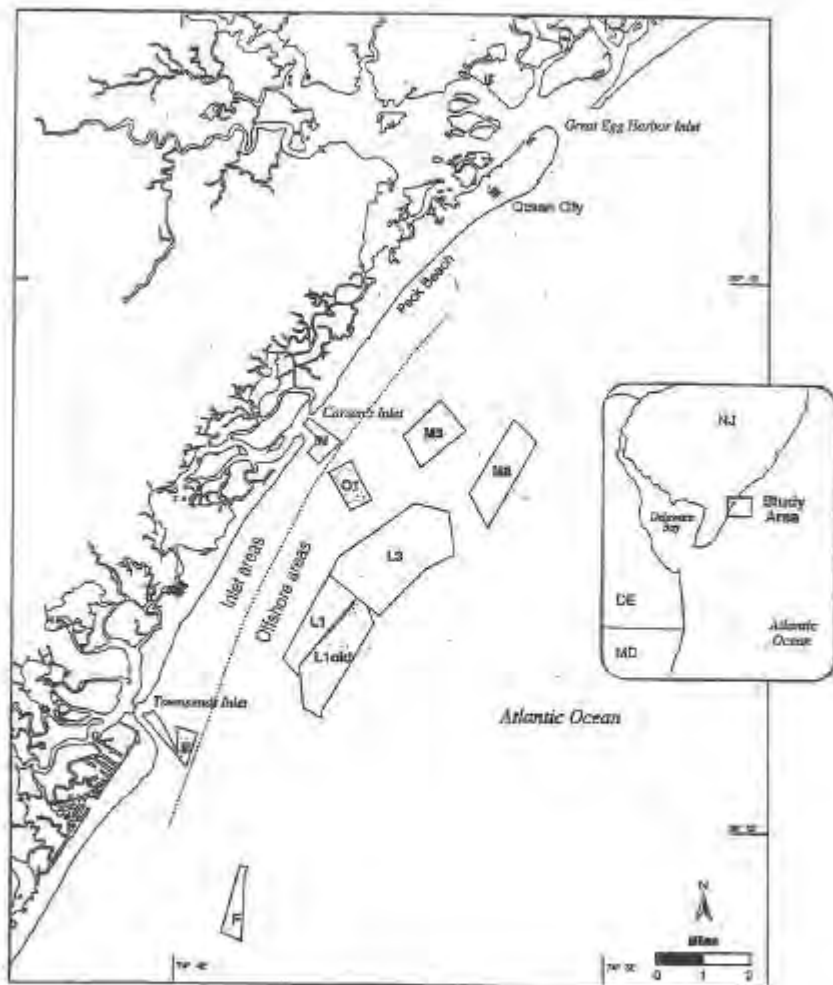


Figure 1: Locations of Four Proposed (New) Borrow Sites (L1, L3, M3, and IN) Relative to Three Previous Borrow Sites (L1 (Old), M3, and O1), Townsends Inlet Reference Site (E), and Southern Reference Site (F), for the Great Egg Harbor Inlet to Townsends Inlet Feasibility Study. (Adapted from Scott and Wirth, 2000)

frutescens), groundsel tree (*Baccharis halimifolia*), bayberry (*Myrica* spp.), glasswort (*Salicornia* spp.), poison ivy (*Toxicodendron radicans*), and common reed (*Phragmites australis*). The low marsh, high marsh, and transition areas are critical components of the estuarine ecosystem which is crucial for the survival of coastal zone species that rely on the combination of cover types for breeding, food, cover, and migratory habitats.

The back bay region of the project area (from the proximity of Blaykman Island near Ocean City, south to Middle Thorofare near Townsends Inlet) is within the Great Egg Harbor - Jarvis Sound Wetlands, an area designated as priority wetlands pursuant to the Emergency Wetlands Resources Act of 1986 (EWRA) (100 Stat. 3582) because of national ecological significance. The EWRA directs the Department of the Interior to identify specific wetland sites that should receive priority attention for acquisition by federal and State agencies using Land and Water Conservation Fund monies.

The designated priority wetlands also include "focus areas" identified by the Atlantic Coast Venture of the North American Waterfowl Management Plan as critical waterfowl wintering, migratory, or breeding habitat, with an emphasis on American Black Duck (*Anas rubripes*) habitat. The Great Egg Harbor - Jarvis Sound Wetlands are characterized by productive salt marshes, shallow bays, numerous tidal ditches, and salt ponds. These features contribute to making these wetlands some of the most important for wintering American Black Ducks, Atlantic Brant (*Branta bernicla*), Bullhead (*Bucephala albeola*), and other waterfowl. The substrate of most bays and sounds are exposed at low tide and the invertebrates present are heavily utilized by shorebirds, wading birds, gulls, terns, and waterfowl. The predominant vegetation in these wetlands is salt marsh cordgrass, which is important for the production of lower food chain organisms used by fish, shellfish, birds, and other estuarine wildlife.

B. BEACH STRAND HABITATS

Beach strand (coastal beach or seaslope), the transitional sandy shoreline area between the land and the ocean, is found at various widths throughout the study area. Beach strand is characterized by four zones: nearshore bottom (submerged areas below mean low water to 9 meters), foreshore (intertidal areas between mean low water to high tide zone), back shore or upper beach (exposed sand flats above high tide line to dunes), and dunes (areas of wind-blown sand ridges or mounds above the highest tide line and exposed to wind action) (U.S. Fish and Wildlife Service, 1997a).

The foreshore or intertidal zone contains beach wrack, which is composed of drying seaweed, tidal marsh plant debris, decaying marine animals, and miscellaneous debris deposited on the beach via wave action and tidal fluctuation. The beach wrack creates a moist micro-habitat suitable to crustaceans such as amphipods (Family: *Amphipoda*); *Orchestia* spp. and *Talorchestia* spp., which are known as beach fleas. Beach fleas are important prey for ghost crabs (*Ocypode quadrata*) (U.S. Fish and Wildlife Service, 1997a). Various foraging birds [i.e., gulls, shorebirds, fish crows (*Corvus ossifragus*) and grackles (*Quiscalus* spp.)] and some mammals are

attracted to the beach fleas, ghost crabs, carrion, and plant parts that are commonly found in beach wrack.

Upper beach and dune habitats also exist within portions of the study area. While the upper beach contains sparse vegetation and few biological interactions, transient ghost crabs, beach fleas, and scavenger beetles may be found in this zone (U.S. Fish and Wildlife Service, 1997a). Natural dunes or remnants of such dunes exist within the study area, especially at Corson's Inlet State Park and Strathmere State Natural Area. The predominant vegetation on primary dunes (first or only dune landward of the upper beach zone) is American beach grass (*Ammophila breviligulata*), which is tolerant to salt spray, shifting sands, and temperature extremes (U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000). On secondary dunes, which lie landward of the primary dunes, vegetation typically includes beach heather (*Hudsonia tomentosa*), beach panic grass (*Panicum amarum*), broom sedge (*Andropogon virginicus*), beach plum (*Prunus maritima*), seaside spurge (*Euphorbia polygonifolia*), joint-weed (*Polygonella articulata*), slender-leaved goldenrod (*Solidago tenuifolia*), and prickly pear (*Opuntia compressa*) (U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000).

C. OTHER VEGETATIVE COVER TYPES

Some non-tidal (palustrine) forested and scrub-shrub wetland vegetative cover types exist along areas that are inland of the high marshes and estuarine back bays adjacent to the study area. Forested wetlands consist predominantly of Atlantic white-cedar (*Chamaecyparis thyoides*), black gum (*Nyssa sylvatica*), and sweetbay magnolia (*Magnolia virginiana*), with minor species including red maple (*Acer rubrum*) and pitch pine (*Pinus rigida*). Major understory species of forested wetland areas include black gum, red maple, and pin oak (*Quercus palustris*). Shrub cover in wetland areas includes sweet pepperbush (*Clethra alnifolia*), highbush blueberry (*Vaccinium corymbosum*), and fetterbush (*Leucothoa racemosa*).

In wet areas transitional to uplands, pitch pine, red maple, and black gum are the predominant overstory species. In upland areas, scarlet oak (*Quercus coccinea*), white oak (*Quercus alba*) and pitch pine comprise the canopy with scrub oak (*Quercus ilicifolia*), white oak, and sassafras (*Sassafras albidum*) comprising the major understory species. Trees comprising the understory on upland sites include American holly (*Ilex opaca*), sassafras, and black locust (*Robinia pseudoacacia*). Lowbush blueberry (*Vaccinium angustifolium*) is the predominant species of the upland shrub layer.

D. FISH AND WILDLIFE RESOURCES

1. Marine Finfish

Shoal areas along the Atlantic coast provide productive finfish habitats. Such bathymetric contours provide important structure and feeding areas for a variety of commercially and

recreational important finfish species. Fishing grounds are concentrated near these productive shoal areas (McClam, pers. comm., 2000). Some notable species that occur within the study area include the Atlantic sturgeon (*Acipenser oxyrinchus*), alewife (*Alosa pseudoharengus*), weakfish (*Cynoscion regalis*), bluefish (*Pomatomus saltatrix*), American eel (*Anguilla rostrata*), winter flounder (*Pseudopleuronectes americanus*), and white perch (*Morone americana*).

Many species of estuarine-dependent fish (fish that spend some stage of life history within an estuary) exist within the study area. Estuarine-dependent species that comprise the majority of the ecologically, recreationally, and commercially important fisheries include Atlantic menhaden (*Brevoortia tyrannus*), weakfish, spot (*Leiostomus xanthurus*), silver perch (*Bairdiella chrysoura*), bluefish, summer flounder (*Paralichthys dentatus*) and winter flounder (Beccasio *et al.*, 1980).

Allen *et al.* (1978) conducted a comprehensive baseline finfish study of the Hereford Inlet estuary in Cape May County. Hereford Inlet is located approximately 10 miles south of the study area and is characterized by shallow sounds and extensive salt marshes. Allen *et al.* (1978) collected a total of 105 species in the tidal marsh embayment. Species collected in more than 10 percent of samples included bay anchovy (*Anchoa mitchilli*), sheepshead minnow (*Cyprinodon variegatus*), mummichog (*Fundulus heteroclitus*), striped killifish (*F. majalis*), Atlantic silverside (*Menidia menidia*), tidewater silverside (*M. beryllina*), northern pipefish (*Syngnathus fuscus*), black sea bass (*Centropristis striata*), bluefish, spot, white mullet (*Mugil curema*), smallmouth flounder (*Etropus microstomus*), summer flounder, widowpane (*Scophthalmus aquosus*), and winter flounder.

2. Shorebirds and Colonial Nesting Waterbirds

Migratory shorebirds are a federal trust resource responsibility of the Service. Wetland areas in the vicinity of Peck Beach Island and Ludlam Island, particularly Great Egg Harbor Bay, Corson Sound, Ludlam Bay, and Townsend Sound, provide high quality habitats for a variety of migratory shorebirds. Shorebirds that use beach areas and associated estuarine wetlands in the proposed project area include: State-listed (threatened) Black Rail (*Lateralus jamaicensis*), American Oystercatcher (*Haematopus palliatus*), Semipalmated Plover (*Charadrius semipalmatus*), Wilson's Plover (*C. wilsonia*), federally listed (threatened) Piping Plover (*C. melodus*), Lesser Golden Plover (*Plevialis dominica*), Black-bellied Plover (*P. squatarola*), Hudsonian Godwit (*Limosa haemastica*), Marbled Godwit (*L. fedoti*), Wimbrel (*Numenius phaeopus*), Sanderling (*Callidris alba*), Semipalmated Sandpiper (*C. pusilla*), Purple Sandpiper (*C. maritima*), Western Sandpiper (*C. mauri*), Least Sandpiper (*C. minutilla*), White-rumped Sandpiper (*C. fuscicollis*), Baird's Sandpiper (*C. bairdii*), Pectoral Sandpiper (*C. melanotos*), Red Knot (*C. canutus*), Dunlin (*C. alpina*), Greater Yellowlegs (*Tringa melanoleuca*), Eastern Willet (*Catoptrophorus semipalmatus*), Curlew Sandpiper (*C. ferruginea*), Stilt Sandpiper (*C. himantopus*), Spotted Sandpiper (*Actitis macularia*), Ruddy Turnstone (*Arenaria interpres*), and Short-billed Dowitcher (*Limnodromus griseus*) (New Jersey Division of Fish, Game and

Wildlife, 1994). During an April 21, 1999 site visit, a Red Knot, Piping Plover, and several Sanderlings were observed foraging within the intertidal zone of the project impact area.

Colonial nesting waterbirds present within the study area include: Great Blue Heron (*Ardea herodias*), Little Blue Heron (*Egretta caerulea*), Tricolored Heron (*E. tricolor*), Snowy Egret (*E. thula*), State-listed (threatened) Black-crowned Night Heron (*Nycticorax nycticorax*), State-listed (threatened) Yellow-crowned Night Heron (*Nycticorax virescens*), Cattle Egret (*Bubulcus ibis*), Great Egret (*Casmerodius albus*), Glossy Ibis (*Plegadis falcinellus*), Great Black-backed Gull (*Larus marinus*), Herring Gull (*L. argentatus*), Laughing Gull (*L. atricilla*), Black-legged Kittiwake (*Rissa tridactyla*), Gull-billed Tern (*Sterna nilotica*), Forster's Tern (*Sterna forsteri*), Common Tern (*S. hirundo*), State-listed (endangered) Least Tern (*S. auilliarum*), State-listed (endangered) Black Skimmer (*Rynchops niger*), Common Loon (*Gavia immer*), Red-throated Loon (*G. stellata*), Great Cormorant (*Phalacrocorax carbo*), and Double-crested Cormorant (*P. auritus*) (New Jersey Division of Fish, Game and Wildlife, 1994). During a January 27, 1999 site visit, a Common Loon was observed in the near shore subtidal zone. Herring Gulls and Great Black-backed Gulls were observed in the intertidal and upper beach zones of the project area.

Information from Andrews (1990), describing project area waterbird colony locations, distribution, size, nesting chronology, historical trends, and census techniques, was provided in Appendix A of the Service's (1999) previously submitted *Great Egg Harbor Inlet to Townsends Inlet Feasibility Study, Cape May County, New Jersey, Planning Aid Report*.

3. Waterfowl

Migratory waterfowl are also a federal trust resource responsibility of the Service. Areas adjacent to the project area, including Great Egg Harbor Bay, Corson Sound, and Ludlum Bay, are important resting and feeding areas for migratory waterfowl on the Atlantic flyway. The back bays of Peck Beach Island and Ludlum Island provide habitat for Tundra Swan (*Cygnus columbianus*), Canada Goose (*Branta canadensis*), Atlantic Brant, American Black Duck, Northern Pintail (*Anas acuta*), Blue-winged Teal (*A. discors*), Green-winged Teal (*A. crecca*), Mallard (*A. platyrhynchos*), Canvasback (*Aythya valisineria*), Greater Scaup (*A. marila*), Common Goldeneye (*Bucephala clangula*), Bufflehead, Oldsquaw (*Clangula hyemalis*), Wood Duck (*Aix sponsa*), and Red-breasted Merganser (*Mergus serrator*) (New Jersey Division of Fish, Game and Wildlife, 1994). During a January 27, 1999 site visit conducted by the Service, Oldsquaws were observed feeding in the nearshore subtidal zone of the project impact area.

4. Raptors

Raptors that occur in the project area include the State-listed (endangered) Red-shouldered Hawk (*Buteo lineatus*), State-listed (endangered) Peregrine Falcon (*Falco peregrinus*), State-listed (threatened) Osprey (*Pandion haliaetus*), State-listed (threatened) Cooper's Hawk (*Accipiter cooperii*), State-listed (threatened) Barred Owl (*Strix varia*), and State-listed

(endangered) Short-eared Owl (*Asio flammeus*) (New Jersey Department of Environmental Protection, 2000). The Osprey feeds primarily on fish in the back bays and inlets of the study area. The Short-eared Owl is a temporary resident of the high marsh cover types in the project area, feeding primarily on small mammals and birds. The Red-shouldered Hawk and Cooper's Hawk migrate over the study area in the spring and fall; however, these transient visitors rarely stay within the area for any significant length of time.

5. Other Wildlife

The Peck Beach Island / Ludlum Island area also supports numerous other wildlife species. Avifauna include the Boat-tailed Grackle (*Quiscalus major*), Sharp-tailed Sparrow (*Ammodramus caudacutus*), Seaside Sparrow (*A. maritimus*), Eastern Kingbird (*Tyrannus tyrannus*), Tree Swallow (*Ichtyopirna bicolor*), Northern Bobwhite (*Colinus virginianus*), and Red-winged Blackbird (*Agelaius phoeniceus*) (New Jersey Division of Fish, Game and Wildlife, 1994). The Boat-tailed Grackle prefers open coastal marshes near large bodies of brackish water. The Seaside and Sharp-tailed Sparrows inhabit salt marshes dominated by salt marsh cordgrass and saltmeadow cordgrass (DeGraaf *et al.*, 1991). The Eastern Kingbird and Northern Bobwhite are found in pine - scrub oak forests, as well as open fields or glades (DeGraaf *et al.*, 1991). Tree Swallows inhabit open forested areas near marshes, ponds, or small lakes (DeGraaf *et al.*, 1991). Red-winged blackbirds favor freshwater marshes, but may also inhabit salt marshes, especially where common reed is the predominant vegetation.

Amphibians and reptiles that inhabit wetlands and transitional zones adjacent to the study area include the State-listed (endangered) eastern tiger salamander (*Ambystoma tigrinum*), southern leopard frog (*Rana sphenocephala*), green frog (*R. clamitans*), Fowler's toad (*Bufo woodhousii*), common snapping turtle (*Chelydra serpentina*), and northern diamondback terrapin (*Malaclemys terrapin terrapin*) (New Jersey Division of Fish, Game and Wildlife, 1994). The green frog inhabits freshwater wetlands, small streams, and edges of ponds and lakes. The northern diamondback terrapin, a species declining in population, is known to inhabit estuarine (back bay) areas adjacent to the study area.

Mammals that are known to inhabit the study area include river otter (*Lutra canadensis*), raccoon (*Procyon lotor*), gray squirrel (*Sciurus carolinensis*), meadow vole (*Microtus pennsylvanicus*), eastern cottontail (*Sylvilagus floridanus*), and white-tailed deer (*Odocoileus virginianus*) (New Jersey Division of Fish, Game and Wildlife, 1994). Many of these species forage in forested, scrub-shrub and emergent wetlands, as well as transitional zones and uplands near the back bays of the study area. The river otter, a State species of special concern, is known to live and breed in the wetlands of the back bay areas of the estuary, and may feed throughout the study area. Beach and bay predators include the red fox (*Vulpes vulpes*) and feral domestic cats (*Felis catus*).

VI. NATURAL HERITAGE PRIORITY SITES AND STATE-LISTED SPECIES

A. NATURAL HERITAGE PRIORITY SITES WITHIN THE STUDY AREA

In order to conserve New Jersey's biological diversity, the New Jersey Department of Environmental Protection's (NJDEP) (1999) Office of Natural Lands Management has identified 389 Natural Heritage Priority (NHP) Sites statewide. According to NJDEP (1999), the NHP Sites have been designated as critically important areas and represent some of the best remaining habitat for rare species, including State-listed threatened and endangered species, and exemplary natural communities in New Jersey. Several of these NHP Sites are located within, or in close proximity to, the proposed project area (Figure 2). According to the NJDEP (1999), NHP Sites are ranked with respect to significance for biological diversity using a scale developed by The Nature Conservancy and the NJNHP. The scale ranges from B1 to B5, with sites ranked B1 through B3 generally being of global significance and sites B4 and B5 being of State significance (New Jersey Department of Environmental Protection, 1999).

The NHP Sites located in the back bay areas (i.e., west of the coastal barrier islands) adjacent to the study area are unlikely to be affected by proposed project activities. The locations of the back bay NHP Sites are provided in Appendix B. Other NHP Sites, including Corson Inlet North, Corson Inlet South and Whale Beach, Middle Thorofare, Townsends Inlet, and Waverly Beach, are located along coastal zones within the proposed project area (Figures 3 - 7). These sites have B3, B4, and B5 rankings (New Jersey Department of Environmental Protection, 1999).

B. RECOMMENDATIONS TO AVOID POTENTIAL IMPACTS TO NATURAL HERITAGE PRIORITY SITES AND STATE-LISTED SPECIES

To avoid potential adverse project-related impacts to State-listed threatened and endangered species, State species of special concern, and exemplary natural communities identified by the NJNHP within the study area, the Service recommends that the Corps continue to coordinate with the Service, NJDEP's Endangered and Nongame Species Program (ENSP), and NJNHP for current site-specific information over the life of the project. The Service recommends that the Corps develop appropriate measures (i.e., seasonal beach nourishment restrictions and establishment of buffer areas for NHP sites within the project area), based upon site-specific information provided by ENSP and/or NJNHP, to avoid potential adverse impacts to NHP Sites and associated State-listed species, due to beach nourishment and borrow site dredging. Such measures should be incorporated into the project proposal at the earliest stages of planning.

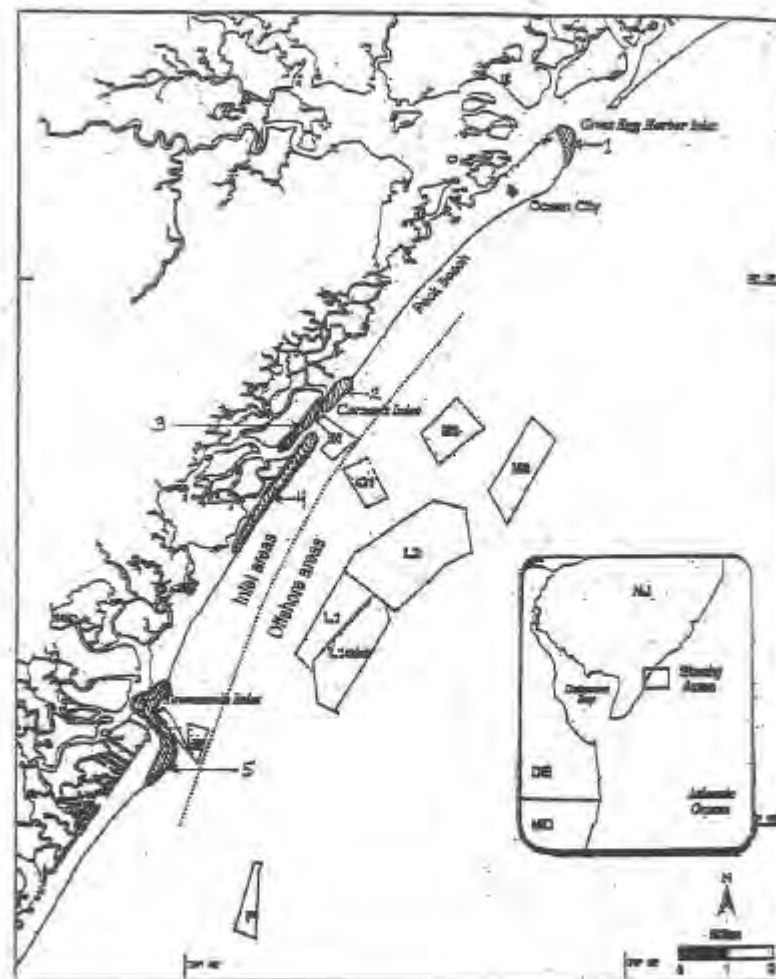


Figure 2: Approximate Locations of Natural Heritage Program Priority Sites Within the Great Egg Harbor Inlet to Townsends Inlet Feasibility Study Area (1. Waverly Beach, 2. Corson Inlet North, 3. Middle Thorofare, 4. Corson Inlet South and Whale Beach, 5. Townsends Inlet).

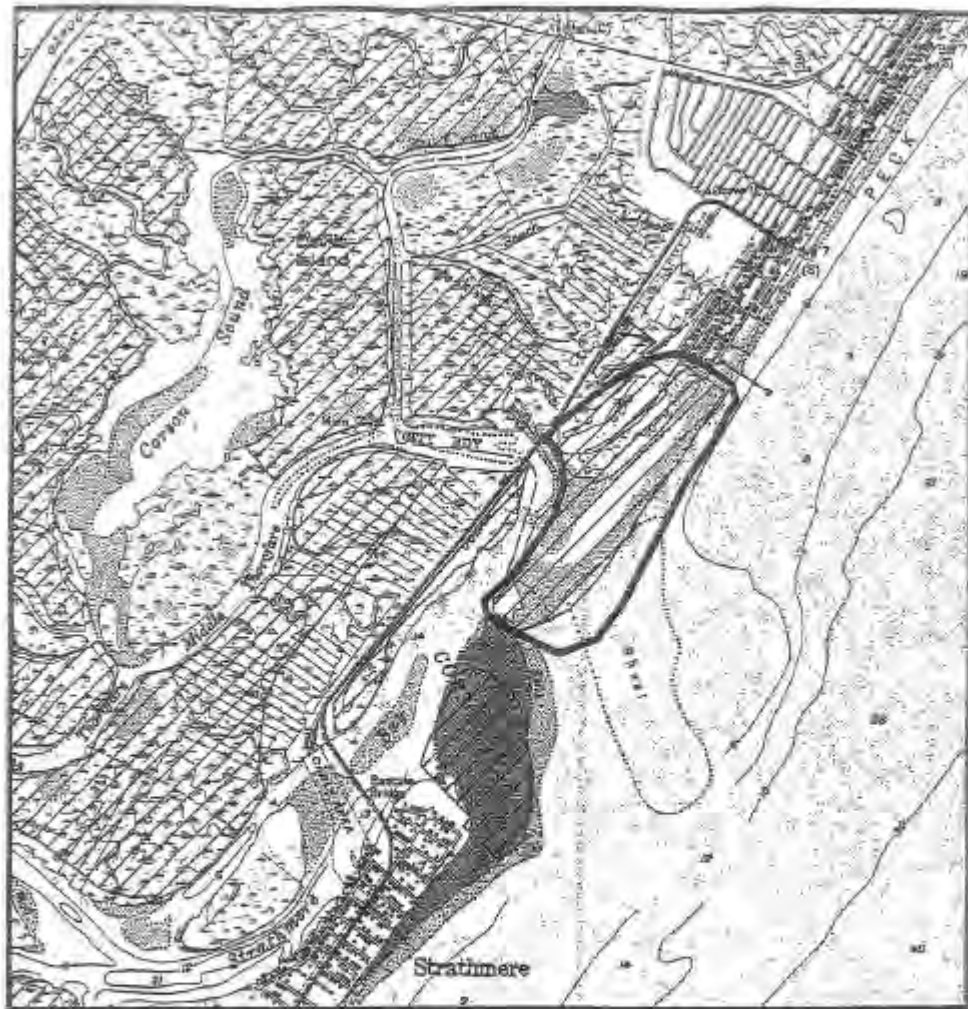


Figure 3: Location of Corson Inlet North Natural Heritage Priority Site, Cape May County, New Jersey. (Sea Isle City USGS Quadrangle)

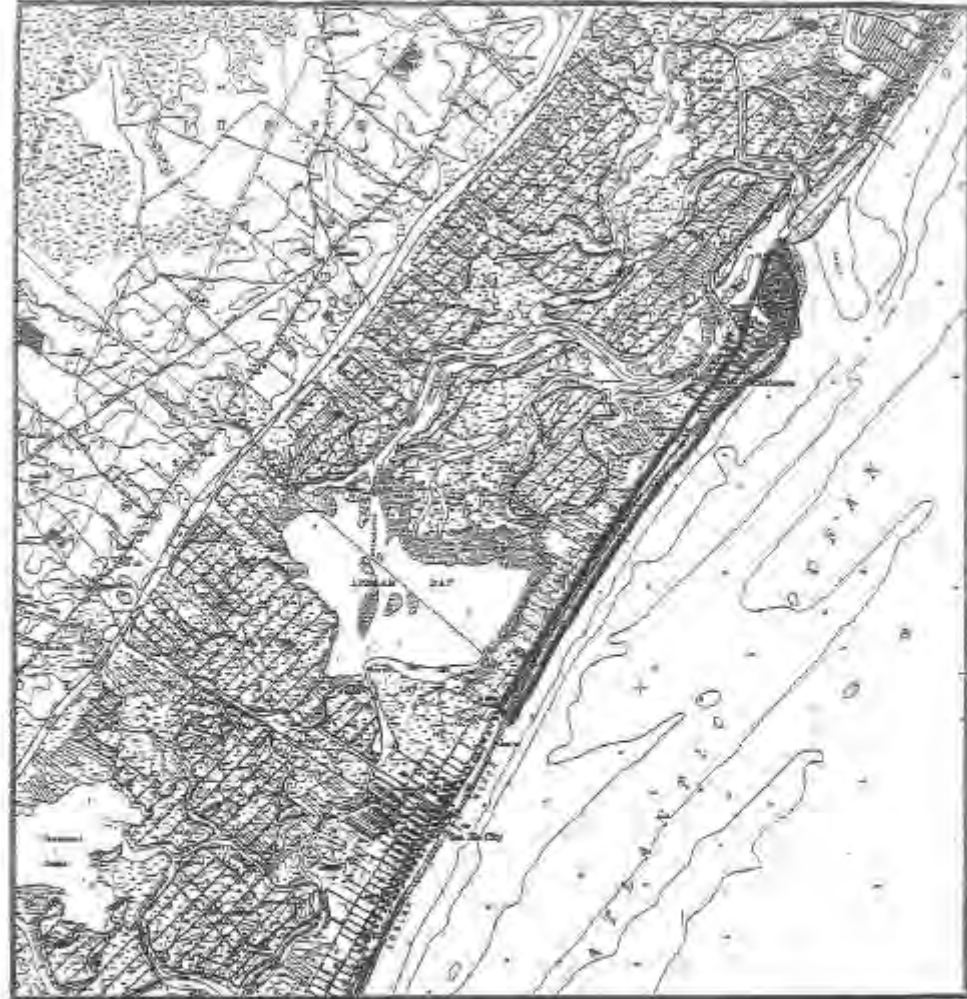


Figure 4: Location of Corson Inlet South and Whale Beach Natural Heritage Priority Site, Cape May County, New Jersey. (Sea Isle City USGS Quadrangle)





Figure 5: Location of Middle Thorofare Natural Heritage Priority Site, Cape May County, New Jersey. (Sea Isle City USGS Quadrangle)

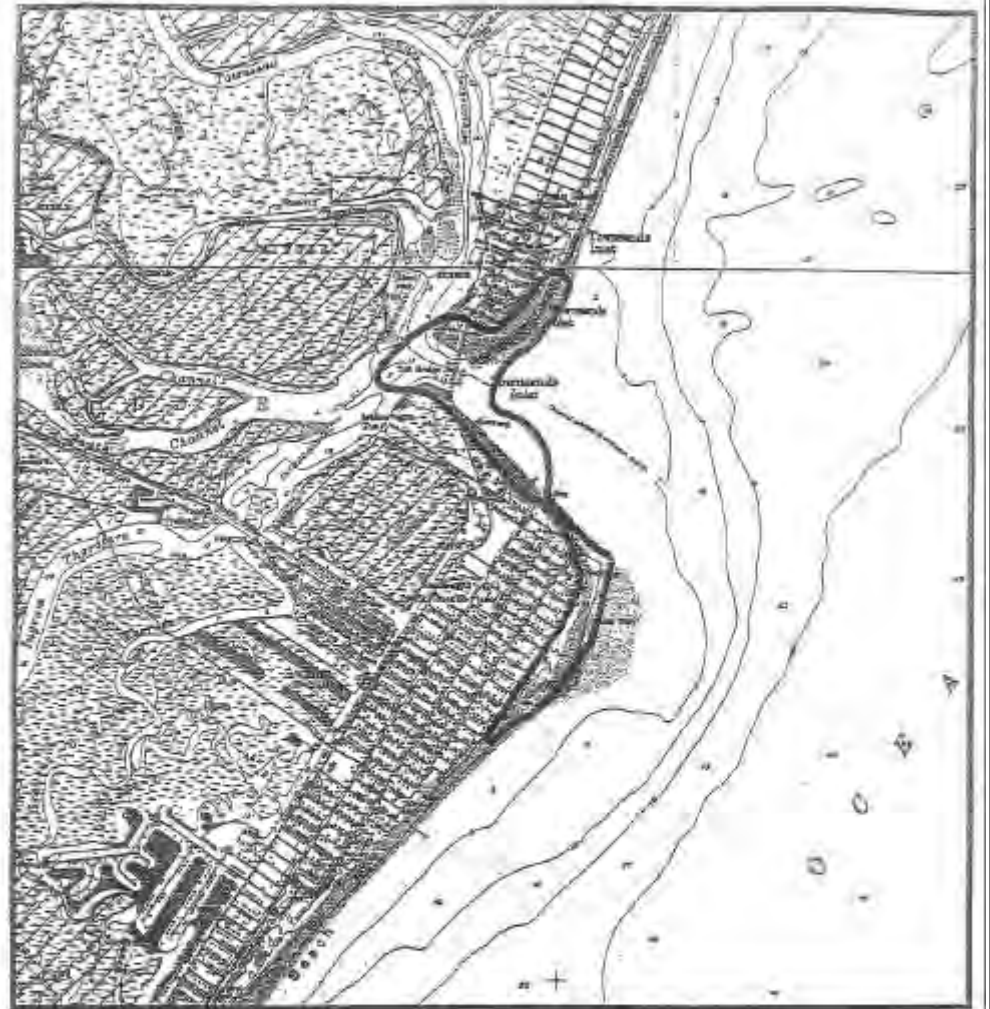


Figure 6: Location of Townsends Inlet Natural Heritage Priority Site, Cape May County, New Jersey. (Avalon USGS Quadrangle)





Figure 7: Location of Waverly Beach Natural Heritage Priority Site, Cape May County, New Jersey. (Ocean City USGS Quadrangle)

VII. FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES

A. PIPING PLOVER

1. Nesting and Foraging Habitats

The federally listed (threatened) Piping Plover has nested historically within the proposed project area, including the northern portion of Peck Beach near Great Egg Harbor Inlet, the middle portion of Peck Beach, and nearly the entire length of Ludlam Beach to its southernmost point at Townsends Inlet. Piping Plovers nest on sandy beaches above the high tide line on mainland coastal beaches, sand flats, and barrier island coastal beaches. The nesting sites are located on gently sloping foredunes, blowout areas behind primary dunes, wash-over areas cut into or between dunes, ends of sand spits, and on sites with deposits of suitable dredged or pumped sand. Food for adult plovers and chicks consists of invertebrates such as marine worms, fly larvae, beetles, crustaceans, and mollusks. Feeding areas include intertidal portions of ocean beaches, ocean wash-over areas, mud flats, sand flats, wrack lines (organic ocean material left by high tide), shorelines of coastal ponds, lagoons, and salt marshes.

2. Habitat Use and Productivity

A growing body of information shows that wash-over habitats, including bayside flats, unstable and recently closed inlets, ephemeral pools (areas on the beach where sea and/or rain water pooled during storm wash-overs and rains), and moist, sparsely vegetated barrier flats, are especially important to Piping Plover productivity and carrying capacity in the New England, New York-New Jersey, and Southern Recovery Units (Wilcox, 1959; Strauss, 1990; Massachusetts Division of Fisheries and Wildlife, 1996; Jones, 1997).

Research indicates that plovers utilizing New England beaches are attracted to, and highly productive on, a wider variety of habitats (Massachusetts Division of Fisheries and Wildlife, 1996; Jones, 1997) than other recovery units in the southern half of their range. However, studies in the New England Recovery Unit also recognize the optimal value of wash-over habitats with open connections to bayside foraging habitats. The majority of plover beaches in New England are natural beaches that are not subjected to beach nourishment. Out of 80 Piping Plover nests observed by Strauss (1990), no nests were found seaward of steep foredunes in Sandy Neck, Massachusetts, where this habitat constituted 83 percent of the beach front. Beach stabilization projects often create beach habitat similar to such steep foredune habitat.

In New York, Wilcox (1959) described the effects of storms on Piping Plovers in 1931 and 1938 that breached the Long Island barrier islands, forming Moriches and Shinnecock Inlets and leveling dunes across the south shore. Only 3 to 4 pairs of Piping Plovers nested on 17 miles [27.4 kilometers (km)] of barrier beach along Moriches and Shinnecock Bays in 1929. However, following the natural opening of Moriches Inlet in 1931, plover numbers increased to 20 pairs in 2 miles (3.2 km) of beach habitat by 1938. In 1938, a hurricane opened Shinnecock



Inlet and also flattened dunes along both Shinnecock and Moriches Bays. In 1941, plover numbers along the same 17-mile (27.4 km) stretch of beach peaked at 64 pairs. Numbers then gradually decreased, a decline that Wilcox attributed to deposition of dredged sand to rebuild dunes, planting of beach grass, and construction of roads and summer homes.

A 1992-1993 study of nest site selection on 90 km (55.8 miles) of beach on Jones Beach Island, Fire Island, and Westhampton Island, New York (Elias *et al.*, 2000) found that all 1-km beach segments with ephemeral pools or bay tidal flats were used for nesting and brood rearing, whereas less than 50 percent of beach segments without these habitats were used. When the amount of time plover broods used each segment was compared with its availability, broods preferred ephemeral pools on segments where pools were present. Where present, bay tidal flats and wrack were the most preferred habitats.

Based on observations by Service biologists during the 2000 nesting season, 7 of the 21 sites (33 percent) occupied by nesting Piping Plovers in New Jersey were areas with low recreational use and access to ephemeral pools and/or bayside tidal flats. These 7 sites supported 58 percent (65 pairs) of the 12 Piping Plover pairs nesting in New Jersey in 2000, and accounted for 62 percent of Statewide productivity (i.e., 97 of 157 chicks fledged) (U.S. Fish and Wildlife Service, 2000a). From 1987 through 2000, the Great Egg Harbor Inlet to Townsends Inlet study area supported an average of 36 plover nesting pairs, accounting for 59 percent of the total Statewide average (61 nesting pairs) (Jenkins, 2000). During this 14-year period, an average total of 28 plover chicks fledged per year within the study area, accounting for 50 percent of the total annual average of chicks fledged Statewide (56) (Jenkins, 2000).

3. Potential Project-Related Impacts

Development along the coastal shoreline for residential and commercial uses, and the subsequent stabilization of the once shifting and dynamic beach ecosystem via seawalls, breakwaters, jetties, and groins have resulted in the destruction and alteration of natural beaches along the Atlantic coast to such an extent that many beaches no longer provide suitable habitat for the Piping Plover. However, human disturbances and the direct loss of nests, rather than the shortage of suitable habitat, are the most critical contributors to the population decline of the Piping Plover (U.S. Fish and Wildlife Service, 1996a).

Beach nourishment or stabilization activities may create additional nesting areas for Piping Plovers on the various beaches within the project area. Recent beach re-nourishment projects (e.g., Ocean City, New Jersey) resulted in the creation of Piping Plover habitat that did not exist prior to project construction. Additionally, habitat created via beach re-nourishment by the Corps New York District at Monmouth Beach, Monmouth County, New Jersey, resulted in nesting by Piping Plovers and establishment of the largest colony of least terns (State-listed as endangered) recorded in New Jersey during the 1997 season (U.S. Fish and Wildlife Service, 1997b). Unfortunately, high levels of human activity on re-nourished beaches often eliminates nesting success (U.S. Fish and Wildlife Service, 1996a). Therefore, occurrence and

nesting of federally or State-listed (threatened or endangered) shorebirds will require restrictions on human activities, including recreational use and beach management (e.g., beach raking and municipal vehicular traffic) to minimize adverse impacts to these species.

According to Jenkins (pers. comm., 2001), recently completed beach nourishment at Ocean City has resulted in an increase in recreational use. High levels of disturbance from human activity, as well as the lack of alternate foraging areas (i.e., wash-over areas, ephemeral pools, and wrack lines), appear to have contributed to plover chick mortality at Ocean City beaches during the 2000 nesting season (Jenkins, pers. comm., 2001). Alternate foraging areas, such as wash-over areas, ephemeral pools, and mud flats, near the plover nesting sites could have prevented such mortality. Due to sparse development and recurrent wash-over events, the Whale Beach portion of the study area (Figure 4) appears suitable for maintenance of naturally-occurring foraging habitats. However, if nourishment were initiated at Whale Beach, nesting habitat would be available on the newly-created berm (east of existing County Route 619). The Service anticipates that plover chicks from nests located on the newly-created beach would forage within the bayside habitats that exist west of County Route 619, if dunes were not constructed as a barrier to occasional wash-over events. The consequent road crossings by plover chicks, necessitated by such a situation, may result in substantial losses of both adults and chicks. A similar situation, which occurred along Dune Road in the Village of West Hampton Dunes (Long Island, New York), resulted in the direct loss of 5 plovers (2 adults and 3 chicks) and 5 plovers (1 adult and 4 chicks) in 1998 and 1999, respectively (U.S. Fish and Wildlife Service, 2000b). Therefore, closure of County Route 619 during the plover nesting season would be necessary to prevent take under Section 9 of the ESA.

The Service acknowledges the activities proposed in the BA (U.S. Army Corps of Engineers, 2001), including recommendations by Scott (2001) in regard to habitat restoration and minimization of adverse effects to the Piping Plover. The Corps is currently engaged in formal consultation with the Service for all beach nourishment projects within the jurisdiction of the Philadelphia District. The Service's Biological Opinion (BO) in response to the BA will be provided on or about August 24, 2001. Detailed comments regarding protection of threatened and endangered species will be provided within the BO to ensure that the Corps' proposed activities do not jeopardize the continued existence of federally listed species.

B. RECOMMENDATIONS TO PROTECT PIPING PLOVER AND OTHER BEACH-NESTING BIRDS

Preservation of plover habitat must be considered in the project design because of nesting and foraging qualities of the study area for Piping Plover. To ensure the continued protection of Piping Plovers, as well as other beach-nesting shorebirds over the life of the project, the Service recommends that the Corps incorporate the following recommendations into project planning.

1. Create preferred plover foraging habitat; such as wash-over areas, ephemeral pools, and mud flats wherever possible throughout the study area. Segments of

the study area with minimal potential for human disturbances would be most suitable; however, creation of foraging habitats should be considered in areas where plover losses have been attributed to limited foraging availability and high recreational use. In areas subject to high recreational use, protect plover foraging habitats via fencing, signing, and public education and outreach programs.

2. Consider eliminating beach nourishment along the Whale Beach segment of the study area. Allowing natural coastal processes to breach the existing dune would create foraging habitats (i.e., wash-over areas, ephemeral pools, mud flats) for Piping Plovers and other shorebirds. Alternatively, if nourishment were initiated, design dunes so that wash-over events are not prevented.
2. Under both scenarios under 2., consider permanent or seasonal closure of County Route 619, along the sparsely developed Whale Beach segment of the study area, to eliminate the potential for Piping Plover mortality due to road crossings.
4. Avoid nourishing beaches occupied by the Piping Plover between March 15 and August 15.
5. On beaches known to have been occupied by the Piping Plover in previous years, plan to conduct nourishment activities immediately after August 15, allowing for recovery of the benthic fauna prior to the next Piping Plover nesting season.
6. Reinitiate consultation pursuant to Section 7 of the ESA:
 - a. at least 135 days prior to beginning any beach nourishment associated with the project; and
 - b. at least 135 days prior to any beach maintenance activities (e.g., beach re-nourishment) for the life of the project (i.e., 50 years).

Piping Plover nesting activity may occur due to creation of suitable habitat as a result of the project. Therefore, to ensure protection of Piping Plovers during the nesting and brood rearing periods from March 15 to August 15, the Service recommends that the Corps develop an Endangered Species Protection and Recreational Management Plan (ESPRMP) for each municipality within the project area prior to initiation of dredging and beach nourishment. The ESPRMPs must adhere to the Service's *Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act* (U.S. Fish and Wildlife Service, 1994) (Appendix D). The Service recommends that the ESPRMPs specifically include, but not be limited to:

- (1) surveys to determine whether Piping Plovers are actively nesting in the project area;

- (2) establishment and identification (e.g., fencing and signing) of protective zones around Piping Plover nests;
- (3) protection of Piping Plover foraging areas (e.g., retention of wreck lines and tidal pools) and conditions to ensure Piping Plover access to such areas;
- (4) off-road vehicle (recreational and essential state/municipal) restrictions during the Piping Plover nesting and brood rearing periods (March 15 to August 15);
- (5) monitoring of Piping Plovers during the nesting and brood rearing period (March 15 to August 15);
- (6) prohibition of kite flying from March 15 to August 15;
- (7) protection of Piping Plover nests, chicks, and adults from native and domestic predators;
- (8) education and outreach to municipal employees and beach recreationists; and
- (9) enforcement of items 1 - 8 above.

Establishment of protective zones and other protective measures developed within the ESPRMPs should be coordinated with each municipality within the study area, as well as with the Service and ENSP. If off-road-vehicles (ORV) access the beach on the project site and if Piping Plovers nest adjacent to the project site, the Guidelines apply to ORV use. The ESPRMPs must be submitted to the Service for review and comment at least 60 days prior to project initiation to determine if further consultation pursuant to Section 7 of the ESA will be required.

In the event that Piping Plovers or other beach nesting birds do nest or expand their nesting areas on Peck Beach and Ludlam Island, the Service recommends that the Corps develop educational materials (e.g., brochures, informational signs) and / or provide funds for public education and outreach. Development of informational materials would educate beach users about beach nesting birds, thereby reducing disturbance to nesting areas. Public education would also promote public support for protecting beach nesting birds.

Finally, the Corps has agreed to implement a shorebird monitoring program, if construction takes place during the nesting season of the Piping Plover and other State-listed beach nesters. The Service further recommends that the Corps develop and implement an in-between-construction shorebird monitoring program, in cooperation with the Service, to monitor the use of the nourished beaches for shorebirds, particularly Piping Plovers. This shorebird monitoring program should be designed to identify and report use of the project area beaches by shorebirds.

particularly the Piping Plover, for the life of the project. Shorebird monitoring within the project area, except within currently known Piping Plover locations, is not conducted by ENSP. Monitoring of enhanced beach areas that are currently not surveyed by ENSP would be the responsibility of the project proponent (i.e., the Corps).

C. SEABEACH AMARANTH

Beach nourishment may also create habitat for the seabeach amaranth (*Amaranthus pumilus*), a federally listed (threatened) plant. The seabeach amaranth is a prostrate annual herb, endemic to Atlantic coastal plain beaches, primarily occurring on wash-over flats at the accreting ends of barrier beach islands and lower foredunes of non-eroding beaches. The species occasionally establishes small temporary populations in other areas, including bayside beaches, blowouts in foredunes, and sand and shell material placed as beach replenishment or dredge spoil. Each plant is an active sand binder and can create a dune 2 feet tall. The seabeach amaranth appears to be intolerant of competition and does not occur on well-vegetated sites (U.S. Fish and Wildlife Service, 1996b).

Flowering begins as early as June and continues until the plant's death, usually in late fall, depending on weather and ocean conditions. Flowers appear to be wind pollinated. Seed production peaks in September and continues until the plants' death. Most seeds are dispersed by wind and water; a waxy coating makes them impervious to water. A portion of the seeds is retained by the dying parent plant and buried in sand on site, a dispersal strategy sea beach amaranth shares with sea rocket (*Cakile edentula*), a close associate (U.S. Fish and Wildlife Service, 1996b).

Sea beach amaranth is federally listed as threatened under the ESA and is State listed as endangered. Causes directly related to its rarity are "hard" beach stabilization projects (seawalls, rip-rap, jetties, bulkheads), beach erosion, beach grooming, and off-road vehicles. Off road vehicular use of beaches has no adverse effects off-season, but the brittle stems break easily when subjected to vehicular traffic during the growing season. Overall, walking beach goers avoid the sparsely vegetated sands of upper beaches (U.S. Fish and Wildlife Service, 1993).

Historically, sea beach amaranth occurred from Massachusetts to South Carolina. Currently, there are approximately 56 remaining populations in the world, distributed in New York, New Jersey, and the Carolinas. Sea beach amaranth was considered extirpated in New Jersey by 1913, following extensive construction of bulkheads and sea walls. It was re-discovered on beaches in Monmouth County on July 31, 2000. In New York, sea beach amaranth reappeared after hurricane Hugo which, at the same time, decreased the South Carolina population numbers by 90 percent. Some of the most vigorous populations are associated with rare nesting shore birds and marine turtles (U.S. Fish and Wildlife Service, 1993). Although no extant occurrences of the seabeach amaranth are known within the proposed project area, the species has recently naturally re-colonized coastal sites within northern New Jersey, New York, Delaware, and Maryland. Therefore, it is possible that the seabeach amaranth may become naturally re-

established within the project area during the project life. Beach nourishment projects have resulted in thriving populations on a few occasions (U.S. Fish and Wildlife Service, 1996b).

D. RECOMMENDATIONS TO PROTECT SEABEACH AMARANTH

To ensure that seabeach amaranth will not be adversely affected by project activities, the Corps has agreed to conduct surveys for seabeach amaranth prior to project initiation and each periodic nourishment. Following a survey that has identified seabeach amaranth sites, the Service recommends establishing a protective zone around any seabeach amaranth sites identified to avoid construction-related pedestrian and vehicular traffic. Also, avoid the placement, movement, or maintenance of pipelines, stockpiling of construction materials and equipment, and pumping, placement, or distribution of sand within such zones. Such measures to protect seabeach amaranth have been incorporated into the aforementioned programmatic BA (U.S. Army Corps of Engineers, 2001). However, the BA indicates that, if avoidance of documented seabeach amaranth sites targeted for beach nourishing activities would not be possible, it is proposed to collect seeds and / or entire plants for relocation. The Service opposes collecting entire plants, unless it can be shown by previously published research that this annual species can withstand relocation with no adverse effects. The Service's BO in response to the BA will be provided on or about August 24, 2001. Detailed comments regarding protection of threatened and endangered species will be provided within the BO to ensure that the Corps' proposed activities do not jeopardize the continued existence of federally listed species.

In addition, for any municipality with documented occurrence of seabeach amaranth, the Corps should address the species within the ESRMP. The ESRMP should include:

- (1) surveys to identify seabeach amaranth occurrence, and
- (2) establishment and identification (e.g., fencing and signing) of protective zones around seabeach amaranth sites.

E. MUNICIPAL RESPONSIBILITIES

The Service recommends that the Corps notify each municipality within the project area about restrictions on recreational activities and beach management (e.g., beach raking and municipal vehicular traffic) regarding present use by Piping Plovers and potential establishment by Piping Plover or seabeach amaranth resulting from the proposed project. This would prevent future misunderstandings regarding the required protection of Piping Plovers and seabeach amaranth. In addition, each municipality should participate in the development of the ESRMP and receive a copy of the aforementioned Guidelines to become familiar with potential recreational activity and beach management restrictions. The purpose of notifying municipalities in advance is to clarify the responsibilities of municipalities that would be benefiting from the proposed federal project. If municipalities are unwilling to cooperate with the Corps and the Service regarding

Piping Plover and seabeach amaranth management, the Corps should consider eliminating the municipality from the proposed project.

VIII. BENTHIC STUDY EVALUATION

The following evaluation of four additional new borrow sites (L1, L3, M8 and IN), pertains to potential dredging-related impacts to marine macro-invertebrates in the study area, and is based primarily upon data from Scott and Wirth's (2000) benthic study of macro-invertebrate communities, including adult surf clams. Data from the three previously proposed (undisturbed) borrow sites [L1 (old), M3, and O1], as reported by Scott and Bruce (1999), were compared to results of the benthic report on the new borrow sites (Scott and Wirth, 2000). New borrow sites L1, L3, and M8 are located offshore; site IN is located at Corson Inlet (Figure 1). The Corps and NJDEP (2000) eliminated the previous borrow sites based upon recommendations from NIBSF and NJBMF (i.e., habitat considerations and New Jersey Prime Fishing Area designation), and due to unsuitability of sediment grain size (i.e., high clay content).

A. BENTHIC MACRO-INVERTEBRATES

Results of the latest benthic report (Scott and Wirth, 2000) indicate similar community composition, diversity, abundance, and biomass, among the three new offshore borrow sites (L1, L3, and M8) and the nearby reference areas (two sample sites located in proximity to each of the proposed borrow sites). Polychaete (Family: *Polychaeta*) worms comprised over 60 percent of the benthic community at each of the offshore borrow sites. With respect to species diversity, the highest total number of taxa (106) was identified at borrow site L3, while the lowest (68) was identified at the nearby reference area. Taxa richness (mean number of taxa) at the three offshore borrow sites was average for the New Jersey coast. No significant differences in the Shannon-Wiener Index and the Simpson's Dominance Index (both used to measure diversity) were detected among the borrow sites.

Mean abundance for the new borrow sites and their respective nearby reference areas was similar and ranged between 5,683 per square meter at borrow site L1 and 6,599 per square meter at borrow site L3 (Scott and Wirth, 2000). Scott and Wirth (2000) reported that the dominant taxa in the three offshore borrow sites were generally small, common organisms that could easily recolonize following dredging operations. Community differences were detected in the inlet areas [Corson Inlet borrow site (IN) and Townsend Inlet Reference Area E (Figure 1)], however, the communities in these areas are consistent with high-energy inlet benthic communities [Lance *et al.*, In Prep., as cited by Scott and Wirth (2000)]. In general, the mean abundance at the new borrow sites was significantly lower than the previous borrow sites examined in the project area (Scott and Wirth, 2000).

B. SURF CLAM RESOURCES

In recent years (1996 through 2000), reports of significant harvest for surf clams within the project area have been consistent with a general trend toward improvement for the south coast of New Jersey (Normant, pers. comm., 2000). The results of the benthic sampling (Scott and Wirth, 2000; Scott and Bruce, 1999) provide information necessary to select borrow areas with the least adverse impacts to surf clam resources.

Based upon Scott and Wirth's (2000) results, small and large surf clams were present in all four borrow sites, including Corson Inlet (borrow site IN). Juvenile clams were present in low numbers (less than 41 per square meter). These numbers were not significantly different from the nearby reference areas. The Corson Inlet borrow site had the highest average density of adult clams (13 clams per 100 square feet) collected by dredge survey. Average surf clam densities in the offshore borrow sites were low (between 1 and 2 clams per 100 square feet). Surf clam data collected from the current offshore borrow sites were similar to data collected from the previously sampled borrow areas (Scott and Bruce, 1999; Scott and Wirth, 2000).

According to the Corps and NJDEP (2000), both the current survey and NJDEP surveys indicate that populations of mature adult surf clams exist near the four borrow areas in or near Corson Inlet. These clams should provide a good recruitment source for population recovery at the borrow sites. The Corps and NJDEP (2000) indicate that surf clam populations within the four borrow areas would be expected to recover, provided suitable environmental conditions (i.e., sandy substrate at least 3-feet-deep and sufficient dissolved oxygen concentrations) are present following dredging. To minimize dredging impacts on surf clam populations and allow for benthic recruitment, dredging will be conducted only once (with the exception of the Corson Inlet borrow site) in any portion of the borrow sites for the life of the project (U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000; Allen, pers. comm., 2001).

IX. POTENTIAL PROJECT IMPACTS AND RECOMMENDED MITIGATIVE MEASURES

A. PROPOSED BORROW SITES

The results of the benthic evaluation report (Scott and Wirth, 2000) suggest that all four new borrow sites could be used as a sand source for beach nourishment and re-nourishment activities, with little or no adverse long-term effects, provided that the dredging plan includes measures to avoid creation of excessively deep (anoxic) pits.

Based on information provided by NJDFW and a preliminary screening of the four new borrow sites, Scott and Wirth (2000) suggested that use of any of the four new borrow sites would have fewer adverse impacts on fishery resources than the previous borrow sites. According to preliminary plans, all four new borrow sites would be dredged in order to provide an adequate

volume of sandy material for proposed beachfill operations (Allen, pers. comm., 2000; U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000). If preliminary plans are revised to exclude one or more of the borrow sites, the Service recommends the use of borrow sites IN, L1, L3, and M8, listed in order of preference (i.e., least to most potential for adverse impacts on benthic invertebrates). This order of preference is based on the Service's evaluation of Scott and Wirth's (2000) benthic study.

I. Recovery of Benthic Communities

Most benthic organisms within the ocean's dynamic ecosystem have adapted to periodic changes in habitat that occur as a result of northeasters, hurricanes, and other storms. As a result, benthic organisms typically recolonize an area quickly, provided the habitat is still suitable. Saloman *et al.* (1982) concluded that benthic organisms recover from dredging events in approximately 1 year, with minor sedimentological changes and a small decline in diversity and abundance within the benthic community. Results of benthic community evaluation within the overlapping Great Egg Harbor and Peck Beach Project area suggest that several macro-benthic parameters (measured in the Ocean City borrow area), including number of taxa, diversity, and abundance, have recovered to pre-dredge conditions within approximately 2 years after the last dredging event (Scott and Kelley, 1998). However, disturbances within the borrow area(s) every 3 years for the life of the project would likely limit re-colonization, thereby maintaining low infaunal abundance and low species diversity.

To minimize repeated impacts on benthic organisms within the borrow area(s), the Service (2000c) recommended that the Corps conduct each nourishment phase in a limited section of the borrow area(s) and alternate locations for each subsequent nourishment cycle. This concept of rotational dredging minimizes frequent, repeated disturbance of a particular area, thereby allowing re-colonization of benthic organisms to occur over a longer period of time. According to information provided in the Corps and NJDEP's (2000) IEIS, a rotational dredging plan will be incorporated into project plans, allowing benthic fauna re-colonization to occur with no permanent loss of habitat.

The three new offshore borrow sites (L1, L3, and M8) are significantly deeper than the three previous borrow sites [L1 (old), M3, and O1] and previous reference site (Southern F) (Figure 1). Based on such information, the Service (2000c) recommended that the Corps avoid creating excessively deep, poorly flushed (anoxic) pits at the borrow sites. The Corps and NJDEP (2000) have indicated that dredging depths would be limited to 10 feet in each borrow area.

2. Essential Fish Habitat

The study area contains Essential Fish Habitat (EFH) for various life stages of 26 species of fish and shellfish, including winter flounder and surf clam (U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000). Section 305 (b)(2) of the Magnuson - Stevens Fishery Conservation and Management Act (MSFCMA) (P.L. 94-265) requires federal

agencies to consult with the Secretary of Commerce regarding any action authorized, funded, or undertaken by the agency that may adversely affect EFH identified under the Act. The Corps and NJDEP (2000) have indicated that EFH consultation with the NMFS has been initiated. The Service recommends continued coordination with the NMFS, pursuant to the MSFCMA, regarding avoidance and minimization of potential adverse effects on EFH.

In addition to any restrictions imposed as a result of EFH compliance, the Service recommends to avoid dredging during periods of shellfish or finfish spawning activity. The usual spawning period and early life stages of winter flounder are between January 1 and May 31 (Riportella, pers. comm., 2000). Dredging should be avoided at that time. The Corps has consulted with the NMFS regarding potential impacts on EFH and federally listed (threatened or endangered) sea turtle and marine mammal species in its jurisdiction.

3. Other Potential Dredging-Related Impacts

Dredging may also adversely affect water quality by increasing turbidity, changing temperature and dissolved oxygen levels, and releasing or re-suspending toxins and bacteria. These factors may cause direct mortality to fish and shellfish, disrupt fish migrations, hamper fish and shellfish spawning, and reduce primary productivity. Additionally, settling of suspended sediment may result in smothering shellfish and other benthic organisms down current of the borrow area, thereby inhibiting re-colonization.

The Service recommends hydraulic-pipeline dredging over hopper dredging in order to minimize turbidity at the borrow sites. Hydraulic-pipeline dredging would also minimize the potential entrainment of federally listed sea turtles (Riportella, pers. comm., 2000). The Corps should continue to consult with the NMFS regarding potential adverse impacts on federally listed sea turtle and marine mammal species under NMFS jurisdiction.

B. BEACH NOURISHMENT AREAS

The proposed beach nourishment and subsequent re-nourishment will bury infaunal organisms and result in mortality within the shallow nearshore (littoral) zone. Most of the organisms inhabiting the dynamic nearshore and intertidal zones are highly mobile or adapt quickly to significant changes in abiotic factors. However, the proposed project would likely reduce infaunal abundance and species diversity despite the resiliency of the intertidal benthic fauna. Reilly and Bellis (1983) determined that recovery of macro-fauna is rapid after beach nourishment activities cease; however, the recolonizing community may differ considerably from the original community. The Corps has conducted beach profile offshore sediment sampling and subsequent grain size distribution analysis to determine compatibility with borrow area sediments (Scott and Wirth, 2000). The results of such analysis indicate that grain size compatibility between the borrow sites and the proposed beachfill areas (intertidal and upper beach zones) would facilitate re-colonization of a macro-invertebrate community similar in species composition to that of pre-beachfill conditions.

By reducing the abundance of intertidal benthic fauna, the proposed beach nourishment and re-nourishment project may adversely impact federally listed (threatened) Piping Plovers, and other shorebirds that feed in the littoral zone, by reducing food (prey base) resources. Adverse impacts would decrease in subsequent seasons as the benthic fauna recolonize the littoral zone. A benthic study by Scott (2001) indicates that feeding by adult juvenile Piping Plovers can be adversely impacted by beach nourishment activities, if the intertidal benthic resources do not recover by the Piping Plover nesting season. Conversely, beach nourishment may create additional suitable habitat that Piping Plovers may use in future seasons. The Service recommends conducting pre- and post-beachfill benthic fauna sampling to assess impacts on total macro-invertebrate abundance, species diversity, and benthic community composition in the intertidal and upper beach zones. Such information would be useful in evaluating short- and long-term impacts to the macro-invertebrate prey base on which Piping Plovers and other shorebirds depend. Two such studies have been planned by the Corps (Scott, 2001).

C. RECOMMENDED HABITAT ENHANCEMENT MEASURES

Beach fill and dune creation provide an opportunity to enhance fish and wildlife habitat. However, any proposed beach creation activities must be closely reviewed, in coordination with the Service and NJDFW, in regard to their effects on shallow water habitat within the project area. In addition, other accompanying adverse impacts to fish and wildlife resources (e.g., the aforementioned adverse impacts to macro-invertebrates (shorebird prey base) in the intertidal and upper beach zones), that may occur as a result of project implementation, must be considered in project planning.

Planning activities for beach fill and dune creation should include an evaluation of potential habitat enhancement for beach nesting birds. Wide beaches with gentle slopes generally provide good quality habitat for beach nesting birds (U.S. Fish and Wildlife Service, 1996a). Creation of low, wide dunes with wash-over areas provides adequate foraging and nesting habitat. Dune configurations that are irregular (e.g., staggered and discontinuous) may attract beach nesting birds. In addition, native dune grasses should be planted in sufficient quantity to provide stabilization, but also minimal enough not to prevent nesting opportunities and potential colonization by seabach amaranth. Fencing systems to trap sand and create dunes should be open to allow passage of juvenile shorebirds between and among the dunes. A broken, zig-zag pattern of fencing parallel to the shore or a Y-type fencing pattern perpendicular to shore are two examples of open fencing systems.

In addition, the Service recommends the use of perpetual deed restrictions or conservation easements to protect newly created beach and adjacent beach habitats for beach nesting shorebirds.

X. CONCLUSIONS AND SUMMARY OF RECOMMENDATIONS

The Service generally supports the selected beach nourishment plan and the use of the four proposed offshore borrow areas as sand sources. In order to optimize benefits for and minimize potential adverse impacts on existing fish and wildlife resources within the study area, the Corps should incorporate the following Service recommendations into the selected plan.

A. RECOMMENDATIONS FOR STATE-LISTED AND FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES

To avoid and minimize potential impacts on State-listed and federally listed threatened and endangered species within the project area, the Service recommends that the Corps incorporate the following measures into project planning:

1. Continue to coordinate with the NJNHP, ENSP, and the Service during project planning, in considering species of special concern and State-listed species (Appendix A). Obtain detailed information (i.e., locations of State-listed species, species of special concern, and associated habitats), via the NJNHP and ENSP, that may exist at NHP Sites within the project area and vicinity (Figures 3 - 7 and Appendix B). Develop appropriate measures (i.e., seasonal beach nourishment restrictions and establishment of buffer areas for NHP sites), based on the specific information obtained, to avoid project-related adverse impacts to the aforementioned resources throughout the project life.
2. Create preferred plover foraging habitat, such as wash-over areas, ephemeral pools, and mudflats, wherever possible throughout the study area. In areas subject to high recreational use, protect such foraging habitats via fencing, signage, and educational material.
3. Consider eliminating beach nourishment along the Whale Beach segment of the study area. Allowing natural coastal processes to breach the existing dune would create foraging habitats (i.e., wash-over areas, ephemeral pools, mud flats) for Piping Plovers and other shorebirds. Alternatively, if nourishment were initiated, design dunes so that wash-over events are not prevented.
4. Consider permanent or seasonal closure of County Route 619, along the sparsely developed Whale Beach segment of the study area, to eliminate the potential for Piping Plover mortality due to road crossing.
5. Avoid nourishing beaches occupied by the Piping Plover between March 15 and August 15.

1. Concur. As part of our standard procedure, we will continue to coordinate with the Service, NJDEP – ENSP and NHP during Preconstruction, Engineering and Design phase to obtain updated information on fish and wildlife resources of concern and to develop appropriate measures to avoid project-related adverse impacts to fish and wildlife resources throughout the project life.

2. The creation of preferred plover foraging habitat will be considered in appropriate areas during the Preconstruction, Engineering and Design Phase of the project. The NJDEP and/or local municipalities will be responsible for placing fencing, signage, and educational materials in areas subject to high recreational use.

3. Omitting nourishment or allowing for dune washover in the Whale Beach area would leave Ludlam Island more susceptible to breaching and also undermine the protection provided by the adjacent areas where nourishment would be provided.

4. This is not a project requirement and would need to be a decision made by Cape May County.

5. Areas occupied by nesting piping plovers will be avoided during the nesting season within established buffer areas or beach sections currently occupied by piping plovers or areas historically occupied by piping plovers.

6. On beaches known to have been occupied by the Piping Plover in previous years, plan to conduct nourishment activities immediately after August 15, allowing for recovery of the benthic fauna prior to the next Piping Plover nesting season.
7. Reinitiate consultation with the Service to ensure protection of the Piping Plover:
 - a. at least 135 days prior to beginning any beach nourishment associated with the project; and
 - b. at least 135 days prior to any beach maintenance activities (e.g., beach re-nourishment) for the life of the project (i.e., 50 years). [The Corps and NJDEP (2000) note that consultation will be ongoing throughout the life of the project and that the above timing recommendation will be followed to allow for formal consultation as necessary].
8. Prior to project initiation, develop and implement an Endangered Species Protection and Recreational Management Plan (ESPRMP) (should Piping Plovers expand their current nesting areas as a result of this project), in cooperation with each municipality within the study area, in accordance with the Service's *Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act* (U.S. Fish and Wildlife Service, 1994). Submit the ESPRMP to the Service for review and comment at least 60 days prior to project implementation.
9. Develop and provide funds for informational materials, public education and outreach, should Piping Plovers and other beach nesting shorebirds expand their nesting areas within the project area.
10. Develop and implement a shorebird monitoring program, in cooperation with the Service and ENSP, to monitor the use of nourished beaches for shorebirds, particularly Piping Plovers.
11. Conduct surveys and establish protective zones around any identified seabeach amaranth sites to ensure that seabeach amaranth will not be adversely affected by project activities. Avoid removing entire seabeach amaranth plants, unless it can be shown by previously published research that this annual species can withstand relocation with no adverse effects. Include seabeach amaranth in the aforementioned ESPRMP for any municipality in which it may occur. [The Corps and NJDEP (2000) note that surveys will be conducted prior to construction, and monitoring shall be conducted to avoid potential adverse effects during project construction].
12. Notify each municipality within the proposed project area, of their responsibilities and potential restrictions on recreational activities and beach management, if Piping Plovers

6. Construction activities will be avoided during the nesting season in areas currently occupied by piping plovers or areas historically occupied by piping plovers. Priority would be given to placement of beachfill immediately after August 15 in areas documented to be inhabited by piping plovers within recent past. This would be done to provide maximum recovery time for benthic organisms along the shoreline to provide a sufficient food source for potential nesting piping plovers the following spring.

7. Concur.

8. The development and implementation of beach nesting bird management plans are currently being negotiated between the non-Federal sponsor (NJDEP) and the local municipalities. Approved management plans will be adopted prior to any construction activities.

9. Public outreach and the development of informational materials will be the responsibility of the NJDEP and the local communities as part of the plover monitoring and management activities.

10. As part of the monitoring for Rare, Threatened and Endangered Species (6.2.29.4), funding for the monitoring of piping plover nests within the project impact area are included in the project costs.

11. If seabeach amaranth occurs during the project life, efforts to avoid adversely impacting this species would be coordinated with the USFWS, however, sand replenishment may be necessary to insure project integrity and function.

12. See response #8. Municipalities would be notified of their responsibilities as per the ESPRMP if nesting piping plovers or sea beach amaranth are identified within the municipal beach area.

expand their nesting areas as a result of the project and / or seabeach amaranth is identified within the municipal beach.

B. RECOMMENDATIONS TO AVOID IMPACTS TO FISH AND WILDLIFE RESOURCES

To avoid or minimize adverse impacts to marine wildlife, including finfish, shellfish, and other benthic organisms at the proposed borrow areas, the Service recommends incorporating the following recommendations into the final project design. [Corps responses to Service recommendations since the draft FWCA report are indicated in brackets, where applicable].

1. The Service continues to recommend the Corps use sites IN, L1, L3, and M8, listed in order of preference (i.e., least to most potential for adverse impacts on benthic invertebrates) should revisions of preliminary plans require excluding one or more of the borrow sites for use as beachfill sand sources. **13.**
2. Conduct each renourishment phase in a limited section of the borrow area(s) and alternate locations (i.e., rotational dredging) for each subsequent renourishment cycle. [To allow benthic fauna re-colonization to occur with no permanent loss of habitat, the Corps and NJDEP (2000) will incorporate rotational dredging into project plans.] **14.**
3. Avoid creating excessively deep, poorly flushed (anoxic) pits at the borrow sites. [The Corps and NJDEP (2000) have indicated that borrow sites would be dredged to a maximum depth of 10 feet.] **15.**
4. Continue coordination with the NMFS regarding Essential Fish Habitat assessment pursuant to the MSFCMA. **16.**
5. The Service continues to recommend the Corps avoid dredging during shellfish or finfish spawning activities. Avoid dredging between January 1 and May 31, which is the usual spawning and early life periods for winter flounder. **17.**
6. Use hydraulic-pipeline dredging rather than hopper dredging in order to minimize turbidity at the borrow sites and minimize the potential entrainment of federally listed sea turtles. [The Corps has consulted with the NMFS regarding potential adverse impacts on federally listed (threatened or endangered) sea turtle and marine mammal species under its jurisdiction. The Corps and NJDEP have not proposed a dredging method or proposed the timing of dredging to date, but propose to include a NMFS-approved monitor on the dredge, if a hopper dredge (with suction head) is used between June and November]. **18.**

13. Based on projected long-term sand needs of the project, Sites "IN" (C1-Corson's Inlet), L1, L3, and M8 would be required.

14. Concur.

15. Concur.

16. Concur.

17. The restriction of dredging between January 1 and May 31 may not be possible during initial construction because this would extend the construction period up to an additional year and may significantly increase the costs associated with mobilization and demobilization. This in addition to piping plover restrictions would leave only 4 months of the year available for construction during foul weather months, which is a safety concern for construction. This restriction may be more feasible during periodic nourishments as they require shorter construction periods.

18. If possible, a pipeline dredge will be used to reduce project impacts. However, if a hopper dredge is used between June and November, a NMFS approved sea turtle/marine mammal monitor would be utilized in accordance with the findings of the Biological Opinion (NMFS, 1996).

C. RECOMMENDATIONS TO ENHANCE BEACH HABITATS

Incorporate the following recommendations into project planning to create additional shorebird habitat and protect or enhance any existing habitat.

- 1. Conduct pre- and post-beachfill benthic fauna sampling to assess impacts on total macro-invertebrate abundance, species diversity, and benthic community composition in the intertidal and upper beach zones. [According to Scott (2001), pre-treatment data were obtained prior to a December 2000 beachfill in Ocean City; post-treatment data gathering was proposed for March and May 2001].

19.

The Service continues to recommend the following enhancement measures, which have not been addressed in the revised draft EIS:

- 2. Review and evaluate any proposed beach creation activity in regard to potential effects on other habitats, including intertidal and upper beach zones, within the project area in coordination with the Service and NJDFW.
- 3. Include shorebird habitat enhancement plans for beach fill and dune creation activities.
- 4. Establish native dune grasses in sufficient quantity to provide dune stabilization, but still promote nesting opportunities for beach nesting birds.
- 5. Design dune fencing systems that allow passage of juvenile shorebirds between and among the dunes. A broken, zig-zag pattern of fencing parallel to the shore or a Y-type fencing pattern perpendicular to the shore are two examples of open fencing systems.
- 6. Obtain a perpetual deed restriction or conservation easement for the newly-created beach and adjacent beach areas.

20.

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XI. REFERENCES

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19. A pre- and post-beachfill benthic fauna sampling study has recently been done on affected beaches in the existing north Ocean City Federal project. Results of this study will be coordinated with the Service when available.

20. Sections 6.2.9 and 6.2.11 describe the direct and indirect impacts of the resident flora and fauna of the dunes, upper beach, and intertidal areas. These sections were expanded to discuss the potential indirect effects on this habitat may have on shorebirds.

21. The District will coordinate with the U.S. Fish and Wildlife Service and the New Jersey Endangered and Nongame Species Program during the development of detailed plans and specifications. In final design, these adjustments of project details can be made to enhance habitats for beach-nesting birds without compromising other project purposes.

22. Dune grass planting measures favorable to promote beach-nesting birds while still providing dune stabilization would be considered through coordination with USFWS and NJDEP during the Preconstruction, Engineering and Design (PED) phase of the project.

23. Dune fencing arrangements that allow for passage of juvenile shorebirds between and among the dunes that also provide for adequate dune stabilization will be considered during the Preconstruction, Engineering and Design (PED) phase through coordination with the USFWS and NJDEP.

24. Perpetual easements will be obtained.

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FEDERALLY LISTED ENDANGERED
AND THREATENED SPECIES
IN NEW JERSEY



An **ENDANGERED** species is any species that is in danger of extinction throughout all or a significant portion of its range.

A **THREATENED** species is any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

	COMMON NAME	SCIENTIFIC NAME	STATUS
FISHES	Shortnose sturgeon*	<i>Acipenser brevirostrum</i>	E
REPTILES	Bog turtle	<i>Clemmys muhlenbergii</i>	T
	Atlantic Ridley turtle*	<i>Lepidochelys kempi</i>	E
	Green turtle*	<i>Chelonia mydas</i>	T
	Hawksbill turtle*	<i>Eretmochelys imbricata</i>	E
	Leatherback turtle*	<i>Dermochelys coriacea</i>	E
	Loggerhead turtle*	<i>Caretta caretta</i>	T
BIRDS	Bald eagle	<i>Haliaeetus leucocephalus</i>	T
	Piping plover	<i>Charadrius melodus</i>	T
	Rosate tern	<i>Sterna dougalli dougalli</i>	E
MAMMALS	Eastern cougar	<i>Felis concolor cougar</i>	E+
	Indiana bat	<i>Myotis sodalis</i>	E
	Gray wolf	<i>Canis lupus</i>	E+
	Delmarva fox squirrel	<i>Sciurus niger cinereus</i>	E+
	Blue whale*	<i>Balaenoptera musculus</i>	E
	Finback whale*	<i>Balaenoptera physalus</i>	E
	Humpback whale*	<i>Megaptera novaeangliae</i>	E
	Right whale*	<i>Balaena glacialis</i>	E
	Sei whale*	<i>Balaenoptera borealis</i>	E
	Sperm whale*	<i>Physeter macrocephalus</i>	E

APPENDIX A

Federally Listed Endangered and Threatened Species,
Federal Candidate Species, and State-Listed Endangered
and Threatened Species in New Jersey

	COMMON NAME	SCIENTIFIC NAME	STATUS
INVERTEBRATES	Dwarf wedgemussel	<i>Alasmidonia heterodon</i>	E
	Northeastern beach tiger beetle	<i>Cicindela dorsalis dorsalis</i>	T
	Mitchell saytr butterfly	<i>Necynympha m. mitchellii</i>	E+
	American burying beetle	<i>Nicrophorus americanus</i>	E+
PLANTS	Small whorled pogonia	<i>Isotria medeoloides</i>	T
	Swamp pink	<i>Helonias bullata</i>	T
	Knieiskern's beaked-rush	<i>Rhynchospora knieskernii</i>	T
	American chaffseed	<i>Schwalbea americana</i>	E
	Sensitive joint-vetch	<i>Aeschynomene virginica</i>	T
	Seabeach amaranth	<i>Amaranthus pumilus</i>	T

STATUS:			
E	endangered species	PE	proposed endangered
T	threatened species	PT	proposed threatened
+	presumed extirpated**		

* Except for sea turtle nesting habitat, principal responsibility for these species is vested with the National Marine Fisheries Service.

** Current records indicate the species does not presently occur in New Jersey, although the species did occur in the State historically.

Note: for a complete listing of Endangered and Threatened Wildlife and Plants, refer to 50 CFR 17.11 and 17.12.

For further information, please contact:
 U.S. Fish and Wildlife Service
 New Jersey Field Office
 927 N. Main Street, Building D
 Pleasantville, New Jersey 08232
 Phone: (609) 646-9310
 Fax: (609) 646-0352

Revised 12/06/00



FEDERAL CANDIDATE SPECIES IN NEW JERSEY

CANDIDATE SPECIES are species that appear to warrant consideration for addition to the federal List of Endangered and Threatened Wildlife and Plants. Although these species receive no substantive or procedural protection under the Endangered Species Act, the U.S. Fish and Wildlife Service encourages federal agencies and other planners to give consideration to these species in the environmental planning process.

SPECIES	SCIENTIFIC NAME
Big-sphodel	<i>Narthecium americanum</i>
Hirst's panicgrass	<i>Panicum hirstii</i>

Note: For complete listings of taxa under review as candidate species, refer to *Federal Register*, Vol. 64, No. 205, October 25, 1999 (Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species).

Revised 11/99



ENDANGERED AND THREATENED WILDLIFE OF NEW JERSEY



Endangered Species are those whose prospects for survival in New Jersey are in immediate danger because of a loss or change in habitat, over-exploitation, predation, competition, disease, disturbance, or contamination. Assistance is needed to prevent future extinction in New Jersey.

Threatened Species are those who may become endangered if conditions surrounding them begin to or continue to deteriorate.

Endangered

Fied-billed grebe, *Podilymbus podiceps**
American bittern, *Botaurus lentiginosus***
Bald eagle, *Haliaeetus leucocephalus***
Northern harrier, *Circus cyaneus**
Northern goshawk, *Accipiter gentilis*
Red-shouldered hawk, *Buteo lineatus***
Peregrine falcon, *Falco peregrinus*
Piping plover, *Charadrius melodus***
Upland sandpiper, *Bartramia longicauda*
Roseate tern, *Sterna dougallii*
Least tern, *Sterna antillarum*
Black skimmer, *Rynchops niger*
Short-eared owl, *Asio flammeus**
Sedge wren, *Cistothorus platensis*
Loggerhead shrike, *Lanius ludovicianus*
Vesper sparrow, *Pooecetes gramineus*
Henslow's sparrow, *Ammodramus henslowii*

* Only breeding population considered endangered or threatened.

** Federally endangered or threatened.

* Breeding population only.

** Non-breeding population only.

BIRDS

Threatened

Black-crowned night heron, *Nycticorax nycticorax*
Yellow-crowned night heron, *Nyctanassa violacea*
Red knot, *Calidris canutus*
Caperey, *Pandion haliaetus*
Cooper's hawk, *Accipiter cooperii*
Red-shouldered hawk, *Buteo lineatus***
Black rail, *Lateralus jamaicensis*
Long-eared owl, *Asio otus*
Barred owl, *Strix varia*
Red-headed woodpecker, *Melanerpes erythrocephalus*
Savannah sparrow, *Passerculus sandwichensis*
Grasshopper sparrow, *Ammodramus sevensonum*
Bobolink, *Dolichonyx oryzivorus*

REPTILES

Endangered

Box turtle, *Clemmys muhlenbergi*
Atlantic hawksbill, *Eretmochelys imbricata***
Atlantic loggerhead, *Caretta caretta***
Atlantic ridley, *Lepidochelys kempi***
Atlantic leatherback, *Dermochelys coriacea***
Corn snake, *Elaphe g. guttata*
Timber rattlesnake, *Crotalus h. horridus*

Threatened

Wood turtle, *Clemmys insculpta*
Atlantic green turtle, *Chelonia mydas***
Northern pine snake, *Pituophis m. melanoleucus*

** Federally endangered or threatened

AMPHIBIANS

Endangered

Tremblay's salamander, *Ambystoma tremblayi*
Blue-spotted salamander, *Ambystoma laterale*
Eastern tiger salamander, *Ambystoma t. tigrinum*
Pine Barrens treefrog, *Hyla anderssonii*
Southern gray treefrog, *Hyla chrysoscelis*

Threatened

Long-tailed salamander, *Eurycea longicauda*
Eastern mud salamander, *Pseudotriton montanus*

MAMMALS

Endangered

Bobcat, *Lynx rufus*
Eastern woodrat, *Neotoma floridana*
Sporn whale, *Physeter macrocephalus***
Fin whale, *Balaenoptera physalus***
Sei whale, *Balaenoptera borealis***
Blue whale, *Balaenoptera musculus***
Humboldt whale, *Megaptera novaeangliae***
Black right whale, *Balaena glacialis***

INVERTEBRATES

Threatened

Mitchell's satyr, *Neonympha m. mitchelli***
Northeastern beach tiger beetle, *Cicindela d. dorsalis*
American burrowing beetle, *Nicrophorus americanus***
Dwarf wedge mussel, *Alasmidonta heterodon***

** Federally endangered

FISH

Endangered

Shortnose sturgeon, *Acipenser brevirostrum***

List revisions:	March 29, 1979
	January 17, 1984
	May 8, 1985
	July 20, 1987
	June 3, 1991
	July 19, 1999

The lists of New Jersey's endangered and nongame wildlife species are maintained by the DEP's Division of Fish, Game, and Wildlife's Endangered and Nongame Species Program. These lists are used to determine protection and management actions necessary to ensure the survival of the state's endangered and nongame wildlife. This work is made possible through voluntary contributions received through Check-off donations to the Endangered Wildlife Conservation Fund on the New Jersey State Income Tax Form, the sale of Conserve Wildlife License Plates, and donations. For more information about the Endangered and Nongame Species Program or to report a sighting of endangered or threatened wildlife, contact: Endangered and Nongame Species Program, Northern District Office, Box 383, R.D. 1, Hampton, NJ 08827, or call (908) 735-8975.

APPENDIX B

Frequently Asked Questions About Natural Heritage Priority (NHP) Sites and Location Maps for Back Bay NHP Sites Adjacent to the Study Area

Frequently Asked Questions About Natural Heritage Priority Sites

What are Natural Heritage Priority Sites?

Through its Natural Heritage Database, the Office of Natural Lands Management (ONLM) identifies critically important areas to conserve New Jersey's biological diversity. The database provides detailed, up-to-date information on rare species and natural communities to planners, developers, and conservation agencies for use in resource management, environmental impact assessment, and both public and private land protection efforts.

Using the database, ONLM has identified Natural Heritage Priority Sites that represent some of the best remaining habitat for rare species and exemplary natural communities in the state. These areas should be considered to be top priorities for the preservation of biological diversity in New Jersey. If these sites become degraded or destroyed, we may lose some of the unique components of our natural heritage.

ONLM has identified 389 priority sites over the course of more than 10 years. We have received assistance from many partner individuals and agencies over this time. The Nature Conservancy and the DEP Endangered and Nongame Species Program have provided key information or assisted with the delineation of a number of the sites.

How are Natural Heritage Priority Site maps used in conservation of biological diversity?

Natural Heritage Priority Site maps are used by individuals and agencies concerned with the protection and management of land. The maps have been used by municipalities preparing natural resource inventories; public and private conservation organizations preparing open space acquisition goals; land developers and consultants identifying environmentally sensitive lands; and public and private landowners developing land management plans.

Natural Heritage Priority Sites contain some of the best and most viable occurrences of endangered and threatened species and natural communities, but they do not cover all known habitat for endangered

and threatened species in New Jersey. If information is needed on whether or not endangered or threatened species have been documented from a particular piece of land, a Natural Heritage Database search can be requested by contacting the Office of Natural Lands Management at the address below.

What do the boundaries of the sites contain?

The boundaries of each Natural Heritage Priority Site are drawn to encompass critical habitat for the rare species or natural communities. Often the boundaries extend to include additional buffer lands that should be managed to protect the habitat. A justification for the boundary is provided for each site. The term "primary bounds" is sometimes used to refer to boundaries enclosing critical habitat. The term "secondary bounds" is sometimes used to refer to boundaries enclosing additional buffer. In maps where both primary and secondary boundaries are described, only the outermost boundary is provided in the mapping.

What is the background map that the sites are drawn upon?

The sites are portrayed on background maps produced from a digital copy of the U.S. Geological Survey 7.5 minute topographic maps. The background maps contain topographic lines as well as streams, lakes, roads, towns and place names. These background maps do not always reflect recent changes in land development. Some may be more than 20 years old. Some sites appear to be shifted in position against this topo map. This shift is due to the fact that most sites have been digitized against a background of rectified aerial photography, and some of the digitized USGS topo maps do not align with this photography.

What do "public lands" depict on the maps?

The "public lands" shaded on these maps are state-owned open space lands that have been digitized as a GIS coverage by the state Green Acres Program. This information is provided to show patterns of State land ownership in the vicinity of the Priority Site. The public lands are areas such as State Parks and Forests, Wildlife Management Areas, and

Natural Lands Trust preserves. They do not currently include lands owned by other state agencies, federal, county or municipal governments or nonprofit conservation organizations. This GIS coverage is constantly being updated, and therefore future editions of the maps will likely contain additional public lands that are not currently mapped as such.

What is the biodiversity significance rank and how is it used?

Each site is ranked according to its significance for biological diversity using a scale developed by The Nature Conservancy and the network of Natural Heritage Programs. The ranks can be used to distinguish between sites that are of global significance for conservation of biological diversity vs. those that are of state significance. The scale ranges from B1 to B5 with sites ranked B1-B3 generally being of global significance and sites ranked B4-B5 being of state significance. The specific definitions for each rank are as follows.

B1 - Outstanding significance, generally the "best of the best" in the world, such as the only known occurrence of any element (species or natural community), the best or an excellent occurrence of an element ranked critically imperiled globally, or a concentration (4+) of good or excellent occurrences of elements that are imperiled or critically imperiled globally. The site should be viable and defensible for the elements or ecological processes contained.

B2 - Very high significance, such as the most outstanding occurrence of any natural community. Also includes areas containing other occurrences of elements that are critically imperiled globally, a good or excellent occurrence of an element that is imperiled globally, an excellent occurrence of an element that is rare globally, or a concentration (4+) of good occurrences of globally rare elements or viable occurrences of globally imperiled elements.

B3 - High significance, such as any other viable occurrence of an element that is globally imperiled, a good occurrence of a globally rare element, an excellent occurrence of any natural community, or a concentration (4+) of good or excellent occurrences of elements that are critically imperiled in the State.

B4 - Moderate significance, such as a viable occurrence of a globally rare element, a good occurrence of any natural community, a good or excellent occurrence or only viable state occurrence of an element that is critically imperiled in the State, an excellent occurrence of an element that is imperiled in the State, or a

concentration (4+) of good occurrences of elements that are imperiled in the State or excellent occurrences of elements that are rare in the State.

B5 - Of general biodiversity interest.

How can I obtain Natural Heritage Priority Site maps for an area of interest to me?

Natural Heritage Priority Site hard copy maps can be obtained by submitting a written request accompanied by a check or money order made payable to the Office of Natural Lands Management at the following address:

Office of Natural Lands Management
P.O. Box 404
Trenton, NJ 08625-0404
Phone: 609-984-1339; Fax: 609-984-1477; Email: doliver@dep.state.nj.us

Individual 8.5" X 11" maps are available at the following rate:

1 - 10 site maps & reports:	\$1.50/site
11 - 20 site maps & reports:	\$1.00/site
> 20 sites:	\$0.50/site

Full sets of the June 1999 atlas (389 sites) are available for \$40

Digital GIS Coverage of Natural Heritage Priority Sites

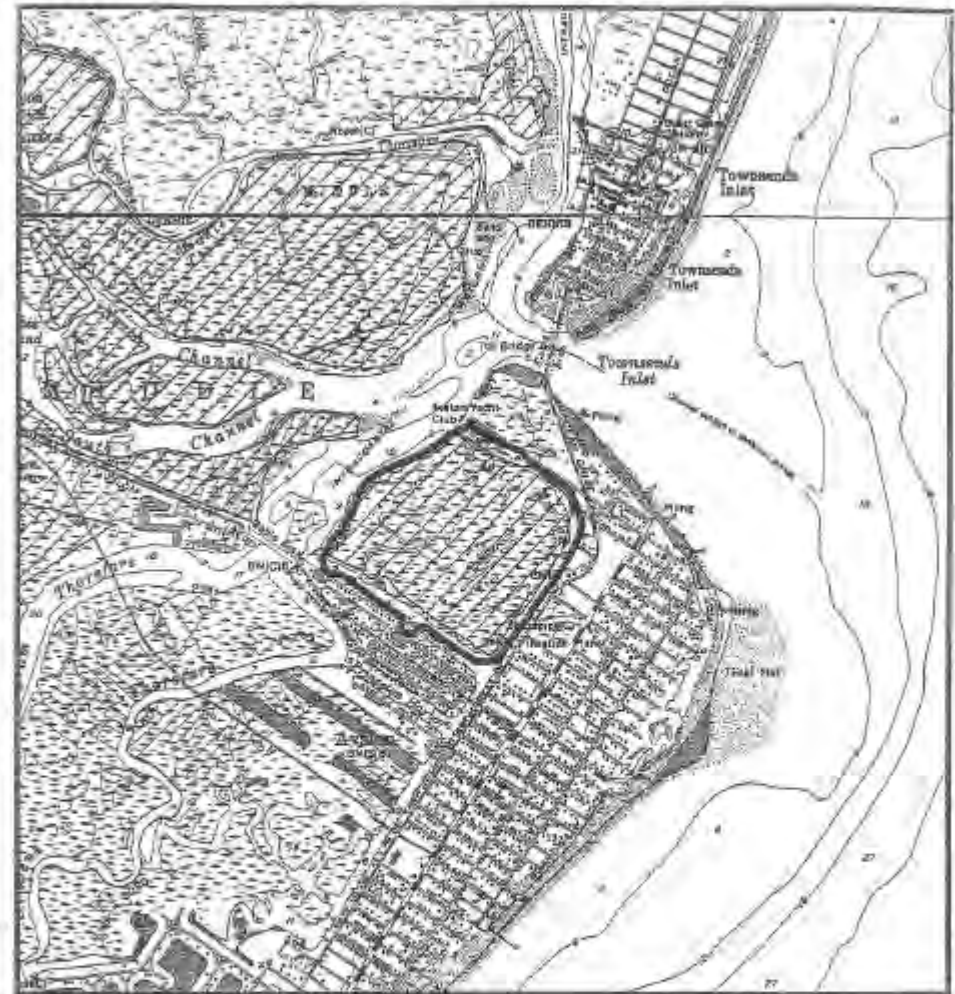
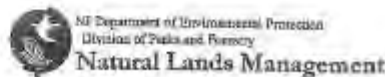
A final digital version of the ArcView GIS file of the Natural Heritage Priority Sites will be available in the near future. Until then, a beta test version of the digital files can be obtained on the internet at the following address:

<http://www.state.nj.us/dep/gis/> -Click on "GIS Data Downloads" and then "Select a data layer." There is no charge for downloading the GIS data.

How often are the maps updated?

The Natural Heritage Priority Site information is constantly being updated in the Natural Heritage Database. New sites will be added and some of the boundaries will be revised in the next edition of the maps, to be made available in October 1999.

August 4, 1999



Natural Heritage Priority Site
Avalon Marsh North
Cape May County



B-3

03

6

A.S. 1999

Graphic Arts



Natural Heritage Priority Site
Avalon Marsh North

Locational Information

Quad Name: Avalon
County: Cape May
Municipality: Avalon Boro

Description of Site

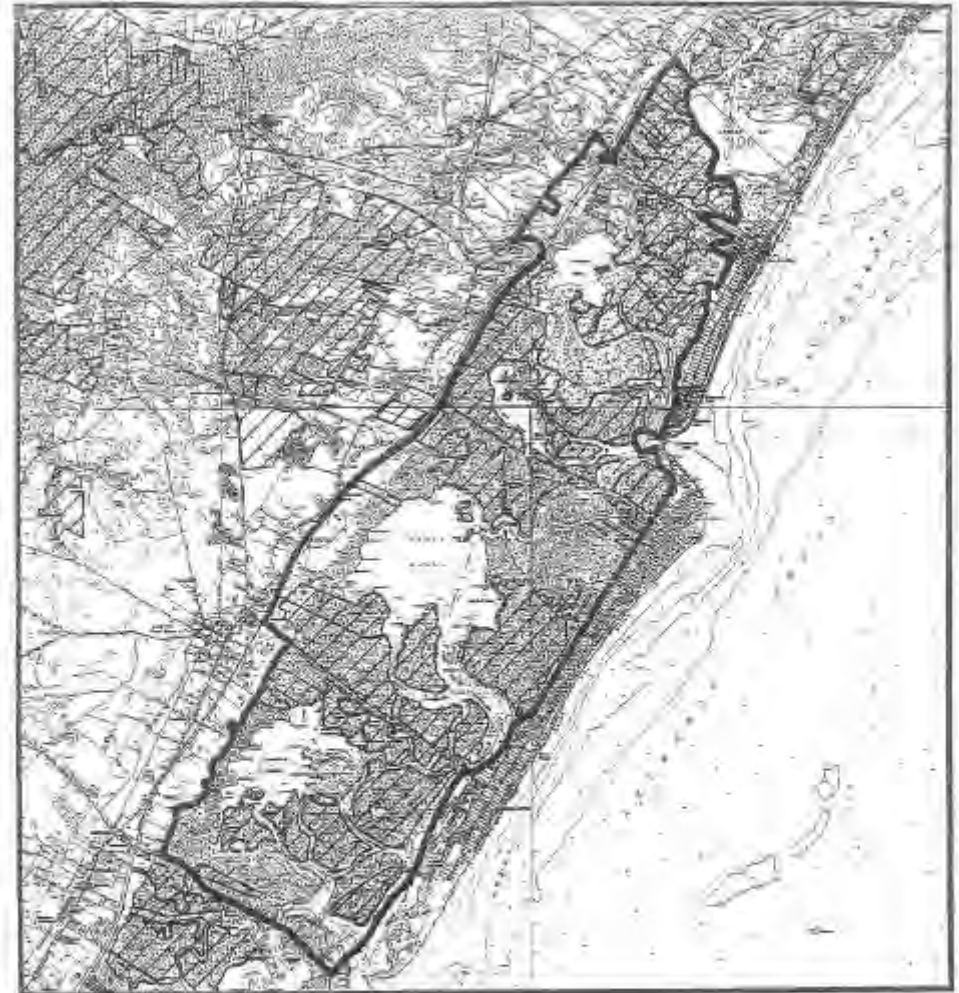
A contiguous patch of salt marsh with small low islands.

Boundary Justification

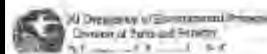
Bounds drawn to include contiguous marsh habitat that contains areas critical for nesting of threatened bird species.

Biodiversity Rank **B5**

An excellent site for a State Threatened bird species.



Natural Heritage Priority Site
Avalon-Stone Harbor Marsh Macrosite
Cape May County



0 0.5 1 Miles



Natural Heritage Priority Site
Avalon-stone Harbor Marsh Macrosite

Locational Information

Quad Name: Avalon ; Stone Harbor ; Sea Isle City ; Woodbine
County: Cape May
Municipality: Middle Twp ; Dennis Twp ; Avalon Boro ; Sea Isle City ; North Wildwood City ; Stone Harbor Boro ; Upper Twp

Description of Site

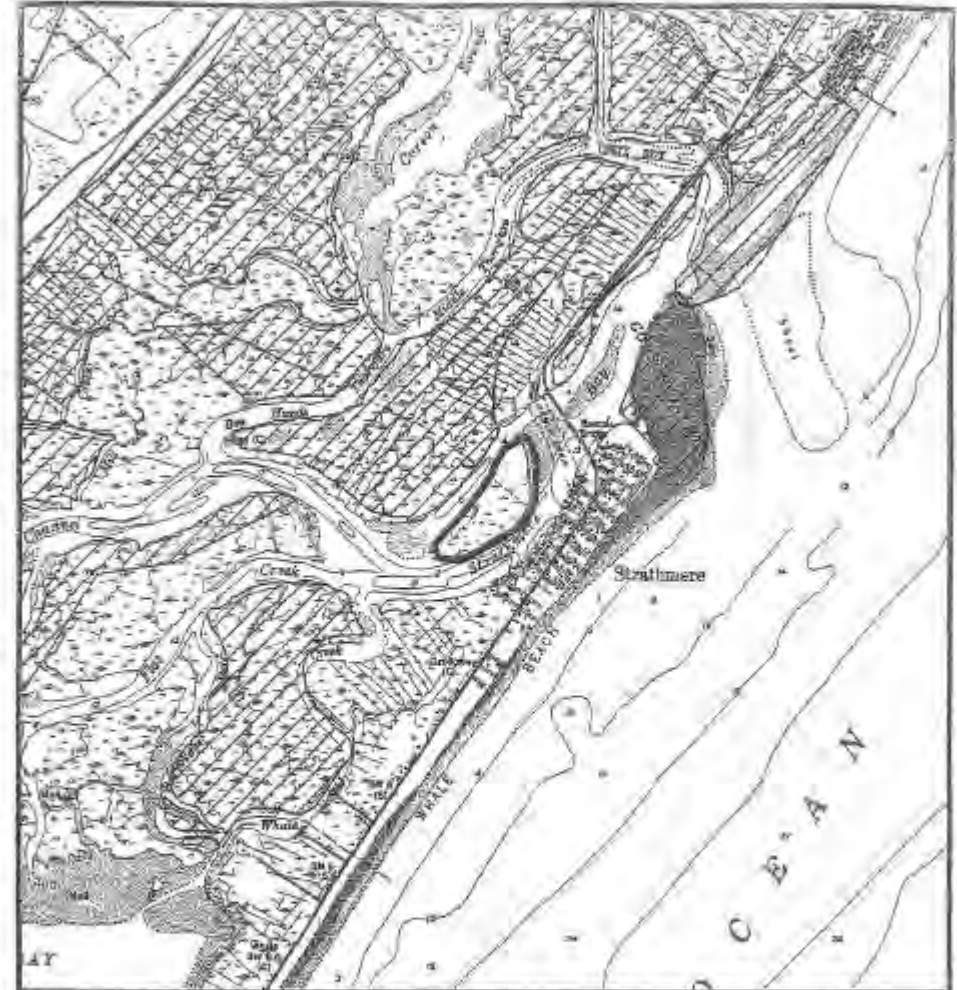
This macrosite occurs on the outer coastal plain behind a series of barrier islands. Tidal salt marsh interspersed with shallow backbays dominates, with a fringe of forested wetlands and mesic uplands on the west. Barrier islands on the east are heavily developed.

Boundary Justification

The secondary bounds include shore bird nesting areas and surrounding salt marsh complex, and patches of forest on the mainland edge which may be concentration area for migrating birds on the Atlantic flyway to rest and feed. The western bounds generally extend to the Garden State Parkway, or slightly beyond where the presence of tidal creeks or intact forest patches justify it.

Biodiversity Rank **B5**

A concentration of state threatened bird species are documented from the salt marsh complex. Forested fringe areas may be important to migrating neotropical passerines.



Natural Heritage Priority Site
Strathmere Bay Island
 Cape May County

NJ Department of Environmental Protection
 Division of Fish and Game
 Natural Lands Management Unit

0.1 0 0.1 Miles

Priority Site



Natural Heritage Priority Site
Strathmere Bay Island

Locational Information

Quad Name: Sea Isle City

County: Cape May

Municipality: Upper Twp

Description of Site

A small bay island located west of Strathmere.

Boundary Justification

Bounds drawn to include this small bay island which provides nesting habitat for bird species.

Biodiversity Rank **B4**

Site contains an excellent population of a State endangered species. Also contains a bird species of special concern.

APPENDIX C

Service's July 12, 2001 Letter to Corps Planning Division
Recommending a Programmatic Biological Assessment for Effects of Beach
Nourishment Projects on Federally Listed Species



United States Department of the Interior

FISH AND WILDLIFE SERVICE



IN REPLY REFER TO:
FP-00V38

Ecological Services
927 North Main Street (Bldg. D1)
Pleasantville, New Jersey 08222

Tel: 609-646-9310
FAX: 609-646-0352

July 12, 2000

Robert L. Callegari, Chief
Planning Division
Philadelphia District
U.S. Army Corps of Engineers
100 Penn Square East
Philadelphia, Pennsylvania 19107-3390

Dear Mr. Callegari:

This letter serves as a follow-up to the June 5, 2000 meeting between representatives of the U.S. Army Corps of Engineers, Philadelphia District's (Corps) Planning Division and the U.S. Fish and Wildlife Service's (Service) New Jersey Field Office, regarding the status of federal beach nourishment and renourishment projects proposed for the New Jersey coast. During the meeting, and via local news information, the Service became aware of several New Jersey beach nourishment projects that are approaching their scheduled implementation dates. The Absecon Island and Avalon and Stone Harbor projects have the earliest dates, with implementation scheduled during the remaining portion of fiscal year 2000 and mid-fiscal year 2001, respectively. The Service has submitted reports (dated August 1996 and June 1997, respectively) regarding these proposals during the feasibility study phases of the projects. The reports were prepared pursuant to Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, 16 U.S.C. 661 *et seq.*) and included Endangered Species Act of 1973 (87 Stat. 884, 16 U.S.C. 1531 *et seq.*) (ESA) Section 7 consultation to ensure the protection of endangered and threatened species.

The above-mentioned FWCA reports provided specific recommendations for protection of the federally listed (threatened) Piping Plover (*Charadrius melodus*), which nests (or nested historically) within several locations of the proposed project areas. Previously implemented beach nourishment projects (e.g., Ocean City, Cape May County and Monmouth Beach, Monmouth County) have created Piping Plover habitat that did not exist prior to construction, thereby increasing the likelihood of adverse impacts from human disturbances during nesting and brood-rearing periods. Therefore, the Service routinely included recommendations within the FWCA reports, that the Corps reinstate consultation pursuant to Section 7(a)(2) of the ESA prior to project implementation. In addition, the Service recommended preparation of a Biological Assessment (BA) if beaches proposed for nourishment or renourishment have been used by

C-1

nesting Piping Plovers, to ensure that such activities do not jeopardize the continued existence of the species. As you are aware, the lead federal agency for a project has the responsibility, under Section 7 of the ESA, to prepare a BA if the activity is a construction project that requires an Environmental Impact Statement (EIS) and the project may affect a federally listed species. In accordance with the ESA, the Corps must prepare a BA to address potential project-related adverse impacts to the Piping Plover. Be advised that a federal agency shall make no irreversible or irretrievable commitment of resources that would prevent formulating or implementing any reasonable and prudent alternatives for the action as described in 50 CFR Part 402.14. This prohibition is in force during the consultation process and continues until the requirements of Section 7(a)(2) are satisfied.

The Service is aware of additional projects (listed below with anticipated initiation dates in parentheses) that are likely to adversely impact Piping Plovers:

- Absecon Island (September 2000)
- Avalon and Stone Harbor (Spring 2001)
- Lower Cape May Meadows and Cape May Point (Fall 2001)
- Brigantine (2002)
- Southern Queen City and Sea Isle City (2004)
- Long Beach Island (2004)
- Mansquan Inlet to Barnegat Inlet (2005)

In addition to information regarding the Piping Plover, our recent FWCA reports include recommendations for the protection of seabeach amaranth (*Amaranthus punctatus*), a federally listed (threatened) plant. Although no extant occurrences of the seabeach amaranth are known within the proposed project areas, the species has recently recolonized coastal sites within New York and Maryland. Therefore, the seabeach amaranth may become naturally established within the project areas during the life of the projects. Threats to seabeach amaranth include construction of beach stabilization structures, beach erosion and tidal inundation, beach grooming, and destruction by off-road vehicles.

In order to ensure the continued protection of the Piping Plover and seabeach amaranth over the life of the proposed beach nourishment and renourishment projects, the Service recommends that the Corps Philadelphia District satisfy the requirements of Section 7 of the ESA within its geographic area of responsibility via programmatic consultation, including the development of a comprehensive BA. The comprehensive BA should address potential project impacts for all active and proposed beach nourishment and renourishment project areas where Piping Plovers nest or have historically nested. Although Piping Plovers do not currently nest (and have not historically nested) within the Absecon Island project area, we anticipate that nesting will occur following the initial nourishment cycle. Therefore, we recommend that the Corps include the Absecon Island project in the comprehensive BA to address potential adverse impacts to Piping Plovers that may occur from future renourishment activities.

C-2

To ensure that seabeach amaranth will not be adversely affected by project activities, the Service recommends conducting surveys prior to initiation of each beach nourishment and renourishment project. Additionally, procedures should be implemented to establish a protective zone around any seabeach amaranth sites identified and avoid: construction-related pedestrian and vehicular traffic; placement, movement, or maintenance of pipelines; stockpiling of construction materials and equipment; and pumping, placement, or distribution of sand within such zones. The Service recommends that the Corps incorporate the above-mentioned protective measures, regarding seabeach amaranth, into the comprehensive BA.

To allow for review and issuance of the Service's Biological Opinion (BO), as required under Section 7 of the ESA, the Service requests that the Corps submit the aforementioned comprehensive BA at least 135 days prior to initiating any beach nourishment or renourishment activities. The Service looks forward to continued cooperation with the Corps during the final stages of the aforementioned beach nourishment and renourishment projects. Should any questions arise regarding these comments, please contact John Staples, Annette Scherer, or Doug Adamo of my staff at (609) 646-9310, extensions 18, 34, and 44, respectively.

Sincerely,



Clifford G. Day
Supervisor

APPENDIX D

Guidelines for Managing Recreational Activities in Piping Plover
Breeding Habitat on the U.S. Atlantic Coast to Avoid
Take Under Section 9 of the Endangered Species Act

GUIDELINES FOR MANAGING RECREATIONAL ACTIVITIES
IN PIPING PLOVER BREEDING
HABITAT ON THE U.S. ATLANTIC COAST TO AVOID TAKE UNDER SECTION 9 OF
THE ENDANGERED SPECIES ACT

Northeast Region, U.S. Fish and Wildlife Service
April 15, 1994

The following information is provided as guidance to beach managers and property owners seeking to avoid potential violations of Section 9 of the Endangered Species Act (16 U.S.C. 1538) and its implementing regulations (50 CFR Part 17) that could occur as the result of recreational activities on beaches used by breeding piping plovers along the Atlantic Coast. These guidelines were developed by the Northeast Region, U.S. Fish and Wildlife Service (Service), with assistance from the U.S. Atlantic Coast Piping Plover Recovery Team. The guidelines are advisory, and failure to implement them does not, of itself, constitute a violation of the law. Rather, they represent the Service's best professional advice to beach managers and landowners regarding the management options that will prevent direct mortality, harm, or harassment of piping plovers and their eggs due to recreational activities.

Some land managers have endangered species protection obligations under Section 7 of the Endangered Species Act (see section I below) or under Executive Orders 11644 and 11989¹ that go beyond adherence to these guidelines. Nothing in this document should be construed as lack of endorsement of additional piping plover protection measures implemented by these land managers or those who are voluntarily undertaking stronger plover protection measures.

This document contains four sections: (I) a brief synopsis of the legal requirements that afford protection to nesting piping plovers; (II) a brief summary of the life history of piping plovers and potential threats due to recreational activities during the breeding cycle; (III) guidelines for protecting piping plovers from recreational activities on Atlantic Coast beaches; and (IV) literature cited.

¹ Executive Order 11644, Use of Off-Road Vehicles on the Public Lands and Executive Order 11989, Off-Road Vehicles on Public Lands pertain to lands under custody of the Secretaries of Agriculture, Defense, and Interior (except for Indian lands) and certain lands under the custody of the Tennessee Valley Authority.

I. LEGAL CONSIDERATIONS

Section 9 of the Endangered Species Act (ESA) prohibits any person subject to the jurisdiction of the United States from harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting listed wildlife species. It is also unlawful to attempt such acts, solicit another to commit such acts, or cause such acts to be committed. A "person" is defined in Section 3 to mean "an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal Government, of any State, municipality, or political subdivision of a State, or of any foreign government; any State, municipality, or political subdivision of a State; or any other entity subject to the jurisdiction of the United States." Regulations implementing the ESA (50 CFR 17.3) further define "harm" to include significant habitat modification or degradation that results in the killing or injury of wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering. "Harass" means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Penalties for violations of Section 9 are provided in Section 11 of the ESA; for threatened species, these penalties include fines of up to \$25,000, imprisonment for not more than six months, or both.

Section 10 of the ESA and related regulations provide for permits that may be granted to authorize acts prohibited under Section 9, for scientific purposes or to enhance the propagation or survival of a listed species. States that have Cooperative Agreements under Section 6 of the ESA, may provide written authorization for take that occurs in the course of implementing conservation programs. For example, State agencies have authorized certain biologists to construct predator exclosures for piping plovers. It is also legal for employees or designated agents of certain Federal or State agencies to take listed species without a permit, if the action is necessary to aid sick, injured, or orphaned animals or to salvage or dispose of a dead specimen.

Section 10 also allows permits to be issued for take that is "incidental to, and not the purpose of, carrying out an otherwise lawful activity" if the Service determines that certain conditions have been met. An applicant for an incidental take permit must prepare a conservation plan that specifies the impacts of the take, steps the applicant will take to minimize and mitigate the impacts, funding that will be available to implement these steps, alternative actions to the take that the applicant considered, and the reasons why such alternatives are not being utilized.

Section 7 of the ESA may be pertinent to beach managers and landowners in situations that have a Federal nexus. Section 7 requires Federal agencies to consult with the Service (or National Marine Fisheries Service for marine species) prior to authorizing, funding, or carrying out activities that may affect listed species. Section 7 also requires that these agencies use their authorities to further the conservation of listed species. Section 7 obligations have caused Federal land management agencies to implement piping plover protection measures that go beyond those required to avoid take, for example by conducting research on threats to piping plovers. Other examples of Federal activities that may affect piping plovers along the Atlantic Coast, thereby triggering Section 7 consultation, include permits for beach nourishment or disposal of dredged material (U.S. Army Corps of Engineers) and funding of beach restoration projects (Federal Emergency Management Authority).

Piping plovers, as well as other migratory birds such as least terns, common terns, American oystercatchers, laughing gulls, herring gulls, and great black-backed gulls, their nests, and eggs are also protected under the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712). Prohibited acts include pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting such conduct. Violators may be fined up to \$5000 and/or imprisoned for up to six months.

Almost all States within the breeding range of the Atlantic Coast piping plover population list the species as State threatened or endangered (Northeast Nongame Technical Committee 1993). Various laws and regulations may protect State-listed species from take, but the Service has not ascertained the adequacy of the guidelines presented in this document to meet the requirements of any State law.

II. LIFE HISTORY AND THREATS FROM HUMAN DISTURBANCE

Piping plovers are small, sand-colored shorebirds that nest on sandy, coastal beaches from South Carolina to Newfoundland. Since 1986, the Atlantic Coast population has been protected as a threatened species under provisions of the U.S. Endangered Species Act of 1973 (U.S. Fish and Wildlife Service 1985). The U.S. portion of the population was estimated at 875 pairs in 1993 (U.S. Fish and Wildlife Service 1993). Many characteristics of piping plovers contribute to their susceptibility to take due to human beach activities.

LIFE HISTORY

Piping plovers begin returning to their Atlantic Coast nesting beaches in mid-March (Couri et al. 1990, Cross 1990, Goldin 1990, MacIvor 1990, Hake 1993). Males establish and defend territories and court females (Cairns 1982). Eggs may be present on the beach from mid-April through late July. Clutch size is generally four eggs, and the incubation period² usually lasts for 27-28 days. Piping plovers fledge only a single brood per season, but may re-nest several times if previous nests are lost. Chicks are precocial³ (Wilcox 1959, Cairns 1982). They may move hundreds of yards from the nest site during their first week of life (see Table 1, Summary of Chick Mobility Data). Chicks remain together with one or both parents until they fledge (are able to fly) at 25 to 35 days of age. Depending on date of hatching, flightless chicks may be present from mid-May until late August, although most fledge by the end of July (Paterson 1988, Goldin 1990, MacIvor 1990, Howard et al. 1993).

Piping plover nests are situated above the high tide line on coastal beaches, sand flats at the ends of sandspits and barrier islands, gently sloping foredunes, blowout areas behind primary dunes, and washover areas out into or between dunes. They may also nest on areas where suitable dredge material has been deposited. Nest sites are shallow scraped depressions in substrates ranging from fine grained sand to mixtures of sand and pebbles, shells or cobble (Bent 1929, Burger 1987a, Cairns 1982, Paterson 1983, Flemming et al. 1990, MacIvor 1990,

² "Incubation" refers to adult birds sitting on eggs, to maintain them at a favorable temperature for embryo development.

³ "Precocial" birds are mobile and capable of foraging for themselves within several hours of hatching.

Strauss 1990). Nests are usually found in areas with little or no vegetation although, on occasion, piping plovers will nest under stands of American beachgrass (*Ammophila breviflora*) or other vegetation (Patterson 1988, Flemming et al. 1990, MacIvor 1990). Plover nests may be very difficult to detect, especially during the 5-7 day egg-laying phase when the birds generally do not incubate (Goldin 1994).

Plover foods consist of invertebrates such as marine worms, fly larvae, beetles, crustaceans or mollusks (Bent 1929, Cairns 1977, Nicholls 1989). Feeding areas include intertidal portions of ocean beaches, washover areas, mudflats, sandflats, wrack lines¹, and shorelines of coastal ponds, lagoons or salt marshes (Gibbs 1986, Coutu et al. 1990, Hoopes et al. 1992, Loegering 1992, Goldin 1993). Studies have shown that the relative importance of various feeding habitat types may vary by site (Gibbs 1986, Coutu et al. 1990, McConnaughey et al. 1990, Loegering 1992, Goldin 1993, Hoopes 1993) and by stage in the breeding cycle (Cross 1990). Adults and chicks on a given site may use different feeding habitats in varying proportion (Goldin et al. 1990). Feeding activities of chicks may be particularly important to their survival. Cairns (1977) found that piping plover chicks typically tripled their weight during the first two weeks post-hatching; chicks that failed to achieve at least 60% of this weight gain by day 12 were unlikely to survive. During courtship, nesting, and brood rearing, feeding territories are generally contiguous to nesting territories (Cairns 1977), although instances where brood-rearing areas are widely separated from nesting territories are not uncommon (see Table 1). Feeding activities of both adults and chicks may occur during all hours of the day and night (Burger 1993) and at all stages in the tidal cycle (Goldin 1993, Hoopes 1993).

THREATS FROM NONMOTORIZED BEACH ACTIVITIES

Sandy beaches that provide nesting habitat for piping plovers are also attractive recreational habitats for people and their pets. Nonmotorized recreational activities can be a source of both direct mortality and harassment of piping plovers. Pedestrians on beaches may crush

¹ Wrack is organic material including seaweed, seashells, driftwood and other materials deposited on beaches by tidal action.

eggs (Burger 1987b, Hill 1988, Shaffer and Laporte 1992, Cape Cod National Seashore 1993, Collazo et al. 1994). Unleashed dogs may chase plovers (McConnaughey et al. 1990), destroy nests (Hoopes et al. 1992), and kill chicks (Cairns and McLaren 1980).

Pedestrians may flush incubating plovers from nests (see Table 2, Summary of Data on Distances at Which Plovers React to Disturbance), exposing eggs to avian predators or causing excessive cooling or heating of eggs. Repeated exposure of shorebird eggs on hot days may cause overheating, killing the embryos (Bergstrom 1991). Excessive cooling may kill embryos or retard their development, delaying hatching dates (Welty 1982). Pedestrians can also displace unfledged chicks (Strauss 1990, Burger 1991, Hoopes et al. 1992, Loegering 1992, Goldin 1993). Fireworks are highly disturbing to piping plovers (Howard et al. 1993). Plovers are particularly intolerant of kites, compared with pedestrians, dogs, and vehicles; biologists believe this may be because plovers perceive kites as potential avian predators (Hoopes et al. 1992).

THREATS FROM MOTOR VEHICLES

Unrestricted use of motorized vehicles on beaches is a serious threat to piping plovers and their habitats. Vehicles can crush eggs (Wilcox 1959, Tull 1984, Burger 1987b, Patterson et al. 1991; *United States of America v. Breezy Point Cooperative, Inc.*, U.S. District Court, Eastern District of New York, Civil Action No. CV-90-2342, 1991; Shaffer and Laporte 1992), adults, and chicks. In Massachusetts and New York, biologists documented 14 incidents in which 18 chicks and 2 adults were killed by vehicles between 1989 and 1993 (Melvin et al. 1994). Goldin (1993) compiled records of 54 chick mortalities (30 on the Atlantic Coast and 4 on the Northern Great Plains) due to vehicles. Many biologists that monitor and manage piping plovers believe that many more chicks are killed by vehicles than are found and reported (Melvin et al. 1994). Beaches used by vehicles during nesting and brood-rearing periods generally have fewer breeding plovers than available nesting and feeding habitat can support. In contrast, plover abundance and productivity has increased on beaches where vehicle restrictions during chick-rearing periods have been combined with protection of nests from predators (Goldin 1993; S. Melvin, pers. comm., 1995).

Typical behaviors of piping plover chicks increase their vulnerability to vehicles. Chicks frequently move between the upper berm or foredune and feeding habitats in the wrack line

and intertidal zone. These movements place chicks in the paths of vehicles driving along the berm or through the intertidal zone. Chicks stand in, walk, and run along tire ruts, and sometimes have difficulty crossing deep ruts or climbing out of them (Eddings et al. 1990, Strauss 1990, Howard et al. 1993). Chicks sometimes stand motionless or crouch as vehicles pass by, or do not move quickly enough to get out of the way (Tull 1984, Hoopes et al. 1992, Goldin 1993). Wire fencing placed around nests to deter predators (Rimmer and Deblinger 1990, Melvin et al. 1992) is ineffective in protecting chicks from vehicles because chicks typically leave the nest within a day after hatching and move extensively along the beach to feed (see Table 1).

Vehicles may also significantly degrade piping plover habitat or disrupt normal behavior patterns. They may harm or harass plovers by crushing wrack into the sand and making it unavailable as cover or a foraging substrate, by creating ruts that may trap or impede movements of chicks, and by preventing plovers from using habitat that is otherwise suitable (MacIvor 1990, Strauss 1990, Hoopes et al. 1992, Goldin 1993).

III. GUIDELINES FOR PROTECTING PIPING PLOVERS FROM RECREATIONAL DISTURBANCE

The Service recommends the following protection measures to prevent direct mortality or harassment of piping plovers, their eggs, and chicks.

MANAGEMENT OF NONMOTORIZED RECREATIONAL USES

On beaches where pedestrians, joggers, sun-bathers, picnickers, fishermen, boaters, horseback riders, or other recreational users are present in numbers that could harm or disturb incubating plovers, their eggs, or chicks, areas of at least 50 meter-radius around nests above the high tide line should be delineated with warning signs and symbolic fencing⁴. Only persons engaged in rare species monitoring, management, or research activities should enter posted areas. These areas should remain fenced as long as viable eggs or unfledged chicks are present. Fencing is intended to prevent accidental crushing of nests and repeated flushing of

⁴ "Symbolic fencing" refers to one or two strands of light-weight string, tied between posts to delineate areas where pedestrians and vehicles should not enter.

incubating adults, and to provide an area where chicks can rest and seek shelter when large numbers of people are on the beach.

Available data indicate that a 50 meter buffer distance around nests will be adequate to prevent harassment of the majority of incubating piping plovers. However, fencing around nests should be expanded in cases where the standard 50 meter-radius is inadequate to protect incubating adults or unfledged chicks from harm or disturbance. Data from various sites distributed across the plover's Atlantic Coast range indicates that larger buffers may be needed in some locations (see Table 2). This may include situations where plovers are especially intolerant of human presence, or where a 50 meter-radius area provides insufficient escape cover or alternative foraging opportunities for plover chicks.⁵

In cases where the nest is located less than 50 meters above the high tide line, fencing should be situated at the high tide line, and a qualified biologist should monitor responses of the birds to passersby, documenting his/her observations in clearly recorded field notes. Providing that birds are not exhibiting signs of disturbance, this smaller buffer may be maintained in such cases.

On portions of beaches that receive heavy human use, areas where territorial plovers are observed should be symbolically fenced to prevent disruption of territorial displays and courtship. Since nests can be difficult to locate, especially during egg-laying, this will also prevent accidental crushing of undetected nests. If nests are discovered outside fenced areas, fencing should be extended to create a sufficient buffer to prevent disturbance to incubating adults, eggs, or unfledged chicks.

⁵ For example, on the basis of data from an intensive three year study that showed that plovers on Assateague Island in Maryland flush from nests at greater distances than those elsewhere (Loegering 1992), the Assateague Island National Seashore established 200 meter buffer zones around most nest sites and primary foraging areas (Assateague Island National Seashore 1993). Following a precipitous drop in numbers of nesting plover pairs in Delaware in the late 1980's, that State adopted a Piping Plover Management Plan that provided 100 yard buffers around nests on State park lands and included intertidal areas (Delaware Department of Natural Resources and Environmental Control 1990).

Pets should be leashed and under control of their owners at all times from April 1 to August 31 on beaches where piping plovers are present or have traditionally nested. Pets should be prohibited on these beaches from April 1 through August 31 if, based on observations and experience, pet owners fail to keep pets leashed and under control.

Kite flying should be prohibited within 200 meters of nesting or territorial adult or unfledged juvenile piping plovers between April 1 and August 31.

Fireworks should be prohibited on beaches where plovers nest from April 1 until all chicks are fledged.

MOTOR VEHICLE MANAGEMENT

The Service recommends the following minimum protection measures to prevent direct mortality or harassment of piping plovers, their eggs, and chicks on beaches where vehicles are permitted. Since restrictions to protect unfledged chicks often impede vehicle access along a barrier spit, a number of management options affecting the timing and size of vehicle closures are presented here. Some of these options are contingent on implementation of intensive plover monitoring and management plans by qualified biologists. It is recommended that landowners seek concurrence with such monitoring plans from either the Service or the State wildlife agency.

Protection of Nests

All suitable piping plover nesting habitat should be identified by a qualified biologist and delineated with posts and warning signs or symbolic fencing on or before April 1 each year. All vehicular access into or through posted nesting habitat should be prohibited. However, prior to hatching, vehicles may pass by such areas along designated vehicle corridors established along the outside edge of plover nesting habitat. Vehicles may also park outside delineated nesting habitat, if beach width and configuration and tidal conditions allow. Vehicle corridors or parking areas should be moved, constricted, or temporarily closed if territorial, courting, or nesting plovers are disturbed by passing or parked vehicles, or if disturbance is anticipated because of unusual tides or expected increases in vehicle use during weekends, holidays, or special events.

Protection of Chicks

Sections of beaches where unfledged piping plover chicks are present should be temporarily closed to all vehicles not deemed essential. (See the provisions for essential vehicles below.) Areas where vehicles are prohibited should include all dune, beach, and intertidal habitat within the chicks' foraging range, to be determined by either of the following methods:

1. The vehicle-free area should extend 1000 meters on each side of a line drawn through the nest site and perpendicular to the long axis of the beach. The resulting 2000 meter-wide area of protected habitat for plover chicks should extend from the ocean-side low water line to the bay-side low water line or to the farthest extent of dune habitat if no bay-side intertidal habitat exists. However, vehicles may be allowed to pass through portions of the protected area that are considered inaccessible to plover chicks because of steep topography, dense vegetation, or other naturally-occurring obstacles.

OR

2. The Service OR a State wildlife agency that is party to an agreement under Section 6 of the ESA provides written concurrence with a plan that:

- A. Provides for monitoring of all broods during the chick-rearing phase of the breeding season and specifies the frequency of monitoring.

AND

- B. Specifies the minimum size of vehicle-free areas to be established in the vicinity of unfledged broods based on the mobility of broods observed on the site in past years and on the frequency of monitoring. Unless substantial data from past years show that broods on a site stay very close to their nest locations, vehicle-free areas should extend at least 200 meters on each side of the nest site during the first week following hatching. The size and location of the protected area should be adjusted in response to the observed mobility of the brood, but in no case should it be reduced to less than 100 meters on each

side of the brood. In some cases, highly mobile broods may require protected areas up to 1000 meters, even where they are intensively monitored. Protected areas should extend from the ocean-side low water line to the bay-side low water line or to the farthest extent of dune habitat if no bay-side intertidal habitat exists. However, vehicles may be allowed to pass through portions of the protected area that are considered inaccessible to plover chicks because of steep topography, dense vegetation, or other naturally-occurring obstacles. In a few cases, where several years of data documents that piping plovers on a particular site feed in only certain habitat types, the Service or the State wildlife management agency may provide written concurrence that vehicles pose no danger to plovers in other specified habitats on that site.

Timing of Vehicle Restrictions in Chick Habitat

Restrictions on use of vehicles in areas where unfledged plover chicks are present should begin on or before the date that hatching begins and continue until chicks have fledged. For purposes of vehicle management, plover chicks are considered fledged at 35 days of age or when observed in sustained flight for at least 15 meters, whichever occurs first.

When piping plover nests are found before the last egg is laid, restrictions on vehicles should begin on the 26th day after the last egg is laid. This assumes an average incubation period of 27 days, and provides a 1 day margin of error.

When plover nests are found after the last egg has been laid, making it impossible to predict hatch date, restrictions on vehicles should begin on a date determined by one of the following scenarios:

1) With intensive monitoring: If the nest is monitored at least twice per day, at dawn and dusk (before 0600 hrs and after 1900 hrs) by a qualified biologist, vehicle use may continue until hatching begins. Nests should be monitored at dawn and dusk to minimize the time that hatching may go undetected if it occurs after dark. Whenever possible, nests should be monitored from a distance with spotting scope or binoculars to minimize disturbance to incubating plovers.

OR

2) Without intensive monitoring: Restrictions should begin on May 15 (the earliest probable hatch date). If the nest is discovered after May 15, then restrictions should start immediately.

If hatching occurs earlier than expected, or chicks are discovered from an unreported nest, restrictions on vehicles should begin immediately.

If ruts are present that are deep enough to restrict movements of plover chicks, then restrictions on vehicles should begin at least 5 days prior to the anticipated hatching date of plover nests. If a plover nest is found with a complete clutch, precluding estimation of hatching date, and deep ruts have been created that could reasonably be expected to impede chick movements, then restrictions on vehicles should begin immediately.

Essential Vehicles

Because it is impossible to completely eliminate the possibility that a vehicle will accidentally crush an unfledged plover chick, use of vehicles in the vicinity of broods should be avoided whenever possible. However, the Service recognizes that life-threatening situations on the beach may require emergency vehicle response. Furthermore, some "essential vehicles" may be required to provide for safety of pedestrian recreationists, law enforcement, maintenance of public property, or access to private dwellings not otherwise accessible. On large beaches, maintaining the frequency of plover monitoring required to minimize the size and duration of vehicle closures may necessitate the use of vehicles by plover monitors.

Essential vehicles should only travel on sections of beaches where unfledged plover chicks are present if such travel is absolutely necessary and no other reasonable travel routes are available. All steps should be taken to minimize number of trips by essential vehicles through chick habitat areas. Homeowners should consider other means of access, eg. by foot, water, or shuttle services, during periods when chicks are present.

The following procedures should be followed to minimize the probability that chicks will be crushed by essential (non-emergency) vehicles:

1. Essential vehicles should travel through chick habitat areas only during daylight hours, and should be guided by a qualified monitor who has first determined the location of all unfledged plover chicks.

2. Speed of vehicles should not exceed five miles per hour.

3. Use of open 4-wheel motorized all-terrain vehicles (ATVs) or non-motorized all-terrain bicycles is recommended whenever possible for monitoring and law enforcement because of the improved visibility afforded operators.

4. A log should be maintained by the beach manager of the date, time, vehicle number and operator, and purpose of each trip through areas where unfledged chicks are present. Personnel monitoring plovers should maintain and regularly update a log of the numbers and locations of unfledged plover chicks on each beach. Drivers of essential vehicles should review the log each day to determine the most recent number and location of unfledged chicks.

Essential vehicles should avoid driving on the wrack line, and travel should be infrequent enough to avoid creating deep ruts that could impede chick movements. If essential vehicles are creating ruts that could impede chick movements, use of essential vehicles should be further reduced and, if necessary, restricted to emergency vehicles only.

SITE-SPECIFIC MANAGEMENT GUIDANCE

The guidelines provided in this document are based on an extensive review of the scientific literature and are intended to cover the vast majority of situations likely to be encountered on piping plover nesting sites along the U.S. Atlantic Coast. However, the Service recognizes that site-specific conditions may lead to anomalous situations in which departures from this guidance may be safely implemented. The Service recommends that landowners who believe such situations exist on their lands contact either the Service or the State wildlife agency and, if appropriate, arrange for an on-site review. Written documentation of agreements regarding departures from this guidance is recommended.

In some unusual circumstances, Service or State biologists may recognize situations where this guidance provides insufficient protection for piping plovers or their nests. In such a case, the Service or the State wildlife agency may provide written notice to the landowner describing additional measures recommended to prevent take of piping plovers on that site.

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Table 1. Summary of Chick Mobility Data

Source	Location	Data
Wattelson 1968 (p.56)	Maryland and Virginia	10 of 38 broods moved to feeding areas more than 100 meters from their nests; 5 broods moved more than 500 meters (distance measured parallel to trackline).
Cross 1989 (p.23)	Virginia	At three sites, observers relocated broods at mean distances from their nests of 153 m +/- 97m (66 observations, 16 broods), 32 m +/- 7 m (8 observations, 3 broods), and 492 m +/- 281 m (12 observations, 5 broods).
Caune et al., 1998 (p.12)	North Carolina	Observations of 11 broods averaged 212 m from their nests; 3 broods moved 600-725 m from nest sites.
Striass 1960 (p.33)	Massachusetts	10 chicks moved more than 200 meters during first 5 days post-hatch while 19 chicks moved less than 200 meters during same interval.
Loewinger 1992 (p.72)	Maryland	Distances broods moved from nests during first 5 days post-hatch averaged 195 m in day habitat (n=10), 163 m in interior habitat (n=6), and 131 m in ocean habitat (n=3). By 21 days, average movement in each habitat had, respectively, increased to 350 m (n=1), 468 m (n=10), and 187 m (n=9). One brood moved more than 1000 m from its nest.
Helvin et al., 1996	Massachusetts and New York	In 16 incidents in which 18 chicks were killed by vehicles, chicks were run over 510 m to 2 900 m from their nests. In 7 of these instances, mortality occurred > 200 m from the nest.

Table 2. Summary of Data on Distances at which Piping plovers React to Disturbance

Source	Location	Data
<i>Flushing of Insular Birds by Substrates</i>		
Hemming et al., 1988 (p.116)	New Scotia	Chicks usually flush from the nests at distances < 40 m; however, great variation existed and reaction distances as great as 210 m were observed.
Cross 1990 (p.67)	Virginia	Mean flushing distances in each of two years were 47 m (n=18), range = 3 m to 300 m) and 35 m (n=21), range = 2 m to 100 m).
Loewinger 1992 (p.61)	Maryland	Flushing distances averaged 70 m (n=53); range was 20 m to 174 m. Recommended use of 225 m disturbance buffers on this site.
Cross and Remington 1991	Virginia	Mean flushing distances for all years on all sites (Virginia plover sites, 1966-91) was 63 m (n=201, n=23, range = 2 m to 200 m). Differences among years were not significant, but differences among sites were.
Hoopes 1993 (p.72)	Massachusetts	Mean flushing distance for incubating plovers was 26 m (n=31).
<i>Disturbance to Non-Insular Birds</i>		
Hoopes 1993 (p.89)	Massachusetts	Mean response distance (all ages, all behaviors) was 23 m for piping-bird distances (range = 10 m to 60 m), 40 m for vehicles (range = 30 m to 70 m), 66 m for departures (range = 20 m to 160 m), and 85 m for kites (range = 60 m to 120 m).
Sudell 1995 (p.76)	New York	Average flushing distance for adult and juvenile plovers was 16.7 m for piping-bird distances (n=385), 19.5 m for joggers (n=183), and 20.4 m for joggers (n=11). Disturbances caused chicks to flush at an average distance of 20.6 m (n=25). Joggers at 32.3 m (n=57), and vehicles at 19.3 m (n=7). Tolerance of incubating birds varied; one chick moved 260 m in direct response to 20 disturbances in 1 hour.

APPENDIX E
Coordination with the New Jersey Division
of Fish and Wildlife



State of New Jersey
Department of Environmental Protection

BALD T. DIBIASELLI
Acting Governor

BRANDY L. GIBBY, P.
Commissioner

DIVISION OF FISH AND WILDLIFE
Robert McDowell, Director
P.O. Box 400
Trenton, NJ 08625-0400

June 20, 2001

Clifford G. Day, Administrator
U.S. Fish and Wildlife Service
927 N. Main St., Bldg. D
Pleasantville, NJ 08232

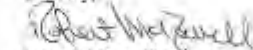
Dear Mr. Day,

This serves to inform you that the Division of Fish and Wildlife (DFW) concurs with the *Draft Fish and Wildlife 2 (b) Coordination Act Report; Great Egg Harbor Inlet to Townsend's Inlet Feasibility Study, Cape May County, NJ; March 2001*. This constitutes the USFWS's draft report on fish and wildlife impacts that can be expected to result from the ACOE's proposed beach nourishment project for Ludlum and Peck Beach Islands.

We believe one minor correction is needed on page 25 relative to the progressive list of acceptable borrow sites. The last site listed in order of preference is M3; we believe this site should be M8 as listed in your Conclusions and Summary of Recommendations Section under B. 1. The DFW has recommended site M3 be avoided as a borrow site.

We hope this information is of service to you.

Sincerely,


Robert McDowell, Director
Division of Fish and Wildlife

v. A. Didun, OER
C. Popolizio, USFWS

The State of New Jersey Department of Environmental Protection



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2208

JUN 22 2001

Mr. Robert L. Callegari
Chief, Planning Division
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

ATTN: Mr. Steve Allen

Dear Mr. Callegari:

We have reviewed the Great Egg Harbor Inlet to Townsends Inlet, Draft Feasibility Report and Integrated Environmental Impact Statement, December 2000. We offer the following pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

We have reviewed the essential fish habitat assessment that was included in the Great Egg Harbor Inlet to Townsends Inlet, Draft Feasibility Report and Integrated Environmental Impact Statement, and concur with the assessment.

In line with our previous recommendations, the impacts on surf clam populations have been minimized by selecting those sand borrow sites with the least numbers of surf clams, and by implementing a monitoring program for the subsequent periodic dredging. The monitoring would determine which borrow sites should be avoided because of the presence of commercially viable populations of surf clams. In order to minimize further impacts on essential fish habitat (EFH), dredging at the borrow sites would be no deeper than ten feet below the existing bathymetry. Adverse impacts on EFH would be also avoided by the selection of borrow sites that do not have any distinctive habitat features such as prominent shoals, hard bottoms, or reefs.

Removal of sand in the selected borrow sites is expected to result in broad shallow pits, which may increase the habitat heterogeneity slightly. In this way, post dredging habitat would be suitable for benthic recruitment and recovery. Post-dredging monitoring would allow for appropriate adaptive management measures during periodic nourishment, if impacts at some sites are more adverse than anticipated. Monitoring of finfish populations will be performed to establish baseline data prior to dredging. Finfish monitoring will also correspond with periodic dredging to establish if there are any short-term or long-term trends concerning finfish populations within the impact areas.

Since our previous recommendations were incorporated, we have no further conservation recommendations to add. Unless project conditions change or new information becomes



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1. Concur. As stated in 6.2.28 (Mitigation Measures) monitoring will be utilized to locate areas of high commercial surfclam densities within the borrow areas to determine if these areas should be avoided.

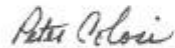
2. Concur. Dredging depths and the avoidance of more valued fish habitats are discussed in 6.2.28 (Mitigation Measures).

3. Concur. Post-dredging monitoring will be conducted to document impacts and to establish if any adjustments or adaptive management measures are necessary if the impacts are more adverse than anticipated as described in the EIS.

available which would change the basis for this determination, further consultation under MSA is **4.**
not necessary.

If you wish to discuss this matter further, please contact Anita Riportella of my staff at (732)
872-3116.

Sincerely,



Peter D. Colosi
Assistant Regional Administrator
for Habitat Conservation

cc: EPA, Region II
FWS, Pleasantville
NJDEP, LURP
NJ F&W
MAFMC- T. Hoff
NEFMC - M. Pentony
HCD, Chiarella
Ramona Schreiber, NOAA

ar/greaseggharbor.deis6/13/01

4. If project conditions change or new information becomes available which would change the basis of the conservation recommendations pursuant to the Magnuson-Stevens Act, further consultation with the National Marine Fisheries Service would be undertaken.



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
408 Atlantic Avenue - Room 142
Boston, Massachusetts 02210-3334

ER 01/370

June 25, 2001

Lieutenant Colonel Timothy Brown
District Engineer, Philadelphia District
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, Pennsylvania 19107-3390

Dear Lieutenant Colonel Brown:

The Department of the Interior (Department) has reviewed the Draft Feasibility Report and Integrated Draft Environmental Impact Statement for the Great Egg Harbor Inlet to Townsends Inlet, Cape May County, New Jersey Feasibility Study (DEIS). The subject DEIS addresses shoreline protection within the project area, which is 15 miles in length and extends from the southern portion of Ocean City to the southern portion of Ludlam Island at Townsends Inlet. The project area, which is located on the Atlantic coast barrier islands of Peck Beach and Ludlam, encompasses the communities of Ocean City, Strathmere, and Sea Isle City, Cape May County, New Jersey. The proposed project would restore berms and dunes through beach nourishment and subsequent re-nourishment. Periodic re-nourishment is expected to occur at 3-year intervals for the South End Ocean City portion of the project and at 5-year intervals for Ludlam Island, following completion of initial construction. The proposed project life is 50 years (U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000).

INTRODUCTION

The Ocean City portion of the project, from 34th Street to 59th Street, would require approximately 1,603,000 cubic yards of sand for the initial berm and dune placement. Subsequent maintenance would require approximately 403,000 cubic yards of sand every 3 years to re-nourish the proposed beach for the project life. The periodic re-nourishment would be synchronized with the existing beachfill project at Ocean City from Great Egg Harbor Inlet to 34th Street. The Corps proposes to obtain sand from an offshore borrow source identified as M8 (U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000). The Ludlam Island portion of the project would require approximately 5,146,000 cubic yards of sand for the initial berm and dune placement. Subsequent maintenance would require approximately 1,820,000 cubic yards of sand every 5 years to re-nourish the proposed beaches for the project life. The Corps proposes to obtain sand from offshore borrow sources identified as L3, L1, and C1 (U. S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000). The following comments are provided pursuant to the National Environmental Policy Act of 1969 (83 Stat. 852; 42 U.S.C. 4321 *et seq.*).

GENERAL COMMENTS

The Department generally concurs with the Corps recommended plan and notes that the majority of concerns and recommendations from the U.S. Fish and Wildlife Service (FWS) and the U.S. Geological Survey (USGS) have been addressed. The Draft Feasibility Report is relatively comprehensive and the recommendations appear reasonable based on the data and information presented. The project does not include hard engineering structures (wooden and stone groins, jetties, revetments, sand bags), which have had limited success and limited public benefit in the past; and planning and project design include longer-term processes, such as the potential for future sea-level rise. The Department recommends continued coordination with the FWS and USGS to address remaining concerns and recommendations in the Final EIS.

1.

SPECIFIC COMMENTS PERTAINING TO FISH AND WILDLIFE RESOURCES

Key issues related to federally listed species and borrow operations are discussed below; outstanding concerns and recommendations are summarized at the end of this section.

Federally Listed Species

The federally listed (threatened) Piping Plover (*Charadrius melodus*) has nested within the proposed project area, including the northern portion of Peck Beach near Great Egg Harbor Inlet, the middle portion of Peck Beach, and nearly the entire length of Ludlam Beach to its southernmost point at Townsends Inlet. Piping Plovers nest on sandy beaches above the high tide line on mainland coastal beaches, sand flats, and barrier island coastal beaches. The nesting sites are located on gently sloping foredunes, blowout areas behind primary dunes, wash-over areas cut into or between dunes, ends of sand spits, and on sites with deposits of suitable dredged or pumped sand. Food for adult plovers and chicks consists of invertebrates such as marine worms, fly larvae, beetles, crustaceans, and mollusks. Feeding areas include intertidal portions of ocean beaches, ocean wash-over areas, mud flats, sand flats, wrack lines (organic ocean material left by high tide), shorelines of coastal ponds, lagoons, and salt marshes. The proposed project, via construction activities or use of the restored beach by humans, may affect Piping Plovers. The Department has received the Corps (2001) Biological Assessment (BA) for Piping Plovers. The FWS, NEW JERSEY Field Office on or about August 24, 2001 will provide a Biological Opinion (BO) in response to the BA. Detailed comments regarding protection of threatened and endangered species will be provided within the BO to ensure that the Corps' proposed activities do not jeopardize the continued existence of federally listed species. To minimize impacts to piping plovers associated with proposed beach nourishment and re-nourishment activities, the FWS recommended several project modifications in its Final Fish and Wildlife Coordination Act, Section 2(b) Report (U.S. Fish and Wildlife Service, 2001) including: seasonal restrictions; further consultation pursuant to Section 7(a)(2) of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) prior to initial nourishment and all subsequent re-nourishment activities; and compliance with the FWS's "Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act," dated April 15, 1994. The Corps has addressed and agreed to implement most of these recommendations regarding piping plovers (U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000; U.S. Army Corps of Engineers, 2001).

1. Additional coordination would be undertaken during Preconstruction Engineering and Design (PED) phase of the project to insure that concerns are addressed.

In addition, the project may create habitat for the seabeach amaranth (*Amaranthus pumilus*), a federally listed (threatened) plant. The seabeach amaranth is an annual plant, endemic to Atlantic coastal plain beaches, primarily occurring on overwash flats at the accreting ends of barrier beach islands and lower foredunes of non-eroding beaches. The species occasionally establishes small temporary populations in other areas, including bayside beaches, blowouts in foredunes, and sand and shell material placed as beach replenishment or dredge spoil. Although no extant occurrences of the seabeach amaranth are known within the proposed project area, the species has recently re-colonized coastal sites within New Jersey, New York, and Maryland. Therefore, it is possible that the seabeach amaranth may become naturally re-established within the project area during the project life.

To minimize impacts to seabeach amaranth associated with beach nourishment and re-nourishment activities, the FWS recommended conducting surveys for seabeach amaranth prior to initiation of construction activities. If seabeach amaranth is identified in the project area, protective zones should be established around the plants to avoid impacts from construction-related activities. The Corps has addressed and agreed to implement the majority of these recommendations, to date, regarding seabeach amaranth (U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection, 2000; U.S. Army Corps of Engineers, 2001).

Other than the piping plover, seabeach amaranth, and an occasional transient bald eagle (*Haliaeetus leucocephalus*), no other federally listed or proposed endangered or threatened flora or fauna under FWS jurisdiction are known to occur within the project area.

Extraction from Borrow Areas

The Corps has addressed and agreed to implement the following FWS recommendations pertaining to dredging activities within the borrow areas:

- (1) Avoid the creation of excessively deep, poorly flushed borrow sites;
- (2) Avoid borrow site O1 due to the high clay content in sediment core samples;
- (3) Avoid borrow site M3 due to the presence of prominent relict shoal features, which are considered valuable finfish and shellfish habitats;
- (4) Shift borrow site L1 to the east by approximately 1,000 feet to provide a buffer area to the Sea Isle "Lump," which also contains valuable finfish and shellfish habitats (Allen, personal communication, 2000); and
- (5) Conduct each re-nourishment dredging phase in a limited portion of the borrow area and alternate locations for each subsequent re-nourishment cycle (rotational dredging).

The FWS also recommended the use of hydraulic-pipeline dredging rather than hydraulic-hopper dredging to reduce turbidity and the potential entrainment of federally listed sea turtles (U.S. Fish and Wildlife Service, 2001). However, through formal consultation pursuant to the Endangered Species Act, the National Marine Fisheries Service (NMFS) (1996) provided a BO and an incidental take statement regarding hydraulic-hopper dredge operations. Provided that the Corps adheres to the terms and conditions provided in the NMFS BO, the Department does not oppose the use of hydraulic-hopper dredging.

Remaining Concerns and Recommendations

Several other recommendations were provided by the FWS; however, they were not addressed in the Corps DEIS. The Department recommends that the Corps continue to coordinate with the FWS and incorporate the following measures into the project design.

1. Obtain a perpetual deed restriction or conservation easement for the newly created beach and adjacent beach areas.
2. Develop informational materials (e.g., brochures, interpretive signs) to educate beach-users about beach-nesting birds.
3. Coordinate with the FWS and the New Jersey Endangered and Nongame Species Program on opportunities to enhance habitats for beach-nesting birds (e.g., irregular dune configurations, fencing systems to trap sand, removal or burial of vegetation during beach re-nourishment).
4. Eliminate beach nourishment along the Whale Beach segment of the study area. Allowing natural coastal processes to breach the existing dune would create foraging habitats (i.e., wash-over areas, ephemeral pools, mud flats) for Piping Plovers and other shorebirds. Alternatively, if nourishment were initiated, design dunes so that wash-over event occurs.
5. Require permanent or seasonal closure of County Route 619, along the sparsely developed Whale Beach segment of the study area, to eliminate the potential for Piping Plover mortality due to road crossing.
6. Avoid nourishing beaches occupied by the Piping Plover between March 15 and August 15.
7. On beaches known to have been occupied by the Piping Plover in previous years, plan to conduct nourishment activities immediately after August 15, allowing for recovery of the benthic fauna prior to the next Piping Plover nesting season.
8. Establish native dune grasses in sufficient quantity to provide dune stabilization, but still promote nesting opportunities for beach nesting birds.
9. Design dune-fencing systems that allows passage of juvenile shorebirds between and among the dunes. A broken, zigzag pattern of fencing parallel to the shore or an Y-type fencing pattern perpendicular to the shore is two examples of open fencing systems.
10. Avoid replenishing beaches found to have been re-colonized by seabeach amaranth.
11. Avoid removing entire seabeach amaranth plants, unless it can be shown by previously published research that this annual species can withstand relocation with no adverse effects.
12. Avoid dredging during shellfish or finfish spawning activities. Avoid dredging between January 1 and May 31, which are the usual spawning and early life periods for winter flounder.

SPECIFIC COMMENTS PERTAINING TO MINERAL RESOURCES

Depth of Closure

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2. Perpetual easements will be obtained.

3. The development of informational materials will be the responsibility of NJDEP, Division of Fish and Wildlife and the local municipalities as part of the piping plover monitoring and management plans.

4. The District will coordinate with the U.S. Fish and Wildlife Service and the New Jersey Endangered and Nongame Species Program during the development of detailed plans and specifications. In final design, these adjustments of project details can be made to enhance habitats for beach-nesting birds without compromising other project purposes.

5. Omitting nourishment or allowing for dune washover in the Whale Beach area would leave Ludlam Island more susceptible to breaching and undermine the protection provided by the adjacent areas where nourishment would be provided.

6. This is not a project requirement and would need to be a decision made by Cape May County.

7. Areas occupied by nesting piping plovers will be avoided between March 15 and August 15 within established buffer areas or beach sections currently occupied by piping plovers.

8. Priority would be given to the placement of beachfill immediately after August 15 in areas documented to be inhabited by piping plovers. This would be done to provide maximum recovery time for benthic organisms along the shoreline to provide a sufficient food source for potential nesting piping plovers the following spring.

9. Dune grass planting measures favorable to promote beach-nesting birds while still providing dune stabilization will be considered. This will be coordination with USFWS and NJDEP during the Preconstruction, Engineering and Design (PED) phase of the project.

10. Dune fencing arrangements that allow for passage of juvenile shorebirds between and among the dunes that also provide for adequate dune stabilization will be considered during the Preconstruction, Engineering and Design (PED) phase through coordination with the USFWS and NJDEP.

11. If seabeach amaranth occurs during the project life, efforts to avoid adversely impacting this species would be coordinated with the USFWS, however, sand replenishment may be necessary to insure project integrity and function.

12. The removal of seabeach amaranth plants would be considered a final option if other measures are not practicable. This measure would only be considered if transplanting is expected to be successful by USFWS or other experts.

13. The restriction of dredging between January 1 and May 31 will be considered during initial construction if it does not extend the construction period to an additional year. This would significantly increase project costs primarily due to additional costs associated with mobilization and demobilization. This restriction would probably be more feasible during periodic nourishments as they require shorter construction periods.

Because the project design requires fill from the date to depth of closure, the determination of depth of closure is important: (a) to the overall project design; (b) for the volume calculations of sand needed; and (c) for cost estimates of sand recovery. Recent studies (Schwab, *et al.*, 2000) along the southern shore of Long Island, New York, which has a similar geographic setting, show that long-term geologic processes in water deeper than the stated depth of closure of -8 meters exert a primary control on shoreline morphology, erosion and accretion patterns. It is unclear how depth of closure for the central New Jersey region was determined; therefore, an explanation of the determination is needed and a more conservative depth of -10 meters should be considered.

Lack of Quantitative Data about the Fines

The tables identifying borrow area characteristics (Tables 2.2-3 through 2.2-7) list mean grain size and sorting (standard deviation) for vibrocore composites, but fail to give a percent or amount of fine-grained material at each core/site. Similar data for the native beach sand are also limited in the report. The amount of fines is critical to overfill calculations and to whether borrow sources are appropriate to re-nourish the specified beaches. In addition, the rejection of several sites because of high fines content is not well documented. Quantitative grain size data together with number and location of samples, plus an indication of the sub-sea floor variability of sediment properties, are essential to evaluate the appropriateness of the borrow sites to be used for re-nourishment of the native beaches.

Erosion potential south of the Corson Inlet C-1 Borrow Site

As mentioned in the report, the use of the C-1 borrow site (Corson Inlet ebb-tidal shoal) is problematic because dredging large volumes of sand from C-1 could disrupt the sand transport across the inlet and increase erosion on the southern island. However, the information provided in the report, does not specify how much of the shoal would be removed. To avoid any possible complications, C-1 should not be used; borrow areas well seaward of the -10 meter contour should be used instead.

Other Potential Borrow Areas

The four borrow areas recommended in the report just barely meet the minimum needed to satisfy the projected sand needs over the 50-year period of this project. Other borrow areas containing high quality sand are also present in the project area (Meisburger and Williams, 1982). This Coastal Engineering Research Center report, which is based on interpretation of more than 1,000 kilometers of seismic profiles and side-scan sonar and 97 vibrocores, identified and described these four borrow areas as well as several other potential borrow areas.

Model Robustness and Accuracy

An understanding of the assumptions used in the models and model analyses is not possible because the Engineering Technical Appendix containing detailed descriptions of the models (SBEACH and GENESIS) was not included with the Draft Feasibility Report provided to the USGS. An assessment of the past performance of SBEACH and GENESIS is needed and, because long-shore drift cannot be included in the modeling, should include an evaluation of the limitation of the models.

Lack of Mineralogical Composition of Borrow Sediment

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14. For southern Ocean City and Ludlam Island, depths of closure were determined by plotting a significant amount of profile data through time available for various locations in the study area. Depths of closure were selected where the profiles joined together in the offshore region indicating a seaward limit of sediment movement. Whereas the suggested depth of -10 m may be appropriate for Long Island, it is excessive for this southern New Jersey region. Depths of closure used in the project design were developed from actual profile data and are considered appropriate and reasonable for this study area.

15. Grain size curves for both the native beach and potential borrow areas are provided in the Geotechnical Appendix. Data concerning fines can be found on these grain size curves. Fines were taken into account when the mean grain size and standard deviation of the material were calculated and used for the overfill analysis.

16. The limits shown for Borrow Area C1 depict the maximum area of suitable sand. The recommended borrow area was further reduced to minimize impacts to the natural processes of the inlet and adjacent shorelines. Dredging in the borrow area will remove material from the main inlet channel and only portions of the ebb shoal seaward of and on the northeastern edge of the channel. However, because of the complex nature of Corson Inlet, further investigation into the use of Borrow Area C1 will be conducted during the PED phase of this study. Initially, the borrow zone used in a local beachfill operation for southern Ocean City in late 2000 will be monitored and evaluated. Additionally, numerical modeling of inlet processes to evaluate pre- and post-dredging conditions will be conducted during the PED phase.

17. The reference report, Meisburger and Williams, CERC MR NO. 82-10, was used as a guide to identify the potential borrow areas. Additional potential borrow areas recommended by the report and within the study area were investigated; however, they were eliminated from further consideration due to substandard material (high fines content). If, during the life of the project, additional material is needed, further investigation of potential borrow sources along with coordination will be conducted.

18. At the time of this feasibility investigation, SBEACH was the model that the USACE adopted to evaluate impacts due to coastal storms. Both the SBEACH and GENESIS models were developed and tested at the US Army Engineer Waterways Experiment Station and have been extensively used by the Corps of Engineers, universities, and private consultants. Calibration of the SBEACH model was conducted for the study area using a set of profile data prior to and following the December 1992 storm in Ocean City. The model was then used to evaluate both "with" and "without" project conditions for various alternatives. Reasonable, even conservative, interpretation of the results were made. Similar to any numerical model, SBEACH does have limitations, one of which is that the model evaluates cross-shore profile changes and does not account for longshore transport. The model was not used in areas adjacent to tidal inlets where sediment transport processes become more complex and when necessary longshore transport was evaluated independently of the SBEACH model.

No data are provided to analyze the similarities of composition of borrow sediment to the native beach material. This analysis is necessary to check for the presence of fragile grains (e.g., forams and other shells) that, if present in large quantity, might be abraded in the surf zone and be a consideration for the overfill calculation.

19.

Processing of Borrow Sediment

From the report, it appears that no processing (e.g., screening or washing) of the borrow sediment is required before placement on the beach. If the percentage of fine-grained material in the borrow sand is too great (>5 to 10%), processing might be necessary. The issue of fines and the need for any processing prior to placement on the beach should be addressed.

20.

Consideration of Relocation and Conversion

The erosion history of the area shows that this part of the New Jersey shore is prone to inundation and erosion during storms. These storms will undoubtedly continue. Equal consideration needs to be given to alternative solutions for beach erosion, such as "retreat from the shore" and "property buyouts/conversion to refuges."

21.

CONCLUSION

The Department is generally supportive of the project, but recommends addressing the above concerns and recommendations of the FWS and USGS in the Final Feasibility Report and Integrated Environmental Impact Statement.

If you have any questions regarding these comments pertaining to fish and wildlife resources or require further assistance on fish and wildlife issues related to the proposed project, including federally listed threatened or endangered species, please contact the FWS at the following address:

Supervisor
U.S. Fish and Wildlife Service
New Jersey Field Office
927 N. Main Street, Building D
Pleasantville, New Jersey 08232
(609) 646-9310

Questions pertaining to comments and recommendations from the USGS should be addressed to:

James F. Devine
Senior Advisor for Science Applications
U.S. Geological Survey
M/S 106 National Center
Reston, Virginia 20192
(703) 648-4191

19. Mineralogical composition of the borrow sediment was not performed. However, there were several analysis performed comparing the native beach material to the borrow areas sediment. The samples used for these analysis where sieved using a mechanical sieve shaker which would possibly break down these fragile grains and be considered in the overfill calculation by default.

20. Information concerning the percentage of fine grained material is presented in the Geotechnical Appendix. Processing of the borrow sand will not be necessary.

21. Permanent evacuation for the Whale Beach area was evaluated in the feasibility study and was not found to be economically justified compared to the selected plan.

Thank you for the opportunity to provide these comments.

Sincerely,


Andrew L. Raddant
Regional Environmental Officer

LITERATURE CITED

- Melshurger, E. and S. J. Williams. 1982. Sand resources on the inner continental shelf off the central New Jersey coast. U.S. Army Corps of Engineers, Coastal Engineering Research Center report MR-82-10, Fort Belvoir, Virginia.
- National Marine Fisheries Service. 1996. Biological Opinion to the Army Corps of Engineers, Philadelphia District. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Protected Resources, Silver Spring, Maryland.
- Schwab, W. C., E. R. Thieler, J. R. Allen, D.S. Foster, B. A. Swift, and J. F. Denny. 2000. Influence of inner-continental shelf geologic framework on the evolution and behavior of the barrier-island system between Fire Island Inlet and Shinnecock Inlet, Long Island, New York. *Journal of Coastal Research* 16(2): 408-422.
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- _____ and New Jersey Department of Environmental Protection. 2000. New Jersey shore protection study, Great Egg Harbor Inlet to Townsend Inlet feasibility study, volume 1: draft feasibility report, integrated environmental impact statement. U.S. Army Corps of Engineers, Philadelphia District, Philadelphia, Pennsylvania. 465 pp. plus appendix.
- U. S. Fish and Wildlife Service. 2001. Great Egg Harbor Inlet to Townsend Inlet feasibility study, Cape May County, New Jersey. Section 2(b) Report. U. S. Department of the Interior, Fish and Wildlife Service, New Jersey Field Office, Pleasantville, New Jersey. 30 pp. plus appendices.

PERSONAL COMMUNICATION

- Allen, S. 2000. Project Manager. U. S. Army Corps of Engineers, Philadelphia District, Planning Division, Environmental Resources Branch, Philadelphia, Pennsylvania.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2
290 BROADWAY
NEW YORK, NY 10007-1885

JUL 12 2001

Mr. Robert L. Callegari, Chief
ATTN: Mr. Steven D. Allen
Planning Division
U.S. Army Corps of Engineers
Philadelphia District
Wanamaker Building, 100 Penn Square East
Philadelphia, Pennsylvania 19107-3391

Dear Mr. Callegari:

Rating: EC-2

The Environmental Protection Agency (EPA) has reviewed the draft integrated environmental impact statement (DEIS) for the New Jersey Shore Protection Study - Great Egg Harbor Inlet to Townsends Inlet (CEQ #010155), located in Cape May County, New Jersey. This review was conducted in accordance with Section 309 of the Clean Air Act, as amended (42 U.S.C. 7609, PL 91-604 12(a), 84 Stat. 1709), and the National Environmental Policy Act (NEPA).

The project area is located in southern New Jersey, and extends approximately 15 miles in length from Great Egg Harbor Inlet to Townsends Inlet. The site consists of two barrier islands, Peck Beach and Ludlam Island; it includes the southern end of Ocean City (Southern Peck Beach) and the entire Ludlam Island, including Strathmere, Whale Beach and the Sea Isle City. The proposed project is intended to reduce the potential for hurricane and storm damage to the structures and properties associated with the communities of Ocean City, Strathmere, and Sea Isle City.

The alternatives analysis considered an array of structural and non-structural alternatives that address storm damage reduction under three levels of screening. The study area was divided into two portions, one encompassing Ocean City, and the other Ludlam Island. In the third screening, the remaining alternatives analyzed were: 1) berm restoration (Ocean City and Ludlam Island); 2) berm and dune restoration (Ocean City and Ludlam Island); 3) berm and dune restoration with structural reinforcement (Ocean City and Ludlam Island); 4) berm and dune restoration with groin field (Ocean City and Ludlam Island); 5) berm and dune restoration with structural reinforcement/groin fields (Ocean City and Ludlam Island); and 6) permanent evacuation (Ludlam Island - Whole Beach only).

The preferred alternative for Ocean City is berm and dune restoration utilizing beachfill. The dune crest will have a top elevation of +3.9 meters (m) NAVD, a top width of 7.6 m and side slopes of 1V:5H. The total width of the berm from the seaward toe of the dune to Mean High Water (MHW) is 66 m. The plan extends from 34th Street to 59th Street for a total length of 4,268 m. Initial sand quantity needed is 1.218 million cubic meters (mcm); periodic nourishment of 0.306 mcm is scheduled to occur every 3 years. The preferred alternative for Ludlam Island is berm and dune restoration utilizing beachfill. The dune crest will have a top elevation of +4.5 m NAVD, a top width of 7.5 m and side slopes of 1V:5H. The total width from the seaward toe of the dune to Mean High Water (MHW) varies depending on location from 58 to 87 m. The plan

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extends from 38 m north of Seaview Avenue in Strathmere to Pleasure Avenue (just beyond 93rd Street) in Sea Isle City for a total length of 10,507 m. Additionally, there is a taper of 20 m into the terminal groin south of 93rd Street. Total length of beachfill, including tapers, is 10,751 m. Initial sand quantity needed is 3,911 mcm; periodic nourishment of 1,380 mcm is scheduled to occur every 5 years. Based on our review, we have the following comments.

Since the 1960s, numerous beach replenishment projects have become increasingly needed in areas of high development that have become susceptible to erosion. Table 6.2.1.4-1 of the DEIS provides a summary of recent past and active projects along the New Jersey Coast and future planned Federal projects that fall within the Philadelphia District; the projects extend from Manasquan Inlet to Cape May Point. Their numbers and the spatial extent of these projects bring up the question of cumulative effects that may result from this project.

With regards to this project, which involves replenishment every three (Ocean City) to five (Ludlam Island) for a period of 50 years, the DEIS has shown that the dredging of borrow areas for the berm and dune restoration, and for the periodic nourishment will not result in adverse cumulative effect to the nearshore, intertidal, and offshore (borrow area) resources. Data was cited to show that the recovery of existing macrofauna in affected nearshore and intertidal areas would be rapid after sand deposition, if grain sizes are compatible with natural beach sediments, which has been ascertained in this project. To mitigate for adverse effects that the project may have on the benthic community of these offshore borrow areas, the following measures would be taken: dredging shallow well-flushed pits, no deeper than 10 feet below the existing bathymetry; dredging during times of lowest biological activity; avoiding previously dredged areas to allow for recruitment and recolonization; and the utilization of pipeline delivery system to minimize turbidity. Moreover, mitigation measures would be taken to protect Federally-listed endangered/threatened species in coordination with the U.S. Fish and Wildlife Service and with the National Marine and Fisheries Service. Adverse impacts on essential fish habitat (EFH) would be avoided by the selection of borrow areas that do not have any distinctive habitat features such as prominent shoals, hard bottoms, or reefs. Additionally, a proposed monitoring program (benthic and surfclam; Federally-listed threatened/endangered species; and water quality) for subsequent dredgings/replenishments would allow for adaptive management measures.

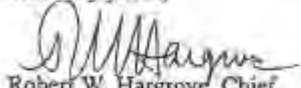
Nevertheless, as you know, in a August 13, 1998 letter, we have expressed concerns regarding the cumulative overall effect of all such projects along the New Jersey Coast. On the positive side, the DEIS lists the acreage and type of marine habitat impacted by these projects, namely, 1,866 acres of inlet ebb shoals, 818 acres of prominent offshore or "lumps" habitat, and 6,610 acres of offshore shoals of low relief. However, there is no discussion with regard to the nature and extent of that impact, including a discussion on mitigation measures that were taken, subsequent environmental monitoring, the efficacy of such measures, and whether any adaptive management measures had to be taken as a result of the environmental monitoring. EPA reiterates the need to include such information, to the extent possible, for the purpose of adequately assessing whether adverse cumulative effects on pertinent resources result from these erosion and storm damage protection projects, when taken as a whole.

Based on our review and in accordance with EPA policy, we have rated the DEIS as EC-2, indicating that we environmental concerns (EC) about the potential cumulative impacts associated with the current or future Federal erosion/storm damage protection projects, described

1. The nature and extent of the impacts of past and present projects are relatively unknown since few of the beach replenishment projects within the Philadelphia District boundaries have included monitoring. The figures stated in the comment primarily represent future acreages of habitat to be affected from proposed projects. Approximately 69% of the 1,866 acres of inlet ebb shoals, 62% of the 818 acres of prominent offshore "lumps", and 100% of the 6,610 acres of offshore shoals of low relief are proposed for use in the proposed future projects. Therefore, little post-dredge monitoring data on these projects exist since the majority of these areas have not been impacted to this date. A majority of the impacted marine habitat is from individual permit actions where there were no monitoring requirements associated with them. Benthic and surfclam monitoring for the existing Federal project in north Ocean City, NJ has been implemented for the borrow site in Great Egg Harbor Inlet. The results did not show significant adverse impacts to benthic and surfclam resources (Scott and Kelly 1998). Because no adverse impacts on the benthic community could be identified, no adaptive measures have been required such as dredging depth modifications or timing restrictions. Comprehensive long-term biological monitoring of the impacted shoreline habitats, nearshore and offshore borrow areas was performed by the New York District for the Asbury Park to Manasquan Section Beach Erosion Control Project (USACE 2001). Reported findings have indicated no significant adverse effects on the benthic communities, fish populations, and water quality in the intertidal, nearshore, and offshore areas. It should be noted that all of the proposed Federal projects within the Philadelphia District include long-term biological monitoring.

in the DEIS. Accordingly, additional information should be included in the final EIS to address the issue of cumulative effect resulting from the current and future Federal projects that were identified in the DEIS. If you have any questions or wish to discuss this letter, please contact Raymond P. Reyes of my staff at (212) 637-3748.

Sincerely yours,



Robert W. Hargrove, Chief
Strategic Planning and Multi-Media Programs Branch

2. **An expanded discussion that relates existing regional monitoring information to cumulative impacts is presented in Section 6.2.25 of the Final Feasibility Study and Integrated Environmental Impact Statement.**



United States Department of the Interior

MINERALS MANAGEMENT SERVICE
Washington, DC 20240

Robert L. Callegari
Chief, Planning Division
Philadelphia District, U. S. Army Corps of Engineers
Wanamaker Building, 100 Penn Square East
Philadelphia, PA 19107-3390

Dear Mr. Callegari:

We have completed our review of the Draft Feasibility Report and Integrated Environmental Impact Statement, Great Egg Harbor to Townsends Inlet, New Jersey and are submitting the following comments as attached.

We are aware that the project calls for use of Federal sand for the periodic nourishments from borrow areas identified as M8 and possibly a portion of L3. Both areas are within a few miles of a study area identified as A-1 in which benthic biological sampling and species classification were done along with wave modeling to determine impacts of removal of various volumes of sand. The results of the study were sent to you upon completion last year.

As required by Public Law 103-426, the Philadelphia District must enter into a Memorandum of Agreement with the Minerals Management Service (MMS) to access Outer Continental Shelf sand resources for the project. In addition, the locality(s) receiving sand from Federal waters must enter into a negotiated agreement with the MMS for use of such sand.

1.

We look forward to working with you and the Philadelphia District on this project. If you have questions or need additional information, contact Roger Amato at (703)787-1282 or Email at Roger.Amato@mms.gov.

Sincerely,

Carol A. Herten
Chief, International Activities
and Marine Minerals Division

Attachment

1. In accordance with P.L. 103-426, the Philadelphia District will enter into a Memorandum of Agreement with the Minerals Management Service for use of Outer Continental Shelf (OCS) sand resources in Area M8 and a portion of L3 during the Preconstruction, Engineering and Design (PED) phase of the project. A negotiated agreement between the local municipalities or the State of New Jersey will also be developed and executed during PED.

Review of Benthic Issues in the EIS and Feasibility Report for Great Egg Harbor Inlet to Townsbed Inlet

1. In regards to the selection of the offshore borrow sites available for dredging, the Army Corps of Engineers (ACE) should be applauded for its foresight and proactive monitoring approach in evaluating the long-term and cumulative impacts of the proposed action on offshore borrow sites. Additionally, it is refreshing to see the ACE incorporating the recommendations of the state and NOAA to the furthest extent reasonable. However, in doing so the longevity requirements of the project's needs may be impaired. The four borrow areas delineated barely meet the minimum amount of sand required for the proposed 50 year period. To adequately meet the sand needs of the current project, other reasonably foreseeable projects, and unexpected projects/events, either the currently proposed borrow areas should be expanded or other potential areas should be identified and incorporated into the EIS and feasibility report. 2.
2. The ACE has proposed several mitigation measures to minimize the adverse effects on the benthic communities of the proposed borrow areas. These measures included: dredging shallow, well flushed pits, avoiding previously dredged areas to allow for recruitment and recolonization, dredging during times of the lowest biological activity and the utilization of a pipeline delivery system. These mitigation measures should be used as stipulations in the proposed project to reduce the direct, indirect and cumulative environmental impacts of the proposed action and future sand dredge operations. 3.
3. The time period for benthic recolonization of the proposed borrow areas is inconsistent throughout the environmental impact section of the Feasibility study. For example, section 6.2.13.1.1.2 notes that, "this area could be left for benthic recruitment and recolonization, which could take *several months to several years.*" Section 6.2.13.2.1.1 suggests that, "benthic studies have demonstrated recolonization following dredge operations within *13 months to 2 years.*" This and other similar contradictions suggest a difference of time in the magnitude of approximately one-year. This period of time difference greatly influences the cumulative impacts of the currently proposed schedule of periodic renourishments in respect to the benthic communities and fish populations of the proposed borrow areas. 4.
4. The analysis of cumulative impacts of the proposed action takes into account the use of the shoals for past, present, and reasonably foreseeable future actions but appears to be lacking in terms of the actual cumulative environmental effects analysis. The cumulative effects analysis should be addressed in terms of *all* the drivers that make up the cumulative effect. (i.e. biology, physical oceanography, socio-economics, etc). This lack of inclusion could very well be caused by deficiencies in the current information available on the long-term and cumulative impacts of sand dredging operations. Nevertheless, the cumulative impacts analysis should be re-evaluated to incorporate these drivers and the inconsistencies in the time frames required for benthic recolonization and its impacts on finfish. 5.

2. The borrow areas were delineated and selected based on projected sand needs of the project over a 50-year period. These sand needs are based on reasonable estimates of nourishment quantities and number of nourishment cycles. Also, consideration to minimizing the aerial extent of the impacted areas was given to minimize disturbance to the benthic community. If the borrow areas become depleted within the project life, other alternative sites or expansion of the existing ones (including Outer Continental Shelf Sites) would be considered, if it is determined that there is a need for additional sand resources.

3. As discussed in the EIS, mitigation measures were recommended to minimize or avoid adverse impacts on resources of concern. Priority would be placed on implementing these measures during design engineering and construction wherever practicable. However, there may be cases where they may not be practicable, such as dredging in times of lowest biological productivity during the initial construction, which requires over a one-year construction period.

4. These time periods refer generally to the span of recolonization rates. However, specific recolonization/recovery rates are variable due to a number of biotic and abiotic factors. These sections were modified in the Final EIS to include some cited examples of different recolonization/recovery rates for offshore borrow areas.

5. Section 6.2.25 "Cumulative Impacts" was expanded to provide additional discussion on previous impact studies as they pertain to cumulative impacts for this action. The Final EIS concluded that there would be no significant adverse cumulative impacts on benthic communities and fisheries with implementation of the proposed action. Although specific monitoring and impact studies within the region are few, the general available literature describes that biological impacts of beachfill placement and dredging are basically short-term, if the project is planned properly. The action proposed in this report avoids or minimizes cumulative effects by avoiding borrow sites that have more pronounced bathymetric features (considered to be attractive to fish and shellfish) that could be permanently altered or eliminated. Dredging shallow pits and rotational dredging in the borrow sites would minimize benthic recovery periods. The discussion in section 6.2.25 "Cumulative Impacts" presents current available information concerning the size and magnitude of impacted areas covering past and present impacts and foreseeable future impacts of affected habitats. However, the timing and duration of the impacts are variable depending on each individual action. This becomes increasingly speculative when discussing foreseeable projects that have not been implemented.



State of New Jersey

Department of Environmental Protection
Air Quality Permitting Program
P.O. Box 027
Trenton, NJ 08625-0027
(609)-292-6716

Robert C. Shinn, Jr.
Commissioner

Christine Todd Whitman
Governor

May 9, 2001

Robert L. Callegari
Chief, Planning Division
Department of the Army
Philadelphia District, Corps of Engineers
100 Penn Square East,
Philadelphia, PA 19107-3390

Attention: Environmental Resources Branch

Dear Mr. Callegari,

The following are comments on the air quality aspects of the draft New Jersey Shore Protection Study feasibility report and EIS, transmitted by the letter of May 3, 2001.

The New Jersey DEP requires permits subject to the regulations in Chapter 7:27, Air Pollution Control. The Bureau of New Source Review permits diesel engines larger than one million btu per hour, or approximately 7.5 gallons of fuel per hour. This includes only stationary sources on land. For increases of over five tons per year of NOx, an evaluation of State of the Art NOx control is required. Catalytic or selective non-catalytic NOx reduction in the exhaust gas is commonly used.

1.

The entire state of New Jersey has been declared non attainment for ozone. Therefore, with the increased attention of the USEPA to the connection between NOx and ambient ozone levels, it is possible that large increases of NOx are subject to N.J.A.C. 7:27-18, Emission Offset Rules.

2.

Also, any particulate matter resulting from sand dewatering processes would be permitted by this bureau. The exclusion rate is one half pound per hour per source.

3.

Once the size and location of point sources of air pollution have been proposed, the responsible parties are invited to come in to BNSR for a pre-application meeting to discuss possible permits and control systems that may be needed.

4.

Very truly yours,

Max Friedman,
Principal Environmental Engineer
BNSR

cc: Lou Mikolajczyk

1. The specific types of equipment (dredges, barges, pumps, bulldozers, etc.) are mobile sources, therefore, there would be no stationary sources on land. The majority of the emissions will be from mobile marine vessels (cutterhead-suction dredges or hopper dredges) and mobile land-based construction equipment.

2. Project specifications will require the construction contractor to be in compliance with Federal and state air quality statutes and regulations.

3. Air quality permits for the discharge of a sand slurry and dewatering operations were not required historically for beach replenishment projects. The District will coordinate with NJDEP during Preconstruction, Engineering and Design to evaluate the need for this permit.

4. See above responses.



State of New Jersey

Department of Environmental Protection
Division of Science, Research and Technology
New Jersey Geological Survey
29 Arctic Parkway
P.O. Box 427
Trenton, NJ 08625-0427

Tel. # (609) 292-1185 - Fax: (609) 633-1004 - Home Page: <http://www.state.nj.us/depr/njgs/>

Robert C. Shinn, Jr.
Commissioner

DONALD T. DIFRANCESCO
Acting Governor

June 18, 2001

RE: Review of Geotechnical Section of Great Egg Harbor Inlet to Townsend Inlet, Draft Feasibility Report and Integrated Environmental Impact Statement

Robert L. Callebari
Chief, Planning Division
Department of the Army
Philadelphia District, Corps of Engineers
Wanamaker Building, 100 Penn Square East
Philadelphia, PA 19107-3390

As per your letter dated May 3, 2001, my staff has reviewed Section 2.2 of the above referenced document. Section 2.2 deals with the geotechnical analysis. All comments are written in the margins in No. 2 lead pencil. Any questions or feedback is welcome. Please contact Dave Hall of my staff in reference to inquires about this review. He can be reached at (609) 984-6587.

Sincerely,

Dr. Karl Muesing
New Jersey State Geologist

1.

1. The report text was revised as appropriate.

2.2 Geotechnical Analysis

2.2.1 Geomorphology

The study area lies within the coastal plain province of Eastern North America. In New Jersey, the province extends from a line through Trenton and Perth Amboy southeastward for approximately 250 kilometers (155 miles) to the edge of the continental shelf. The land portion of the province is bounded on the northeast by the Raritan Bay and on the west by the Delaware River. The line of maximum elevation runs from the Navesink Highlands southeastward to the Mount Holly area, with the land rising gradually from the sea as a moderately dissected plain to an elevation of approximately 91 kilometers (57 miles) in the center, from where it slopes toward the Delaware River and Raritan River drainage systems. The submerged portion of the plain slopes gently southeastward at 0.5 meters to 1.5 meters per kilometer (2.6 ft to 7.9 ft per mile) for nearly 167 kilometers (104 miles) to the edge of the continental shelf. The surface of the shelf consists of broad swell and shallow depressions with evidence of former shorelines and extensions of river drainage systems.

The Atlantic coastal shelf is essentially a sandy structure with occasional silty, gravelly or stoney deposits. It extends from Cape Cod to Florida, and is by far the world's largest sandy continental shelf.

2.2.2 Physiography

The New Jersey shoreline can be divided into three sections where the sea meets the mainland, at the northern and southern ends of the state, and where the sea meets the barrier beach, in the central portion of the state.

2.2.3 Barrier Beaches

The New Jersey barrier beaches belong to a land form susceptible to comparatively rapid changes. In the study area, the barrier islands range in width from 300 meters (about 1000 feet) to about 1,500 meters (about 5,000 feet). Landward of the barrier beaches and inlets of the study area are tidal bays, which range from five to eight kilometers (3 to 5 miles) in width. These bays have been filled by natural processes and much of their area is covered with tidal marshes. The remaining water area consists of smaller bays connected by water courses called throglars. Four geologic processes are considered to be responsible for the detritus (or loose material) in the bay area: stream sedimentation, which contributes a small amount of upland material; waves wading over the barrier during storms; direct wind action blowing beach and dune sand into the lagoon; and the work of tidal currents, which normally brings in more sediments in suspension from the beach on flood tide than they remove on ebb tide. The vegetation of the lagoon, both in marsh and bay, serves to trap and retain the sediments.

(open water)

This sentence reads like you are dealing with an elevation of 91 km?

Tidal bays

Tidal bays

2.2.4 Drainage of the Coastal Plain

The stream drainage system of the New Jersey coastal plain was developed at a time when sea level was lower than at present. The subsequent rise in sea level has drowned the mouth of coastal streams where tidal action takes place. This tidal effect extends up the Delaware River to Trenton, NJ, a distance of 223 kilometers (139 miles). The formation of the barrier beaches removed all direct stream connection with the ocean between Barnegat Bay and Cape May. These streams now flow into the lagoons formed in the back of these barrier beaches and their waters reach the Atlantic Ocean by way of the inlets. The significance of these features of the drainage system to the problem area is that the coastal plain streams, whose upper courses carry little sediment, lose that little sediment in their estuaries, and in the lagoons, and supply virtually no beach nourishment to the ocean front.

2.2.5 Surficial Deposits

The coastal plain of New Jersey consists of beds of gravel, sand and clay, which dip gently towards the southeast, and contain fossils showing them to be of the Cretaceous, Tertiary, and Quaternary ages. The older and lower layers appear at the surface along the northwest margin of the coastal plain and pass beneath successively younger strata in the direction of their dip. The parallel outcrops of successive strata make this a "belted coastal plain". Since the formations dip toward the southeast, successively younger layers appear along the shore and progress southward. Between Bay Head and Cape May City, the coastal lagoons, tidal marshes and barrier beaches fringe the coast. These formations have contributed to the sands of the present beaches. During Quaternary time, changes in sea level caused the streams alternately to spread deposits of sand and gravel along drainage outlets and later to remove, rework, and redeposit the material over considerable areas, concealing earlier marine formations. One of these, the Cape May formation consisting largely of sand and gravel, was deposited during the last interglacial stage, when the sea level stood 10 to 14 meters (33 to 46 feet) higher than at present. The material was deposited along valley bottoms, grading into the estuarine and marine deposits of the former shoreline. In many places along the New Jersey coast, there is a capping of a few feet of Cape May formation. This capping is of irregular thickness and distribution, but generally forms a terrace about 7.5 to 10.5 meters (25 to 34 feet) above sea level. The barrier beaches, being of relatively recent origin, are generally composed of the same material as that found on the offshore bottom.

2.2.6 Subsurface Geology

The Atlantic coastal plain consists of sedimentary formations overlying a crystalline rock mass known as the "basement". From well drilling logs, it is known that the basement surface slopes at about 30 meters per kilometer (155 feet per mile) to a depth of more than 2,000 meters (1.2 miles) near the coast. Geophysical investigations have corroborated well-log findings and have permitted determination of the profile seaward to the edge of the continental shelf. A short distance offshore, the basement surface drops abruptly but rises again gradually near the edge of the continental shelf. Overlying the basement are semi-consolidated beds of lower Cretaceous

Land in the southern areas, like most, is composed of the Cape May Formations

evidence does seem to be of the Cretaceous

sediments. The beds vary greatly in thickness, increasing seaward to a maximum thickness of 4,000 meters (2.5 miles) then decreasing to 2,500 meters (1.5 miles) near the edge of the continental shelf. On top of the semi-consolidated material lie unconsolidated sediments of Upper Cretaceous and Tertiary formation. These materials, in relatively thin beds on the land portion of the coastal plain, increase in thickness to a maximum of 1,500 meters (1 mile) near the edge of the continental shelf.

2.2.7 Geologic History

The sea successfully advanced and retreated across the 250-kilometer (150 mile) width of the Coastal Plain during the Cretaceous and Quaternary time. Many sedimentary formations were deposited, exposed to erosion, submerged again and buried by younger sediments. The types of sorting, the stratification, and the fossil types in the deposits indicate that deposition took place offshore as well as in lagoons and estuaries, and on beaches and bars. Considerable changes in sea level continued to take place during Pleistocene time. Glacial periods brought lowering in sea level as water was locked up in the high ice masses. As the sea level fell to a beach line, kilometers seaward of the present shoreline, Pleistocene sediments were deposited in valleys cut into older formations. The water released through glacial melt during interglacial periods brought a rising of sea level and beaches were formed far inland of the present shore.

2.2.8 Beach Sampling

(All elevations in NAVD88 datum)

Beach samples were collected on five survey lines along southern Ocean City and along nine survey lines on Ludlum Island. A distance of approximately one mile was used to determine separation between the survey lines that were sampled. The following survey lines were sampled along southern Ocean City: OC51, OC53, OC55, OC57, and OC59 (Figure 2.7.8-1). Samples were collected by Ocean Surveys, Inc. in both March and September 1997 at the following location along the survey line: dune base, berm crest, midberm, mean high water, mean low water, -2.21 meters (-7.25 feet), -4.04 meters (-13.25 feet), and -5.87 meters (-19.25 feet). The Ludlum Island survey lines that were sampled are as follows: LI-1, LI-2A, LI-3, LI-4A, LI-5A, LI-5C, LI-6A, LI-6BA, and LI-6D (Figure 2.7.8-1). Samples for Ludlum Island were collected in two time periods, the first being January to April 1998 and the second October to December 1998. The samples were collected at the following locations along the survey lines: dune base, mean high water, mean low water, -2.21 meters (-7.3 ft), -4.04 meters (-13.3 ft), and -5.87 meters (-19.3 ft). Unfortunately, a certain number of samples were not obtained during the Ludlum Island sampling. For January to April 1998 the samples not collected were LI-1: -2.21 meters (-7.3 ft), -5.87 meters (-19.3 ft); LI-2: -2.21 meters (-7.3 ft); LI-3: -2.21 meters (-7.3 ft), -5.87 meters (-19.3 ft); LI-4A: -5.87 meters (-19.3 ft). The samples not collected for the October to December 1998 were LI-6BA: -2.21 meters (-7.3 ft), -4.04 meters (-13.3 ft).

2.2.9 Potential Borrow Area Delineation

The *Great Egg Harbor Inlet to Townsends Inlet Reconnaissance Study (April 1996)* identified several potential borrow areas for southern Ocean City and Ludlum Island using existing information. In order to positively identify sources of sand for the Great Egg Inlet to Townsends Inlet Feasibility Study, a series of sub-bottom acoustic profiling lines were conducted off of Ludlum Island. Forty-seven vibrocores were then obtained to identify specific material types in certain areas.

2.2.9.1 Acoustic Sub-bottom Profile

An acoustic survey of the area between Sea Isle City, NJ and Corson Inlet, NJ was conducted between 31 July 1997 to 5 August 1997. A seismic reflection method, which measures the response of a medium to the passage of an elastic wave, was utilized. A subbottom profiler operating at a frequency of 3.5 kHz was used. Accurate positioning for the survey was accomplished using a DGPS satellite receiver connected to a data link receiver tuned to the U.S. Coast Guard GPS transmitter at Sandy Hook, NJ. The geophysical survey provided project area-wide data on the topography of the sea bottom and the sub-bottom acoustic (seismic) reflectors to a depth of about 15.24 meters (50 feet) below the sediment / water interface. Eleven profiling lines were run parallel to the coast with an additional four lines that zigzagged across the area surveyed to total 144.84 kilometers (90 miles) of acoustic surveying. The lines ranged in distance offshore from approximately 2.41 (1.5) to 6.44 (4) kilometers (miles).

2.2.9.2 Vibrocore Borings

Thirty-seven vibrocores, NJV-347 to NJV-379, were collected, in the Atlantic Ocean off the coast of New Jersey, within the limits of the acoustic survey. The samples were collected 31 July 1997 to 5 August 1997. The desired depth of penetration for the vibrocores was 6.10 meters (20 feet). The fieldwork included positioning of the vessel using a DGPS navigation system, obtaining continuous core samples and penetration records. All vibrocores were retrieved using a 271B Alpine pneumatic vibrocorer with particle size analysis of the sediment retrieved in the vibrocores.

In the vicinity of Corson Inlet New Jersey, 10 vibrocores, NJV-521 to NJV-530, were collected by Duffield Associates. The samples were collected in July 1999 to a desired depth of penetration of 3.05 meters (10 feet). The fieldwork was similar to that which was detailed above however the vibrocoreing was conducted aboard a 15.24 meters by 6.10 meters (50 feet by 20 feet) barge positioned by a tugboat. The vibrocores were advanced utilizing a 203.2 millimeter (8 inch) Alpine pneumatic vibrocorer. A visual classification and particle size analysis was conducted on the sediment retrieved in the vibrocores.



State of New Jersey

Department of Environmental Protection

DONALD T. DiFRANCESCO
Acting Governor

Robert C. Shinn, Jr.
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lschmidt@dep.state.nj.us

June 28, 2001

Mr. Robert L. Callegari
Chief, Planning Division
Philadelphia District
Corps of Engineers
100 Penn Square East
Philadelphia, PA 19107-3390

**RE: Draft Environmental Impact Statement - Comments
Great Egg Harbor Inlet to Townsends Inlet
Ocean City, Upper Township, and Sea Isle City, Cape May County**

Dear Mr. Callegari:

The Office of Coastal Planning and Program Coordination of the New Jersey Department of Environmental Protection (NJDEP) has completed its review of the Draft Environmental Impact Statement (EIS) for the Great Egg Harbor Inlet to Townsends Inlet project Ocean City, Upper Township, and Sea Isle City, Cape May County. We offer the following comments regarding natural and cultural resource impacts.

NATURAL RESOURCES

The Department's Division of Fish and Wildlife is in agreement with the selection of borrow sites for beach nourishment. Prior coordination and cooperation with our Department's Bureau of Engineering and Construction and the Army Corps of Engineers (ACOE) was effective in selecting sites with reduced impacts on fish and shellfish resources.

Shellfish Comments

The Division of Fish and Wildlife's Bureau of Shellfisheries concurs with the choice of borrow areas in the selected plan. However, they recommend some changes and updates be addressed in the Final EIS. On page 2-27,

updates are needed on the surf clam resources of New Jersey. In 1999 some 67% of molluscan landings were surf clams (by weight) and 84% of the Mid-Atlantic and New England landings were landed in New Jersey. Also, surf clam resources in Cape May County (i.e. below Great Egg Harbor Inlet) have contributed 14.4% to the total harvest in the 1999-2000 season; it had been as high as 24.8% in the 1998-1999 season. In 1999, this region contributed 24.8% of the total New Jersey estimated standing stock of surf clams.

Relative to issues on pages 6-83 and 6-98, the Bureau of Shellfisheries agrees that an updated (pre-construction) surf clam survey should be done since surf clams could have set in commercial densities between time of the Draft EIS and the actual project construction. However, if commercial densities are found at a particular borrow site, then we would recommend additional discussions on alternative locations or procedures would need to be initiated since the commercial densities show the site is productive habitat. The suggested one-time commercial harvest (allowed anyway within the season, 10/1 to 5/31), would not resolve the problem of losing productive surf clam habitat. It also would not take into account the marketability of the clams since it would take longer than 3 to 5 years before surf clams even approach the market size of 5 inches.

The Bureau of Shellfisheries emphasizes the importance of performing long-term surveys on each borrow area in order to collect crucial data on recovery rates. While it is acknowledged that this may be expensive to do, the future benefits of assessing impacts would play a crucial role in designing other projects or at least assisting in identifying and/or preventing negative impacts associated with beach replenishment projects. Preservation of the existing substrate type/strata should also be emphasized at the borrow sites in order to aid in recolonization. The Final EIS should address long-term studies and the preservation of existing substrate types.

Endangered /Threatened Species

The Division of Fish and Wildlife's Endangered and Nongame Species Program is currently reviewing the *Biological Assessment for Piping Plover and Seabeach Amaranth Resulting from Beach Nourishment Projects Along the New Jersey Coast* to which the Draft EIS refers. The Endangered and Nongame Species Program's specific comments and recommendation will be provided when its review of the *Biological Assessment* is completed. In general, the Draft EIS adequately addresses the primary issues with which we are concerned, namely impacts to endangered beach nesting birds (piping plover, least tern, and black skimmer). While mentioned here, the following recommendations will be covered in more detail through comments on the *Biological Assessment*.

- All barrier island communities within the project area must be required to develop, formally adopt and implement beach nesting bird management plans.

1. Section 2.3.11.2 was updated with this information.
2. As discussed in the EIS, it is anticipated that with the exposure of suitable substrate after dredging is completed, these areas could have suitable habitat for future recruitment. Therefore, a permanent loss of habitat is not anticipated. This should be demonstrated through pre and post-construction monitoring of the affected areas to determine if the impacted areas have suitable physical, chemical and biological parameters necessary for future recruitment of the affected areas. It may be possible to focus dredging in areas of lesser productivity within the existing borrow areas early in the project and monitor recruitment patterns in the affected areas to determine if more productive areas could be harvested with subsequent sand extraction and surfclam recruitment.
3. Concur. Monitoring for surfclams within the borrow areas will be conducted over a long-term to coincide with periodic nourishment cycles. Preservation of substrates similar to existing substrates will be emphasized through dredging depth correlation with strata in vibrocore logs.
4. The development and implementation of beach nesting bird management plans are currently being negotiated between the non-Federal sponsor (NJDEP) and the local municipalities. Approved management plans will be adopted prior to any construction activities.

- For portions of this beach nourishment project that have the potential to disturb nesting piping plovers/least terns/black skimmers, the ACOE consider adhering to seasonal restriction that prohibit work during the nesting season (approximately 4/1 through 9/1). This means that no seasonal restrictions would be required on those sections of beach that have not had nesting birds in the preceding 3 to 5 years. If birds begin nesting on those previously "non-nesting" sections during or immediately preceding construction, then we recommend that the ACOE work with the United States Fish and Wildlife Service (USFWS) and the Endangered and Nongame Species Program to insure that the birds are not adversely impacted by the construction activities. **5.**
- Easements negotiated with private owners or tidelands leaseholders by the ACOE or the Bureau of Engineering and Construction should include language that specifically provides for the Division of Fish and Wildlife and/or the USFWS to undertake management of endangered beach nesting birds on the property. Clear permission must be incorporated into the easements that allow the Division of Fish and Wildlife and/or the USFWS: the right of entry by staff or approved agents; the ability to monitor nesting activities; the erection of protective fencing and signs; the construction of predator exclosures; and the right to engage in other management activities as necessary. **6.**
- We recommend that the Final EIS address the ACOE providing funding to cover the costs of monitoring beach nesting birds. **7.**

Some updating changes and corrections should be addressed in the Final EIS including the following:

- For page 2-40, Section 2.3.15.1 Beaches and Dunes, the number of piping plover pairs currently nesting in the project area has dropped to around 15 to 18 pairs, representing around 16% of the State's nesting population (update). Also, piping plovers begin to arrive in March and begin nesting in mid-to-late April (correction/clarification). In addition, it is noted that the Strathmere Natural Area has recently been subject to storm events and tidal fluctuations that have gradually resulted in the loss of an estimated 40% of the natural area. This has directly impacted New Jersey's largest colony of the endangered black skimmer. That is, in 2000, the Division of Fish and Wildlife estimated there were approximately 1,200 birds present in the natural area; this year about 100 birds have returned and no nests have been found to date (update). **8.**
- For page 2-41, Section 2.3.16, the Endangered and Nongame Species Program questions if the Strathmere Natural Area was established by the Natural Lands Trusts as indicated in the subject document or by the Office of Natural Lands Management. **9.**

Miscellaneous Concerns

- The Division of Fish and Wildlife notes that Corsons and Townsends Inlets are choked with shifting sand deposits that jeopardize their navigable use. These sites appear to be ideal locations for providing sources of borrow,

5. Construction activities will be avoided during the nesting season in areas currently occupied by piping plovers or areas historically occupied by piping plovers. Priority would be given to placement of beachfill immediately after August 15 in areas documented to be inhabited by piping plovers within the recent past. This would be done to provide maximum recovery time for benthic organisms along the shoreline to provide a sufficient food source for potential nesting piping plovers the following spring.

6. The project sponsor, NJDEP, would need to negotiate easements to allow USFWS and NJDEP staff to monitor and manage nesting activities.

7. As part of the monitoring for Rare, Threatened and Endangered Species (6.2.29.4), monitoring of piping plover nests within the project impact area will be conducted.

8. Section 2.3.15.1 was updated with this information.

9. PL-E The Strathmere Natural Area was acquired by the State of New Jersey from the Natural Lands Trust in 1969 with funding from the New Jersey Green Acres Land Acquisition Act of 1961, and was later assigned to the Division of Parks and Forestry in 1970 (personal communication with Robert Cartica, Office of Natural Lands Management). This was clarified in the text.

particularly for periodic re-nourishment, as well as providing improved and/or safer inlets for navigation. While a small portion of Corsons Inlet is an approved borrow area, consideration of a larger borrow area here and a borrow area at Townsends Inlet is needed. Such use could also lessen the amount of sand required from other borrow sites. This issue should be addressed in the Final EIS.

- Relative to the issue of lost habitat on the Strathmere Natural Area, it is questionable if the proposed beachfill in the area will be sufficient to provide the necessary protection and re-establishment of habitat losses on the natural area. This issue should be addressed in the Final EIS.

CULTURAL RESOURCES

Our Department's Historic Preservation Office is coordinating with the ACOE the review of this project under Section 106 of the National Historic Preservation Act. Several resources eligible, on, or potentially eligible for inclusion in the Nation Register of Historic Places exist near the project but will not be impacted by the sand placement activities. These include:

- buildings near the sand placement areas (which will receive greater protection as the results of installation of the project);
- three magnetic targets within Borrow Area "M3" with shipwreck-like characteristics (Borrow Area "M3" has been removed from consideration as a sand borrow area); and
- two nearshore targets (deeply buried in submerged sand placement locations and with characteristics not readily similar to potential shipwrecks).

Remaining are five targets or anomalies which may be shipwrecks eligible for inclusion in the National Register of Historic Places within the project's Area of Potential Effects. Based on treatment recommendations for these potential historic sites presented by the ACOE in a May 3, 2001 project letter and discussion with the archaeologist of the ACOE, implementation of the following conditions will ensure avoidance of adverse effects to the five sites.

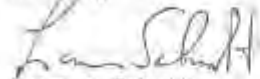
- Anomaly I (in Sea Isle City) and Anomalies II and III (both in Ocean City) shall be monitored to assure their avoidance during sand installation in accordance with a monitoring plan to be developed by the ACOE which provides for their protection.
- A plan for avoidance of Targets 21:82 and 45:63, both in Corsons Inlet Borrow Area, shall be developed and implemented by the ACOE which includes establishing an ample (ideally 1000 foot) buffer area around both Targets.
- Both of the above plans for avoidance and monitoring shall be submitted to the Historic Preservation Office for review and approval prior to implementation.

10. The Corson Inlet borrow area was delineated in such a manner as to avoid negative impacts (erosion) to Corson's Inlet State Park and the Strathmere Natural area. Borrow areas in Townsends Inlet are already committed to the Townsends Inlet to Cape May Inlet shore protection project.

11. While habitat restoration was not a primary goal of this project, a 734-foot taper extends into the Strathmere Natural Area, which may provide some habitat protection. Opportunities for habitat and habitat protection through design adjustments (without departing significantly from the project design parameters) could be considered during the Pre-Construction Engineering and Design (PED) Phase.

Thank you for the opportunity to review the Draft EIS.

Sincerely,



Lawrence Schmidt
Director
Office of Coastal Planning
and Program Coordination

C. Andrew Didun, NJDEP
Debbie Fimbel, NJDEP



State of New Jersey

Department of Environmental Protection
Land Use Regulation Program
P.O. Box 439
Trenton, New Jersey 08625-0439
www.state.nj.us/dep/landuse

William C. Evans, Jr.
Governor

Richard D. White
Lieutenant Governor

Robert L. Callegari
Chief, Planning Division
Department of the Army
Philadelphia District, Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, Pennsylvania 19107-3391

JUN 23 2001

RE: Great Egg Harbor Inlet to Townsends Inlet, Draft Feasibility Report and
Integrated Environmental Impact Statement
Federal Consistency Determination and Section 401 Water Quality Certification
Land Use Regulation Program File No. 0500-01-0002.1

Dear Mr. Callegari:

The New Jersey Department of Environmental Protection, Land Use Regulation Program, acting under Section 307 of the Federal Coastal Zone Management Act (P.L. 92-583) as amended, has reviewed the "Great Egg Harbor Inlet to Townsends Inlet Feasibility Study, Draft Feasibility Report, Integrated Environmental Impact Statement, Volume 1" dated December 2000. Based on the report, the Program has determined that the draft plan and project is consistent with New Jersey's Rules on Coastal Zone Management N.J.A.C. 7:27E-1.1 et seq, as amended to May 7, 2001, and the applicable Rules guiding issuance of a Section 401 Water Quality Certificate, provided that the conditions discussed below are met to the satisfaction of the Department of Environmental Protection.

Project Description

The U.S. Army Corps of Engineers has proposed a project intended to provide shore protection for the communities of Ocean City, Stratimere, Whale Beach area, and Sea Isle City, in Cape May County, New Jersey. Hurricanes and storm damage reduction will be provided by beach nourishment and dune construction utilizing sand obtained from offshore borrow areas.

The selected plan for South End Ocean City consists of a berm and dune utilizing sand obtained from an offshore borrow source identified as "M8". The dune crest has a top elevation of +12.8 ft. NAVD88, while the berm extends from the seaward toe of the dune for a distance of 100 feet at an elevation of +7.0 ft. NAVD88 before sloping down at 1V:25H to elevation -1.25 ft. NAVD88. The remainder of the design template parallels the existing profile slope to the depth of closure. The total width from the seaward toe of the dune to Mean High Water (MHW) is 218 feet.

The plan extends from 34th Street to 59th Street for a total length of 2.6 miles. Initial sand quantity is estimated at 1,603,000 cubic yards. Periodic nourishment of 403,000 cubic yards is scheduled to occur every 3 years synchronized with the existing Federal beachfill project at Ocean City (Great Egg Harbor Inlet to 34th Street).

The selected plan for Ludlam Island also consists of a berm and dune utilizing sand obtained from offshore borrow sources identified as "L3", "L1", and "C1". The dune crest has a top elevation of +14.8 ft. NAVD88, while the berm width extends from the seaward toe of the dune for a distance of 50 ft. at an elevation of +6.0 ft. NAVD88 before sloping down (varying from 1V:30H to 1V:50H) to elevation -1.25 ft. NAVD88. The remainder of the design template parallels the existing profile slope to the depth of closure. The total width from the seaward toe of the dune to MHW varies from 190 to 285 feet depending upon location.

The plan extends from about 125 feet north of Seaview Avenue in Strathmere to Pleasure Avenue (just beyond 93rd Street) in Sea Isle City for a total length of 6.5 miles. In addition, there is a taper of 734 feet into Corson's Inlet State Park and a taper of 66 feet into the terminal groin south of 93rd Street. Total length of beachfill, including tapers, is 6.7 miles. The plan also includes the extension of two stormwater outfall pipes by 150 feet at 84th and 88th Street in Sea Isle City. Initial sand quantity is 5,146,000 cubic yards. Periodic nourishment of 1,820,000 cubic yards is scheduled to occur every 5 years.

The following discussion includes an evaluation of project compliance with the Rules on Coastal Zone Management (N.J.A.C. 7:7E-1.1 *et seq.*), and identifies the conditions under which the project is found consistent with the rules. This consistency determination is issued subject to compliance with these specific conditions.

I. Surf Clam Areas (N.J.A.C. 7:7E-3.3)

Surf Clam Areas are water within which can be demonstrated to support significant commercially harvestable quantities of surf clams or areas important to the recruitment of surf clam stocks. Development that would result in the destruction, condemnation, or contamination of surf clam areas is prohibited.

Based on the information provided and prior coordination with the NJDEP Bureau of Shellfisheries (BSF), the ACOE was effective in selecting sites with reduced impacts on fish/shellfish resources. BSF concurs with the choice of the proposed borrow areas in the selected plan, identified as "M8", "L3", "L1", and "C1". The Army Corps of Engineers (ACOE) proposes to perform a surf clam survey during the PED phase of the project to provide an update on the condition of commercial surf clam stocks prior to construction. The ACOE has indicated that this is necessary due to the potential variability of surf clam stocks that may occur over the period of time from the feasibility study to construction. If significant commercial stocks are identified within the sand borrow site locations, the District proposes to coordinate with the NJDEP Bureau of Shellfisheries to allow for a commercial harvest within the borrow area site prior to construction.

a) If commercial densities were found at a particular borrow site during the PED phase, it would indicate that the site is productive surf clam habitat. The proposed

dredging for sand would destroy that habitat, and is not consistent with this rule. Commercial harvest prior to dredging could only be found acceptable after alternative sand sources have been investigated, and the area to be impacted has been reduced to the maximum extent practicable. Due to funding and timing considerations, the potential need for an alternative sand sources is not a component of the study that should be delayed until the PED phase of the project. Therefore, it is recommended that ACOE coordinate with BSF to identify alternative locations or procedures that could be implemented to avoid impact to the productive habitat during development of the Final Plan. Carson's Inlet and Townsends Inlet should be considered for future sand sources.

b) The ACOE has proposed a surf clam monitoring plan, however, BSF has recommended that ACOE expand the monitoring plan to include long-term surveys on each borrow area in order to collect crucial data on recovery rates.

c) Based on recommendations from BSF (ref: letter to Robert Callegari dated April 26, 1999), the Final Plan shall include information to demonstrate that the proposed dredging will not expose clay or mud substrates, which would be unsuitable habitat for surf clam recovery.

2. Historic and Archaeological Resources (N.J.A.C. 77E-3.36)

Development that detracts from, encroaches upon, damages or destroys the value of historic or archaeological resources is discouraged.

The New Jersey Historic Preservation Office (HPO) is currently coordinating with the U.S. Army Corps of Engineers on this project under Section 106 of the National Historic Preservation Act. HPO's comments indicate that several resources eligible on or potentially eligible for inclusion in the National Register of Historic Places exist near the project, but will not be impacted by the sand placement project. These include: buildings near the sand placement areas (which will receive greater protection as the result of installation of the project; three magnetic targets within Borrow Area "M3" with shipwreck-like characteristics (Borrow Area "M3" has been removed from consideration as a sand borrow area); and two nearshore targets (deeply buried in submerged sand placement locations and with characteristics not readily similar to potential shipwrecks).

Remaining are five targets or anomalies which may be shipwrecks eligible for inclusion in the National Register of Historic Places within the project's Area of Potential Effects. Based on treatment recommendations for these potential historic sites presented by the U.S. Army Corps of Engineers in a May 3, 2001 project letter and HPO's discussions with the ACOE's archaeologist, implementation of the following conditions will ensure avoidance of adverse effects to the five sites.

a) Anomaly I (in Sea Isle City) and Anomalies II and III (both in Ocean City) shall be monitored to assure their avoidance during sand installation in accordance with a monitoring plan to be developed by the U.S. Army Corps of Engineers (ACOE) which provides for their protection.

1. This study identified seven potential sand sources. Of these seven sites, three were eliminated based on NJDEP opposition to fisheries impacts (L2 and M3). Another site (O1), was eliminated due to unsatisfactory sand quality. The remaining sites selected (L1, L3, M8 and C1) are expected to accommodate the projected sand needs over a 50-year period.

If significant commercial surfclam densities develop within portions of these sites during the project life, the sites are large enough that it should be possible to take sand within the existing sites and still avoid high commercial surfclam densities. It should be noted that once an area is impacted, the permanent surfclam habitat may not be lost over a long-term. Post-dredge monitoring of these areas would provide valuable insight into the recovery rates of affected areas.

2. Area C1 is located in Corson's Inlet and is designated in this study for the periodic nourishment of Strathmere. Townsends Inlet (Area E) is already a designated borrow area for another Federal project at Avalon.

3. Concur. Monitoring for surfclams within the borrow areas will be conducted over a long-term to coincide with periodic nourishment cycles. Preservation of substrates similar to existing substrates will be emphasized through dredging depth correlation with strata in vibrocore logs.

4. Borrow depths have been chosen to ensure that two feet of sand is left in place over any clay or mud substrates. The vibrocore borings will be used to delineate clay or mud substrates in order to ensure that a minimum of two feet of sand is left intact over these areas during dredging.

5. Concur

6. Concur

b) A plan for avoidance of Targets 21:82 and 45:63, both in Corson's Inlet Borrow Area, shall be developed and implemented by the ACOE which includes establishing an ample (ideally 1000 foot) buffer area around both Targets.

c) Both of the above plans for avoidance and monitoring shall be submitted to the Historic Preservation Office for review and approval prior to implementation.

3. Endangered or Threatened Wildlife Species Habitat (N.J.A.C. 7:7E-3.38)

Areas known to be inhabited on a seasonal or permanent basis by or to be critical at any stage in the life cycle of any wildlife or vegetation identified as "endangered" or "threatened" species on official Federal or State lists of endangered or threatened species or under active consideration for State or Federal listing, are considered Special Areas. Development of this area is prohibited unless it can be demonstrated that the endangered or threatened wildlife or vegetation species habitats would not directly or through secondary impacts on the relevant site or in the surrounding area be adversely affected.

The NJ Endangered and Nongame Species Program (ENSP) is currently reviewing the document entitled *Biological Assessment for Piping Plover and Seabeach Amaranth Resulting from Beach Nourishment Projects Along the New Jersey Coast* (BA), which the Draft Integrated EIS makes reference to. The NJ Division of Fish and Game shall provide comments and recommendations regarding protection of the wildlife habitat upon completion of that review.

The proposed dredge operation may potentially impact several species of sea turtles, particularly the loggerhead sea turtle, Kemp's ridley sea turtle, green sea turtle, and leatherback sea turtle. The proposed dredge operation may potentially impact several species of marine mammals, particularly the right whale, humpback whale, finback whale, and harbor porpoise. The Draft Feasibility Study indicates that monitoring for sea turtles and marina mammals will be conducted pursuant to the Biological Opinion (National Marine Fisheries Service, 1996) in the event that a hopper dredge is used for this project.

Corson's Inlet State Park and the Strathmere Natural Area historically been utilized by piping plovers, least tern, and black skimmers which are listed species that nest along the sandy beach areas. The following conditions to avoid impact to these species will require continued coordination with ENSP, and shall be incorporated into the Final Plan.

a) All barrier island communities within the project area shall be required to develop, formally adopt and implement a beach nesting bird management plan in cooperation with NJDEP ENSP and the U.S. Fish and Wildlife Service (USFWS) to address the protection of beach nesting birds on newly created beaches.

b) For portions of the beach nourishment project that have the potential to disturb nesting piping plovers / least terns / black skimmers, work is prohibited during the nesting season (approximately April 1 through September 1). This restriction does not apply to beaches that have not had nesting birds in the preceding 3-5 years. If birds begin to nest on those previously "non-nesting" sections during or immediately preceding construction, the ACOE shall work with USFWS and NJDEP ENSP to insure that the birds are not adversely impacted by the construction activities.

7. Concur

8. Concur

9. The development and implementation of beach nesting bird management plans are currently being negotiated between the non-Federal sponsor (NJDEP) and the local municipalities. Approved management plans will be adopted prior to any construction activities.

10. Construction activities will be avoided during the nesting season in areas currently occupied by piping plovers or areas historically occupied by piping plovers. Priority would be given to placement of beachfill immediately after August 15 in areas documented to be inhabited by piping plovers within the recent past. This would be done to provide maximum recovery time for benthic organisms along the shoreline to provide a sufficient food source for potential nesting piping plovers the following spring.

c) Access easements negotiated with the private property owners or tidelands leaseholders by the ACOE or the NJDEP Division of Engineering and Construction shall include language that specifically provides for the NJDEP ENSP and / or USFWS; the right of entry by staff or approved agents; the ability to monitor nesting activity; the erection of protective fencing and signs; the construction of predator enclosures; and the right to engage in other management activities as necessary.

4. Sand and Gravel Extraction (N.J.A.C. 7:7E-4.2(i))

Sand extraction for beach nourishment is conditionally acceptable provided that Special Areas, as defined in the RCZM, are not directly or indirectly degraded.

Provided that the conditions above at 1. Surf Clam Areas (N.J.A.C. 7:7E-3.3) is met, this project is acceptable pursuant to this rule.

5. Public Open Space (7:7E-3.40)

Public open space includes land areas owned or maintained by State agencies used for or dedicated to conservation of natural resources, public recreation, visual or physical public access or wildlife protection or management. Public open space includes lands held by the New Jersey Natural Lands Trust (N.J.S.A. 13:1B-15.119 et seq.) Development that adversely affects existing public open space is discouraged.

The Draft Feasibility Report indicates that the proposed berm and dike will extend 125 feet north of Seaview Avenue in Strathmere, and taper 734 feet into the Strathmere Natural Area. In accordance with the Natural Areas System Rules at N.J.A.C. 7:5A-1.9(e)11 this project must be reviewed by the Natural Areas Council and approved by the Commissioner. This approval shall be obtained prior to completion of the Final Plan.

If you have any questions regarding this letter, please do not hesitate to call Helen Owens of my staff at (609) 292-8262.

Sincerely,

Richard H. Kropp
Richard H. Kropp
Director
Land Use Regulation Program

Date 6/28/01

- c) Steve Allen, Planning Div., U.S. ACOE, Philadelphia District
- Bernard J. Moore, NJDEP Engineering & Construction
- Lawrence Schmidt, Office of Program Coordination
- Andy Didun, NJDEP Division of Fish, Game & Wildlife
- Robert Cartica, NJDEP Natural Lands Management
- Debra Fimble, NJDEP Historic Preservation Office
- Kim Springer, LURP

11. The project sponsor, NJDEP, would need to negotiate easements to allow USFWS and NJDEP staff to monitor and manage nesting activities.

12. Sand extraction for beach nourishment has the potential to directly or indirectly degrade surfclam areas (N.J.A.C. 7:7E-3.3) and Shipwrecks and Artificial Reefs (N.J.A.C. 7:7E-3.13) as identified in Subchapter 3 "Special Areas". The proposed borrow areas currently do not "support significant commercially harvestable quantities of surfclams", however, they may support this in the future, given the variability in their distribution and densities. Also these areas may also be considered as "areas important for recruitment of surfclam stocks." As discussed in previous responses, monitoring is necessary to determine if significant commercially harvestable quantities of surfclams are present within these sites, and to document recruitment rates of impacted areas. Two targets were identified as potential shipwreck sites within the borrow area C1. The placement of buffer zones around these targets would insure protecting these special areas.

13. See comment #12.

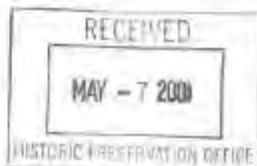
14. Concur. A draft detailed plan will be submitted to the Natural Areas Council for approval by the Commissioner during the Pre-construction, Engineering and Design Phase of the project.



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
WANAMAKER BUILDING, 100 PENN SQUARE EAST
PHILADELPHIA, PENNSYLVANIA 19107-3300

MAY 03 2001



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Environmental Resources Branch

SUBJECT: Section 106 Consultation, Great Egg Harbor Inlet to Townsends Inlet, Draft Feasibility Report and Integrated Environmental Impact Statement

Ms. Dorothy P. Guzzo, Administrator
New Jersey Historic Preservation Office
New Jersey Department of Environmental Protection
CN 404
Trenton, New Jersey 08625

Dear Ms. Guzzo:

This letter is in regard to the Philadelphia District's proposed plan to construct shore protection measures as detailed in the enclosed document: *Great Egg Harbor Inlet to Townsends Inlet Feasibility Study, Draft Feasibility Report and Integrated Environmental Impact Statement* (see Enclosure #1). This report evaluates existing conditions and shore protection problems facing the communities of Ocean City, Strathmere, Whale Beach area, and Sea Isle City. The Draft Integrated Environmental Impact Statement evaluates environmental impacts of the proposed plan that was developed to address the shore protection problems identified in the study. The feasibility study is being cost-shared equally by the Federal government and the New Jersey Department of Environmental Protection, which is the non-Federal sponsor.

The study area is located in southern New Jersey and extends approximately 15 miles in length from Great Egg Harbor Inlet to Townsends Inlet. It encompasses two barrier islands, Peck Beach (containing Ocean City) and Ludlam Island (Strathmere and Sea Isle City). The study area has been historically subject to significant damage due to storm events. The 1962 Nor'easter resulted in damage to 8,467 structures within the entire study area at a cost of \$140,000,000 (converted to 1999 dollars). Continued real estate development since this time has increased the potential for storm damages.

The feasibility study evaluated various alternative plans of improvement formulated for hurricane and storm damage reduction. To effectively address the problem, separate plans were formulated for Ocean City and Ludlam Island.

The selected plan for South End Ocean City consists of a berm and dune utilizing sand obtained from an offshore borrow source. The dune crest has a top elevation of -12.8 ft NAVD88, while the berm extends from the seaward toe of the dune for a distance of 100 feet at an elevation of -7.0 ft NAVD88 before sloping down at 1V:25H to elevation -1.25 ft NAVD88. The remainder of the design template parallels the existing profile slope to the depth of closure. The total width from the seaward toe of the dune to Mean High Water (MHW) is 218 feet.

The plan extends from 34th Street to 59th Street for a total length of 2.6 miles. Initial sand quantity is estimated at 1,603,000 cubic yards. Periodic nourishment of 403,000 cubic yards is scheduled to occur every 3 years synchronized with the existing Federal beachfill project at Ocean City (Great Egg Harbor Inlet to 34th Street). Material would be taken from the borrow source identified as "M8".

The selected plan for Ludlam Island also consists of a berm and dune utilizing sand obtained from an offshore borrow source. The dune crest has a top elevation of +14.8 ft NAVD88, while the berm width extends from the seaward toe of the dune for a distance of 50 ft at an elevation of +6.0 ft NAVD88 before sloping down (varying from 1V:30H to 1V:50H) to elevation +1.25 ft NAVD88. The remainder of the design template parallels the existing profile slope to the depth of closure. The total width from the seaward toe of the dune to Mean High Water (MHW) varies depending upon location from 190 to 285 feet.

The plan extends from about 125 feet north of Seaview Avenue in Stratimere to Pleasure Ave (just beyond 93rd Street) in Sea Isle City for a total length of 0.5 miles. In addition, there is a taper of 734 feet into Curson's Inlet State Park and a taper of 66 feet into the terminal groin south of 93rd Street. Total length of beachfill, including tapers, is 6.7 miles. The plan also includes the extension of two stormwater outfall pipes at both 84th and 88th Street in Sea Isle City by 150 feet.

Initial sand quantity is 5,146,000 cubic yards. Periodic nourishment of 1,820,000 cubic yards is scheduled to occur every 5 years. Material would be taken from the borrow sources identified as "L3", "L1", and "C1".

In accordance with Section 106 of the National Historic Preservation Act of 1986, as amended, and its implementing regulations, 36 CFR 800, the Philadelphia District has conducted several cultural resources investigations in order to identify and evaluate historic properties in the project area that could potentially be impacted by this proposed activity.

The Philadelphia District conducted a Phase I cultural resources investigation in 1995 for the State of New Jersey in preparation for a state funded beach nourishment project located between 34th and 59th streets in Ocean City. This area is now part of the present project and is located north of Curson's Inlet. In the report of the study, entitled *Phase I Submerged and Shoreline Cultural Resources Investigations, Peck Beach (34th Street to Curson Inlet), City of Ocean City, Cape May County, New Jersey* (Dolan Research, Inc. & Hunter Research, Inc. 1996), researchers discuss the results of background and documentary research, terrestrial pedestrian survey, and the remote sensing survey of Borrow Area #1 (see Enclosure #2). Two historic structures of note were found in an advanced state of disrepair and neither is considered eligible for inclusion in the National Register. The remote sensing survey identified no potentially significant underwater cultural resources in Borrow Area #1.

A Phase 1A cultural resources documentary investigation of the entire 15 mile long study area between Great Egg Harbor Inlet and Townsends Inlet was conducted in 1997. In the report of this study entitled *Phase 1A Cultural Resources Investigations, Great Egg Harbor Inlet to Townsends Inlet, Cape May County, New Jersey* (Dolan Research, Inc. and Hunter Research, Inc. 1999), researchers utilized background and documentary research to assess the potential for cultural resources with an emphasis on study areas not previously investigated (see Enclosure #3). No field investigations were carried out as part of this research. The 34th Street Train Station, determined eligible for listing in the National Register of Historic Places as part of a thematic nomination prepared in 1984, was identified in the immediate project area.

A Phase 1B cultural resources investigation was conducted in the present 8.5 mile long project area in 1998. Entitled *Phase 1 Submerged and Shoreline Cultural Resources Investigations, Great Egg Harbor Inlet to Townsends Inlet, Cape May County, New Jersey* (Hunter Research, Inc., Dolan Research, Inc. and Enviroscan, Inc. 1999), the report of this investigation describes the results of background and documentary research, visual inspection and pedestrian magnetic survey of the shoreline areas at low tide, and remote sensing survey of offshore borrow areas and near-shore sand placement areas (see Enclosure #4). No evidence of prehistoric archaeological resources was noted in the project area. A late 19th/early 20th century frame boat house and late 19th century frame beach cottage were noted on the shoreline in Sea Isle City and may be considered eligible for listing on the National Register of Historic Places.

Three magnetic anomalies were found within the tidal zone during the pedestrian magnetometer survey (Anomaly I in Sea Isle City and Anomalies II & III in Ocean City) and may represent potentially significant cultural resources. However, researchers did not recommend any further work at these locations because the material at each site is buried and not likely to be damaged during proposed sand placement activities. Two additional magnetic anomalies located in the underwater near-shore sand placement area - one off Strathmere, the other off Ocean City - may also represent significant cultural resources, such as shipwrecks. Finally, three magnetic targets exhibiting shipwreck characteristics were located in Borrow Area "M3". No potentially significant targets were identified in offshore Borrow Areas L1 and Q1.

A remote sensing cultural resources survey of four additional proposed offshore borrow areas L1, L3, M8, and C1 (Corson's Inlet) was completed in July 2000. In the draft report of the investigation, entitled *Supplemental Phase 1 Submerged Cultural Resources Investigation, Great Egg Harbor Inlet to Townsends Inlet, Cape May County, New Jersey* (Dolan Research, Inc. August, 2000), researchers describe the location of two magnetic underwater targets exhibiting shipwreck characteristics in the C1 (Corson's Inlet) Borrow Area (see Enclosure #5). No targets resembling potential cultural resources were identified in Borrow Areas L1, L3, and M8.

A final cultural resources investigation was conducted in 2001 to determine if the four remote sensing targets recommended for further investigation were historically significant (see Enclosure #6, Executive Summary dated April 27, 2001). These targets are 2:2552, 3:965, 21:82 and 45:63. Investigations at near-shore and buried Targets 2:2552 and 3:965 were inconclusive. However, researchers indicate that the material responsible for generating the magnetic readings at these locations is likely to be wire rope, outfall pipe, or fiber optic cable and no further work is recommended. Divers could not confirm the source of Targets 21:82 and 45:63 due to adverse site conditions present in Corson's Inlet. Researchers believe that both targets exhibit strong shipwreck characteristics and should be avoided.

Based on the results of the above referenced cultural resources investigations, it is our opinion that proposed sand borrowing and placement activities, as detailed in the enclosed draft project report, could potentially cause physical destruction or damage to five potentially significant remote sensing targets. These targets include Anomaly I (Sea Isle), Anomaly II, Anomaly III (both in Ocean City), Target 21:82 and Target 45:63 (both in Borrow Area C1 in Corson's Inlet). However, it is our position that the impacts can be avoided and that measures can be taken to ensure that the project will have no adverse effect on these buried and submerged locations. These measures include monitoring of Anomalies I, II, and III during sand placement activities, the delineation of 1000 foot buffers around Target 21:82 and Target 45:63, and avoidance of the buffer areas during sand borrowing activities.

Pursuant to 36 CFR 800.5 (b) of the Advisory Council on Historic Preservation's (Council) regulations, please review the enclosed documentation and provide this office with your opinion regarding our "no adverse effect" determination within thirty days of receipt of this correspondence. In addition, any comments you may have regarding the enclosed reports would be appreciated. Should you have any questions regarding this matter, please contact Mr. Michael Swanda, Environmental Resources Branch, at (215) 656-6556.

Sincerely,


Robert L. Callegari
Chief, Planning Division

Enclosures

CONCUR

JUN 2 2001

DEPUTY STATE HISTORIC
PRESERVATION OFFICER

1.

1. The N.J. State Historic Preservation Office concurs with the Philadelphia District's determination of "no adverse effect" provided that conditions for monitoring and avoidance as described in the Philadelphia District's letter are met.

Dear Mr. Callegari,

As a member of the Strathmere Fishing and Environmental Club I urge the Army Corp of Engineers to consider dredging Corson's Inlet both inside and outside of the inlet in conjunction with the beach replenishment scheduled for this fall. I feel that dredging the inlet will allow the water to flow in and out of the inlet in a more direct fashion and reduce further erosion of Corson's Inlet State Park and the Strathmere Beach.

I thank you for your consideration in this matter.

Name
Address

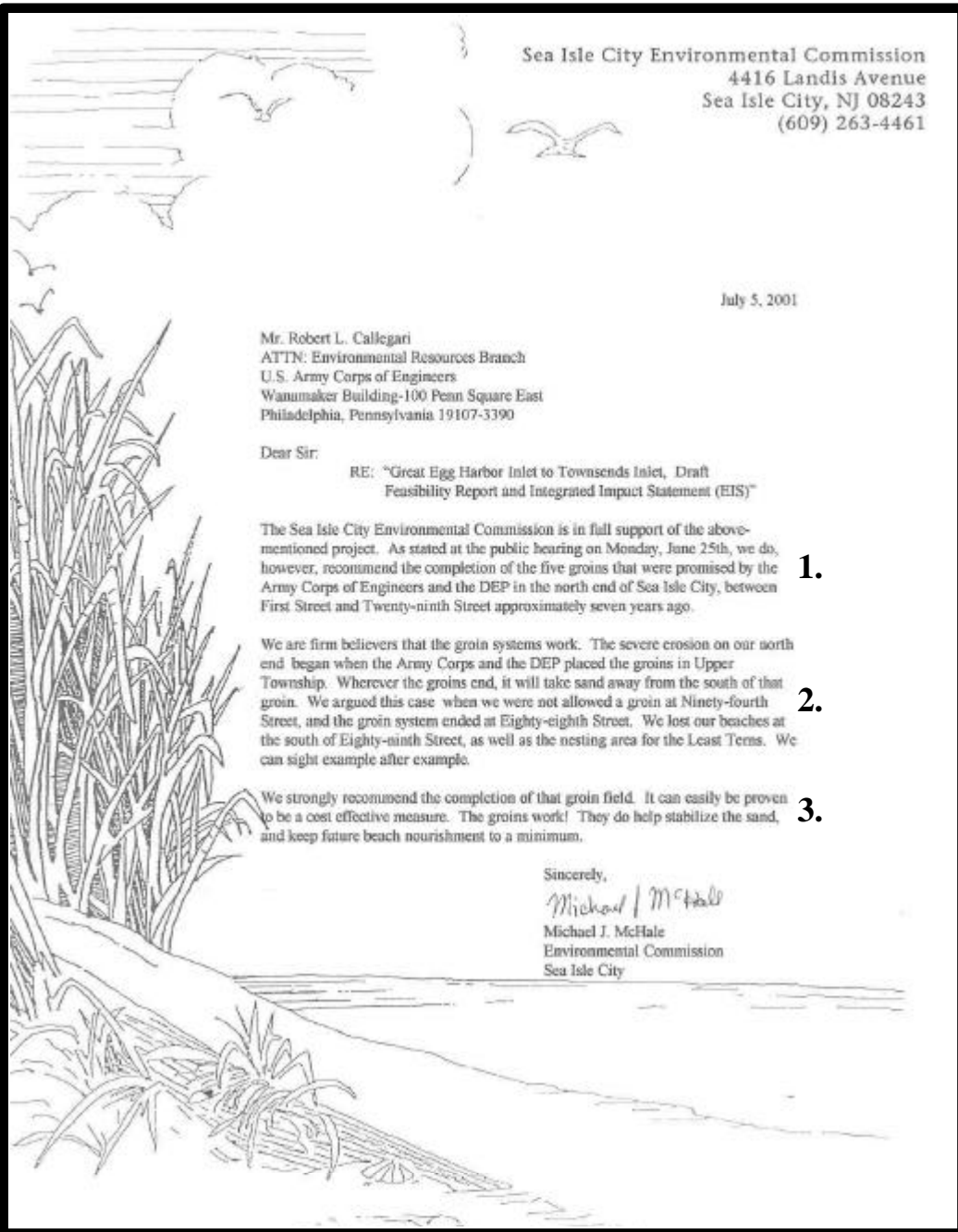
Names and Addresses Withheld

Signature

Signatures Withheld

1.

1. The beach replenishment scheduled for the fall is a state project. The proposed Federal project detailed in the *Great Egg Harbor Inlet to Townsends Inlet Feasibility Report* would however, also use Corson Inlet as a borrow source.



Sea Isle City Environmental Commission
4416 Landis Avenue
Sea Isle City, NJ 08243
(609) 263-4461

July 5, 2001

Mr. Robert L. Callegari
ATTN: Environmental Resources Branch
U.S. Army Corps of Engineers
Wanamaker Building-100 Penn Square East
Philadelphia, Pennsylvania 19107-3390

Dear Sir:
RE: "Great Egg Harbor Inlet to Townsends Inlet, Draft
Feasibility Report and Integrated Impact Statement (EIS)"

The Sea Isle City Environmental Commission is in full support of the above-mentioned project. As stated at the public hearing on Monday, June 25th, we do, however, recommend the completion of the five groins that were promised by the Army Corps of Engineers and the DEP in the north end of Sea Isle City, between First Street and Twenty-ninth Street approximately seven years ago. **1.**

We are firm believers that the groin systems work. The severe erosion on our north end began when the Army Corps and the DEP placed the groins in Upper Township. Wherever the groins end, it will take sand away from the south of that groin. We argued this case when we were not allowed a groin at Ninety-fourth Street, and the groin system ended at Eighty-eighth Street. We lost our beaches at the south of Eighty-ninth Street, as well as the nesting area for the Least Terns. We can sight example after example. **2.**

We strongly recommend the completion of that groin field. It can easily be proven to be a cost effective measure. The groins work! They do help stabilize the sand, and keep future beach nourishment to a minimum. **3.**

Sincerely,
Michael J. McHale
Michael J. McHale
Environmental Commission
Sea Isle City

1. Acknowledged. The proposed groin construction was a state project. The Corps was only involved with the permitting aspect.

2. Acknowledged. According to our records, the groins in Upper Township were constructed by the State and local municipality.

3. Groins are effective in reducing sand loss due to longshore transport. Therefore, as part of the feasibility study, a analysis was performed to determine the cost-effectiveness of groin construction in the Whale Beach area. However, in this case, groins would only be able to reduce sand nourishment requirements by about 4%. This is not enough savings to offset the substantial initial cost of the groins.

NORTH END ASSOCIATION (NORTH)

P.O. BOX 98 • Sea Isle City, NJ 08243



July 6, 2001

Mr. Robert L. Callegari
Environmental Resources Branch
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

RE: Great Egg Harbor to Townsend Inlet, Draft Feasibility Report (EIS)

Dear Mr. Callegari:

On behalf of the North End Association, which has 125 members, we would like to add these comments to the statement made at the public hearing in Sea Isle City on June 18, 2001:

(1) Please omit any mention of the north end of Sea Isle City being in Whale Beach. (See news clippings enclosed that clearly state that the whales were washed on shore in Strathmere. In fact, a new sign recently appeared on Landis Avenue/Ocean Drive north of 1st Street in Strathmere stating "Welcome to Whale Beach in Upper Township.") 1.

(2) As the public relations director for Sea Isle City and a former teacher of English, I have been waging a lone battle to use "Townsend Inlet," not "Townsend's Inlet," or the more widely used "Townsend's Inlet" in referring to the inlet by name. They are incorrect. 2.

(3) Although your study maintains that the installation of five groins promised to the city by the N.J. Department of Environmental Protection (NJDEP) in a letter from Commissioner Robert C. Shinn, Jr. in December 1997 would not be cost effective, we disagree and state categorically that a beach replenishment project in the north end without the construction of the five groins would be a very costly error with the need to replenish north end beaches annually instead of the proposed five years. Those of us living in the area can attest to the destruction of 100 feet of dunes caused by the construction of the groin in the south end of Strathmere. 3.

(4) The city needs to have the groin field designed by the U.S. Army Corps of Engineers after the disastrous "Storm of the Century" in March of 1962 completed. The north end is the only section of the city where there are no groins to stabilize our beach and protect our dunes. The geotubes installed by the county and maintained by the city are a bandaid solution. Even with no major storms, more than 20 feet of dunes was washed away in 2000 and 2001, resulting in major cost to the city. 4.

We appreciate the corps' proposed beach replenishment project, but we hope that those undertaking the feasibility study will reconsider the request for the groins. 5.

Sincerely,

Irene S. Jameson, Ed.D.
Chairperson

1. There did not appear to be any official set boundaries for Whale Beach when the study was initiated, thus it was mostly referred to in the report as the "Whale Beach area." Regardless, our use of the term Whale Beach for a specific area does not endorse any "official" federal government designation. Unfortunately, time constraints do not allow for the requested revisions to the report.

2. It is agreed that "Townsend Inlet" is better grammatically, however "Townsend's Inlet" is the term used on official mapping such as NOAA charts.

3. As part of the feasibility study, a detailed analysis was performed to determine the cost-effectiveness of groin construction. According to our analysis, groins would only reduce sand nourishment requirements by about 4%. This is not enough savings to offset the substantial initial cost of the groins. Even without the groins, our calculations show that sand nourishment every 5-years should be adequate.

4. Acknowledged. See previous response.

5. We have verified our findings that groin construction is not a more economical solution than the selected plan.



Whale
Beach

Trussby
February 16th
1950

Strathmore
1950

Off Nelson Road,
Strathmore



Isle County Times

Isle County's Home Newspaper
 A ISLE CITY, NEW JERSEY, FRIDAY, FEBRUARY 17, 1939

60-Foot Whale Draws Unprecedented Throngs To Strathmere



The picture shows an estimated 400 of the size of the big, 60-foot whale that washed up on Nelson beach, Strathmere, late Friday, and the two days following. Here it is in that spot, apparently to be a dead whale, but it is still alive. (Special photo by the staff.)

Americanism Program To Be Presented Wed.

Rep. Auchincloss Will Be Principal Speaker in County

Local affairs have been presented by the Americanism program in the County American League Assembly, which will present an Americanism program in the conference of the county building.

Mr. Auchincloss, representing the Congressional District, will be principal speaker. The program will feature the public. It will be held at 8 p. m.

VanZorst, Corson And Ferus Winners In Upper Election

Defeat DeSantis, Cassidy, McHastars for School Bd. Posts; Record Number of Votes Cast

Local affairs have been presented by the Americanism program in the County American League Assembly, which will present an Americanism program in the conference of the county building.

Girl Scouts Hold Birthday Party

SEA ISLE CITY—Members of the three troops of Girl Scouts of the Sea Isle City group celebrated their annual birthday on Sunday evening with a local convalescent party at the American Legion, Commodore A. V. H. B. B.

Drug Store At Sea Isle Sold To Phila. Man

Has Been Operated For 28 Years by M. S. Feldman

SEA ISLE CITY—News & Editorials on Tuesday (16) in the first of the Sea Isle City group celebrated their annual birthday on Sunday evening with a local convalescent party at the American Legion, Commodore A. V. H. B. B.

Retirement

Local affairs have been presented by the Americanism program in the County American League Assembly, which will present an Americanism program in the conference of the county building.

February 19-26 is BROTHERHOOD WEEK
 Accept or Reject People on Their Individual Worth

75,000 View Dead Mammal On Sunday

Linger in 4 Blocks From Where One in 1929 Died

HEALTHY—A crowd which has gathered in front of the Strand Hotel, 100 N. 10th St., Sunday afternoon, Feb. 17, to view the body of a dead whale, which was found on the beach of Sea Isle City, N. J., on Sunday, Feb. 17, 1939, is estimated to be the largest crowd of people ever gathered in the city.

Co. League Of Municipalities Meets Tonight

Will Be Host To Atlantic County Group at Avalon

Atlantic County will host the Atlantic County League of Municipalities on Tuesday evening, Feb. 18, at the Hotel Avalon, 100 N. 10th St., in Atlantic City.

Drug Store At Sea Isle Sold To Phila. Man

Has Been Operated For 28 Years by M. S. Feldman

SEA ISLE CITY—News & Editorials on Tuesday (16) in the first of the Sea Isle City group celebrated their annual birthday on Sunday evening with a local convalescent party at the American Legion, Commodore A. V. H. B. B.

Seek Blood Donors In 5 Communities

Woodsboro, Del. Presses for Blood Donors

Woodsboro, Del. Presses for Blood Donors

PAGE SIX
 75,000 View Dead Mammal On Sunday

Healthier—A crowd which has gathered in front of the Strand Hotel, 100 N. 10th St., Sunday afternoon, Feb. 17, to view the body of a dead whale, which was found on the beach of Sea Isle City, N. J., on Sunday, Feb. 17, 1939, is estimated to be the largest crowd of people ever gathered in the city.

Clark Writes Of 'What Next For Our American Cities?'

By the author of 'What Next For Our American Cities?'

Clark writes of 'What Next For Our American Cities?'

Plans To Dis

Local affairs have been presented by the Americanism program in the County American League Assembly, which will present an Americanism program in the conference of the county building.

Engagement An

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Two Narrowly Dodge Death At Crossing

Car Crashes Into Freight in Fire of Gorking; Woman Is Critically Injured

POST NO WARNING LIGHTS

A young woman is critically injured and a freight train derailed today at a crossing on the Oregon coast, where the post no warning lights were in operation.

The accident occurred at 11:30 a. m. on the crossing between the Oregon coast and the city of Gorking. The freight train was carrying a load of lumber and was moving southward at the time of the collision.

The woman, who was driving a car, was thrown from the vehicle and sustained serious injuries. She is being treated at the local hospital.

The cause of the accident is believed to be the failure of the post no warning lights to function properly. The freight train was moving at a high rate of speed at the time of the collision.

The accident has caused a delay in the freight train's schedule. The woman's injuries are expected to be serious.

Cold Spring Granite Host To Kivanians

The Kivanians of the Cold Spring Granite Club are holding a social gathering at the club house. The event is open to all members and their families.

5 to 100 Thousand Jam Streets See Huge Whale; Traffic Choked

Dog, Hit By Car, Causes Burning Of 3 Buildings

Ocean City Given Score After Injured Animal Bites Master's Hands

HATCH IS DROPPED IN GAS

Three ill-protected buildings near the beach were destroyed by fire today. The fire started in a gas hatch and spread rapidly.

The buildings, which were used for storage, were completely destroyed. The cause of the fire is believed to be a gas leak.

The fire started in a gas hatch and spread rapidly. The buildings were completely destroyed.

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The fire started in a gas hatch and spread rapidly. The buildings were completely destroyed.

Wins Road Bid By Margin of 1/5 of a Cent

The bid for the new road was won by a margin of one-fifth of a cent. The contractor was awarded the contract.

Chest Clinics Gain With Popular Favor

Chest clinics are gaining in popularity. The clinics provide a convenient and effective way to treat chest ailments.

This Boy Just Wanted to Play Rail, and He Did

County Service Club Hear the Amazing Story of How He Tuned Out

'BOY EXPERT' GIVES ADVICE

A young boy, known as the 'boy expert', gave advice to the County Service Club. The boy's story is an amazing tale of how he tuned out.

The boy's story is an amazing tale of how he tuned out. He gave advice to the County Service Club.

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The boy's story is an amazing tale of how he tuned out. He gave advice to the County Service Club.

Reminiscence of Long Eastern To Visit

From New Jersey, Pennsylvania, New York, Delaware and Other States

AVAILABLE PARKING SPACE AT PREMIUM ALL SUMMER

60-Foot One-Blocker, Not a Pleading Problem; May Be Tuned to Day, Dignified

The availability of parking space is a problem for many businesses. A 60-foot one-blocker is available at a premium all summer.

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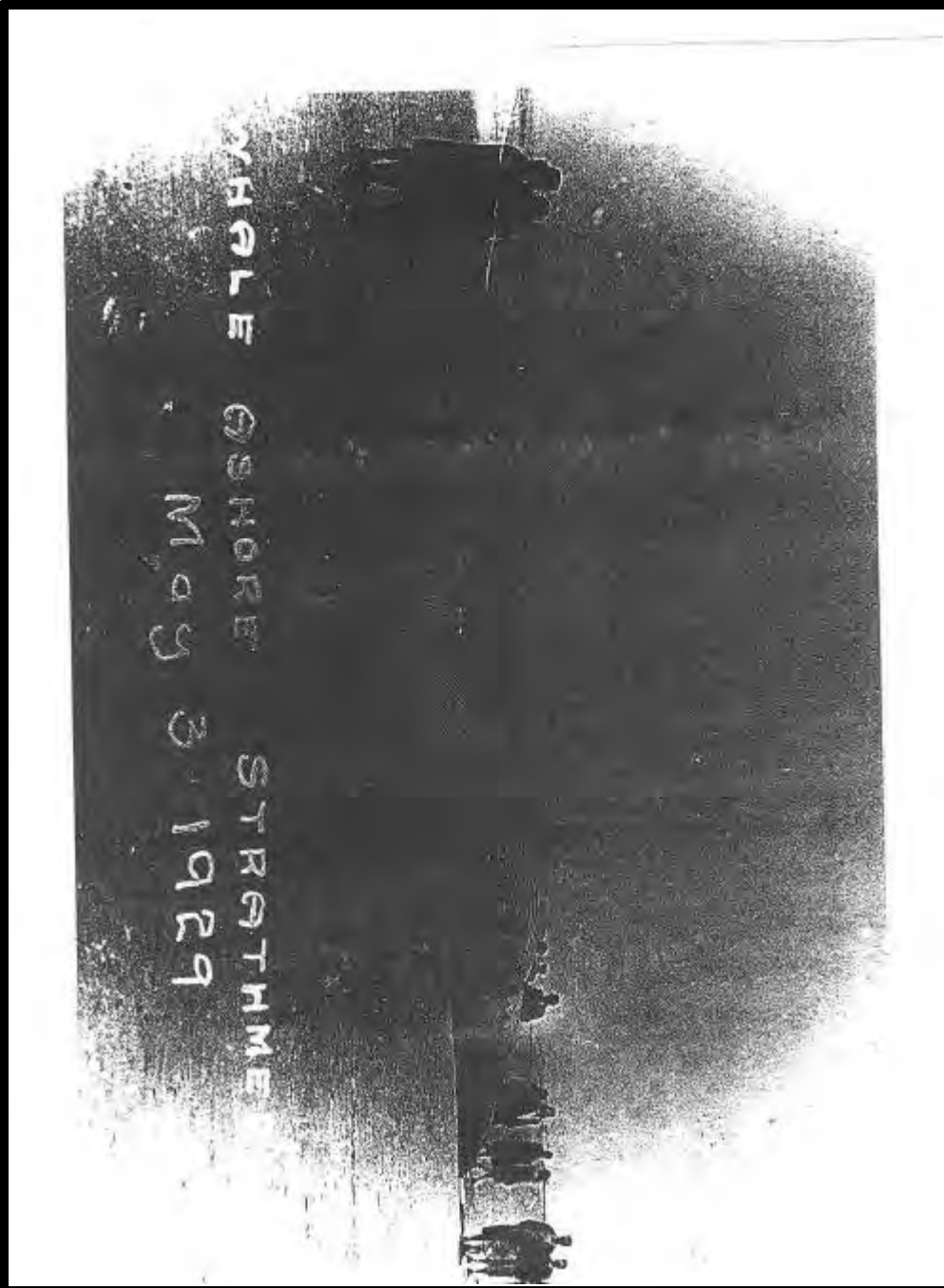
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WHOLE SHORE STRATHMORE May 3 1929

WALKER, PREVITI, HOLMES & ASSOCIATES

Engineers - Surveyors
Environmental Consultants - Planners

JOHN R. WALKER
ANDREW A. PREVITI

JAMES N. HOLMES
(1963-1999)

JOHN A. FAIRHELLER, JR.
ROGER D. McLARNON

Mailing Address:
P.O. Box 569
Ocean City, NJ 08226-0569

156 Stagecoach Road
Marmora, NJ 08223
(609) 390-1927
Fax: (609) 390-0040

July 3, 2001

Lt. Colonel Timothy Brown, District Engineer
U.S. Army Corps of Engineers, Philadelphia District
John Wanamaker Building
100 Penn Square East
Philadelphia, PA. 19107-3390

Re: New Jersey Shore Protection Study
Great Egg Harbor Inlet to Townsends Inlet

Dear Lt. Colonel Brown:

I am the City Engineer for the City of Sea Isle City and in this capacity I received a copy of the following report:

New Jersey Shore Protection Study
Great Egg Harbor Inlet to Townsends Inlet

Draft Feasibility Report
Integrated Environmental Impact Statement
Appendix A: Pertinent Correspondence, December, 2000

Please also be advised that I attended the June 25, 2001 Public Meeting in Sea Isle City relative to this project.

The purpose of this letter is to provide comment relative to the above noted report. I also testified at the June 25th Hearing and the contents of this letter are similar to comments noted at the Hearing.

Please take into account the following comments when finalizing the Feasibility Study:

- 1) The study notes storm water outfalls on Ludlam Island at 84th and 88th Street as noted on Page ES-3, and at other locations on other pages in the report. Storm water outfalls are actually located at 82nd Street and at 86th Street.

1.

1. Acknowledged and corrected.

- 2) A selective plan for Ludlam Island calls for a renourishment under a five (5) year cycle. I asked at the Public Hearing that if a need arises to renourish before the five year period ends, will the ACOE undertake this work or will it be a State/Local responsibility? Representatives of the ACOE indicated that the work would not be a State/Local responsibility, but would be a joint responsibility under the appropriate funding formula.
- 3) The selected plan reflects the BD50-14.8 Berm & Dune Restoration Alternative. This alternative was deemed to be the most cost effective. The study also analyzed a Beach-Dune & Groin Option. Page 5-79 of the study summarizes the groin option as follows:

“The addition of the groins would not produce greater net benefits, and therefore option was no longer considered”.

I would make the following comments concerning the groin option:

- A) The City of Sea Isle City supports the inclusion of the construction of low profile groins in this project. The City has proposed a groin field for the beaches north of 31st Street in Sea Isle City and has even entered into an agreement with the NJDEP to construct these groins. I am enclosing for your review a copy of a design study prepared for the City and our office by J. Richard Weggel, Ph.D., P.E., entitled:

Design of a Groin Field For the Beaches North of Thirty-First Street in Sea Isle City, New Jersey

The performance of the existing groin field on Ludlam Island has been studied in the past. These studies have found that the beaches within the groin field are relatively stable and wider than the beaches north and south of the groin field. The extension of low profile groins to the project area north of 31st Street will help to produce a wider beach and will keep any beach nourishment materials in place for a longer period of time.

- B) The design study noted in Section A above recommends construction of the low profile groins over a period of time. Sequential construction of the groins should be considered in the cost benefit analysis. I do not think that this was the case and that the initial construction costs for all five groins was factored in as being constructed at the very beginning of the project. Sequential construction should have a positive impact upon “net benefits”.

2.

3.

4.

2. Correct. All sand nourishment is cost-shared between the Federal and non-Federal sponsor. As part of the project, periodic sand nourishment will be placed to maintain the design template when necessary.

3. Acknowledged. However, our analysis showed that groin construction would only reduce nourishment quantities by about 4%. This reduction was not enough for it to be cost-effective over the 50-year period of analysis.

4. In the feasibility study, groin construction was assumed to occur simultaneously. Sequential construction would indeed reduce average annual costs. However, since average annual benefits would also be reduced, and are low in magnitude, it is doubtful that this alternative would produce greater net benefits than the selected plan.

- 4) The existing 88th Street groin and the terminal groin located south of 93rd Street are missing from Figure 6.1-22.

5.

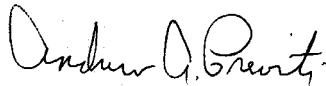
The City of Sea Isle City is very much in favor of the proposed project. However, while the City supports the Selected Plan, the City thinks that the Selected Plan could be improved by the inclusion of the five low profile groins described in Dr. Weggel's report. Sea Isle City Mayor, Leonard C. Desiderio, requested at the June 25th Hearing that the groin option be reconsidered and be included in the Selected Plan. I support the Mayor's suggestion and I base this on my twenty-eight years of experience with the beaches of Sea Isle City.

Thank you for providing me with the opportunity to review the Draft Feasibility Report and I shall await the finalization of the report.

If you should have any questions concerning my comments, please feel free to call me.

Very truly yours,

WALKER, PREVITI, HOLMES & ASSOCIATES



Andrew A. Previti, P.E.
City Engineer

AAP/pp

c: Mayor and Board of Commissioners
Theresa Tighe, RMC
Bernard J. Moore, NJDEP
Irene Jameson, SIC
File No. 7516
File No. 7206

5. Acknowledged. The digital mapping was produced prior to the construction of the terminal groin while the 88th Street groin was mistakenly omitted. These errors have been noted in the figure.

Dave & Lois Budd

40 N. Woodland Ave. 5117 – 5119 Central Ave.
Woodbury, NJ 08096 Ocean City, NJ 08226
856-845-0195-work 609-399-0479
856-845-8865
856-384-1798-fax

6/28/01

Robert Callegari
Attn: Environmental Resources Branch
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

Dear Mr. Callegari,

I attended the workshop in Ocean City, NJ last night concerning the shore protection program from 36 th st to 59 th street. Thank you for an informative evening.

Our family is against building of dunes in front of our beachfront home at 51 st . We have lived there since 1945 and have witnessed all of the storms you mentioned in your presentation. In 1962 we lost both our home and our grandfathers home next door, to the strong northeaster. This turned out to be a blessing. The storm undermined an old bulkhead and then had nothing to stop it for 3 days. The following year a new bulkhead with large rocks , that were brought in by rail, were placed 10 – 12 feet deep. This is the best thing that has been done to the beach in the last 50 years.

I believe the records show no storm has ever had levels above this bulkhead. I am very comfortable with this as a protection for our property. The dunes and fencing that have been recently created have cut off my view of the beach and water and have greatly restricted our access to the water. Our family loves the beach. Our grandkids have kyacks, surfboards , boogie boards, skimmer boards etc they enjoy using, when they can get them to the water.

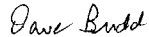
Once created a dune system becomes almost impossible to control. The height of dunes in other areas of Ocean City are evidence of this. The City has recently lost a highly publicized case where a judge ruled that the dune height had reduced property value due to a cut off view, restricted access, and damages were awarded. I think many property owners are frustrated .

Saying that I realize that by definition, being a beachfront owner makes me in the minority. If dunes are eventually built, access for property owners must be taken into consideration. The present proposal while great according to the textbook definition of keeping the dunes as far away from the high tide line as possible, have put it right up against my property line. There needs to be a trough similar to the one there now with several cut throughs to the beach.

I also would like to see more information on how to keep the beach sand from drifting southward. There are tremendous amounts of sand in and off of Corsons inlet that are part of your replenishment project. If we could keep it from drifting, less pumping would be necessary.

I hope some compromise can be worked out. Mr. Rambo seemed to understand the problem and was a very good listener. At some point the needs of those you are trying to protect need to be addressed. Beach replenishment, OK, but I do not know what dunes give us that we do not already have with the bulkhead.

Sincerely,



David L. Budd

1. **During the Preconstruction, Engineering, and Design Phase, the Corps will coordinate with the state and city regarding construction of the dune in the same location as the recently created dune, leaving the “trough” or access area in-place. Coordination regarding dune walkovers for beach access will also be accomplished.**
2. **The feasibility report examined the alternative of constructing groins to reduce longshore transport and therefore periodic sand nourishment requirements. However, nourishment quantities were relatively low enough that groin construction was found not to be cost-effective in this situation.**

Section 3 – Public Workshop Minutes

1

1 STATE OF NEW JERSEY
 2 OCEAN CITY
 3
 4 RE: ARMY CORPS OF ENGINEERS
 5 PUBLIC HEARING ON FEASIBILITY
 6 STUDY FOR GREAT EGG HARBOR
 7 INLET, TOWNSENDS INLET,
 8 OCEAN CITY AND LUDLAM ISLAND
 9
 10 PLACE OF HEARING: MUNICIPAL BUILDING
 11 SEA ISLE CITY, NEW JERSEY
 12
 13 DATE OF HEARING: JUNE 25, 2001
 14
 15 TIME OF HEARING: 7:00 p.m.
 16
 17 PANEL MEMBERS SPEAKING ARE:
 18 CARMEN ZAPPILE
 19 BERNIE MOORE
 20 GUS RAMBO
 21 SUSAN LUCAS
 22
 23 ALSO PRESENT: RICHARD CHILAN
 24 Chief of Public Affairs
 Army Corps of Engineers

 COURT REPORTING ASSOCIATES
 1422 Chestnut Street, Suite 408
 Philadelphia, PA 191021
 (215) 564-0466

 COURT REPORTING ASSOCIATES

3

1 Brigantine and Absecon.
 2 In Cape May, again, a very busy
 3 chart with lots of studies and lots of
 4 construction work ongoing.
 5 As we shift from the New York
 6 District Corps and some of the work that
 7 they were doing, and we finished all of
 8 their work up there, we are going to be
 9 shifting down into the Philadelphia
 10 District now, and you are going to see
 11 dredges working off your shoreline on kind
 12 of a regular basis.
 13 My own dream and idea is that every
 14 year for the next few years we are going to
 15 have two dredges working off the shoreline.
 16 We are going to have a monopoly on them.
 17 This is where it is. This is the
 18 project that we want to work on.
 19 In addition, we are also looking at
 20 offshore resources of sand. You saw the
 21 little slides, these little segments of our
 22 shoreline and projects. Each of those
 23 little segments have their own individual
 24 borrow sites, enough sand in those borrow

COURT REPORTING ASSOCIATES

2

1 (Following the Pledge of Allegiance
 2 and introductions by Susan Lucas, the
 3 following transpired:)
 4 MR. ZAPPILE: Actually, Bernie Moore
 5 will come up first and give a spiel. He
 6 likes to warm up the audience.
 7 MR. MOORE: Good evening ladies and
 8 gentlemen. The State of New Jersey, of
 9 course, has been working with the Army
 10 Corps of Engineers on shore protection
 11 since about 1928, and we think they are the
 12 best that there is in the business for
 13 shore protection.
 14 Our whole program in New Jersey is
 15 based on their expertise and the work that
 16 they do and in compliance with the Coastal
 17 Zone Management Program that the State has.
 18 Just to give you a quick overview as to
 19 what projects we have in the system right
 20 now; that is, Monmouth County, you can see
 21 all of the little studies and the
 22 construction work that is ongoing.
 23 This is Ocean.
 24 The same thing in Atlantic,

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4

1 sites to last 50 years.
 2 When you look back at the sites in
 3 Cape May County, we have a borrow site for
 4 Ocean City up here at Great Egg Harbor
 5 Inlet, as we come down into 34th Street,
 6 down to Townsends Inlet. We have a number
 7 of sites offshore here within the area at
 8 Avalon and Stone Harbor.
 9 We have a borrow site right at
 10 Townsends Inlet and one further on down at
 11 Hereford Inlet, and, of course, down at
 12 Cape May City, an offshore site, Cape May
 13 Point and Lower Township, again, offshore
 14 sites, and up in the Delaware Bay. We have
 15 some sites off of the Villas. Each of
 16 these individual segments have their own
 17 individual borrow sites.
 18 What we are looking at is what
 19 happens in the future.
 20 Suppose we have a major storm and
 21 need sand to replenish our beaches quickly.
 22 We are looking at offshore sites, and the
 23 sites you should be interested in are sites
 24 A and B right here. They are located off

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1 the Townsends Inlet area. They are about 6
2 to 7 miles off the shoreline, and there is
3 a great quantity of sand out there just
4 asking us to come and get it.

5 I have been out there with the
6 Bureau of Geology from the DEP and the good
7 old management folks from Washington. We
8 have been gathering information on the
9 grain size, what environmental problems we
10 would have, and we are in the process of
11 developing an EIS so that the Department of
12 Interior can grant us a permit to go out
13 there when the day comes.

14 It's a long ways away. It hasn't
15 happened, and it will be a few more years
16 to go before we will ever get that permit,
17 but we are working on it.

18 We have other sites up and down
19 along the shoreline.

20 We are looking at the same thing;
21 again, trying to get better quality sand,
22 good quality sand, we can put on the beach
23 and be retained.

24 As we end the feasibility study we

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1 time will be 50/50.

2 Real estate. Real estate is
3 obtained for public access so that the
4 public has a right to go down onto the
5 beach; also, so that the Corps and its
6 contractors and its monitoring folks have
7 the right to go down on the beach and do
8 the measurements that they have to do to
9 make sure that the project is functioning
10 correctly.

11 Project coordination. Throughout
12 this entire time, there is a coordination
13 between the Army Corps of Engineers, the
14 State, the County and the municipalities
15 that are involved.

16 Project maintenance. We will
17 discuss what happens after the project has
18 been constructed and what role you and I
19 have to do to make sure that the project is
20 still maintained.

21 That's what I go through with the
22 Army Corps of Engineers.

23 At the same time, there is going to
24 be another agreement written between the

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6

1 are working on right now, and that's what
2 this meeting is about, is to get your
3 comments about what we have proposed, we
4 will then go into the next phase of the
5 project, which will be plans and
6 specifications. At that point, the State
7 of New Jersey will begin to enter into
8 agreements with the Army Corps of Engineers
9 and lock us together permanently over the
10 life of this project.

11 The project life is 50 years.
12 Again, it will be between the Army Corps of
13 Engineers and the State.

14 The initial construction will be
15 spelled out in detail. Renourishment for
16 the City of Ocean City is every three
17 years, and for Ludlam Island it is every
18 five years.

19 Again, on the cost sharing, and I
20 will go into this in a little bit more
21 detail in a few more minutes, will be
22 65/35. That's what Congress has agreed to.
23 The initial construction will be that,
24 65/35, and the renourishment at a later

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8

1 State and the three municipalities of Sea
2 Isle City, Upper Township and Ocean City.

3 Basically, we cover the same thing.

4 We kind of change the wording around
5 a little bit. My agreement is only, maybe,
6 7 or 8 pages long and the Army Corps of
7 Engineer's agreement is about 30 to 40
8 pages long.

9 One of the things you have to be
10 aware of is this last item, endangered
11 species protection.

12 Years ago, we never had to worry
13 about endangered species because we didn't
14 have any on the beach, the little piping
15 plover, and leas tern, because we didn't
16 have a beach for them to nest on, so they
17 didn't bother to come.

18 Now we have a beach and we are
19 getting to be quite good at providing
20 nesting areas for these endangered species.

21 So, we have to enter into agreements
22 with the Fish and Wildlife folks to make
23 sure that the birds have their piece of the
24 beach so they can nest. We have to put

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1 fences up to provide protection for them.
2 That's part of the agreement that we
3 will have to work with.

4 As I said, I was going to talk to
5 you about cost sharing. I have to admit
6 that about three weeks ago, at a Beach
7 Commission meeting, I made a royal screw
8 up, as they would say, and gave the wrong
9 information.

10 Hopefully, tonight I will correct
11 that.

12 Cost sharing is set in what they
13 call the Water Resource Development Acts.
14 The first one was done in 1986.

15 Every two years, there is a Water
16 Resource Act that authorizes various
17 projects and gives direction to the Corps
18 of Engineers for shore protection,
19 dredging, flood control projects and other
20 civil-type work that they do.

21 For shore protection, cost sharing
22 is 65 percent Federal and 35 percent
23 non-Federal. That's the way it has been.
24

In 1999, they tried to change the

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1 completed, 2004-2005 for the initial
2 construction, and somewhere around 2010 you
3 will be doing your first renourishment for
4 the Sea Isle City/Upper Township area. At
5 that time, cost sharing will be 50/50.

6 That's reflected in the charts and
7 the feasibility study handouts.

8 You probably heard some talk about
9 cost sharing changing from 35 percent to 65
10 percent for everything. Right now, we have
11 been assured by our people in Washington,
12 from all of the other congressional
13 districts, not only in New Jersey, but in
14 the Great Lakes, California, Texas and
15 Florida, that that's not going to happen.

16 It's just not going to happen.

17 Initial construction will remain at
18 65/35, the way it is, and whatever
19 agreements we made before 1999, they will
20 stay also.

21 So, when we look at this project,
22 and don't let these numbers scare you, it's
23 really not all that bad when you look at
24 it. Here is the total cost for the Ocean

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10

1 cost share.

2 Our congressional delegations worked
3 together, and what they came up with was
4 somewhat of a compromise.

5 The initial construction for all of
6 the projects will be 65 percent Federal and
7 35 percent non-Federal.

8 The change comes when we start doing
9 periodic renourishment. If you were doing
10 periodic renourishment before December 31,
11 2000, it still remained at 65/35. That's
12 with a project
13 authorization and a feasibility study completed.
14 It was 65/35.

15 If the periodic renourishment was
16 not started after -- was started after
17 December, 2000, it switched to 60/40. On
18 December 31, 2001, it will switch to 55/45,
19 and on December 31, 2002, it will switch to
20 50/50.

21 Look at the project that we are
22 involved in right now. We are now doing
23 what we call plans and engineering. It
24 will be 2002-2003 for the plans to be

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12

1 City side.

2 The cost of the project is 12.5
3 million dollars, and by the time we cost
4 share everything out, the Federal government
5 is going to be picking up about 8.1 million
6 dollars and the State is going to be
7 picking up about 3 million dollars and the
8 City of Ocean City about 1 million dollars,
9 just about a million. That's really not too
10 bad.

11 Ludlam Island, and I know that's the
12 one you are interested in, the total cost
13 is 29.9 million dollars. It's broken up
14 65/35. The net of 35 percent is broken up
15 again to 75/25.

16 What I did, because we have Corson's
17 Inlet State Park at the north end of Upper
18 Township, Strathmere, I took into
19 consideration that they are going to
20 benefit by this and they have to pay
21 something.

22 Upper Township, they pick up 25
23 percent.

24 Sea Isle City, of course, is the

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1 bigger municipality, so they pick up 72
2 percent.

3 This is what you are paying for.
4 When you break it all down, you are looking
5 at the Federal government paying 19.5
6 million dollars and the State paying almost
7 8 million dollars and Upper Township paying
8 650,000 thousand and Sea Isle City 2
9 million dollars.

10 Those numbers will, of course,
11 change, but not very much. These are
12 pretty good estimates. They are on the
13 high side a little bit. They should be
14 okay. That's what we are looking at.

15 I started off by saying New Jersey
16 has the best shore protection program.
17 That's why I put up that sign, "New Jersey
18 and Shore Protection, partners together."

19 MR. ZAPPILE: I will run through,
20 basically, what the feasibility study is
21 about.

22 There is a report in the back. I
23 have some extra ones here.

24 I will run through and give a brief

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1 The State has determined that there
2 is a high percentage potential for storm
3 damage, so they requested Congress to
4 allocate funds to study these areas they
5 were talking about.

6 Congress did allocate the funds, and
7 then what came about is the New Jersey
8 Shore Protection Study.

9 What that is, basically, is the
10 Philadelphia district, from Manasquan Inlet
11 all the way down to Cape May Inlet. We
12 looked at a lot of different regions. We
13 looked at from Manasquan Inlet to Barnegat
14 Bay. We looked at Great Egg Harbor Inlet
15 down to Cape May and down into Avalon. We
16 looked at different regions. What we are
17 here today to talk about is this one
18 specific region. This study is about from
19 Great Egg Harbor Inlet down to Townsends
20 Inlet, which includes Ocean City and Ludlam
21 Island.

22 Here are more specific areas where
23 we are going to be talking about tonight.

24 Basically, here are some photos we

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14
1 overview. I don't want to spend too much
2 time on it. I want to get to the comments
3 you people have so we can answer your
4 questions.

5 As soon as this comes on, I will
6 take it away.

7 Here we go. Basically, I am going
8 to give you some background about how this
9 study came to be and then talk about the
10 feasibility study.

11 That's important to know, that it is a study.

12 Someone asked us our opinion of what
13 we could do to reduce storm damage in this
14 area.

15 That's what we are looking for.

16 Whether you like the project or
17 don't like the project, it's a study. A
18 lot of things can happen before it actually
19 gets built.

20 We will talk about project
21 implementation and also talk about current
22 administration policies and how it regards
23 shore protection projects.

24 Basically, why are we here?

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16
1 took while flying around the area one nice
2 day in 1998 or 1999.

3 That's up in Strathmere. That's
4 about the same time period.

5 This is the Whale Beach area looking
6 north towards Strathmere.

7 This is looking south toward Sea
8 Isle City.

9 This is back in 1995. There was a
10 storm offshore. You can see where the
11 waves are breaking in proximity to the
12 homes there.

13 This is the same time frame looking
14 south.

15 That's not too long after the
16 terminal drawing was put down in Sea Isle
17 City after the beach fell.

18 Basically, to give you a little bit
19 of overview the way the Army Corps of
20 Engineers works, basically, there were two
21 different studies, two different phases.
22 One was the reconnaissance phase, which we
23 started back in 1995. That phase was a
24 12-month study.

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1 The Federal government paid for the
 2 whole thing. The whole point of
 3 reconnaissance is to ask are there problems
 4 out there and do we need to do more
 5 detailed study and how much will it cost?

6 What happened in April of 1996 is we
 7 found that yes, there were problems down
 8 there and we recommended that we do a more
 9 detailed study, which required a cost share
 10 where the state was the local sponsor,
 11 which was the State of New Jersey.

12 The feasibility phase is what we are
 13 here to talk about tonight. That is
 14 normally about three or four years. It's
 15 shared 50/50 between the Federal government
 16 and the State of New Jersey.

17 It was initiated back in April of
 18 1997. The draft report was submitted in
 19 December.

20 When I say "submitted", what
 21 happened is when we finished our report, we
 22 sent it up to our headquarters in
 23 Washington. They looked at it and gave us
 24 their comments of what they thought before

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1 to both the environment and the people. We
 2 select a plan and coordinate with the
 3 public and the agency, which is what we are
 4 doing now, and then we make our final
 5 recommendations.

6 Basically, the problem we identified
 7 was storm damage vulnerability.

8 The big storms were the 1944
 9 hurricane and the 1962 storm, also known as
 10 the Five High storm.

11 The 1944 storm was one of those
 12 storms you get like every 50 years.

13 You hear someone say that is a 5 or
 14 10-year storm. Well, that was a 50-year
 15 storm. The probability of getting a storm
 16 of that level is once every 50 years.

17 The 1962 storm, also known as the
 18 Five High storm, stayed around for five
 19 high tides. That is where a lot of the
 20 damage came from. That was a 25-year
 21 storm. The 1944 hurricane storm was a lot
 22 stronger.

23 For the 1962 storm, over 2000
 24 structures were damaged. If you converted

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1 we released it to the public.

2 If we release it to the public and
 3 Washington says they don't like the
 4 project, then it doesn't make any sense.
 5 They have already seen it and have made
 6 their comments and took that into
 7 consideration. Whatever they say, whatever
 8 deal we work out with them, is what we
 9 recommend.

10 Basically, this report was released
 11 for the public and agency comment back in
 12 May, 2001.

13 Right now, we are in the agency and
 14 public comment period. We have gotten
 15 letters from different agencies commenting
 16 on reports. So far, we have gotten pretty
 17 good comments. The comment period was
 18 supposed to end tonight, but there has been
 19 a two-week extension to July 9. That's
 20 when all the comments should be in.

21 What do we do in a feasibility
 22 study?

23 We identify the problem, formulate
 24 solutions and evaluate what the impacts are

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1 that into today's dollars, that would be
 2 about 52 million dollars.

3 There were also storms in 1991,
 4 1992, 1993, 1994 and 1998.

5 The 1992 storm was a storm where the
 6 water came at its highest level, from our
 7 records.

8 Basically, how damage happens is you
 9 get erosion from long-term erosion and from
 10 storms. You get wave attack and
 11 inundation, which is simply another word
 12 for flooding.

13 Here are some photos from the 1962
 14 storm. That's up at Strathmere. You can
 15 see some houses knocked down there.

16 Some more in Strathmere.

17 That's the Whale Beach area. You
 18 can see back here there are 1, 2, 3, 4, 5,
 19 6 homes there.

20 That's in Sea Isle City.

21 This is 31st Street in Sea Isle
 22 City. You see a lot of homes were knocked
 23 down there.

24 This is 41st Street in Sea Isle

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1 City. The whole first row of the houses
 2 were knocked down.
 3 This is down on 48th Street.
 4 This is down on 59th Street.
 5 This is down on 60th Street. They
 6 got hit pretty bad.
 7 That's at the end, down on 95th
 8 Street.
 9 You can see there is definitely a
 10 great amount of damage.
 11 The housing density back then was
 12 not nearly what it is today. There are
 13 even more houses there now. They are built
 14 higher and better, so we have the trade
 15 off. The houses are built better, but now
 16 there are more houses and even more chances
 17 for damage.
 18 In Upper Township, in Strathmere,
 19 you can see how close the water comes to
 20 the houses.
 21 This is the 1994 storm.
 22 This is the Whale Beach area back in
 23 1998, right before they put in those
 24 offshore break waters.

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1 alternatives can be developed? They
 2 analyze the project conditions with the
 3 different alternatives and ask what are the
 4 benefits to the cost. We have to show, for
 5 every dollar spent, that you get at least a
 6 dollar in benefits. That's what we are
 7 required to show.
 8 Basically, in defining the existing
 9 conditions, we look at everything. We look
 10 at what is going on along the coastline,
 11 how the shoreline moves, the historical
 12 shore lines, what is out there now, are
 13 there jettys out there, are there bulkheads
 14 out there. We look for sand off shore. We
 15 have to find sand that matches the sand on
 16 the beach now. If you get grains that are
 17 too different, each sand you put on will
 18 wash away real quick. That's a big
 19 concern.
 20 We look at the environmental
 21 conditions.
 22 There are only certain areas where
 23 we can dredge from. Finding a lot of sand
 24 is the easy part. The hard part is getting

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1 The photo isn't to really show the
 2 break waters. It's to show you how the
 3 dunes looked.
 4 This is after the 1992 storm. You
 5 can see that it is pretty washed out there.
 6 Once again, this is another shot of that.
 7 This is the Promenade area.
 8 Everybody knows that, basically, high tide
 9 comes right up there.
 10 Here is another aerial photo to give
 11 you an idea of the proximity of the waves
 12 to the homes.
 13 This is the south end. A few years
 14 ago, it was pretty bad. Now it looks a lot
 15 better. After that, our obvious objective
 16 was to reduce storm damage vulnerability.
 17 Even the Federal government could figure
 18 that out.
 19 Basically, how do they come up with
 20 solutions?
 21 Well, they see what the existing
 22 conditions are. They ask what happens if
 23 we don't do anything with or without
 24 flooding conditions. They ask what kind of

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1 through all the environmental regulations.
 2 We don't want to disturb fish habitat. We
 3 also look for ship wrecks. We are required
 4 to make sure we know where all the ship
 5 wrecks are so, when we do do dredging, we
 6 don't impact on them.
 7 What is without project condition?
 8 Basically, that is the conditions
 9 without any special projects. What would
 10 happen? Basically, it has been what is
 11 happening now. We use a computer model to
 12 look at what the damage will be. We look
 13 at it over 50 years. That's what we are
 14 required to look at. We run a computer
 15 model of all different level storms to see
 16 what kind of damage would happen.
 17 We have about 5 million dollars in
 18 average annual damage. The way that is
 19 computed involves using the interest rate.
 20 There is a lot involved in doing that.
 21 Basically, if you were to average all the
 22 storms over 50 years, you would get about 5
 23 million dollars a year in damage.
 24 When we figure damages, that doesn't

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1 include the market rate of houses. We are
2 not allowed to include the market rate. We
3 are only allowed to include the cost of
4 rebuilding houses.

5 If we were to include market rate,
6 you can imagine how much the damage would
7 be.

8 Now that we know what the without
9 project condition is, we get to what kind
10 of alternatives do we develop. How do we
11 do that?

12 We do initial screening. Being we
13 have done four or five of these studies, we
14 have a real good feel for what will and
15 won't work when we look at other locations
16 along the coast.

17 We kind of have an idea. We look at
18 structural and non-structural alternatives.

19 A non-structural alternative would
20 be to buy everybody out, to tell everybody
21 to get off the island. That's very
22 expensive, but we look at that.

23 We look to see whether the
24 alternatives meet the objectives. We look

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1 Ocean City.

2 Basically, these are the ones that
3 we did a real detailed analysis on.

4 When we looked at berm restoration,
5 just putting beach out there was not really
6 an alternative. Then we looked at a berm
7 and a dune. We looked at structural
8 reinforcement.

9 By that, I mean putting a dune there
10 and putting in a geotube in the center of
11 that, just like they have in the Whale
12 Beach area.

13 Then we looked at putting in a groin
14 field, putting five or six groins out in
15 the Whale Beach area, how would that work.

16 We looked at combining all the
17 alternatives.

18 We looked at evacuation for the
19 Whale Beach area. We got a lot of comments
20 from Washington to make sure you look at
21 evacuation, especially in areas where it is
22 not as densely populated as your typical
23 New Jersey shore area.

24 What are the benefits?

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1 at the environmental impact. We do a
2 detailed analysis of things that we feel
3 are the best. Basically, the one that
4 usually comes out pretty good is the dune
5 and the berm. Most people know what the
6 dune is. The berm is the flat part of the
7 beach.

8 A lot of times it's hard to notice
9 because the beach is such a gradual slope.

10 The berm is what we define as the
11 flat part of the beach that goes in front
12 of the dune. You can see how it slopes
13 down to the high-water line.

14 There is also the putting of a
15 geotube in, which is what was put in in the
16 Whale Beach area. We look at something
17 like that.

18 We also look at putting a groin in,
19 what some call a jetty. They are actually
20 really called groins. I don't know why
21 they came up with that name, but that is
22 really what they are called. That's
23 actually a timber groin in Strathmere.

24 That's a stone groin at the end of

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1 To reduce storm damage.

2 That's the thing we look at.

3 We also can claim damage through
4 reduced local efforts. If the State or the
5 City has to go out there every year and
6 spend a few hundred thousand dollars or a
7 million dollars, we can say hey, if we put
8 this project in, they don't have to do
9 that, so we can claim those benefits for
10 that.

11 We also look at recreation. The way
12 we are regulated, we can only claim a
13 certain percentage of our benefits toward
14 recreation. It's 50 percent. No matter
15 how many recreation benefits we generate,
16 because we have a bigger beach, we can only
17 claim a certain amount.

18 That is the law that they give us.

19 So, we do claim it, but it is like a
20 secondary type of thing.

21 Costs. We have the initial
22 construction costs, periodic nourishment
23 costs that we put in and also monitoring.

24 We have to do a lot of the

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1 environmental monitoring. There are a lot
 2 of costs associated with that.
 3 Basically, the selected plan and
 4 report was the berm and dune. I have some
 5 more detailed things hanging up in the back
 6 on some poster boards. This kind of gives
 7 you a schematic.
 8 To make it easier to understand, the
 9 way it works out is a dune is a certain
 10 height. I think it is 14.8 NABD. That's
 11 how high it is. What does that mean?
 12 Well, in Strathmere, it's about 9
 13 feet high from the beach, so if you were
 14 walking on the beach in Strathmere, we
 15 would have the dune about 9 feet high
 16 measured from the beach. You go about 50
 17 feet out. There are existing dunes out
 18 there in Strathmere. Depending on where
 19 you are at, the highest dune would be in
 20 the area of Strathmere that has a bulkhead.
 21 The worst part would probably be about six
 22 feet high. If you were at the bulkhead
 23 area in Strathmere, the dune would be about
 24 six feet over the existing bulkhead. For

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1 there, we put sand fence up there, we do
 2 nourishment of about 1.8 million cubic
 3 yards every five years and we would also
 4 extend the outfalls.
 5 There are a couple places where,
 6 because the beach is wider, we have to make
 7 those outfalls longer also.
 8 Basically, you can see where we have
 9 our bar areas.
 10 Basically, we are dredging over here
 11 and in Corson's Inlet also in the
 12 renourishment cycle.
 13 Basically, these are the benefits.
 14 With the project implemented, it
 15 would reduce damage about 60 percent.
 16 One thing I didn't mention is that
 17 most of the damage, according to the
 18 computer model, would be from wave damage.
 19 I think it would be reduced about 60
 20 percent with that project. If we did
 21 nothing, most of the damage would come from
 22 waves breaking on structures knocking
 23 structures down.
 24 Basically, our project would reduce

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1 the most part, it would be about two or
 2 three feet over the existing dunes. Now,
 3 if those dunes got knocked down before we
 4 went out there, it would be nine feet from
 5 the beach. If you look at what's out there
 6 now, that's what it is.
 7 Whale Beach is the same thing. It's
 8 a 50-foot berm and a dune about nine feet
 9 high on the beach.
 10 For Sea Isle City, the easiest way
 11 to explain how that is is that is about
 12 three feet over the Promenade. For the
 13 most part, there are no dunes on the
 14 Promenade now. That's really how high it
 15 would be.
 16 For the south end, the dunes down in
 17 Sea Isle City, there are pretty good dunes
 18 there. It would be pretty close to what is
 19 out there now, maybe a foot or two larger.
 20 What is the selected plan that we
 21 recommend?
 22 Basically, it's about 5 million
 23 cubic yards going the whole length of the
 24 island. Basically, we put dune grass up

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1 about 58 percent of all damage.
 2 Local costs are gone. If we do this
 3 project, the locals don't have to spend
 4 that amount of money on their shore
 5 protection project.
 6 There are recreation benefits of 1.6
 7 million dollars.
 8 There are benefits during
 9 construction, which is a goofy thing they
 10 make us do.
 11 As you are building a project, you
 12 get benefits, even though the project is
 13 not fully completed.
 14 Like, before we finish Strathmere,
 15 we can start claiming benefits. That's
 16 something we use to show all the benefits
 17 we are getting and also to detour costs.
 18 We had to really justify the Whale
 19 Beach area because of a lack of houses out
 20 there. We had some other benefits we were
 21 able to get.
 22 That area, if that area is cut off
 23 during a storm, what happens? The people
 24 in Strathmere will be stuck there. Besides

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1 a qualitative explanation, we explained to
2 Washington how people could get stuck
3 there. We also had to say people had to
4 detour and drive extra, things like that.

5 We made our argument two ways, in a
6 monetary way and we also said it's
7 dangerous to let that area breach.

8 How much does it cost?

9 Basically, the total project costs
10 about 30 million dollars.

11 Real estate costs are about
12 \$300,000.

13 Total periodic nourishment over 50
14 years adds up to about 100 million dollars.

15 Ultimate project cost over 50 years
16 is about 128 million dollars.

17 When you annualize that, it's about
18 4 million dollars a year.

19 When I talked before about the
20 benefits and the costs, there are benefits
21 and there are costs and you subtract them
22 and that is your net benefits.

23 Basically, for every dollar we
24 spend, there would be \$1.50 in benefits.

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1 then goes to preconstruction engineering
2 and design. The plans we are showing now
3 are conceptual to a point to what we would
4 build. The next plan we do would be more
5 exact, so we can actually get a bid, give
6 it to a contractor. It would be a very
7 detailed plan.

8 We would need congressional
9 authorization.

10 We can't just go out and build it.

11 We need congress to say yes, you can
12 build it.

13 After that, we need congressional
14 funding. We don't get this money
15 automatically. Congress has to provide
16 it to us.

17 I want to mentioned quickly about
18 the current administration policy.

19 Right now, as I mentioned before, we
20 need funding for it to happen. It's not
21 something that automatically happens.
22 There is a proposal to adjust the cost
23 sharing.

24 This has been going on for the last

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1 That's what we showed from our analysis.

2 Basically, there would be a \$1.50
3 benefit for every dollar we spend and about
4 2 million dollars in net average annual
5 benefits.

6 Cost sharing. As Bernie talked
7 about before, basically, in the end, all
8 those numbers, starting out with 65/35 and
9 50/50, when you run it altogether, it's
10 about 53% for the Federal government and 47
11 for the local government, being the State
12 and local government.

13 It's the same thing Bernie is saying
14 but in a different way

15 Implementation. This is just a
16 recommendation. This is what the study
17 says.

18 Basically, we have to address any
19 comments we get from agencies and from the
20 public. We have to address those comments
21 and include that in the report. We then
22 submit the report to Washington.

23 Assuming it's approved, and we have
24 a pretty good feeling that it would be, it

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1 couple of years. That will make it easier
2 to build it.

3 It still needs congressional action
4 for anything to happen.

5 That's the overview of the project.

6 If you have questions, we will,
7 hopefully, have answers for you.

8 MR. DELASARIO: At this time we will
9 entertain comments and questions regarding
10 this project. You signed up and I will
11 call on you.

12 I call on Mayor Richard Palombo of
13 the Upper Township Committee.

14 MAYOR PALOMBO: Thank you on behalf
15 of Upper Township for hosting this joint
16 meeting. We would like to acknowledge the
17 Army Corps of Engineers and the State DEP
18 for their promised hope in trying to secure
19 our beaches on the island from Strathmere
20 down to Sea Isle City.

21 I have a basic comment.

22 First of all, we are very pleased to
23 partner with not only the State and Federal
24 agencies, but also with Sea Isle City

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1 itself. We have long allocated money on a
2 yearly basis for beach replenishment. I
3 look at Mr. Moore, hoping we see something
4 in September for some of Strathmere.

5 We are committed to beach
6 replenishment.

7 It is money spent wisely to ensure
8 the safety of our residents and take care
9 of the property values and assessments we
10 have. It also makes good sense. We are in
11 the tourist business. We have a lot of
12 people who come down as tourists.

13 We heard testimony about migratory
14 birds. I think the environment has been
15 enhanced.

16 I grew up in North Wildwood. I am
17 45. I have seen some major changes for the
18 good. We in Upper Township are firmly
19 committed to working on a project like
20 this, as I am sure Sea Isle City is.

21 We feel, as we progress further
22 towards the work and get this beach
23 replenished, it's nice to see that we are
24 not planning just for a temporary fix for

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1 the township.

2 Bernie, I have a question.

3 I haven't heard anything permanent
4 about the north end between 1st Street and
5 29th Street. You promised six or seven
6 years ago we would have five groins in
7 there by now. May I have an answer to that
8 question?

9 MR. MOORE: Yes. That is what we
10 had intended to do, but other projects
11 stepped in. We also, of course, got into
12 some discussions with your municipality at
13 the Commissioner's level about putting in
14 shore protection structures and sanitary
15 sewers. We batted that around for a couple
16 of years and it never went anywhere.

17 I believe the project we are
18 involved in right here has a better chance
19 of going forward than the groin project.

20 MR. McHALE: The mayor mentioned
21 before that we want to see a permanent fix.
22 To us, it's just temporary. Historically,
23 the groins ended at 47th Street. We had a
24 lot of erosion at 60th and 61st. The State

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1 two or three years, but we are looking 50
2 years down the line, so for my children's
3 children the shore will be there for all
4 generations. I appreciate all you have
5 done.

6 Lenny, it's funny. Mr. McCrossin,
7 who is here with me, who is head of finance
8 and revenue in our township, we are
9 brainstorming how we can come up with, at
10 least substantially, some sort of money on
11 the allocation.

12 What I am trying to say, basically,
13 is that Upper Township is certainly
14 committed on this partnership. We are
15 looking forward to working with Sea Isle
16 City and the State and Federal agencies to
17 see this project come to fruition.

18 MR. DELASARIO: I next call on the
19 former mayor of Sea Isle City, Michael J.
20 McHale, representing the Sea Isle City
21 Environmental Commission.

22 MR. McHALE: The Sea Isle City
23 Environmental Commission is glad to see a
24 project like this because it is good for

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1 and Federal governments came in. They went
2 up to 79th. The erosion ate into 81st.
3 They went up further, to 88th. We
4 asked them to go to 94th. They said no.
5 There was a lot of erosion there.

6 If you look at the north end, once
7 they finished Strathmere, which was a great
8 idea, it caused erosion on the south side.
9 It always does. It happens. Historically,
10 that is what happens. That is where our
11 problem is.

12 The Army Corps of Engineers created
13 the problem. We are only asking for help.
14 We need a permanent solution down there or
15 else we are just throwing our money away.
16 If we are going to pay 50/50 for beach
17 renourishment, we know it is going to go.
18 That sand will not stay there, unless
19 something is done to keep it there.

20 MR. MOORE: The project we have here
21 is a permanent fix. When we were proposing
22 the five or six groins we were going to put
23 in, this project was sputtering around. It
24 wasn't going in the right direction.

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1 Again, we had our problems with our own
 2 department and the city justifying that.
 3 There were many, many meetings regarding
 4 this. I think now we have a project than
 5 we can justify that the department is
 6 supporting to provide protection in there.
 7 Yes, we did have a problem down on the
 8 south end of Sea Isle City with the groins.
 9 That's what we normally get.
 10 In Strathmere, there was just not enough
 11 sand feeding the system. Here, you are to
 12 have sand to feed the system. I think you
 13 will find that the project will work very
 14 nicely.

15 MR. McHALE: You are telling us that
 16 sand will stay at six, seven, eight feet?

17 MR. MOORE: That is correct. We are
 18 going to have some erosion, as Carmen
 19 showed. There is design for advance
 20 nourishment out in front of that. That
 21 advance nourishment will erode and we will
 22 be back into renourishing. That's the way
 23 the project is, not just for Sea Isle City,
 24 but also for Upper Township. It's the same

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1 keep the sand from eroding away. It will
 2 keep it there longer, but it will not keep
 3 it from eroding away.

4 During that study, building a groin
 5 field there was looked at and how often
 6 will we have to come back to put sand back
 7 into it. The sand will erode away. You
 8 are right, it will erode away. When you
 9 look at how much money it will cost to
 10 build all these groins and the cost of
 11 coming back every so often to put sand back
 12 into it, and compare that to not putting
 13 the groins in, putting all your money into
 14 putting sand as it is needed, and based on
 15 the analysis, and again, it is certainly
 16 projecting out into the future what it will
 17 be, it's cheaper to put the sand in than it
 18 would be to build the more expensive
 19 groins.

20 This is equivalent to a permanent
 21 solution. The permanent solution is for
 22 the dollar, it's cheaper in the long run to
 23 keep on going in and putting sand in on,
 24 say, a three-year cycle, than it would be

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1 way. There is renourishment. The basic
 2 design provides you with protection.

3 MR. McHALE: On behalf of Sea Isle
 4 City Environmental Commission, we would
 5 like to see something permanent down there.

6 We agree with the project. We think
 7 it's a great thing. Hopefully, Bernie, you
 8 are right, there will be enough sand out
 9 there to defend that area. We don't think
 10 so. Back in 1998, there was real strong
 11 beach erosion on the south side.

12 We are saying the same thing is
 13 going to happen. We would hope that you
 14 would come with a permanent solution to
 15 keep the sand there, especially since the
 16 city is going to paying for it 50/50 in
 17 years to come.

18 MR. RAMBO: Groins work great in
 19 certain areas and always don't work so hot
 20 in other areas.

21 The basic idea in putting this groin
 22 field in that Mr. McHale was talking about
 23 is to reduce the amount of time we have to
 24 come back to renourish. Groins will not

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1 to build the more expensive groins up front
 2 and come in maybe every seven to ten years
 3 to put sand in. We are not ignoring the
 4 groins. It was cheaper to not put them and
 5 still maintain the beach profile that is
 6 needed to protect the road and the overwash
 7 in the Whale Beach area.

8 MR. McHALE: I agree with you on
 9 that point, but I still say that if we put
 10 groins there, the sand will stay longer and
 11 we have to come up with the 50/50 money a
 12 lot less.

13 MR. RAMBO: In the long run, it's
 14 cheaper for you. It's less dollars for
 15 you. We are talking about a 50-year
 16 project, coming back all the time, and also
 17 talking about a large expenditure of funds
 18 to build a groin field.

19 MR. McHALE: We have had a lot of
 20 beach renourishment in the south end when
 21 the groins weren't there, and it was gone
 22 within a couple of years. Once a groin is
 23 in, it stays.

24 If you look at the whole southern

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1 part of the island, I feel it is in great
2 shape because of the groin system. I think
3 you put that area in a weak position by not
4 putting in groins.

5 The Army Corps of Engineers promised
6 six or seven years ago groins in there.

7 MR. RAMBO: When you look at it, it
8 will cost more to put the groins in than it
9 would be to resand the beach.

10 You are also talking about the
11 southern end of the island, which gets all
12 the sand anyway. If you want to build a
13 groin field to make sure it works, build it
14 at the end of the pipeline where all the
15 sand is going to.

16 If you build the groin field in the
17 beginning of the pipeline, up in the
18 northern end, and there is not a lot of
19 sand there to begin with, it's not going to
20 help trap a lot of sand.

21 Really, all the groin is is a big
22 catcher's mitt to catch sand coming down.
23 If you have new sand fed into the system,
24 you are still going to get erosion and you

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1 are not going to get that incoming sand.
2 When you do a beach fill from
3 Strathmere all the way down, in theory and
4 practice, you have put in a lot of sand in
5 the whole system. The whole system sees
6 sand, so as grains of sand march down in a
7 southerly direction, like it does in this
8 part of New Jersey, there is enough sand to
9 feed into it, so it keeps on going.

10 Anybody who builds anything can be
11 proven wrong ten years from now.

12 Based on what we have looked at,
13 again, it is less expensive in dollars to
14 not build the groins and continue to put
15 the sand in than it will be to build a
16 groin field and put sand in on a periodic
17 basis.

18 MR. McHALE: We recommend completion
19 of the groin field. Thank you.

20 MR. DELASARIO: The next speaker is
21 Dale Foster, Cape May County Engineer.

22 MR. FOSTER: On behalf of the
23 county, I would like to thank the Army
24 Corps of Engineers and the Environmental

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1 Protection Agency for coming down tonight
2 and tomorrow night for putting on this
3 public hearing on this much-needed
4 improvement project. I have a statement
5 and comments.

6 Cape May County beaches are a
7 national treasure and, as such, should be
8 maintained in a manner that retains the
9 charm that draw visitors from far and near.
10 The beaches are the most critical component
11 of the County's tourism industry. They
12 provide storm protection for the
13 infrastructure and development of the
14 coastal communities. The periodic
15 restoration of our beaches is essential to
16 protect the lives and properties of our
17 residents and visitors, as well as ensuring
18 the vibrancy of the tourist industry.

19 The County supports the immediate
20 implementation of the selected plan for the
21 south end of Ocean City and Ludlam Island
22 to reduce the potential for storm damages
23 in the communities of Ocean City, Sea Isle
24 City and Strathmere.

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1 The benefits gained in storm damage
2 protection far outweigh the costs in
3 implementing these beachfill projects.

4 The selected plan for the south end
5 of Ocean City consists of constructing a
6 berm and dune built to a height of +3.9
7 meters from an offshore borrow source. The
8 plan extends from 34th Street to 59th
9 Street and will tie in to the existing
10 50-year Federal beachfill in the northern
11 portion of Ocean City.

12 The selected plan for Ludlam Island
13 consists of constructing a berm and dune
14 built to a height of +4.5 meters from an
15 offshore borrow source. The plan will
16 extend from Corson's Inlet State Park in
17 the north to Townsends Inlet in the south.

18 Several areas on Ludlam Island have
19 been severely and repeatedly ravaged by
20 storms, particularly over the last ten
21 years.

22 In 1962, a northeasterly storm
23 wreaked havoc on Cape May County. The
24 three communities to greatly benefit from

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1 the proposed beachfill project suffered a
2 tremendous loss or damage to structures as
3 the result of that storm. The communities
4 have since been rebuilt and real estate
5 development has continued, thus increasing
6 the potential for storm damage.

7 Strathmere is particularly
8 vulnerable to being isolated in the event
9 of a severe storm, as was demonstrated
10 during the February, 1998, northeasterly
11 storm.

12 While minor to moderate damage was
13 inflicted in the mid-Atlantic and New
14 England areas as a result of that storm,
15 the community of Strathmere was cut off
16 from the rest of Cape May County. The dune
17 and roadway to the south of Strathmere in
18 the Whale Beach area was destroyed during
19 that storm.

20 In 1991, twice in 1992 and once in
21 1994, the dune in the Whale Beach area was
22 washed away by storms.

23 The New Jersey Department of
24 Environmental Protection constructed

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1 admirably to prevent flooding and damages
2 wreaked by storm wave action. However,
3 this area needs more than just geotextile
4 tubes and the short berm area in front
5 toward the ocean. This area needs
6 long-term storm damage prevention benefits
7 that will be provided by the proposed
8 beachfill project.

9 Nothing short of full implementation
10 of the dune and berm on Ludlam's Island is
11 acceptable.

12 Some feel that the Whale Beach area
13 should be left alone so that nature can
14 take her course, but this action or
15 inaction would require even a greater
16 investment into the infrastructure of this
17 area, such as constructing a bridge to span
18 Whale Beach.

19 A large breachable area in such a
20 place as Whale Beach will result in
21 increased potential for damages from
22 back-bay flooding of the adjacent
23 communities.

24 The Whale Beach area is not alone in

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1 emergency dune repairs to restore the dunes
2 that protected the access from Sea Isle
3 City to Strathmere. Unfortunately, those
4 emergency dune repairs were not able to
5 withstand nature's fury.

6 After the 1998 storm, the County had
7 the responsibility of reconstructing the
8 storm-ravaged section of Ocean Drive in the
9 Whale Beach area.

10 Given the knowledge that the
11 emergency dune repairs did not provide much
12 in the way of storm damage protection, the
13 County constructed a dune using geotextile
14 tubing for its core. The tube was covered
15 with sand and dune grass. When looking at
16 the dune from the roadside, one says the
17 dune is in great condition with its tall
18 and green dune grass. One only needs to
19 walk over the top of the dune to see the
20 scarring effects that waves have done.
21 Currently, sand is being placed on and in
22 front of the tubes for the third time since
23 the tubes were installed in 1998.

24 Geotextile tubes have worked

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1 storm damage inflicted over the past years.

2 Strathmere has been particularly
3 hard hit along with the south end of Sea
4 Isle City at Townsends Inlet.

5 Storm damage prevention benefits
6 gained by implementing the proposed
7 beachfill project, with its commitment of
8 periodic renourishment, is long overdue.
9 The beachfill project will also provide
10 greater tourism interests and opportunities
11 that will pay back dividends over and above
12 the costs of the program.

13 The property owners, municipalities,
14 County and State governments have a
15 tremendous amount of development and
16 infrastructure investments in these
17 communities. The County has committed
18 resources in this area and we cannot afford
19 to replace this investment.

20 On behalf of the Cape May County
21 Board of Chosen Freeholders, I cannot
22 emphasize how important it is for the
23 Federal government to move as quickly as
24 possible to implement this much needed

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1 shore protection. Thank you.
2 MR. DELASARIO: Representing the
3 North End Association of Sea Isle City, I
4 call on Dr. Irene Jameson.

5 DR. JAMESON: We of Whale Beach
6 object to the use of that term. There are
7 no whales around. We just call it the
8 north end. That's what we prefer.

9 Bernie, you and I have been dancing.
10 You taught me the song and dance game. I
11 mean it. You and I have been dancing the
12 groin dance for about seven years, and you
13 are still dancing all around me.

14 I have listened to every word you
15 said. I am 76 years old. What happens at
16 the end of 50 years when I am still here
17 and there are no groins and all the sand is
18 gone? What happens?

19 MR. RAMBO: The Corps of Engineers
20 in our district hasn't reached a point
21 where it has had a beach fill for 50 years.
22 We can promise anything will happen, but
23 the Corps of Engineers, historically, has
24 continued on with their projects.

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1 beach fill and appreciate it. If Margate
2 doesn't want it and Ventnor doesn't want
3 it, give it to us. We don't care how high
4 you make the dunes. Again, think about our
5 groins, please.

6 MR. RAMBO: Dr. Jameson, we will go
7 back as part of this whole process, and we
8 have heard it twice, but we will go back
9 and relook at the facility and still be
10 satisfied in our hearts that it is still a
11 better economic solution not to put the
12 groins in. If we find we made a mistake or
13 something happens, we will let everyone
14 know at the end of this process. We will
15 look at it again, because you guys
16 requested us to look at it again.

17 MS. JAMESON: How many of you want
18 the groin field in the north end?
19 (Whereupon, hands were raised.)

20 We will not be happy campers down
21 there, not in Whale Beach.

22 MR. RAMBO: Our job is to do what is
23 best with the taxpayers' money.
24 Our job is to listen to you.

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1 The important part is that it is
2 Congress who tells us what to do and what
3 not to do. Everyone has to understand
4 that. It's not us that says we will do
5 this.

6 In the 50th year, you would expect,
7 and the Corps of Engineers would expect,
8 and the Corps of Engineers would probably
9 go over the State, to see what Congress
10 wants us to do.

11 MS. LUCAS: Again, they are looking
12 to see if it's going to be justified. By
13 all counts, there will be benefits.

14 MS. JAMESON: The groin field and
15 the beach fill is a washout. The geotubes,
16 they are just about on their last legs. It
17 looks beautiful from the street, but when
18 you go to the top of the walkway, there is
19 a six to eight-foot drop. Of course, they
20 are covering it right now. It's going to
21 happen. It's going to happen even with
22 your dunes and beach fill.

23 There is the expression you don't
24 look a gift horse in the mouth. We like

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1 Quite often in life, and you may
2 know more about things in life than we do,
3 at least we are smart enough to know that
4 we may not know and you may.

5 We will go back and look at what we
6 did and consciously make an effort to see
7 what is the best solution in using
8 taxpayers' money and then get that
9 information back to you.

10 MS. JAMESON: We appreciate it. As
11 taxpayers, we think you are wasting your
12 money and our money during those 50 years.
13 If you put the groins in, we will be happy
14 and you will be happy and I will stop
15 bothering you.

16 MR. DELASARIO: In 50 years, she
17 will come looking for you.

18 MR. RAMBO: I hope I can outrun her
19 then.

20 MR. DELASARIO: Our next speaker is
21 Augusta Hogan of Sea Isle City.

22 MS. HOGAN: I am a resident of 49th
23 and Pleasure. I am very concerned about
24 the project they are talking about, the

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1 sand dunes. What is going to happen where
 2 the Promenade is between 47th and 52nd?
 3 MR. ZAPPILE: The sand dunes would
 4 be about three feet higher than the
 5 Promenade deck. Where the Promenade is,
 6 it's about three feet more.
 7 VOICE: It's about where the hand
 8 railing is.
 9 MS. HOGAN: Is what they they are
 10 going to do?
 11 MR. BEARD: It won't be piled right
 12 at the Promenade. There will be a slope
 13 that slopes out toward the ocean. We will
 14 try to start it right there where the rocks
 15 are so there is not a big gap.
 16 MS. HOGAN: What is happening now,
 17 as you know, and I would say for the past
 18 ten years it has gotten worse, is we are
 19 losing more and more and more every year.
 20 Since 1998, it came over at 49th Street.
 21 The ocean came over. I saw that in your
 22 pictures. I have pictures here at high
 23 tide within the last month where it is up
 24 to the rocks. You can see in these

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1 out there that all the mussels are
 2 uncovered. You should see what it looks
 3 like.
 4 MR. RAMBO: Nature does a lot of
 5 strange things when you don't expect her to
 6 do it. It's hard to say why, specifically,
 7 something happened. It's very difficult,
 8 especially on the coast. You folks should
 9 know that more than anybody. Strange
 10 things happen.
 11 MR. DELASARIO: We next call on
 12 Gerald Faiss of the Sea Isle City Taxpayers
 13 Association.
 14 MR. FAISS: The Sea Isle City
 15 Taxpayers Association has 3,000 property
 16 owner members. What I would like to say to
 17 you folks is what can the 3,000 members of
 18 this association do to help you to help us?
 19 Write to our senators and write to our
 20 congressman?
 21 We had a problem a few years ago and
 22 we cranked out a thousand letters to FEMA
 23 very quickly and solved the problem.
 24 Is there something that we can do

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1 pictures that the sand is good from 47th
 2 Street north. From 47th Street to 5nd
 3 Street, there is no sand. What is
 4 happening is it is destroying our bulkhead
 5 for the Promenade. This is an example. We
 6 have grass growing out of the top of the
 7 bulkheads. The bulkheads have rods coming
 8 out of the bulkheads, because they are
 9 rotting. Every time we get a high tide,
 10 the ocean comes up over onto the Promenade.
 11 You can actually see here how it has eroded
 12 the Promenade. There are gullies there.
 13 MR. RAMBO: That's why the project
 14 is here, to prevent damage.
 15 MS. HOGAN: In a bad storm, it does
 16 come over. This is high tide.
 17 MR. ZAPPILE: In one of the photos I
 18 showed, we know that this is on the whole
 19 island.
 20 MS. HOGAN: Isn't it because at 47th
 21 Street there is a groin and south of the
 22 groin it is eating away?
 23 You should have been down there
 24 yesterday and today. There is such a gully

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1 other than pray?
 2 MR. RAMBO: Again, we are funded by
 3 Congress.
 4 MR. ZAPPILE: We are not allowed to
 5 say certain things.
 6 MR. FAISS: I have one other
 7 question just to clarify.
 8 In Corson's Inlet, is that also an
 9 area where you will be dredging?
 10 MR. ZAPPILE: Yes. You can see on
 11 the big map I have there that we will be
 12 using that as our periodic nourishment for
 13 the Strathmere area. Every five years, we
 14 are coming back and putting sand on the
 15 beach and we will taking from Corson's
 16 Inlet?
 17 MR. FAISS: There is the build up of
 18 sand on either side of the bridge, and you
 19 have those hot dogs up there on wave
 20 runners. There must be a lot of people
 21 taking headers, keeping the emergency squad
 22 busy.
 23 Thank you very much for coming.
 24 MR. DELASARIO: We next call on Mr.

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1 Walt Wescoat of South Jersey Boaters.
 2 MR. WESCOAT: Good evening.
 3 You just talked about dredging at
 4 Corson's Inlet. Why don't you make the
 5 navigation channel workable? It's very
 6 easy to do. They did the same thing in
 7 Longport. They stay 50 yards from the
 8 inlet and don't do anything to the
 9 navigation channel but waste our money.
 10 The dredging for the north end,
 11 which you probably don't want to hear
 12 tonight, has ruined Great Egg Harbor Bay.
 13 I want to know when you guys are going to
 14 appropriate the money to fix Great Egg
 15 Harbor Bay. Dredging the north end is what
 16 causes the intercoastal waterway to be
 17 closed under the Dolores Cooper Bridge.
 18 The sand washes right in and closes the
 19 channel while you go away and leave us with
 20 the trouble.
 21 MR. MOORE: Mr. Wescoat, I will take
 22 the Corson's Inlet area first.
 23 Prior to 1970, the Army Corps of
 24 Engineers came in and dredged a channel in

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1 foundations. There were only a couple of
 2 sites available in that general area.
 3 Up to this point, the State of New
 4 Jersey has never paid for disposal sites.
 5 We entered into some agreements with
 6 the Upland owners where we could use their
 7 land to dispose of the material at no cost
 8 to us.
 9 The DOT built the bridge. They paid
 10 the owner to use those sites and fill them
 11 up.
 12 Right now, there are no disposal
 13 sites available in Broad Thoroughfare in
 14 that particular area.
 15 On the other hand, at the same time,
 16 there are no disposal sites and no money in
 17 my budget. I have not had an
 18 appropriation for dredging funds for more
 19 than eight years for any waterway within
 20 the State of New Jersey.
 21 We have over 400 miles of waterways
 22 and most of them are clogged up. We are in
 23 the process of trying to resolve that
 24 issue. That is the problem right now. It

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1 there periodically. In 1970, the State of
 2 New Jersey made a decision that we would no
 3 longer dredge Corson's Inlet. What
 4 happened, of course, was a lot of the
 5 marinas that were there transferred down to
 6 the Townsends Inlet area or up to the Great
 7 Egg Harbor area. We had used the channel
 8 coming into Corson's Inlet as a source of
 9 sand for several beach nourishment projects
 10 in Upper Township and also for the southern
 11 part of Ocean City.
 12 As for the Great Egg Harbor area and
 13 Dolores Cooper bridge, that is on the
 14 intercoastal waterway.
 15 The Army Corp of Engineers had the
 16 responsibility for dredging the waterway.
 17 The State of New Jersey has an
 18 obligation to provide disposal sites for
 19 the Army Corps of Engineers to put their
 20 dredge material.
 21 When Dolores Cooper Bridge was being
 22 built, the Department of Transportation
 23 needed disposal sites to put their material
 24 that they were excavating for the bridge

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1 is not the Army Corps of Engineers' fault
 2 on intercoastal waterways. It is our
 3 responsibility.
 4 MR. WESCOAT: There is a virgin
 5 dredge site 300 yards from where the
 6 dredging needs to be done. The main
 7 closure to the channel at the mouth of the
 8 Ocean City side is caused by the dredging
 9 for the north end of Ocean City. You take
 10 the protective covering away, the
 11 protective bar, it lets the sand wash right
 12 into the channel.
 13 There are about six dredge sites
 14 right there.
 15 1. In an emergency, you could use a
 16 side-casting dredge to dredge right through
 17 the channel and kick it over to where there
 18 is dead level water. I understand that the
 19 DEP doesn't allow that. There are sites
 20 right alongside the channel that could be
 21 filled up. There are sites right under the
 22 bridge, the bridge right of way, 10 feet,
 23 you can fill with sand right under the
 24 bridge in the bridge right of way. A guy

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1 by the name of Mr. Battaglia, a State
2 Engineer, told me fill it up. If the Army
3 Corps of Engineers and the Coast Guard are
4 happy with it, fill it up.

5 There is no berm around the side
6 where it can leak into the water. When you
7 put sand in there, the water will run off
8 back in. That could cure the problem.

9 There is a gentleman who owns one
10 site that has never been used. It is all
11 permitted and all bermed and all ready to
12 go. It has never had mud put in it. The
13 only thing is the State has to pay for the
14 use of it.

15 We did a survey last week. It would
16 take less than 50,000 cubic yards to open
17 the channel. To do the channel completely
18 through Broad Thoroughfare, it would take
19 about 100,000 cubic yards and cost about
20 \$150,000.

21 Jerry Jones from the Corps of Army
22 Engineers in Philadelphia has the money and
23 is ready to do the dredging.

24 He told me a couple of days ago that

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1 MR. WESCOAT: This is a mandated
2 Federal marine highway by the Army Corps of
3 Engineers and must be fixed. It is nigh on
4 seven years that we have gone through this
5 gross negligence that it hasn't been fixed.

6 MR. MOORE: We have had channels
7 where the clam boats couldn't even get in,
8 even at high tide.

9 MR. WESCOAT: You can't allow that
10 to happen. You can't do beach fill for 50
11 million dollars and not let the boating
12 people by, a guy who buys a million dollar
13 boat. How many times does that equal a \$5
14 beach tag on the beach?

15 MR. MOORE: All right. You and I
16 have had these discussions before.

17 MR. WESCOAT: No, we haven't.

18 I called you five times one Friday
19 before Easter trying to get an appointment
20 to bring a delegation from my area up there
21 to discuss it and you wouldn't talk to me.

22 MR. MOORE: There were at least six
23 letters written to you. You talked to my
24 assistant Commissioner. You have talked to

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1 if I could find a site for him to put the
2 mud, or you would allow him someplace to
3 put the mud, or buy the site, \$150,000 off
4 of this 30 million dollar check over here
5 would cure that.

6 You said you haven't had any
7 funding. I was to the Assembly people of
8 my county on Friday. I said, "You will
9 find some way."

10 Now, can you tell me how you get the
11 money to do the job?

12 Does the assemblyman have to come
13 along and say okay, I will appropriate the
14 money to do this particular job?

15 Do you tell him I need this job
16 done, you've got to appropriate money? How
17 do we get the money to do that?

18 MR. MOORE: There is a request every
19 year where we ask for money. It goes
20 through the budget process. It is
21 appropriated to us by the budget process,
22 the same as the Federal government system.
23 We just have not had any money for
24 dredging.

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1 the Congressman. You have talked to the
2 Assembly people. We are all aware of the
3 problem.

4 MR. WESCOAT: I don't get any
5 answers. You don't answer me.

6 MR. MOORE: We have answered.

7 Let me stop this at this point
8 because, number 1, the whole process here
9 tonight is to talk about this beach fill
10 project and not the Dolores Cooper Bridge,
11 which you and I have discussed for oomph
12 years.

13 MR. WESCOAT: It's the dredging at
14 the north end of Ocean City, which we will
15 discuss tomorrow night at that meeting.

16 That's what ruins the Great Egg
17 Harbor Bay. Where there used to be an
18 eight-foot beach at low tide, the birds now
19 walk.

20 Where does all that sand come from?
21 It comes from you loosening the sand up out
22 there and it washes in.

23 MR. DELASARIO: Before we go into
24 our closing, we will have about five more

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1 minutes for questions.
 2 Does anyone have a question?
 3 I call on the Sea Isle City
 4 engineer.
 5 VOICE: Good evening. I have a
 6 couple of points to make. In the report,
 7 you mentioned Sea Isle City at various
 8 locations. The actual locations are 82nd
 9 Street and 86th Street.
 10 In the report, you mentioned a dune
 11 height elevation of 14.8, which is about
 12 three feet above the Promenade. That's not
 13 going to be a problem, where we don't have
 14 a Promenade, as far as the maintenance
 15 problem, but it will be a problem for us if
 16 you are not going to stabilize that sand
 17 almost immediately after you put it in.
 18 In the design phase, consider a
 19 geotextile tube or mat or something that
 20 will keep the sand in place while the
 21 vegetation gets a chance to mature, and it
 22 will prevent a lot of sand from blowing and
 23 washing down all through the Promenade,
 24 even though I know you said it will blow a

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1 there is a way to look at a longer time
 2 period and spread that initial cost out
 3 over a longer period than 50 years, I think
 4 you will see it as being cost effective, if
 5 not more cost effective.
 6 The other thing that I don't think
 7 is plugged into the option analysis or the
 8 cost basis is what if you have to renourish
 9 more than every five years?
 10 One of the diagrams that Carmen had
 11 up in the very beginning listed five
 12 storms, 1991, 1992, 1993, 1994 and 1998
 13 within a relatively short period of time.
 14 If you get that kind of situation, and it
 15 is likely you could over 50 years, then you
 16 will have to renourish more than every five
 17 years. The cost in doing that is going to
 18 be greater and it is going to make the
 19 option of groins look better, because that
 20 will tend to slow down the sand you lose
 21 over that period of time.
 22 I think you ought to take a look at
 23 that.
 24 I talked to Carmen a little bit

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1 little bit, but it will still end up
 2 blowing.
 3 We have the problem now. It's going
 4 to get even worse if you are three feet
 5 above the Promenade. If there is something
 6 you can do to look at that, that will help
 7 us.
 8 To reiterate what Mayor McHale said
 9 and Dr. Jameson said, leader of the North
 10 End Association, about the groins, I don't
 11 think you deny the functioning of them and
 12 how they slow down the rate of erosion.
 13 That's mentioned in your report. I think
 14 the whole reason they are not included in
 15 the selection option is the dollar value.
 16 I think the fallacy in looking at that is
 17 you are only looking at it from the 50-year
 18 period, which you are mandated to do.
 19 Rocks are around a long time. All things
 20 being equal and we don't get a tremendous
 21 rise in sea level, the groin structures, if
 22 built now, would be effective well over 50
 23 years. Even though you may not be able to
 24 include it as part of the actual report, if

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1 before the meeting about this issue of
 2 five-year renourishment. I would like to
 3 see you go on the record indicating if
 4 there is a need to renourish in a short
 5 period of time, whether two or three years,
 6 that that's included within the scope of
 7 the commitment from the Federal government
 8 and that there would be a commitment to
 9 renourish in three years, say, if there is
 10 a need to actually do that.
 11 MR. RAMBO: I want you to understand
 12 something. When we build the beach
 13 initially, we estimate how much sand is
 14 going to be lost in a year. I don't
 15 remember what it is off the top of my head.
 16 When we first build the beach, we put those
 17 five years of erosion on the beach to begin
 18 with.
 19 If we guess right, and it takes five
 20 years, and all of a sudden at that point we
 21 say we have to beach fill now, but if we
 22 got a storm of almost any intensity just
 23 prior to beach fill, that is a section that
 24 the beach is designed to protect your homes

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1 and property. What I am saying is we
2 always need minimum beach to prevent
3 damages.

4 What we do is we add more sand onto
5 that.

6 If you look on these sections back
7 here, you will see what we call a
8 construction beach and a design beach. If
9 it erodes faster than five years, if we put
10 on five years worth of sand, if it erodes
11 faster, we have to go back and tell our
12 headquarters. We survey and monitor it.
13 Our guess of five years, and Ocean City
14 three years, are educated guesses based on
15 what we think is going to happen based on
16 what happened in the past and what we think
17 is going to happen in the future. When you
18 do that, you don't know. We say it might
19 not be until seven or eight years we have
20 to come back and beach fill it. If it is a
21 calm decade, we may not have to beach fill
22 at all. Yes, it could be less or it could
23 be more. We try to make a guess using the
24 best average.

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1 Zaleski. I have a couple of questions. I
2 will be brief.

3 Can we get 2004? Can we get to
4 2005? What needs to be done to get us
5 there?

6 MR. MOORE: That assurance has
7 already been taken care of.

8 After the 1992 storm, State funding
9 was approved for shore protection at the
10 rate of 15 million dollars per year. That
11 has been recently upgraded to 25 million
12 dollars per year. We get that regardless
13 of what the conditions are. We will have
14 stable funding for this project.

15 MR. ZALESKI: Has the 25 million
16 dollars proven to be sufficient?

17 MR. MOORE: Yes. Basically, the
18 only criticism I have gotten so far is I
19 use it all on Army Corps of Engineers'
20 projects and very little or none on State
21 municipal projects.

22 MR. ZALESKI: The reason I asked is
23 because the geotubes have been exposed so
24 long that it seems there was a problem

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1 VOICE: My final comment and
2 question is:

3 Is funding in place for the design
4 phase of the project?

5 MR. MOORE: We have received initial
6 funding. We got funding this year and
7 probably will have funding next year. We
8 do not have the full amount, but we do have
9 funding for this year and next year.

10 VOICE: To begin the design phase?

11 MR. MOORE: Yes. We have money this
12 year to actually get started.

13 MR. RAMBO: The phase he is talking
14 about is the phase that, while we are
15 trying to gather the information now, we
16 can apply some of this.

17 What we can do on the landward side
18 of the dune slope to prevent wind blown
19 sand until the dune gets established? Now
20 we can fold those kind of suggestions into
21 the next phase coming up. If you have
22 something to say, please say it so we can
23 learn.

24 MR. ZALESKI: My name is John

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1 getting the money to cover them back up.

2 MR. MOORE: We have not done that.
3 We have not been involved in covering up
4 the geotubes.

5 MR. DELASARIO: The City is
6 responsible for covering up the geotubes.

7 MR. ZALESKI: I thought the State
8 was involved in some way.

9 MR. DELASARIO: No.

10 MR. ZALESKI: Thank you.

11 MR. DELASARIO: Any other questions?

12 MR. O'BRIEN: My name is Dan
13 O'Brien.

14 My question is:

15 How long do the geotubes last? How
16 long do you expect they will still be in
17 place?

18 MR. MOORE: As long as they are
19 covered and are not undermined by wave
20 action, they will last relatively
21 indefinitely. The problem is they have
22 been exposed to ultraviolet radiation and
23 suffered degradation. After exposure to
24 ultraviolet radiation and degradation, a

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1 wave can smash into it and rupture it. If
2 you don't fix it, it spreads and spreads.
3 It depends on a lot of factors. It can be
4 five years or twenty years.

5 MR. O'BRIEN: When put in place, it
6 was said that they were temporary.

7 Let's say the geotubes break down
8 and there are no more geotubes, no more
9 protection from them. As you said, in
10 1991, 1992, 1993, 1994 and 1998 we had
11 storms one after another that completely
12 took the dunes away, and, of course, put
13 our properties in the north end area at
14 jeopardy. I am saying this, because I
15 really think we need groins for protection,
16 especially if the geotubes don't hold up.

17 We bought our place in 1989. We
18 have seen right through the front of our
19 place the dunes just washed away, so if we
20 don't have geotubes, then I really think we
21 have to have the groins. We don't know if
22 the geotubes will be here for more than
23 five years. My suggestion is that we have
24 groins for protection in case the geotubes

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1 sand.

2 Again, when it comes down to the
3 groins, it comes down to spending a lot of
4 money, economically spending money today.
5 If we spend 10 million dollars today, it
6 has a certain economic impact.

7 If you hold that 10 million dollars
8 off to year 15 from now, the impact of that
9 10 million dollars to today's dollars, how
10 we evaluate it, is a very small dollar
11 amount.

12 You have to understand the economics
13 of how we evaluate these things. In
14 today's dollars, spread out over time and
15 brought back to the present, dollars spent
16 in the present are 100 percent of the
17 value. Dollars spent in year 2035 -- You
18 can spend 10 million dollars in year 2035,
19 but in today's dollar value, it is a very
20 small amount.

21 That's why as you go out in the
22 years of nourishment, the cost to do that
23 nourishment isn't 5 million dollars like it
24 is today. It may only have a value of a

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1 are not going to be here. If it is a
2 50-year plan, if they even last 20 years,
3 there is going to be a time we don't have
4 geotubes. I think that's why we really
5 need the groins.

6 MR. RAMBO: Mr. O'Brien, like I
7 said, we are going to go back because we
8 heard you clearly about the groin issue.

9 I want you to understand something.

10 Groins do not protect you from wave
11 attack.

12 When a common storm hits, basically,
13 it comes parallel to the beach. The groins
14 really don't do what you may think they do
15 to protect you from storm damage, which is
16 what our project is about. Groins are
17 there to try to slow down what is called
18 long shore transport, sand moving
19 southward. It slows that down, but it
20 doesn't stop on-shore/off-shore loss of
21 sand. Usually, in a storm, most of the
22 storms we get, the higher storm levels,
23 they attack more parallel to the shoreline
24 and give you on-shore/offshore loss of

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1 couple hundred thousand dollars in today's
2 dollars.

3 We will go back and look at it all.
4 We have no problem in going and looking at
5 it making making sure whatever decision we
6 make is presented to you folks, in possibly
7 another form like this.

8 Let's wait and see as we go through
9 the design phase.

10 VOICE: Coming from left field, one
11 of the things said was if the north end
12 were to be washed out, in order to allow
13 people to get out of here, someone would
14 have to build a bridge to continue to get
15 to the highway.

16 Somehow or other, shouldn't the New
17 Jersey Department of Transportation be
18 involved in some of these things to protect
19 the road from washing out so we have an
20 emergency exit to get out of these places?

21 I know the conditions would have to
22 be somewhat different than they have been
23 in the past, but you can end up having an
24 entire island possibly trapped. Getting

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1 out the north end would be the only way to
 2 get out and it wouldn't be there anymore.
 3 Somehow or other, if they build bridges and
 4 things to protect roads, somehow or other,
 5 maybe they should be involved in this.
 6 MR. ZAPPLE: It is a county road.
 7 VOICE: But the people live in the
 8 State of New Jersey.
 9 MR. RAMBO: The cost of putting a
 10 causeway, which is really what you are
 11 talking about, to span Whale Beach, the
 12 north end, I thought we looked at that in
 13 the early stages.
 14 MR. ZAPPLE: I think 7 million
 15 dollars to build a bridge. It kind of gets
 16 into the same thing as the groin thing.
 17 It's expensive to build up front. You are
 18 not spreading it out over 50 years like you
 19 are with sand. It is cheaper over 50 years
 20 to do the sand than it is to put a bridge.
 21 VOICE: My point is that maybe it
 22 should be presented to the State, unless
 23 they want Highway Department funds to be
 24 spent building a causeway. Maybe they

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1 Thank you very much.
 2 ***
 3 (Whereupon, the hearing concluded at
 4 8:35 p.m.)
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1 should be doing something to help that.
 2 MS. JAMESON: I think he is asking
 3 for help on the groins from the Department.
 4 MR. RAMBO: The State is part of
 5 this whole process. That's why Bernie is
 6 here. Bernie may represent DEP because
 7 that is where he works at, but to the Army
 8 Corps of Engineers, he represents the State
 9 of New Jersey and any and all aspects of
 10 it.
 11 MS. JAMESON: We are not asking for
 12 a bridge. We don't want a bridge on the
 13 north end.
 14 MR. DELASARIO: I thank you for
 15 coming out. I would like to thank the
 16 audience for coming out with your
 17 questions. I ask that you look at the five
 18 drawings for the north end. By all means,
 19 while you are looking at them, please don't
 20 put this project on hold.
 21 Thank you very much. You have been
 22 very informative. I think everyone has a
 23 better idea of where we are going and what
 24 it looks like.

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CAPE MAY, NEW JERSEY

RE: ARMY CORPS OF ENGINEERS
PUBLIC HEARING ON FEASIBILITY
STUDY FOR GREAT EGG HARBOR INLET,
TOWNSENDS INLET OCEAN CITY
AND LUDLAM ISLAND

PLACE OF HEARING: OCEAN CITY, NEW JERSEY

DATE OF HEARING: JUNE 27, 2001

TIME OF HEARING: 7:00 P.M.

PANEL MEMBERS SPEAKING:

- GEORGE SAVASTANO
- CARMEN ZAPPILE
- BERNIE MOORE
- GUS RAMBO
- SUSAN LUCAS

ALSO PRESENT: RICHARD CHLAN
Chief of Public Affairs
Army Corps of Engineers

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Harbor and Townsends Inlet. Once again,
this is a feasibility study coming to an
end. These are concepts, not final
designs. We are very interested in the
solution they came up with, the Army Corps
of Engineers and the State, to solve the
erosion problem.

Carmen Zappile will give you an
overview of the study and the findings.

Bernie Moore will give the New
Jersey perspective. We will then be open
for questions and answers.

MR. ZAPPILE: Good evening ladies
and gentlemen. My name is Carmen Zappile,
the project manager for this study since it
started back in 1997.

I will give you the background about
what happened with the study, the results
of the study, what it will take for project
implementation and what the current
administration policy is regarding shore
projects.

Background. The State has
determined that there is high potential for

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MR. SAVASTANO: Good evening ladies
and gentlemen. We are here tonight to hear
a presentation by the Army Corps of
Engineers on a feasibility study for the
south end shore improvement project in
Ocean City, New Jersey, part of a study
done by the Corps of Engineers for the
Great Harbor Inlet and Townsends Inlet.

We have present tonight with us
Bernie Moore, an administrator with the
Department of Environmental Protection;
Carmen Zappile, project manager for this
study who is with the Army Corps of
Engineers; Susan Lucas to my left, chief of
the costal planning section; Gus Rambo,
chief of the civil engineering management
office for the Philadelphia district, and
(followed by other inaudible names that did
not speak during the meeting.)

Susan Lucas is going to kick it off
for us.

MS. LUCAS: Thank you for having us
here tonight. We are going to present to
you the feasibility study for the Great Egg

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storm damage. They asked Congress to
allocate funds for the Corps of Engineers
to undertake a study. Congress did
allocate those funds. What came out of
that is the New Jersey shore protection
study in the late 1990s.

We looked at numerous areas, all the
way down to Cape May. In this particular
study, we looked at the Great Egg Harbor
Inlet and the Townsends Inlet.

Specifically, what we will talk
about tonight is the area of Ocean City
down to 34th Street-36th Street.

You are looking at the south area.
These are aerial photos from about
1999.

Here is another one. This is
looking northward at Corson's Inlet State
Park.

Here is the garden area.

I previously said we looked at
several areas. We looked at the area in
the gardens not included in the Ocean City
project on the north end. We looked to see

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1 if anything could be done in that area
 2 also.
 3 Basically, as part of this study,
 4 there are two phases. One a reconnaissance
 5 phase, which was one year in duration and
 6 100% Federally funded. It said a more
 7 detailed study was needed in this area and
 8 that is how we got into the feasibility
 9 phase. It was a three or four year
 10 duration, and the cost was shared with the
 11 New Jersey Environmental Protection Agency.
 12 A draft report was submitted to
 13 higher authorities back in December, 2000.
 14 Before we release it to the public,
 15 we need to release it to Washington. They
 16 take a look at it and make sure it is okay
 17 to release to the public and agencies for
 18 their comments.
 19 It was released for comment in May.
 20 This is the end of that comment period.
 21 What do we do?
 22 As far as the feasibility study, we
 23 identified problems and formulated
 24 solutions and evaluated impacts, optimized

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1 the high water line came to about here.
 2 Here is the same location during the
 3 1998 storm. It was very wet that year.
 4 Looking back in that same area, this
 5 is flooding once the water came over the
 6 bulkhead.
 7 This is back during 1992 at the
 8 south end. The dunes that existed there,
 9 you can see where they are being washed
 10 away and breached.
 11 Looking at some of the storm damage
 12 from 1962, this is 1962 storm damage south
 13 of 34th Street.
 14 You can see wide-scale damage to the
 15 first row of homes there.
 16 Here is more damage.
 17 This is down at 54th Street.
 18 Plan formulation. Basically, our
 19 objective is to reduce storm damage
 20 vulnerability to the south end area by
 21 looking at the existing conditions, analyze
 22 "without" project conditions; that is, if
 23 we don't do anything, what will be the
 24 condition; develop alternatives, analyze

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1 and selected a plan and coordinated with
 2 public agencies.
 3 Problem identification. The big
 4 problem is storm damage vulnerability. The
 5 big storm was the 1944 hurricane. You get
 6 that kind of storm on an average of every 50
 7 years.
 8 The 1962 storm also did damage and
 9 stuck around for five high-tide cycles,
 10 thus, it was given the name of the Five
 11 High Tide Storm.
 12 There was damage to over 6,000
 13 structures. In today's dollars, that is
 14 about 90 million dollars.
 15 There were also storms in 1991,
 16 1992, 1993, 1994 and 1998, the 1992 storm
 17 probably being the most severe.
 18 The problem is from storms you get
 19 erosion, storm induced and long term. You
 20 get wave attack and inundation or flooding.
 21 This picture is back a couple of
 22 years ago before the dune and beach out
 23 there now. This is looking at the south
 24 end around 50th Street. You can see how

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1 "with" project conditions and compare
 2 benefits to costs.
 3 We define existing conditions by
 4 looking at the physical processes of the
 5 coast, the historic shorelines over the
 6 long term, look at existing protective
 7 structures, such as bulkheads; the
 8 geotechnical conditions, such as sand out
 9 in the ocean for a particular type of sand
 10 to closely match the sand on the beach now.
 11 We look at the environmental
 12 conditions. When we dredge material from
 13 the ocean bottom, we need to quantify the
 14 impact to the critters living there.
 15 We look at the cultural resources,
 16 such as looking for shipwrecks, not to
 17 disturb historic shipwrecks and things like
 18 that.
 19 "Without" project condition. We use
 20 computer modeling to quantify what the
 21 damages will be if we don't do anything.
 22 We try to link it to historic damage and
 23 analyze it over 50 years. Over 50 years,
 24 it averages to about 5 million dollars in

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1 annual storm damage. All the storms that
2 happen through 50 years, this is what would
3 happen.

4 Develop alternatives. We first look
5 at initial screening. Being we have done
6 these studies before, we have a pretty good
7 idea what works and what doesn't work.

8 We go through a whole bunch of
9 alternatives. We have a pretty good sense
10 of what will work and won't work and break
11 it down to a chosen few and then do a
12 detailed analysis and quantify the "with
13 project" damages.

14 Basically, one of the things we
15 looked at that has proven to be very
16 successful was dune and berm. This is a
17 cross section to give you an idea what that
18 is.

19 We looked at putting geotechnical
20 tubes in the center of the dune. That is
21 in the Whale Beach area in the north end
22 between First and Thirteenth Street in Sea
23 Isle City.

24 We also looked at putting groins out

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1 Costs. What are the costs? You
2 have the initial construction costs for a
3 project like this. You have periodic
4 nourishment and long-term monitoring where
5 we go out there and do beach surveys and go
6 in the borrow areas to make sure whatever
7 impacts we are making we monitor them and
8 are able to quantify that.

9 Selected plan. The plan we came up
10 with was a berm and dune restoration. To
11 give you an idea graphically what it is,
12 you can see the berm in the berm and dune
13 plans.

14 This is how it looks in terms of
15 damage reduction.

16 This is the plan we are going to go
17 with. You can see damage reduction here is
18 almost 60 percent, not as much as these
19 here, which have a higher dune and berm in
20 front. As you can see, the cost for some
21 of these is higher.

22 This is the cost for the one we
23 picked.

24 This is the berm only plan. That

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1 there.

2 This is a timber groin in Sea Isle
3 City.

4 This is a stone groin at the
5 southern end of Ocean City.

6 We actually did a detailed analysis
7 of berm restoration, putting a beach out
8 there with no dune, and then we looked at
9 putting a berm and dune restoration with
10 structural reinforcement, such as a
11 geotechnical tube in the center of it, and
12 putting a groin field and combining them.

13 Benefits. You ask what are the
14 benefits from this type of project.

15 You have storm damage reduction.
16 That's the big thing. You have reduced
17 local efforts. If we put our project in,
18 the city won't have to go do it's own
19 project on the south end.

20 You have recreation benefits. We
21 are only allowed to use a certain
22 percentage of benefits in our analysis. No
23 more than 50 percent can be used for
24 recreation.

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1 gives you an idea how these things jibe out
2 graphically.

3 This is showing the net benefits
4 minus the cost. That's your net benefits.

5 This is the one we are going with,
6 the highest benefits, which is a hundred
7 foot berm and a dune of about 12 feet.

8 That means it is about two feet over
9 bulkhead height.

10 That is two feet over bulkhead
11 height and a hundred foot berm. It's
12 pretty similar to what is out there now,
13 except our dune will be wider.

14 Here it goes. This is conceptual.
15 A more detailed conception is shown on the
16 poster board. Basically, it's a hundred
17 foot berm and about two feet over the
18 existing bulkhead, which is about six feet
19 high standing on the beach.

20 This is what it looks like out there
21 right now.

22 When we did this project and came up
23 with this study, we had our team start here
24 and go up.

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1 We had to work out how to move that
2 around based on the existing dune placed
3 there.

4 We will talk about that in more
5 detail.

6 This is looking over the bulkhead.
7 It's almost two feet in some areas.
8 In terms of the view of people, it
9 probably won't be much different in most
10 locations.

11 Selected plan. The initial
12 construction quantity is 1.6 million cubic
13 yards. We will also put dune grass,
14 850,000 square feet, sand fencing of 2.5
15 miles and periodic nourishment of 400 cubic
16 yards at a cycle of every three years.

17 Basically, we take sand from this
18 area here. It's outside the 3-mile limit.

19 Actually, we wanted to go closer,
20 but there was concern from a State agency
21 about fish habitat. It costs a little bit
22 more to go out that far, but it's better
23 environmentally.

24 To get an idea what the benefits are

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1 rate and other things to get to the annual
2 of about 2.1 million dollars a year.

3 Benefit cost comparison. Looking at
4 benefits and cost, for every dollar spent,
5 your benefits to cost ratio is almost \$2 in
6 benefits, 1.9 dollars in benefits.

7 Cost allocation. Who pays what?

8 The initial construction cost is 65
9 percent Federal and 35 percent non-Federal.
10 It works out to 8.1 million dollars for
11 Federal and 4.4 million dollars for
12 non-Federal.

13 Periodic nourishment costs are split
14 50/50 between Federal and non-Federal.

15 We will talk later how that is
16 subject to change with the current
17 administration.

18 In terms of numbers, the ultimate
19 project cost is 52 percent Federal and 48
20 percent non-Federal.

21 Bernie from the State will tell you
22 what happens for implementation, how this
23 project gets built, what has to happen
24 next.

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1 that I talked about before, there is,
2 basically, storm damage reduction. We
3 reduce the damage by about 50 percent
4 according to what we investigated.

5 Local costs are foregone. This is
6 how much we serve the locals every year in
7 terms of beachfill for the south end.

8 There are recreation benefits of
9 about \$800,000.

10 As you build the project, before
11 completion, you have recreation benefits.
12 If you have the project in ten blocks, that
13 is recreation benefits of about \$40,000 a
14 year.

15 You have annual benefits of about 4
16 million dollars a year.

17 Project costs. The initial
18 construction costs is 12.5 million dollars.
19 Land and easements is \$100,000. Total
20 periodic nourishment over 50 years is 64
21 million dollars. The ultimate project cost
22 for 50 years is 76.5 million dollars.

23 When you break that down, it's not
24 dividing it by 50. You use the interest

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1 We need to address any comments we
2 get on this report. We get a lot of
3 comments from agencies. We have to
4 address every one of them.

5 After we address them, we submit the
6 final report to Washington. If they
7 approve it, we are able to go to a more
8 detailed phase, which is getting blueprints
9 to give to a contractor to construct the
10 job. That usually lasts about a year or
11 two.

12 Before it gets built, we need
13 Congress to authorize the project. We need
14 Congress to say it likes the project, build
15 it. They have to come up with the money,
16 and also the State has to come up with the
17 money, in order for us to build it.

18 Current administration policy.
19 Current administration policy is a proposal
20 to adjust cost sharing. These kinds of
21 projects have been kind of iffy. That may
22 change or that may not change. That's out
23 of our hands. It's a political thing. We
24 are waiting to see what happens.

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1 Cost sharing may change to 50/50
 2 from 65/35. We are not sure at this point.
 3 In general, it needs Congressional
 4 action for these projects to be built at
 5 this time.
 6 Bernie Moore is now going to address
 7 you.
 8 MR. MOORE: Good evening ladies and
 9 gentlemen.
 10 The project Carmen has been talking
 11 about is between 34th Street and Townsends
 12 Inlet.
 13 Back in the early 1990s, we did a
 14 project from the north end of Ocean City
 15 down to 34th Street. That was a separate
 16 project authorized by Congress and has been
 17 very successful in Ocean City.
 18 The State of New Jersey, along with
 19 the Army Corps of Engineers, has divided
 20 the shoreline into little segments or
 21 independent areas that can stand alone.
 22 When we did this, you ask: Why didn't all
 23 of Ocean City become one project? The
 24 reason was, back in the 1990s and early

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1 What we are looking at right now is
 2 to obtain the necessary data so that we can
 3 go forward with the EIS and get permits
 4 from the various agencies we have to get
 5 them from.
 6 In the event of a storm, we can go
 7 to these sites first and pick up the sand
 8 and put it back on the beach as quickly as
 9 possible and save the individual borrow
 10 sites for the project. That's what we are
 11 working on.
 12 As we move forward from tonight and
 13 get into the next phase of the project, the
 14 State of New Jersey and the Army Corps of
 15 Engineers are going to enter into an
 16 agreement called a project cooperation
 17 agreement. That agreement covers the life
 18 of the project for 50 years. It covers a
 19 detailed written report on the initial
 20 construction that will actually be carried
 21 out. It also talks about renourishment.
 22 Renourishment in the Ocean City area is
 23 once every three years, and for upper and
 24 Sea Isle City, it is once every five years.

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1 1970s, when first developed, the rules of
 2 the game were different. We had to cut the
 3 project off at 34th Street.
 4 We tried to correct our ways in the
 5 1980s by including this in a major study.
 6 Carmen indicated where we have sand
 7 deposits. Each of these segments is along
 8 the shoreline: Cape May, Atlantic, Ocean
 9 and Monmouth. We have individual borrow
 10 sites off shore which will supply enough
 11 sand for each of these projects for the
 12 life of the project, which is 50 years.
 13 In addition, the State of New
 14 Jersey, working with the Bureau of Geology
 15 and Mineral Management Agency from the
 16 Department of the Interior is looking at
 17 off-shore sites beyond the 3-mile limit. I
 18 think the areas that are of most concern to
 19 the folks here are A and B. They are down
 20 off Townsends Inlet.
 21 There is very good quality sand
 22 about six to seven miles off shore. There
 23 is a very good quality of sand and the
 24 quantity of sand is tremendous.

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1 We get down to cost sharing. I will
 2 explain it a little bit later and show you
 3 some numbers. Right now, the cost sharing
 4 for initial construction is 65 percent
 5 Federal and 35 percent non-Federal.
 6 Renourishment is on a 50/50 basis.
 7 For real estate, and you have
 8 already been through all this, almost all
 9 of your beach front is owned by the City.
 10 There are very few parcels the City does
 11 not own. In those cases, they have
 12 perpetual easements.
 13 We are in good shape.
 14 Project coordination. There is an
 15 ongoing dialogue between the Army Corps of
 16 Engineers, the State, the counties and
 17 cities. There is very good input and
 18 comments that we get from each of the
 19 individual areas.
 20 Project maintenance will also be
 21 covered in the project cooperation
 22 agreement as to how and what we can do on
 23 the beach to maintain the facilities that
 24 we have.

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1 That's with the Army Corps of
 2 Engineers.
 3 We also have an agreement. There
 4 are agreements upon agreements upon
 5 agreements. Basically, our agreement with
 6 the City covers, basically, the same things
 7 we covered with the Army Corps of
 8 Engineers.
 9 Cost sharing, that non-Federal share
 10 is now further cost shared between the
 11 cities and the State, the State picking up
 12 75 percent of that non-Federal share and
 13 the municipalities picking up 25 percent.
 14 There is one other item that you
 15 should be interested in. It is endangered
 16 species, the little piping plovers and the
 17 least terns.
 18 We never had to worry about them in
 19 early 1992, because we didn't have a beach
 20 and the birds didn't nest. Now we have a
 21 beach. The birds now nest.
 22 So, we have to come up with a plan
 23 to protect the birds and make sure they
 24 have equal rights, you might say, along

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1 In that, it says the initial
 2 construction will be 65/35. That's the
 3 law.
 4 What it also says is that if a
 5 project was authorized by Congress or a
 6 feasibility study was completed by December
 7 31, 1999, then the 65/35 will hold both for
 8 initial construction and periodic
 9 nourishment.
 10 If the project was not approved
 11 until December 31, 2000, initial
 12 construction would remain at 65/35, but the
 13 periodic nourishment would then be scaled
 14 to 60/40. It has to do with periodic
 15 nourishment.
 16 In the particular case we are
 17 looking at, this is fiscal 2001.
 18 In fiscal 2002, 2003, we look at the
 19 next phase, PED.
 20 In fiscal 2004, 2005, you will be
 21 looking at the actual construction of the
 22 project.
 23 The first time we turn around to do
 24 renourishment is going to be somewhere

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1 that beach front. That will be covered in
 2 the State aid agreement.
 3 There is one municipality in the
 4 State right now that has an agreement with
 5 Fish and Wildlife. That is Avalon.
 6 Cost sharing. In 1986, the Water
 7 Resource Development Act was approved.
 8 That's the document which moved forward all
 9 these various shore protection flood
 10 controls and dredging projects throughout
 11 the country.
 12 Under WRDA, through 1998, the cost
 13 sharing for initial construction and pier
 14 periodic nourishment was 65/35, exactly
 15 what you are paying when we do the beach
 16 fill from the inlet area down to 34th
 17 Street. That is the cost sharing.
 18 In 1999, there was a proposal to
 19 change the cost sharing to 35 percent
 20 Federal and 65 percent non-Federal. After
 21 lots of discussion in Washington, the
 22 Congressional folks came up with a
 23 compromise. That compromise is set out in
 24 WRDA 1999.

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1 after 2002, almost 2010. At that time,
 2 it's going to be 50/50 unless the law
 3 changes.
 4 The proposal put on the table
 5 recently, and I am sure you have seen
 6 comments in the paper, was, again, to
 7 switch it back to 35 percent Federal and 65
 8 percent non-Federal.
 9 I don't know how that is going to
 10 come out. I know some of the
 11 sub-committees have voted against that and
 12 have made a very strong approach to that.
 13 I can also say to you that, a month
 14 ago, when the American Shore and Beach and
 15 American Coastal Coalition had their
 16 conference in Washington, many of the
 17 Congressmen who came over and talked to us
 18 very clearly indicated to us that was dead
 19 on arrival in the House. These Congressman
 20 were not just from New Jersey. They were
 21 from California, Texas, the Great Lakes
 22 area, Washington.
 23 There is some action going on within
 24 the Congressional area.

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1 Now we get down to the nuts and
 2 bolts of what it is going to cost us.
 3 Here it is for Ocean City. The
 4 total cost of the project is 12.5 million
 5 dollars. The Federal Government pays about
 6 8.1 million dollars and the non-Federal
 7 share is 4.39, the State picking up 75
 8 percent of that 4.39, bringing us down to
 9 about 3.2 or 3.3, Ocean City picking up
 10 1.1.
 11 Because this project involves Corson
 12 Inlet State Park, there is a portion of the
 13 project that the park will benefit from, so
 14 they also have to pay. I am the guy who is
 15 going to pay that. It is not going to be
 16 the park people.
 17 That reduces the city's share down
 18 to just about a million dollars for a 12.5
 19 million dollar project.
 20 To give you a feel of what is going
 21 on on the other side of Corson's, Ludlam
 22 Island, again, you have about a 30 million
 23 dollar project down there.
 24 The Federal government's share is

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1 is "New Jersey and shore protection,
 2 perfect together."
 3 Thank you very much.
 4 MR. ZAPPILE: Next, we are going to
 5 get some questions, and, hopefully, some
 6 answers.
 7 MR. SAVASTANO: We have two
 8 individuals who signed up to speak. If
 9 there are others, I think we are willing to
 10 hear them also, anybody else who did not
 11 fill out a sheet.
 12 I call on Mr. McCall.
 13 MR. McCALL: Thank you.
 14 Bernie and I have worked on a number
 15 of projects.
 16 Susan, it's nice to see you again.
 17 Unlike my friend from Avalon, when I
 18 call you, you don't have to take one or two
 19 nitroglycerin tablets. It's always a
 20 pleasure to just have a nice conversation
 21 with you on the telephone without lots of
 22 ancillary anecdotes.
 23 First of all, I thank you, Susan,
 24 for being here in Ocean City and having

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1 about 19 million dollars. The non-Federal
 2 share is about 10.5 million dollars, and
 3 the State's share is 7.8.
 4 Again, we divide that 7.8 among the
 5 State, Upper Township and Sea Isle.
 6 Overall, for a 42 million dollar
 7 project, Ocean City provides 1 million
 8 dollars and Upper Township \$650,000 and Sea
 9 Isle City about a 1.9 million.
 10 I think the project so far has been
 11 very good.
 12 I think the City of Ocean City is in
 13 very good shape. We have pumped the same
 14 area twice now since 1992 with the city as
 15 part of the Army Corps of Engineers other
 16 projects up in the northern end of the
 17 State. Things have worked out extremely
 18 well. The beaches have held up extremely
 19 well.
 20 I think it's a very important
 21 project and will provide the protection
 22 that you need.
 23 I would like to close with my last
 24 slide, which I think is appropriate, which

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1 this public hearing.
 2 We are pretty pleased at the City.
 3 I am also a member of the Coastal
 4 Conservation Commission.
 5 Jack is here as part of the Coastal
 6 Conservation Commission.
 7 I see Councilman Jones and
 8 Councilman Alessandrine here.
 9 Not speaking on behalf of the
 10 council but as a council person, we are
 11 excited about the prospect of this
 12 happening as a part of Ocean City's future.
 13 George has done an outstanding job in
 14 professionally managing this project to
 15 date.
 16 George and I had some conversation
 17 last year toward the waiting days.
 18 George said, "Frank, I will be okay
 19 and everything is going to work."
 20 George, thank you very much for your
 21 professional dealing with the folks.
 22 I think it's good for the region.
 23 This is a continuation of a regional
 24 project.

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1 I am very excited about being able
2 to participate in this small portion in
3 this part of the region. I thank you very
4 much for your interest.

5 I know the Ocean City residents are
6 very pleased with the amount of ratables
7 that we have here and the kind of
8 protection this is going to afford us over
9 the years to come. I think it is very
10 worthwhile.

11 I think the administration and City
12 Council is looking forward to making this
13 project a reality.

14 I saw the funding formula. Some
15 people think some of our pockets are sewn
16 shut, so the more you can reduce that 1
17 million dollar contribution, the better it
18 will be.

19 It makes an awful lot of sense.
20 Thank you very much Susan. I know
21 you have been in a number of regions doing
22 a lot of good work. I, for one, have
23 followed some of that work in the various
24 regions. I am very happy that you are part

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1 When you dig a 50-foot hole in the
2 navigation channel, the dredge sits there
3 for a month or two months to make a 50-yard
4 passage in the navigation channel.

5 Tim Brown said we will look at this,
6 but when you realize there is not enough
7 sand to do the Ocean City job, we have to
8 get sand at other places.

9 If you take the sand out of that
10 navigation channel first, wouldn't that be
11 nice?

12 I am not against beach building. I
13 live a hundred yards from the beach.

14 Somehow, I have to get somebody's
15 attention that you have to fix what you
16 broke.

17 Great Egg Harbor Bay is in terrible
18 shape from what you did.

19 Tim Brown said he will look at it.
20 I have no faith in that either.

21 This is the reason why I am
22 addressing you now. The north end has
23 ruined Great Egg Harbor Bay.

24 Just about a month ago, the Coast

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1 of the Philadelphia region. Thank you.
2 You other folks, thank you for your
3 support.

4 And Bernie, thanks.
5 MR. SAVASTANO: The chair recognizes
6 Mr. Wescoat.

7 MR. WESCOAT: Good evening.
8 I am not against building beaches.
9 I live a hundred yards from the beach. If
10 you see a wave come over the sea wall,
11 don't you think it's time to leave? All
12 the roads are closed.

13 However, every time you do
14 something, there is a reverse action. Your
15 reverse action has been that you have
16 ruined Great Egg Harbor Bay. There is no
17 way to get around it. You are partially
18 responsible for the blockage underneath
19 Great Egg Harbor Bay and underneath Dolores
20 Cooper Bridge. I have several pictures
21 here. If I may approach, if you look at
22 them, the white portion of sand is the
23 blockage that comes through if you take the
24 protective barriers away.

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1 Guard showed up and put another buoy right
2 under the JFK bridge running south 25 yards
3 wide. There used to be water there shore
4 to shore. You used to be able to bring the
5 boats in with no problem. Now there is a
6 problem.

7 Bernie says he has no money.
8 Public relations for the north end
9 of Brigantine said the DEP donated 1.275
10 million dollars to do the Brigantine job.
11 Is that correct or is that erroneous?

12 MR. SAVASTANO: Mr. Wescoat, do you
13 have a comment or question in regard to the
14 south end feasibility study?

15 MR. WESCOAT: The north end and the
16 south end are altogether.

17 MR. SAVASTANO: They are separate
18 projects.

19 MR. WESCOAT: Until they fix what
20 they broke --

21 MR. SAVASTANO: This meeting is not
22 about that. This meeting is to discuss the
23 feasibility study for the south end. Your
24 comments or concerns should be about that.

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1 We will be be happy to talk to you
 2 after the meeting.
 3 MR. WESCOAT: I am so vehement
 4 against anymore beach building that I am
 5 considering getting a Federal injunction to
 6 stop anymore beach building until there is
 7 a concerted effort on the part of the State
 8 to fix the intercoastal waterway between
 9 the Corps of Engineers, State and towns.
 10 That's the only way I know of to get their
 11 attention. They must fix what they already
 12 broke. I don't know what they will break
 13 down here.

14 That's it.

15 MR. SAVASTANO: Does anybody else
16 have any comments or questions?

17 MS. WRIGHT: Can we get a schematic
18 on the dune building process and a dunes
19 profile that you are planning to put in the
20 south end?

21 MR. RAMBO: We still have one
22 sitting there.

23 MS. WRIGHT: To me, it doesn't look
24 like a dune building scene.

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1 they stay intact until you need them for
2 storm activity.

3 I agree with George, that we can
4 look at this and adjust the dune. Right
5 now, it is up against the bulkhead.

6 MS. WRIGHT: No, it is not.

7 MR. SAVASTANO: The proposed dune is
8 now planned to be against the bulkhead so
9 you don't have any trapped water and there
10 is no maintenance needed.

11 Once we establish dune grass, you
12 keep a lot of sand.

13 All that considered, we are willing
14 to move that dune and adjust it to
15 accommodate what the locals need there.

16 MS. LUCAS: Last night, one of the
17 suggestions we heard regarding dunes was to
18 put in a geotextile tube until sand grass
19 takes hold.

20 MR. RAMBO: That has to be looked
21 into.

22 We don't want a big sheet of
23 material clapping against your house.

24 MS. WRIGHT: We won't have the

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1 MS. LUCAS: She is concerned with
2 the offset.

3 MS. WRIGHT: It drops about two feet
4 below the bulkhead and it extends out up to
5 20 feet from there. That trough is
6 considered very important by the people who
7 live in the area. It's a means of getting
8 out onto the beach. It also serves as a
9 sand dump in times of heavy wind so sand
10 doesn't get on properties.

11 Establishing dunes and getting them
12 to run right has cut their work
13 tremendously.

14 MR. RAMBO: Stay where you are.

15 George, is this something the City
16 likes to do?

17 MR. SAVASTANO: This is something we
18 can address during the design phase,
19 consistent with what we did on the north
20 end, and something I think we can work out.
21 She makes a good point.

22 MR. RAMBO: Normally, you have to do
23 a couple things with dunes. You put them
24 as far away from the ocean as possible so

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1 problem if the dunes are vegetated at this
2 point.

3 MR. RAMBO: Some are and some
4 aren't. It varies slightly. It depends on
5 how we want to do this.

6 For example, the dunes in the Avalon
7 area are huge. They may be huge, but they
8 still have to be a little bigger to
9 accommodate what we want to do in the area.
10 Instead of going in and putting new dunes
11 on top of old established dunes with weed
12 vegetation, we are packing dunes onto the
13 front of existing dunes.

14 The dunes here, by the time we get
15 around to this project, we can still debate
16 covering the whole dune over.

17 Our dunes may be as high in each
18 area but they are much wider. Do we
19 maintain the integrity there now, or do we
20 incorporate the dune into a larger dune?

21 The whole point is to hear this and
22 adjust.

23 We work closely with George. You
24 might say George is an old friend. We work

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1 easily with him.
 2 MS. WRIGHT: I have been in charge
 3 of the city dune project since 1993. I
 4 feel I know what I am talking about.
 5 MR. RAMBO: We will be happy to sit
 6 down with you and walk along the beach to
 7 find out what you desire to be done. You
 8 may know about your dunes and beaches
 9 better than we do.
 10 MS. WRIGHT: Have you been to our
 11 south end since March?
 12 MR. RAMBO: No.
 13 MS. WRIGHT: It looks very
 14 different. I will be glad to take you down
 15 there.
 16 MR. RAMBO: We want enough quantity
 17 of sand to provide a resource of sand to
 18 feed the beach as it begins to get hit
 19 hard. We are willing to adjust that.
 20 MS. WRIGHT: Do I understand you
 21 will be building the dunes?
 22 MR. RAMBO: Yes.
 23 MS. WRIGHT: Are you supplying the
 24 materials and personnel to build them?

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1 MS. WRIGHT: We do a lot of that.
 2 MR. RAMBO: With this project, you
 3 don't have to do anything. You can sit and
 4 watch and yell at us to put it in the right
 5 place. All this is done for you. You just
 6 take it over and maintain it the way you
 7 are doing it.
 8 MS. LUCAS: You will be part of the
 9 process.
 10 MR. RAMBO: We build it for you.
 11 MR. MOORE: You will be part of the
 12 coordination team that meets on a weekly or
 13 monthly basis to make sure everything is
 14 moving smoothly.
 15 When we built the first part of the
 16 job, we met weekly to schedule where we
 17 were going to be and what we were going to
 18 do. The same thing happens again.
 19 MS. WRIGHT: Thank you.
 20 MR. SAVASTANO: Are there any other
 21 questions or comments?
 22 VOICE: I have two questions.
 23 Taking up what she said, if the
 24 proposed dune comes up to the existing

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1 MR. BEARD: Yes. You saw what we
 2 did on the north end of the Federal project
 3 that exists, designed in the mid 1980s. It
 4 didn't come with a dune. We got smarter
 5 over the years and found out that a dune
 6 greatly assists in damage protection.
 7 All our projects now have dunes.
 8 If you go across from the southern
 9 point of Delaware up to what we do in the
 10 middle of New Jersey, some people want
 11 dunes under the boardwalk and some want a
 12 trough area like you want.
 13 We try to accommodate each one and
 14 still maintain the integrity by being not
 15 too close to the ocean and berm, yet far
 16 enough away to protect the dune from normal
 17 high tides.
 18 MS. WRIGHT: Are you supplying the
 19 materials and personnel or are you
 20 supplying the funds for us to continue to
 21 do that?
 22 MR. RAMBO: We go out with a
 23 contractor. We supply the sand fence, the
 24 dune grass and even plant it.

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1 bulkhead like you mentioned, how do the
 2 existing beach-front owners access the
 3 beach without going to the end of the
 4 street?
 5 MR. SAVASTANO: Right now, people
 6 who don't live mid-block can walk in the
 7 area clear of dune vegetation without going
 8 out to the street. That's why we want to
 9 coordinate. The only way to do it, if we
 10 collectively decide to build a dune all the
 11 way to the bulkhead, would be some kind of
 12 material parallel to the bulkhead and
 13 parallel as well to the dune. We solicit
 14 public input first. We work well together.
 15 We never said anything bad.
 16 MR. RAMBO: It can be adjusted. The
 17 whole point is to make it so you people can
 18 live with it and get storm damage
 19 protection. It can be worked out.
 20 MR. SAVASTANO: The project out
 21 there now was done in collaboration with
 22 comment from the public. Kit worked with
 23 Public Works and sent notices to all the
 24 people who live along the beach. She got

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1 some feedback from them and our office got
 2 feedback.
 3 When we created that zone, it was
 4 based on information we have and what Kit
 5 knows about building dunes and what we know
 6 how to keep the people happy and make sure
 7 it all works together.
 8 MR. RAMBO: Literally, we would
 9 appreciate you helping us tell the
 10 contractor how and where to put the sand
 11 fencing.
 12 MS. WRIGHT: I have a large display
 13 in my office.
 14 MR. RAMBO: We would value where you
 15 you think is the best place to do it.
 16 MR. SAVASTANO: Anything else?
 17 MR. RAMBO: Thank you for making it
 18 easy on us.
 19 MR. SAVASTANO: Thank you all.
 20 ***
 21 (Whereupon, the meeting concluded at
 22 8:00 p.m.)
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 24

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