



October 19, 2016

VIA EMAIL

(Robert.J.Smith@usace.army.mil, Mark.f.Lulka@usace.army.mil)

The U.S. Army Corps of Engineers  
New York District  
Planning Division-Environmental Branch  
26 Federal Plaza, New York, New York 10278-0090

**RE: Comments on the The Fire Island to Montauk Point, Combined Beach  
Erosion Control and Hurricane Protection Project (FIMP) Draft Reevaluation  
Report/Environmental Impact Statement**

Dear Mr. Smith and Mr. Lulka:

We write to submit comments on the Fire Island to Montauk Point, Combined Beach Erosion Control and Hurricane Protection Project Draft Reevaluation Report and Environmental Impact Statement ("FIMP").

Seatuck Environmental Association, Inc. ("Seatuck") is a nonprofit organization dedicated to conserving Long Island wildlife and the environment. The organization advocates for conservation policy across Long Island and conducts a wide-ranging environmental education program, including the operation of two public nature centers: the Suffolk County Environmental Center in Islip, where Seatuck is based, and the South Shore Nature Center in East Islip.

We appreciate the opportunity to comment on the FIMP and would like to applaud the U.S. Army Corps of Engineers ("Army Corps") on the completion of the plan. We know it has been a long time in coming. We also know how critically important it is that the plan be approved. It represents an opportunity to secure unparalleled funding for the South Shore of Long Island to address storm readiness, resiliency and the health of our coastal ecosystem. While we have concerns and questions, as detailed below, we support the plan in principle. We look forward to participating as final details are worked out and implementation commenced.

Generally speaking, while we commend the Army Corps on a thorough plan that attempts to move beyond traditional coastal protection measures, we think it misses the mark in some ways. It takes a too short-sighted view of the challenges facing the South Shore of Long Island, incorporates an optimistic assessment of the risks of sea level rise, and invests too heavily in management strategies (beach replenishment and breach avoidance) that place short-term protections over the long-term viability of the barrier system.

However, we recognize that much of the planning incorporated into the FIMP is the result of the plan's long history, as well as the political climate and prevailing economic realities. We commend the Corps for making changes to the plan in the wake of Superstorm Sandy, for considering impacts to bayside communities on the mainland of Long Island, for incorporating an adaptive management plan, and for keeping an open mind about the future direction of the program.

We especially applaud the inclusion of a non-structural component and the focus on the most vulnerable communities on mainland Long Island. Communities such as Amityville, Lindenhurst and Mastic Beach are on the front lines in the struggle to deal with the impacts of climate change. However, as discussed below, we don't think elevating structures is the answer. We think broad implementation of an elevation policy will only encourage more private investment and public expenditure in areas where we should be adopting coastal retreat policies. Instead, we encourage the Army Corps to make a down payment on sensible retreat by including a robust voluntary property buyout program.

### **I. Breach Management**

We recognize the inherent conflict in the Army Corps' position regarding barrier island breaches. On one hand, the agency knows – and the FIMP acknowledges – that the creation of barrier island inlets through storm-induced breaching is a natural and necessary part of the barrier island system. Inlets are an important vehicle – in fact, *the most important vehicle* – for cross-island sediment transport. This transfer of sediments from the ocean to the bay is a critical component of barrier island migration, the process through which barrier islands increase in width, “roll over” and keep up with rising sea levels. In other words, breaches and the creation of new inlets *must* occur if a barrier island is to remain viable and persist over a geologic time scale. Without breaches leading to new inlets, the island will stay in place and eventually drown as ocean waters rise around it.

On the other hand, from Army Corps' perspective, there is a prevailing scientific consensus that barrier island inlets increase the risk of storm impacts to people and property by providing entry for storm surges (although we note the recent work by Dr. Charlie Flagg suggests and others suggesting that Bellport Inlet may actually relieve storm surge during certain storm events, *Flagg, C. N. 2012. Initial Report for the Evaluation of Wildness Breach, Fire Island National Seashore. National Park Service Report*).

This inherent conflict creates difficult decisions for policymakers regarding barrier island breaches. On one hand they are a necessary part of allowing barrier islands to remain viable barriers over the long term. On the other hand, they increase risk of storm impacts in the short term. To a large extent, the answer to the question of how to balance these competing interests depends on the time scale being applied. If long-term time scales are considered, then breaches should stay open and transport sediment until they naturally close. On the other hand, a shorter time scale (such as the 50-year scope of the FIMP), suggests all breaches be closed before they allow greater bayside storm damage.

In this context, the Army Corps' position on breaches, as reflected in the FIMP, is understandable. The agency's mission is to prevent storm damage over the life of the project – since that time frame is short, the FIMP is focused on reducing the occurrence of breaches and quickly closing most that do form. But clearly there is a balancing of competing interests. Not *all* risks from breaches can be eliminated. To do so would require the Army Corps to prevent every breach and/or to close every breach immediately (both of which are impossible). Where should the line be drawn?

The FIMP attempts to draw this line by identifying places where 1) breaches must not form (Proactive Breach Response), 2) where they must not remain if they do form (Reactive Breach Response), and where they can exist temporarily, but only if they are closing pursuant to some unidentified schedule (Conditional Breach Response). We recognize that this approach is a change from the previous New York State Breach Contingency Plan and applaud the Army Corps for this softening of its approach to breaches. It is a step in the right direction in our opinion, but we don't think it goes far enough.

The Conditional Breach Closure proposal provides insufficient details to allow us to fully understand how it would be applied. Under this category, the FIMP states "a breach closure team will make a decision about whether a breach should be closed based on whether or not the breach is closing naturally." What is the time frame for "closing naturally"? Scientists tell us that, on a geologic time scale, *all* breaches are in the process of closing naturally. It's not clear what parameters would be applied in making this decision.

Further, the process for establishing the "breach closure team" and final decision-making authority is not clear. In our opinion, this process should involve a wide range of leading scientific voices from a host of agencies, universities and organizations. And we think the National Park Service should lead this process. With its broad mission to safeguard both the ecological and recreational values of Fire Island (as well as accommodate private development) the agency is well positioned to consider the many interests and competing values at issue in the decision about whether to close a breach.

In the end, we urge the adoption of a genuinely nuance, science-based process similar to what took place with the Wilderness Breach in 2012. There, the National Park Service led an effort to convene a team of scientific experts to assess the situation, monitor the breach, gathered data (about impacts to tides, storm risks and ecological conditions), and offer

advice on both storm risks and ecological benefits. A similar process should be followed for future breaches on Fire Island.

Importantly, we think this process should be applied to *all* breaches, not just those in the areas identified for the “Conditional Breach Response.” Regardless of how and why the various areas on Fire Island have been delineated and categorized, once a breach has opened, it seems reasonable that it is considered on a case-by-case basis and a decision about its future is based on the best available science.

In addition, in the way the Army Corps has identified areas where breaches cannot be allowed to occur or persist, perhaps it can identify locations in advance where breaches *can* exist, at least for some pre-determined amount of time. While we understand that in some instances the cost of closing a breach goes up the longer it stays open, this is not always the case. In some instances, the limited tidal basin, proximity of other breaches or other factors dictate that breaches will stay small and likely close in a short time. Bellport Inlet is an example of such a location. It has stayed small, likely because of the high sand budget and the limited tidal drain, and – experts we have consulted have predicted – will likely close within the next few years. If this turns out to be true, the inlet will have produced tremendous benefits with few flooding impacts.

## **II. Back Bay Nourishment**

The FIMP recognizes that the proposed breach management policy would interfere with the important cross-island sediment transport from breaching, stating unequivocally that “breaches result in the transport of sand that introduces sediment into the bay, and that the mechanical closure of breaches would reduce the amount of sediment that could be transported.” The plan’s proposed solution is to add more sand to the bay during the closure process: “The breach closure plans will include an additional quantity of sand on the bayside of the barrier island to replicate this process, to enhance the long-term stability and resiliency of the closure action. The specific dimensions and configuration will be developed as part of the breach closure plan at the time of the closure operation.” This plan raises several questions:

- A. *Cost?* – As Table 15 in the FIMP illustrates, breaches move large amounts of sand before they close, especially in sand-rich environments like the western half of Fire Island. According to Table 15, the hypothetical breaches analyzed would transport, on average, more than 1,500,000 cubic yards of sand to the bay in one year. Mechanically putting this much sand into bay would be expensive. In most cases, it would exceed the amount of sand necessary to close the breaches. It is not clear that these costs have been built into the budget estimates, which leaves us wondering if the work would ever happen. The large amount of sand necessary to “replicate” cross-island sediment transport from a breach seems cost prohibitive. Our worry, of course, is that budget restrictions would limit or eliminate the amount of sand placed in the bay during breach closure.

- B. Sand Source?* – Another concern about the “replication” proposal is the question of the sand sources. Where would this sand come from? Has it been built into the estimates for the borrow site calculations? If not, it may likely be difficult to find authorized sources of sand for this purpose. The designated offshore sand borrow areas are already difficult to access due to permitting requirements and the claim by the USGS that some of these shoal areas could possibly contribute to the regional sand budget by "onshore" transport of sand along the shoal crest to the shore face.
- C. Replication?* – A more fundamental question about this proposed approach is: would it work? Does moving large amounts of sand into the bay replicate the cross-island transport from a breach? Is there evidence that such an approach has worked in other parts of the country? Even if the approach technically satisfies the necessary bayside sand budget, it seems unlikely that it would create the ecologically valuable habitat produced by flood shoal deltas. As the recent Wilderness Breach has demonstrated, breaches produce habitat for rich ecological communities that thrive in the shallows and flats of the flood shoal delta. It seems dubious that the mass mechanical deposition of sand could “replicate” such benefits.

For us, the many questions about the proposal to mechanically replicate cross-island sediment transport weigh in favor of allowing breaches to stay open, at least temporarily. An open breach will do for free what the proposal would do at a cost of tens of millions (and that may not actually work).

### **III. Mitigation for Lost Exchange/Circulation**

If implemented, the breach management policy outlined in the FIMP will have the effect of eliminating the necessary cross-island transport of sediment to the back bay. But the policy will have another impact: by minimizing the likelihood of breaches and quickly filling most that form, the policy will reduce ocean/bay exchange in the Great South Bay and other bays. This will result in reduced flushing of pollutants, greater stagnation and overall lower water quality. In an era of high nitrogen inputs (measures underway to address nitrogen won't have full impact for years), loss of salt marsh and eel grass, and increased algal blooms, the impact of reduced ocean/bay exchange on water quality and ecological health will be significant.

To mitigate against this seemingly unavoidable consequence (at least with regard to Great South Bay), we propose that the Army Corps commit to examining and considering realignment of Fire Island Inlet.

As the Army Corps knows, Fire Island Inlet is one of the most inefficient inlets on the Eastern seaboard. Its western migration and subsequent stabilization has resulted in a 4-mile elongated spit formation that severely limits the inlet's efficiency. It's said that more than 75% of the tidal energy that enters the inlet is dissipated before it reaches the bay. The

result, of course, is that Fire Island Inlet has far less impact on Great South Bay exchange and circulation than it should. In an era of extensive water quality degradation from nitrogen and other pollution and resulting harmful algae blooms, any reduction in ocean flushing can have disastrous results, not only to water quality, but also to eelgrass population and salt marsh health. In this regard, the diminished efficiency of Fire Island Inlet is exacerbating an already severe problem. A realignment of Fire Island Inlet could increase ocean exchange dramatically, thereby helping to mitigate against the worst impacts of nitrogen and other pollution, especially over the next several decades as efforts to reduce these pollution sources begin to pay dividends.

The 4-mile Fire Island Inlet is also extremely expensive to maintain. The Army Corps must remove 1.5 million cubic yards of sand on average once *every other year* to maintain navigability in the inlet. When the Fire Island Inlet is dredged, no other regional inlets are addressed – it consumes the Corps' entire dredging budget for the region.

On the other hand, a "new" Fire Island Inlet, located somewhere near its original position to the east of Robert Moses State Park, would be vastly more efficient and much less expensive to maintain. Its short length (approximately 500 meters) and north-south orientation would greatly improve tidal exchange and circulation in the Great South Bay and reduce dredging costs (perhaps by as much as 90%).

We realize that such a proposal would require careful, detailed analysis of potential outcomes and impacts. We understand that there would be positive and negative impacts, depending on one's point of view. Beachfront homeowners along Gilgo Beach and other western beaches, for example, would likely benefit from an increased sand budget from the current inlet's large ebb shoal. On the other hand, the loss of vehicular driving access to Fire Island (we assume a driving bridge would be economically and politically untenable) would certainly generate opposition.

While driving access is understandably important to many Fire Island residents and businesses, we don't think protecting the ability to drive to and from Fire Island should be a deciding factor in setting policy regarding the barrier island's future. It seems reasonable to expect, in an era of rapidly rising sea levels, that full connectivity and driving access will be difficult to maintain at Fire Island throughout the life of the project. Residents, visitors, contractors and service providers should expect to have to transition back to a boat-based community. In fact, we urge the Corps to consider ways to support and supplement this transition, perhaps through providing funding for additional ferry service to the island.

The Army Corps has already produced a positive analysis of the idea. *Kraus, N.C., G.A. Zarillo, and J.F. Tavoraro. 2003. Hypothetical Relocation of Fire Island Inlet, New York. Proceedings Coastal Sediments '03. Corpus Christi, TX: World Scientific Publishing Corp. and East Meets West Productions. 15 p.* Given that such realignment would mitigate against impacts caused by the FIMP's breach management policy, additional analysis and serious consideration of the concept is warranted.

#### **IV. Acquisition Program**

As the Army Corps itself recognizes, the proposed efforts to nourish beaches and eliminate breaches can only serve as short-term solutions. They may provide risk reduction over the course of the project, but eventually, as sea levels rise and storms increase in frequency and intensity, it will be cost prohibitive to maintain the same coastal strategy. Eventually, it will be impossible to keep the barrier island system viable in its current position, and impossible to protect low-lying coastal development on the mainland of Long Island. Eventually, we will have to let the barrier island migrate inland and we'll have to retreat from the coast.

In this sense, the most important part of the FIMP is the proposed non-structural component that addresses the thousands of homes within in the 10-year floodplain on the mainland. As the plan is being advanced to minimize the risk associated with storm damage from hurricanes and other major storm events, the overarching goal the FIMP states "preference will be given to nonstructural measures that minimize impacts to coastal landforms and natural habitats".

While Seatuck applauds this prioritization, we think the focus on elevating structures is a seriously misguided policy. It would raise structures (but potentially not outdated septic systems), while leaving roads, bridges and other structures in place and the public on the hook to maintain this infrastructure, while also provided emergency and other services. An across-the-board elevation strategy would also send the wrong message to the public: that they're safe where they are and can continue to invest in low-lying, at risk locations.

Instead, we urge the Army Corps to incorporate the use of "buyouts" in the plan. Such a strategy, in which government purchases existing developed lots containing residences and associated infrastructure such as sanitary systems, driveways, etc. and removes them, is, by far, the best strategy to employ to achieve the goal of minimizing storm risk and impacts to coastal landforms and natural habitats.

Specifically and most importantly, buyouts remove homeowners, their homes, and their physical possessions out of harm's way, a direct and highly effective means to reduce storm related damage. Other important and worthwhile goals achieved by buyouts include: reduced costs associated with removal of debris during post-storm clean-up events; reduced costs for first responders needing to assist homeowners in flooded areas and less opportunity for putting first responders in harm's way to begin with (first responders made over 100 rescues in Mastic Beach during Superstorm Sandy); protection and enhancement of natural areas including tidal marshes which can lessen adverse impacts from storms; and removal of cesspools and septic systems which can improve water quality by reducing water degradation caused by flooding of these systems during storms as it extensively occurred on the Mastic peninsula and through the leaching of nitrogen into adjacent coastal waters from systems that are mere feet above the water table.

We recognize that it may be difficult for homeowners to agree to sell their homes located in the flood zone and to relocate immediately, as many have developed lasting memories and feel conflicted moving out of a home they've lived in for many years. To address this issue Seatuck recommends that any Corps buyout program, in addition to an immediate purchase and vacating of premises, include various options for homeowners to continue occupying purchased properties for finite terms of tenancy such as five, ten, or fifteen years, or life tenancy, or until a storm event occurs which damages the structure, whichever period of time is shorter. A benefit of this approach, would be, a reduced payment per homeowner from the government, potentially allowing for more property owners to participate.

It is important to note that there is ample opportunity to employ buyouts along Long Island's south shore, adjacent to the northern sides of the Great South and Moriches Bay. For example, there are a few thousand low-lying developed properties in the Village of Mastic Beach, on the Mastic Peninsula, which would be ideal candidates for a comprehensive buyout program. More than 450 homes in the area received damage that amounted to more than 50% of the structure by Superstorm Sandy and nearly 1,500 homes achieved 25% damage. Moreover, there are nearly two thousand developed properties within the zero to five-foot land contour or the 100-year flood zone. An excellent overview of the buyouts that have occurred in this area can be seen in the case example prepared in the Lincoln Institute's "Buy-In for Buyouts: The Case for Managed Retreat from Flood Zones" (<http://www.lincolninst.edu/sites/default/files/pubfiles/buy-in-for-buyouts-full.pdf>).

We would urge that the purchases of a buyout program be prioritized based on their proximity to the coast, which – generally speaking – serves as an accurate indication of vulnerability. Properties along the shoreline are generally the most exposed and of the lowest elevation and are much more likely to receive the direct brunt of storm and adverse weather events. Additionally, they are the first to feel the effects of steady sea level rise than are properties hundreds to thousands of feet removed from the coast. We recommend, therefore, that any buyout program "begin at the shoreline" and work inland.

Based on a recent meeting with Army Corps staff we understand that, based on existing federal law, any buyout program will need to be a mandatory program; i.e. property owners will have no discretion or option to sell their properties but will be required to sell pursuant to the use of eminent domain. We strongly believe the program should be a discretionary program in which interested owners participate and those that are not interested do not. Thus, we strongly urge the Corps to work with Congress to modify the relevant statutory language so the buyout program becomes voluntary in nature, while obviously reserving the right to utilize condemnation in certain circumstances.

## **V. Wildlife Impacts**

### *A. General Comments*

We observe that the majority of impacts to wildlife appear to be directly related to Army Corps efforts to prevent the barrier island from acting like a barrier island. This gets to the issue we raised above regarding time scale. We suggested that if the Corps took a long-term look at coastal protection, it would let the barrier island breach, tolerate new inlets and stop nourishing beaches. Doing so would allow the barrier system to stay viable over the long term. It would also allow the establishment of overwash areas, tidal shoals, and other backbay features that provide critically important habitat to many of the species at risk from the FIMP. In other words, the FIMP's most significant wildlife impacts come from the plan's focus on short-term benefits at the expense of natural processes that promote long-term stability.

However, as stated above, we recognize that the Corps is limited in its ability to consider long-term costs and benefits, and that it has attempted to balance many issues within the project timeline. Given this reality, we commend the Corps on its willingness to employ mitigation measures and to pursue the establishment and restoration of natural features. We think the level of monitoring, mitigation and other conservation measures contained in the Fire Island to Moriches Inlet Plan (FIMI) are commendable. By our count the FIMI contained twenty-two such measures; we encourage the Corps to continue and extend all of them to the full FIMP.

### *B. Red Knot*

One portion of the FIMP with which we are particularly disappointed is the plan's consideration and discussion of the red knot (*Calidris canutus*). The shorebird, which was recently listed by the U.S. Fish & Wildlife Service (USFWS) as a Federally Threatened Species, makes an astounding long distance migration, flying over 9,300 miles from breeding grounds in the arctic down to Tierra del Fuego at the tip of South America.

Along this journey it relies on only a few locations where it stops to feed and refuel, including Long Island. Red knots rely on Long Island's bayside beaches as stopover habitat during spring and fall migration (as the FIMP specifically recognizes). This habitat, which includes sand spits, shoals, and sandbars, is generally found near natural island features, especially including barrier island breaches.

The bird's long distance migration and reliance on disparate habitats already makes it susceptible to extinction; the potential of sea level rise to impact its migratory feeding stations only exacerbates its peril. As sea level rises, red knots will likely lose portions of its vital feeding habitats; like missing rungs of a ladder, it will become more imperiled if those foraging locations on the south shore of Long Island are missing or inaccessible.

The FIMP acknowledges that red knot habitat will be lost due to the construction of stabilization structures and implementation of re-nourishment efforts. Despite this admission, the plan nevertheless indicates that the project will have “no effects” on the red knot (Table 4). Given this contradiction, we are not confident the measures proposed to mitigate against the FIMP’s harmful effects on red knots are well conceived or will be sufficient. We urge the Corps to revisit the plan’s section on the red knot and to provide more detailed mitigation plans to minimize impacts to his federally protected species.

**VI. Adaptive Management**

Finally, we note the importance of the FIMP’s Adaptive Management Plan. The Army Corps’ ability to remain flexible and open to new science and changing realities, especially in light of the uncertainty regarding sea level rise and other climate change impacts, will be critical to the long-term success of the program. We applaud the Corps on inclusion of the plan and urge that it be given serious attention and resources.

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Again, thank you for the opportunity to comment on the FIMP. We look forward to staying involved as implementation details are finalized, partnership contracts are signed and implementation commences.

Very truly yours,

Enrico Nardone  
*Executive Director*

John Turner  
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cc.

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