

Fire Island Inlet to Montauk Point, NY Final General Reevaluation Report



APPENDIX L PERTINENT CORRESPONDENCE

U.S. Army Corps of Engineers

New York District



February 2020



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK NY 10278-0090

October 22, 2019

District Commander

Mr. Andrew L. Raddant
Regional Environmental Officer
Office of Environmental Policy and Compliance
Office of the Secretary
U.S. Department of the Interior
15 State Street, Suite 800
Boston, Massachusetts 02109-3572

Dear Mr. Raddant:

This letter provides an update on the Fire Island Inlet to Montauk Point (FIMP) Project, and responds to the letters received from the Department of the Interior on the project dated June 6, 2019, and June 7, 2019. The June 6, 2019 letter was signed by the Regional Directors of the National Park Service (NPS), U.S. Fish and Wildlife Service (USFWS), and U.S. Geological Survey (USGS), and supported the finalization of a mutually acceptable plan for FIMP. The letter identified the adaptive management plan as the last element requiring agreement for a plan to be mutually acceptable. The June 7, 2019 letter provided comments from a joint review by Department Bureaus, including NPS, USFWS, USGS, and the Office of Policy Analysis (PPA), with additional input and guidance from the Bureau of Indian Affairs.

Since receipt of the two letters, the U.S. Army Corps of Engineers, New York District (District) held a conference call with the Federal and State agency representatives to discuss the Monitoring and Adaptive Management Plan (MAMP), on August 1, 2019. The result of that discussion was agreement that the level of detail contained in the MAMP is generally sufficient for final report approval, and that the MAMP can continue to be finalized as the District finalizes design plans based on real-time field conditions and proceeds towards construction. A follow-up meeting is scheduled for November 25, 2019, to continue this dialogue.

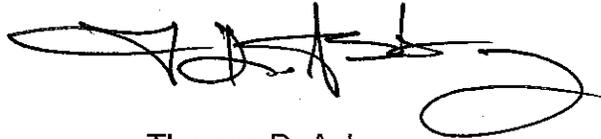
In light of the excellent collaboration and basic consensus on the path forward, the District is proceeding with the submission of the Final General Reevaluation Report and Environmental Impact Statement for HQUSACE approval, with the recommendation that any needed additional coordination to confirm a mutually acceptable plan occur as part of this approval process.

It is noted that the June 6, 2019 letter requested revisions be made to the report. To the extent practicable, the District has revised the report to address the comments. Many of the comments are grouped into categories that follow common subject matter, or by Department or Bureau. The enclosure provides responses to the comments,

grouped by each category, to communicate our intent on how to address the comments as the project features are developed in detail.

The District remains committed to working collaboratively with the Department of Interior through study completion, and beyond the study phase through project implementation, operation, adaptive management, and monitoring. Please contact Mr. Frank Verga, Project Manager at (917) 790-8212 if you should require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Asbery', with a large, stylized flourish at the end.

Thomas D. Asbery
District Commander
New York District

Encls

CF:

Ms. Wendi Weber, Regional Director, USFWS

Ms. Gay Vietzke, Regional Director, NPS

Mr. Michael Tupper, Regional Director, USGS

District Responses to DOI Comments (June 7, 2019 Letter)

The following contains a summary of the comments received, based upon the major themes, and the District's intent on how to address these comments.

1. **Monitoring and Adaptive Management Plan (MAMP).** A significant number of comments in the DOI letter are in reference to the MAMP, which is included as an appendix to the General Reevaluation Report (GRR). The comments reflect the Department's preference for the MAMP to include detailed information including but not limited to governance, responsibility, and decision making processes; cost responsibilities; data management; performance objectives, measures, predictions, targets, and triggers; important species and conditions; and physical and biological monitoring methods.

USACE (New York District and North Atlantic Division) and the Department (PPA, NPS, USFWS, USGS) discussed the MAMP during an August 1, 2019 teleconference. There was agreement among meeting participants that USACE is committed to monitoring and adaptive management of the project. There is a common understanding of the Department's preference to include detailed monitoring and adaptive management information in the MAMP, so as to codify commitments during project planning. Though the District agrees that it is valuable to include such information in the MAMP, and that detailed information will be eventually incorporated into the document, USACE guidance doesn't require much of the requested information to be agreed to and documented during the planning phase, and to reach a mutually acceptable plan.

The District acknowledges that there are a number of refinements to the MAMP that can be made now to clarify high-level goals, governance, and decision making processes. These edits are currently being incorporated into the MAMP, for submission with the final report. However, there was agreement that many of the extensive revisions requested in the June 7, 2019 letter will continue to be developed in the Pre-construction Engineering and Design (PED) phase.

The District and Department will continue to work together to finalize the details of the MAMP. USACE committed during the August 1, 2019 teleconference to hosting an Adaptive Management and Monitoring Team kick-off meeting at the beginning of the PED phase. This meeting is currently scheduled for November 25, 2019. NPS has proactively coordinated with my office regarding the meeting to ensure the agenda reflects the Department's interests. The District looks forward to resolving the Department's concerns about the MAMP will be resolved during continued coordination that will occur during PED.

2. **Secretary-level Discussions and Agreements.** The comment letter identifies two project features: land management, and annual operations to maintain sand habitat. These two topics were discussed at the joint-agency October 2017 meeting between the Secretary of the Army and Secretary of the Interior, and agreement was reached

that the Corps cannot do anything more than the effort currently included in the recommended plan. Enclosed for reference is documentation of the referenced agreement. As discussed prior, the Department of the Army does not have authority to implement local land management actions, nor to maintain the referenced sand habitat.

3. Recreation Analysis Methodology. The PPA provided comments related to the recreational analysis detailed in the GRR, and recommended further analysis. The recreation analysis followed methodologies outlined in USACE policy and best practices. The recreation model used was reviewed and certification by USACE subject matter experts. In addition, the analysis completed a rigorous review by USACE District, North Atlantic Division, Headquarters, and agency experts, as well as independent peer review, and was determined to be sufficient. It is also important to note that the selected plan has been identified as a plan that is mutually acceptable to the Department of the Army and Department of the Interior, rather than the plan that maximizes net benefits; the economic analysis was only used in establishing economic justification, and was not used for plan selection. Because of these factors, the District believes further analysis is not warranted.

4. Need for Mitigation. The USFWS identified the need for compensatory mitigation. No compensatory mitigation is required as the recommended plan includes features that comprehensively address potential impacts. Based upon the need to satisfy the mutually acceptable requirement (Department and USACE), the project will cease renourishments after year 30, reduced the scale of the project along the shoreline addressed "no net loss" of sediment transport across the barrier island by including the placement of approximately 4,200,000 cubic yards of sediment in the back bay environment. The analysis contained in the FEIS, will include the coordination that occurred after release of the DEIS between the Department (and other resource agencies) that resulted in the project providing for 14 coastal process features (12 barrier island locations and two mainland locations). In addition to augmenting the resiliency and enhancing the overall barrier island and natural system coastal processes, the coastal process features will compensate for reductions in cross-island transport and sediment input to the Bay, offsetting impacts from the placement of sediment along the barrier island shorefront.

5. USACE Hydraulic Modeling. Many USGS comments relate to the hydraulic modeling completed in support of the consideration of alternative plans. Many of the comments are similar to those provided previously, and represent comments that reflect a difference of professional opinion. The USACE modeling is based upon a comparison of existing and future conditions, as compared to with-project conditions with a range of storm conditions designed to represent the full likelihood of storm conditions. The USGS modeling methodology is largely based upon interpretation of a post-Hurricane Sandy condition and does not explicitly consider different historical or hypothetical conditions with respect to storm inputs or barrier island conditions. This difference in modeling approach is the basis in the difference of professional opinion.

The USACE hydraulic modeling products completed a rigorous review by USACE District, North Atlantic Division, Headquarters, and agency experts, as well as independent peer review, and was determined to be sufficient. The District believes further modeling is not warranted.

6. Requested Report Edits for Clarity. The District acknowledges that many of the Department's comments requested specific language for clarity, and are appropriate to incorporate into the latest draft of the GRR and EIS. Many of these comments were provided by NPS. The District is currently incorporating these edits into the reports. They will be reflected in the October 2019 report versions that will be transmitted to USACE Headquarters, and made available to the Department during final review of the GRR and EIS.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water, Bureau of Flood Protection and Dam Safety

625 Broadway, Albany, New York 12233-3504

P: (518) 402-8185 | F: (518) 402-9029

www.dec.ny.gov

August 20, 2019

Anthony Ciorra
Chief, Sandy Recovery Branch
United States Army Corps of Engineers
New York District
26 Federal Plaza
New York, NY 10278

RE: Fire Island Inlet to Montauk Point, New York, Beach Erosion Control and Hurricane Protection Project Certification of Financial Capability

Dear Mr. Ciorra:

Enclosed please find the Self-Certification of Financial Capability for the Fire Island Inlet to Montauk Point, New York, Beach Erosion Control and Hurricane Protection Project (Project). The New York State Department of Environmental Conservation is prepared to proceed with the design and construction of the Project.

If you have any questions, please contact Matt Chlebus at matthew.chlebus@dec.ny.gov or by telephone at (518) 402-8139.

Sincerely,



Alan A. Fuchs, P.E.

Director

Bureau of Flood Protection and Dam Safety

Enc.: Self-Certification of Financial Capability

cc: N. Lussier, NYSDEC
C. Dixon, NYSDEC
A. Goswami, NYSDEC
M. Chlebus, NYSDEC

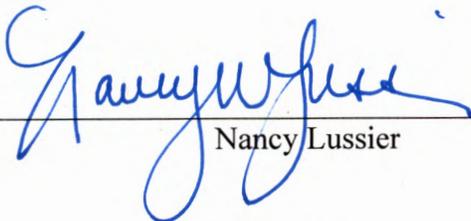


Department of
Environmental
Conservation

**NON-FEDERAL SPONSOR'S
SELF-CERTIFICATION OF FINANCIAL CAPABILITY
FOR DECISION DOCUMENTS**

I, Nancy Lussier, do hereby certify that I am the Director of the Division of Management and Budget Services of the New York State Department of Environmental Conservation (the "Non-Federal Sponsor"); that I am aware of the financial obligations of the Non-Federal Sponsor for the **FIRE ISLAND INLET TO MONTAUK POINT, NEW YORK, BEACH EROSION CONTROL AND HURRICANE PROTECTION PROJECT**; and that the Non-Federal Sponsor will have the financial capability to satisfy the Non-Federal Sponsor's obligations for that project. I understand that the Government's acceptance of this self-certification shall not be construed as obligating either the Government or the Non-Federal Sponsor to implement the project.

IN WITNESS WHEREOF, I have made and executed this certification this 20th day of August, 2019.

BY: 
Nancy Lussier

TITLE: Director, Division of Management and Budget Services
New York State Department of Environmental Conservation

DATE: 8/20/19

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water, Bureau of Flood Protection and Dam Safety
625 Broadway, Albany, New York 12233-3504
P: (518) 402-8185 | F: (518) 402-9029
www.dec.ny.gov

August 20, 2019

Colonel Thomas D. Asbery
Commander and District Engineer
US Army Corps of Engineers
New York District
26 Federal Plaza, Room 2119
New York, NY 10278-0090

Dear Colonel Asbery:

The purpose of this letter is to confirm the New York State Department of Environmental Conservation's (DEC) interest in participating in the Fire Island Inlet to Montauk Point, New York, Beach Erosion Control and Hurricane Protection Project (FIMP Project) as the Non-Federal Sponsor with the United States Army Corps of Engineers (Corps) for the construction of the Project. Furthermore, the DEC supports the recommendations contained in the Project's Final Integrated Hurricane Sandy General Re-evaluation Report/and Environmental Impact Statement (GRR/EIS), dated February 2019.

In order for the DEC to take on the role of the Non-Federal Sponsor, the DEC's authority (Chapter 7 of Title 4 of the New York State Unconsolidated Laws) to participate in a project to arrest erosion and alleviate or prevent damage resulting from storms requires the DEC to have a local sponsor that will share in the Non-Federal Sponsor's costs and obligations. Suffolk County, along with the Towns of Babylon, Islip, Brookhaven, Southampton, and East Hampton, have agreed to be the DEC's local sponsors. Letters of support from these municipalities are enclosed.

The DEC understands that to the extent that the Disaster Relief Appropriations Act of 2013, Public Law 113-2 enacted January 29, 2013 (DRAA 13), funds appropriated by Congress are available, the Corps will construct the Project at 100 percent Federal expense. In the event that there are insufficient DRAA 13 funds to complete construction of the Project, the proposed Project Partnership Agreement (PPA) will need to be amended and the remaining work will be subject to cost-sharing.

This letter does not constitute a binding agreement for the DEC to serve as Non-Federal Sponsor, nor is this letter a commitment for the funding of any portion of the Project. These commitments can only be made when the proposed PPA with the Corps for the Project is executed by the Office of the New York State Comptroller. DEC maintains that it is interested in being the Non-Federal Sponsor; however, the DEC's participation will depend upon successful execution of a formal agreement with the local sponsors.

The DEC recognizes that additional analysis will be required during the Pre-Construction Engineering Design (PED) phase of the Project, and that based on the refinements that occur during PED, the final design may differ from the designs outlined in the GRR/EIS. The Corps will need to continue to coordinate with New York State and our Local Sponsors throughout PED as the plan, real estate needs, and Project elements are further refined.

The Department awaits the Corps submittal of their Water Quality Certification (WQC) applications for this project. Based on the Department's review of the Hurricane Sandy General Reevaluation Report (GRR) dated February 19, 2019, the Department does not foresee any problems that would preclude the issuance of a WQC for each project contract subject to the applicable environmental windows for finfish, shellfish, shorebirds and other rare, threatened, and/or endangered species. However, until such an application is received and the Department initiates and successfully completes its formal review process, the WQC cannot be issued. The Department also expects that the previous Department comments dated April 25, 2019 on the GRR/EIS will be adequately addressed in the Corps' WQC applications.

The DEC will continue working with the Corps to move the Project forward as expeditiously as possible. If you have any questions, please contact me by email at alan.fuchs@dec.ny.gov, or by telephone at (518) 402-8185.

Sincerely,



Alan Fuchs, P.E

Director

Bureau of Flood Protection and Dam Safety

Enclosures: Letters of Support from NYS Local Sponsors

ec: Carrie Gallagher, NYSDEC
Arvind Goswami, NYSDEC
Matt Chlebus, NYSDEC
Matt Maraglio, NYSDOS
Anthony Ciorra, USACE
Frank Verga, USACE
Steven Bellone, Suffolk County
Rich Schaffer, Town of Babylon
Angie M. Carpenter, Town of Islip
Edward Romaine, Town of Brookhaven
Jay Schneiderman, Town of Southampton
Peter Van Scoyoc, Town of East Hampton

Town of Babylon

200 E. Sunrise Highway
Lindenhurst, New York 11757
(631) 957-3072



RICH SCHAFFER
SUPERVISOR

September 13, 2018

Mr. Alan A. Fuchs, P.E., Director
Bureau of Flood Protection and Dam Safety
625 Broadway, 4th Floor
Albany, New York 12233-3504

RE: Fire Island Inlet to Montauk Point, New York Hurricane and Storm Damage Reduction Project

Dear Mr. Fuchs:

Please allow this to serve as formal support of the recommendations contained in the Draft Final Fire Island Inlet to Montauk Point, New York General Reevaluation Report to be provided to all parties in October 2018. The Town of Babylon expresses an interest in participating in the Fire Island Inlet to Montauk Point Project (Project) as one of the Local Sponsors to the New York State Department of Environmental Conservation (Department) for the construction of the Project.

The Town understands that to the extent that the Disaster Relief Appropriation Act of 2013, Public Law 113-2 enacted January 29, 2013 funds appropriated by Congress are available, the United States Army Corps of Engineers will fund the initial construction at 100% Federal expense.

This letter is not a commitment for the funding of any portion of the Project. The commitment can only be made when a Local Project Partnership Agreement for the Project is executed with the Department. The Town maintains that we are interested in being one of the Local Sponsors, however participation of the Town will depend upon the successful execution of said formal agreement.

Sincerely,



Rich Schaffer
Town Supervisor
Town of Babylon

9/17/18

Date

OFFICE of the SUPERVISOR



ANGIE M. CARPENTER
Supervisor

October 3, 2018

Mr. Alan A. Fuchs, P.E., Director
Bureau of Flood Protection and Dam Safety
625 Broadway, 4th Floor
Albany, New York 12233-3504

RE: Fire Island Inlet to Montauk Point, New York Hurricane and Storm Damage Reduction Project

Dear Mr. Fuchs:

Please allow this to serve as formal support of the recommendations contained in the Draft Final Fire Island Inlet to Montauk Point, New York General Reevaluation Report to be provided to all parties in October 2018. The Town of Islip expresses an interest in participating in the Fire Island Inlet to Montauk Point Project (Project) as one of the Local Sponsors to the New York State Department of Environmental Conservation (Department) for the construction of the Project.

The Town understands that to the extent that the Disaster Relief Appropriation Act of 2013, Public Law 113-2 enacted January 29, 2013 funds appropriated by Congress are available, the United States Army Corps of Engineers will fund the initial construction at 100% Federal expense.

This letter is not a commitment for the funding of any portion of the Project. The commitment can only be made when a Local Project Partnership Agreement for the Project is executed with the Department. The Town maintains that we are interested in being one of the Local Sponsors, however participation of the Town will depend upon the successful execution of said formal agreement.

Sincerely,

Angie M. Carpenter
Islip Town Supervisor

AMC: ng



Town of Brookhaven Long Island

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SEP 17 2018

FLOOD PROTECTION
AND DAM SAFETY

Edward P. Romaine, Supervisor

September 13, 2018

Mr. Alan A. Fuchs, P.E., Director
Bureau of Flood Protection and Dam Safety
625 Broadway, 4th Floor
Albany, New York 12233-3504

RE: Fire Island Inlet to Montauk Point, New York Hurricane and Storm Damage Reduction Project

Dear Mr. Fuchs:

Please allow this to serve as formal support of the recommendations contained in the Draft Final Fire Island Inlet to Montauk Point, New York General Reevaluation Report to be provided to all parties in October 2018. The Town of Brookhaven expresses an interest in participating in the Fire Island Inlet to Montauk Point Project as one of the Local Sponsors to the New York State Department of Environmental Conservation for the construction of the Project.

The Town understands that to the extent that the Disaster Relief Appropriation Act of 2013, Public Law 113-2 enacted January 29, 2013 funds appropriated by Congress are available, the United States Army Corps of Engineers will fund the initial construction at 100% Federal expense.

This letter is not a commitment for the funding of any portion of the Project. The commitment can only be made when a Local Project Partnership Agreement for the Project is executed with the Department. The Town maintains that we are interested in being one of the Local Sponsors, however participation of the Town will depend upon the successful execution of said formal agreement.

Sincerely,

Edward P. Romaine
Supervisor

Office of the Supervisor

One Independence Hill • Farmingville • NY 11738 • Phone (631) 451-9100 • Fax (631) 451-6677

www.brookhaven.org

Printed on recycled paper



JAY SCHNEIDERMAN
Supervisor

TOWN OF
SOUTHAMPTON
116 Hampton Road, Southampton, NY 11968

Telephone: (631) 283-6055
Fax: (631) 287-5708
jschneiderman@southamptontownny.gov

October 4, 2018

Mr. Alan A. Fuchs, P.E., Director
Bureau of Flood Protection and Dam Safety
625 Broadway, 4th Floor
Albany, New York 12233-3504

RE: Fire Island Inlet to Montauk Point, New York Hurricane and Storm
Damage Reduction Project

Dear Mr. Fuchs:

Please allow this to serve as formal support of the recommendations contained in the Draft Final Fire Island Inlet to Montauk Point, New York General Reevaluation Report to be provided to all parties in October 2018. The Town of Southampton expresses an interest in participating in the Fire Island Inlet to Montauk Point Project (Project) as one of the Local Sponsors to the New York State Department of Environmental Conservation (Department) for the construction of the Project.

The Town understands that to the extent that the Disaster Relief Appropriation Act of 2013, Public Law 113-2 enacted January 29, 2013 funds appropriated by Congress are available, the United States Army Corps of Engineers will fund the initial construction at 100% Federal expense.

This letter is not a commitment for the funding of any portion of the Project. The commitment can only be made when a Local Project Partnership Agreement for the Project is executed with the Department. The Town maintains that we are interested in being one of the Local Sponsors, however participation of the Town will depend upon the successful execution of said formal agreement.

Sincerely,

Jay Schneiderman, Supervisor



TOWN OF EAST HAMPTON

159 Pantigo Road
East Hampton, New York 11937

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FLOOD PROTECTION
AND DAM SAFETY

PETER VAN SCOYOC
Supervisor

(631) 324-4140
pvanscoyoc@eamptonny.gov

September 26, 2018

Mr. Alan A. Fuchs, P.E., Director
Bureau of Flood Protection and Dam Safety
625 Broadway, 4th Floor
Albany, N.Y. 12233-3504

Re: Fire Island Inlet to Montauk Point, New York Hurricane and Storm Damage Reduction Project

Dear Mr. Fuchs:

The Town of East Hampton hereby expresses an interest in participating in the Fire Island Inlet to Montauk Point Project (Project) as one of the Local Sponsors to the New York State Department of Environmental Conservation (Department) for the construction of the Project.

However, regarding the Draft Final Fire Island to Montauk Point, New York General Reevaluation Report, which is expected to be provided to the involved parties in October, 2018, and the most recent description of the beach replenishment for the downtown Montauk Beach proposed to take place under the FIMP project:

At a meeting on June 28, 2018, on the FIMP project, with D.E.C. and Army Corps representatives in attendance, the Town of East Hampton learned that the Army Corps is proposing the addition of 400,000 cubic yards of sand on the Montauk beach, an amount substantially less than is needed and that had been anticipated under the FIMP project.

In fact, at a public meeting in Montauk in September, 2016, the Army Corps, in reference to documentation submitted by East Hampton Town illustrating that the downtown Montauk beach needed a 759,000 cubic yard sand replenishment, along 6,000 linear feet, had indicated that the Corps' thinking was "in line with what the town is proposing." The Corps representative concurred that a project of that scope was called for, and that, based on information submitted by the Town, the Corps had determined it was justified, under the Corps' own engineering and cost-benefit analyses.

While the Corps represented in June that the volume of sand had been reduced based on the current narrow width of the beach, it was suggested that the sand be used to lengthen the project area to the east and west as it is well-understood that lengthening a beach nourishment project will increase its lifespan.

At my request, the Corps agreed to re-evaluate and review the proposal. To date, the Town has not received a response.

The Town understands that to the extent that the Disaster Relief Appropriation Act of 2013, Public Law 113-2 enacted January 29, 2013 funds appropriated by Congress are available, the United

States Army Corps of Engineers will fund the initial construction at 100% Federal expense.

This letter is not a commitment for the funding of any portion of the Project. The commitment can only be made when a Local Project Partnership Agreement for the Project is executed with the Department. The Town maintains that we are interested in being one of the Local Sponsors, however participation of the Town will depend on the successful execution of said formal agreement.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter Van Scoyoc". The signature is fluid and cursive, with the first name "Peter" being the most prominent.

Peter Van Scoyoc
Supervisor, Town of East Hampton

COUNTY OF SUFFOLK



OFFICE OF THE COUNTY EXECUTIVE

Steven Bellone
SUFFOLK COUNTY EXECUTIVE

September 18, 2018

Mr. Alan A. Fuchs, P.E., Director
Bureau Flood Protection and Dam Safety
625 Broadway, 4th Floor
Albany, New York 12233-3504

**Re: Fire Island to Montauk Point, New York, Hurricane and Storm Damage
Reduction Project**

Mr. Fuchs:

Subject to the formal agreement described in this letter, please allow this to serve as support for the recommendations contained in the Draft Final Fire Island Inlet to Montauk Point, New York General Reevaluation Report to be provided to all parties in October, 2018. The County of Suffolk is interested in participating in the Fire Island Inlet to Montauk Point Project (Project) as a Local Sponsor to the New York State Department of Environmental Conservation for the construction of the Project, for its holdings within the project area. The County understands that to the extent that the Disaster Relief Appropriation Act of 2-13, Public Law 113-2 enacted January 29, 2013 funds appropriated by Congress are available, the United States Army Corps of Engineers will fund the initial construction at a 100% Federal expense.

This letter is not a commitment for the funding of any portion of the Project. The commitment can only be made when the proposed PPA with the DEC for the Project is executed. The County is interested in being a Local Sponsor along with other local governments. However, participation of the County will depend upon the successful execution of a formal agreement.

Sincerely,

Steven Bellone
County Executive
County of Suffolk

9-18-18
Date



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
15 State Street – Suite 800
Boston, Massachusetts 02109-3572

June 7, 2019

9043.1
ER 16/0427

Colonel Thomas D. Asbury,
District Engineer
U.S. Army Corps of Engineers
26 Federal Plaza
New York, New York 10278

RE: Fire Island Inlet to Montauk Point, New York, Reformulation Study
Preliminary Final Environmental Impact Statement and
General Reevaluation Report

Dear Colonel Asbury:

Please find herein the Department of the Interior's (DOI) comments and recommendations on the preliminary draft Final Environmental Impact Statement (DFEIS) and Final General Reevaluation Report (DFGRR) for the Fire Island Inlet to Montauk Point, New York, Reformulation Plan (FIMP). We appreciate the opportunity to review and provide input on the draft documentation, and, in particular, the highly productive opportunity for discussing our pending comments and key agency interests during the FIMP Executive Steering Committee meeting on May 9.

This meeting provided an excellent information exchange between our agencies, New York State Department of Environmental Conservation and Department of State. Enough so that progress has been made on several points or questions raised in the following comments regarding the Monitoring and Adaptive Management Plan (MAMP) and Coastal Process Features (CPF) in particular. Moreover, the agreement between our agencies to collaboratively move forward on reaching a reasonable level of detail for the MAMP prior to the FEIS/GRR finalization should resolve many additional questions.

In the interest of time, and the need for further discussion on the meeting outcomes, we have not edited our original comments but consider them provisional/draft. Please also know that final DOI input on the published FEIS/GRR will be through the Office of Environmental Policy and Compliance headquarters as per standard practice, with signature by Michaela Noble, Director, and will be subject to additional vetting.

These preliminary comments reflect the joint review of the DOI bureaus, including the National Park Service (NPS), U.S. Fish and Wildlife Service (USFWS or Service), U.S. Geological Survey (USGS), Office of Policy Analysis (PPA), and with additional input and guidance from the Bureau of Indian Affairs.

Similar to our 2016 comments on the preliminary DEIS/GRR, these comments are not comprehensive, but respond to the USACE's expedited request on documents and appendices exceeding 2000 pages in total.

As we stated in our 2016 comments on the DEIS, the FIMP is a complex and ambitious undertaking, with a study area of 83 miles and total project cost exceeding \$1.5B, including inlet modification, non-structural measures, beach and dune fill, sediment management, groin modifications, coastal process features, adaptive management and integration of land use regulations and management (DFEIS p. ES-1).

To quote our 2016 DEIS comments:

“The Department of the Interior (Interior) has recognized, over many years, the importance of the FIMP, and we support many of its objectives. The DEIS of 2016 reflects a fundamental step forward from its 1978 predecessor, and we believe it may advance further as a result of the current review process. With this understanding, concurrent with the public and agency review process the USACE, Interior, and New York agencies have agreed to continue to develop content and resolve concerns with several elements of the FIMP that may affect the final project plan.”

Indeed progress has been made in several areas since 2016. There are, however, elements of concern and differences in understanding that do remain, many of which pertain to the scientific underpinnings of the proposed project. As we mentioned in our May 9 meeting, we hope to resolve, or “bridge” these differences by stepping forward together by way of the Monitoring and Adaptive Management Plan, the importance of which is also reflected in the May 2017 correspondence on the FIMP from the Regional Directors of the NPS, USGS, FWS, and the July 2014 MOU between our agencies, signed by the Assistant Secretary of the Army (Civil Works) and the Department's Acting Assistant Secretary for Fish, Wildlife and Parks (both attached). The draft MAMP will serve as a solid platform. As USGS states in its input, “Given the inherent challenges of applying adaptive management principles to a complex system (Williams and Brown 2016), the FIMP is an impressive effort, which identifies the basic components of adaptive management.”

Our agencies are also aware that management and implementation concerns remain, and have been a topic of discussion at higher levels. The May 2017 Regional Directors' letter included the following recommendation, which should be reflected in the FEIS/GRR:

“The adaptive management plan should include a monitoring protocol regarding enforcement of such laws and regulations and establish a threshold for USACE to withhold future funds to maintain FIMP projects if federal, state and local laws, policies and regulations that regulate land use are not implemented and enforced.”

In addition, we recommend that the Shinnecock Nation be consulted as the development of the MAMP moves forward. Especially given the emphasis in the Department's 2016 and current comments on (1) the need for greater consideration of sea level rise scenarios (see USGS and NPS input herein), (2) DGRR section 2.1.5, par. 5 on New York State Coastal Resiliency Act scenarios; and (3) the recognition that the water flow through the maintained inlets represent the greatest contributor to economic impacts to the mainland. Adaptive management strategies/alternatives will need to consider the effects of the inlets. The designated 10-year flood plain, used as a general demarcation for upland non-structural measures, will likely change during the life of the project. This should be recognized in the FEIS/GRR.

The Department's specific comments on the DFEIS and DGRR follow, and are organized as follows:

USGS..... p. 4
PPA..... p. 20
NPS..... p. 22
FWS..... p. 26

Thank you for the opportunity to review and comment on this project. If you have questions regarding these comments, please contact the following:

NPS: Alexcy Romero, alexcy_romero@nps.gov, 631-687-4751
PPA: Kristin Skrabis, kristin_skrabis@ios.doi.gov, 202-208-4979
USFWS: Spencer Simon, spencer_simon@fws.gov, 413-253-8578
USFWS: Kyla Hastie, kyla_hastie@fws.gov, 413-253-8325
USGS: Rob Thieler, rthieler@usgs.gov, 508-457-2211

Please contact me at (617) 223-8565 if I can be of further assistance.

Sincerely,



Andrew L. Raddant
Regional Environmental Officer

Attachments

U.S. GEOLOGICAL SURVEY

Executive Summary

This is a technical review of the FIMP draft FGRR by N. K. Ganju, S. L. Zeigler, A. L. Aretxabaleta, J. L. Miselis, J. G. Flocks, D. R. Smith, and C. E. Schubert, with coordination and support provided by E. R. Thieler. The main points of the review are:

- The governance and performance metrics of the monitoring and adaptive management section of the plan need clarification to properly define how the project will adapt to modifications.
- The implementation and goals of the coastal process features (CPF) to address some of the environmental consequences (e.g., bird habitat in overwash areas) of the plan need to be better evaluated and described.
- The effects of the plan activities on water levels and water quality in the bay through dredging alterations and breach closures need to be clarified. Monitoring of water level can inform decision making for breach response. Although the likely breach locations are identified, information is lacking/unknown about the size of breaches.
- The involvement of the different agencies (USACE, NPS, FWS, USGS, State) in the monitoring activities needs to be streamlined and participation agreements should be developed with each agency.

Documents

General Reevaluation Report.

The DFGRR includes the justification, description and design specifications of the FIMP. The Tentatively Selected plan is justified by a set of model results (Appendix A4) that show increased flooding under breach-open conditions. The 1-ft increase in extreme water level from wilderness breach (pg. 85) remains a high estimate for the effect of the breach. The effects of overwash and breach size are never properly evaluated. There are several issues (inlet size, dredging, sea level rise, ecological, and fresh water considerations) with this approach:

- **Inlet size:** The size of the breach considered is unrealistic. In Section 4.4.2, the plan states that breach “...*growth rate is dependent upon the tidal prism of the back bay and can be fit to an exponential curve...*” The suggestion of fitting an exponential curve sounds highly questionable, but, as explained in Appendix A, this means an increasing form of the decaying exponential curve ($1 - \exp(-kt)$), as shown in Figure 1. The width and area evolution of the Wilderness Breach (monitored by Stony Brook) shows a completely different pattern from what the project is suggesting (Figure 1). The “large breach” at Great South Bay and its evolution is much larger than observed. Even the “small” breach scenario seems to overestimate breach growth. In summary, it appears that the breach growth curves can be improved, especially the

large breach case. The plan continues to use the large breach scenario when, in reality, the Wilderness Breach has been open for ~7 years and appears to have a relatively stable configuration at ~500 m² (Hapke et al., 2017). Referring to the growth curve as “exponential” gives the wrong impression. In reality, their model, $A=A_0(1-\exp(-kt))$ uses an exponential, but clearly no exponential growth. The plan should clearly state that what has been considered is a “worst-case scenario” that goes beyond any documented breaching.

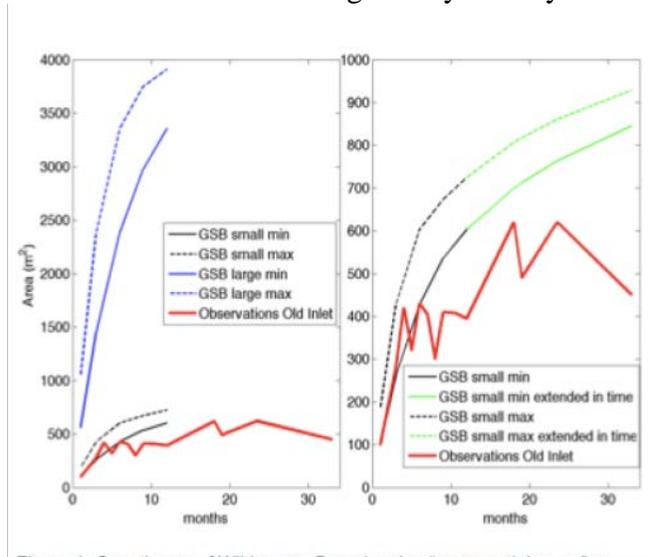


Figure 1: Growth rate of Wilderness Breach using “exponential curve” as described in the plan compared with observations.

The Wilderness breach seems to be evolving in time with seasonal variations (Hapke et al., 2017) but in no case shows a continuing growth of the breach. The large breach scenario that represents the basis for a large fraction of the storm modeling included in Appendix A4 seems an extreme case that might not have anything to do with any historical breaches in the area. In fact, Hurricane Sandy was a considerable storm with significant effects in the system and the main breach across Fire Island was the Wilderness Breach that at no point reached the size used in the model simulations that support the economic justification of the plan. While it is typical for the USACE to present the worst-case scenario, it is important to identify this as the case. If realistic conditions based on the size of the Wilderness breach were to be considered, a more suitable size would be in the range of 500-650 m².

- Breaching versus dredging effects on water level:** Aretxabaleta et al. (2017) report that the temporal changes in tidal amplitude and storm surge magnitude are more associated with dredging of the existing inlets rather than the direct effect of storms. The tides and the water level transfer from offshore have been changing slightly in recent years (2008–2015). The changes occur at times during or immediately after inlet dredging (Figure 2). There are changes that occur at the same time as the changes in dimension of a breach through Fire Island. Assuming that all changes are associated with the breach is not appropriate, as tidal magnitude alterations occurred after dredging of the existing inlets even for times before Hurricane Sandy.

While Aretxabaleta et al. (2017) focuses on the tidal changes, they also demonstrated that changes in the magnitude of the bay response to storms follow a similar pattern. The bay response to storm fluctuations from offshore was independent of the magnitude of the storms.

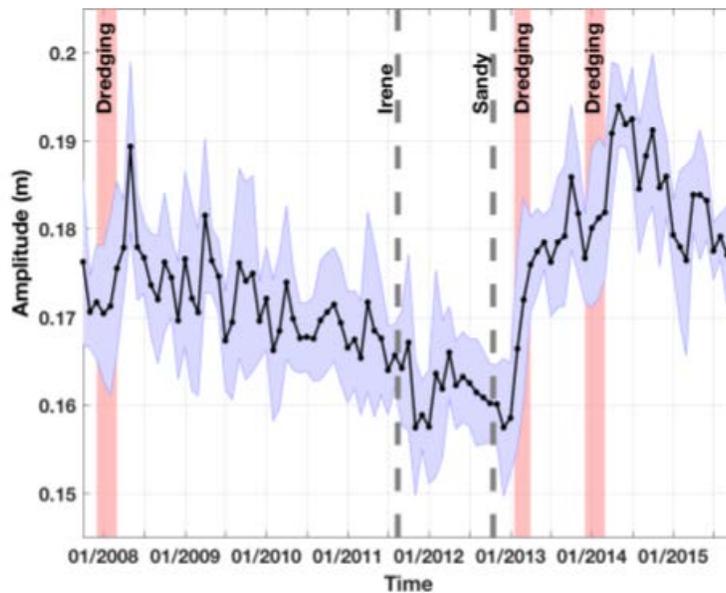


Figure 2: Temporal changes in the principal semi-diurnal tide inside Great South Bay. The timing of the main storms and the dredging of Fire Island Inlet are also indicated.

Monitoring bay and offshore water levels can provide guidance in terms of when significant changes in tidal and storm dynamics in the bay have occurred after a storm or after some dredging was conducted. If significant changes in water level response are observed, then more proactive breach management response might be necessary. This monitoring would help inform the difficult, and potentially data deficient, process of the Breach Closure Team.

- Climate change and sea level rise:** The plan only partially explains the way it is going to adapt to climate change over a 50-year time scale. While the concern is mentioned in the plan (e.g., Section 2.1.5, 6.1), the use of the low rate of sea level rise (SLR) in the plan seems to question the validity of such a long-term plan. The project might be able to help with some intermediate and high sea level rise rates, as described in the plan, but the plan does not evaluate the sensitivity of the project to these scenarios. As the plan openly states that it will only consider historical SLR, the SLR scenarios are incomplete. The Table in the Executive Summary is labeled "pending."

Additionally, the plan acknowledges the uncertainty associated with future storm frequency and magnitude, but ignores any of the studies that provide some insight into this question (e.g., Grinstead et al., 2013).

- **Landscape and habitat considerations:** In section 6.8 (page 140), it is stated that “a key objective of the FIMP project is to restore natural coastal processes that have been impacted by past development of the barrier island, including 1) alongshore transport, 2) cross-island transport, 3) dune growth and evolution, 4) bay shoreline processes, and 5) estuarine circulation and water quality.” However, this does not consider the impacts of the FIMP project itself. A more in-depth discussion of the impacts related to the FIMP project is needed. Specifically, it would be useful to have an approximate quantification of how much landscape change (and associated habitat impacts) will likely occur as a result of the FIMP. If that work has already been done (e.g., through modeling), it needs to be discussed more explicitly in this document.

Table 42 (page 148) states ‘overall habitat suitability will likely increase along affected beach front’. However, there is no indication of how this conclusion was reached. The FIMP may result in wider beaches, but the loss of overwash processes is likely to result in the loss of habitat. This conclusion needs to be better supported. Finally, the table indicates that barrier island CPFs are intended to provide suitable habitat for these species. But again, without quantification of how much habitat will be lost through the FIMP and how much will be created through CPFs, the extent of landscape change (e.g., Gutierrez et al., 2015) and habitat impact is unknown.

- **Extension to other species:** In Table 42 (page 148), rare species and habitats (including piping plovers, red knots, and seabeach amaranth) are listed as resources that will potentially be impacted by the project. It can be argued that other species will also be affected (e.g., terns, American oyster catchers, for example).

- **Freshwater considerations:** The last paragraph on page 33 of DFGRR section 2.1.10 (Bayside Tidal Hydrodynamics) states "Information concerning freshwater sources is relatively sparse." Monti and Scorca (2003) and Misut and Monti (2016) characterize freshwater discharge to the South Shore Estuary Reserve (SSER) from the Long Island mainland; Schubert (2010) characterizes this discharge to the SSER and coastal ocean from Fire Island. In addition, Schubert (1998) estimated the freshwater discharge from the South Fork to the coastal ocean.

Appendix A: ENGINEERING

The model simulations represent a worse-case scenario. The sizes of the breaches included in the simulations tend to exceed the observed sizes of the Wilderness breach after Hurricane Sandy (clearly a sizeable storm). The plan should make it clear that the worst case is being considered. If this is used for the economic justification of the plan, it should be made clear throughout.

The numerical simulations used SBEACH to lower the dunes before the hydrodynamic model DELFT is used. By lowering the dune height before the storm, there is a chance that overwash

and overtopping will be overestimated in the early part of the storm resulting in too much flooding in the bay. What are the contributions of dune height changes to bay flooding?

Assuming that bay surge water level, bay wind setup, and bay wave setup can be linearly added is an oversimplification of the physics of the system. As pressure gradients caused by the addition of wave setup and surge are established, the bay will dynamically adapt to the new conditions and in general, the combined effect can be smaller or larger than presented in the plan depending on wind direction and duration.

Table 8-1 lists "Hurricane Sandy Peak Still Water Levels" at four locations within the FIMP project area. Schubert and others (2015) summarize and analyze peak storm-tide (stillwater and wave-affected) elevations for Hurricane Sandy at several hundred locations within New York, including several dozen within the FIMP project area. (This report also includes Hurricane Sandy storm surge values for long term water level gage locations, as well as peak storm-tide elevations for Tropical Storm Irene and the December 1992 nor'easter, within the FIMP project area.) The plan should consider the inclusion of these measurements and the potential contribution to changes in storm effect estimates.

Appendix A-1: STORM SURGE MODELING

This appendix includes the complete set of numerical simulations conducted to evaluate water level during storms in the study area. The resulting stage-frequency relationships are also included. The model simulations used a complex system to include far-field and local effects from wind, waves and hydrodynamics. The main issue with the simulations is the lack of any uncertainty estimation. The model simulations are deterministic and based on certain parameters (e.g., choice of friction), forcing (e.g., wind data quality especially for historical storms), and model limitations (e.g., 2-D modeling of a 3D process). As such, they include a fair amount of uncertainty that the appendix does not include. The stage-frequency relationship is a statistical tool and including the level of expected uncertainty in the model results should be straightforward. The issue is that as the model results are over 12 years old, it is unlikely to be easily reproducible. This is a significant issue raised in our comments on the DEIS/DGRR, and is a substantial driver for a rigorous Adaptive Management plan.

Appendix A-4: NUMERICAL MODEL

Both van Ormond et al. (2015) and the numerical studies described in this appendix used a larger cross section of the Wilderness breach than the one that existed. The results of the impact of the breach seem to be sensitive to the size of that opening. While it is argued that the differences between observed and modeled water levels are consistent between the two modeling efforts, it seems that in both cases it results in an overprediction of the maximum water levels observed during November 2012. The magnitude of the overprediction is also not explicitly acknowledged. As these numerical studies represent the basis for a lot of the flooding estimates, it will be good to provide an idea of the potential inherent errors.

The size of the breach seems to be producing inconsistent results (Figure 12, 13). The June 2014 breach is half the size of the BOC-1, but the difference with- and without-breach appears

to get smaller with the larger breach. The models for 1938 storm show that small and large inlets produce about the same results. The inconsistent results have repercussions for the stage-frequency calculations included in the plan.

The beach open condition (BOC – 3 months) is based on a 2500 ft wide and a 7 ft deep breach at Old Inlet (17, 500 ft²). The observations from Stony Brook (Flagg) show a maximum area of 630 m² (6800 ft²) for June 2014. The Hapke et al. (2017) results are consistent with this smaller size. The size of BOC seems rather extreme and also it seems odd that there are large increases in the plan’s stage-frequency curves using the June 2014 size.

Appendix A-5: TRIGGERS OF PROACTIVE BREACH RESPONSE

The thresholds for proactive breach response seem a bit arbitrary and should be better explained. While they are better than the previous (DFGRR) proposed measurements of just dune height, the specific values for each reach seem subjective without further explanation. The changing geological, morphological, and geometrical conditions along the length of the project region make the choice of threshold difficult. The plan acknowledges this point but might have done a better job at justifying the choices.

Appendix C: COST ENGINEERING

Associated monitoring costs covered in MAMP. Spending appears reasonable.

Appendix D: BENEFITS

The model results of the breach open condition are not clear and suffer from the same deficiencies described previously.

Appendix E: PLAN FORMULATION

The incorporation of the marsh creation discussion to the plan is a good addition. The realization of the need to establish bay-side habitats that would otherwise be created naturally by overwash and breaching is now a significant part of the formulation of the plan.

The plan would also benefit from acknowledging the potential benefits of maintaining breach open conditions for the environmental health and water quality of the bay. Recent studies (e.g., Hinrichs et al., 2018) have shown changes in flushing time and bay circulation due to the presence of the Wilderness Breach. The enhanced flushing in the bay can significantly improve the deteriorating water quality conditions of the bay.

Appendix H: LAND MANAGEMENT

Table 3-1 as portrayed indicates that the land management for wetland protection and restoration falls under USACE, but with reference to NPS’ and FWS’ roles. Clarification of authorities would be beneficial here.

Appendix I: COASTAL PROCESS FEATURES

CPF effects on other habitats: Planned Coastal Process Features (CPF) seem to generally focus on shorebird habitat over flora (lots of devegetation planned) and other habitat types (e.g., bay seagrass beds). It is unclear if this is by design or by default.

Sediment texture: For each bayside CPF project, the plan states: “Sand placement at the CPF sites will be performed in coordination with renourishment cycles of the beach fill features.” This seems to imply that beach fill/dune sediment will be the same as bay side CPF sediment. The native beach sediment on the bayside is likely a mix of sand and much, not solely sand. We recommend that placement sediment should be of a similar texture to native sediment if the CPFs are to provide the desired restoration of coastal processes. Other considerations should include:

- Stated design thickness may not be consistent with thickness of natural overwash deposits, which generally thin toward the bayside shoreline.
- For each bayside CPF, nearshore bottom type should be considered (e.g., sand, mud, or seagrass). The plan does not mention potential impacts of bayside projects on the benthic habitats of the bays, but these should be considered, monitored, and adaptively managed, particularly in the case of seagrass.
- For marsh creation, and infilling of man-made ditches, sediment mixtures of sand and mud that mimic natural conditions should be considered.
- For bayside CPFs, particularly those in GSB where cross-bay fetch is large, predominant long-shore transport (LST) directions should be considered in the restoration design, as LST will ultimately restructure the design.

CPF volumes: The project calls for placement of 4.2 million yd³ all along the back-barrier shoreline. Additional enhancements include thin-layer deposition, mixture of subaqueous, thin layer, fan, etc. The resulting volume looks like an initial deposit of ~ 1.0 million yd³, then ~ 0.3 million yd³ every 4 years for 30 years.

The methodology by which the total volume of sediment for CPFs (4.2 M CY) was determined was not presented and therefore whether or not this volume is valid for the study area could not be evaluated. An appendix could be added to describe the “cross-island transport analyses” referred to in the DFGRR (S6.8.1.1, P140 and Appendix I, S2.1, P5).

Offset calculations: As noted above, there is no assessment of landscape and habitat impacts resulting from the CPFs. Landscape and habitat models exist that would allow USACE to quantify approximately how much habitat will be created/maintained in CPFs. For example, the amount of habitat that will likely be created is listed under CPF site at Clam Pond – but how that number was calculated is not clear. And similar areas are not calculated for other CPFs.

It is not clear if the CPFs will preserve existing habitat or will actually restore degraded habitats. It is not enough to simply preserve existing habitat without creating new habitat if the goal is no net loss with the FIMP.

Habitat characterization and foraging: The criteria for habitat characteristics listed on page 5 is in keeping with what the USGS and others have found for habitat plovers selected in the past. From Zeigler et al (2018): Most habitat was characterized at (1) 1-3 m (3-9 ft); (2) < 300 m from foraging habitat; (3) vegetation density < 20%. It is great that this plan considers both nesting and foraging habitat (e.g., page 5). However, it needs to be made explicit that nesting habitat will be functionally connected to foraging habitat in CPF sites for chicks. Foraging habitat is useless if the birds cannot move between nesting and foraging habitats due to, for example, dense vegetation or human development/beach stabilization structures (including sand fencing).

Devegetation: On page 6, it is indicated that ‘devegetation will occur either via mechanical process or the targeted application of herbicides.’ However, there are no additional details on this. Increased vegetation density as a result of the loss of overwash processes is a major impact of the FIMP. The following needs to be addressed:

- a. Frequency of devegetation.
- b. The possible effects of herbicides into the broader system. For example, damage to sensitive plants, pollution of interior water bodies important for foraging, and loss of insect communities that are important food sources.
- c. Time of year for herbicide application, to avoid potential problems with use of these chemicals or mechanical approaches when the birds are getting ready to nest, which is when the vegetation would be emerging.

On page 9, the DFGR indicates: “FIMP designates the Democrat Point CPF as a species protection zone and recommends prohibiting installation of beach stabilization features”. This will allow natural disturbances that create/maintain early successional habitat without the use of herbicides. Could this be done at all of the ESA offset CPFs? The USGS has found that having areas where natural disturbance dynamics are allowed to occur is critical for maintaining habitat on developed barrier islands.

Clarification about vegetation implementation: Under the description of several CPF sites, the DFGR states that USACE will not implement vegetation management or manipulation of the sites unless conducted as an incidental action associated with future sediment placement. This is confusing because it seems that the point of the ESA offset sites was to maintain early successional habitats. Does this mean these sites will not contain engineered stabilization structures such that natural overwash processes should be able to maintain habitat effectively?

Specific comments:

P3, Table 1: The plan to devegetate Democrat Point seems in direct conflict with the aim to maintain on-site sand volume, since decreasing the amount of vegetation will increase aeolian transport. Also, birds are not the only ES species...what about the flora?

S3.4, P12: Is the living shoreline referenced to be subaqueous or subaerial?

S3.11, P16/S3.12, P17: The final GRR should explain why an assumed slope was used here, or if observations from elsewhere on the island can be used.

Appendix J: MAMP

As currently structured, the MAMP seems incomplete and requires revision and improvement. There are a number of considerations involving both monitoring (coordination, responsibility, physical, biological, and water level sampling) and adaptive management (governance, performance measures, predictions, thresholds) that require revision.

Given the inherent challenges of applying adaptive management principles to a complex system (Williams and Brown 2016), the FIMP is an impressive effort, which identifies the basic components of adaptive management. Nevertheless, the adaptive management process described in the FIMP—the when and how changes and modifications will be made—is implicit and loosely structured. To some extent a loose decision structure arises from practical necessity and desire for flexibility; however, the downside is that an implicitly defined process can lack transparency and accountability. Much is left for the AM Advisory Team or FIMP Assessment Team to specify, apparently by design.

The following comments are targeted to identify areas that need to be addressed for the published FEIS if possible to ensure that the DOI principals' vision (May 2017) for a 'robust adaptive management and monitoring plan' is met, consistent as will with the USACE-DOI MOU.

Governance: Committee authority requires clarification. The committee structure as outlined in Appendix J is currently inconsistent regarding who will recommend and ultimately authorize changes or modifications. For example, the FIMP Assessment Team (a technical team designated by the AM Advisory Team) will make recommendations for management changes or modifications (page 3); on what basis would the AM Advisory Team not pass those recommendations to the District Commander? The DFGRR states (page 3) that "The FIMP Assessment Team will include technical specialists designated by the AM Advisory Team to evaluate the performance of the project features as compared to the project goals, objectives and criteria and make recommendations to the AM Advisory Team." The scope of work assigned to the FIMP Assessment Team(s) encompasses the iterative phase of adaptive management, so the team or teams will be critical. DFGRR describes the makeup of the AM Advisory Team. What will be the composition of the FIMP Assessment Team? The DFGRR only states that, "The composition of this team may vary based on the project feature being assessed and the associated technical discipline required." How this will work in practice will need better definition to avoid multiple assessment teams, or inexperienced team composition, resulting in different approaches to adaptive decision making.

Objectives and performance measures: Metrics in Table J2 are based on performance at the feature level, but the performance metrics should derive from the fundamental project objectives listed on the top of page 7. The features are means to the desired ends, which ultimately aim to reduce loss of life, property, and economic activity from flooding, reduce damage to structures from erosion, and restore coastal processes. Currently, the adaptive

management is set up to ensure proper implementation of the features, which are means to the ends, but does not track progress towards the fundamental FIMP project objectives directly. As a result, the FIMP could do a good job at the features but fail at meeting the project-level objectives. The structure for the objectives can be outlined as follows:

- Project level objectives (fundamental objectives, long term, large spatial extent)
 - Reduce flood related damage
 - Reduce damage to structures due to erosion
 - Restore coastal process
 - Cost objective* (not explicitly stated)
- Feature level objectives (means objectives, feature-dependent time and spatial scales)
 - Objectives The feature is implemented properly
 - The feature functions as intended
 - Cost objective* (not explicitly stated)
- from the BO (regulatory in nature)
 - * Cost objectives can be framed as a ‘stay within project budget constraint’ or a non-natural scale--minimize cost.

Predictions: Very little is said in Appendix J about predictions with the exception of sediment transport modeling (page 33) and benthic community endpoints based on reference sites (page 39), and nothing specific is said about knowledge-based solutions -- a key component of Adaptive Management -- will be facilitated. If the observations do not align with the expectations, then the hypotheses and models underlying the predictions are inaccurate; it's not only the actions that need to be changed, but the underlying predictive models also need to be updated – which is the basis for knowledge-based solutions in adaptive management (Nichols and Williams 2006). The process for updating the predictive models should be described in more detail or indicate who will define that process moving forward.

Rules for changing or modifying actions: Who will develop the rules, protocols, or guidelines that specify when to make changes or modifications given considerations, uncertainties, and constraints? The process should be formalized and consistently applied rather than ad hoc and applied on a case-by-case basis. In some cases, triggers are specified in Table J1 and J2, but justification for the triggers is unclear. For example, there are several triggers in Table J1 that include numerical thresholds (e.g., >30 percent deviation) without justification. Are the triggers listed in Table J1 intended to be starting points for review and possible revision by the FIMP Assessment Team and AM Advisory Team?

Adaptive management for T&E species: The adaptive management plan to support the ESA BO should be more formal because of the tight focus on recovery of T&E species (Lyons et al. 2008, Runge 2011, Runge 2011). DOI published a technical framework for formal adaptive management (Williams and Brown 2012). The components of a formal adaptive management plan would include measurable attributes for the T&E species and other fundamental objectives (e.g., coastal processes and cost) combined into an objective function, predictive model(s) to forecast species response to project actions, an explicit analysis to identify the project actions that optimize the objective function (i.e., the optimization step), monitoring to observe consequences of project actions, and an explicit analysis to use the observations to update the

predictive model(s) (i.e., the learning step), reduce uncertainty, and improve future management choices (Runge 2011). The FIMP includes many of these components but does not integrate them in the formal way outlined by Williams and Brown (2012), Runge (2011), and others. The FIMP Assessment and AM Advisory Teams should evaluate formalizing the adaptive management plan for the DOI trust species.

Water level monitoring: Fifty years of water level monitoring at 13 sites is certainly sufficient. However, the distinction between inside and outside inlet sites is not clear. The plan needs to provide clarity on where these sites will be located to identify sites that may be subject to water level attenuation through inlets.

Sections a4 (Wave Measurements) and a5 (Water Level Measurements) indicate that water level data are to be used from nearby, existing USGS tide gages. These include existing USGS tide stations Great South Bay at Watch Hill (station ID 01305575), Moriches Bay at East Moriches (station ID 01304920), and Shinnecock Bay at Ponquogue (station ID 01304746). However, the Watch Hill and East Moriches stations have recently been discontinued due to a lapse in funding, and the Ponquogue station is facing a similar situation. Continued operation of these tide gages is being pursued by the USGS New York Water Science Center (NYWSC) and requires additional funding sources.

Section a5 (Water Level Measurements) states "A total of 13 long term water level gages will be installed." The USGS NYWSC has installed and operated a network of 18 long term water level gages in New York (see [project webpage](#) and [interactive map](#)), including five within the FIMP project area. (Although additional funding is required to continue long term operation of three of these gages, per the previous comment.) Real-time data from the five FIMP-area gages is supplied to the NPS; National Weather Service; Suffolk County Department of Fire, Rescue and Emergency Services; local first responders; other stakeholders; and the general public. As such, the USGS and its partners are interested in augmenting this network with the additional long-term water level gages. Pending available funding, the USGS NYWSC is able to assist with installation and operation of the additional gages, as well. Depending on location, the USGS NYWSC may also be able to simultaneously collect non-directional wave spectra from the additional gages. Water level gages installed by the USGS NYWSC at tidal inlets may also provide platforms for current (ADCP) and suspended sediment (turbidity) measurements, subject to available funding.

Considering the extensive description of the lidar monitoring included, it might be appropriate to include similar efforts for some of the other parts of the MAMP, for instance, the specific methodology of the biological sampling, the locations of the new wave and water level gages, and the model simulations that are expected or required for monitoring. There is no indication of where subsurface nearshore gauges will be placed. The plan needs to specify whether they are going to be near every project area or collocated with directional wave buoys. A more detailed description of physical monitoring strategy is needed.

USGS practices for Physical Monitoring: The Physical Monitoring section includes much less detail about monitoring methodology than the Biological Monitoring section and should be better described. The plan should include "best practices" for the physical monitoring that is

consistent with established (and vetted) methods. This would also allow some input regarding preferred (e.g., topo-bathymetric products to include surf zone rather than topo-only lidar and bathymetric data with a surf-zone gap) and emerging (e.g., SfM; drones; etc.) technologies, the latter of which will undoubtedly become more common over the life of the project.

Coordination between Physical and Biological Monitoring: Effort should be made to coordinate between the Physical and Biological Monitoring plans. For example, both will require elevation data (e.g., lidar), both will utilize aerial imagery, and both will collect and analyze sediment grain sizes. Opportunities to leverage data acquisition and analysis efforts should be described. Furthermore, in order to ensure that data is comparable across monitoring efforts, the biological and physical monitoring methodologies that are shared should be standardized. For example, if the bio-monitoring plan is to use sieves for grain size analysis (note: laser diffraction is preferred), then it seems that the physical-monitoring effort should use the same techniques. The biological and physical components of the plan could actually be combined rather than separated; this might highlight opportunities for better coordination and standardization.

Borrow areas: The monitoring plan for the borrow areas could benefit from some clarification. First, in Appendix J, S3.4, P18, the wording for a description of borrow area monitoring is confusing. First, bathymetry is not subaerial... submerged or subaqueous is what is probably intended here. Second, the discussion of grain size is confusing. From other parts of the text, it seems like the intent is to sample the sediment within the borrow areas repeatedly to ensure continued suitability of the sediment therein. The text can be clarified to reflect this. Finally, regarding the monitoring of the infilling of borrow areas, it seems like an appropriate trigger could be identified to initiate the collection of vibracores. Thirty vibracores seems like too many, particularly if the borrow area doesn't fill in at the anticipated rate. Instead, borrow area monitoring should utilize repeat geophysical surveys (including sub-bottom) and surface grab/box core samples to monitor new deposits. If the infilling rate exceeds some predetermined threshold, then perhaps more extensive (and expensive) vibracoring could take place.

Two wave gages offshore might not be sufficient to monitor transformation due to borrow activities or to track long-term changes in wave field if desired.

Consistency quantification: Where possible, the adaptive management plan should strive to establish specific triggers for action rather than relying on vague language. For example, in some places it is stated that if monitoring data are "consistent" or "substantially different" from predictions, some action will take place. The FIMP Advisory Team should consider if it would be possible to place some percentage bounds on consistent (e.g., <10 percent different from predictions) and substantially different (e.g., >20 percent different from predictions.)

Sediment color: Much of the language surrounding sediment compatibility monitoring focuses on sediment texture. However, sediment color can be very important for nesting wildlife, both shorebirds and turtles. Sediment texture and color should be monitored throughout the life of the project.

USGS cost sharing: Section f: Cost sharing between USGS and USACE is a remnant from a prior proposal and should be removed. USGS does anticipate future discussions about a cost-shared effort to conduct monitoring and related activities as part of the adaptive management plan. Mention of cost sharing should also be removed for details on CC BERM and beach buggy. Likewise, inner shelf measurements and modeling appears to be pulled directly from prior proposals and must be revisited with partners. Details on this application and how it will be used will be necessary.

S6.2f, P33-34: This section needs to be rewritten following further discussion with USGS. The three bullets on Appendix J, S6.3, and P35 should be similarly removed/revised. Table J-2: Monitoring and Analysis Matrix has a column for “Responsible Entities” for funding and implementation, but most of the monitoring has no funding source specified. Also, given the above comment, Table J-2 will need to be revised accordingly.

Piping plover loss monitoring: The list of monitoring data for piping plovers is given on page 45. This looks like fairly standard and comprehensive list. It may be implied, but nest fate and reason for nest loss (if known) should be explicitly considered in the monitoring protocol. On page 20, it is stated that the step taken as part of the adaptive management plan when productivity falls below the threshold will depend on the reason for low productivity. Therefore, the cause of nest loss should be noted.

Contingency plan beyond monitoring of piping plovers: The MAMP needs to ensure that the CPFs are creating enough habitat to offset loss through the FIMP, and if not, additional habitat creation be pursued.

Additional monitoring: Inlet monitoring for bathymetry/geomorphic change every 10 years seems insufficient. If dredging is occurring more often than that, we recommend that monitoring be performed on the same schedule. The Unvegetated/Vegetated Ratio (UVVR, Ganju et al., 2017) could be used as performance metric for wetland monitoring in either coastal process features or back-barrier environments.

Horseshoe crab eggs are critical to red knot migration. Locations of red knot foraging areas have been monitored within south shore embayments (M. Sclafani, Cornell Cooperative Extension, personal communication), which has shown that red knots foraging areas corresponds with horseshoe crab spawning density. Recent research by Stony Brook University has revealed that horseshoe crabs move among and within embayments on the south shore and horseshoe crabs of different ages migrate between south shore embayments and the ocean (Bopp et al. 2017 and 2018). Horseshoe crabs will likely be encountered in bottom trawl and surf clam sampling. Protocols for horseshoe crabs should include measuring prosomal width, recording stage (juvenile or adult), and sexing of adults. Presence of acoustically tagged horseshoe crabs in Moriches Bay could also be detected by the VEMCO receivers deployed for sturgeon monitoring (Bopp et al. 2017; POC: Justin Bopp, Stony Brook University). Feature-level actions (e.g., burrow areas) should avoid impact to benthic communities, particularly horseshoe crabs. Consider seasonal restrictions on project activities to reduce impact on horseshoe crab spawning migration. Incorporate red knot and horseshoe crab triggers into the CPF plan.

Light quality monitoring: Monitoring of light quality will help determine the water quality conditions inside the bay system. As seagrass health and recovery is dependent on good light conditions, monitoring light attenuation periodically in several areas locations of the bays will help determine the potential for seagrass bed recovery. After the opening of the Wilderness breach, there have been several reports of potential recovery in several areas near Fire Island in the relative proximity of the breach. The breach has helped with bay water flushing and that has improved light climate. As breaches are managed by the plan, the effects on residence time and seagrass condition should also be considered. Observations were available for several months in several areas of Great South Bay, but additional periodic measurements will help determine the long-term evolution of the bay. Also, these observations should be expanded to adjacent bays such as Moriches and Shinnecock Bays.

Specific comments on Appendix J:

S2.2.4, P11: The plan should specify whether sand fencing would be installed after placement. It is commonly used in other restoration projects, but is not mentioned here.

S2.2.7, P12: The climate change parameters to be monitored and means of measurement should be identified. Also, a new bullet should be added specifically for sea level rise given the importance of SLR to the future effectiveness of the plan.

S3.2, P15: The plan should be specific about who will be reviewing this part and any other aspect requiring revision.

S3.4, P17: Sediment compatibility monitoring should be part of not only Beach and Dune Fill monitoring, but also part of the monitoring for Sediment Management at Montauk, Groin Modification, and CPF-Barrier Island projects.

S6.1, P24: Monitoring elevation change (a component of volume) should be stated explicitly in the general monitoring plan. Aerial photography is not a suitable replacement for lidar because it is not possible to extract vertical elevations, unless sufficient data is collected for a SfM approach. More explanation of how aerial imagery will be used is necessary.

S6.1, P25, c: Add bullet for updrift and downdrift topobathymetric change analysis.

S6.1, P25, e: Add bullet for updrift and downdrift topobathymetric change analysis.

S6.3, P34: Reports are great first step, but if the project is to be the scientific boon for the area that the text describes, the data and metadata need to be published or otherwise made publicly available outside of reports.

S7.3.2, P41: The description of the techniques to be used in the Biological Monitoring section is MUCH more detailed than the description of the techniques to be used for the physical monitoring section. This disparity should be explained. We recommend a conversation with

USGS to weigh-in with specifications on methods that are already in place. USGS methodologies for physical sampling should be used to fill out the physical monitoring section.

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OFFICE OF POLICY ANALYSIS

The following provides FIMP comments in three areas: The Corps' response to PPA's DEIS comments; Socioeconomics in the Monitoring and Adaptive Management Plan (MAMP); and, Ecological Services and the MAMP.

1. The Corps' response to PPA's comments on recreation.

We did not find copies of the survey instruments in the documents and assume you mean Dr. Jonathan Silberman who has, for example, studied the recreation benefits of beach nourishment (Corps Response to PPA Comments, DOI p. 46).¹ We certainly do not question Dr. Silberman's expertise. At issue is the Corps' conflicting statements:

- “Overall this plan is economically viable; however, when excluding the impact of recreation, the economic analysis of the Management Plans indicates that at some locations the Plans provide a Benefit to Cost Ratio [*sic*] (BCR) of less than 1. This is generally a result of the high cost of the increased bypassing relative to the measurable Storm Damage Reduction Benefits” (Appendix A 2016, p. 333).
- “The quality of the data from the respondent completed methodology is a limitation of the study” (Appendix D Recreation, p. 3).
- “The major limitations in the survey methods were to have respondents complete the surveys without an interviewer and to only ask willingness to pay (WTP) questions to quantify the respondents [*sic*] value for maintaining the beach against erosion. The survey excluded the additional WTP questions to avoid having a survey that was too lengthy, which would result in a low completion rate, and to reduce potential confusion in responding to what appear to be repetitive questions. Due to limitations on the budget at the time of completion a self-directed survey was chosen as the most efficient way to collect information” (Corps Response to PPA Comments, DOI p. 46).
- “The limitations associated with respondent completed forms was recognized during the data collection design. Given the available budget it was determined that the ability to collect a greater number of responses outweighed the concerns regarding data quality” (Corps Response to PPA Comments, DOI p. 48).

Clearly, Dr. Silberman had substantial data limitations. As of at least 2016, the Corps knew that recreation mattered to the outcomes of the proposed Management Plans. Budget limitations were identified as the reason for not conducting more recent original study despite the relative importance of recreation to the benefit-cost ratio (BCR) of the Plans. Multiple DOI economists do not agree that there is a “likely understatement of visits and benefits” as the reason to have not invested in more study on recreational use (Corps Response to PPA Comments, DOI p. 48). On the contrary, we stand by our review that benefits are likely overstated (DOI p. 45). Given the

¹ Silberman, Jonathan and Mark Klock. (1988) “The Recreational Benefits of Beach Renourishment,” *Ocean & Shoreline Management*, 11, 73–90.

amount of uncertainty related to a key component of the BCR, we question the determination of a 1.3 BCR for the Tentatively Selected Plan (TSP) (DFEIS, p. ES-17).

2. Socioeconomics in the Monitoring and Adaptive Management Plan

It is unclear how the “Socioeconomic Elements” will be addressed in the Monitoring and Adaptive Management Plan (MAMP). The MAMP summary only identifies presence/absence of buildings at Montauk Beach (Table J-1). It seems reasonable for the MAMP to identify the proposed metrics. For example:

Socioeconomic Elements (to be obtained during annual project inspection that is conducted under OMRR&R, and interpretation of general physical data):

- Building stock (*presence/absence*)
- Recreation use changes (*visitor counts*) [not ferry counts]
- Land use changes [What categories are proposed? This link is broken:
http://www.longislandindex.org/land_use_analysis.html]

The FIMP acknowledges the long history of Native Americans who have shellfished, fished, and hunted in the study area. Meetings with two Tribal Nations, the Shinnecock Indian Nation and the Unkechaug Indian Nation (Poospatuck) were held “between 2003 and 2006 to communicate the study’s goals, discussion of potential impacts to cultural resources, and identification of flood-prone areas for further study” (EIS 2019, p. 3-133). The FEIS should include additional information on how the Corps addressed “protected tribal resources, tribal rights or Indian Lands” following consultation,² and ongoing coordination and outreach as the FEIS finalization process is completed. Unless the Tribal Nations already identified no affected resources, it seems reasonable to expand the Socioeconomic Elements in the MAMP to include Tribal natural and cultural resources.

3. Ecological Services and the MAMP

As communicated in 2016, Interior economists still think habitat equivalency analysis and/or resource equivalency analysis could be used to evaluate the ecological service losses and gains from the Management Plans. These methods are already familiar to the Corps³ and could be used in the context of the MAMP to determine whether the Management Plans are sufficiently addressing resource impacts or adaptive management is needed.

4. Monitoring in the MAMP

Monitoring in the MAMP should include ecological service losses and gains.

²https://www.spk.usace.army.mil/Portals/12/documents/tribal_program/USACE%20Native%20American%20Policy%20brochure%202013.pdf

³ <https://apps.dtic.mil/dtic/tr/fulltext/u2/a501248.pdf>

NATIONAL PARK SERVICE – FIRE ISLAND NATIONAL SEASHORE

Overall Comment

The National Park Service (NPS) supported the implementation of the Fire Island to Moriches Inlet Stabilization Project (FIMI) with the clear commitment from the US Army Corps of Engineers that the Fire Island to Montauk Point Reformulation Plan (FIMP), a plan to provide storm damage reduction for the south shore of Long Island over the next 50 years, would be completed, funded, and implemented. This plan is of great importance to the NPS as it manages and protects the significant natural and cultural resources of Fire Island National Seashore and will serve as a guide for future managers of this national park. We continue to look forward to working with the USACE as we bring this planning effort to a close and begin to implement it.

Adaptive Management Plan

The United States Geological Survey (USGS) has provided herein an excellent review of the Monitoring and Adaptive Management Plan (AMP) and the NPS echoes USGS's comments. The MAMP needs specific monitoring techniques, metrics, and thresholds to understand if the project design is effective and meeting FIMP objectives.

Clarification is also, needed for AMP research and monitoring funding. Items identified for monitoring do not have funding associated with it. What is the Post Authorization Report? It seems that funding for the AMP depends on this report. What is the approval process?

FIMP Documents in general

DFEIS ES-8 (and others): *Otis Pike High Dune Wilderness* is the correct name for the federal wilderness area.

Updated language is needed regarding the Wilderness Breach Management Plan/EIS and the selected alternative in the Record of Decision. Especially in the FEIS ES-8 planning process summary.

Suggested language:

A Record of Decision (ROD) for the Wilderness Breach Management Plan/ EIS was signed on July 23, 2018. Under the selected action identified in the ROD, the evolution, growth, and/or closure of the breach will be determined by natural barrier island processes, and human intervention to close the breach will occur only “to prevent loss of life, flooding, and other severe economic and physical damage to the Great South Bay and surrounding areas.”

The National Park Service will continue to monitor the wilderness breach using established methods that staff and scientists have used since 2012. Monitoring will be guided by three criteria that serve as indicators to alert Seashore staff to changes in the breach that could elevate the risk of severe storm damage in the form of loss of life, flooding, and other severe economic and physical damage, which could lead to a decision to close the breach.

DFEIS page 1-5: Update the General Management Plan (GMP) language to the recently approved 2016 GMP, delete the 1978 reference.

FIMP Final Recommended Plan 2018 Document

Page 32: “Talisman is located in the central portion of Fire Island within Barrett Island Park between Fire Island Pines and Water Island.” Replace “Barrett Island Park” with “Barrett Beach.”

FIMP preliminary draft Final General Reevaluation Report (DFGRR)

Wilderness breach references: Throughout all of the FIMP documents the wilderness breach is named differently - “wilderness breach,” “breach,” “inlet,” “Old Inlet breach.” The NPS has consistently called it the “wilderness breach” so it would not be confused with other past breaches, and although it is geomorphologically an inlet, the term inlet suggests it is navigable, which the wilderness breach is not. Consistency will limit confusion.

Page iv, second bullet: This bullet incorrectly states that the breach will be opened indefinitely. The correct characterization below is from the NPS Record of Decision (ROD): This ROD language should be used throughout the documents as it applies under all alternatives:

“Under the selected action, the evolution, growth, and/or closure of the breach will be determined by natural barrier island processes, and human intervention to close the breach will occur only “to prevent loss of life, flooding, and other severe economic and physical damage to the Great South Bay and surrounding areas.”

Has USACE adopted or plan to adopt the ROD for the wilderness breach? This needs to be clarified.

Page vi, bullet number 4: This bullet confines the mutually acceptable plan to areas “...within the jurisdictional boundaries of the National Park Service...” This is an incorrect interpretation of the enabling legislation for Fire Island National Seashore. Please also see page 3 of the Department’s October 2016 comments on the FIMP DEIS:

“The authority of the Chief of Engineers, Department of the Army, to undertake or contribute to shore erosion control or beach protection measures on lands within the Fire Island National Seashore shall be exercised *in accordance with a plan that is mutually acceptable to the Secretary of the Interior and the Secretary of the Army and that is consistent with the purposes of sections 459e to 459e-9 of this title.*” 16 U.S.C. §459e-7(a)

Page xi, Wilderness Conditional Breach Response: The Breach Closure Team helps to determine closure, but the Superintendent of the National Seashore is the final decision maker for federal tracts of land on Fire Island. This needs to be clear in the FGRR.

Page xi, second bullet under Breach Response: As part of the administrative record, and for people in the future to understand why certain decisions were made, an explanation of why Talisman was designated for the Reactive breach response strategy should be included. Suggested language for incorporation: “The NPS recognizes the high vulnerability of the Talisman area, the deep water in the back bay, and new infrastructure connecting communities east and west at that location, and therefore the Talisman area was recommended to be Reactive breach response.”

Page xii, bullet under *Integration of Local Land Use Regulations and Management*: This section should state that if the annual inspection report identifies that federal, state or local entities are not managing in compliance with laws, policies and regulations, the project should be terminated.

Page xv, The wilderness breach is not considered a permanent feature. The NPS ROD language, as mentioned above, should be used to capture the nature of the breach’s evolution. It has not significantly impacted water levels and that is why it is allowed to remain open. The last sentence should be removed or revised accordingly.

Page 18, section 1.3.5.: The last sentence of this section includes the statement “...the breach within the Wilderness Area of FIIS has remained open and is being monitored by the DOI, and is under evaluation in an EIS to determine future management actions for the breach.” This sentence should be revised to reflect the completed EIS process.

Please use instead the language from the Record of Decision (ROD), signed by the NPS Northeast Regional Director on July 23, 2018:

“Under the selected action, the evolution, growth, and/or closure of the breach will be determined by natural barrier island processes, and human intervention to close the breach will occur only “to prevent loss of life, flooding, and other severe economic and physical damage to the Great South Bay and surrounding areas.”

Page 23: As stated in the MAMP comments above pertaining to potential borrow areas, significant uncertainties remain about the monitoring and adaptive management plan.

Page 30, section 2.1.8: This section should identify the contribution of offshore sediment sources to the island’s sediment budget.

Page 33 - Sediment budget modeling should identify the impact on the island’s sediment budget from borrow area mining. This is a significant element of the project. The USACE needs to include this impact in its budget and MAMP.

Page 32, section 2.1.9.4, Wilderness Area Breach: See comment on DFEIS page ES-8 regarding the need to update several references to the Wilderness Area Breach and the now completed NEPA process, and to include mention of the USACE’s Wilderness Breach Management Plan/EIS adoption process if appropriate.

Page 34, section 2.1.11, Breach and Overwash impacts: Page 33 includes a discussion on how the wilderness breach did not significantly increase water levels, but on page 34 the first bullet says that it does. This is confusing. There have not been significant impacts and that is why the wilderness breach remains open. Recommend removing at least the first bullet and maybe the second.

Page 47, bullet number 6: See above comment on page iv, second bullet: iv, which states, incorrectly, that the breach will be opened indefinitely. Please see the following language from the NPS Record of Decision (ROD), which should be used throughout the documents as it applies under all alternatives:

“Under the selected action, the evolution, growth, and/or closure of the breach will be determined by natural barrier island processes, and human intervention to close the breach will occur only “to prevent loss of life, flooding, and other severe economic and physical damage to the Great South Bay and surrounding areas.”

As above, please also clarify if the USACE has adopted or plans to adopt the ROD for the wilderness breach.

Page 49: See above comment on page 47 regarding the breach closure and EIS process.

Page 85: Same as page 49 comment immediately above.

Coastal Process Features

The plan indicates that a “living shoreline” may be considered for the Talisman area. The elements of a living shoreline and potential construction methods (soft sand to planted marsh to oyster bags), and how to measure if these features are properly functioning, should be identified in the MAMP.

U.S. FISH AND WILDLIFE SERVICE

The Service along with the Department, National Park Service (NPS), and U.S. Geological Survey (USGS) provided comments on preliminary and final versions of the Draft Environmental Impact Statement (DEIS) in correspondence dated May 26, 2016, and October 19, 2016. The Corps provided responses to the bureaus' comments in the form of a review comment table which was provided to the Service on February 15, 2019.

The Service has reviewed the Corps' comments and also conducted a cursory review of the draft Final EIS (DFEIS), which was made available prior to public release, as per our responsibilities under the National Environmental Policy Act, including our role as a cooperating agency. Given competing workload and limited timelines we were unable to completely and thoroughly review the DFEIS, and its many appendices. As the project is still in its early stages of planning, we anticipate providing continuing input through Fish and Wildlife Coordination Act engagement.

Specific responses to the Corps' comments are inserted into column F of the Corps' review comment table (attached). We provide broader comments on the Recommended Plan such as the Monitoring and Adaptive Management Plan, Coastal Process Feature and Mitigation, Existing Conditions and Environmental Consequences sections of the DFEIS below.

Monitoring and Adaptive Management Plan (MAMP)

The Service supports the comments issued by the USGS on the approach and structure of the Monitoring and Adaptive Management Plan.

Appendix J of the Draft Final General Re-evaluation Report (DFGRR) describes the MAMP. Biological components of monitoring are listed as vegetation cover, CPF terrestrial and wetland mapping, Endangered Species Act (ESA) habitat conditions, benthic community, ESA surveys (presence and productivity). We recommend that planning for the MAMP continue in the Pre-Construction Engineering and Design (PED) Phase of the project to evaluate incorporation of monitoring plans for high priority (or other key indicator) species in the list provided below in Table 1 and the habitats they depend on, which will assist the Corps in meeting its objectives of "...maintaining, enhancing, and restoring the ecosystem integrity and coastal biodiversity" (DFEIS page 1-20).

Table 1. Priority Species

Highest Priority	High Priority	Moderate Priority
American Black Duck (B/W/M)	American Golden Plover (M)	American Avocet (M)
American Oystercatcher (B)	Audubon's Shearwater (M)	American Bittern (B/W/M)
American Woodcock (B/W/M)	Baltimore Oriole (B)	American Wigeon (W/M)
Atlantic Brant (W/M)	<i>Bay-breasted Warbler*</i> (B)	Bachman's Sparrow (B)
Black Rail (B)	<i>Bicknell's Thrush*</i> (B)	Bald Eagle (B/W/M)
Blue-winged Warbler (B)	Black Scoter (W/M)	Black Skimmer (B)
Canada Goose – Atl. Pop. (W/M)	Black-and-white Warbler (B)	Blackburnian Warbler (B)
Eskimo Curlew (M)	Black-bellied Plover (W/M)	Black-crowned Night Heron (B/W)
Gull-billed Tern (B)	Bridled Tern (B/M)	Brown-headed Nuthatch (B/W)
Piping Plover (B/M)	Broad-winged Hawk (B)	Canada Warbler (B)
Prairie Warbler (B)	Brown Thrasher (B)	Cerulean Warbler (B)
Red Knot (M)	Buff-breasted Sandpiper (M)	<i>Coastal Plain Swamp Sparrow**</i> (B)
Red-throated Loon (W/M)	Bufflehead (B/W/M)	Common Goldeneye (B/W/M)
Roseate Tern (B/M)	Canada Goose - North Atl (W/M)	Common Snipe (B/W/M)

Ruddy Turnstone (M)	Canvasback (W/M)	Common Tern (B/M)
Saltmarsh Sharp-tailed Sparrow (B/W/M)	Chimney Swift (B)	Cory's Shearwater (M)
Sanderling (W/M)	Clapper Rail (B)	Gadwall (B/W/M)
Seaside Sparrow (B/W/M)	Common Eider (B/W/M)	Golden-winged Warbler (B)
Whimbrel (M)	Dunlin (W/M)	Grasshopper Sparrow (B)
Wood Thrush (B)	Eastern Kingbird (B)	Gray Catbird (B)
	Eastern Towhee (B/W/M)	Green-winged Teal (B/W/M)
	Field Sparrow (B/M)	Harlequin Duck (W/M)
	Forster's Tern (B/M)	Henslow's Sparrow (B)
	Glossy Ibis (B)	Hooded Merganser (B/W/M)
	Great Crested Flycatcher (B)	<i>Ipswich Savannah Sparrow</i> ** (B)
	Greater Scaup (W/M)	Killdeer (B/W/M)
	Greater Shearwater (M)	King Rail (B/W)
	Greater Yellowlegs (W/M)	Least Bittern (B)
	Horned Grebe (W/M)	Least Sandpiper (M)
	Hudsonian Godwit (M)	Lesser Yellowlegs (W/M)
	Kentucky Warbler (B)	Little Blue Heron (B/W)
	Least Tern (B/M)	Loggerhead Shrike (B)
	Lesser Scaup (W/M)	Manx Shearwater (M)

Long-tailed Duck (W/M)	Nelson's Sharp-tailed Sparrow (B/M)
Louisiana Waterthrush (B)	Northern Pintail (W/M)
Mallard (B/W/M)	<i>Razorbill (M)</i>
Marbled Godwit (M)	Red-necked Phalarope (M)
Marsh Wren (M)	Red Phalarope (M)
Northern Bobwhite (B/W)	Red-breasted Merganser (W/M)
Northern Flicker (B/W/M)	Red-cockaded Woodpecker (B/W)
Northern Gannet (W/M)	Red-headed Woodpecker (B/W/M)
Prothonotary Warbler (B)	<i>Royal Tern (B)</i>
Purple Sandpiper (W/M)	Ruddy Duck (W/M)
<i>Rusty Blackbird*</i> (B)	Sedge Wren (B/W/M)
Scarlet Tanager (B)	Semipalmated Plover (M)
Semipalmated Sandpiper (M)	Short-eared Owl (W/M)
Short-billed Dowitcher (M)	Snowy Egret (B/W)
Solitary Sandpiper (M)	<i>Sora (B/M)</i>
Surf Scoter (B/W/M)	Spotted Sandpiper (B/M)
Tundra Swan – Eastern (W/M)	Swainson's Warbler (B)

Whip-poor-will (B)	Tricolored Heron (B)
White-rumped Sandpiper (M)	<i>Upland Sandpiper*</i> (B/M)
White-winged Scoter (W/M)	Western Sandpiper (M)
Willet (B/W/M)	Wood Duck – Eastern (B/W/M)
Willow Flycatcher (B)	<i>Yellow-crowned Night Heron (B/M)</i>
Wilson’s Phalarope (M)	
Wilson’s Plover (B)	
Worm-eating Warbler (B)	
Yellow-throated Vireo (B)	

B= Breeding; W= Wintering; M= Migration.

As noted in Steinkamp (2008),

“Highest priority species are those requiring serious and/or immediate action and potentially given preference over other species when deciding where to focus efforts and resources for management or other conservation actions. High priority species are those for which attention is not as time-sensitive as highest priority species because continental concerns or observed population declines are not as grave. For moderate priority species, threats are assumed less serious, populations more secure, and/or a smaller proportion of the specie’s continental distribution is supported by the BCR (e.g., species of conservation concern at the edge of their range and uncommon in the BCR). The conservation needs of moderate priority should be considered and, whenever possible, included in conservation management decisions to positively affect their populations when planning or managing for higher priority species.”

Overall, we recommend that the following steps should be included as a framework for monitoring and adaptive management and applied to species and habitats with conservation need: Assessing the problem, defining objectives and design criteria, developing alternatives, estimating consequences, selecting alternatives, and implementing and monitoring. As noted above, since the Corps has often expressed that further planning will take place during the PED phase of the project, we recommend that the Corps re-engage with the Service under the Fish and Wildlife Coordination Act so that we can provide further input into the MAMP development.

Coastal Process Features and Mitigation

Coastal Process Features

Page 2-30 of the DFEIS includes the opening remarks about CPF planning,

“As CPF sites are advanced to the PED phase, conceptual profiles for each CPF site that more accurately depict existing and proposed gradients at each would be developed. Some locations for CPFs may be changed (some dropped, others added), and the type and/or configuration of CPFs selected may also change. In addition to stakeholder and community outreach, the PED phase will include field studies, surveys and data collection inputs to a more detailed design of CPFs. Accordingly, the concept level plans simply illustrate examples of what possibly could be undertaken at the identified sites, or similar sites, to provide or improve CPFs.”

This comports with our understanding that these sites are conceptual and further detailed planning is necessary, as discussed in more detail below.

The Service’s assessment of the CPFs and presumed habitat area goals are discussed in more detail in our Fish and Wildlife Coordination Act Report. We note that the Recommended Plan includes several conceptual plans for salt marsh restoration at Smith Point County Park Salt Marsh and Mastic Beach wetlands to support Coastal Storm Risk Management (CSRМ). The restoration projects include efforts to use dredged material to simulate cross island transport; regrade marsh elevation, fill mosquito ditches, create channels for tidal exchange, and vegetate marshes, restore forested areas, high marsh and low marsh. While some target elevations, and habitat goals are noted for CSRМ functions, these plans do not include biological goals for non-ESA species, site analysis, design considerations, or site maintenance and management plans, which are typical elements of salt marsh restoration plans. We recommended the FEIS include these elements or a clear path to their development with an interagency team comprised of the Service, NPS, USGS, and the Environmental Protection Agency.

In terms of the elevation targets and drainage changes to Smith Point County Park Marsh, in particular, the overall impacts of these actions and the intended benefits expressed as goals and measurable objectives to wetland functions, vegetation, and sensitive fish and wildlife species should be discussed in the FEIS. The CPFs are described in the DFEIS as restoring wetland functions but there is no discussion of what functional losses the wetlands have experienced or why they need to be restored from a biological perspective. We understand that one of the Corps’ intentions is undertake these measures in order to partly compensate for loss of overwash processes, which would have otherwise delivered sand to the Smith Point wetlands. However, the scope of the proposed project should necessitate further planning and not be limited to these several marsh areas. We note that the Northeast Coastal & Barrier Network’s Salt Marsh Monitoring program (www.irma.nps.gov) proposed a comprehensive monitoring program for salt marsh and estuarine habitats, including marsh development process monitoring of elevation, vegetation, nutrient loading, eutrophication, and resident fish as a multiple parameter approach, to provide an initial understanding of why the ecosystem is changing. They expressed that knowledge of possible causes of marsh landscape change could enable the development of more

informed or targeted research questions and ultimate management action, if warranted. This program has continued to collect data at salt marshes on Fire Island including the Smith Point County Park Marsh. Data can be accessed at irma.nps.gov. We recommend this data and approach be incorporated into a full restoration planning strategy for this and other wetland restoration sites presently identified in the DFEIS and other wetlands or geographic areas determined through agency and public comments on the FEIS.

Similarly, bayside sand flat CPFs are described as having CSRM and ESA functions, but also require an objective analysis as to the benefit of non-ESA species. Nearshore flood shoals and shallow water, intertidal, and wetlands are also extremely important to breeding and migratory seabirds. The DFEIS recognizes that the Recommended Plan will prevent these habitats from forming, but does not present any species and habitat mitigation plans, other than the CPFs which have been designed and will be managed primarily in order to address impacts of the Recommended Plan on piping plover or to serve CSRM functions.

Mitigation

In terms of mitigation, we note that the DFEIS does not present mitigation alternatives, although there were a couple of references to it in regard to the Biological Opinion. The DFEIS indicates that the Recommended Plan will have similar impacts to the environment as the Future Without Project condition, which "...would not generate significant impacts and would not require mitigation" (Page 4-86 of the DFEIS). This conclusion is not well supported, as preventing natural processes that maintain the barrier island complex will impact fish and wildlife habitats. For example, the endangered species consultation for piping plover and seabeach amaranth identifies impacts this project would have on these species.

In evaluating mitigation, we noted in our May 2016 comments that the Recommended Plan should include an analysis of without and with project impacts that presents how much early successional and wetland habitat would be formed in the without-project scenario and what would be prevented in the with-project scenario. Estimates of overwash habitat formation are provided in the DFEIS. But, these estimates are constrained by the Corps' explanation that habitat formation would be limited by breach closure within 12 months in the Future Without Project Condition and the process of habitat succession which would limit the persistence of early successional habitat. We continue to recommend inclusion of a quantitative comparison of habitat gains and losses in the FEIS as it is critical in understanding the appropriate amount of mitigation that should be provided for fish and wildlife species, or the form it would take relative to the proposed 4.2 million cubic yards of sediment that is offered to meet the no net loss mitigation requirement agreed to by the agencies.

Affected Environment and Environmental Consequences

As noted above, we provide specific responses to the Corps' February 15, 2019, response to our October 29, 2016, comments related to Affected Environment (or existing conditions) and Environmental Consequences (impact analysis) sections of the DFEIS in the attached updated matrix table, lines 181 to end. With a focus on migratory birds, we continue to recommend that the FEIS include up to date information on avian resources in the marine offshore environment,

barrier beach, back bays, and mainland areas in the footprint of project impacts. In the matrix table, the Corps responded to our 2016 comments that the habitats and species' associations have not materially changed over the 20-year course of the FIMP Reformulation Study. However, over that time frame, we note that agencies have identified habitat and species' trends on a regional level via a number of action plans that are relevant here, or, as in the case of both the National Park Service and Service have undertaken more recent studies in the actual FIMP Project area, and climate change science has increased dramatically. For instance, the NPS funded a number of environmental resource studies within the boundary of the FIIS that are germane to the FIMP. The Department's Hurricane Sandy Resiliency Studies, as well as monitoring reports from the Corps' FIMI project also provide extremely relevant information useful for describing the Affected Environment and important to assessing the Environmental Consequences of the Recommended Plan. These are listed below:

- Gobler, C. J., and A. Stevens. 2017. Assessing the response of juvenile and adult hard clams to the new breach in Great South Bay: Post-Hurricane Sandy study. Natural Resource Report NPS/NCBN/NRR—2017/1505. National Park Service, Fort Collins, Colorado.
- Gobler, C. J., C. S. Young, J. Goleski, R. B. Wallace, F. Koch, T. K. Hattenrath-Lehmann, M. W. Lusty, J. D. Thickman, K. Langlois, Y. Litvinenko, J. L. Collier, and D. J. Lonsdale. 2018. Assessing the response of the Great South Bay plankton community to Hurricane Sandy. Natural Resource Report NPS/NCBN/NRR—2018/1781. National Park Service, Fort Collins, Colorado.
- LaFrance Bartley, M., J. W. King, B. A. Oakley, and B. J. Caccioppoli. 2018. Submerged marine habitat mapping at Fire Island National Seashore: A post-hurricane Sandy study. Natural Resource Report NPS/NCBN/NRR—2018/1797. National Park Service, Fort Collins, Colorado.
- Methratta, E. T., C. L. Pacelli, L. Fields, K. Bosma, H. J. Clark. 2016. Technical synthesis report for physical and ecological resources at Fire Island National Seashore. Natural Resource Report NPS/FIIS/NRR—2017/1415. National Park Service, Fort Collins, Colorado.
- Nicosia, E. L. 2015. Monitoring salt marsh vegetation and nekton at Fire Island National Seashore and the William Floyd Estate: 2015 summary report. Natural Resource Data Series NPS/NCBN/NRDS—2015/995. National Park Service, Fort Collins, Colorado.
- Nye, J. A., M. G. Frisk, R. M. Cerrato, M. Sclafani, C. N. Flagg, S. R. Sagarese, and J. A. Olin. 2018. Effects of a storm-induced barrier breach on community assemblages and ecosystem structure within a temperate lagoonal estuary: A post Hurricane Sandy analysis. Natural Resource Report NPS/NCBN/NRR—2018/1702. National Park Service, Fort Collins, Colorado.

- Tinoco, A. I., and B. J. Peterson. 2018. Effects of Hurricane Sandy on Fire Island National Seashore: Assessing seagrass-associated nekton communities (July 2018 update). Natural Resource Report NPS/NCBN/NRR—2018/XXXX. National Park Service, Fort Collins, Colorado.
- Rocks, E. N., and S. M. Stevens. 2018. Northeast Coastal and Barrier Network salt marsh vegetation monitoring protocol implementation plan: Version 1.0. Natural Resource Report NPS/NCBN/NRR— 2018/1790. National Park Service, Fort Collins, Colorado.
- DeRose-Wilson, A., K. Sloan, J.D. Fraser, D.H. Catlin, and S.M. Karpanty. 2013. Response of Piping Plovers and their Invertebrate Prey to Habitats Created By Hurricane Sandy. Department of Fish and Wildlife Conservation, Virginia Tech, Blacksburg, Virginia 24061. Report Submitted to U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers. 50 pp.
- Derose-Wilson, A., J.D. Fraser, D.H. Catlin, and S.M Karpanty. 2014. Shorebird Survey Report. Department of Fish and Wildlife Conservation, Virginia Tech, Blacksburg VA, 24061. 12pp.
- Monk, J.D., K. Miles, A. DeRose-Wilson, J.D. Fraser, D.H. Catlin, S. Ritter, K.M. Walker, and S.M. Karpanty. 2015. Monitoring of Piping Plover, Red Fox, and Shorebirds, Fire Island, NY. Department of Fish and Wildlife Conservation, Virginia Tech, Blacksburg, Virginia 24061. Report Submitted to U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers. 60 pp.
- Carey, A.M., K. Miles, S.G. Robinson, K.M. Walker, E. Kwon, J.D. Monk, H.A. Bellman, A. Derose-Wilson, K. Hunt, J.D. Fraser, D.H. Catlin, S. Ritter, S.M. Karpanty, and D. Sanger. 2016. Monitoring of Piping Plover, Red Fox, and Shorebirds, Fire Island, NY. Department of Fish and Wildlife Conservation, Virginia Tech, Blacksburg, Virginia 24061. Report Submitted to U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers. 168 pp.
- Granger, L.M., K.M.Black, S.Robinson, K.M. Walker, H.A. Bellman, J.D. Fraser, D.H. Catlin, S.J. Ritter, and S.M. Karpanty. 2017. Piping Plover and Red Fox Monitoring on Fire Island, NY. Department of Fish and Wildlife Conservation, Virginia Tech, Blacksburg, Virginia 24061. Report Submitted to U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers. 161 pp.

Overall, the Service finds that it's May and October 2016 comments are still relevant in regard to recommendations about incorporating the updated surveys, data, and conclusions of recent FIMP-area specific studies into the Existing Condition and Environmental Consequences sections of the DFEIS. The environmental consequences framework should address impacts to habitats for coastal seabirds (a diverse group of species dependent on aquatic and marine resources), species of greatest conservation need, and wetlands at a landscape level. Future

planning for the MAMP, CPFs, and mitigation should include a defined step-wise process for identifying mitigation alternatives, goals, monitoring, and adaptive management.

REFERENCES

Steinkamp, M. 2008. New England/Mid-Atlantic Coast Bird Conservation Region (BCR 30) Implementation Plan. USFWS Atlantic Coast Joint Venture 11410 American Holly Drive, Laurel, MD 20708. 251 pp.



June 6, 2019

Colonel Thomas D. Asbery
District Engineer
U.S. Army Corps of Engineers
26 Federal Plaza
New York, New York 10278

Dear Colonel Asbery:

The purpose of this letter is to confirm the Department of the Interior's (DOI) commitment and interest in continuing to work with the U.S. Army Corps of Engineers (USACE) in finalizing a mutually acceptable plan for the Fire Island Inlet to Montauk Point Reformulation Study (FIMP). The DOI agency, representatives from the National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), U.S. Geological Survey (USGS), and the Secretary's Office of Environmental Policy and Compliance have engaged in extensive coordination with USACE, and will continue to do so to help ensure a timely completion and approval of FIMP.

Since the 2014 Memorandum of Understanding between DOI and USACE, the DOI agency review and comment to the Draft FIMP documents, and the various meetings and calls related to FIMP, much progress has been made to address DOI's concerns and the critical elements identified for a mutually acceptable plan. The last element of a mutually acceptable plan that requires further coordination between DOI and USACE is the Adaptive Management Plan (AMP), as identified in the May 2017 letter from the DOI Regional Directors to Colonel Caldwell. Given the project's complexity and duration, it is important that the AMP has language that provides direction and flexibility for the project.

We remain committed to our continued collaboration with the USACE throughout the completion and implementation of the FIMP.

Sincerely,


Wendi Weber
Regional Director, FWS


Gay Vietzke
Regional Director, NPS


Michael Tupper
Regional Director, USGS



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NORTH ATLANTIC DIVISION
FORT HAMILTON MILITARY COMMUNITY
302 GENERAL LEE AVENUE
BROOKLYN NY 11252-6700

CENAD-PD-PP

20 Dec 2018

MEMORANDUM FOR Commander, New York District, 26 Federal Plaza New York, NY
10278-6700

SUBJECT: Model Review Plan Approved for Use Review of Fire Island Inlet to Montauk
Point, NY Project Specific Recreation Benefits Analysis Model

1. Reference is made to the subject document.
2. The Recreation Simulated Demand Model was developed to estimate National Economic Development (NED) recreational benefits for beach erosion control and improvements. The study area covers the beaches from Fire Island to Montauk, New York. The purpose of the model is to describe the relationship that exists between the number of annual visits people are willing to make and price per visit and calculate the total willingness to pay (WTP) for use in the project benefit analysis. The model consists of a Microsoft Excel spreadsheet which calculates simulated demand curves. The simulated demand curves are based upon the sampling distribution produced from a previously conducted survey on WTP.
3. The use of the Fire Island Inlet to Montauk Point, NY Project Specific Recreation Benefits Analysis Model is approved for a single use, rather than certified. The Model Review Plan was approved on 8 August 2018. The district has executed the review plan as directed. The review has shown that the model meets the criteria contained in EC 1105-2-412. This approval is based upon the decision of the National Planning Center for Coastal Storm Risk Management (PCX-CSRМ). There are no unresolved issues at this time.
4. APPLICABILITY: This model approval for use is limited to the subject study.
5. The point of contact is Mr. Larry Cocchieri, Deputy Director for National Operations, PCX-CSRМ, 347-370-4571, Lawrence.J.Cocchieri@usace.army.mil.

Encl

A handwritten signature in black ink, appearing to read "J. Vietri", written over a horizontal line.

JOSEPH R. VIETRI
Director, National Planning Center for
Coastal Storm Risk Management



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NORTH ATLANTIC DIVISION
FORT HAMILTON MILITARY COMMUNITY
302 GENERAL LEE AVENUE
BROOKLYN NY 11252-6700

CENAD-PD-PP

8 Aug 2018

MEMORANDUM FOR Commander, New York District, 26 Federal Plaza New York, NY
10278-6700

SUBJECT: Model Review Plan Approved for Use Review of Fire Island Inlet to Montauk
Point, NY Project Specific Recreation Benefits Analysis Model

1. Reference is made to the subject document.
2. The Recreation Simulated Demand Model was developed to estimate National Economic Development (NED) recreational benefits for beach erosion control and improvements. The study area covers the beaches from Fire Island to Montauk, New York. The purpose of the model is to describe the relationship that exists between the number of annual visits people are willing to make and price per visit and calculate the total willingness to pay (WTP) for use in the project benefit analysis. The model consists of a Microsoft Excel spreadsheet which calculates simulated demand curves. The simulated demand curves are based upon the sampling distribution produced from a previously conducted survey on WTP.
3. The Fire Island Inlet to Montauk Point, NY Project Specific Recreation Benefits Analysis Model Review Plan is approved. The National Planning Center for Coastal Storm Risk Management will implement the review process, as described in the plan and in EC1105-2-412 and consider the findings for approval for use.
4. APPLICABILITY: This model will be applicable for the Fire Island Inlet to Montauk Point, NY Study.
5. The point of contact is Mr. Larry Cocchieri, NAD Planning Program Manager, 347-370-4571, Lawrence.J.Cocchieri@usace.army.mil.

Encl


JOSEPH R. VIETRI
Director, National Planning Center for
Coastal Storm Risk Management



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON DC 20310-0108

OCT 11 2017

MEMORANDUM FOR DEPUTY COMMANDING GENERAL FOR CIVIL AND
EMERGENCY OPERATIONS

SUBJECT: Fire Island to Montauk Point (FIMP), Suffolk County, New York, Hurricane Sandy General Reevaluation Report – Policy Exception

I am responding to the Director of Civil Works' memorandum dated July 13, 2017, requesting that I grant an exception to the requirement to recommend the National Economic Development (NED) plan and allow the U.S. Army Corps of Engineers (Corps) to recommend the "mutually acceptable" plan consistent with requirements of the authorizing law, section 8 of Public Law (P.L.) 88-587 (78 Stat. 928), (An Act to establish the Fire Island National Seashore), dated September 11, 1964.

The Fire Island Inlet to Montauk Point (FIMP), New York, Combined Beach Erosion Control and Hurricane Protection Project was authorized by the River and Harbor Act of 14 July 1960. This authorization has been modified by Section 31 of the Water Resources Development Act (WRDA) of 1974, and Section 103, 502, and 934 of the WRDA of 1986 (P.L. 99-662). The Hurricane Sandy General Reevaluation Report on the project is being conducted in accordance with the Disaster Relief Appropriations Act of 2013 (P.L. 113-2).

In accordance with P.L. 88-587, the Chief of Engineers may undertake or contribute to shore erosion control or beach protection measures on lands within the Fire Island National Seashore in accordance with a plan that is mutually acceptable to the Secretary of the Interior and the Secretary of the Army. In the letter dated May 3, 2017 from the regional directors of Fish and Wildlife Service, National Park Service, and U.S. Geological Service, the recommended plan presented in the Director of Civil Works' memorandum dated July 13, 2017 is mutually acceptable to the Department of Interior.

The recommended "mutually acceptable" plan would manage the risks of coastal storm damages by the construction of a continuous 90 foot wide berm and a dune at a height of +15 feet National Geodetic Vertical Datum (NGVD) along the developed shorefront areas of Great South Bay and Moriches Bay on Fire Island and Westhampton barrier islands. Renourishment of the berm and dune is estimated to occur every four years over 30 years. The existing Ocean Beach groins would be modified by shortening and lowering the structures. Sand bypassing would occur across Fire Island, Moriches, and Shinnecock Inlets, with sand placed in a berm template at +9.5 feet NGVD. Coastal process features would be constructed to mimic natural processes that increase barrier island resiliency by placing approximately 4.7 million cubic yards of sediment in the back bay environment. Implementation of non-structural measures is proposed for approximately 4,720 structures within the 10 year floodplain, primarily through building retrofits, with limited relocations and buyouts based upon structure type and condition. Localized acquisition would be included in areas subject to high frequency flooding, with reestablishment of natural floodplain function.

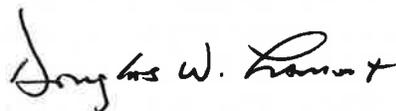
The recommended "mutually acceptable" plan would include performing proactive, reactive, conditional, and wilderness conditional breach response activities along the shorefront of barrier islands. Proactive breach response would occur when beach and dune are lowered below a 25 year level of risk reduction. Reactive breach response is planned for when an actual breach has occurred in locations that receive beach and dune placement. Conditional breach response would only occur within federally-owned tracts in the Fire Island National Seashore, and would require a determination of whether natural closure is sufficiently occurring. Wilderness conditional closure is similar to conditional breach response; however, it would also require a determination as to whether significant damage would occur.

Based on October 2016 (Fiscal Year (FY) 2017) price levels, the estimated total project first cost, including re-nourishment, of the NED plan is \$1,718,738,000. Based on the FY2017 price levels and a discount rate of 2.875 percent, the NED plan would have an estimated average annual cost of \$62,619,000 and estimated average annual benefits of \$109,843,000, \$73,036,000 in coastal storm damage reduction benefits and \$34,991,000 in recreational benefits. The net average annual benefit of the NED plan is \$47,224 at a benefit-to-cost ratio of 1.8 to 1.

Based on FY 2017 price levels, the estimated total project first cost, including periodic nourishment, of the recommended "mutually acceptable" plan is \$1,666,031,200. In accordance with P.L. 113-2, construction of the project would be 100 percent federally funded. Based on FY 2017 price levels and a discount rate of 2.875 percent, the recommended "mutually acceptable" plan is estimated to result in an average annual cost of \$67,168,700 and an average annual benefit of \$97,224,000, \$72,713,000 in coastal storm damage reduction benefits and \$22,695,000 in recreation benefits, for a total net average annual benefit of \$30,024,000, and a benefit-to-cost ratio of 1.4 to 1.

My staff has reviewed the memorandum and background information and found that the analysis is presented clearly and reasonably, and that the recommended "mutually acceptable" plan is in the federal interest and consistent with the requirements of P.L. 88-587. I have therefore decided to approve the requested policy exception to identify the "mutually accepted" plan as the Tentatively Selected Plan.

If there are any questions, your staff may contact Ms. Cindy Barger, Project Planning and Review at (202) 761-0041.



Douglas W. Lamont, P.E.
Senior Official Performing the Duties of the
Assistant Secretary of the Army
(Civil Works)

CF: CECW-P
CECW-PC
CECW-NAD RIT (Mr. Thomas Smith, Ms. Catherine Shuman)
CECW-NAD Planner (Mr. Ray Wimbrough - please provide
copy to CENAD and CEMVK)

SACW: File
Prepared: Cindy Barger/SACW/August 23, 2017



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
441 G STREET, NW
WASHINGTON, DC 20314-1000

CECW-NAD

JUL 13 2017

MEMORANDUM FOR SENIOR OFFICIAL PERFORMING THE DUTIES OF THE ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)

SUBJECT: Fire Island to Montauk Point (FIMP), Suffolk County, New York, Hurricane Sandy General Reevaluation Report, National Economic Development (NED) Plan Waiver Requests

1. References:

- a. Letter, Executive Office of the President, Council on Environmental Quality, June 6, 1978.
- b. Engineering Regulation (ER) 1105-2-100 (Planning Guidance Notebook), 22 April 2000.
- c. Interagency Reformulation Group (U.S. Army Corps of Engineers (Corps)), State of New York and National Park Service), Vision Statement for the Reformulation Study (Fire Island to Montauk Point Reformulation Study), adopted in 2004.
- d. Memorandum, Headquarters, U.S. Army Corps of Engineers (CECW-NAD-RIT), 8 Jan 2014, subject: Fire Island to Montauk Point, Completion Strategy.
- e. Memorandum of Understanding between the United States Army and the Department of the Interior, 24 Jul 2014.

2. The purpose of this memorandum is to request policy waivers that will assist in meeting the requirements of Section 8 of Public Law 88-587 (78 Stat. 928), (An Act to establish the Fire Island National Seashore) dated September 11, 1964, for the draft FIMP Hurricane Sandy General Reevaluation Report, Suffolk County, New York,. That Act provides that the authority of the Chief of Engineers to undertake or contribute to shore erosion control or beach protection measures on lands within the Fire Island National Seashore shall be exercised in accordance with a plan that is mutually acceptable to the Secretary of the Interior and the Secretary of the Army. In addition to these policy waivers, there are two potential project components proposed by the Department of the Interior (DOI) that are not acceptable to the Corps. These components are presented for your consideration.

CECW-NAD

SUBJECT: FIMP Hurricane Sandy General Reevaluation Report, Suffolk County, New York, NED Plan Waiver Requests

3. The Corps and the National Park Service (NPS) are working towards a mutually acceptable plan through a collaborative formulation process intended to achieve the most responsive coastal storm risk management plan for the system while meeting both DOI and Corps missions. This plan has been formulated to substantially reduce the risk of loss of life and threats to human safety, in a densely developed portion of Long Island, New York, while minimizing interruption of natural processes within and adjacent to the Fire Island National Seashore.

4. Although the NED plan is economically justified as a system, it does not include the following features which are mutually acceptable to the Corps and the NPS because they are not incrementally justified, as required by ER 1105-2-100 (reference 1b): sand bypassing at three inlets; sediment placement that mimics and bolsters natural processes (Coastal Process Features); and modification of the Ocean Beach groin field. The NED plan also identified a nonstructural component within the 6-year floodplain that reasonably maximizes net benefits, however the Recommended Plan includes a larger nonstructural component located within the 10-year floodplain with acquisition of the most at-risk structures for future restoration opportunities. Inclusion of these features requires policy waivers. The Supplemental Information Paper (Enclosure 1) provides additional discussion and justification for the waiver requests.

5. During the collaborative formulation process, two potential project components proposed by the DOI letter, dated 3 May 2017 (Enclosure 2), were not acceptable to the Corps. One component would require a commitment to achieving "no net loss" of habitat as a result of the project, with perpetual management of the resulting early successional habitat, to include maintenance and replacement by the Corps, throughout the life of the project. The second unacceptable component proposed by DOI would require the Corps to ensure enforcement of state and local laws and policies that would limit development in the project's high risk areas. These components are discussed in more detail below and in the FIMP Mutual Acceptability Unresolved Issues Paper (Enclosure 3).

6. The Corps has proposed offsetting the amount of sediment that would have otherwise been washed over the island, absent a federal project, and has determined this amount to be 4.7m cubic yards over the life of the project. The commitment to place 4.7m cubic yards of sediment to mimic backbay overwash areas will require repeated sediment placement at proposed locations along the bayside shoreline over the project life. The sand placement at these sites will be performed in coordination with the periodic nourishment of proposed beachfill features, and will be subject to monitoring and adaptive management to ensure that project objectives are being met. The material will be allowed to naturally colonize. The DOI requests the Corps perpetual management of the resulting early successional habitat. However, backbay

CECW-NAD

SUBJECT: FIMP Hurricane Sandy General Reevaluation Report, Suffolk County, New York, NED Plan Waiver Requests

overwash areas are subject to typical tides and wave action, and the effects of tropical storms and nor'easters. The dynamic and changing nature of these areas make it nearly impossible to accurately predict necessary elevations, planting locations and criteria, etc. Any restoration in these areas almost certainly would not meet the success criteria and would result in an endless cycle of earth movement, plantings, and monitoring. Pursuant to Public Law 88-587, the Corps can commit to generalized placement and natural dispersal of the sediment along the shoreline, along with natural plant recruitment that would mimic the natural processes. Additionally, as Operations, Maintenance, Repair, Rehabilitation and Replacement (OMRR&R) are the responsibility of the non-federal sponsor, the Corps cannot agree to perform any OMRR&R processes.

7. The Corps does not possess the regulatory authority to implement the DOI's request to enforce state and local laws and policies. Corps regulatory authority primarily is limited to Section 10 of the River and Harbors Act as well as Section 404 of the Clean Water Act, neither of which allows for such enforcement.

8. The Recommended Plan best balances coastal storm risk management, life and safety considerations, cost effectiveness, and the sustainability of the barrier island and associated habitat. It fully responds to the River and Harbor Act of 14 July 1960, subsequent amendments, and the CEQ referral of June 1978 (Reference 1.a) by addressing flood risk reduction for the study area to the greatest extent practicable. Additionally, the features of the Recommended Plan are necessary to achieve mutual acceptability with DOI, as required by Public Law 88-587. After careful consideration of the higher level of flood risk reduction for this complex coastal community, and in light of a greatly reduced risk to life and human safety, the Corps recommends that the requested policy waivers be granted for the implementation of the Recommended Plan. The Corps asks your concurrence with our determination that our perpetual management of early successional habitat, and our enforcement of state and local laws and policies, are not acceptable, and requests that this position and its supporting rationale be shared with NPS as we endeavor to finalize a mutually acceptable plan.

9. The point of contact for this memorandum is Ms. Catherine Shuman, Deputy Chief, North Atlantic Division Regional Integration Team, at (202) 761-1379, or catherine.m.shuman@usace.army.mil.

Encls



JAMES C. DALTON, P.E.
Director of Civil Works

Attachments [Note: some formatting may differ from the original]



May 3, 2017

Colonel David A. Caldwell
 District Engineer
 U.S. Army Corps Engineers
 26 Federal Plaza
 New York, New York 10278

Dear Colonel Caldwell:

This letter is intended to identify what is needed to finalize the Fire Island Inlet to Montauk Point Reformulation Study (FIMP). We share a commitment to completing the plan as rapidly and as efficiently as possible.

As you know from our 2014 Memorandum of Understanding, the Department of the Interior (DOI) and the U.S. Army Corps of Engineers (USACE) are committed to developing a plan that is mutually acceptable to both organizations. To this end, DOI agency representatives from the National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), U.S. Geological Survey (USGS), and the Secretary's Office of Environmental Policy and Compliance have engaged in extensive coordination with USACE.

Although we have not yet received, nor have seen, the final *project plan*, per past discussions DOI believes that the USACE and DOI are in agreement on the FIMP's concepts and key elements and are on a good path to produce a mutually acceptable final plan. Described below are what we believe are the necessary and agreed upon concepts and key elements that need to be included in the plan:

- A commitment to achieving a "no net loss" of habitat as a result of the project. USACE has identified the amount of back-bay habitat that would be impacted over the life of the project and has committed to the replacement of 4.7 M CY of sand to offset these impacts. In addition, USACE and DOI need to complete the estimation of the early successional habitat that will be affected and replaced throughout the life of the project.
- Given the project's complexity and duration a robust adaptive management and monitoring plan are needed. The final adaptive management plan should:
 - Reflect the physical process discussions on the impacts of coastal engineering on storm risk; activities include inlet management, sediment bypassing, beach

- nourishment, groin modification, offshore sand mining, alteration of frequency and magnitude of over wash, and breach response.
- Include necessary monitoring of ecological and biological responses to these physical processes.
 - Identify risk and adverse impact thresholds for taking action and alternative management if thresholds are exceeded.
 - Include a long-term storm damage risk reduction plan that adheres to laws and regulations meant to limit development in FIMP'S high-risk areas. The adaptive management plan should include a monitoring protocol regarding enforcement of such laws and regulations and establish a threshold for USACE to withhold future funds to maintain FIMP projects if federal, state and local laws, policies and regulations that regulate land use are not implemented and enforced.
- USACE is proposing coastal process features to restore or mimic natural coastal processes that are precluded due to project elements. To date the identified coastal process features have been for the placement of sediment in the back-bay environment. The coastal process feature plan should:
 - Identify areas where, if possible, more natural processes can occur.
 - Consider altering the design template to allow for more over wash, or modifying breach closure timing based on natural breach evolution or cost-effectiveness.
 - Preserve, restore, and enhance mainland marshes to reduce threats from flooding and inundation to surrounding developments.

Having these elements included and addressed in the plan and in the USACE's Biological Assessment, supported by agreements with non-Federal land managers, will help ensure a timely completion of the required Endangered Species Act Section 7 consultation.

DOI is committed to working with the USACE on finalizing a mutually acceptable plan that serves the interests of our collective agencies and the publics we serve. If the USACE has any changes or concerns with the concepts and key elements as described in this letter please let us know, otherwise we look forward to receiving the final plan.

In light of your upcoming rotation, we would like to take this opportunity to thank you for all your work on this effort. Our staffs are committed to continue working with your staff throughout the transition. We look forward to meeting and stand ready to work with your upcoming replacement, Colonel Thomas Asbery.

Sincerely,




Wendi Weber
Regional Director, FWS

Joshua Laird
Acting Regional Director, NPS



Michael Tupper
Regional Director, USGS

MEMORANDUM OF UNDERSTANDING
between the
THE UNITED STATES ARMY
and
THE DEPARTMENT OF THE INTERIOR

I. PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to provide a foundation for collaboration between the United States Army (Army), represented by the United States Army Corps of Engineers (Corps) and the Department of the Interior (DOI), for purposes of developing a plan that is mutually acceptable for hurricane and storm damage reduction, including identifying and evaluating natural and nature-based measures that contribute to coastal storm damage risk reduction, in the general reformulation study for the Fire Island to Montauk Point, New York project (FIMP).

II. BACKGROUND

The Corps and DOI stipulate that:

- A. Congress authorized the FIMP for beach erosion control and hurricane protection in section 101 of the Rivers and Harbors Act of 1960, Public Law 86-645;
- B. Section 8 of the Act establishing the Fire Island National Seashore, Public Law 88-587 directed that the authority of the Corps to undertake or contribute to shore erosion control or beach protection measures on lands within the Fire Island National Seashore lands shall be exercised in accordance with a plan that is mutually acceptable to the Secretary of the Army and the Secretary of the Interior;
- C. The Corps initiated a reformulation study of the FIMP in 1980;
- D. In 2004, the Corps, DOI, and other partners adopted a Vision Statement for the reformulation study that acknowledged a preference for measures that protect and enhance natural processes and minimize adverse environmental impacts;
- E. In 2011, the Corps in consultation with the DOI developed a Tentatively Federally Selected Plan in the FIMP reformulation study that included a combination of soft structural, nonstructural, and nature based solutions as well as monitoring and adaptive management components to address uncertainties;
- F. In 2012, Hurricane Sandy damaged portions of the FIMP project area, increasing risk and vulnerability of coastal developments in the project area to flooding; and,
- G. Congress provided funding in the Disaster Relief Appropriations Act of 2013, Public Law 113-2 to reduce future flood risk in ways that will support the long-term

sustainability of the coastal ecosystem and communities and reduce the economic costs and risks associated with large-scale flood and storm events.

III. MUTUAL AGREEMENTS

Building upon previous collaboration efforts such as the Vision Statement and the Tentatively Federally Selected Plan, and, subject to applicable federal laws, regulations, guidance, policy and the NEPA public review process, the Corps and DOI mutually agree to collaboratively:

- Identify natural and nature based measures that may contribute to hurricane and storm damage reduction in the FIMP study area;
- Investigate modeling tools to quantify the contribution of natural and nature-based measures to hurricane and storm damage reduction in the FIMP study area;
- To the extent possible, formulate all hurricane and storm damage reduction measures and alternatives in a manner that avoids or minimizes adverse environmental impacts;
- Develop project monitoring protocol with the goal of assessing, and adaptively managing, project impacts and performance;
- Take into account potential changing conditions, including sea level rise and the dynamic nature of the FIMP study area, over the period of analysis when formulating all hurricane and storm damage reduction measures and alternatives; and
- Formulate land use management measures and evaluate their contributions to long-term risk reduction.

IV. GENERAL PRINCIPLES

- A. This MOU is intended only to outline areas of cooperation between the Corps and DOI necessary to allow for effective project implementation, and is not intended to create any right or benefit, substantive or procedural, enforceable at law by any party against the United States, its agencies, its officers, or any person.
- B. This MOU is neither a fiscal nor funds obligation document. Any endeavor involving reimbursement or contribution of funds between the parties to the MOU will be handled in accordance with applicable laws, regulations, and procedures.
- C. The Corps and the DOI intend to conduct the activities contemplated in this agreement in accordance with existing authorities. If any of the provisions of this MOU are determined to be inconsistent with existing laws, policies, regulations or directives governing the parties, then the provisions of this MOU not affected by a finding of inconsistency shall remain in full force and effect.
- D. The parties to this MOU shall meet on a quarterly basis (in person or via conference call) to review the implementation of this MOU until the GRR/EIS for the FIMP project is completed.

- E. This MOU may be modified as necessary, by mutual agreement of both parties, by a written amendment signed and dated by an authorized representative of each party.
- F. Either party may terminate this MOU by providing 45 days written notice to the other. Otherwise this MOU will remain in force through completion of the GRR/EIS for the FIMP project and during the period of initial construction of the project.

V. **POINTS OF CONTACT.** The following individuals will be the points of contact for this MOU:

CORPS

Mr. Joe Vietri
Chief, Planning and Policy, North Atlantic Division
Building 301, General Lee Avenue
Fort Hamilton Military Community
Brooklyn, New York 11252
Joseph.R.Vietri@usace.army.mil
917-613-3873

FISH AND WILDLIFE SERVICE

Mr. David Stilwell
Field Supervisor, New York Field Office
U.S. Fish and Wildlife Service
3817 Luker Road
Cortland, NY 13045
607-753-9334

NATIONAL PARK SERVICE

K. Christopher Soller, Superintendent
Fire Island National Seashore
120 Laurel St.
Patchogue, NY 11772
631-687-4752

Mary Foley, Regional Chief Scientist
Northeast Region
National Park Service
15 State St.
Boston, MA 02109
617-223-5024

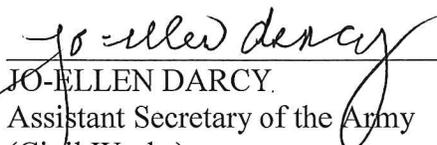
USGS

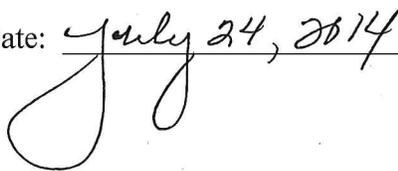
Walter Barnhardt
Center Director, Woods Hole Coastal and Marine Science Center
384 Woods Hole Road

Woods Hole, MA 02543
wbarnhardt@usgs.gov
508-457-2211

VI. **EFFECTIVE DATE.** The parties have executed this MOU as of the last date written below

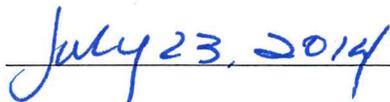
U.S. ARMY


JO-ELLEN DARCY
Assistant Secretary of the Army
(Civil Works)

Date: 

Department of the Interior


RACHEL JACOBSON
Acting Assistant Secretary for
Fish, Wildlife and Parks

Date: 



DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF

Planning Division

October 9, 2009

Mr. Mike Stankiewicz
New York State Department of Environmental Conservation
Flood Protection Bureau
625 Broadway
Albany, NY 12233-3507

Dear Mr. Stankiewicz:

This is in reference to your September 15, 2009 email that provided consolidated State and County comments on the Draft Formulation Report (dated May 2009) for the Fire Island Inlet to Montauk Point, New York Reformulation Study.

Attached is a response to your comments. We are now proceeding with the preparation of a GRR and EIS. In conjunction with this effort, the District intends to distribute the Formulation Report results to the various towns, interested agencies, etc. as the basis for conducting public information sessions, necessary to inform the public of the current status of the plan of improvement alternative analyses completed to date.

We are aware that New York State supports the further development of the NED/NER Plan. It is our belief that with the changes made to the report to address your comments, and changes made to address comments received from the Department of the Interior, we will have addressed all requests for further development.

If you have any questions, feel free to contact Mr. Frank Verga, Project Manager, at 917-790-8212, or Mr. Stephen Couch, Chief, Coastal Section, at 917-790-8707.

Sincerely,

for Thomas J. Hodson
Frank Santomauro, P.E.
Chief, Planning Division

CC:

Jim Tierney (NYSDEC)
Fred Anders (NYSDOS)
Peter Scully (NYSDEC, Region I)
Eric Star (NYSDEC, Region I)



DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF

Planning Division

October 9, 2009

Mr. Andrew L. Raddant
Regional Environmental Officer
U.S. Department of Interior, Office of Policy and Compliance
408 Atlantic Avenue - Room 142
Boston, MA 02210-3334

Dear Mr. Raddant:

This is in reference to your August 11, 2009 letter that provided consolidated Department of Interior comments on the Draft Formulation Report (dated May 2009) for the Fire Island Inlet to Montauk Point, New York Reformulation Study.

Attached is a response to your comments. Please note that we have not provided a point-by-point response, but rather have consolidated the comments and responses. We are now proceeding with the preparation of a GRR and EIS. In conjunction with this effort, the District intends to distribute the Formulation Report results to the various towns, interested agencies, etc. as the basis for conducting public information sessions, necessary to inform the public of the current status of the plan of improvement alternative analyses completed to date.

In our responses we have distinguished between revisions that will be implemented prior to public release of the Formulation Report results, and revisions that will be addressed in the GRR and EIS. Many of the comments provided identify the NPS position on various plan of improvement alternatives, and are similar in nature to the conclusions of the August 22, 2008 meeting between our agencies. It is our expectation that resolution of DOI issues on specific alternatives is something that will continue on a parallel path with the public information sessions and preparation of the GRR and EIS.

If you have any questions, feel free to contact Mr. Frank Verga, Project Manager, at 917-790-8212, or Mr. Stephen Couch, Chief, Coastal Section, at 917-790-8707.

Sincerely,

A handwritten signature in black ink that reads "Thomas J. Hodson".

for Frank Santomauro, P.E.
Chief, Planning Division

CC:

Mary Foley (NPS)

Chris Soller (NPS-FIIS)

Andrew Raddant (DOI-OEPC)

David Stilwell (USFWS)

Jim Tierney (NYSDEC)

Mike Stankiewicz (NYSDEC)

Fred Anders (NYSDOS)

Peter Scully (NYSDEC, Region I)

Eric Star (NYSDEC, Region I)

Big Picture Items highlighted by DOI

PROCESS:

It is our understanding that the DFR will serve as a platform for the U.S. Army Corps of Engineers' (USACE or Corps) environmental impact assessment prepared under the National Environmental Policy Act (NEPA). Thus, our agencies have a shared interest in ensuring that the DFR is a sufficient foundation for *initiating* the NEPA process, preparing an adequate impact assessment, and withstanding the rigorous peer review proposed by USACE.

The DFR lacks an alternative that represents the local sponsor's wishes and capabilities. Until this is resolved we advise against moving forward in the NEPA process.

- **NYD Response.** By letter dated February 2009, the NYSDEC has indicated that New York State supports the further development of the NED/NER Plan. That being said, based upon discussions with our sponsor, and internal coordination following the last IRG meeting, it is agreed that the preparation of a GRR and EIS should only be completed and distributed for public review when there is agreement on a plan that has local support, and it has been fully vetted through the Corps' review process. Rather than preparing the GRR and EIS for public review, the District intends to distribute the Formulation Report as the basis for local government, and public input on the alternatives. As such, in our responses we have distinguished between 1) revisions to the Formulation Report that will be implemented prior to public release, and 2) revisions that will be incorporated and addressed required in the GRR and EIS. Many of the comments provided, specifically from the NPS identify the NPS position on various alternatives. Since our intent is to solicit public input on the alternatives, it is our expectation that resolution of DOI issues on these alternatives can proceed on a parallel path with these public meetings, so long as the alternatives are included in the report.

PLAN:

The National Park Service has identified an alternative in the DFR (Alternative 3G) that may serve as a starting point for further discussions. Conceptual support is described herein for mainland building retrofits, land management measures, and adaptive management. Ensuring consistency with NPS policies, regarding interventions in natural processes, groin removal, *implementation* of land management measures, will necessitate further modification, as will developing a strong adaptive management plan.

- **NYD Response.** While this sentence reads as the opinion of the NPS, does this reflect the position of DOI as a whole? It is recognized that Chapter 10 of the formulation report identified Alternative 3G as the storm damage reduction plan that most meets the most NED and Vision Criteria. Chapter 11 of the report seeks to integrate the additional components described by the NPS. This is a positive if we can agree that we can focus on refinements to Alternative 3G to identify a plan that satisfies both agencies. However, as addressed in the specific comments, with implementing Land Management, it must be recognized that there are some strong limitations in what we the Corps has legal authority to implement.

TECHNICAL:

The DFR currently does not present the level of information necessary to undergo a thorough scientific review

Additional concerns include: adequacy of the environmental setting characterizations, Habitat Evaluation Procedures (and results), and restoration measures; potential impacts to listed species; lack of mitigation for project impacts; sustainability, and characterization of the “Without Project Future Conditions.”

Additional concerns include inadequate treatment of sea level rise acceleration; quality or presentation of data; treatment of uncertainty; treatment of coastal processes; validation and verification of model results; offshore sand supplies, and impacts to sediment transport from dredging.

We also believe that the overall tone of the DFR can be improved

- **NYD Response.** A recurring comment is the need for additional detail in the Engineering, Economics, and Environmental existing conditions. The point-by-point comments address the particulars. It should be pointed out that this was prepared as a Planning Document to present the alternatives and was not intended to provide all of the technical back-up. In many instances (particularly the Engineering and Environmental), the back-up technical reports have previously been provided to the DOI agencies, and will be contained in greater detail in the supporting Appendices and EIS.

U.S. Geological Survey – comments relate to technical back-up required for Report.

Presentation of back-up data

This draft report does not provide sufficient information to conduct a rigorous scientific review. In order to request a review of the various proposed mitigation plans, the USACE must show their work, as oppose to stating “results.”

- **NYD Response.** As was explained in our July 13, 2009 meeting, this report is a planning document that was not intended to provide all of the technical back-up. Members of USGS have been part of the review team, provided with detailed information regarding the borrow source investigation, sediment budget, inlet morphology and storm surge modeling and have had the opportunity to review this information. Items previously reviewed by USGS staff include the following (1)the Draft Borrow Area Appendix (comments received from USGS on 18 May 2007, regarding the Borrow Source Investigations Draft Appendix, FIMP Reformulation Study, presently incorporated into the latest version of the Appendix), (2) multiple interim products for the Storm Surge Modeling efforts as part of the Technical Review Panel, December 2002 through August 2004, (3) the Future Vulnerable Conditions Report, dated 4 Feb 2005, with comments receive from USGS staff and replied to February 2005, and (4)FIMP Storm Surge Modeling Documentation, comments received from USGS staff, responses dated and delivered to USGS staff on 26 July 2006. This technical information, and the results of the prior review can be provided to the DOI/USGS. When the GRR and EIS are ultimately assembled, the technical appendices will also contain much of this information. At the time the modeling work was being conducted, and under the review and guidance of the Technical Review Panel, the work established the state of the art, in combining hydrodynamic and morphological modeling. That state of the art has since been built upon, and has been the impetus to the development of the Corps’ Morphos modeling system. The modeling work used for FIMP has been the subject of numerous conference papers, peer reviewed journal papers, and a PhD thesis. Notwithstanding the time lag between the conduct of the numerical modeling study and the formal preparation of the study documentation, the Corps stands behind the modeling methodology, assumptions and results.

Background, Period of Analysis

The USACE’s project time frame is 50 yrs. In contrast, DOI agencies, the NPS and the USFWS have missions to protect natural resources and natural processes for the overall public good and for the benefit of ecosystems for the long term, virtually in perpetuity...

As a result of their mission objectives, the NPS and the USFWS must plan and manage for much longer than a 50-yr time frame (centuries to millennia and longer) and are obligated to factor in scientific data and predictions of future coastal conditions that likely will exceed past mean values and record highs.

- **NYD Response.** The Corps utilizes 50 yrs as a planning horizon for 2 primary reasons, 1) The Corps is authorized to participate in shore protection projects over a 50-yr period, and 2) In conducting or cost and benefit analysis, everything is considered against present values. Projecting beyond 50-yrs has little effect on the financial analysis.

Sea Level Rise:

There are several discrepancies found in this section where the USACE does not adhere to recommendations from their own, albeit recent, publication, USACE Circular No. 1165-2-211, "Incorporating Sea-Level Change Considerations in Civil Works Programs"

The Circular recommends using the intermediate and high curve rates in NRC (1987) and doing the calculations at 5-year increments. These rates would be in addition to regional geologic subsidence, resulting in relative SLR (RSLR).

It is stated on Page 138 that the potential for accelerated SLR will be addressed in the plan selected; however, there is no mention in the current plan.

- **NYD Response.** Please note that the draft report was prepared prior to the release of the current SLR guidance. Presently, the report partially incorporates the current Corps guidance. The report, in its current form, addresses RSLR for the historic trend, IPCC, and NRC curve 3, but only for the without project condition. The intent was not to run all these scenarios for all of the alternatives, but rather focus on the final array of alternatives. Now that the guidance has been finalized, the District will coordinate with the Corps' Coastal Planning Center of Expertise to determine the appropriate level of inclusion in the report. In all, it should be pointed out that the new Corps guidance provides information on which scenarios to evaluate, but does not provide specific guidance on how to include the SLR into a plan selection. We will revisit Chapter 11 of the report, which seeks to integrate climate change into the plan, but in general, it is our expectation that the incorporation of the current guidance will not alter the current findings in the report.

Quality and Uncertainties of Mainland Elevation Data

These magnitude results in changes in storm surge elevation from the numerical simulations need to be validated in some way.

- **NYD Response.** The description of the calibration and validation of the numerical storm surge modeling is contained in the Draft Baseline Conditions Storm Surge Modeling and Stage-Frequency Generation mentioned above, and also interim results reviewed and commented on by the Technical Review Panel, which included USGS staff.

What elevation data was used by the USACE in their inundation analysis?

- **NYD Response.** The FIMP study was initiated with a multi-million dollar mapping effort between 1994 and 1996 of the entire project area, up to either the Long Island Railroad or to the +16.0 ft NGVD contour on the mainland. The elevation data on the topographic mapping was displayed at 2.0 ft contours, with other spot elevations included. Due to the nature of the mainland topography (with a low probability of changes in elevation) this data is still valid. Regarding the barrier islands, which are more dynamic, more recent LIDAR data sets have been used for modeling efforts and volume calculations.

Offshore Sand Volumes

The report states the need for large volumes of suitable sand for nourishment, but there is little detail about the offshore borrow areas, how the areas will be dredged, how the dredge pits are likely to evolve over time (i.e., fill in or not, type of sediment fill, organic content, etc), what effect the dredging will have on benthic habitat and resources, and potential effect on the coastal system, especially shoreline change. There is also no mention of the potential of obtaining material from further offshore or from other regions or mainland sources or of stockpiling the spoil from annual inlet dredging, and using that material for beach nourishment

- **NYD Response.** It is acknowledged that the report does not provide much detail on the borrow areas, required sand volumes or the monitoring that could be undertaken as part of the use of offshore deposits. We will revisit the report to include some summary information on these details. However, USGS staff has had the opportunity to review the Draft Borrow Area Appendix (comments received from USGS on 18 May 2007, regarding the Borrow Source Investigations Draft Appendix, FIMP Reformulation Study, presently incorporated into the latest version of the Appendix, including sand utilization, variety of borrow sources, and borrow area interaction regarding shoreline change). The Corps can forward this new version of the Borrow Source Appendix to the DOI/USGS

Geology and Sedimentology

In the description of the physical setting of the project area, the next draft or final Formulation Report should provide more detailed information by incorporating the current understanding of the coastal system, citing recent published works and presenting new information on the region or recent advances in coastal processes. Holocene sediment deposit and geological framework – inaccurate, sediment budget - application and description, shoreline change analysis – date of the analysis

- **NYD Response.** If there are specific changes or additional data the USGS would like to provide for inclusion into the revised report, we would welcome the input. In general, the more detailed information requested by the DOI/USGS is more appropriately included in the technical appendices and sub-appendices. We can ensure that the information in the main report references these appendices. Specific items described in the DOI comments are: (1) properly cited discussion of the geologic framework of the study area, and the hydrodynamic significance of the inner shelf and shoreface bathymetry and sediment distribution; (2) more discussion on cross-shelf transport; (3) proper citation of materials referenced (Rosati sediment budget); (4) discussion of more recent trends in shoreline change rates (again, unfortunately the delay in the report process has impacted the inclusion of the most recent data, some of which are still in press) (5) references to the Woods Hole Group report regarding interaction between offshore features and transport patterns at Georgica Pond, shoreline undulations specifically at Fire Island and how these issues relates to borrow area designations; (6) The Future Vulnerable Condition, which was developed with the guidance and advice of the Technical Review Panel, and included USGS staff. The overwashing and breaching modeling was also subjected to “realism” testing based on the 1938 and 1992 storms, requested by and guided by the Technical Review Panel.

Modeling

“It is difficult if not impossible to analyze or review the model results when observations of physical processes/properties are not presented to verify the model results.”

- **NYD Response.** As described in the Overview section above, the hydrodynamic and morphological modeling was scrutinized, guided and reviewed by a Technical Review Panel, which included four highly regarded coastal engineers and physical scientists (including USGS staff). Background on the TRP can be forwarded to the DOI/USGS. Documentation was developed to fully describe the work, including the physical processes, calibration and validation of each of the components of the comprehensive modeling scheme. It was deemed not appropriate to include the great detail of the coastal processes modeling in the planning/alternative-focused DFR, however backup data and reports can be sent to the USGS.

Specific comments:

- (1) The development of the breaching scenarios were empirically based, from breaches in the project area, especially the 1979 breach at Moriches Inlet, and the two 1992 breaches at Westhampton. Hydraulic modeling of the breaches was conducted to match that empirical data.
- (2) WISWAVE was the best available tool to be included in the numerical modeling scheme developed under the advice of the Technical Review Panel;
- (3) the description of Delft3D modeling, the wave modeling, the EST, development is included in the FIMP Storm Surge Modeling Documentation, comments received from USGS staff, responses dated and delivered to USGS staff on 26 July 2006. This information will be summarized in the Engineering Appendix, and the full modeling document will be included as a sub-appendix in the GRR
- (4) Other technical comments will be addressed in future correspondence and in the draft GRR, including development of future scenarios and the inclusion of life-cycle (50 year storm occurrence simulations), likelihood of partial breach closure (information supplied and discussed at meetings with NPS staff), estimated bay depositional volumes, and cost development for inlet closure gates (which would in turn need the development of significant engineering features to maintain the barrier island topography).

USFWS – comments focus on 1) level of detail in the existing conditions, 2) need for mitigation planning, 3) concerns with HEP model, 4) concerns with restoration planning, 5) concerns with how Endangered Species are addressed. There are also several comments on alternatives or overall combined plans.

Level of detail

The Draft Formulation Report does not adequately summarize or characterize the existing environmental setting in the study area. It has long been our experience that we, as an agency, need to be careful in terms of endorsing a limited range of alternatives before details of the affected environment and the alternatives' (both those carried forward and those eliminated) impact on the environment are available.

- **NYD Response.** This report was prepared as a planning document, not the full GRR and EIS. The level of detail sought by the USFWS will be contained in the EIS and supporting technical back-up. The District, in support of the Habitat Evaluation Procedure (HEP) analysis performed numerous surveys of the study area to establish a baseline condition and to document the quality and quantity of habitat. The HEP analysis will be used to compare the relative value of different areas at the same time (baseline studies) or the relative value of one area with time (impact assessment). The District identified an interagency Team (HEP Team) to assist the District in evaluating evaluating the quality of habitats in the FIMP project areas and the development of the HEP methodology. The HEP Team included representatives from the National Park Service (NPS), United States Fish and Wildlife Service (USFWS), and the NYSDEC. Other agencies, such as The U.S. Environmental Protection Agency (USEPA) and The Nature Conservancy (TNC) participated as review members only. At the initiation of the HEP process, each agency was given the opportunity to identify if there are other methods available to capture the habitat benefits, other than HEP. The HEP Team acknowledged that the Project area is comprised of a spatial and temporal mosaic of communities in varying periods of succession and geomorphologic conditions that cannot easily be captured through environmental/habitat models such as HEP. From this, the HEP was modified (from original USFWS single-species based versions) to account for this mosaic of habitats and to aid in the assessment of a landscape-level restoration approach. This modified HEP, as agreed to by the HEP team members that created it, allowed each variable in each habitat to be specifically weighted and addressed as per the unique needs of a large, multi-species use, project area. It was agreed by all the agencies that there were no other options available, and that the modified HEP is the most appropriate method for considering the habitat effects. A Final HEP Report will be available in Fall 2009.

Mitigation Planning

The Draft Formulation Report does not clearly identify any mitigation measures specific to the recommended alternatives that are being considered. We believe that the draft formulation report should include statements on the mitigation alternatives so the agencies can be better informed and aware of the measures that are being contemplated by the Corps to address specific alternative derived impacts.

mitigation includes:

1. avoiding the impact;
2. minimizing the impact;
3. rectifying the impact;
4. reducing or eliminating the impact over time; and
5. compensating for the impact.

Because unavoidable impacts are likely to occur if the FIMP plan includes components that result in adverse habitat modification, habitat creation foregone, (*i.e.*, preventing natural processes which create and maintain habitat) over the long life of the project, then the Service will recommend that those losses be compensated by replacement of the same kind of habitat value

the Service recommends that the Corps include specific restoration/mitigation alternatives as part of a preferred project description, identify associated costs and include the cost-benefit analyses for each alternative, and ensure that firm, written commitments are made by the Corps and local sponsors to implement these measures,

Beachfill. However, the net benefits do not appear to incorporate costs associated with environmental impacts or mitigation (discussed further below). (22)

Overall, the document does not provide an integrated approach to addressing project impacts with proposed restoration alternatives. There is an attempt to address impacts associated with the processes outlined in the report, including longshore transport, cross-island transport, bayside, processes, and estuarine processes. The plan does not present any mitigation alternatives directly related to any of the proposed alternatives.

- **NYD Response.** The potential impacts from the proposed alternatives are impacts on essential fish habitat and managed species during the dredging and sand placement portion of the operation. The impacts on surf zone communities during beach construction, significant, long lasting, population level effects are minimized (based on past monitoring efforts) as long as the sediments are similar to existing conditions. While we do not anticipate that the effects of the beach nourishment will be great enough to justify a large-scale mitigation effort, any future mitigation would need to be discussed.

In addition to the above, the District is cognizant of the potential changes of the project alternatives on natural processes. As pointed out in your letter, mitigation consists of avoiding, minimizing, rectifying, reducing, or compensating for impacts. Please note that some alternatives discussed in the DFR contain elements in their project design to minimize the impacts.

Some examples of mitigative measures are as follows:

- (a) Avoid: Adjust the time of construction activities to avoid periods of fish migration, shorebird nesting; preserve a public access point.
- (b) Minimize: Adding to the traditional storm damage reduction design a component to increase back-bay habitat, increase or develop new wetlands
- (c) Rectify: Restore flow to the back-bay.
- (d) Reduce: Control erosion (sedimentation control plan); place restrictions on equipment and movement of construction and maintenance personnel.

HEP Analysis

The results of the HEP analyses are skewed towards the creation of wide beaches, high berms, and dunes.

- **NYD Response.** The District, in support of the Habitat Evaluation Procedure (HEP) analysis performed numerous surveys of the study area to establish a baseline condition and to document the quality and quantity of habitat. The HEP analysis will be used to compare the relative value of different areas at the same time (baseline studies) or the relative value of one area with time (impact assessment). The District identified an interagency Team (HEP Team) to assist the District in evaluating evaluating the quality of habitats in the FIMP project areas and the development of the HEP methodology. The HEP Team included representatives from the National Park Service (NPS), United States Fish and Wildlife Service (USFWS), and the NYSDEC. Other agencies, such as The U.S. Environmental Protection Agency (USEPA) and The Nature Conservancy (TNC) participated as review members only. At the initiation of the HEP process, each agency was given the opportunity to identify if there are other methods available to capture the habitat benefits, other than HEP. The HEP Team acknowledged that the Project area is comprised of a spatial and temporal mosaic of communities in varying periods of succession and geomorphologic conditions that cannot easily be captured through environmental/habitat models such as HEP. From this, the HEP was modified (from original USFWS single-species based versions) to account for this mosaic of habitats and to aid in the assessment of a landscape-level restoration approach. This modified HEP, as agreed to by the HEP team members that created it, allowed each variable in each habitat to be specifically weighted and addressed as per the unique needs of a large, multi-species use, project area. It was agreed by all the agencies that there were no other options available, and that the modified HEP is the most appropriate method for considering the habitat effects.

A Final HEP Report will be available in Fall 2009.

Restoration Alternatives

It is unclear to the Service how HEP restoration projects will be maintained/managed over the life of the project, given that natural processes are not being restored

There are some restoration projects supported by the HEP team that the Service agrees to, in concept. However, we find that many of the selected sites do not, as presented, include enough details concerning design, protection, and management

The Service preliminarily supports the concept of the proposed creation of subaerial and intertidal habitats on the bayside from Atlantique to Cornielle Estates (Table 9.4, alternative T-25-1, page 329). However, we indicated in meetings that more appropriate sites exist from an ecological standpoint, such as lands north of the Federal tracts within the FIIS.

We recommend that the Corps consider replicating this alternative at the sites the Service submitted in our February 13, 2008, letter, and then provide the results to the FIMP planning team for further discussion.

In spite of our July 7, 2006, recommendations that restoration efforts for heron rookeries be removed from consideration as a FIMP restoration alternative, ... Table 9.4 lists the creation of heron habitat at John Boyle, New Made, and Warner's Island East as possible restoration alternatives.

The draft formulation report does not appear to specifically address the Service's recommendations for habitat restoration sites provided in the PAL

The Service supports the restoration of bayside habitat (page 261) in proximity to inlet management alternatives to provide a mosaic of habitats, but has concerns with the restoration of ocean dune habitat that would limit/prevent cross-shore sediment transport. We have placed particular emphasis in previous comments on restoring back bay islands for colonial waterbird use and recommend that the Corps incorporate those recommendations into its mitigation alternative planning efforts.

The Service supports the compensation of bayside habitat as a mitigation measure associated with the application of a storm damage reduction measure (such as beach fill on the ocean beaches) or as mitigation for a breach fill response. The Service also supports the minimization of the impacts of hard structures in the back bay littoral processes through modification of bayside structures and bay beach nourishment in selected sites (21)

- **NYD Response.** No changes required for release of the Formulation Report.

ESA

The Draft Formulation Report does not incorporate any of the conservation measures for endangered species discussed at joint interagency meetings or in correspondence provided to the Corps in February 2008, and does not accurately characterize the status of efforts taken in an attempt to draft the Long Term Regional Comprehensive Planning for Threatened and Endangered Species for the FIMP action area.

The Service would not consider this important phase of the endangered species conservation planning to be "accomplished," as depicted in the document

- **NYD Response.** The District will work with USFWS to integrate additional information into the formulation report to provide information on the locations where measures could be implemented, and the types of work that could be implemented, in order to obtain input on these alternatives.

Existing Conditions:

- include information on the public access plan
- Information is lacking on brackish, freshwater ecosystems
- Statistical information on seabird concentrations should be provided
- The red knot should be identified as a candidate species for listing under the ESA
- This section does not provide a clear sense of the importance of the study area in regard to piping plover breeding habitat on Long Island
- include results from over 25 years of hawk watch statistics
- quantify the amount of bayside beach habitat that has been "eliminated due to bulkhead construction, immediate development, and or severe erosion"
- Sand Shoals and Mudflats: The Service recommends that the Corps discuss the overall distribution and relative amount of these geomorphological features
- quantify the salt marsh acreages found in the study area.
- Mainland Upland, Birds and Wildlife: The Service recommends that the Corps provide a more accurate representation of avifauna in this particular habitat type

- **NYD Response.** This information is more appropriately contained in the EIS for the project.

WOPFC

many projects affecting the shoreline are either directly overseen or implemented by the Corps (e.g., inlet maintenance projects) or permitted by the Corps' Regulatory Branch (e.g., Fire Island National Seashore Community beach nourishment projects in 2003 and 2008-09) and, therefore, can be coordinated by the Corps in a fashion that takes a more programmatic approach to shoreline management than presently exists.

- **NYD Response.** It is not within the Corps regulatory capacity to govern the plans that local communities decide to undertake, unless it is connected with an assessment of the impact of an ongoing Corps project.

Alternatives:

Comments on the evaluation of alternatives (The report does not contain sufficient information that would assist the Service in understanding and agreeing that the ratings provided in ...)

Section 13. Storm Closure Gates: Information concerning the monetary costs and environmental impacts associated with this alternative should be included in the document.

- **NYD Response.** Additional information will be provided in support of the storm surge barriers.

Breach Response

As stated in the Service's September 13, 2007, correspondence, the Service supports the consideration of alternatives which allow for breaches to remain open, a protocol to determine if breach closure is warranted, and the creation of back-bay habitat as mitigation.

The Service supports the consideration of alternatives that are of a lower dune elevation to allow for overwash events in appropriate areas, including the 9.5 ft NGVD breach closure alternative that is being carried forward for consideration (page 242)

The Service is concerned that in an area such as Old Inlet where natural processes are occurring, namely cross-island sediment transport, which sustains a high ecological value, could be considered an area that requires manipulation as a proactive plan.

- **NYD Response.** No changes required in the report to address these concerns.

National Park Service

Process:

The NPS has been directed to manage Fire Island National Seashore (FIIS) in a natural state. The establishing legislation does anticipate that beach nourishment and/or new inlet development may be appropriate in the future. As you correctly note in several places throughout the document, the FIMP project arises in the context of two key Congressional enactments. The USACE authorization and WRDA's, along with multiple USACE guidance documents cited at page 192 provide the basis and framework for this planning effort. Similarly, Congress has explicitly directed that any actions regarding "shore erosion control or beach protection" within Fire Island National Seashore (FIIS) must meet two criteria: (1) it must be pursuant to a plan that is "mutually acceptable to the Secretary of the Interior and the Secretary of the Army" and (2) it must be "consistent" with the FIIS legislation. The FIIS legislation further requires that any federal beach project must be done under an agreement between the Secretary of the Army and the Secretary of the Interior.

The Draft Formulation Report does present NPS policies generally (see pages 364 and 368). However, we suggest that the next version of the report needs to explain NPS policies much more carefully and specifically, as follows. This explanation should be inserted into the discussion about the park at pages 47-49.

- **NYD Response.** We can insert additional text into the report. It would be beneficial to review the proposed text to ensure a common understanding of the implications of this language, and of what is written what is the law, what is policy, and what is the interpretation of policy. For example, the NPS states that they have been directed to manage the park in a natural state. The authorizing legislation, contained in Section 8 of Public Law 88-587, however, requires "for conserving and preserving for future generations certain relatively unspoiled and undeveloped beaches, dunes ..." This does not specifically require management in a natural state. The language should also reflect the legislative history of the law, where Congress stated that Section 8 provides that the National Seashore will not interfere with shore-erosion and beach protection measures by the U.S. Corps of Engineers and / or the State of New York.

Big Picture

The NPS is willing to support alternative 3G as the starting point of an alternative which may be mutually acceptable. As stated in the report, while not meeting all requirements of the Vision, this alternative most closely meets the requirements of the Vision document. We are supportive of several elements of this plan. However, several amendments must be made before we can fully accept this alternative and recommend that a temporary waiver of policy be requested of Department of the Interior officials to accomplish the plan objectives. Many of these comments are restated from comments made in our June 3, 2008, letter to Colonel Tortora.

Elements of alternative 3G that we can support include:

1. Non-structural Building Retrofit, Land Management and Acquisition Measures
2. Adaptive Management
3. Components of Land Management & Acquisition
 - Dune district coterminous with CEHA
 - Improved mapping and monitoring of local enforcement of the CEHA.
 - acquire from willing sellers within the CEHA developed properties, vacant parcels, or buildings at risk.
 - Establish a regional entity such as a Suffolk County Coastal Commission

- **NYD Response.** It is positive that NPS is supportive of these components of the plan. This is consistent with their prior position. It should be noted that the acquisition that DOI supports cannot be justified under our current requirements for Corps participation, although we would be supportive of its inclusion in the plan as a locally implemented component.

Amendments necessary for NPS support of this alternative include:

Remove or reduce impediments of the Ocean Beach Groins

- **NYD Response.** We agree with groin modification (shortening), as long as certain conditions are met. Chapter 11 of the report identifies the conditions upon which this could be included, which primarily include: addressing the water supply infrastructure protected by these groins.

Non-structural Building Retrofit, Land Management and Acquisition Measures. The plan does not include non-structural (land management and acquisition) measures along the shorefront of the barrier that would allow for a more landward dune construction and, it is acknowledged, would reduce the potential for storm damage and help restore ecosystem integrity. Implementation of these measures, the report says, is the responsibility of the local municipalities with the State and the NPS.

- **NYD Response.** Above, the NPS supports shorefront acquisition as a recommended component of the plan, but here comments that it is something that needs to be included to be acceptable. This is identified as a responsibility of other parties, since we cannot show the economic justification for this alternative.

Adaptive Management of Sand sources

Critical to our ability to effectively implement adaptive management is the need to improve our understanding of the role of offshore sand sources. The USACE is evaluating whether extraction of sand from borrow areas located on ridges south of Fire Island would have adverse impacts on adjacent park resources. We support the approach that the USACE is taking to gain a better understanding of the current knowledge of offshore sediments processes. It has been our understanding that a workshop held in July 2008 would produce a white paper prepared by the technical team of Federal, academic, and professional experts who were in attendance. This paper would assess the appropriateness of monitoring and adaptively managing the borrow area sediments as they are removed from offshore borrow areas or whether alternative sites further offshore need be used. This is not addressed in the plan.

- **NYD Response.** It is acknowledged that the intent to include the offshore borrow areas in adaptive management plan is presently not included in the report. This is an oversight and can be included in revisions to the formulation report. The revised Borrow Area Appendix and Monitoring Appendix will detail this further.

Sea level Rise Scenarios The report states that all 50-yr model simulations presented in this report are based on the historic rate of sea-level rise from the Sandy Hook-NOAA gage. Given predicted accelerated rates of sea-level rise, the report acknowledges that this is a conservative approach and there is mention that future sensitivity analyses may incorporate sea-level rise rates as predicted by the IPCC Report (2007); however, the fact that this current FIMP Formulation Report presents model simulations and discussions without recognition of predicted accelerated rates is a significant oversight.

- **NYD Response.** The current guidance on SLR was released on 1 July 2009, subsequent to preparation of the report. As is discussed in the USGS comments, we have partially addressed the SLR guidance, particularly in the WOPFC projection of damages. Since there are a large number of alternatives, the intent was not to consider SLR as applied to all alternatives, but rather to address SLR only in the final array of alternatives.

Breach Management. The Plan suggests that as a part of the final design, a breach response protocol could be adjusted to consider establishing a higher threshold at which action is taken (i.e., waiting a period of time for the breach to close naturally in the wilderness area). If closed, the fill would simulate an overwash fan or similar natural feature. We are in agreement with this approach. Any manipulation of the Fire Island barrier in the large publicly-owned tracts should only occur as necessary.

The NPS will allow only a post breach response plan for all major public tracts within the Fire Island National Seashore. This plan will require extensive monitoring of any breach for a period of time to assess whether the breach will close on its own. In the May 2, 2008 workshop on breach management, Dr. Nicholas Kraus, USACE, coastal engineer, suggested that breach behavior could be modeled well in advance of a breach in locations where they are likely to occur. This may be an option the USACE may want to pursue. We understand that the risks associated with breach management in the major public tracts adjacent to development will need to be assessed along with all elements of the FIMP plan and EIS. We also expect that the benefits of maintaining or restoring natural processes on natural resources and national park values will be assessed.

- **NYD Response.** It is true that the plan recognizes opportunities to fine-tune the implementation procedures for the breach response alternatives. We will continue to work with NPS to define the implementation criteria that are acceptable to the NPS, the Corps, the State, and The County. If the NPS seeks to impose these limitations on the Suffolk County Park property, there likely will be concerns from the County. As part of this process we can review the discussions that took place at the May 2, 2008 meeting, on information needs that could be assembled as part of the long-term monitoring and adaptive management plan.

Beach Nourishment NPS has repeatedly raised concerns about the NED beach nourishment alternative, (i.e., the placement of sand over any long term project life) invests in a temporary solution at best. The historic northerly migration of the dune system accentuated with even a conservative estimate of sea level rise strongly suggests that maintenance requirements and costs of the artificial beach and dune system will increase into the future. At the end of the project life the current encroachments of improved property will remain within the dune system. The project does not solve the problem, it simply defers the problem. Increased expenditures will be required to sustain the status quo into the future long-term. The alternative is initial beach nourishment gradually replaced by a focus land-use management and improved property acquisition program. NPS can concur with a beach nourishment protocol that has an initial placement with a sharply declining commitment of sand nourishment over time. All agree that beach nourishment will only provide storm damage reduction benefits as long as this action is maintained. The draft lacks the necessary non structural component **committing** the Corps, the NPS, the State and the local governments to essential land management and acquisition measures. Although as the Vision Statement points out “No plan can reduce all risks,” at the conclusion of the project, properties currently at risk of storm damage should be at a minimum. The NPS cannot commit to a long-term, in perpetuity, program of beach nourishment; it would be in violation of NPS policy and under the circumstances of this project a policy requirement that we would recommend not be waived. The authorities for this project should also be conditioned to require state and local performance on specific conditions prior to the federal funding of future phases. Many federal

programs do not allocate funding until compliant local or state programs meet certain criteria. FIMP should follow the models provided by the New Jersey Pinelands National Reserve, the Clean Water Act, FEMA, DOT, etc.

A land acquisition program concurrent with a beach nourishment program has the potential to extend the storm damage protection benefits many years beyond the life of the project. This will constitute a more permanent solution as well as to approximate natural dune migration over time. Such an approach will far better fulfill the Congressional intent of the national seashore. Similarly, we are in agreement that moving the Smith Point County Park bath house should be examined as an alternative to sand nourishment in front of the bath house as this will also lead to more permanent protection for these recreation resources.

- **NYD Response.** Please note that beachfill is not recommended in perpetuity. As described earlier. The report considers placement of beachfill for up to 50 years. Chapter 11 of the report identifies three different approaches for addressing this concern, as have been discussed by the Corps, the DOI and NYS. These include 1) A shorter duration for renourishment, followed by a breach response plan (transitional plan), 2) A moving dune, where renourishment would depend upon acquisition (translational dune), and 3) Adaptive Management Plan, where the renourishment would be analyzed for 50-yrs, but subject to modification based upon monitoring and adaptive management decisions. It is acknowledged that there are strengths and weaknesses of each of these approaches. It is recognized that the NPS has concerns over these issues. It would be more useful to understand the NPS position on the three different approaches that have been identified to address this issue, or if there are details that need to be developed further.

Inlet Maintenance We understand the need to maintain the inlets for safe navigation. The USACE acknowledges that inlet dredging affects sediment transport on both the ocean and bayside environments of Fire Island. Sand bypassing has always been considered to be essential to maintain sediment transport on the ocean side. Similarly, sediment availability and transport processes are also important to minimize bayside erosion as well. As 69% of annualized storm damages to the mainland occur from waters passing through these inlets. The plan should develop alternatives which would minimize these damages.

- **NYD Response.** It is acknowledged that there are 3 inlet issues, with possible solutions:
 - 1 – maintaining alongshore transport along the ocean coast. It is positive that the NPS supports the continued maintenance of the inlets and sand bypassing.
 - 2 – maintaining sediment transport along the bay shoreline. As was discussed in our August 22, 2008 regional meeting, and captured in the MFR – the issue was captured as “regardless of the cause, the DOI sees the need to address the bayside sediment issues”. As was concluded at the meeting, we do not see this as an inlet issue, but rather as a restoration issue. If there are solutions that involve inlet material we would be agreeable with using inlet material.
 - 3 – alternatives to reduce the level of flooding in the bay, due to water that comes in through the inlet. It should be pointed out that non-structural alternatives on the mainland address the damages due to this source. It is acknowledged that the report does not present all of the technical information that was recently developed to further address this issue. The detailed information will be provided to you, and summarized in the report. The analysis conducted specifically looked at the reduction in flooding that could be achieved by narrowing the inlet in order to reduce the cross-sectional area of the inlet. This analysis shows no significant reduction in flooding of the inlet, unless the inlet bottom was stabilized with rock to prevent scouring.

Cross Island Sediment Transport (need for bayside sediment)

We would agree that a major study to assess long term impacts from past dredging is not necessary. However, understanding the need for bayside sediment and its importance in maintaining island integrity and reducing storm damage is central to FIMP. As we requested in the June 3, 2008, letter the FIMP needs to 1) fully evaluate, manage and compensate for project impacts on cross-island processes; 2) develop bayside habitat restoration proposals, including removal of bulkheads and placing dredged material in shallow water to provide intertidal foraging and/or marsh substrate; 3) jointly develop a schedule for studies evaluating changes in bayside geomorphology and sediment availability due to historical inlet, breach and dune management practices; and 4) carefully and scientifically design and closely collaborate with other agencies to meet New York State Department of Environmental Conservation regulations for the placement of sand in intertidal and sub-tidal bay environments.

- **NYD Response.** This comment appears to contradict itself, where it says that a major study is not needed, but then describes a need for a study. There is also overlap with the following comment on NER alternatives. In Chapter 9 of the report we have recommended that the restoration alternatives be implemented in a phased approach that will allow for lessons learned, and adaptive implementation to address the local, regulatory concerns. As is pointed out in the following comment, we have had multiple meetings to identify additional restoration alternatives, but these meetings have not identified additional alternatives of interest to the NPS.

National Ecosystem Restoration (NER) Alternatives Few of the HEP alternatives restore natural processes; thus NPS does not support them. Among the few HEP alternatives we continue to support include the restoration of the Great Gun tidal marsh, removal of the Ocean Beach groins, and creating of sand lobes to mimic cross shore sediment transport at Atlantique to Cornielle and/or other locations. At an October 16, 2008, meeting with USACE and USFWS, NPS further provided comments on each alternative listed in Table 9.4. Specific comments on restoration sites that fall within Seashore boundaries are provided below. Additional detail can be found in the Memorandum for the Record from the October 16, 2008, meeting.

- **NYD Response.** There are continual references to the need for additional restoration alternatives. As a follow-up to the August 22, 2008 workshop, we held a meeting on October 16, 2008, which is specifically referenced. The conclusion to that meeting is summarized in the MFR excerpt below:

The meeting concluded with the Corps asking the NPS if there were any additional locations for bayside habitat restoration, or bayside sediment placement that should be considered (consistent with the discussion held at the Interagency Meeting on August 22, 2008). The NPS replied that there were no additional sites they were interested in pursuing, and that the scope of the proposed restoration measures were satisfactory to address their concerns regarding the long-term need for bayside sediment placement

We looked to identify if additional alternatives need to be considered. While NPS apparently disdains most of the alternatives being considered, USACE must proceed under the assumption that NPS is unable to add alternatives to the range under consideration.

HEP

the HEP models developed for the FIMP are an oversimplification of the complex physical and biotic processes and interactions that define the barrier island ecosystem. Barrier islands are variable systems

that undergo change temporally and spatially. In addition, a functioning barrier island does not represent one optimal community condition, as does the HEP models, but a mosaic of conditions over space and time. The static HEP models do not adequately represent the dynamic geomorphology and ecology of the FMP Project Area.

- **NYD Response.** As was provided in the response to USFWS comments, at the initiation of the HEP process, each agency was given the opportunity to identify if there are other methods available to capture the habitat benefits, other than HEP. It was agreed by all the agencies that there were no other options available, and that HEP is the most appropriate method for considering the habitat effects. The District, in support of the Habitat Evaluation Procedure (HEP) analysis performed numerous surveys of the study area to establish a baseline condition and to document the quality and quantity of habitat. The HEP analysis will be used to compare the relative value of different areas at the same time (baseline studies) or the relative value of one area with time (impact assessment). The District identified an interagency Team (HEP Team) to assist the District in evaluating the quality of habitats in the FIMP project areas and the development of the HEP methodology. The HEP Team included representatives from the National Park Service (NPS), United States Fish and Wildlife Service (USFWS), and the NYSDEC. Other agencies, such as The U.S. Environmental Protection Agency (USEPA) and The Nature Conservancy (TNC) participated as review members only. At the initiation of the HEP process, each agency was given the opportunity to identify if there are other methods available to capture the habitat benefits, other than HEP. The HEP Team acknowledged that the Project area is comprised of a spatial and temporal mosaic of communities in varying periods of succession and geomorphologic conditions that cannot easily be captured through environmental/habitat models such as HEP. From this, the HEP was modified (from original USFWS single-species based versions) to account for this mosaic of habitats and to aid in the assessment of a landscape-level restoration approach. This modified HEP, as agreed to by the HEP team members that created it, allowed each variable in each habitat to be specifically weighted and addressed as per the unique needs of a large, multi-species use, project area. It was agreed by all the agencies that there were no other options available, and that the modified HEP is the most appropriate method for considering the habitat effects.

External Peer Review (EPR) The plan with all its support documentation is extensive and addresses storm damages in a complex and extremely dynamic system. We congratulate the USACE in requiring a comprehensive evaluation of this study. We feel that the National Academies are uniquely qualified to undertake this task.

- **NYD Response.** Noted. We will consult with the Corps' Planning Center of Expertise on the appropriate entity to oversee the Peer Review.

Public Communication Plan Although not mentioned in this plan but discussed numerous times is the need to develop and implement a public communication plan. This plan should not only focus on elements of the FIMP but should also focus on flood risk, projected sea level rise and increased frequency and intensity of storms in the North Atlantic.

- **NYD Response.** We agree that the outreach plan that has been developed to date needs to be updated and implemented. We agree that the plan needs to account for the heightened awareness of climate change; but also needs to recognize what is known and what is unknown with respect to climate change. We are not aware of a firm prediction that storm intensity or frequency would increase.



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



August 11, 2009

(9043.1)

Mr. Frank Santomauro, P.E.
Chief, Planning Division
U.S. Army Corps of Engineers
26 Federal Plaza
New York, NY 10278-0090

Dear Mr. Santomauro:

Thank you for providing the Department of the Interior (Department) with the opportunity to review and comment on the May 2009 Fire Island Inlet to Montauk Point (FIMP), New York, Draft Formulation Report (DFR). This response conveys the collective comments of the Department participating Bureaus and Offices, including the National Park Service (NPS), U.S. Fish and Wildlife Service (USFWS or Service), U.S. Geological Survey (USGS), Office of Environmental Policy and Compliance, and the Regional Solicitor's Office. We have expedited our review of this substantial document, the stated intent of which is "...to be used by project sponsors as a basis for a common understanding of existing conditions, future without project conditions, and the planning process applied to arrive at the final array of alternative plans that could be supported for implementation as a joint Federal, State, and local project." (DFR, p. 1)

It is our understanding that the DFR will serve as a platform for the U.S. Army Corps of Engineers' (USACE or Corps) environmental impact assessment prepared under the National Environmental Policy Act (NEPA). If agreement is reached on a mutually acceptable plan, implementation of storm damage reduction measures within Fire Island National Seashore (FIIS) would also trigger NPS' NEPA responsibilities. Thus, our agencies have a shared interest in ensuring that the DFR is a sufficient foundation for *initiating* the NEPA process, preparing an adequate impact assessment, and withstanding the rigorous peer review proposed by USACE.

From the standpoint of initiating the NEPA process, importantly, the DFR lacks an alternative that represents the local sponsor's wishes and capabilities. This need has been underscored by both of our agencies in numerous meetings. Until this is resolved we advise against moving forward in the NEPA process. We do not wish to repeat the situation described on p. 55 of the DFR concerning the Fire Island Interim Project.

The National Park Service has identified an alternative in the DFR (Alternative 3G) that may serve as a starting point for further discussions. Conceptual support is described herein for mainland building retrofits, land management measures, and adaptive management. Ensuring consistency with NPS policies, regarding interventions in natural processes, groin removal,

implementation of land management measures, will necessitate further modification, as will developing a strong adaptive management plan.

Additional concerns identified in more detail below include, among others: adequacy of the environmental setting characterizations, Habitat Evaluation Procedures (and results), and restoration measures; potential impacts to listed species; lack of mitigation for project impacts; sustainability, and characterization of the “Without Project Future Conditions.”

Considering the peer review process, we find that the DFR currently does not present the level of information necessary to undergo a thorough scientific review. We believe that the Department can assist the USACE substantially in this regard. Many of the concerns identified herein are also reflected in the National Research Council’s (NRC) 2009 *Final Report from the NRC Committee on the Review of the Louisiana Coastal Protection and Restoration (LACPR) Program*. For instance, our support for a regional entity to take a leadership role in land use measures, is countered by our concern that implementation has been disassociated from USACE’s engineered alternatives. Additional concerns include inadequate treatment of sea level rise acceleration; quality or presentation of data; treatment of uncertainty; treatment of coastal processes; validation and verification of model results; offshore sand supplies, and impacts to sediment transport from dredging.

We also believe that the overall tone of the DFR can be improved. We seek a more balanced presentation of the natural processes that have been crucial to the historic integrity and condition of the barrier islands, including breaching and overwash, and the adverse affects of development and human interventions in those same processes.

The following sections provide more detail on the items identified above, and include the comments of the USGS, NPS, U.S. Fish and Wildlife Service, and short section of more generic concerns.

Thank you again for the opportunity to provide input on this important document. We look forward to further collaboration between our agencies.

Sincerely,



Andrew L. Raddant
Regional Environmental Officer

U.S. Geological Survey

Introduction

A team of geoscientists from the U.S. Geological Survey (USGS) has provided a limited review of the 381 page U.S. Army Corps of Engineers (USACE) Fire Island to Montauk Point New York Reformulation Study, Draft Formulation Report (DFR). In our review, we include an overview of our major findings, deficiencies, observations and recommendations. The focus of the review was the baseline science presented in the FIMP.

As background in reviewing the FIMP, it is important to realize that several fundamental policy differences exist between the missions of the USACE and the Department of the Interior's (DOI) NPS and USFWS that are germane to the FIMP project. The USACE has the mission to design and build engineering projects to: 1) mitigate coastal erosion and provide protection to human infrastructure at the coast and in the coastal zone landward of the shore, and 2) maintain boat navigation through tidal inlets and channels. Their main objective is not to maintain the beach to protect environmental resources or enhance recreational value, nor to maintain the natural processes necessary to allow coastal landforms to evolve over the long term, centuries and beyond. The USACE's project time frame is 50 yrs. In contrast, DOI agencies, the NPS and the USFWS have missions to protect natural resources and natural processes for the overall public good and for the benefit of ecosystems for the long term, virtually in perpetuity. These DOI agencies must also consider public safety and human welfare.

As a result of their mission objectives, the NPS and the USFWS must plan and manage for much longer than a 50-yr time frame (centuries to millennia and longer) and are obligated to factor in scientific data and predictions of future coastal conditions that likely will exceed past mean values and record highs. In contrast, the USACE project design mostly relies on data from the recent historical record with mean values and record highs, such as wave heights, storm frequency, flooding values, sea-level change rates, etc. That said, the USACE Vision Statement does contain the main points that decisions in the FIMP plan will be based on sound science, that preference will be given to non-structural measures to protect natural landforms and processes, and that the project will address long term demands for public resources.

With climate change, essentially all of the driving environmental values (e.g., temperature, precipitation, sea-level rise, storminess, human population increase) for the next 50 years and beyond are likely to be very different than the conditions over the past century. These rapidly changing conditions, likely to accelerate during the remainder of this century, need to be brought more fully into the cultural thinking and become integral to the coastal planning of both the USACE and the DOI.

Topics of Concern

Overview

This draft report does not provide sufficient information to conduct a rigorous scientific review. In order to request a review of the various proposed mitigation plans, the USACE must show their work, as oppose to stating "results." In its present state, the report is not transparent; assumptions are not shown, descriptions of baseline data used are generally lacking, confirmation of most modeling results are not presented, background information on model

assumptions and methods used are not presented, existing bodies of work related to the evolution/dynamics of the study area are ignored, and work presented is improperly cited, or omitted entirely. In some instances, outdated published work was cited and it is the opinion of the USGS review team that newer, more relevant information on the region or recent advances in coastal processes are not considered or incorporated.

Sea Level Rise Acceleration

There are several discrepancies found in this section where the USACE does not adhere to recommendations from their own, albeit recent, publication, USACE Circular No. 1165-2-211, "Incorporating Sea-Level Change Considerations in Civil Works Programs". Specifically, it is stated that, *Potential relative sea-level change must be considered in every coastal activity as far inland as the extent of estimated tidal influence*. This Circular goes on to state that areas already influenced by sea level rise (SLR) or where changes are predicted, predicted SLR should be an integral part of the project analysis. For future values of global SLR, the Circular recommends using the intermediate and high curve rates in NRC (1987) and doing the calculations at 5-year increments. These rates would be in addition to regional geologic subsidence, resulting in relative SLR (RSLR). It then recommends that both the performance and risk for each project design alternative be evaluated using the RSLR rates and that project designs that best accommodate RSLR be selected. For the FIMP region over the next 50 years, this could mean a RSLR value of ~ 1 meter.

Some of this is discussed on Page 69 using Figure 3.1, but it does not appear that this process has been used in the DFR and does not appear to be reflected in discussion of the alternatives. Rather, the report uses historic SLR rates from the NOS Sandy Hook, NJ gage and acknowledges that SLR is likely to increase but no values are given other than rates of 1.3 ft and 2.7 ft by year 2060. Also, the gauge data for Sandy Hook are for some reason given in English units rather than metric and the numbers presented are different than gauge data reported in Zervas (2001). In Zervas, the gauge data are 3.88 mm/yr for Sandy Hook, which is 0.0127 ft/yr and 7.62 in over 50 years. This is in contrast to the reported values (page 68) of 0.127 ft/yr and 6.35 in over 50 years.

Another source of SLR data in the study area can be obtained from the tide gauge at the Battery in New York City, which dates to 1856. Using this gauge, the linear trend in relative SLR (RSLR) from 1856-2006 is 2.77 +/- 0.09 mm/yr. Over that same time period, the global eustatic rate of SLR is about 1.7 mm/yr (IPCC, 2007). Thus, there is about 1 mm/yr subsidence in the local RSLR record.

The SLR projections used in the DFR are unrealistically low. The future SLR is likely underestimated by a factor of 2-5. As a result, the draft DFR report very likely underestimates significantly the ability to provide the desired level of performance of the stabilized barrier island, the sand volumes and costs required to do so, and the return interval, duration, and extent of future mainland flooding. The FIMP fails to recognize that future rates of SLR in the study area have no historical or even late Holocene geologic precedent and that the response of the southern Long Island coastal system to SLR may preclude effective engineering-based management.

Currently there are three published, credible projections for SLR for the 21st century:

1. IPCC (2007) – 18-59 cm by 2100
2. Rahmstorf (2007) – 50-140 cm by 2100
3. Pfeffer et al. (2008) – 78-201 cm by 2100

Two recent papers (Yin et al. 2009, Hu et al. 2009) suggest that the northeastern U.S. may experience additional SLR due to changes in the strength of the Atlantic Meridional Overturning Circulation (AMOC). As the AMOC slows, the dynamic topography of the sea surface relaxes and sea-level rises at the coast. There is also a steric component due to regional ocean warming. Yin et al. suggest 20-30 cm dynamic+steric rise for New York by 2050. Hu et al. suggest 10-30 cm for the northeastern U.S. by 2100. Finally, recent paper by Bamber et al. (2009) found that the collapse of the West Antarctic Ice Sheet (WAIS) not only adds to eustatic SLR, but also causes a redistribution of ocean mass due to the reduced gravitational attraction of the smaller WAIS. This is a global effect, and is most pronounced in a band at ~40° north latitude (i.e., ~Long Island, NY) where the sea-level rise is about 25% more than elsewhere around the globe. There is presently high uncertainty about the potential for full WAIS collapse, but the effect also applies to partial collapse.

The need to include future sea-level acceleration in DFR plans and design was a recommendation of the breach/overwash modeling review committee several years ago, but was not incorporated in the draft FIMP. Further, on Page 23 the report discusses future consequences of storms, but there is neither mention of increased SLR nor the potential of increased storminess above historic levels. It is stated on Page 138 that the potential for accelerated SLR will be addressed in the plan selected; however, there is no mention in the current plan.

Quality and Uncertainties of Mainland Elevation Data

Models were used to report on the potential flooding effects on the barrier-island system and mainland areas of Long Island from storm surges and breaches in the barrier. These model results form the basis for the economic assessments presented in the DFR (for example, see Table 5.19 on page 183), but little to no detail on the models is presented and no indication of a validation process to include uncertainties in model results is presented. For example, the model results that illustrate the effect that changes in topography (barrier island breaching) have on the flooding conditions within Great South Bay (Page 154), suggest that if a breach remains open for 3 months it can increase flooding of the mainland from 30-46 cm above normal, with multiple breaches increasing flooding up to 61 cm above baseline conditions. Breach-open conditions for 12 months are reported to increase flooding from 46-61 cm above normal. These scenarios worsen under the 500-yr event to up to 1.6 m above normal. These magnitude results from the numerical simulations need to be validated in some way. In the “Storm History” section (Pages 10-24), the damage descriptions are focused on damage to the barrier island chain. If a key justification (cost-benefit ratio) of the FIMP plan is to protect the mainland infrastructure from storm-induced inundation, a detailed history of damage to mainland structures should be presented as a validation of the model results. The economic assessment values as presented in Table 5.19 for the conditions of inundation occurring due to tidal inlets and wave setup in the back bay need to be justified with recent historical values.

A critical question that needs to be addressed and which could place doubt on the economic assessments presented in the DFR: What elevation data were used by the USACE in their inundation analysis? The vertical resolution of the elevation data used in modeling various increments of flooding is critically important. According to Gesh and others (2009), the best

available digital elevation (DEM) data available for the Long Island mainland is USGS 10 ft and 20 ft contour data. At this vertical resolution limit, the minimum SLR increment that can be modeled is 3.64 m. If these DEM data were used in the analyses presented in the FIMP report, the values of increased flooding above baseline conditions are all in the statistical noise due to the relatively low resolution of the DEM. How does this fit with the modeling done for determining economic impacts of flooding the barrier mainland?

Offshore Sand Volumes

The report states the need for large volumes of suitable sand for nourishment, but there is little detail about the offshore borrow areas, how the areas will be dredged, how the dredge pits are likely to evolve over time (i.e., fill in or not, type of sediment fill, organic content, etc), what effect the dredging will have on benthic habitat and resources, and potential effect on the coastal system, especially shoreline change. There is also no mention of the potential of obtaining material from further offshore or from other regions or mainland sources or of stockpiling the spoil from annual inlet dredging, and using that material for beach nourishment.

Recent USGS assessment using Monte Carlo Simulation modeling techniques of sand in Holocene ridges on the inner shelf offshore Long Island by Bliss et al. (2009) suggests Holocene sand volumes of 1.4B m³ at the 90th percentile, 2.9 B m³ at the 10th percentile, with a mean volume of 2.2 B m³. Environmental and other factors maybe reduce the volume available for beach nourishment and/or restoration. However, older pre-Holocene sediments are also present on the inner shelf beneath the shoals or in adjacent areas and may be suitable in texture and composition for nourishment considerations. Additional discussion of offshore sand and implications of dredging and removal in the FIMP is warranted.

Geology and Sedimentology

In the description of the physical setting of the project area, the next draft or final Formulation Report should provide more detailed information by incorporating the current understanding of the coastal system, citing recent published works and presenting new information on the region or recent advances in coastal processes. For example:

- There is discussion throughout the DFR about attempting to engineer toward more natural conditions. Yet the report also seems to downplay the fact that breaching and inlet formation are critical processes in the natural evolution and maintenance of the barrier-island system. This seems to be in contrast to the attempts to engineer toward a more natural condition. Not allowing breaching to occur will result in a more vulnerable situation at the end of the project.
- The discussion of the Holocene sediment deposit and geological framework presented on Page 26 is not accurate. The map presented in Figure 3.2 (a USGS map which is not cited) is referred to as “geologic framework.” It is not. This map shows Holocene sediment thickness mapped on the inner shelf and cannot be substituted for the geologic framework and evolution of the barrier island system. There should be a detailed, properly cited discussion of the geologic framework included in the Formulation Report that stresses the hydrodynamic significance of the inner shelf and shoreface bathymetry and sediment distribution.
- A sediment budget is not used to *reflect trends in along-shore sediment transport* as presented in the DFR. It is used to understand sediment transport and processes within a

given coastal system. Long-term erosion of the coast is associated with gradients in both littoral transport and cross-shelf transport. This should be acknowledged, rather than be dismissed (see page 81). If the uncertainty of the coastal sediment budget is as great as the values presented in the DFR, then that brings into question the values themselves and leads to the conclusion that the estimates are not viable to support sound scientific guidance. A discussion of cross-shelf sediment transport needs to be included in the report. Even if observational data (physical oceanographic/sediment transport instrumentation deployments, etc.) confirming this process does not exist, there is strong indirect geomorphic evidence, plus literature from other barrier-island settings showing that it is an important component of the coastal sediment budget.

- The sediment budget used in the DFR is based on the work of Rosati, which is not referenced. This work should be cited correctly rather than refer to it as *existing conditions*. This budget does not represent existing conditions, it is Rosati's best estimate of the coastal sediment budget.
- There are updates to the shoreline change analysis for Fire Island that are not presented in the DFR. Rather, the report only seems to use the results from a 10-yr old Coastal Seds Proceedings paper by Mark Gravens and others (it wasn't referenced, but we assume this is the Gravens et al, 1999 paper they discuss). The Gravens and others (1999) report does not provide a current understanding of the system, error analysis is not provided, and the time period selected for this analysis includes the most damaging storms in decades. This work is used to stress that erosion of the barrier island system is increasing (note the erosion rates presented on Table 3.3 are useless considering the high values of standard deviation shown). If the DFR had presented updated shorelines and assessed change up through the past decade, the result would be entirely different; there are areas of pronounced erosion, termed "undulations" in the report, however the net change from 1983 to 2007 indicated an overall trend of accretion, 0.15 m/yr, as oppose to the increasing erosion rate of -0.7 m/yr cited in the DFR. In addition, it is important to note that coastal change presented in the DFR is measured using end-point rates. A linear regression for Fire Island for similar time periods to those used by Gravens and others (1999) gives dramatically different results (-0.05 m/yr WLR from 1933-1983 versus -0.4 m/yr EPR from 1933-1979).
- The most recent published analysis of coastal change (Hapke, in press) indicates that the large hotspots of coastal erosion, termed "undulations" in the DFR, are spatially persistent over a century-scale timeframe. These may be interrupted by storm processes, but in the long term, they prevail strongly supporting the interpretation of fundamental geologic control (bathymetry and wave forcing). The fact that the DFR recognizes that erosional hotspots along Fire Island exist and are *thought to be related to the condition of the nearshore bar, and* that coastal sediment transport patterns are affected by offshore bathymetry off Georgica Pond (Page 303), but does not address the impact of changing the nearshore bathymetry by borrowing sediment from within 1 km of the barrier-island system is not logical and should be resolved in the next draft or final Formulation Report.
- Rather than manufacture a *future vulnerable condition* (Page 137), why not use actual vulnerable condition topography in the form of data collected either after the October 2005 or the April 2007 nor'easters? Have the modeled erosion projections due to storms been verified (Page 145)? This would be relatively easy to do using LIDAR data from 2005 and 2007. Similarly, for the "without project annual damages" presented on Table 5.19, is there recent evidence of the \$64M in the mainland and barrier that occur on average due to present inlet conditions and wave setup in the back bay? This is critical to

justify that the cost analysis has provided a reasonable assessment of current conditions. If the values of current conditions can not be justified, then it greatly reduces the justification of the future assessment conditions and costs.

Modeling

Much of the planning is based on the results of numerical models. As mentioned in the overview, it is difficult if not impossible to analyze or review the model results when observations of physical processes/properties are not presented to verify the model results. There is an overall lack of observations of the physical processes offshore of the barrier island and in the back bay areas. The observations are critical to identify the major processes controlling coastal circulation, sediment transport, and water elevations in the back bay, AND are necessary to calibrate and verify numerical models. Many of the models used are highly empirical and must include a detailed explanation of the data used to provide the model outputs; in some cases, ignoring the inner-shelf processes actually violates assumptions of some of the models. That said, sediment transport is extremely difficult to predict, especially in coastal settings. We would suggest that there are new, state-of-the-art modeling approaches that should be applied to the FIMP plan.

Examples concerning the presentation of modeling results in the FIMP are:

- In the description of the back-bay flooding (Page 9), it is stated, *When a storm impacts the area, when the barrier island does not breach, there are approximately 9,000 mainland buildings which would be flooded by a 100-year event (a large storm with a 1% chance of occurring in any year). In one condition modeled, which considered a breach into each bay, where these breaches grew unchecked, that same storm would flood almost 10,000 additional buildings, resulting in more than 19,000 mainland buildings flooded. On Fire Island and the Westhampton Barrier, the same breach event would also cause the number of structures on the bayside of the barrier island flooded under a 100-year event to rise from approximately 2,400 to more than 3,200.* This scenario is based on “one condition modeled.” That is not statistically relevant. What does it mean that the “breaches grew unchecked”? There is always some limit. How big did they get? Please clarify.
- The WISWAVE model (Page 139) was developed 28 years ago and is a second-generation wave model. There are more modern, third-generation wave models that are available that allow different wind-wave growth mechanics with more accurate physics and allow more directional bins that can resolve the wave fields.
- There is no verification/validation of ADCIRC or SBEACH results presented (Page 140-142) in the FIMP. SBEACH is highly empirical and requires strong calibration to determine appropriate profile change rates. Additionally, it is based on an equilibrium profile assumption that does not account for controls due to geologic framework restrictions on shoreface progradation. The FIMP states that Delft3D was used in two-dimensional (depth averaged) mode on Page 140. However, on Page 141 a 3D sediment transport simulation is reported? These statements are contradicting. The ability to accurately predict the cross-shore movement of sediment in the nearshore requires a model that can resolve the vertical processes of onshore and offshore movement of sediment. A depth-integrated approach requires strong calibration of empirical coefficients to adjust the on-off shore movement of material. What physical processes

information was used to adjust/calibrate the on-offshore model coefficients for sediment transport?

- On Page 141, wave induced runup is not included in the computations. The runup of the swash is difficult to include, however the infragravity wave band may be significant to induce dune erosion. This process should be accounted for. On Page 141, It is not clear how the outputs of wave, circulation, and morphological models can provide input to determine storm occurrence. Perhaps it is meant that these outputs can provide estimates of impacts of specific storms? Please clarify.
- There is only a vague and limited description of the EST model presented on Page 141. More information is required.
- It is not clear what processes were included for the determination of the blue curves presented on Figures 5.4 and 5.5. Were these curves determined based on tides, atmospheric pressure, and wind stress? And then were the red lines showing the added effect of the waves?
- In the discussion of Post-storm recovery on Page 146, it says, *The estimated amount of beach recovery has been established for various shoreline locations. These recovery amounts have been developed in order to match the long term erosional trends for each location, and establish whether the area is erosional, stable or accreting in the long-term.* This method clearly identifies the lack of available recent physical observations of the system. If the model results are being nudged towards long-term trends, then why are the models even being run? As the system changes (evolves) the response will evolve. Clearly the models being used are not being allowed to evolve the system and use that evolution to affect future scenarios. What “trends” are being used here? The trends that did not consider offshore sources of sediment? Please clarify.
- The discussion of breach evolution presented on Page 152 states, *The analysis projects a 50% likelihood of a partial breach closing naturally during the winter months, and a 75% likelihood of a partial breach closing naturally in the summer months.* How were these results obtained? What are the error estimates of these results? Is there sensitivity analysis on these model simulations? Please clarify.
- It is not at all clear how the values presented on Tables 5.5-5.7 were derived. There is a need for an error assessment on these quantities. How is it possible to determine the amount of sediment that would be above Mean Sea Level?
- Initial screening of storm closure gates for the managed inlets was dismissed rather abruptly in the FIMP (Page 209). If ~70% of storm damage is reportedly due to the present conditions, including the managed inlets, why does the cost of this outweigh the benefits? If more realistic rates of sea level rise were considered, would the cost-benefit ratio change?

Summary

The USGS review team believes the draft FIMP has a number of areas where it can be improved by adding more specific details, citing current published works, and verifying numerical models. Following resolution of the major comments and concerns as noted by the USGS review team and given sufficient time, we would be willing to provide a subsequent review.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (Service) has reviewed the U.S. Army Corps of Engineers’ (Corps) draft report entitled, “*Fire Island Inlet to Montauk Point Reformulation Study (FIMP)*”

Draft Formulation Report,” dated May 2009, which was received by the Service via electronic correspondence on June 6, 2009. It is our understanding that the purpose of the Formulation Report is to provide the reader with an overview of the analyses undertaken and the findings to date of the FIMP Reformulation Study, and is intended to be used by project sponsors as a basis for a common understanding of existing conditions, future without project conditions, and the planning process applied to arrive at the final array of alternative plans that could be supported as a joint Federal, State and local project. This is the second version of a “formulation report” that we have reviewed, as described below. The comments provided herein are based on an evaluation of this draft report in the context of comments the Service has provided to the Corps in meetings, teleconferences, and written correspondence over the course of this planning effort, but most recently since 2006. We believe that the majority of our previous comments are still relevant and should be addressed.

Overview of Recent Coordination with the Service

Below is a statement on the recent coordination between the Service and the Corps on the 2006 Draft Formulation Report, pursuant to the Fish and Wildlife Coordination Act (FWCA) of 1958, as amended (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq*) and the Endangered Species Act (ESA) of 1973, as amended (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq*). This statement appeared in a joint letter to the Corps signed by the Service, National Park Service (NPS), and the Department of the Interior (DOI) on June 3, 2008.

“Since 2006, the USFWS has provided a number of technical assistance documents, including: a FWCA planning aid letter making recommendations for project environmental features including habitat enhancement and restoration, identifying restoration options within the project area which we had discussed with land managers/owners, (approximately 37 sites) (October 6, 2004); formal comments on the Draft Executive Summary Formulation Report (July 9, 2007, and September 13, 2007); formal comments on the Habitat Evaluation Procedure developed for the FIMP (July 7, 2006); a planning aid letter which lays out the first parts of the 2(b) report, (principally a description of the affected environment, including the materials originally provided on October 6, 2004 identifying restoration options within the project area); a letter provided on October 12, 2007, expressing concerns that the Interagency Reformulation Group had not yet discussed project environmental impacts, (December 31, 2007); a follow-up document to our description of affected environment, describing goals for compensatory mitigation and our justification for such recommendations, (February 25, 2008); a letter conveying our recommendations for listed species conservation measures by way of listed/candidate species habitat enhancement and restoration, (February 13, 2008); and another round of comments on a draft listed species management plan for the project action area, to ensure protection of listed species from recreational activities for the life of the project (conveyed via email, May 9, 2008).”

Other important coordination meetings occurred on the following dates:

December 4, 2007 – Joint Service and Corps meeting with landowners in the Study Area to discuss the development of a draft management plan for threatened and endangered species.

January 7, 2008 – Interagency meeting among the Service, Corps, and NPS to discuss National Ecosystem Restoration (NER) alternatives.

October 14, 2008 – Interagency meeting among the Service, Corps, and NPS to discuss restoration alternatives for the Fire Island National Seashore (FIIS).

Overall Comments on the May 2009 report:

This report presents a number of significant issues that should be addressed by the Corps in the planning process. These issues are central to our core mission of protecting and conserving fish and wildlife resources, including threatened and endangered species, migratory birds, and interjurisdictional fishes and their habitats, as well as the responsibilities of the Corps under the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. §4321 *et seq.*), the FWCA, and the ESA. Many of these comments were provided in correspondence to the Corps during informal ESA consultation, the Habitat Evaluation Procedures (HEP) planning effort, and the on-going FWCA consultation.

- (1) The Draft Formulation Report does not adequately summarize or characterize the existing environmental setting in the study area. In the introduction, an acknowledgement is made that the level of detail is limited, but then an assertion is made that the level of detail is sufficient to allow for comparison of alternatives and identification of a preferred plan. It has long been our experience that we, as an agency, need to be careful in terms of endorsing a limited range of alternatives before details of the affected environment and the alternatives' (both those carried forward and those eliminated) impact on the environment are available.
- (2) The Draft Formulation Report does not clearly identify any mitigation measures specific to the recommended alternatives that are being considered.

Sections 1502.14 and 1502.16 of the regulations for implementing NEPA (40 CFR Parts 1500-1508) require the action agency to formulate appropriate mitigation measures for the proposed action or alternatives. These regulations define mitigation to include:

1. avoiding the impact;
2. minimizing the impact;
3. rectifying the impact;
4. reducing or eliminating the impact over time; and
5. compensating for the impact.

The Service's Mitigation Policy (Federal Register Vol. 46, No. 15, January 23, 1981) adopts NEPA's definition of mitigation and considers the specific elements to represent the desirable sequence of steps in the mitigation planning process. We believe that the draft formulation report should include statements on the mitigation alternatives so the agencies can be better informed and aware of the measures that are being contemplated by the Corps to address specific alternative derived impacts. We understand there is some relationship between the NER alternatives and the alternative for storm damage reduction, but the linkage is less than clear to us.

The Service has discussed the negative impacts that beach fill projects can have on fish and wildlife resources, including threatened and endangered species, in FWCA 2(b) Reports and Biological Opinions for Corps' projects or permitted activities (*e.g.*, Westhampton Interim Project, Fire Island Interim Project, West of Shinnecock Inlet Interim Project, Shelter Island Erosion Control Project, and Breach Contingency Plan). In those reports, we referenced peer-reviewed literature, grey literature, agency reports, and field observations to substantiate this point, and to stress the need for identifying a

number of options to address storm damage protection on the barrier island that were fully mitigated and avoided, or minimized impacts to listed species. We also provided mitigation measures that the Corps should incorporate into those projects to avoid, minimize, or compensate for the adverse impacts associated with storm damage protection projects, most notably beach fill alternatives.

As stated in our supplemental Planning Aid Letter dated February 25, 2008, because unavoidable impacts are likely to occur if the FIMP plan includes components that result in adverse habitat modification, habitat creation foregone, (*i.e.*, preventing natural processes which create and maintain habitat) over the long life of the project, then the Service will recommend that those losses be compensated by replacement of the same kind of habitat value, so that the total loss of such in-kind habitat value will be eliminated. This is consistent with our recommendations concerning some of the above listed Corps' storm damage reduction projects. Compensatory mitigation projects may include restoration, enhancement, or creation of replacement habitat to convert it to the type lost; restoration or rehabilitation of previously altered habitat; increased management of similar replacement habitat so that the in kind value of the lost habitat is replaced, or a combination of these measures. By replacing habitat losses with similar habitat, populations of species associated with these valuable habitats may remain relatively stable, despite project implementation.

The draft formulation report cites numerous instances when a proposed action will impact coastal processes and fish and wildlife resources. Consequently, the Service recommends that the Corps include specific restoration/mitigation alternatives as part of a preferred project description, identify associated costs and include the cost-benefit analyses for each alternative, and ensure that firm, written commitments are made by the Corps and local sponsors to implement these measures, if necessary, as part the mitigation planning for this project. Finally, we note that the first paragraph in this report identifies the FIMP Reformulation Study's very purpose, concluding that reducing risk of coastal storm damages is to be accomplished "while maintaining, enhancing and restoring ecosystem integrity and coastal biodiversity."

- (3) The results of the HEP analyses are skewed towards the creation of wide beaches, high berms, and dunes. That is, although we have long asserted and documented that early-successional habitat associated with overwash, inlet migration, tidal flat establishment is the habitat that, overall, is most compromised by human interference in natural processes, the HEP process takes a very narrow view. This view is as narrow as the HEP study units evaluated, favoring a "project" where multiple habitat types can be "restored" rather than recognizing what is absolutely essential at a landscape scale. Further, it is unclear to the Service how HEP restoration projects will be maintained/managed over the life of the project, given that natural processes are not being restored (e.g. overwash prevented, breaches filled, new inlet formation prevented).

A primary concern that the Service has with this HEP analysis, as stated in our July 7, 2006, correspondence, is that the analysis decreases Habitat Suitability Index (HSI) values when breaching/overwash occur, and increases HSI values when sand/dune placement occurs in an area (*e.g.*, Old Inlet) deemed of high ecological value due to the recent occurrence of overwash processes. For example, Table 9.3 on page 323 gives higher habitat unit (HU) values to sites where breach response and breach restoration alternatives (future with-action: renourishment of profile/sand and dune placement) occur than if the natural coastal cross-shore sediment transport process is allowed to occur (future no-action). To further illustrate this point, Table 9.6 (page 332) also gives higher

HU values to the restoration of dune width and height than to the creation of a sand lobe on the bayside at Atlantique to Cornielle.

There are some restoration projects supported by the HEP team that the Service agrees to, in concept. However, we find that many of the selected sites do not, as presented, include enough details concerning design, protection, and management. In some cases, we do not support restoration alternatives based on their stated purpose. Examples of alternatives which illustrate these comments are discussed below.

The report states that for alternatives involving bayside habitat improvements in conjunction with breach closure, created fore-dune areas would be planted with 40% cover (page 323). One of the Service's concerns with these restoration alternatives and how they are assessed in the HEP modeling (as stated in our July 7, 2006, correspondence) is whether post-restoration conditions will be maintained and how realistic it is to assume that local landowners would conduct maintenance activities. To the extent that these activities are being proposed as conservation measures to minimize impacts to Federally-listed species, these factors would need to be addressed in the Draft Formulation Report and in the Corps' Biological Assessment.

The Service preliminarily supports the concept of the proposed creation of subaerial and intertidal habitats on the bayside from Atlantique to Cornielle Estates (Table 9.4, alternative T-25-1, page 329). However, we indicated in meetings that more appropriate sites exist from an ecological standpoint, such as lands north of the Federal tracts within the FIIS. These areas are probably more suitable as they are more removed from recreational activities, ferry and water taxi routes, and other impacts associated with human development and transportation routes. No where in New York State would we recommend creating compensatory mitigation in landscape positions where they would be vulnerable to any number of human-caused impacts, both direct and indirect. Overall, we believe these types of mitigation alternatives located in suitable and sustainable landscape positions are necessary and should be pursued vigorously in order to address the loss of this type of habitat due to alternatives that prevent breaching and overwashing of the barrier island (e.g., beach fill and breach response alternatives), or to mitigate the impacts of existing hard structures (e.g., jetties, groins, bulkheads, etc.). Alternatives such as these should incorporate habitat and species monitoring, habitat functional management, and protection over the life of the project.

As noted above, the extent that these actions may affect listed species such as the piping plover (*Charadrius melodus*), seabeach amaranth (*Amaranthus pumilus*), or roseate tern (*Sterna dougallii dougallii*) should be fully evaluated in the Biological Assessment pursuant to 50 CFR Part 402.12. The Service also recommends that the Corps address the potential impacts of this and other alternatives on the red knot (*Calidris canutus rufa*), a candidate species for listing under the ESA.

In accordance with the Service's Fish and Wildlife Manual, part 870 FW 1 Section 1.8, subsection D., Endangered/Threatened Species, the consideration of endangered and threatened species in project planning is required by Section 7 of the ESA and related regulations. Thus, to avoid any possibility of confusion with the consultation requirements of Section 7 of the ESA, no Federally-listed endangered or threatened species should be used as an evaluation species in a HEP study.

- (4) Some recommendations for habitat restoration are not supported by existing data regarding population trends for fish and wildlife species of concern, or our understanding of the physical conditions that create and maintain habitats in the study area.

In spite of our July 7, 2006, recommendations that restoration efforts for heron rookeries be removed from consideration as a FIMP restoration alternative, due to our high concern on the status of populations of colonial waterbirds such as the common tern (*Sterna hirundo*), least tern (*Sterna antillarum*), and roseate tern, the 2009 Draft Formulation Report includes this as a restoration alternative.

Table 9.4 lists the creation of heron habitat at John Boyle, New Made, and Warner's Island East as possible restoration alternatives. As stated in our July 7, 2006, correspondence, the Service recognizes that heron rookeries are an important fish and wildlife resource. However, due to the lack of habitat management, many bay islands have undergone vegetative succession such that suitable habitat in the form of dense trees and shrubs already exist for herons in the project area – that is, this type of habitat is readily available. The Service instead recommended these bay islands for restoration (via vegetation management) to support breeding colonial ground-nesting water birds, due to their history in supporting these species. The Service has stated that the fish and wildlife habitat resources in the most peril within the FIMP project area are colonial waterbird breeding areas, specifically for the Federally listed endangered roseate tern, which only breeds in common tern colonies. Therefore, the Service does not support the restoration of the bay island sites into heron rookeries due to the more urgent need to return these areas to their previous availability as colonial waterbird breeding habitat. The Service does not agree with the values in Table 9.6 (page 332) for New Made Island in which habitat values for shorebird and heron nesting habitat creation/restoration are comparable, as these are not consistent with the long running data collected by the New York State Department of Environmental Conservation concerning the status of the tern and heron species identified above in the study area, or our recommendations provided in the Service's Planning Aid Letter (PAL).

- (5) The draft formulation report does not appear to specifically address the Service's recommendations for habitat restoration sites provided in the PAL.
- (6) The Draft Formulation Report does not incorporate any of the conservation measures for endangered species discussed at joint interagency meetings or in correspondence provided to the Corps in February 2008, and does not accurately characterize the status of efforts taken in an attempt to draft the Long Term Regional Comprehensive Planning for Threatened and Endangered Species for the FIMP action area.

In a letter to the Corps dated February 13, 2008, the Service provided 23 preliminary sites, which totaled over 600 acres and consisted of bay islands, barrier island, habitats, or back bay areas, for consideration as compensatory mitigation sites to offset unavoidable impacts to the nation's waters, sites to restore and minimize the project's adverse effects on listed species, and/or sites the Corps should pursue under its obligations and responsibilities under Section 7(a)(1) of the ESA. A presentation of these sites was given both to the Corps and NPS in joint interagency meetings. The Draft Formulation Report does not address these sites in any manner. We recommend that the Corps review our previous comments on this report as well as our comments on the negative impacts beach fill and breach response projects can have on fish and wildlife resources, including threatened and endangered species contained in the FWCA 2(b) reports and Biological Opinions for Corps' projects or permitted activities (e.g., Westhampton Interim Project,

Fire Island Interim Project, West of Shinnecock Inlet Interim Project, Shelter Island Erosion Control Project, and the Breach Contingency Plan). In those reports, we referenced peer-reviewed literature, gray literature, agency reports, and field observations, to convey this point to the Corps and to stress the need for identifying a number of options to mitigate impacts to Federally-listed species attributable, for the life of the project, to storm damage protection alternatives on the barrier island.

- (7) The Service supports the objectives of the Vision Statement; however, there needs to be a clear accounting in the Draft Formulation Report on the mitigation actions that will be undertaken relative to specific alternatives versus restoration measures that will be undertaken to address the objectives of the Vision Statement.

Specific Comments:

Study Area Development Patterns, Recreation, and Public Access, page 93: The Service recommends that the Corps include information on the public access plan for the Reformulation Study in the revised Draft Formulation Report and discuss the public access plan in the context of “environmental setting and carrying capacity,” as noted on page 93.

Table 3.5, page 96: Information is lacking on brackish, freshwater ecosystems in the study area. Several major riverine systems occur at Carmans River and Connetquot River. This is an extremely important but often overlooked habitat complex in the FIMP study area.

Marine Offshore Ecosystem, Marine Offshore, page 99: Statistical information on seabird concentrations should be provided in order to illustrate the relative importance of this habitat to these species in a regional context.

Marine Offshore Ecosystem, Marine Intertidal, Birds, page 102: The red knot should be identified as a candidate species for listing under the ESA. Further, while there are generally no site specific inventories of avifauna, we recall that the Corps did produce a report on avifauna in portions of the project.

Marine Offshore Ecosystem, Marine Beach, page 103: This section does not provide a clear sense of the importance of the study area in regard to piping plover breeding habitat on Long Island. In 2007, the FIMP study area supported 47.5% (218 prs) of the total piping plover population on Long Island (458 prs). Examining the distribution of piping plovers on the south shore of Long Island, the FIMP study area supported 68.7% (218 prs) of the total south shore population (317 prs) in 2007. Similar analyses should be conducted by the Corps for other Federally- and State-listed species and species of high conservation concern. There are over ten major piping plover breeding sites in the study area. Further, there are a number of historic roseate tern breeding sites and several active roseate tern breeding sites in the area. Seabeach amaranth occurs throughout the project area.

In regard to seaduck populations, this section should discuss the distribution of these species relative to offshore areas, particularly those areas that are potentially subject to offshore dredging, (i.e., the sand borrow areas).

Terrestrial Upland, Birds, page 106: This section makes a casual reference to sightings of raptor species in Amagansett. However, the Service recommends that this section include results from over 25 years of hawk watch statistics that have been collected and compiled by the Fire Island Raptor Enumerators. They have a publicly accessible database that can be found at <http://www.battaly.com/fire>. Other sources of information that the Corps might find useful in

characterizing the avifauna in the project area include the USGS' Breeding Bird Survey data which can be found on-line at <http://www.pwrc.usgs.gov/BBS/> as well as the New York State Breeding Bird Atlas data at <http://www.dec.ny.gov/animals/7312.html>.

Bayside Beach, page 107: The Service recommends that the Corps quantify the amount of bayside beach habitat that has been “eliminated due to bulkhead construction, immediate development, and or severe erosion” and discuss these in relativistic terms. As it is presented now, the information is unsubstantiated, but if known, would assist in the development of mitigation alternatives for compensation of habitats lost to erosion caused by hard shoreline structures on the bayside of the barrier island, or for restoration of bayside littoral processes.

Bay Intertidal Habitat, Birds, page 108: This section includes a discussion of birds found in the western end of West Hempstead Bay. The revised Draft Formulation Report should clarify this.

Sand Shoals and Mudflats, page 108: The Service recommends that the Corps discuss the overall distribution and relative amount of these geomorphological features in the study area, as they are important habitat for a number of biota (not discussed in the section that follows this lead section, but in the Bay Intertidal Habitat). We would note that these areas can be haul out areas for seals that overwinter on Long Island, foraging sites for resident and migratory shorebirds and waterbirds and, therefore, should be discussed on their own merits.

Salt Marsh, page 109: The Service recommends that the Corps quantify the salt marsh acreages found in the study area.

Salt Marsh, Birds, page 109: Over the last 20 years or so, these habitats have been increasingly more important to less common birds such as the State-listed species common tern, and other species such as black skimmer (*Rynchops niger*) and American oystercatcher (*Haematopus palliatus*) (species of high conservation concern). The saltmarsh sharp-tailed sparrow (*Ammodramus caudacutus*), a species of highest conservation concern in Bird Conservation Region 30, is also found in saltmarsh habitat.

Mainland Upland, Birds and Wildlife, page 112: This section only mentions three bird species typical of the upland habitats, in some instances; however, over 60 species may be present during the breeding season. The Service recommends that the Corps provide a more accurate representation of avifauna in this particular habitat type. A good starting point for the Corps would be the New York State's Breeding Bird Atlas data found at <http://www.dec.ny.gov/animals/7312.html> and the USGS Breeding Bird Survey data at the address provided earlier in our comments.

This section describes a discussion on amphibian diversity on the barrier island system, which is not relevant to the mainland habitat discussion.

Threatened and Endangered Species, Table 3.6, page 113: Seabeach amaranth is listed as threatened under the ESA, not endangered as noted on this table.

Threatened and Endangered Species, page 115: The Service recommends that the Corps correctly characterize the status of its consultation with the Service under the ESA as informal. The Corps has not initiated formal consultation as of this date, but has coordinated from time to time with the Service on threatened and endangered species for some aspects of the study.

The Corps accurately lists the Federally-listed species under the Service's jurisdiction in paragraph 2 on page 115, but inaccurately states that they all use "essentially the same habitats." Piping plover, least tern, and seabeach amaranth do occupy early successional habitats on the barrier island system, but amaranth is restricted to the ocean shoreline beaches where cross island overwash is not present; whereas plovers and terns can utilize bayside beaches on both the barrier island and mainland. Further, these three species do not share habitat with sandplain gerardia which is an upland plant species. Note also that piping plovers and State-listed tern species may breed in early-successional habitat above mean high tide, but will only succeed in fledging chicks if there is an abundant supply of forage available in tidal mudflats in and around inlets, on flood tide deltas, in ephemeral pools on the beach front, and in wrack along the beaches and bay shorelines.

Paragraph 4 on page 115, inaccurately represents the status of several activities that the Service recommended be undertaken under the auspices of the FIMP Long-term Comprehensive Management Plan for Endangered Species (LTCMP). For instance, while a couple of meetings have been held with landowners relative to long term monitoring, management, and protection efforts that should be considered for incorporation into project, no specific plans have been developed or agreements entered into at this time. We provided the Corps with excellent examples of monitoring, management, and funding agreements developed by the Corps Philadelphia District, the State of New Jersey, and the Service's New Jersey Field Office. These were provided as conservation measures for a programmatic consultation on the Corps Federal navigation channels and inlet management and beach renourishment program. The Service would not consider this important phase of the endangered species conservation planning to be "accomplished," as depicted in the document.

Section 4, Without Project Future Conditions, General, page 123: Paragraph 3 of this section states the "WOPFC [without project future conditions] instead highlights the magnitude of haphazard, uncoordinated actions which are undertaken in the absence of an overall plan." The Service notes that many projects affecting the shoreline are either directly overseen or implemented by the Corps (e.g., inlet maintenance projects) or permitted by the Corps' Regulatory Branch (e.g., Fire Island National Seashore Community beach nourishment projects in 2003 and 2008-09) and, therefore, can be coordinated by the Corps in a fashion that takes a more programmatic approach to shoreline management than presently exists. We also note that projects that would be constructed within the jurisdictional boundaries of the National Seashore also benefit from National Park Service's oversight and long-term planning views associated with Park Special Use Permits and their general management plan, currently under development.

Section 4, Without Project Future Conditions, Actions to Maintain a Threshold Condition, page 125: In regard to statements made in paragraph 3 of this section, comments provided immediately above apply.

The last sentence of this paragraph implies that the FIMP, or a similarly designed overall plan, would be designed to protect individual residences. Please clarify.

The last paragraph of this subsection on page 126 suggests that the activities of the East Hampton Town or Southampton Town Trustees regarding the coastal ponds, such as using material deposited in the flood shoal for small dune building projects, would continue to be an activity that the Corps would characterize as uncoordinated. However, as the Service pointed out above, the Corps would have regulatory control over that activity and, therefore, through its Regulatory Branch, could begin to address these actions in an integrated fashion. These activities are also subject to State and local controls.

Damage Results, page 175: The revised draft formulation report should explain what percentage of the overall damages calculated in this section are from loss of landscaping and cars in the shorefront zone.

Damage Sensitivity and Uncertainty, Damage Categories, Public Emergency, page 184: When the Corps has determined that it can calculate Public Emergency Costs associated with storms, will the results be viewed as savings as well? For instance, someone driving their car to a designated shelter may remove that car from the category of damaged assets (see above comment).

Section I. Summary of Problems and Opportunities, General, page 191: Point 4 states, “The barrier island provides a high degree of protection to the mainland which could be compromised by a breach.” Please clarify this statement in relation to economic analysis data provided on page 184 which states, “...14% of the total damages are due to storms that result in breaching and overwashing,” and “[69%] of the damages [to the mainland and back bay areas] is due to flooding of the backbay areas that is likely to occur regardless of the barrier island condition.” Perhaps management of the inlets in a different way might minimize their impacts on flooding of back bay areas, allowing for incorporation of additional measures to *restore* natural processes, such as over-washing.

Section C. Initial Screening, No Action, page 203: The document states that the project “...assumes continuation of the Westhampton Interim Project for thirty years....” The Corps should clarify the timeline for this project as it was initiated in 1997, nearly 12 years ago, leaving only 18 years from now until its conclusion.

Table 8.12, Breach Closure Alternative, page 248: Row two, middle column: The last sentence is incomplete.

Row 5: There is no information in the document relative to this alternative that discusses how the alternative would protect and restore natural habitats, other than restoring beach widths and the artificial creation of dunes.

Row 6: There is no information concerning response protocols, such as time of year restrictions, environmental monitoring, etc., that would merit the “Partial” rating given to this evaluation criteria.

Row 8: As the goal of breach closure is to close breaches and provide dune and beach profiles which significantly limit the potential for future breaches, it is not clear from the text why the Corps gave a “Full” rating to this criteria.

Summary of Breach Response Alternative, page 249: The Corps should evaluate, based on coordination with its non-Federal sponsors and the cooperating agencies, “...where a greater amount of cross-shore transport...can be considered further.” Currently, this information is lacking in the Draft Formulation Report. Results of that coordination should be included in the revised report. Cross-shore transport or sediment results in reestablishment of back bay habitats, including breeding and foraging areas for listed species and other migratory birds, and essential fish habitat.

Fire Island Inlet, page 256: The Corps should include a discussion on the effects that would be expected at the western tip of Democrat Point by increasing the deposition basin and the dredging of the ebb shoal relative to the existing endangered species habitat at Democrat Point.

Table 8.24, Inlet Management Measures, page 262: The preferred alternative for each of the inlets is basically the implementation of each respective Authorized Inlet Project along with dredging of the ebb shoal. The fact that the Service has repeatedly requested and recommended that the Corps' Operations Division reinstate formal consultation for each of the inlet projects, demonstrates that the Service believes these projects continue to have adverse impacts on Federally listed species and their habitats that were not, nor are, currently evaluated and minimized. Therefore, the Service does not agree that collectively these actions to be carried forward in the FIMP should be rated as in "Full" support of the criteria found in rows 4, 5, and 6. Findings on these criteria should be deferred, until further coordination with the Service conducted pursuant to the ESA.

Table 8.37, Non-Structural Retrofit Alternatives, page 278: The report does not contain sufficient information that would assist the Service in understanding and agreeing to the ratings provided in rows 4, 5, and 6 related to habitats and environmental impacts. Information regarding the location of these alternatives and associated habitats (wetlands, uplands, etc.) should be included in the revised Draft Formulation Report.

Untitled Table on page 299: The report does not contain sufficient information that would assist the Service in understanding and agreeing that the ratings provided in rows 4, 5, 6, related to habitats and environmental impacts.

Untitled Table 8.52, page 309: The report does not contain sufficient information that would assist the Service in understanding and agreeing that the ratings provided in rows 4, 5, and 6, related to habitats and environmental impacts.

Untitled Table 8.53, page 319: The report does not contain sufficient information that would assist the Service in understanding and agreeing that the ratings provided in rows 4, 5, 6, and 8, related to habitats and environmental impacts.

Cross-Island Sediment Transport

The Service concurs with statements in the document relative to the importance of cross-island transport processes in the formation of back-bay habitats and the actions that alter/impact it, and recognizes that cross-island transport is the primary mechanism for sediment introduction into the back bays (see pages 37, 130, 188). Efforts by the Corps to try to quantify the volume of sediments entering the bay during breach events are found in Table 5.5 on page 160, which can contribute to the development of mitigation alternatives for recommended beach fill and breach response alternatives. We agree with USGS that it is unclear how the Corps could calculate how much of that sediment would be above mean sea level and what the error assessments are for these calculations. We note that the spit formed in the back bay at West Hampton Dunes has been eroding, but that it has great value as both potential breeding habitat (above mean high tide) and as foraging habitat (vast intertidal mud flats surround the visible portions of the spit).

Section 4. Sediment Management (Inlet Sand Modifications), page 205: The Service concurs with the statements on page 205, that inlets serve as a conduit for floodwaters/storm surge to enter the bays during storm events. Measures to improve long shore sediment transport at the inlets should also include a discussion of potential environmental impacts, and mitigation plans to avoid, minimize, or compensate for those impacts.

Section 13. Storm Closure Gates: Information concerning the monetary costs and environmental impacts associated with this alternative should be included in the document.

Inlets

The Service provided comments on the Corps' Draft Inlet Modification Report in our correspondence dated September 13, 2007.

Dredging of flood shoal

The report lists the dredging of the flood shoals as a viable alternative for each of the inlets. As stated in our September 13, 2007, correspondence, the Service is still concerned with the potential impacts that this practice would have on the sediment budget and ecology of the bay environments. The practice of removing sediment from the bayside for placement on the ocean shoreline removes sand from the bay areas, where bayside shoreline processes form essential habitats, such as tidal flats/deltas, tidal wetlands, submerged aquatic vegetation beds, and early successional habitat for breeding and foraging waterbirds and horseshoe crabs (*Limulus polyphemus*). Additionally, flood shoals at each of the inlets provides important haul-out/loafing areas for over-wintering seals, as well as foraging habitat for shorebirds and terns species.

The report recognizes the impacts of flood shoal dredging, stating that dredging of the ebb shoal is preferred, due to potential environmental impacts (page 251) of flood shoal dredging, although such dredging is not ruled out.

Structural Measures

The report states that structural measures (groins, breakwaters) appeared promising to reduce the requirement for beach fill and provide more reliable protection in the area west of Shinnecock Inlet (page 225). As stated in our September 13, 2007, correspondence, the Service is concerned with the impacts that these measures would have on fish and wildlife resources. These structures will harden/alter the habitat used by breeding plovers and may impede natural processes that create and maintain optimal breeding and/or growing habitats, such as ephemeral pools, overwash fans, and dune blowouts, which are features of a naturally eroding beach.

Maintenance dredging

As listed in Table 8.16 on page 254, Alternative 1 for Moriches Inlet calls for the dredging of the inlet every year (1 year cycle-authorized project). This frequency appears to be based on maintaining reliable navigation. The authorized project appears to refer to the maintenance dredging authorization, while the annual dredging schedule is being developed for the FIMP - a storm damage protection project. Is the current 4 year cycle not sufficient to maintain reliable navigation or is the need for sand driving the frequency of dredging? Please clarify in the next version of the Report. Also, annual dredging limits the amount of time that the benthic community (prey for shorebirds, including the Federally-listed threatened piping plover) can recover from dredge material burial, which could take up to 6 months.

Restoration Alternatives

The Service supports the restoration of bayside habitat (page 261) in proximity to inlet management alternatives to provide a mosaic of habitats, but has concerns with the restoration of ocean dune habitat that would limit/prevent cross-shore sediment transport. We have placed particular emphasis in previous comments on restoring back bay islands for colonial waterbird use and recommend that the Corps incorporate those recommendations into its mitigation alternative planning efforts.

Vision Statement

Table 8.24 states that inlet management measures fully attain the evaluation criteria that “The plan or measure help protect and restore coastal landforms and natural habitat.” Although sand bypassing does help reduce or eliminate deficits in longshore transport, the stabilization of these inlets prevent the natural migration of inlets and the distribution of sediments into the bay (as stated in page 37 - unconstrained inlet processes provide back barrier sediments for marsh growth). As such, the Service does not agree that such measures fully attain these criteria.

Breach Response

Breach Closure

The report states, on page 214, that it is more cost effective to close a breach immediately, and that immediate breach closure was recommended for further evaluation. This decision appears to be based solely on cost effectiveness with no consideration of environmental impacts or benefits. As stated in the Service’s September 13, 2007, correspondence, the Service supports the consideration of alternatives which allow for breaches to remain open, a protocol to determine if breach closure is warranted, and the creation of back-bay habitat as mitigation. The Draft Formulation Report does recognize the importance of breaches in the formation of back-bay habitats, and that it may be possible to construct/restore over-wash/back-bay habitats to complement breach response alternatives (page 247). The Service supports the consideration of such restoration/mitigative measures.

As stated in our September 13, 2007, correspondence, the Service supports the consideration of alternatives that are of a lower dune elevation to allow for overwash events in appropriate areas, including the 9.5 ft NGVD breach closure alternative that is being carried forward for consideration (page 242).

Pro-Active Breach Closure

The report states that triggers/threshold conditions have been established (page 243) that, once attained, would require action (renourishment of profile) to prevent a breach. The Service is concerned that in an area such as Old Inlet where natural processes are occurring, namely cross-island sediment transport, which sustains a high ecological value, could be considered an area that requires manipulation. This practice would limit/prevent the development of early successional habitat. The Service would support the consideration of alternatives that allow for the development of such habitat. Perhaps these triggers/threshold conditions could allow for the development of these habitats that are not/may not be susceptible to breaching.

Restoration Alternatives

The Service supports the compensation of bayside habitat as a mitigation measure associated with the application of a storm damage reduction measure (such as beach fill on the ocean beaches) or as mitigation for a breach fill response. The Service also supports the minimization of the impacts of hard structures in the back bay littoral processes through modification of bayside structures and bay beach nourishment in selected sites (page 247).

Vision Statement

Table 8.12 states that breach closure alternatives fully attain the evaluation criteria that “Dune and beach nourishment measures consider both storm damage reduction, restoration of natural

processes, and environmental effects.” The assessment portion of the table recognizes that breach closure could cause a potential reduction in cross-shore transport. Breach closure alternatives either severely limit or prevent the natural process of cross-island sediment transport, as such, the Service does not concur that these alternatives fully attain this criteria.

Beach Fill

Figure 8 (page 281) depicts areas where beach fill is under consideration. One of the areas for consideration is Old Inlet, an area of relatively high ecological value due to the presence of early successional habitat. In correspondence dated July 7, 2006, the Service expressed concerns with practices to stabilize this area and severely limit or prevent the natural process of cross-island sediment transport.

The benefit-cost ratio analysis of beach fill alternatives (page 294) indicates that each beach fill alternative (+ 13 ft., + 15 ft., +17 ft.) would be cost-effective, yet the report states that only the +15 alternative would be carried forward since it maximizes net benefits. However, the net benefits do not appear to incorporate costs associated with environmental impacts or mitigation (discussed further below). Table 8.5 (page 299) states that beach-fill alternatives only partially attain the evaluation criteria that “Dune and beach nourishment measures consider both storm damage reduction, restoration of natural processes, and environmental effects.” The Service concurs with this assessment, since it recognizes that such an alternative “reduces cross-shore transport because of higher dunes”. The environmental impact is recognized, but the need for mitigation does not appear to be addressed here, only that it is being minimized.

Groin Modification

The Service is concerned with the proposed re-use of stone from groin modification alternatives for the restoration of bayside habitat (page 308). Hardening of the shoreline deflects wave/current energy and alters shoreline and back-bay habitat. The Service supports the consideration of bio-engineering (eco-gabions, bio-logs, etc.) in lieu of the use of only stone to restore bayside shorelines.

Phase 2, Overview of the Development of National Ecosystem Restoration (NER) Alternatives. B. Restoration of processes with the primary objective of storm damage reduction, page 320.

Identification and screening of potential restoration sites, page 324: This section fails to mention the Service PAL that provided a detailed account of preliminary sites which the Service was recommending for restoration.

National Ecosystem Restoration Alternatives

Overall, the document does not provide an integrated approach to addressing project impacts with proposed restoration alternatives. There is an attempt to address impacts associated with the processes outlined in the report, including longshore transport, cross-island transport, bayside, processes, and estuarine processes. The plan does not present any mitigation alternatives directly related to any of the proposed alternatives.

In a number of FWCA 2(b) Reports and Biological Opinions submitted to the Corps on related dredging and storm damage protection projects within the FIMP study area, the Service has provided mitigation measures that would avoid, minimize, or compensate for impacts related to fish and wildlife resources. For each of these types of projects, the Service has reported the

adverse direct and indirect impacts these types of projects can have on Service trust resources, including endangered species, migratory birds, and interjurisdictional fishes.

Bayside Shoreline Improvements

The Service supports the concept of bayside shoreline improvement involving the creation of an over-wash lobe (alternative SPCP-2) for shorebird foraging/nesting habitat and bayside sediment input as discussed on page 322. However, this and other proposed restoration alternatives, lack information on long term habitat maintenance, protection, and management that would assist us in gauging their effectiveness. We recommend that the Corps consider replicating this alternative at the sites the Service submitted in our February 13, 2008, letter, and then provide the results to the FIMP planning team for further discussion.

National Park Service

General Comments on Relevance of NPS Legislation and Management Policies to FIMP

The USACE has been directed to recommend a storm damage reduction plan, a plan which requires a local financial sponsor, New York State, with local governments, Towns of Brookhaven, Islip, Easthampton, and Southampton and Suffolk County. A draft plan that lacks the necessary statements of the legally required local sponsor is not a plan. The document needs to set forth the State's position and commitment to any preferred alternatives or proposed undertakings regarding the FIMP.

The NPS has been directed to manage Fire Island National Seashore (FIIS) in a natural state. The establishing legislation does anticipate that beach nourishment and/or new inlet development may be appropriate in the future. As you correctly note in several places throughout the document, the FIMP project arises in the context of two key Congressional enactments. The USACE authorization and WRDA's, along with multiple USACE guidance documents cited at page 192 provide the basis and framework for this planning effort. Similarly, Congress has explicitly directed that any actions regarding "shore erosion control or beach protection" within Fire Island National Seashore (FIIS) must meet two criteria: (1) it must be pursuant to a plan that is "mutually acceptable to the Secretary of the Interior and the Secretary of the Army" and (2) it must be "consistent" with the FIIS legislation. The FIIS legislation further requires that any federal beach project must be done under an agreement between the Secretary of the Army and the Secretary of the Interior.

The "consistency" with the FIIS legislation mandates that multiple other concerns be integrated into the FIMP in addition to the USACE directive to reduce storm damage risk within the boundaries of the national seashore. These include, the preservation of the dunes, the Sunken Forest and the area slightly east of Davis Park (called the 8-mile zone in the original legislation and now designated as a National Wilderness Area) in their natural state; conserving and preserving for posterity unspoiled and undeveloped beaches, dunes and natural features with the "primary aim" of conserving natural resources; and in carrying out these directives, being consistent with the basic enabling laws of the national park system. Under its general authorities, the NPS has adopted management policies, most recently published in 2006. Pertinent policies include those of allowing erosion, overwash events, inlet formation and shoreline migration to occur without interference. Second, human actions which have altered natural processes should be first examined in order to restore natural conditions or mitigate for

their impacts. Third, shoreline manipulation measures need to achieve natural resource management objectives and minimize impacts outside the target area.

Within the context of the Corps' Vision Statement, it was acknowledged that long-shore sediment transport, cross-island sediment transport, dune growth and evolution, estuarine circulation and water quality, and bayside shoreline processes are the five critical processes necessary to maintain the integrity of the coastal barrier. Although storm events have societal impacts, they move large quantities of sediment into the system which not only provide sediment for the development of breeding habitat for federally-protected species but also for the development of protective features such as beaches and dunes and back bay salt marshes.

The Draft Formulation Report does present NPS policies generally (see pages 364 and 368). However, we suggest that the next version of the report needs to explain NPS policies much more carefully and specifically, as follows. This explanation should be inserted into the discussion about the park at pages 47-49.

“Fire Island National Seashore, which makes up more than 31% of the ocean shoreline included in the Reformulation Study, is a unit of the National Park System. The seashore is managed in accordance with the National Park Service Organic Act of 1916, the enabling legislation of the park itself, other applicable federal laws, and the Management Policies of the National Park System. The NPS Management Policies are articulated by the NPS Director. They set the framework and provide Servicewide direction for all NPS management decisions, and are mandatory for all NPS employees unless specifically waived in writing by the Secretary of the Interior, the Assistant Secretary, or the Director of the National Park System. The NPS Management Policies are revised at appropriate intervals to consolidate policy developments or to respond to new laws, new understanding of park resources, or other relevant changes. The most recent edition of the NPS Management Policies was issued in 2006.

“Pursuant to these Management Policies, natural geologic processes in parks, including natural shoreline processes such as erosion, accretion, and inlet formation, should be allowed to proceed without interference. The reason for this policy is that the preservation of processes in their natural condition prevents resource degradation and therefore avoids the need for resource restoration. In applying this policy, the NPS must use scientific findings and the analyses of scientifically trained resource specialists (*NPS Management Policies, Chapter 4, Sections 4.1, 4.8.1, 4.8.1.1 (2006)*).

“Therefore, the NPS will not intervene, and will not allow intervention by others, in the natural biological or physical processes in parks, except

- when directed by Congress;
- in emergencies in which human life and property are at stake;
- to restore natural ecosystem functioning that has been disrupted by past or ongoing human activities; or
- when a park plan has identified the intervention as necessary to protect other park resources, human health and safety, or facilities.

“If intervention in natural processes is deemed necessary, the NPS policy is to keep it to the minimum necessary to achieve the stated management objectives (*NPS Management Policies, Chapter 4, Section 4.1 (2006)*).

“It is also the policy of the NPS to investigate alternatives for mitigating the impacts of human structures or activities, including structures or activities outside parks, that have altered the nature and rate of natural shoreline processes in parks (*NPS Management Policies, Chapter 4, Section 4.8.1.1 (2006)*).

“A major factor in the application of these policies to a particular shoreline within the National Park System is the extent to which that shoreline is naturally-functioning or not. Naturally-functioning shorelines should generally be left alone. Any plan that interferes with a naturally-functioning park shoreline, including beach nourishment, breach closure, construction of infrastructure, or installation of shoreline control measures, and that does not meet the other circumstances spelled out in the NPS policies, would be inconsistent with the policies and could not be allowed absent a written policy waiver from the Secretary of the Interior, the Assistant Secretary of the Interior, or the Director of the National Park Service. Conversely, targeted intervention may be allowed along a park shoreline that is no longer natural (that is, it has been impacted by structures or activities in or external to the park) to restore the natural function of that shoreline, or in the other particular situations listed in the policies.

“For example, components of the plans presented in this document that would mitigate or restore natural processes in the park that have been impacted by human activities or structures may well be deemed by the NPS to be consistent with NPS policies and therefore implementable. On the other hand, the components of the plans presented in this document that would not serve a restoration purpose or meet the other circumstances in which intervention is allowed would only be implementable in Fire Island National Seashore if the NPS first obtained a written policy waiver from the Secretary of the Interior, the Assistant Secretary of the Interior, or the Director of the National Park Service.”

Discussion of FIIS at both pages 47-49 and 311, also, needs to reflect that the NPS will need to issue a special use permit to authorize implementation of those components of the final plan which impact the resources of the Seashore. It is also correctly mentioned that the Seashore is currently revising its General Management Plan to update the one that is now thirty years old. Both a permit of this magnitude and the new plan would normally require the preparation of an EIS. Therefore, the NPS hopes that its NEPA compliance can tier off a satisfactory FIMP EIS, thereby requiring compliance only for the more specific NPS action. Ultimately, this approach could lead to a more efficient use of government funds, to shortening time needed for either of these tiered processes, and to have more effective coordination in long-term NPS and USACE planning and implementation.

Major NPS Requirements for the USACE Plan

The NPS is willing to support alternative 3G as the starting point of an alternative which may be mutually acceptable. As stated in the report, while not meeting all requirements of the Vision, this alternative most closely meets the requirements of the Vision document. We are supportive of several elements of this plan. However, several amendments must be made before we can fully accept this alternative and recommend that a temporary waiver of policy be requested of Department of the Interior officials to accomplish the plan objectives. Many of these comments are restated from comments made in our June 3, 2008, letter to Colonel Tortora.

Elements of alternative 3G that we can support include:

1. Non-structural Building Retrofit, Land Management and Acquisition Measures

Alternatives that include building retrofits and land management on the mainland of Long Island should be the highest priorities for action under the FIMP. Assisting those homeowners and establishments which are most directly impacted by flooding from storms provides the highest long-term and permanent direct benefits. We are in complete agreement with the Corps institutional constraints which state: “*Storm damage reduction measures must consider non-structural options first, beachfill only second and structural measures only where necessary to satisfy planning objectives...*” from page 196.

2. **Adaptive Management** The Corps proposes to establish an adaptive management plan that will provide for monitoring of the system to improve understanding of coastal processes and allow for adjustments over the life of the project. Adaptive management could be related to inlet processes, breach processes and consequences, performance of beachfill, refinement of nourishment triggers, evaluation of alignment changes based upon non-structural plan implementation, assessment of effectiveness of non-structural measures, restoration measures and climate change. We are in complete agreement that critical coastal processes are poorly understood requiring extensive monitoring of the coast zone to assess the effectiveness of elements of the plan.

We are in full agreement that no action taken to reduce storm damage either on the mainland of Long Island or within the national seashore should lead to any new development or lead to any violation of the Coastal Erosion Hazard Area (CEHA). We are also in full agreement with the following recommendations:

- a) Federal Law that established Existing Fire Island NS Dune District should be amended to authorize the Dune District to align with the CEHA and to authorize changes in the Dune District boundary automatically as a result of changes in the CEHA boundary.
- b) NYS should improve mapping and monitoring of local enforcement of the CEHA.
- c) Authorize and appropriate through the Project Authorization funds to acquire from willing sellers within the CEHA developed properties, vacant parcels, or buildings at risk.
- d) Establish a regional entity such as a Suffolk County Coastal Commission with authority granted through federal and state legislation if necessary to undertake land use planning and regulation, establish priorities for land acquisition of property to be held by state or local governments and to fulfill the requirements of the local sponsor. We recommend that this be a federal, state, and local decision-making body.

A recent report issued by the National Research Council on the results of an External Peer Review (EPR) requested by the USACE on the Louisiana Coastal Protection and Restoration Program (LACPR) expresses the opinion that, “*Discouraging development in particularly vulnerable areas, whether or not they are protected by levees, is a fundamental principle of flood risk management and reduction. The LACPR should*

strengthen its cooperation with State and local entities to ensure that the prevention of induced development is accorded a more prominent and meaningful role in future plans (NRC 2009).” We strongly encourage the USACE – New York District to take a leadership role in flood risk management and reduction practices within the FIMP project area.

Amendments necessary for NPS support of this alternative include:

1. **Remove or reduce impediments of the Ocean Beach Groins** NPS will require the removal of 4 groins within the seashore boundary. We agree that any plan to remove the groins would not be a stand alone option, but would need to be a part of a comprehensive plan to address remaining risks in the area to property and facilities. This action is necessary as is pointed out that *“accelerated shoreline erosion and loss of private and federal lands west of the Ocean Beach is attributable to the groins which protect their municipal water supply but increase erosion to the west, from 2 feet/year to 3 feet/year.”* In addition to relocation of structures and facilities and beach fill, acquisition of property in fee or tenancy agreements must also be considered.

The alternatives discussion notes that one issue with removing the Ocean Beach groins is that the village’s well head is located south of the dunes. It is stated on page 306 that it will cost \$5 million to relocate the well. However, since communities both east and west of Ocean Beach are served by the Suffolk County Water District, the costs of connecting to this regional utility must be examined, as connecting to an existing system may be cheaper than drilling new wells.

2. **Non-structural Building Retrofit, Land Management and Acquisition Measures** The plan does not include non-structural (land management and acquisition) measures along the shorefront of the barrier that would allow for a more landward dune construction and, it is acknowledged, would reduce the potential for storm damage and help restore ecosystem integrity. Implementation of these measures, the report says, is the responsibility of the local municipalities with the State and the NPS. The plan, further states, however, that land use regulations and acquisition are critical for the Corps to be able to make a determination that the proposed project will not induce development. Construction of the project, and continued renourishment would be dependent upon this certification from the State of New York. All alternatives including acquisition which will reduce storm damages and will restore ecosystem integrity in Fire Island National Seashore, a unit of the national park system, needs to be fully explored.
3. **Adaptive Management** As stated above we are in agreement that the plan should be accompanied by extensive monitoring and an adaptive management plan. This monitoring needs to be sensitive enough to detect unanticipated outcomes from implemented strategies thereby allowing modifications to the actions if needed.

Critical to our ability to effectively implement adaptive management is the need to improve our understanding of the role of offshore sand sources. The USACE is evaluating whether extraction of sand from borrow areas located on ridges south of Fire Island would have adverse impacts on adjacent park resources. We support the approach that the USACE is taking to gain a better understanding of the current knowledge of

offshore sediments processes. It has been our understanding that a workshop held in July 2008 would produce a white paper prepared by the technical team of Federal, academic, and professional experts who were in attendance. This paper would assess the appropriateness of monitoring and adaptively managing the borrow area sediments as they are removed from offshore borrow areas or whether alternative sites further offshore need be used. This is not addressed in the plan.

A recently published paper (Hapke, et al., 2009) examines the sediment budget for Fire Island between Moriches and Fire Island Inlets. The results of this analysis indicate that there is an average sediment deficit of 217,700 m³/y between sediment entering the system and exiting the system. Although updrift shoreline erosion, redistribution of nourishment fills, and reworking of inner-shelf deposits have all been proposed as the potential sources of additional sediment needed to rectify budget residuals and are probably relevant over various spatial and temporal scales, studies indicate that an onshore component of sediment transport is likely more important along Fire Island than has previously thought. We are not only concerned that the sources identified for 50 years of beachfill (~78 million y³ to 234 million y³) may be an important source of sediment for the island but are also concerned that alteration of the configuration of offshore sand resources may exacerbate storm damages to private properties within the communities. Understanding and fully considering these impacts is a critical element of the plan and to future adaptive management strategies that may be considered.

4. **Sea level Rise Scenarios** The report states that all 50-yr model simulations presented in this report are based on the historic rate of sea-level rise from the Sandy Hook-NOAA gage. Given predicted accelerated rates of sea-level rise, the report acknowledges that this is a conservative approach and there is mention that future sensitivity analyses may incorporate sea-level rise rates as predicted by the IPCC Report (2007); however, the fact that this current FIMP Formulation Report presents model simulations and discussions without recognition of predicted accelerated rates is a significant oversight. We understand that new USACE guidance as Circular 1165-2-211 will require planning documents to examine alternative sea level rise scenarios. Although the sea level rise scenarios published in the IPCC report (2007) are now thought to be very conservative estimates, it is essential for the FIMP to follow this new Corps guidance.
5. **Breach Management** The Plan suggests that as a part of the final design, a breach response protocol could be adjusted to consider establishing a higher threshold at which action is taken (i.e., waiting a period of time for the breach to close naturally in the wilderness area). If closed, the fill would simulate an overwash fan or similar natural feature. We are in agreement with this approach. Any manipulation of the Fire Island barrier in the large publicly-owned tracts should only occur as necessary.

The longstanding Breach Contingency Plan approved in 1992 has required coastal geologists and coastal engineers to determine if artificial closure of a breach was necessary outside of the developed areas. A significant problem with all the plans is that sediment delivery to the bayside of Great South and Moriches Bays is essential for the growth and maintenance of the barrier and will be decreased by breach closure practices. This effect is noted in Table 10.4 and other tables. Long-term maintenance of barrier island salt marsh habitat, and perhaps seagrass beds as well, will be dependent on cross-

island transport of sediment to the bayside and establishment of flood tide deltas – serving as platforms for new marsh development and sediment for maintenance of existing marshes. As stated by Leatherman and Allen (1985) and Roman et al. (2007) a majority of the existing salt marshes throughout the Fire Island barrier were initiated on flood tidal deltas associated with historic inlets and/or significant breaches. The long-term maintenance of salt marshes at Fire Island is tightly coupled to the preservation of inlet and breach processes. With predicted accelerated rates of sea-level rise and with adoption of management alternatives that decrease the delivery of sediment to the Bay, it is possible that the marshes will experience a sediment deficit and become submerged. The without project future condition assumes that the frequency and intensity of future storms will remain unchanged. IPCC (2007) predicts an increase in intensity of storms. This could have a significant influence on the expected projections of change, especially those environmental/habitat changes that are directly related to overwash, breach, and new inlet events.

For example, more intense storms could result in more extensive cross-island transport of sediment to the Bay and establishment of new platforms for marsh development, or sediment delivery to existing marshes thereby enhancing their ability to maintain elevation in response to sea-level rise. The NPS will allow only a post breach response plan for all major public tracts within the Fire Island National Seashore. This plan will require extensive monitoring of any breach for a period of time to assess whether the breach will close on its own. In the May 2, 2008 workshop on breach management, Dr. Nicholas Kraus, USACE, coastal engineer, suggested that breach behavior could be modeled well in advance of a breach in locations where they are likely to occur. This may be an option the USACE may want to pursue. We understand that the risks associated with breach management in the major public tracts adjacent to development will need to be assessed along with all elements of the FIMP plan and EIS. We also expect that the benefits of maintaining or restoring natural processes on natural resources and national park values will be assessed.

- 6. Beach Nourishment** NPS has repeatedly raised concerns about the NED beach nourishment alternative, (i.e., the placement of sand over any long term project life) invests in a temporary solution at best. The historic northerly migration of the dune system accentuated with even a conservative estimate of sea level rise strongly suggests that maintenance requirements and costs of the artificial beach and dune system will increase into the future. At the end of the project life the current encroachments of improved property will remain within the dune system. The project does not solve the problem, it simply defers the problem. Increased expenditures will be required to sustain the status quo into the future long-term. The alternative is initial beach nourishment gradually replaced by a focus land-use management and improved property acquisition program. NPS can concur with a beach nourishment protocol that has an initial placement with a sharply declining commitment of sand nourishment over time. All agree that beach nourishment will only provide storm damage reduction benefits as long as this action is maintained. The draft lacks the necessary non structural component committing the Corps, the NPS, the State and the local governments to essential land management and acquisition measures. Although as the Vision Statement points out “No plan can reduce all risks,” at the conclusion of the project, properties currently at risk of storm damage should be at a minimum. The NPS cannot commit to a long-term, in

perpetuity, program of beach nourishment; it would be in violation of NPS policy and under the circumstances of this project a policy requirement that we would recommend not be waived. The authorities for this project should also be conditioned to require state and local performance on specific conditions prior to the federal funding of future phases. Many federal programs do not allocate funding until compliant local or state programs meet certain criteria. FIMP should follow the models provided by the New Jersey Pinelands National Reserve, the Clean Water Act, FEMA, DOT, etc.

A land acquisition program concurrent with a beach nourishment program has the potential to extend the storm damage protection benefits many years beyond the life of the project. This will constitute a more permanent solution as well as to approximate natural dune migration over time. Such an approach will far better fulfill the Congressional intent of the national seashore. Similarly, we are in agreement that moving the Smith Point County Park bath house should be examined as an alternative to sand nourishment in front of the bath house as this will also lead to more permanent protection for these recreation resources.

7. **Inlet Maintenance** We understand the need to maintain the inlets for safe navigation. The USACE acknowledges that inlet dredging affects sediment transport on both the ocean and bayside environments of Fire Island. Sand bypassing has always been considered to be essential to maintain sediment transport on the ocean side. Similarly, sediment availability and transport processes are also important to minimize bayside erosion as well. As 69% of annualized storm damages to the mainland occur from waters passing through these inlets. The plan should develop alternatives which would minimize these damages.

8. **Cross Island Sediment Transport (need for bayside sediment)** Cross island sediment transport and the need for bayside sediment has been described in detail in a white paper previously provided to the USACE (Nordstrom and Jackson, 2005). The major conclusion of this paper is that although wave and current energies are low in Great South Bay, much of the bay shoreline is eroding. The greatest changes occur near maintained inlets or next to marinas and bulkheads. Sediment inputs to the bay system from overwash events, island breaching, and dune migration allow the barrier to maintain itself as it migrates landward under the influence of sea level rise. We would agree that a major study to assess long term impacts from past dredging is not necessary. However, understanding the need for bayside sediment and its importance in maintaining island integrity and reducing storm damage is central to FIMP. As we requested in the June 3, 2008, letter the FIMP needs to 1) fully evaluate, manage and compensate for project impacts on cross-island processes; 2) develop bayside habitat restoration proposals, including removal of bulkheads and placing dredged material in shallow water to provide intertidal foraging and/or marsh substrate; 3) jointly develop a schedule for studies evaluating changes in bayside geomorphology and sediment availability due to historical inlet, breach and dune management practices; and 4) carefully and scientifically design and closely collaborate with other agencies to meet New York State Department of Environmental Conservation regulations for the placement of sand in intertidal and sub-tidal bay environments. The full text of the paper referenced above can be found at: <http://www.nps.gov/fiis/naturescience/science-synthesis-papers.htm>.

9. **Resource Economics** In chapter 8 (evaluation of individual storm damage reduction alternatives), it appears that only construction costs were evaluated and not the costs associated with changes in the value of public use, including both direct and passive use values. The NPS Organic Act (1916) and Management Policies (2006) emphasize the importance of both the direct use by visitors and the passive use by the public in the management of NPS resources. Methods that are generally accepted in the economics literature are available and can be used to estimate these direct and passive use values. NPS recommends that these use values should be estimated and incorporated into the evaluation. In chapter 9 (development of national ecosystem restoration alternatives), it appears that the economic valuation of national ecosystem restoration alternatives was not evaluated. Rather, a cost-effectiveness analysis was conducted. NPS believes that the benefits of ecosystem restoration need to be estimated in order to determine the impacts on the net benefits of each alternative. Methods that are generally accepted in the economics literature are available and can be used to estimate these benefits of ecosystem restoration. NPS recommends that these benefits should be estimated and incorporated into the evaluation.

10. National Ecosystem Restoration (NER) Alternatives Few of the HEP alternatives restore natural processes; thus NPS does not support them. Among the few HEP alternatives we continue to support include the restoration of the Great Gun tidal marsh, removal of the Ocean Beach groins, and creating of sand lobes to mimic cross shore sediment transport at Atlantique to Cornielle and/or other locations. At an October 16, 2008, meeting with USACE and USFWS, NPS further provided comments on each alternative listed in Table 9.4. Specific comments on restoration sites that fall within Seashore boundaries are provided below. Additional detail can be found in the Memorandum for the Record from the October 16, 2008, meeting.

In HEP meetings and bayside workshops, the development of bayside beaches and wetlands in the area of the Lighthouse was dismissed due to the high energy conditions associated with Fire Island Inlet.

T-2 Sunken Forest: NPS does not support any of the alternatives. NPS currently has funding for and is proceeding with a demonstration project to restore bayside sediment transport processes in the vicinity of the marina via beneficial use of dredge material to create an erosional head.

T-3 Reagan Property: NPS supports the concepts presented in alternatives 1 and 3; however the use of coir logs, gabions or other engineering structures for restoration is not acceptable within park boundaries. NPS does not support alternative 2.

T-5 Great Gun: NPS supports alternatives 1 and 2. This is Town of Brookhaven property; thus the Town should be consulted for input on these alternatives.

T-10 East Inlet Island: NPS supports these alternatives.

T-11 John Boyle Island: NPS supports these alternatives.

T-14 Ocean Beach: NPS supports alternatives 1 and 2. NPS does not support acquisition primarily as a restoration alternative; and therefore suggests that alternative 3 be considered as a nonstructural alternative.

T-15 New Made Island: NPS supports these alternatives.

T-24 Davis Park: NPS does not support these alternatives.

T-25 Atlantique to Cornielle: NPS supports these alternatives. NPS prefers the less deterministic approach presented in alternative 1 over alternative 2.

T-26 Kismet: As previously stated, NPS does not support acquisition primarily as a restoration alternative.

T-28 Atlantique: As previously stated, NPS does not support acquisition primarily as a restoration alternative.

NPS, in correspondence to USACE dated July 10, 2006, commented at length about the HEP process. HEP was presented as a tool that could be used to represent the complex ecosystems within the FIMP Project Area; however, the HEP models developed for the FIMP are an oversimplification of the complex physical and biotic processes and interactions that define the barrier island ecosystem. Barrier islands are variable systems that undergo change temporally and spatially. In addition, a functioning barrier island does not represent one optimal community condition, as does the HEP models, but a mosaic of conditions over space and time. The static HEP models do not adequately represent the dynamic geomorphology and ecology of the FIMP Project Area.

In correspondence to USACE dated January 7, 2008, we acknowledged that the Habitat Evaluation Procedures (HEP) and the matrix were the tools USACE had chosen for evaluating projects for the National Ecosystem Restoration (NER) plan. In that same correspondence NPS clarified that no NER projects can occur within the boundaries of FIIS without NPS approval. Furthermore, at the January 7, 2008, FIMP Interagency Group (IRG) meeting USACE stated that, with appropriate justification, any restoration project that did not rank highly (per HEP, the matrix, and incremental cost analysis) could be included in the NER plan.

The only land owners involved in the development of the HEP evaluated restoration alternatives were NPS and FWS; thus with the exception of projects occurring on those properties, owner support was not assessed. The final FIMP plan should provide adequate information to resolve classification as “unknown priority”. In addition, the NYDEC evaluation and approval process for listed alternatives should be documented in the final report.

11. External Peer Review (EPR) The plan with all its support documentation is extensive and addresses storm damages in a complex and extremely dynamic system. We congratulate the USACE in requiring a comprehensive evaluation of this study. We feel that the National Academies are uniquely qualified to undertake this task.

12. Public Communication Plan Although not mentioned in this plan but discussed

numerous times is the need to develop and implement a public communication plan. This plan should not only focus on elements of the FIMP but should also focus on flood risk, projected sea level rise and increased frequency and intensity of storms in the North Atlantic.

Specific comments on the text:

Page 5: The Draft Formulation Report asserts that human activities have dramatically altered existing natural coastal processes, and that the Reformulation Study area is not functioning as a natural sustainable system (also see pages 32, 56, and 132). What is the scientific basis for this assertion? Is there agreement within the scientific community on this point? Please clarify.

Page 5: Add movement of sediments from the off-shore to the near-shore.

Page 5: Is the 9,000 buildings within the study area only describing the mainland or is it including the barrier island? Over 4000 buildings are within FIIS alone, so a mainland/barrier breakdown might be useful here.

Page 7: Add off-shore transport of sediments here again.

Pages 7-10: Discussion and Summary. As discussed above under “General Tone and Message” this entire discussion of the Problem Overview does not begin with a basic explanation of the natural processes that reduce storm risk, does not discuss how human infrastructure has been located in areas vital to the effective functioning of these systems, and that in addition, some actions by people intended to reduce storm impacts actually increase risk. While overwash and breaching do present risks to existing structures, no explanation is given describing the positive role that these processes play in adding sediment to the bay systems and reinforcing the barrier islands.

Page 7: Please modify “Nation Park Service” to read “National Park Service.”

Page 8: We recommend ensuring consistency in definitions throughout the report, or in clarifying to which sections of text each definition applies. For example, "breaches" are defined on page 8 as "new inlets" but the definitions on page 37 distinguish between depths and longevity of breaches. Please clarify.

Page 21: 3rd full para. “The March 1993 resulted in...” The March 1993 nor’easter??

Pages 23, 127: Please clarify if there has been any consideration of a decrease in development due to increases in flood insurance rates or inability to obtain house insurance, as happened in Louisiana when major insurance companies pulled out of the state entirely.

Page 32: Please modify the sentence in the first full paragraph, “On the other hand, dune elevations along Fire Island are remarkably similar...” Similar to what? Historic dune elevations? If the answer is historic dune elevations, why is 1938 selected for this point?

Page 39: Historic Breaching – The NPS agrees with the statement that “stable inlets have led to significant increases in bay flushing and water quality relative to pre-stabilization conditions at

Moriches and Shinnecock Bays,” however, it could also be noted that the decline in the LI duck industry also had a significant influence on improved water quality in Moriches Bay.

Page 40: The nearshore geologic framework is discussed briefly on page 73 but the dismissal of its importance on page 40 led us to believe that it would not be included. We would argue that the shallow geologic framework is very important to the island's response to individual storms. As seen at Assateague Island National Seashore (ASIS) in 1998, a shallow peat or clay layer could prevent a deep breach through the island. Furthermore, areas where nearshore shallow and surface sediments are gravel may respond very differently than nearby beaches that are fronted by thick layers of sandy sediments (see recent publications about gravel outcrops and the framework geology control on shorelines along the North Carolina and Virginia coasts, such as McNinch 2004, Browder and McNinch 2006, Miselis and McNinch 2006, and Schupp et al. 2006). Also, the shallow geologic framework as it relates to groundwater is going to be important to the island's vegetative communities (makeup, locations, and stability).

Page 83: and throughout -- The term “estuarial” is not commonly used in the scientific literature. Perhaps the term “estuarine” would be more appropriate.

Page 85: It is stated that based on SCDHS long-term water quality data, that dissolved oxygen levels in the Bays do not reach hypoxic levels; however, it should be stated that there is evidence that dissolved oxygen levels in the tributaries that discharge into the Bays probably do experience hypoxic or anoxic conditions (e.g., Forge River).

Pg 92: The total visitation to FIIS including all the communities is 4 million. The visitation to NPS FIIS facilities is 700,000.

Page 115: Essential Fish Habitat – It is stated that the study area contains essential fish habitat for 27 species of fish that are managed under the Magnuson-Stevens Act. The next version of the Formulation Report should include a table that lists these species and the specific habitat types that they utilize.

Page 123: Future conditions should consider possibilities of sea-level rise, increased competition for offshore sand resources, increase in storm intensity, and increase in storm frequency-- and how any or all of these three changes will change the island's geomorphology and resilience. Although the introduction to this section states that these changes will be considered, it is not clear which scenarios or effects were considered.

Page 124 and 125: The statement that “The only policy identified which specifically considers leaving breaches open is limited to the Wilderness Area of the Fire Island National Seashore” is incorrect. As explained above in our general comments, NPS policies require that all natural shoreline processes, including breaches, should occur unimpeded regardless of whether or not those processes are occurring in wilderness or non-wilderness areas of a park (*NPS Management Policies, Chapter 4, Section 4.8.1.1 (2006)*). Intervention in such natural processes is only allowed in the four circumstances explained above in our general comments. Wilderness status of the areas does not alter the application of these policies.

Page 195: Please reword the following sentence as indicated, “Where a potential adverse impact

is established, plans must consider mitigation or replacement measures and ~~should~~must adopt such measures, if justified.”

Pages 198-199 and 342: As stated above in our general comments, the criteria used for plan evaluation should expressly include the consistency of the plans with NPS policies.

Page 203: Number 1 No Action: It is unclear if the WOPFC or the FVC is the baseline for determining with project benefits.

Page 205: We were confused by the following sentence, “Therefore, modifications of current inlet design and dredging practices that may provide measures to limit storm surge propagation through the inlets that leads to bay flooding have also been explored.” Does this mean that such modifications are recommended for further study? Please clarify.

Page 371: The statement on this page that the plans “should” be consistent with the Vision Statement should be changed to “will.”

Additional Comments

The following comments are provided in addition to input on the DFR from NPS, USGS, and FWS. Several of the items were also reflected in the Department’s June 2008 input on the draft Formulation Report Executive Summary.

Page 8, first paragraph. This text presents the impression that breaches will usually grow unless people intervene. It should be stated that some breaches may grow and others may close naturally. Some of the conditions that would contribute to the likelihood of breaches closing naturally include: areas where the barrier is wide, where there is a secondary line of dunes (such as the Sunken Forest and some parts of Fire Island Pines), where bayside marshes are extensive, where the bay is shallow and navigation channels have not been dredged perpendicular to the shoreline or into the peat layer, or if several breaches have opened from the same storm.

Page 21. The discussion on page 21 does not point out that the breaching at Westhampton focused at that spot due to the combined effect of the groin field and the lack of adequate sand filling those groins. Please revise in the next iteration of the document.

Page 21-24. Correct the bases for storm damages to reflect the impacts that the groins have had on exacerbating storm damages to down-drift areas.

Pages 25-28. Again, this section does not contain a discussion of the coastal processes, both cross-island, off-shore to near-shore, or barrier and off-shore to bay, which are among the vital mechanisms sustaining a robust barrier island system.

Page 37. The text at page 37 needs to point out the positive aspects of inlet formation for prevention of risk over the long term.

Page 39. No basis is given for the suggestion that there may be an overall sediment benefit from the growth of the relatively fixed flood shoal. Please substantiate in the next draft version of the Report.

Page 51. Second paragraph. It is our understanding that no fill was installed for these 13 groins in the 1960's. Please clarify if that was the case, or when and how much fill was actually installed before 1997.

Page 53. Second paragraph. Insert the following after the third sentence, "The December 1992 storm caused two inlets to form in the badly eroded area west of the groin field." On page 22 the DFR provides illustrations of these inlets, and page 53 establishes that the groin field caused erosion and lawsuits, but the reader is never told directly that it also created the conditions which led to the narrowed barrier, the breaching and inlets.

Page 56. After the first paragraph, we suggest also adding. "Lawsuits were filed challenging the decision of the USACE to proceed directly with work on the Reformulation Study. The courts dismissed all the allegations against the government, reinforcing doctrines that beach nourishment is a discretionary federal decision, not a matter of obligation or of right, and that without any state sponsor, a federal decision was premature."

P. 151. Table 5.2, Future Vulnerable Condition. In addition to the comments from USGS noted above, the Future Vulnerable Condition (FVC) is not well defined for the reader. Without further clarification, the discussion gives the impression that the FVC conditions should be interpreted literally (e.g., Table 5.2, p. 151, maps on p. 150). Please ensure that the next version of the document gives the reader a clear understanding of the FVC.

Page 154. Please clarify what is meant by the statement that a 500 year event would be experienced by a 2-10 year storm.

P. 183. Table 5.19, Without Project Annual Damages, indicates that 69% of the bay flood damages to the mainland and the barrier happen without any breach of the barrier (see also validation concerns identified by USGS). Similarly Table 5.2 (p. 151) indicates that the developed areas within Fire Island may withstand a storm having a return level of over 500 years. This information should be presented to the reader in the opening discussion. It also indicates the need for a more clear representation of the economic justification for beach nourishment in developed areas of Fire Island.

Page 193. The DFR does reflect a greater awareness of the Vision Statement criteria for achieving a mutually acceptable plan. However, in bullets 3 and 4 the text has been changed from the original, which reverses the respective use of "priority" and "preference." Please revise, and include the entire text as an appendix to the next version of the Formulation Report.

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DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF

Planning Division

June 3, 2009

James Tierney, Assistant Commissioner
New York State Department of Environmental Conservation
Office of Water Resources
625 Broadway
Albany, New York 12233-1010

Dear Mr. Tierney:

I am writing in reference to the Fire Island Inlet to Montauk Point, New York, Reformulation Study. Based upon our meeting held with representatives of NYSDEC and NYSDOS on April 21, 2009, we have confirmed that the State of New York is supportive of the current NED/NER plan elements, which include inlet bypassing, mainland non-structural improvements and road raisings, barrier island beachfill placement with nourishments, and an overall breach response plan.

It was agreed at this meeting that the next step required for moving this study forward is to complete the Draft General Reevaluation Report (GRR) and Environmental Impact Statement (EIS) as quickly as possible to allow the start of the public review process. In order to initiate the completion of the Draft GRR and EIS, we are providing you with the Draft Formulation Report (dated May 2009) for your final review, in order to ensure that we have addressed your concerns and have your full support of the alternatives analyses and the identified recommended plan of improvement.

The Draft Formulation Report addresses many of the concerns previously raised by the State of New York and Department of Interior (DOI), and significantly expands upon the previously reviewed November 2006 report. This new report includes background information on the physical, social, environmental, and cultural conditions; presents full alternatives analysis detail; integrates the Vision statement into the development and evaluation of alternatives; and identifies the plan of improvement that best balances the objectives of Storm Damage Reduction and Habitat Restoration while achieving the Vision objectives.

Presently, this draft report is only intended for internal review by the State of New York and DOI, so it should not be released outside of your agency at this time.

In order to advance this study towards the public release of the Draft GRR and EIS, I am requesting that you complete your final review of the Draft Formulation Report by 15 July 2009 in order to maintain the overall project schedule. We will be scheduling a coordination meeting with the State and DOI for later this month in order to discuss any outstanding issues and questions you may still have.

If you have any questions, please contact Mr. Frank Verga, Project Manager, at (917) 790-8212, or Mr. Stephen Couch, Chief, Coastal Section, at (917) 790-8707.

Sincerely,

Handwritten signature of Thomas J. Hudson in black ink.

for Frank Santomauro, P.E.
Chief, Planning Division

CC:

Mike Stankiewicz (NYSDEC)
Fred Anders (NYSDOS)
Peter Scully (NYSDEC, Region I)
Eric Star (NYSDEC, Region I)
Bob McIntosh (NPS)
Mary Foley (NPS)
Chris Soller (NPS-FIIS)
Andrew Raddant (DOI-OEPC)
David Stilwell (USFWS)



DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF
Planning Division

June 3, 2009

Bob McIntosh
Associate Regional Director, Construction & Facility Management
Northeast Region
National Park Service
15 State Street
Boston, MA 02109

Dear Mr. McIntosh:

I am writing in reference to the Fire Island Inlet to Montauk Point, New York, Reformulation Study. Based upon our meeting held with representatives of NYSDEC and NYSDOS on April 21, 2009, we have confirmed that the State of New York is supportive of the current NED/NER plan elements, which include inlet bypassing, mainland non-structural improvements and road raisings, barrier island beachfill placement with nourishments, and an overall breach response plan.

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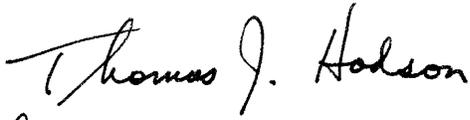
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If you have any questions, please contact Mr. Frank Verga, Project Manager, at (917) 790-8212, or Mr. Stephen Couch, Chief, Coastal Section, at (917) 790-8707.

Sincerely,


for Frank Santomauro, P.E.
Chief, Planning Division

CC:

Mary Foley (NPS)
Chris Soller (NPS-FIIS)
Andrew Raddant (DOI-OEPC)
David Stilwell (USFWS)
Jim Tierney (NYSDEC)
Mike Stankiewicz (NYSDEC)
Fred Anders (NYSDOS)
Peter Scully (NYSDEC, Region I)
Eric Star (NYSDEC, Region I)



DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF

Planning Division

March 30, 2009

James Tierney, Assistant Commissioner
New York State Department of Environmental Conservation
Office of Water Resources
625 Broadway
Albany, New York 12233-1010

Dear Mr. Tierney:

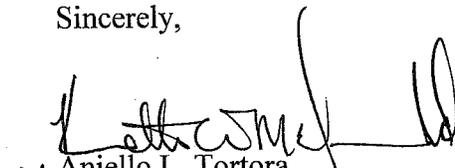
I am writing in reference to your February 26, 2009 letter regarding the Fire Island Inlet to Montauk Point, N.Y. Reformation Study. Thank you for clarifying that the NED/NER Plan is supported by the State of New York. Your letter identified several key issues that we agree are important and need to be addressed in the Reformulation Study. These include:

- 1) accounting for issues related to climate change and sea level rise,
- 2) addressing monitoring, modeling, and long-term adaptive management for the project,
- 3) examination of local land use policies, issues, and alternatives to address these issues,
- 4) the need to effectively communicate risk, and,
- 5) limitations in our Principles and Guidelines, and the need to evaluate the intangible aspects of plans that do not translate to economic valuation through direct measurement techniques.

We are currently addressing each of the items listed above in the Reformulation Study. In order to ensure that there is a common understanding of how these items are to be addressed, we would like to meet with you and your staff as soon as possible. We would also like to discuss the process and schedule for completion of the final report. Mr. Stephen Couch, Chief, Coastal Section will be contacting Mr. Mike Stankiewicz of your office to arrange this meeting.

I appreciate the leadership you have provided in solidifying the State's position. I believe that with this direction we can make a concentrated effort which will allow us to complete this important study. Please contact me at (917) 790-8000, or Mr. Couch at (917) 790-8707 if you have any questions.

Sincerely,


Aniello L. Tortora
Colonel, U.S. Army
District Engineer

cc:

General Semonite, Corps of Engineers
Commissioner Grannis, NYSDEC

New York State Department of Environmental Conservation

Assistant Commissioner

Office of Water Resources, 14th Floor

625 Broadway, Albany, New York 12233-1010

Phone: (518) 402-2794 • FAX: (518) 402-8541

Website: www.dec.ny.gov



Alexander B. Grannis
Commissioner

February 26, 2009

Colonel Aniello L. Tortora
Commander and District Engineer
Department of the Army
Corps of Engineers, New York District
26 Federal Plaza
New York, New York 10278-0090

Re: Fire Island Inlet to Montauk Point Reformulation Study

Dear Colonel Tortora:

After careful consideration of extensive information provided by your office and subsequent technical dialogues, and after consultation with the New York State Department of State, it is my pleasure to report that New York State Department of Environmental Conservation (DEC) formally supports the further development of the "National Economic Development/National Ecosystem Restoration Plan" (Plan) for the Fire Island Inlet to Montauk Point project.

DEC's understanding of the next phase of the process is that the Army Corps of Engineers will now develop and issue a draft General Reevaluation Report (GRR) and Draft Environmental Impact Statement (DEIS) based on the Plan. After technical and peer review, the Corps will release the draft GRR/DEIS for public review and will follow the various National Environmental Policy Act requirements. The Corps will then finalize the GRR/EIS, which will be a central basis for decision-making on project attribute refinements and possible project implementation. It is the DEC's understanding that no further authorizations are needed from New York State to proceed to the next step of the process.

DEC recognizes that the Corps criteria and programs are evolving. This is embodied in the Corps' "12 Actions for Change" that grew out of experiences associated with the tropical season of 2005. Moreover, the Corps is actively in the process of reviewing and revising its 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies, pursuant to federal law. In this regard, New York State remains particularly interested in working with the Corps on the complex issues associated with sea level rise and heightened storm surge intensity associated with climate change as the DEIS and reevaluation process goes forward. Climate change makes all the more necessary the monitoring, modeling and long-term adaptive management concepts discussed to date.

New York agrees that the first choice in any project implementation is to achieve critical goals in a manner that comports with, or maintains, natural processes and eco-systems. Coastal wetland habitats, for example, are vital to the environment and the economy. Next, what has been termed "non-structural" measures are the preferred option to limit risk of harm to human health and property. Structural methods, of course, are viewed as the least-preferred option, with "soft" (or sand only) options strongly favored over hard structural measures.

Numerous safety reports and studies have recommended that, in general, development be directed away from near-coast and coastal flood plain areas. The implementation of intelligent land use policy and regulations, over the long-term, will be a critical component of any true solution that helps to prevent even more individuals from living in danger zones and flood plains. The Corps' expressed intention to examine state and local land use policy and issues within the reevaluation report and DEIS is welcome; this will provide critical information on a full range of problem solving options.

Indeed, any real solution must involve a broad dialogue among numerous stakeholders built upon high-quality scientific evaluations. Effective implementation of any solution will by necessity involve a partnership between local, federal and state governments.

As we go forward, DEC encourages the Corps to effectively communicate risk – to endeavor to make "real" the existing and growing vulnerability of coastal communities and eco-systems. In addition, we strongly encourage the Corps to remain cognizant of the State Coastal Management Program and Policies, in partnership with the New York State Department of State.

We look forward to the Corps considering and addressing these areas of mutual concern during the NEPA and reevaluation process.

DEC remains concerned that Corps technical and planning staff may be constrained by 25-year old principles and guidelines. It is our hope that, when the Corps completes the revision specified by the 2007 Water Resources Development Act amendments, modern-day considerations will be more effectively included in project formulation and economic valuation. There are many public benefits to our coastal resources that do not correlate to a specific economic market (or dollar price) valuation system. Somehow, we must find a way to effectively "value" such intangibles as we proceed.

Again, thank you for all the cooperation and consideration you have extended to New York State. If I can be of any assistance, please do not hesitate to contact me directly.

Sincerely,

A handwritten signature in black ink that reads "James M. Tierney". The signature is written in a cursive, slightly slanted style.

James M. Tierney

cc: General Semonite
Commissioner Grannis

**FIRE ISLAND INLET TO MONTAUK POINT, NY (FIMP)
REFORMULATION STUDY
ISSUE RESOLUTION CONFERENCE (IRC)
AUGUST 22, 2008**

Introduction: Representatives from the Army Corps of Engineers (ACE) the Department of the Interior (DOI), the State of New York, Suffolk County and other interested parties¹ participated in an Issue Resolution Conference (IRC) at the Suffolk County Office Building to discuss issues concerning the Fire Island Inlet to Montauk Point (FIMP) area, and paths to resolution.

At the completion of the IRC, all participants walked away with a common understanding of the issues and agreement that nothing discussed at the IRC required immediate elevation to each agency's leadership at this time. Some of the further action discussed will be dependent on the decisions from the New York State Executive Branch concerning its preferred approaches to FIMP management. In anticipation of those decisions, the group agreed that a similarly-staffed meeting, or smaller working sub-group meetings, should be held in October to maintain momentum on the FIMP Reformulation Study.

Interim steps include:

- Presentation of issues and recommendations to the NYS Governor's office (anticipated for late September), in order to determine the level of interest and potential support for local government sponsorship of COE recommendations; and report back on results;
- Development of a "white paper" suggesting alternative incentives to transition private structures/holdings into the public domain;
- Drafting of language for legislative authority to evaluate the "back bay erosion problem" (that is, longer term implications of breach remediation);
- Potential joint legislation enabling COE and DOI to align their authorities;
- Initial investigation of establishing a "coastal commission"-type authority to manage cross-governmental, multi-constituent issues concerning the FIMP area, long term.

There was agreement that in every case there must be ongoing discussion, and action, on options to mitigate the impact of *every* decision that is made and implemented.

The following section summarizes issues, discussion and follow up agreed to by the participants.

¹ See attached "Participant List"

Inlet Maintenance

(**Note** – inlet issues were broken into 2 categories of issues, with a 3rd issue identified as an offshoot. The 3 issues are described below as inlet maintenance, inlet management, and bayside management.)

Problem Statement: How will the three congressionally mandated inlets within the FIMP area be maintained in the future in the absence of the FIMP Project?

Discussion

This issue was originally included as a discussion topic, since in the DOI letter to the Corps, the DOI indicated that they could not support the assumption that inlets would continue to be maintained in the without-project condition. In their opening remarks, the DOI indicated that they had revised their position, and the DOI did not object to the assumption that inlets would be continued to be maintained in the without project condition.

As a result of the change in the DOI position, there was little discussion, and it was agreed that the USACE will continue to maintain the three existing, Congressionally-authorized inlets, in their current locations, dependent on continuing future appropriations. This is inherent in the USACE's navigation role.

The discussion, regarding opportunities for improved inlet management is described further below.

Next Steps No next steps, this issue is resolved.

Inlet Management

Problem Statement: The FIMP Study is seeking to identify opportunities for improvements in inlet management in the future. How is the FIMP Study addressing the issues related to: 1) improved bypassing of the inlets, 2) the contribution of the inlets to bayside flooding, 3) the problems and opportunities associated with erosion and habitat degradation along the bayside shoreline. As a subset, what are the science and data collection needs to support this, is there agreement on what needs to be done.

Discussion

There was significant discussion regarding the management of the inlets.

USACE clarified that in the formulation of alternatives, inlet management measures were looked at as a means to reduce storm damages.

It was generally recognized that the recent work done for alternative development, included an interagency team in the development of alternatives, but focused more on opportunities for the improved management of the inlets in order to accomplish objective 1, which is to improve sediment transport associated with the management of the inlets, in the alongshore.

USACE further clarified that the formulation of alternatives was undertaken in a manner, which gave a priority to alternative measures that accomplished the desired objectives with a minimum amount of change, and could be readily reversed or modified based upon improved understanding of the inlets.

As a result of this analysis, the recommendation at each of the inlets is continuation of the authorized navigation project, plus additional dredging from the inlet ebb shoals to bypass the equivalent amount of material that is trapped within the inlet. This plan includes a monitoring and adaptive management plan to establish the exact bypassing needs, and to provide improved information that could allow for future changes in inlet management.

Examples of alternatives that could be considered in the future, when greater information is available to more reliably predict the effects of the alternatives, include: shortening of the east Jetty at Shinnecock Inlet to improve bypassing, and measures that could be implemented to restrict the cross-sectional area of the inlet to reduce mainland flooding. These are two alternatives, that if implemented are not readily reversible, and could have unintended consequences, that with the present state of knowledge would be difficult to forecast.

There was general acceptance of the inlet management approach, and conclusions as it relates to measures to improve sand bypassing; however, there were still significant remaining concerns regarding inlet management measures, and the relationship to measures to address bayside flooding, and opportunities for bayside sediment placement.

With respect to data collection needs, there was general agreement that any monitoring and adaptive management would need to be further defined, and would be developed as a forward-looking plan, and should not be geared towards characterizing past influences associated with inlet stabilization and maintenance activities.

Next Steps Convene a technical group discussion on the content and scope of a monitoring and adaptive management plan for the inlet activities. Further discussion on bayside habitat restoration measures is discussed below.

Bayside Management

Note The topic of Bayside Management was established as an offshoot of the Inlet Management discussion. The topic was identified as its own, since the issue was identified as a problem that the inlets may contribute to, but is not exclusively an inlet problem.

Problem Statement:

Regardless of the cause of the degradation, there is a long-term need to address conditions along the bayside of the barrier island in order to address the long-term problems of storm damages and habitat degradation. We need to identify the best way to manage bayside management and restoration.

Discussion:

DOI and County expressed concern about the lack of bayside sediments, and bayside erosion of the shoreline. Although this discussion started as an inlet-related issue, there was a general recognition that the problem of bayside erosion and bayside flooding is not solely due to inlet management activities, but that there are other contributors to the problem. It was generally recognized that the problems of bayside erosion are less severe than the ocean-side, and may require longer-term solutions.

There were several proposed approaches for addressing bayside erosion issues:

Solution 1. It was discussed, that if there is a concern regarding the impact that the existing inlets are having on the bay shoreline, that a separate Section 111 study (Project to offset impacts associated with Navigation Projects) could be initiated to identify the magnitude of the impact of the inlets, and to identify if solutions are available to address this problem.

Solution 2. It was discussed that the issues of bayside erosion and habitat degradation could be addressed with a separate authority (such as the existing South Shore of Long Island, Ecosystem Restoration Authority) to address the problem.

Solution 3. It was acknowledged that a number of the issues being discussed are presently being evaluated in the restoration alternatives being developed under the Reformulation Study. At this point there remain regulatory concerns that could restrict the implementation of these restoration measures. One solution could be an implementation plan that calls for phased implementation of the restoration measures, in conjunction with an intensive monitoring plan for the constructed sites and an adaptive management plan that helps to identify the sequencing of the restoration efforts.

Next Steps:

- For FIMP, proceed with the evaluation of restoration alternatives as per solution 3.
- County/State agencies to ask their County/State government counterparts to write resolutions requesting that the Corps study a particular area of concern.
- All participants agreed that language for legislative authority to evaluate the “back bay erosion problem” should be drafted.

Integration of Non-Structural Measures

Problem Statement: How will the various Non-Structural Land Management Measures be linked with Structural Measures within the Collaborative Plan? Are they independent, integral or contingent to each other? What implications does this the nature of the linkage have for the level of analysis conducted in the EIS? Are there also cost-sharing implications?

Discussion: The question of how the Non-Structural (N-S) Land Management Measures, will be linked with Structural measures and how this might effect their presentation in the EIS was discussed. There were 3 categories of actions that had been discussed at prior meetings and were touched upon here, including: 1) actions likely to occur in the future without project condition, 2) actions that are integral to the recommended plan (where the plan cannot function without action), and 3) complementary actions, which are not necessary for the plan to function, but could improve the effectiveness of the plan.

All actions associated with the FIMP Alternatives will be evaluated for direct, indirect, and cumulative effects. Similar actions in the region will also be evaluated for cumulative effects. If it can be determined with a reasonable degree of certainty, that an N-S measure (such as NYS’ stated intent to revise/strengthen aspects of the CEHA program) will be implemented completely independent of a FIMP recommendation, then it would be would be discussed as part of the Future Without Project Condition (FWOPC), and analyzed as part of Cumulative Effects. If the N-S measure (such as establishing a Coastal Commission) is integral to a FIMP recommendation, and required to compliment or strengthen other aspects of the Plan, or if it is a contingent action (such as the acquisition of property from willing sellers prior to shifting beach nourishment landward)

then it would be presented as part of the Alternative, and analyzed for direct, indirect, and cumulative effects. Complementary actions, which could improve the functioning of the overall plan, but are not necessary for the plan to function would need to be acknowledged and discussed as part of indirect and cumulative effects, depending on the certainty of its implementation and the amount of information available about the actions.

New York State indicated that their preference would be to integrate the non-Structural measures (primarily regulatory measures) with the structural measures, but had recognized the concerns raised at prior meetings that doing so would increase the scope of the EIS and could increase the difficulty in processing the EIS. The Corps is clarifying that these actions can be addressed in relation to the FIMP collaboration plan, but there may not be sufficient information currently available to fully evaluate all aspects of the proposed action(s). In many instances, such as change in to the CEHA program, there will likely be a need for a separate compliance process evaluating all aspects of the proposed changes, not just aspects that would complement the FIMP plan.

As many of the N-S measures will be phased in over time and space, the analysis of indirect and cumulative effects will have to be based on reasonable expectations or assumptions concerning their for their context and intensity. For some N-S measures, (such as retrofit/elevations), additional investigations (such as site specific cultural resource or HTRW surveys) may be conducted programmatically as specific implementation actions (home-owners entering into retrofit/elevation agreements). Also, many of the measures may be controversial warranting consideration of whether the effects are potentially significant. The input of the Local Governments participating in the FIMP Study will be useful in gauging anticipated stakeholder concerns so that they may be presented in the DEIS for full public comment (with the acknowledgement that the proposed regulatory changes will require their own, independent environmental reviews independent of FIMP).

The USACE is continuing to work with the FIMP Study Partners to develop statements defining these actions in terms of their geographic context and intensity (or rate of implementation over time) and collate pertinent available information for their analysis.

Next Steps:

- Utilize the information from prior meetings to define the N-S Measures as specifically as possible (with an emphasis on the land use / regulatory measures). Obtain input from the participating agencies on the classification of the non-structural measures (FWOPC Action, Integral Action, or Complementary Action), including the underlying rationale to support this classification. Identify the scope of the analysis for each of these measures, depending upon their classification, and identify the responsible party for preparing this information. The FIMP Study Partners, as part of the County-led Non-Structural TMG, have indicated they will assist in drafting these descriptions and USACE has developed a description of N-S Retrofit Measure as a template.
- Determine if the N-S measure will be implemented programmatically, and if so, what additional investigations will be conducted and how that information will be evaluated and impacts avoided, reduced, or mitigated.
- Assemble the integrated plan indicating whether the proposed N-S measures are independent or integral to the Collaborative Plan native so that direct, indirect, and cumulative effects can be delineated appropriately.

- Analyze Direct, Indirect and Cumulative Impacts (adverse and beneficial). The FIMP Partners will be asked to assist in providing input on likely stakeholder participation for some of these analyses.

Breach Response

Problem Statement: What are the agreed-upon protocols for closing a breach within non-populated areas of the public tracts on Fire Island?

Discussion:

It was generally recognized that there have been ongoing discussions at the staff-level to develop the specific response strategy for each of these locations. This issue was raised for discussion because of the concern that there is a preference for immediate closure of a breach, and in some instances a proactive response, where the park has taken the position that breach closure would be implemented when it is clear that the breach is not likely to close naturally.

- **DOI:** Breach response in large, natural areas needs to take into consideration the potential for breaches to close naturally, and breach closure templates should be designed to achieve the desired overwash regimes.
- **COE:** A protocol is being developed to include the range of acceptable and practical possible pre- or post-storm actions that may be taken
- **All participants** agreed that breach response in populated areas is not an issue, and that there are many factors that influence how quickly a particular breach can and will need to be addressed. There was also agreement that if a monitored breach in a natural area was found to be growing out of control, that it would be closed.

Next Steps:

The group agreed to review the protocol being designed by COE for breach response in large, natural areas. A smaller technical group shall meet to discuss the protocols. (*Lead: Lynn Bocamazo, USACE*)

Long-Term Land Management and Acquisition Strategy to Complement and Reduce the Need for Beach Nourishment

Problem Statement. It is recognized that the Project stakeholders are interested in identifying and developing an approach which could allow for a transition from a beachfill plan to a plan that requires a lesser commitment for renourishment, and relies on non-structural measures, so as to reduce the need for perpetual renourishment beyond the 50 year project life.

Discussion:

- It was acknowledged that there are a number of ways by which the underlying rationale could be laid out.

- The Corps identified 2 somewhat different approaches that could be undertaken, based upon the objectives.
 - Approach 1 – If the intent of the transitioning plan is to achieve a plan that provides comparable levels of risk reduction, it is difficult to forecast the rate of implementation of the voluntary non-structural plans and the effectiveness of these plan alternatives in reducing the level of risk to the point where a change in the structural protection could be implemented. Under this scenario a recommendation would be to recommend a plan that could be continued for 50 years, but modified at any time, based upon the rate of implementation of the non-structural measures. This approach was not favored by the participating agencies. A shorter duration was identified as preferable to serve as an incentive for participation. It was recognized that under this scenario the threat of being exposed to storm damages would not serve as an incentive, and that other incentives for participation would be necessary, including more favorable acquisition strategies, or flood insurance disincentives.
 - Approach 2 – If the intent of the transitioning plan was not to provide a consistent level of risk reduction, but rather to accept the fact that the intent is to transition, regardless of the level of risk reduction afforded, one could establish a plan that ensures that adequate time is available to offer acquisition and to implement improved regulatory measures and more strongly link the scheduled renourishment to these activities. Developing a plan under this criteria would require a firm schedule for these activities to proceed, and a commitment to implement these actions consistent with this schedule.
- The group agreed that this is a difficult issue, within the Corps it was unclear if either of the 2 approaches presented would be supported by HQUSACE.
- Because there has been no effective approach to motivating owners to leave on a long or short-term incentive schedule; decisions now involve whether to work with or around house placement. Study is required to determine the most cost-effective areas to target for acquisition.
- It was recognized that the FIMP Study is attempting to address issues that are beyond the scope of many typical Corps studies. One suggestion was that some of the issues related to land management measures, particularly related to Federal initiatives could be advanced on a path independent of, and in advance of the FIMP Study. It was suggested that the recent Secretary-level involvement could be used as a basis for developing joint Agency recommendations for legislation to establish the land management and acquisition opportunities.

Next Steps:

All participants agreed that it will take some study to determine the best approach and most cost-effective way to transition land in the flood plain from the private sector to the public sector, as a means to transition from structural protection to non-structural protection measures.

- DOI and the Corps agreed that there is a need for mutual legislation, supported by the Secretaries of the Army and Interior, related to the land management and acquisition strategy.
- All participants agreed that a “white paper” suggesting alternative incentives to transition private structures/holdings into the public domain should be drafted to further describe and evaluate the 2 scenarios that were identified. (*Lead: Steve Couch, ACE*)

Establishment of a Coastal Commission

Problem Statement: There is a recognized need for a more unified local entity to take on the local responsibilities for land acquisition and regulatory enforcement in order to achieve the objective of a plan that includes both structural and non-structural measures. There is a concern that in the absence of such an entity that the structural measures will proceed, but that the non-structural measures would not be implemented.

Discussion: This topic had been discussed previously in other meetings. The group collectively agreed that an ongoing management body similar to a “coastal commission” would be an effective way to accomplish the non-structural objectives of the Reformulation study. This commission could take on many roles, including: enforcement, acquisition, a taxing entity to raise funds for the mainland retrofit program, and non-state sponsor for the overall project.

It was generally acknowledged that the establishment of a Commission is a means to implement the overall plan, rather than a specific plan alternative that could be developed independent of the alternative development process

Next Steps:

Prepare a paper that provides an overview of the functions that a Commission could undertake as a means for establishing the framework of a Commission, in order to obtain acceptance / support for the approach. (*Lead: Carrie Meek Gallagher*)

Accounting for Climate Change

Problem Statement: How will the effects of climate change be incorporated in the reformulation study analyses?

Discussion: There was some discussion that the DOI ASA was informed that the analyses would not consider climate change or the potential for accelerated sea level rise.

It was clarified that the present analyses done to date, in the life cycle simulations uses the historic rate of sea level rise, with a range of uncertainty, based upon the historic trends. The current Corps guidance states that projects should be formulated based upon historic rates of sea level rise, but that the final plan selection take into consideration the potential for sea level rise, and the adaptability of the plan to account for this.

The existing Corps guidance is currently being revised as guidance that would be consistent for Federal agencies that have a responsibility for constructing long-term infrastructure projects that could be impacted by climate change. This draft guidance recognizes that climate change could impact 1) sea level rise, 2) storm intensity, and 3) storm frequency. The proposed guidance is similar to the existing guidance, and 1) recognizes that due to the uncertainty in climate change projections, projects should be formulated on historic trends; projects should NOT be altered up-front solely to account for climate change, and 2) project formulation should take into account the need for adaptability, and plan for adaptive management and anticipatory engineering as the means to address climate change over the project life.

The reformulation report will acknowledge the potential for climate change, and the impacts of accelerated sea level rise rates. Similarly, the report will recognize the potential for, and the impact

of, additional climate changes, such as increases in storm frequencies.; with a general discussion of how this would be accounted for in the lifecycle management of the project. Agencies agreed that this is acceptable.

Next Steps: None, issue is resolved.

Sincerely,

[Appropriate signatories-the Corps, DOI, the State of New York, Suffolk County, etc.]

Participant List

PARTICIPANTS	AFFILIATION	PHONE NUMBER	EMAIL
Anders, Fred	NYSDOS	518-473-2477	Fred.anders@dos.state.ny.us
Buonaiuto, Frank	USACE	631-878-5468	fsbuonaiuto@optonline.net
Couch, Stephen	ACOE	917-790-8707	stephen.couch@usace.army.mil
Davies, DeWitt	SC	631-853-4865	dewitt.davies@suffolkcountyny.gov
Fischer, Lauretta	SC	631-853-6044	lauretta.fischer@suffolkcountyny.gov
Foley, Mary	USDOJ-NPS	617-223-5024	mary_foley@nps.gov
Gallagher, Carrie Meek	SC	631-853-4016	carriemeek.gallagher@suffolkcountyny.gov
Grillo, Carolyn	Facilitator - SRA CONSULTANT	703-284-6944	carolyn_grillo@sra.com
Henn, Roselle	ACOE	917-790-8620	roselle.e.henn@usace.army.mil
Hodson, Tom	ACOE	917-790-8602	thomas.j.hodson@usace.army.mil
Isles, Tom	SC	631-853-5191	tom.isles@suffolkcountyny.gov
Jones, Cliff	ACOE	917-439-9139	clifford.s.jones@usace.army.mil
McGuinness, Sean	USDOJ-NPS	631-687-4753	Sean_McGuinness@NPS.gov
McIntosh, Bob	USDOJ-NPS	617-223-5122	Bob_McIntosh@nps.gov
Pavacic, John	SC	631-854-4984	John.Pavacic@suffolkcountyny.gov
Pendergrass, Barry	NYSDOS	518-486-3277	Barry.Pendergrass@dos.state.ny.us
Petrella, Gerard	SENATOR SCHUMER	631-753-0978	Gerry_Petrella@schumer.senate.gov
Raddant, Andrew	USDOJ	617-223-8565	andrew_raddant@ios.doi.gov
Reynolds, Michael	USDOJ-NPS	215-597-7059	Michael_Reynolds@nps.gov
Russell, Victoria	TOWN OF BABYLON	631-422-7695	Vrussell@townofbabylon.com
Santomauro, Frank	ACOE	917-790-8700	frank.santomauro@usace.army.mil
Schneider, John	CONGRESSMAN BISHOP'S OFC	631-696-6500	jon.schneider@mail.house.mygov
Scully, Peter	DEC	631-444-0345	pscully@gov.dec.state.ny.us

PARTICIPANTS	AFFILIATION	PHONE NUMBER	EMAIL
Seebode, Joe	ACOE	917-790-8209	joseph.j.seebode@usace.army.mil
Sinkevich, Steve	USDOI-FWS	631-581-2941	steve_sinkevich@fws.gov
Stankewicz, Mike	DEC	518-402-8127	mrstanki@gw.dec.state.ny.us
Stillwell, David	USDOI-FWS	607-753-9334	david_stilwell@fws.gov
Vietri, Joseph	USACOE	917-613-3873	joseph.s.vietri@usace.army.mil
Walsh, Kristen	SENATOR CLINTON	631-338-2138	kristen_walsh@clinton.senate.gov
Zitani, Brian	TOWN OF BABYLON	631-422-7640	bzitani@townofbabylon.com
Zuba, Nicholas	TOWN OF BABYLON-SUPV	631-957-3054	nzuba@townofbabylon.com



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



June 3, 2008

Colonel Aniello L. Tortora
District Engineer, New York District
U.S. Army Corps of Engineers
26 Federal Plaza
New York, NY 10278-0090

Dear Colonel Tortora:

We are writing in response to your request of February 11, 2008, that the Department of the Interior (the Department) provide “agency recommendations for a mutually acceptable storm damage reduction plan.” The Department has been actively engaged in efforts directly or indirectly related to the Fire Island to Montauk Point Storm Damage Reduction Reformulation Plan (FIMP) for over 40 years. Bureaus within the Department involved with FIMP have included representation by the Office of Environmental Policy and Compliance (OEPC), the National Park Service (NPS), U.S. Fish and Wildlife Service (USFWS), U.S. Geological Survey (USGS), and the Solicitor’s Office.

The Department is participating in this effort under the authority of a number of statutes and policies including the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*) (NEPA); the enabling legislation for the Fire Island National Seashore (Public Law 88-587, September 11, 1964, 78 Stat. 928, 16 U.S.C. §459e *et seq.*) (the Seashore); the Migratory Bird Treaty Act (16 U.S.C. 703 – 712 *et seq.*), the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*) (FWCA); the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) (ESA); and, among other National Park Service directives, the National Park Service Management Policies, 2006.

The purpose of these comments is to assist with the effort initiated by the United States Army Corps of Engineers (USACE or the Corps) in the development of an alternative which could be mutually supported by all of the key state and federal agencies involved with this effort. Any such alternative would be evaluated and presented for wider public review and comment as a part of the on-going NEPA process.

Plan Formulation - Draft Formulation Report

The FIMP Executive Summary, Draft Formulation Report (DFR) was provided to us in late December, 2006. While its stated purpose is to provide a summary of the available alternatives, the DFR primarily describes traditional construction and maintenance activities with relatively less information on other alternatives. The DFR was to provide project stakeholders with a basis for having a common understanding of the alternatives that are available to reduce the impacts of storms on human life and property, and the relative effectiveness of these alternatives in the study objectives. Some additional supporting information used to develop the DFR has been provided over the past year. However, other supporting information, including the full draft formulation report, and the economic evaluation, remain withheld.

The objective of water resources project planning, we understand, is to contribute to national economic development (NED), but it must be “consistent with protecting the nation’s environment, pursuant to national environmental statutes, applicable executive orders, and other federal planning requirements as contained in Engineering Regulation 1105-2-100.” (DFR, Page 46) Further, the DFR describes how the FIMP planning process was “integrated in to a ‘Vision Statement for the Reformulation Study’ ... has been coordinated with project stakeholders, and within the Corps and has been approved as the framework for moving forward with a new approach to address storm damages.” (DFR page 47) On page 50, the DFR states: “changed planning considerations dictate that the current emphasis beto strive for a more complete and accurate view of flood risk. Full emphasis is now being placed on reducing risk to life property, health, safety, social well-being and the environment in a more integrated, comprehensive and systems-based approach.”

We fully concur with such an approach. But, we find that the DFR neither reflects the FIMP “Vision Statement” nor a “more integrated, comprehensive and systems-based approach.” The “Vision Statement” was developed through a collaborative, multi-agency effort *initiated by the Corps* in 2004. This text was endorsed by the Department’s Deputy Assistant Secretary of the Interior for Fish, Wildlife and Parks in 2005. The fundamental framework set forth in the Vision Statement, emphasizing the restoration of natural coastal processes and the reduction of risks through non-structural measures, was reinforced by the Assistant Secretary of the Army for Civil Works during his visit to the Seashore this April.

Since the distribution of the DFR, the Department has provided you and your staff, the Executive Steering Committee (ESC), and other agency representatives with feedback on the DFR and supportable approaches for the FIMP. The considerable effort of the Department team has been directed towards expanding the limited scope of alternatives presented in the DFR with an array of environmentally sustainable alternatives and strategies that reduce the risk of storm damage and are consistent with Department mission and policies. We have also raised pertinent science based issues that should be integrated into USACE project planning.

The USFWS has provided technical assistance directly to the Corps under the FWCA and the ESA as well as written comments on the DFR¹. The Seashore has provided written comments on the Habitat Evaluation Procedures (HEP).² Information has also been conveyed through presentations, bulleted summaries, multiple informal working texts and memoranda, as well as during innumerable meetings, teleconferences, and negotiations.

As you are aware, negotiations among the interagency FIMP partners (including USACE, New York State, Suffolk County, the Department, and at times with Federal Emergency Management

¹ Since 2006, the USFWS has provided a number of technical assistance documents, including: a FWCA planning aid letter making recommendations for project environmental features including habitat enhancement and restoration, identifying restoration options within the project area which we had discussed with land managers/owners, (approximately 37 sites) (October 6, 2004); formal comments on the Draft Executive Summary Formulation Report (July 9, 2007, and September 13, 2007); formal comments on the Habitat Evaluation Procedure developed for the FIMP (July 7, 2006); a planning aid letter which lays out the first parts of the 2(b) report, (principally a description of the affected environment, including the materials originally provided on October 6, 2004 identifying restoration options within the project area); a letter provided on October 12, 2007 expressing concerns that the Interagency Reformulation Group had not yet discussed project environmental impacts, (December 31, 2007); a follow-up document to our description of affected environment, describing goals for compensatory mitigation and our justification for such recommendations, (February 25, 2008); a letter conveying our recommendations for listed species conservation measures by way of listed/candidate species habitat enhancement and restoration, (February 13, 2008); and another round of comments on a draft listed species management plan for the project action area, to ensure protection of listed species from recreational activities for the life of the project (conveyed via email, May 9, 2008).

² Comment letters of July 10, 2006 and January 23, 2008.

Agency (FEMA) and other federal agencies) continues at a high level of involvement. We will refer to these agencies' field representatives as "the FIMP team."

Collectively the FIMP team has been working to develop a "mutually acceptable alternative" integrating approaches supportable by the State of New York, recent environmental initiatives of the Corps, and policies for management of national parks, as well as the other pertinent laws cited above, including the ESA. We have recently received the April 8 letter and comments provided by Mr. James Tierney, Assistant Commissioner, New York Department of Environmental Conservation. His letter reflects areas of common concern, unaddressed questions, and similar policies to those of the Department, and highlights areas that need more detailed evaluation by the FIMP team.

Underlying the challenges of FIMP are multiple State and Federal statutory requirements which must be integrated and phased to effectively implement a sustainable and effective plan. We are using the term "multi-mission" project to recognize that the authorizations or programs of multiple agencies apply to this project. Several federal and state legislative directives already define the project purposes and the FIMP team contemplates that some adjustments to current authorizations for the Corps, the Seashore, state and local agencies will be needed.

As you are aware, in 1964, merely four years after Congress first authorized the predecessor to FIMP, it addressed this project in the Seashore's enabling legislation:

"The authority of the Chief of Engineers, Department of the Army, to undertake or contribute to shore erosion control or beach protection measures on lands within the Fire Island National Seashore shall be exercised *in accordance with a plan that is mutually acceptable* to the Secretary of the Interior and the Secretary of the Army *and that is consistent with the purposes of sections 459e to 459e-9 of this title.*" 16 U.S.C. §459e-7(a) [Emphasis added.]

Thus representatives of the National Park Service and the Seashore have participated extensively assisting the FIMP team understand the purposes of the Seashore and national park policies and laws. The primary aim of these is to conserve natural resources and natural processes, including undeveloped natural dunes and beaches and the physical and biological processes which sustain them.

Policies, laws and programs of at least two important New York State agencies, several departments within Suffolk County, local governments and other federal agencies will also ultimately be involved in plan implementation. The FIMP team has recognized that integrating these programs—whether for funding, permits, or direct actions—will reinforce the effectiveness of any engineered components of FIMP and likewise that the engineered components cannot occur without being integrated or phased with these other programs.

The details about how best to accomplish these important purposes have been under discussion and over the past year and a half. Considerable progress has been achieved and a number of significant points of agreement seem to have been reached. This would not have occurred without the intense level of commitment among these agencies. However, many issues remain.

Problem Identification - Interagency Strategy

Conceptually, the problem we collectively face is understood: Intensive development has taken place in hazardous, ever-dynamic coastal areas. In some cases these hazards have been

exacerbated by human interventions in natural coastal processes. Traditional Corps construction and maintenance activities along with activities conducted by others include inlet stabilization and channel dredging; groins, seawalls and revetments; beach fill; beach scraping; breach closures; and bayside bulk-heading. While intended to protect human infrastructure from storm damage or to improve reliable navigation, such actions have led to unanticipated or under-evaluated indirect adverse effects on the sustainability of a barrier island ecosystem.

In fact, these actions can indirectly *exacerbate* the problems they were designed to address. Many cause unavoidable adverse impacts to wildlife habitat and to natural processes. These natural processes sustain features which provide protection to bayside areas and buffer storm impacts, including the barrier islands, salt marshes, and intertidal and subtidal flats. Thus, these activities can have the effect of either transferring erosion to other areas or can interfere with the effectiveness of these natural features in reducing damage from storms.

Concerns of the Departmental members on the FIMP team focus on a number of fundamental areas:

- Cross-island sediment transport, as affected by the jetty-stabilized inlets and barrier management, and the long-term impacts on erosion of the bay systems' shorelines, salt marshes, intertidal and subtidal zones;
- Inlet modifications, if any;
- Breach response strategies;
- Removal of sediments from the off-shore;
- Littoral transport proposals;
- Alternatives for barrier island management;
- Effective non-structural measures including sufficient legal authority for each implementing agency to perform its needed implementation roles;
- Natural process restoration alternatives. This includes options for proactive alternatives which reflect goals of the National Ecosystem Restoration (NER) and the "Vision Statement"; options for compensatory mitigation; and options for listed species conservation measures.
- Impacts, if any, to FIMP development from WRDA 2007 section 2031, Changes to Principles and Guidelines, and constraints with current guidance.

The discussion below provides a general overview of Department-supportable approaches to long-term storm risk reduction based on our preliminary understanding of their impacts to natural resources and processes. It also gives a brief synopsis of the status of team efforts to date. A longer and more detailed description of these points will follow under separate cover. A final decision by the Department will not be made without a full analysis of project effects on the human environment, through the NEPA, the ESA and laws governing the National Park Service (NPS) and the Seashore.

Cross-Island Sediment Transport to the Bays:

The three bays within the FIMP area primarily receive their sediments from ocean-side sources, as compared to other bay systems which primarily receive sediment from rivers. These sediments sustain marsh bottom elevations, provide early-successional habitats critical for many species and help buffer bay shorelines from the erosive effects of wave action, including that induced by boat wakes. In a natural system, sediments are redistributed through the bays as inlet locations shift, forming shoals and intertidal flats. In light of sea-level rise coupled with past and

proposed actions affecting sediment transport to the bays, an adequate supply of sediment is needed to maintain these features and the storm-buffering they provide.

Stabilizing inlets, filling breaches, attempting to stabilize barrier shorelines, dredging bay channels with sediment placement off-shore, and bulk-heading bay shorelines can impede sediment transfer and redistribution within the bay systems. The DFR does not address measures to prevent or mitigate for the adverse impacts from existing structures and management practices which impede cross-island sediment transport and distribution.

A Department-compatible plan must include a schedule for studies evaluating changes in bayside geomorphology and sediment availability due to historical inlet, breach and dune management practices as well as fully evaluate, manage and compensate for project impacts on cross-island processes. The DFR did not address cross-island sediment impacts from the maintained inlets and barrier island stabilization efforts. To better understand the cumulative impacts of past and future actions concerning management of the inlets and manipulation of the barriers, the Department supports initiation of a comprehensive evaluation of these activities for alternatives affecting cross-island transport.

Alternatives proposed for beach fill, breach management and inlet management must include bayside habitat and sediment transport monitoring, mitigation or restoration and adaptive management. We can support bayside habitat restoration proposals, including removal of bulkheads, placing dredged material in shallow water to provide intertidal foraging and/or marsh substrate, strengthening the integrity of the barrier island by widening the island and increasing the volume of sediment that comprises the island itself as mitigating for human-caused alterations. We support filling abandoned navigation channels to provide a similar strengthening of the barrier island. Actions that are intended to prevent natural processes including overwash, formation of intertidal flats, overwash fans, spits, etc. (see below under Barrier Island Management) will need to compensate for cross-island sediment losses via other measures to address these processes and features with equivalent functions, values or restoration of the processes which support them.

Mitigation alternatives that require the placement of sand in intertidal and sub-tidal bay environments will also require careful scientific design and close collaboration to meet State Department of Environmental Conservation regulations. Wetlands regulations or design protocols may be needed to address mitigation proposals for impacts to natural features which buffer storm impacts.

Modifications, if any, to inlet maintenance.

As stated below, some measures in the DFR to reduce inlet impacts to littoral processes can be supported. For the interim, before we can endorse any long-term inlet management option, a clear commitment to the scope and time frame for the study described above is needed.

We are disappointed that the environmental effects of long term maintenance of the inlets *in situ* was not evaluated in depth and that decisions rejecting alternatives other than current practices were made using a very rudimentary ranking system. With 83% of bayside storm flooding now occurring through the inlets without any breach of the barriers, we believe that many viable alternatives were not sufficiently evaluated in the Draft Inlet Management Report.

Among the environmental effects needing additional consideration are those on Federally listed species. Three of the listed species on Long Island rely on early-successional habitat. No better

productivity can be achieved than at unarmored inlets, where colonial waterbirds can nest and feed both on the back bay and on the ocean shoreline. We understand that additional studies may be conducted by the Corps. Alternatives, including perhaps shallower configurations for the inlets, would minimize the impacts from the inlet flooding on the mainland. Once impacts to the mainland via inlet flooding are minimized, it is entirely possible that the barrier islands as barriers to flooding can be evaluated differently – perhaps overwash and temporary breaching could be allowed to provide for sediment inputs into the back bay and produce valuable wildlife habitat.

Breach Response Strategies:

The Department recognizes that it may be appropriate to develop site specific breach response protocols for the many reaches across the entire project area. This includes a careful look at different response protocols for the developed areas and major public tracts, including those within the Seashore. If different breach response plans (BRP) are developed for various reaches, careful protocols and response criteria will be needed for each. Departmental staff is currently working cooperatively with your staff on these details, however each site or segment will ultimately need the commensurate advanced evaluation of effects.

Within the five major public tracts within the Seashore, pre-breach management, tapers and other manipulations are not consistent with Departmental policies. The Seashore will accept post-breach response actions where public safety emergencies exist after monitoring and site-specific evaluations and pursuant to these more specific protocols which are still under discussion. Consideration of breach response strategies in the developed areas within the Seashore is dependent upon FIMP team agreement on a barrier island management plan for these areas.

We also strongly urge the Corps to commit to fully provide for the loss of early successional habitat if BRP planning concludes that any breach must be closed and no new inlets will be allowed to form for 50 years. This includes overwash habitat and spits rising above mean high tide which would have been formed at a new inlet. These interrupted processes would have otherwise created potential colonial waterbird nesting habitat and moist soil habitat where the birds can feed. Such features provide nesting and foraging habitat in close proximity and could be protected from disturbance from humans. The Corps has provided us with detailed calculations of the amount of sediment which might find its way into the back bay at various locations in the project area, also calculated for various periods of time the breach/new inlet might remain open. This demonstrates the quantities of material which will be prevented from entering the back bay. Using information from the formation of the spit formed at the Pikes Inlet breach/new inlet formation, we can calculate how much habitat development is precluded by the BRP scenarios, and how much could be gained by either allowing a breach to stay open awhile, or artificially nourishing the back bay with additional, compensatory sediment at the time of a breach.

Off-Shore Sediment Removal:

Current science cannot not adequately define the depth of closure and sediment budget for Fire Island to ascertain the impacts of sand removal from the shore-attached off-shore ridges which USACE has identified as its likely borrow sites. The Seashore and USGS are concerned that a multi-decadal beach nourishment program which relies upon the removal of sand from off-shore borrow areas south of Fire Island may impact long-term sediment availability to the island, particularly if some areas now receive infusions of sand from those sources.

Our concerns have been somewhat diminished because USACE has agreed to monitor off-shore coastal sediment processes, to adaptively manage the borrow areas, to remove limited quantities of sand for initial barrier placement from the deepest borrow areas, and not to remove sand from borrow areas south of the designated National Wilderness Area. In addition, USACE will identify additional deepwater borrow locations. At present, the parameters for the study of off-shore sediment transport processes have not yet been agreed to; resolution of the study parameters and design is critical to reach agreement on any long-term off-shore sand removal program.

Littoral Transport Proposals:

The Department conceptually supports proposals to reduce interference with littoral transport processes by structures. This includes removal and shortening of groins, particularly the Ocean Beach groins which have nearly doubled the rate of dune retreat measurable as far as the Lighthouse. The Corps has indicated support for modifications to the Westhampton groin field. To the extent that modification of the Westhampton groin field and other groins in the project area restore the natural movement of sediment along the shore, we could generally support such actions, pending full analysis of environmental effects.

For the short-term, until the more comprehensive evaluation of the cross-island impacts is completed, the Department can support some inlet management proposals.

Barrier Island Management:

The Department recognizes that different management approaches may be appropriate for the undeveloped public lands and communities on the barrier islands. Within the five major public tracts of the Seashore, manipulation of the barrier island is not consistent with Departmental policies. The Seashore, its neighboring public park to the west, the Robert Moses State Park, and the Smith Point County Park, all share common purposes to provide for public beach recreation. The Seashore has already begun, with the participation of staff from these other parks, to explore more sustainable approaches to providing for public recreation needs, given the dynamic nature of barrier islands. We are examining other approaches for portable, seasonal or relocated public facilities and investment in infrastructure. The beachfront will always be with us, but repetitive infrastructure costs mean that we need to be more strategic in our investment in facilities to provide for our visitors' needs.

Within the developed areas, a number of different alternatives are under active discussion. The Department supports a plan that decreases manipulation of natural processes and increases reliance on non-structural (institutional) methods to reduce storm damage risk. We support the State's stated goal of gradual reduction in reliance upon beach nourishment; however, the specific time-frames and alternatives have not yet been resolved. The Department supports an integrated approach of non-structural actions, relocation of structures and public facilities, and limited sand replenishment (including sand placed on the north side of the dunes where feasible) transitioning to a more viable and robust undeveloped primary dune.

While we have not yet been provided with the economic evaluation section of the full DFR, the breach probability information we have been given indicates that the developed areas within the Seashore presently are not expected to breach in less than a 500 year storm. Beach replenishment alternatives causally connected to mainland flooding from a breach therefore seem economically unjustified. In light of the information in the DFR that 83% of bay flood damages from a storm occur due to inlet conditions without a breach of the barrier, team conversations

have focused on acceptable transitional approaches integrated with breach response strategies. Staff discussions continue to evaluate effective alternatives phasing non-structural approaches integrated with some engineered actions. The Department supports facilitating a more resilient primary and undeveloped natural dune system south of most of the existing barrier development by funding non-structural (land use) measures **at a minimum** at the same level as perpetual renourishment alternatives. This approach, no more costly than 50 years of renourishment, could meet the State's goal of reducing dependence on renourishment and lead to environmentally sustainable approaches protecting the great majority of the island's residences. Importantly, in addition to being consistent with the environmental sustainability criteria of the "Vision Statement", USACE-NER and other initiatives, this approach would be consistent with the Seashore's legislation. If paced with bayside flood mitigation efforts, integrated strategies such as these could obviate the need for perpetual shoreline replenishment and provide justifiable levels of flood risk reduction for barrier and the mainland areas.

From a wildlife perspective, it would be advisable to construct/repair and maintain the smallest dune profile possible project-wide, so that early-successional habitat formation is not precluded. To the extent that it is precluded for the life of the project, we ask that the Corps provide compensatory habitat for early-successional habitat for wildlife and plants.

Non-Structural Measures and Program Integration:

The FIMP team has recognized that the effectiveness of the "non-structural institutional" program changes are integral to the success of any FIMP plan. Governmental programs at all levels should be better integrated so that existing disincentives to effective coastal land use programs are removed. The non-structural measures (meaning land use and incentive programs, not beach fill or elevating structures) under review include a number of state and local programs already in place, needed improvements to those programs, and some amendments to various laws or regulations administered by the partner agencies.

The general term "non-structural measures" also includes a number of incentives, such as alternative capital gains methods or catastrophic insurance proposals; flexible acquisition approaches, such as retained occupancies, relocations, and exchanges; as well as acquisitions conducted by partner agencies, community organizations and conservation trusts. Collectively these approaches could advance public ownership of the primary dune area in conjunction with reduced amounts of beach fill. New legislative initiatives could amend the Seashore's dune district to allow it to utilize the same features as the State's Coastal Erosion Hazard Area (CEHA) law and could revise FEMA's programs so the County and Towns receive post-storm funds for measures consistent with sustainable storm damage reduction. A regional or County body could be created to operate a land bank similar to the Pine Barrens' model, facilitate land exchanges or implement portions of FIMP as a special area management plan bringing several government programs together to provide landscape level protection.

Many of the non-structural approaches are not confined to the Seashore or the barrier islands and apply to development in hazard areas on the mainland. The DFR proposes some \$500,000,000 in bayside flooding mitigation to elevate mainland structures within the 10 year flood plain since such substantial flooding occurs within the bays through the inlets without a breach of the barrier. The Department supports mainland flood mitigation but we believe more effective strategies are needed in addition to elevating structures and raising roads. As the State's letter notes, there is a tendency for such public incentives to foster increased private development in hazard areas. These actions may give communities a false sense of security and function as disincentives to longer term solutions for wind and flood damage.

The Department supports, with participation of local Town and County planners, development of grant criteria for these elevation subsidies integrated with local government hazard mitigation plans or FIMP-specific local implementation plans. Such criteria should reinforce local government infrastructure plans focusing the federal subsidies to town or hamlet centers or “smart-growth” areas where sewers, elevated roads and utilities already support denser development. The Department supports using half of these funds for local acquisition and relocation actions in areas unsuitable for development, such as wetlands, areas with high water tables, natural shorelines, and mainland areas most likely to be affected by a breach. Such approaches could increase “greenways” along shorelines, reduce long-term flood risk, reduce wind damage, save money over the long-term, anticipate sea-level rise and are consistent with several state and federal pro-active hazard mitigation and coastal policies.

The specifics of the transitional engineered features and how these are phased and integrated with institutional changes, post-storm response measures and incentive programs are still being worked out. However, the FIMP team recognizes that the effectiveness of FIMP as well as Departmental support rests upon this critical component. Importantly, the County has recently initiated efforts to address these issues. Since substantial work remains to resolve these matters, we encourage all partner agencies to continue to focus on these details.

Natural Process Restoration Alternatives

The Vision Statement and Environmental Restoration: In addition to providing a plan that reduces storm damage risks to human life and property, the Vision Statement set a goal of maintaining, enhancing, and restoring ecosystem integrity and coastal biodiversity. In order to address the restoration of natural processes there must be an analysis to determine how the processes have been disrupted and the community/ecosystem impacts that have resulted from the interruption of those processes. From this assessment, alternatives that address the restoration of these processes can be developed.

Overwash, breach formation, and barrier island movement northward are all natural processes. These processes are essential to the sustainability of the barrier island and marsh ecosystem which also provides natural protection of the mainland shore. However, since these processes also have adverse impacts on human infrastructure and navigation, innovative, and sustainable mitigation measures, including habitat restoration, enhancement, and habitat management will be needed to offset the adverse impacts of measures conducted to reduce erosion that also harm the natural evolution of the ecosystem.

Habitat and natural process restoration activities should be found in three areas in a FIMP Integrated Plan:

- 1) as a proactive, forward-thinking part of the project itself, (NER alternative) and as provided by the FWCA;
- 2) as compensation for unavoidable adverse impacts to habitat and natural processes attributable to the project alternatives carried forward; and
- 3) as conservation measures to minimize the level of adverse effects of the project on Federally-listed species.

Natural Process Restoration Options: The Corps has indicated support for 33 restoration options. The USFWS strongly supports options that restore natural processes, provide crucial sources of habitat for species which require early-successional breeding and growing substrates;

we strongly support further research into methods for habitat restoration in this type of coastal setting, and urge the Corps to build pilot projects *as soon as possible*. We support additional sites for restoration as provided in several documents since 2004. We could support an adaptive management approach to habitat restoration/development as this type of construction has not yet been attempted in this part of the country. We support restoration project construction as part of an NER alternative, as mitigation for unavoidable impacts to habitat, and, finally, in select locations, as conservation measures to minimize the adverse effects of the project on Federally-listed species. The USFWS also provided a report in October 2003 which recommended additional sites and a justification for their selection – we request that the Corps fully consider those options which did not “score well” in the HEP scoring, over which we had expressed concerns.

Compensatory Mitigation: USFWS strongly urges that any compensatory mitigation for losses of natural formation and maintenance of habitat attributable to the project be provided in locations that make sense from an overall ecosystem conservation perspective – in an ecologically sound location. Restoration alternatives within the Seashore must be consistent with NPS policies. We strongly urge that any mitigation planning involve long term maintenance of the sites to ensure long term viability of the habitats. Sites identified by the USFWS in 2004, by the HEP team and by the USFWS in discussions of potential conservation measures should be evaluated for all three purposes bulleted above.

Listed and Rare Species Habitat Enhancement, Restoration, Creation and Management Measures: USFWS strongly supports Corps’ efforts to develop conservation measures. Conservation measures represent actions pledged in the project description that the action agency will implement to further the species’ recovery. Such measures may be tasks recommended in the species’ recovery plan (in the case of Federally-listed species), should be closely related to the action, and should be achievable within the authority of the action agency. The beneficial effects of conservation measures are taken into consideration when the USFWS concludes whether there is likely to be jeopardy or non-jeopardy to the listed species, and in the analysis of incidental take. Such measures, however, must minimize adverse effects to listed species within the action area in order to be factored into the USFWS’s analyses. Listed species conservation measures need to include long term management agreements and a funding mechanism that will seek to maintain conservation of the Federally-listed piping plover and seabeach amaranth. USFWS has provided the Corps with input into such plans and has discussed the necessity of having such agreements in place as soon as possible. USFWS has also discussed how the cost of long term monitoring and recreational activity management in listed species habitat might be covered by in-kind service components of the local cost share for the FIMP.

WRDA 2007, section 2031, Changes to Principles and Guidelines:

The Department is interested in the Corps’ on-going process of implementing Section 2031 of WRDA 2007, which supports revision of the Corps’ Civil Works Principles and Guidelines. This April Assistant Secretary Woodley reinforced the importance of this effort. Formal responses from the national level of the Department will be released. However, focusing on the implications for FIMP, revisions supporting multiple project objectives will facilitate developing projects consistent with the Corps Environmental Principles and with the “Vision Statement.”

In conclusion, we appreciate the USACE’s continued efforts to participate in development of a mutually acceptable alternative with the Corps’ project development team and the multiple other agencies potentially affected by FIMP. We hope that with the additional information to be

provided under separate cover on the topics identified in this letter, we will continue to make steady progress towards completion of this process.

We share the State's goal that the project area be "in an ecologically-healthier, more sustainable condition at the end of the 50-year life than it is now." We agree that "a more sustainable condition would be one where risk of storm damage has been reduced to a large degree by implementation of non-structural measures, such as land use regulation or flood-proofing, so that need for and dependency on structural measures are replaced by dependency on non-structural measures." In combination with progressive strategies to remove infrastructure and development from hazardous areas, and to remove, redesign or mitigate for engineered structures that are adversely impacting coastal processes, a more sustainable and ecologically sound condition could be achieved for Long Island. It would also be one where human activities and expectations—for conservation, recreational, residential, infrastructure and commercial activities—are better integrated with natural coastal processes to gain the benefits of these special resources, rather than attempting to work against them.

Sincerely,



Mr. Andrew L. Raddant
Regional Environmental Officer, Northeast Region
Office of Environmental Policy & Compliance
Department of the Interior



Mr. Robert W. McIntosh, Jr.
Associate Regional Director
Planning, Construction and Facility Management, Northeast Region
National Park Service



Mr. David Stilwell
Field Supervisor
New York Field Office
U.S. Fish and Wildlife Service

cc:

James Tierney, Assistant Commissioner, NYSDEC
Michael Stankiewicz, NYSDEC, CO
Kenneth Markussen, NYSCDEC, CO
James DeZolt, Division of Water Director, NYSDEC, CO
Peter A. Scully, Regional Director, NYSDEC, RI
Bill Spitz, NYSDEC, RI
Fred Anders, NYSDOS
George Stafford, Assistant Secretary of State, NYSDOS
Steve Levy, Suffolk County

Email cc:

Anthony Ciorra, USACE
Clifford Jones, USACE
Joseph Vietri, USACE
Steve Couch, USACE
Roselle Henn, USACE
Mark Copeland, Cong. Bishop's Office
Carrie Meek Gallagher, Suffolk County
Sean McGuinness, FIIS, NPS
Mike Bilecki, FIIS, NPS
Patricia Laskowski, FIIS, NPS
Mary Foley, NER, NPS
Mike Reynolds, NER, NPS
Dennis Reidenbach, NER, NPS
Robin Lepore, NER, NPS
Laury Zicari, FWS
Marvin Moriarty, FWS
E. Murphy, NYSCDEC
Amy Engel, Suffolk County



Fire Island to Montauk Point (FIMP) Reformulation Study

Preface: The purpose of the FIMP Vision Statement is to articulate the goals and strategies of the Reformulation Study so that all decision-makers, stakeholders, and study team members may share a common understanding in this multi-faceted study. It is hoped that the FIMP Reformulation Study will serve as a model for addressing similar coastal issues elsewhere on Long Island, the Northeast, and the United States as a whole.

Vision Statement

The vision for the Fire Island to Montauk Point Reformulation Study is to prepare an implementable, comprehensive, and long-term regional strategy for the 83 mile portion of the south shore of Suffolk County, Long Island, New York that will reduce risks to human life and property, while maintaining, enhancing, and restoring ecosystem integrity and coastal biodiversity. This will require an assessment of at risk properties within the 71 square mile floodplain, present and future sea level rise, restoration and protection of important coastal landforms and processes, and important public uses of the area. The Reformulation Study will lead to a project that provides New York State and its residents with lower storm damage risks and a full range of future options for coastal zone management.

The Reformulation Study is taking an innovative approach using the best available analyses tools for addressing coastal storm risk reduction and pre- and post-storm shoreline management along both barrier and mainland shorelines. The U.S. Army Corps of Engineers and the State of New York, in their lead project planning and cost sharing roles, are developing innovative management and restoration measures working with a wide range of stakeholders to establish comprehensive, consensus-based solutions. The final plan will recommend measures for implementation by federal agencies, New York State, Suffolk County and local governments through the exercise of all applicable governmental authorities to the maximum extent practical to achieve national, state and local objectives.

- No plan can reduce all risks. On-going monitoring will evaluate the effectiveness and impacts of implemented policies. The monitoring results will serve as the basis for adaptations and adjustments to improve the project's effectiveness and respond to the dynamic nature of the FIMP study area.
- Collection, analysis, and independent technical review of scientific data will be conducted to improve understandings of complex and dynamic, regional hydrologic, geomorphic, and ecological factors and interrelationships while simultaneously facilitating the building and sharing of an integrated scientific, economic, and social knowledge base.
- Efforts will be undertaken to reduce mainland and barrier island flooding through site specific measures that address the variety of causes of flooding throughout the study area, consistent with applicable agency laws and missions.
- Priority will be given to measures that reduce risks and provide protection to human life and property, restore and enhance coastal processes and ecosystem integrity, and are environmentally sustainable.
- Preference will be given to measures that protect and restore coastal landforms and natural habitats, aid in recovery of threatened and endangered species, enhance public recreation and use, and ensure perpetuation of essential physical and biological processes.
- Measures that avoid or minimize adverse environmental impacts and adequately address long-term demands for public resources will be used wherever and whenever appropriate and required, while continuing to accept and embrace governmental responsibility and accountability under the law.
- Dune and beach replenishment will be optimized to balance storm damage reduction and environmental considerations. Sand nourishment will be considered where it will create conditions suitable for restoration of natural processes and where appropriate to protect important uses. Active intervention will be considered where it is possible to achieve balance and synergy between human development, economic activities, and natural systems.
- Existing shore stabilization structures, inlet stabilization measures, dredging practices, and other coastal area modifications past and present, including bay and estuarine shorelines, will be assessed to examine their impacts and, as appropriate, recommended to be altered, mitigated or removed to help restore important physical and biological processes.

The FIMP Web Page:

<http://www.nan.usace.army.mil/fimp/index.htm>